**INLAND ENERGY, INC.**

South Tower, Suite 606
3501 Jamboree Road
Newport Beach, CA 92660
(949) 856-2200 / Fax (949) 856-2313
www.inlandenergy.com

*Thomas M. Barnett*
*Executive Vice President*

DOCKET
07-AFC-1
DATE SEP 12 2007
RECD. SEP 18 2007

September 12, 2007

Mr. John Kessler
Project Manager
Siting Division – MS 52
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Responses to CEC Supplemental Data Requests re the VV2 Hybrid Project

Dear John:

Pursuant to the "Data Response and Issue Resolution Workshop Supplemental Data Requests" (the 8/8/07 Supplemental DR) received from your office following the August 8, 2007 Workshop in Victorville, please find enclosed applicant's responses. Note that the responses to the first two items listed in the 8/8/07 Supplemental DR under Cultural Resources will be sent through our attorneys, Latham & Watkins, to protect the confidentiality of the potentially sensitive material.

Please contact me if you have any questions.

Sincerely,

Thomas M. Barnett

Encl.

Cc: S. Head, A. Bachrach – ENSR
M. Carroll – Latham & Watkins
J. Roberts – City of Victorville

## Victorville 2 (07-AFC-1)
## Data Response and Issue Resolution Workshop Supplemental Data Requests

The following are supplemental data needs requested by CEC staff intended to supplement and clarify the City of Victorville's Data Response filed July 23, 2007. Please provide the following:

**Cultural Resources**

1. Illustration of site locations within 1,000 feet of project components in Figure 5;

2. DPR 523 Forms – Building, Structure & Object Records and Archeological Site Records as applicable where such features exist;

**Soil and Water Resources**

MWA

1. Copy of Kirby Brill's Power Point presentation from workshop summarizing adjudication;

VVWRA

1. Annual records of total effluent from VVWRA plant for 2000 - 2006 with a breakdown of total secondary and tertiary treatment and uses within those categories including deliveries to the Mojave River, percolation ponds, and Westwinds Golf Course, etc.

2. Figure 1 (page 3) from the Flow Projection Study by RBF, prepared for VVWRA.

3. Water quality data characterizing the tertiary and secondary-treated wastewater.

VVWD

1. Historical groundwater production records for 2000 - 2006 on a monthly basis with ramp-down and replacement water information; Please include the amount of Base Annual Production and a breakdown of the amount of water produced as Free Production Allowance and amount of replacement water (water produced in excess of Free Production Allowance) for each year.

2. Historical customer (or service connections) records for 2000-2006 defining how many customers VVWD served annually between 2000 and 2006

3. Approximate percentages of indoor vs. outdoor water use by VVWD customers;

Apple Valley

1. Apple Valley Ranchos Water Company Urban Water Management Plan dated November 2005;

2. Apple Valley Water Conservation Plan (Ordinance);

3. Apple Valley Ranchos Water Company historical water production reports for 2000 - 2006;

4. Historical customer (or service connections) records for 2000 - 2006;

Hesperia

1. Hesperia Water District historical water production reports for 2000 – 2006;

2. Historical customer (or service connections) records for 2000 – 2006;

Draft Drainage, Erosion and Sediment Control Plan

Replacement pages where descriptions are being revised for chemical storage containment (Section 4.2.1), and water used for dust suppression (Section 4.2.5);

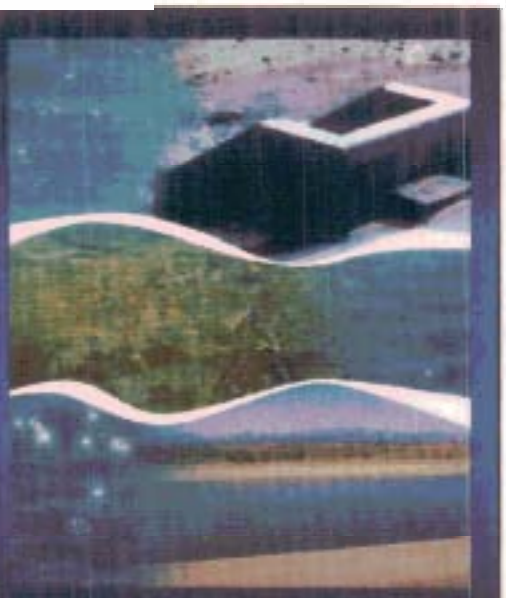
## Soil and Water Resources

1. Copy of Kirby Brill's Power Point presentation from workshop summarizing adjudication

Water

# Adjudication, water supply and environment?

Background Presentation at CEC Workshop on VV2



Kirby Brill
General Manager
Mojave Water Agency

November 8, 2006

Mojave Water Agency

## Overview

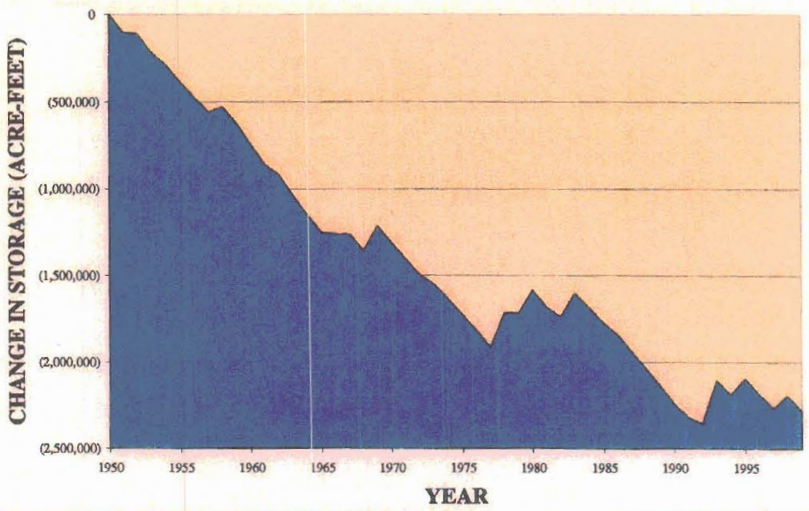
- Adjudication 101
- Protection of Riparian Habitat under the Judgment
- Proposed groundwater storage ("claim") program
- State and local water supply management

Mojave Water Agency

# First, a little history…

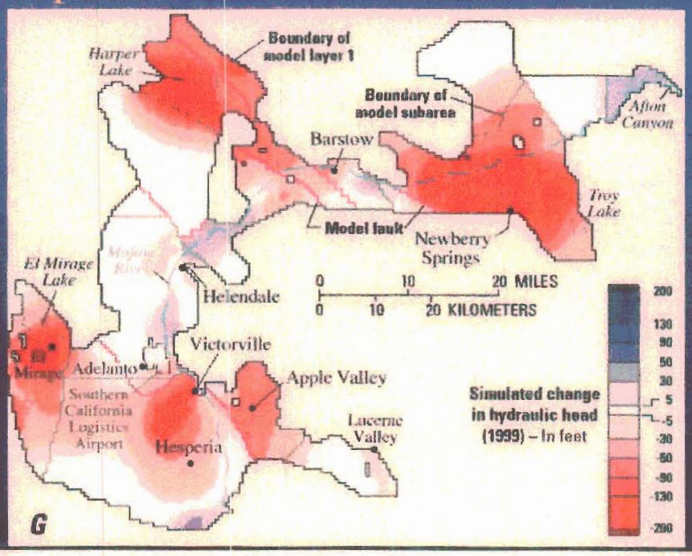
Mojave Water Agency

## Since 1950, over 2M AF of ground water has been Mined from the Mojave River Basin



Mojave Water Agency

## Modeling helps show that overdraft has lowered water levels as much as 200 feet in some places




Mojave Water Agency

## The Solution: Create a ground water management system – "MWA & the Adjudication"

- Threat of building moratorium in 1960
- MWA created in 1960 to buy water from SWP and ensure future water supplies
- Failed attempt in 1964-74 to adjudicate ground water pumping rights
- In 1990, Barstow v. Adelanto prompted second adjudication
- Adjudication gives water rights to all who pumped ground water between 1986 and to 1990
- Pumping in excess of right results in payment to MWA for purchase of imported water or transfer

Mojave Water Agency

## The resulting "Judgment" is a binding Court mandate administered by Watermaster

BRUNICK, ALVAREZ & BATTERSBY
PROFESSIONAL LAW CORPORATION
1839 COMMERCENTER WEST
POST OFFICE BOX 6425
SAN BERNARDINO, CALIFORNIA 92412
TELEPHONE: (909) 889-8301 824-0823

William J. Brunick, (Bar No. 46289)
Boyd L. Hill, (Bar No. 140435)

Attorneys for Cross-Complainant MOJAVE WATER AGENCY

FILED
RIVERSIDE COUNTY
JAN 10 1996
By Y.A. Burns Deputy

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF RIVERSIDE

| | |
|---|---|
| CITY OF BARSTOW, et al,<br>Plaintiff,<br>v.<br>CITY OF ADELANTO, et al,<br>Defendant. | CASE NO. 208568<br>ASSIGNED TO JUDGE KAISER DEPT.4 FOR ALL PURPOSES<br>JUDGMENT AFTER TRIAL |

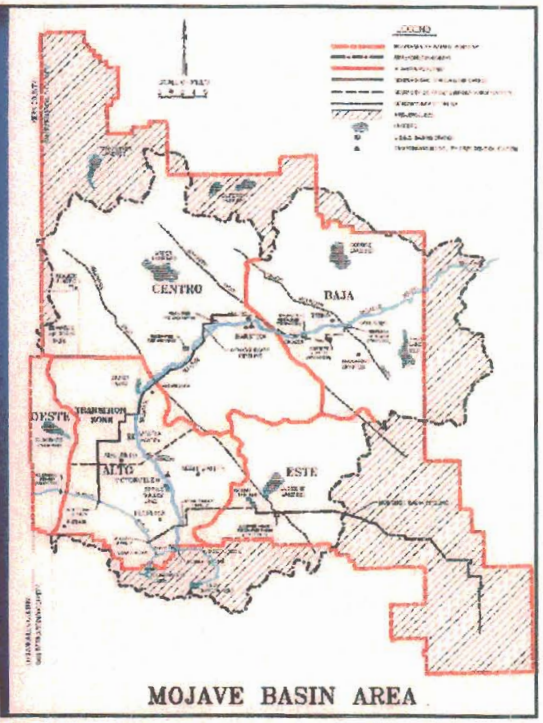
Mojave Water Agency

## MWA is the appointed Watermaster"

- MWA Board also serves as the Mojave Basin Area Watermaster
- Job is to implement the Mojave Basin Area Judgment
- Or simply put, act as the "Court Appointed Contract Administrator"

Mojave Water Agency

Watermaster administers the Judgment for 5 sub-areas with unique water supply characteristics




MOJAVE BASIN AREA

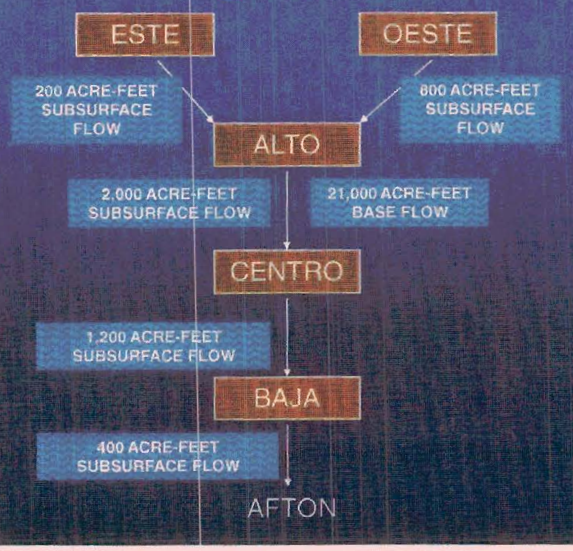
Mojave Water Agency

# Definitions

- Free Production Allowance: The total amount of water, and any Producer's share thereof, that may be produced from a Subarea each year **free of any Replacement Obligation**.
- Production Safe Yield: The highest average annual amount of water that can be produced from a Subarea: (1) over a sequence of years that is representative of **long-term average annual natural water supply to the Subarea** net of long-term average annual natural outflow from the Subarea, (2) under given patterns of production, applied water return flows and consumptive use, and (3) **without resulting in a long-term net reduction of groundwater** in storage in the Subarea.

Mojave Water Agency

# The Judgment also established Subarea Obligations



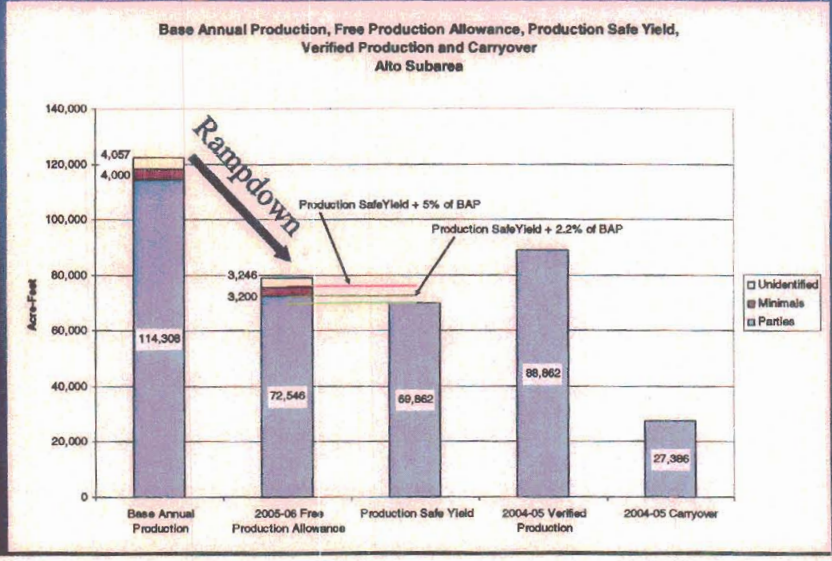

Mojave Water Agency

# Each Sub-Area has its unique Water Balance

| WATER SUPPLY | ALTO |
|---|---|
| Surface Water Inflow | |
| Gaged | 65,500 |
| Ungaged | 3,600 |
| Subsurface Inflow | 1,175 |
| Deep Percolation of Precipitation | 3,500 |
| Imports | |
| Lake Arrowhead CSD | 1,740 |
| SWP Deliveries | TBD |
| TOTAL | 75,515 |
| CONSUMPTIVE USE AND OUTFLOW | |
| Surface Water Outflow | |
| Gaged | 0 |
| Ungaged | 34,700 |
| Subsurface Outflow | 2,000 |
| Consumptive Use | |
| Agriculture | 1,900 |
| Urban | 46,000 |
| Phreatophytes | 11,000 |
| TOTAL | 95,600 |
| Surplus/Deficit | (20,085) |
| Total Estimated Production (2002-03) | 89,649 |
| Production Safe Yield (2002-03) | 69,564 |

Mojave Water Agency

# The goal is to achieve balance by reducing "FPA" close to Safe Yield




Mojave Water Agency

# MWA is responsible for importing water to "mitigate" overproduction if rights cannot be bought or leased

- If a producer uses more than their FPA then they must:
  - 1) Lease or purchase an amount equal to their overproduction or,
  - 2) Pay a replacement assessment to Watermaster adequate to purchase an equal amount of imported water
- If (2) Watermaster collects assessment and transfers funds to MWA
- MWA is obligated to use that money to purchase imported water
  - MWA must deliver water to the sub-basin from which the replacement assessment was collected
  - MWA can use its storage account to fulfill this obligation

Mojave Water Agency

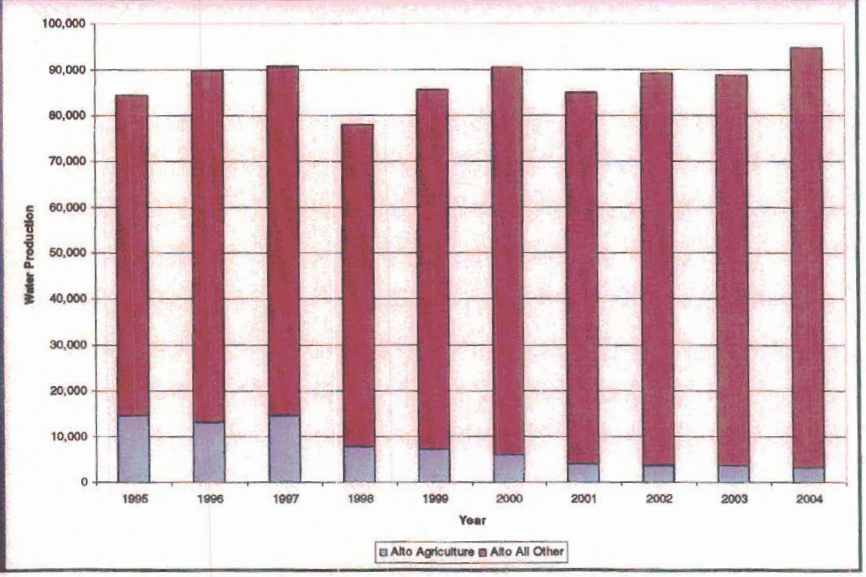
# MWA's obligations are specified in the Judgment

9. MWA Obligations. The Physical Solution is intended to provide for delivery and equitable distribution to the respective Subareas by MWA of the best quality of Supplemental Water reasonably available. MWA shall develop conveyance or other facilities to deliver this Supplemental Water to the areas depicted

a. Secure Supplemental Water. MWA, separate and apart from its duties as the initial Watermaster designated under this Judgment, shall exercise its authority under Sections 1.5 and 15 of the MWA Act to pursue promptly, continuously and diligently all reasonable sources to secure Supplemental Water as necessary to fully implement the provisions of this Judgment.

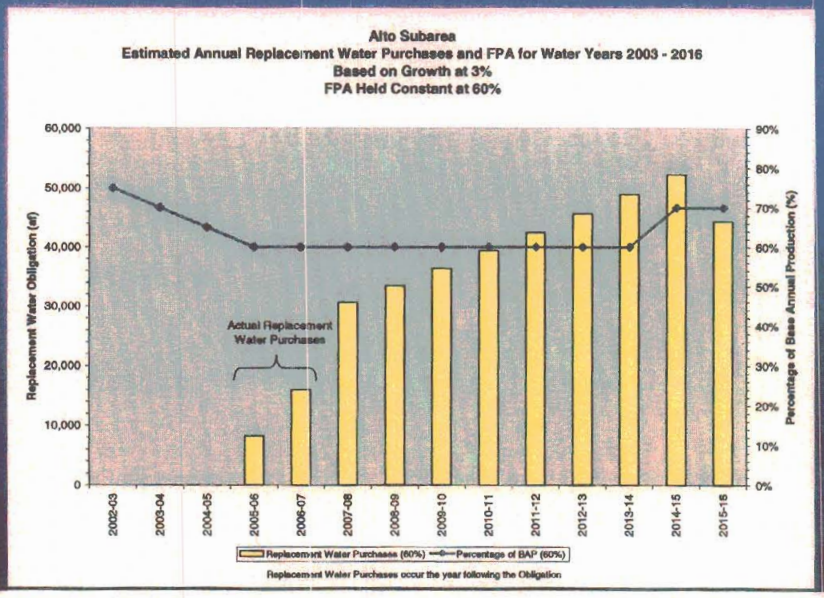
Mojave Water Agency

# In the Alto sub-basin, almost all of the "sellers" are gone, prompting a shift to imported water



Mojave Water Agency

# Rampdown and growth are moving the market to more reliance on imported water

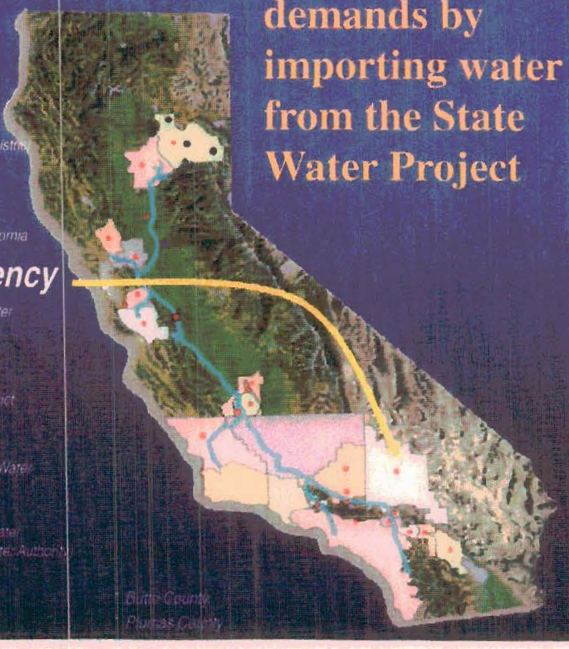



Mojave Water Agency

Alameda County Flood Control and Water Conservation District, Zone 7
Alameda County Water District
Antelope Valley - East Kern Water Agency
City of Yuba City
Castaic Lake Water Agency
Coachella Valley Water District
County of Kings
Crestline - Lake Arrowhead Water Agency
Desert Water Agency Dudley Ridge Water District
Empire West Side Irrigation District
Kern County Water Agency
Littlerock Creek Irrigation District
Metropolitan Water District of Southern California

**Mojave Water Agency**

Napa County Flood Control Agency and Water Conservation District
Oak Flat Water District
Palmdale Water District
San Bernardino Valley Municipal Water District
San Gabriel Valley Municipal Water District
San Gorgonio Pass Water Agency
San Luis Obispo County Flood Control and Water Conservation District
Santa Clara Valley Water District
Santa Barbara County Flood Control and Water Conservation District/Central Coast Water Authority
Solano County Water Agency
Tulare Lake Basin Water Storage District
Ventura County Flood Control District



Butte County
Plumas County

# MWA will meet demands by importing water from the State Water Project

Mojave Water Agency

# Protection of Riparian Habitat

Mojave Water Agency

## Judgment Conditions Protecting Natural Resources

1. FPA Rampdown to Production Safe Yield (Five Percent Rule)
   *paragraph 22 (pages 25-26)*

2. FPA Adjustment Factors:
   - Consumptive Use by Riparian Vegetation (including any changes)
     *Exhibit H, paragraph 2(a) (pages H-1, H-2)*
   - Protection of Public Trust Resources
     *paragraph 20 (page 24)*
   - Protection of Species Listed in Exhibit H
     *Exhibit H, paragraph 2(a) (page H-2)*

3. FPA Adjustment Process:
   - Public Notice and Hearing
   - Court Review
     *paragraph 36 (pages 41-43)*

4. Reducing Production in/near Baja Riparian Areas
   *Exhibit H, paragraph 2(b) (referencing Table H-2)*

5. Groundwater Level Standards for Habitat Areas
   - Judgment Seeks to Achieve
     *Exhibit H, paragraph 2 (pages H-1, H-2)*

6. Water Level Monitoring in Habitat Areas
   *paragraph 24(e) (page 29); Exhibit G, paragraph 2(b)*

7. Biological Resources Trust Fund/Assessments
   *paragraph 25(d) (pages 36-37)*

8. Non-Interference with Storm Flows
   *paragraph 18 (page 23)*

9. Replacement in the Transition Zone
   *paragraph 28 (page 39)*
   *Exhibit G, paragraph 2 (pages G-2, G-3)*

10. Basic Replacement/Makeup Requirements
    - Subarea Obligations
      *paragraph 22 (pages 25-26)*
      *paragraphs 25(b) and 25(c) (page 36)*

11. DFG on Subarea Advisory Committees
    *paragraph 31 (page 40)*

12. Continuing Jurisdiction of the Court
    *paragraph 19 (page 24)*

13. BAP/FPA Adjustments for Changes in Consumptive Use Due to Transfers or Changes in Purpose of Use
    *Paragraph 24(g) (pages 33-34)*

14. No Waiver by State Regarding Public Trust
    *Exhibit H, paragraph 4 (page H-4)*

*All references to Judgment after trial dated January 31, 1996

Mojave Water Agency

**EXHIBIT H**

**BIOLOGICAL RESOURCE MITIGATION**

1. **Protection of and Description of Existing Riparian Habitat**. In arriving at a Physical Solution, the Parties have taken into consideration the water needs of the public trust resources of the Mojave Basin Area, including but not limited to, those species listed in Table H-1 within each of the areas as shown on Figure H-1 and the riparian habitat areas shown on Figure H-1 and described generally as follows:

2. **Protection Pursuant to Physical Solution**. The following aspects of the Physical Solution must be implemented to seek to achieve the water table standards set forth in Table H-2 which were proposed by DFG as being necessary to maintain and converse the riparian resources in the areas shown on Figure H-1, including the species listed in Table H-1:

3. **Additional Protection Pursuant to Trust Fund Established by Watermaster Using the Proceeds of Biological Resource Assessments**.

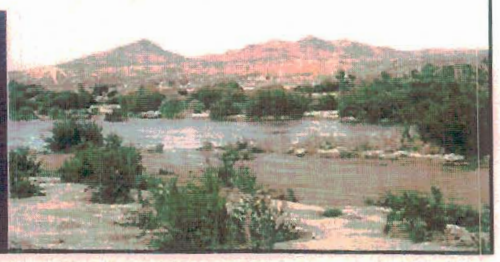
Mojave Water Agency

# Pursuant to the Judgment, CDFG developed their plan for protecting habitat

HABITAT WATER SUPPLY MANAGEMENT PLAN
FOR
THE ADJUDICATED AREA OF THE MOJAVE RIVER BASIN
SAN BERNARDINO COUNTY, CALIFORNIA

Prepared by
The California Department of Fish and Game

July 2004



Mojave Water Agency

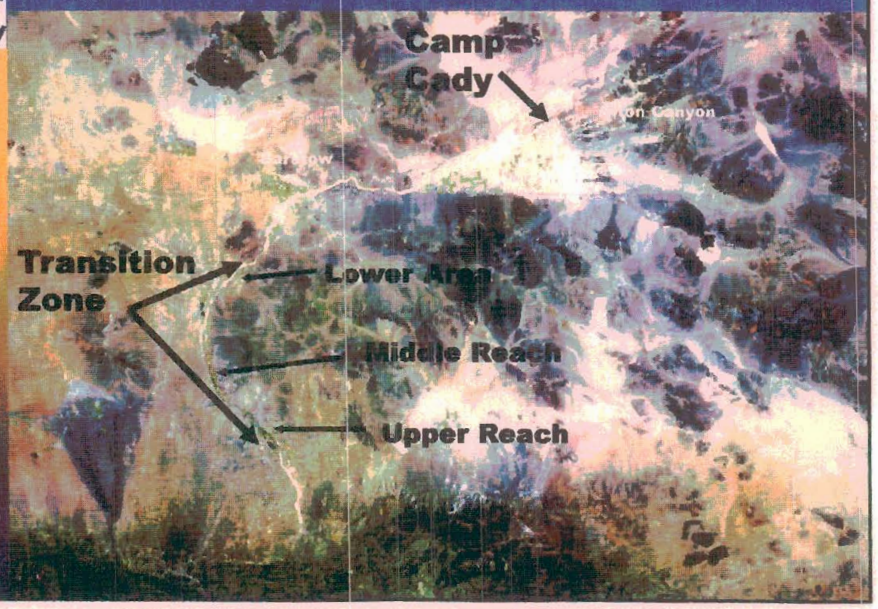
**HABITAT WATER SUPPLY MANAGEMENT PLAN FOR THE ADJUDICATED AREA OF THE MOJAVE RIVER BASIN SAN BERNARDINO COUNTY, CALIFORNIA**

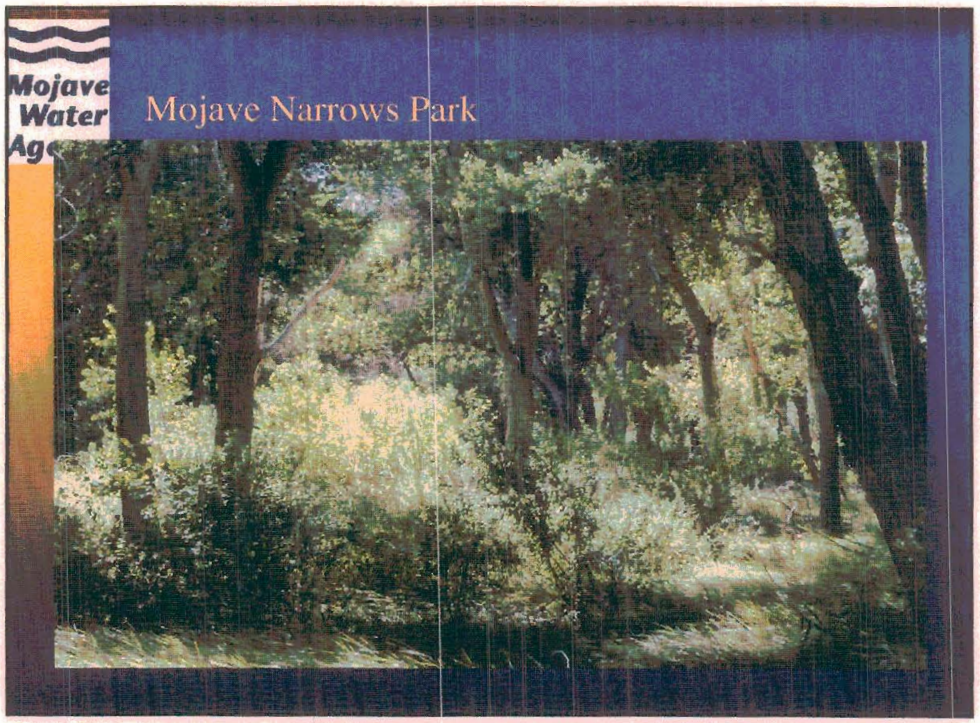
**TABLE OF CONTENTS**

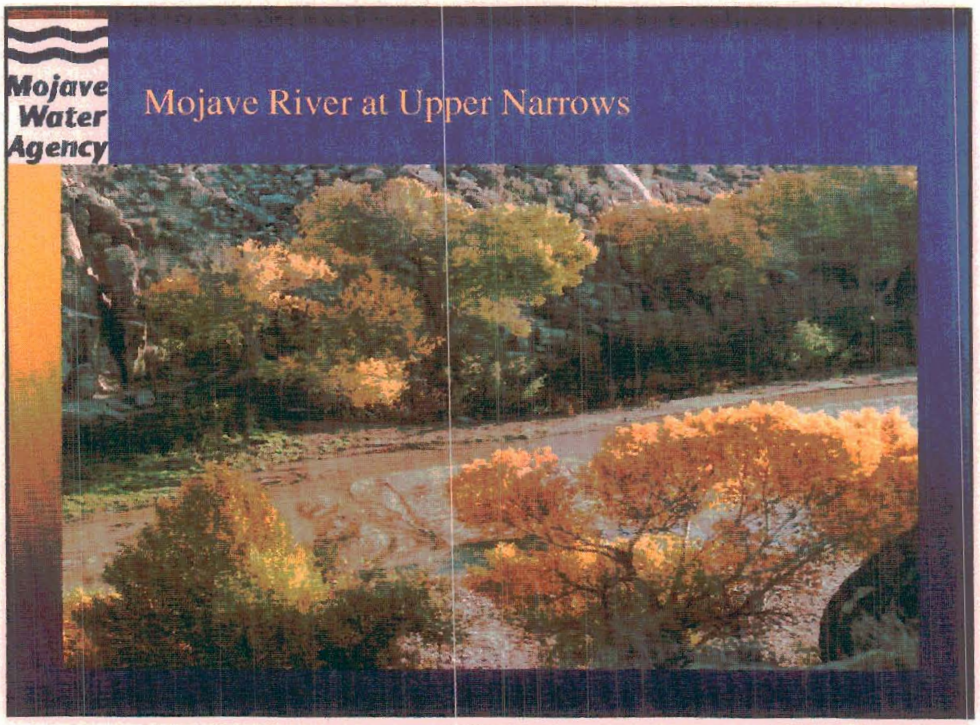

1. BACKGROUND ..... 1
2. AUTHORITY, CONSTRAINTS, AND SCOPE ..... 2
3. HABITAT AREAS: CONDITION, THREATS, GOALS AND WATER MANAGEMENT STRATEGIES ..... 4
   - 3.A UPPER REACH OF THE VICTORVILLE TO SILVER LAKES CORRIDOR ..... 4
   - 3.B MIDDLE REACH OF THE VICTORVILLE TO SILVER LAKES CORRIDOR ..... 5
   - 3.C CAUSES OF LOSS IN THE UPPER AND MIDDLE REACHES ..... 5
   - 3.D UPPER AND MIDDLE REACH HABITAT WATER MANAGEMENT GOALS ..... 7
   - 3.E UPPER AND MIDDLE REACH HABITAT WATER MANAGEMENT STRATEGIES ..... 8
   - 3.F ACTIONS TO PROTECT HABITAT AREAS IN THE UPPER REACH AND MIDDLE REACH TO BE UNDERTAKEN BY THE DEPARTMENT OF FISH AND GAME PURSUANT TO THIS PLAN INCLUDE: ..... 8
   - 3.G LOWER REACH OF THE VICTORVILLE TO SILVER LAKES CORRIDOR - ..... 9
   - 3.H CAUSES OF LOSS ..... 11
   - 3.I LOWER REACH - TRANSITION ZONE HABITAT WATER MANAGEMENT GOALS ..... 12
   - 3.J SPECIFIC ACTIONS TO BE TAKEN BY THE DEPARTMENT IN SUPPORT OF HABITAT PROTECTION WITHIN THE TRANSITION ZONE AREA: ..... 13
   - 3.K CAMP CADY WILDLIFE MANAGEMENT AREA ..... 13
   - 3.L CAUSES OF LOSS, CONTINUING THREATS ..... 14
   - 3.M CAMP CADY HABITAT WATER MANAGEMENT GOALS ..... 14
   - 3.N CAMP CADY HABITAT WATER MANAGEMENT STRATEGIES ..... 15
4. OTHER ACTIONS NECESSARY FOR HABITAT WATER MANAGEMENT ..... 16


Mojave Water Agency

The Grand View Point - Satellite Photo Mojave Desert

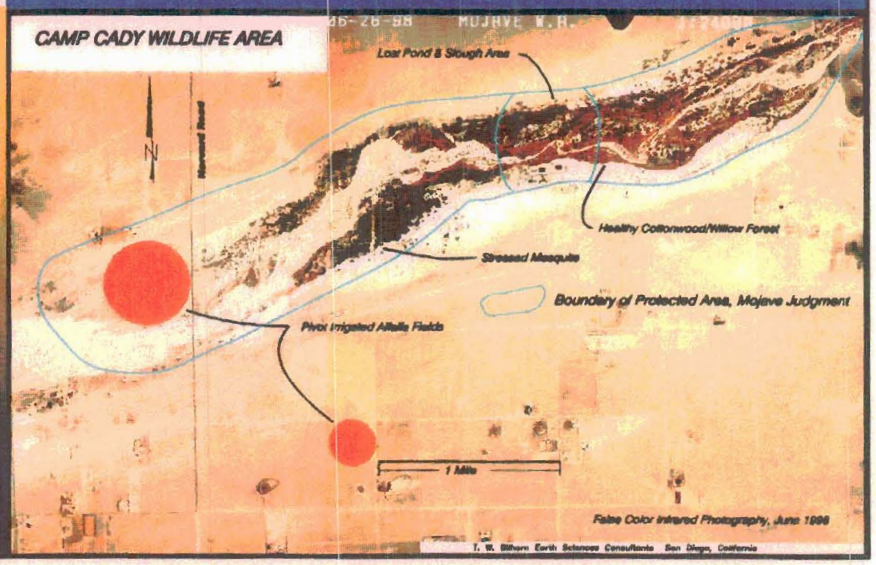



Mojave
Water
Age
Mojave Narrows Park


Mojave
Water
Agency
Mojave River at Upper Narrows

Mojave Water Agency

## Camp Cady Aerial




Mojave Water Agency

## The Perspective of the Department of Fish and Game

- 1996 Court Judgment "adjudicated" our water rights to aid those with longer term interests – perhaps 10 or more years.
- It was recognized that for natural recharge in a desert basin we can be affected by surface and subsurface flows along the Mojave River, any cross faults, and changes in usage within our basin and upstream.
- **That a combination of <u>conservation</u>, <u>importing water</u>, and appropriate use would be needed to meet the overall goal of sustainable production – a safe yield.**

VVWRA

1. Annual records of total effluent from VVWRA plant for 2000 - 2006 with a breakdown of total secondary and tertiary treatment and uses within those categories including deliveries to the Mojave River, percolation ponds, and Westwinds Golf Course, etc
2. Figure 1 (page 3) from the Flow Projection Study by RBF, prepared for VVWRA
3. Water quality data characterizing the tertiary and secondary-treated wastewater.

**VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY**
**Annual Treatment Process & Discharge Monitoring Report**
**2000**

| | | VVWRA Regional Treatment Facility | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Influent Flow mg | Primary Effluent Flow mg | Equal Basin Influent mg | Equal Basin Effluent mg | Sec Effluent Flow mg | Effluent to Perc Pond mg | Effluent to River mg | Total Effluent Flow mg |
| 2000 | JAN | 248.24 | 277.93 | 249.50 | 260.89 | 277.93 | 26.23 | 219.97 | 246.20 |
| 2000 | FEB | 231.43 | 266.85 | 232.70 | 242.88 | 266.85 | 12.78 | 218.55 | 231.34 |
| 2000 | MAR | 246.44 | 283.07 | 155.86 | 161.57 | 283.07 | 11.76 | 232.73 | 244.49 |
| 2000 | APR | 240.28 | 272.71 | 209.59 | 212.30 | 272.71 | 25.94 | 211.94 | 237.88 |
| 2000 | MAY | 250.32 | 286.94 | 30.75 | 35.70 | 286.94 | 12.40 | 235.19 | 247.58 |
| 2000 | JUN | 244.67 | 279.22 | 74.77 | 77.00 | 279.22 | 28.58 | 213.16 | 241.74 |
| 2000 | JUL | 252.35 | 284.33 | 270.06 | 271.15 | 284.33 | 30.56 | 219.89 | 250.45 |
| 2000 | AUG | 259.93 | 293.65 | 96.90 | 98.37 | 293.65 | 42.31 | 215.48 | 257.79 |
| 2000 | SEP | 254.07 | 287.04 | 272.48 | 271.28 | 287.04 | 30.49 | 221.34 | 251.83 |
| 2000 | OCT | 260.38 | 295.73 | 60.28 | 60.29 | 295.73 | 46.03 | 212.15 | 258.19 |
| 2000 | NOV | 251.62 | 288.06 | 36.03 | 35.56 | 288.06 | 51.08 | 198.52 | 249.60 |
| 2000 | DEC | 256.61 | 294.38 | 37.57 | 37.42 | 294.38 | 40.41 | 214.41 | 254.81 |
| TOTAL | | 2,996.33 | 3,409.91 | 1,726.49 | 1,764.41 | 3,409.91 | 358.58 | 2,613.32 | 2,971.90 |
| DAILY AVG | | 8.19 | 9.32 | 4.72 | 4.82 | 9.32 | 0.98 | 7.14 | 8.12 |
| DAILY MIN | | 7.42 | 8.16 | 0.33 | 0.26 | 8.16 | 0.00 | 0.00 | 7.36 |
| DAILY MAX | | 9.04 | 11.87 | 9.50 | 9.63 | 11.87 | 8.25 | 8.33 | 8.99 |

Reclaimed

| Date | Day | Plant Service Water Total Flow mg | Plant Service Water 3W Flow mg | Plant Service Water Aeration Sprays mg | Estimated Well Water Usage mg | Reclaimed Water Total Flow mg | Reclaimed Water Plant Irrigation mg | Reclaimed Water SCLA Irrigation mg | Reclaimed Water Compost Facility mg |
|---|---|---|---|---|---|---|---|---|---|
| 2000 | JAN | 8.316 | 7.757 | 0.001 | 0.050 | 0.558 | 0.558 | 0.000 | 0.000 |
| 2000 | FEB | 9.447 | 9.336 | 0.000 | 0.046 | 0.111 | 0.111 | 0.000 | 0.000 |
| 2000 | MAR | 11.986 | 11.730 | 0.000 | 0.050 | 0.597 | 0.256 | 0.000 | 0.341 |
| 2000 | APR | 7.199 | 6.883 | 0.000 | 0.048 | 1.133 | 0.316 | 0.000 | 0.816 |
| 2000 | MAY | 8.105 | 6.901 | 0.000 | 0.050 | 1.220 | 1.203 | 0.000 | 0.017 |
| 2000 | JUN | 11.001 | 9.489 | 0.000 | 0.294 | 1.512 | 1.512 | 0.000 | 0.000 |
| 2000 | JUL | 6.613 | 6.222 | 0.000 | 0.050 | 0.424 | 0.392 | 0.000 | 0.032 |
| 2000 | AUG | 6.435 | 8.081 | 0.000 | 0.050 | 0.500 | 0.354 | 0.000 | 0.146 |
| 2000 | SEP | 7.885 | 7.476 | 0.000 | 0.048 | 0.595 | 0.409 | 0.000 | 0.185 |
| 2000 | OCT | 8.665 | 8.415 | 0.000 | 0.050 | 0.383 | 0.250 | 0.000 | 0.133 |
| 2000 | NOV | 11.615 | 11.316 | 0.000 | 0.048 | 0.417 | 0.299 | 0.000 | 0.117 |
| 2000 | DEC | 9.045 | 8.736 | 0.000 | 0.050 | 0.382 | 0.310 | 0.000 | 0.073 |
| TOTAL | | 108.312 | 102.342 | 0.001 | 0.831 | 7.830 | 5.970 | 0.000 | 1.860 |
| DAILY AVG | | 0.296 | 0.280 | 0.000 | 0.002 | 0.021 | 0.016 | 0.000 | 0.005 |
| DAILY MIN | | 0.166 | 0.136 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 |
| DAILY MAX | | 1.011 | 1.000 | 0.000 | 0.023 | 0.217 | 0.050 | 0.000 | 0.206 |

**VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY**
**Annual Treatment Process & Discharge Monitoring Report**
**2001**

VVWRA Regional Treatment Facility

| Year | Month | Influent Flow mg | Primary Effluent Flow mg | Equal Basin Influent mg | Equal Basin Effluent mg | Sec Effluent Flow mg | Effluent to Perc Pond mg | Effluent to River mg | Total Effluent Flow mg |
|---|---|---|---|---|---|---|---|---|---|
| 2001 | JAN | 257.06 | 296.03 | 36.81 | 36.67 | 298.03 | 20.49 | 234.41 | 254.90 |
| 2001 | FEB | 230.08 | 267.07 | 72.35 | 72.87 | 267.07 | 15.63 | 208.75 | 224.39 |
| 2001 | MAR | 255.48 | 290.43 | 246.09 | 246.09 | 290.43 | 27.56 | 225.16 | 252.72 |
| 2001 | APR | 247.72 | 279.73 | 146.80 | 148.03 | 279.73 | 23.87 | 222.12 | 245.99 |
| 2001 | MAY | 258.44 | 292.40 | 276.48 | 277.10 | 292.40 | 21.10 | 234.70 | 255.81 |
| 2001 | JUN | 252.65 | 288.53 | 115.83 | 119.82 | 288.53 | 26.17 | 223.96 | 250.13 |
| 2001 | JUL | 261.41 | 300.45 | 32.89 | 33.84 | 300.45 | 12.81 | 246.40 | 259.22 |
| 2001 | AUG | 264.92 | 306.32 | 32.98 | 33.19 | 306.32 | 32.21 | 230.17 | 262.37 |
| 2001 | SEP | 260.18 | 299.63 | 42.63 | 42.32 | 299.63 | 32.59 | 225.28 | 257.87 |
| 2001 | OCT | 269.26 | 311.05 | 51.06 | 52.49 | 311.05 | 35.29 | 231.89 | 267.18 |
| 2001 | NOV | 258.14 | 285.92 | 34.60 | 34.13 | 285.92 | 49.80 | 206.14 | 255.94 |
| 2001 | DEC | 262.25 | 298.38 | 34.47 | 36.51 | 298.38 | 47.42 | 212.82 | 260.24 |
| TOTAL | | 3,077.59 | 3,517.92 | 1,122.98 | 1,133.06 | 3,517.92 | 344.95 | 2,701.81 | 3,046.76 |
| DAILY AVG | | 8.43 | 9.64 | 3.08 | 3.10 | 9.64 | 0.95 | 7.40 | 8.35 |
| DAILY MIN | | 7.46 | 8.13 | 0.02 | 0.47 | 8.13 | 0.00 | 3.96 | 7.39 |
| DAILY MAX | | 9.61 | 11.72 | 16.65 | 10.09 | 11.72 | 4.25 | 8.64 | 9.55 |

| Reclaimed | | Plant Service Water | | | Estimated | Reclaimed Water | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Total Flow mg | 3W Flow mg | Aeration Sprays mg | Well Water Usage mg | Total Flow mg | Plant Irrigation mg | SCLA Irrigation mg | Compost Facility mg | Construct Grading mg |
| 2001 | JAN | 9.422 | 9.136 | 0.000 | 0.050 | 0.502 | 0.286 | 0.000 | 0.215 | 0.000 |
| 2001 | FEB | 7.127 | 6.989 | 0.000 | 0.045 | 4.982 | 0.138 | 0.000 | 0.219 | 4.625 |
| 2001 | MAR | 7.755 | 7.631 | 0.000 | 0.050 | 1.241 | 0.125 | 0.000 | 0.269 | 0.847 |
| 2001 | APR | 5.674 | 5.427 | 0.000 | 0.048 | 0.454 | 0.135 | 0.000 | 0.207 | 0.112 |
| 2001 | MAY | 7.257 | 6.940 | 0.000 | 0.050 | 1.402 | 0.317 | 0.000 | 1.086 | 0.000 |
| 2001 | JUN | 4.966 | 4.651 | 0.000 | 0.048 | 1.290 | 0.822 | 0.000 | 0.469 | 0.000 |
| 2001 | JUL | 5.178 | 4.863 | 0.000 | 0.050 | 0.859 | 0.315 | 0.000 | 0.544 | 0.000 |
| 2001 | AUG | 11.191 | 10.887 | 0.000 | 0.050 | 1.009 | 0.303 | 0.000 | 0.705 | 0.000 |
| 2001 | SEP | 8.143 | 7.891 | 0.000 | 0.048 | 0.823 | 0.252 | 0.000 | 0.570 | 0.000 |
| 2001 | OCT | 10.673 | 10.481 | 0.000 | 0.050 | 0.501 | 0.192 | 0.000 | 0.310 | 0.000 |
| 2001 | NOV | 7.516 | 7.351 | 0.000 | 0.048 | 0.279 | 0.165 | 0.000 | 0.114 | 0.000 |
| 2001 | DEC | 9.009 | 8.955 | 0.000 | 0.050 | 0.091 | 0.054 | 0.000 | 0.037 | 0.000 |
| TOTAL | | 93.910 | 91.201 | 0.000 | 0.584 | 13.432 | 3.104 | 0.000 | 4.745 | 5.584 |
| DAILY AVG | | 0.257 | 0.250 | 0.000 | 0.002 | 0.037 | 0.009 | 0.000 | 0.013 | 0.015 |
| DAILY MIN | | 0.117 | 0.110 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| DAILY MAX | | 0.574 | 0.564 | 0.000 | 0.002 | 0.533 | 0.517 | 0.000 | 0.482 | 0.431 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2002

VVWRA Regional Treatment Facility

| Influent Flow mg | Primary Effluent Flow mg | Equal Basin Influent mg | Equal Basin Effluent mg | Sec Effluent Flow mg | Effluent to Perc Pond mg | Effluent to River mg | Total Effluent Flow mg |
|---|---|---|---|---|---|---|---|
| 281.75 | 300.19 | 186.11 | 190.12 | 300.19 | 36.61 | 223.13 | 259.74 |
| 237.50 | 275.50 | 261.52 | 258.19 | 275.50 | 26.59 | 208.37 | 234.97 |
| 261.48 | 304.57 | 289.94 | 292.38 | 304.57 | 28.49 | 231.20 | 259.70 |
| 260.56 | 300.92 | 289.23 | 292.21 | 300.92 | 20.04 | 238.98 | 259.01 |
| 272.68 | 300.15 | 283.86 | 286.65 | 300.15 | 88.47 | 182.82 | 271.29 |
| 267.32 | 292.34 | 194.31 | 194.96 | 292.34 | 91.18 | 170.97 | 262.15 |
| 278.30 | 304.33 | 89.54 | 101.73 | 304.33 | 95.01 | 179.85 | 274.87 |
| 283.20 | 313.54 | 34.22 | 34.81 | 313.54 | 87.71 | 193.13 | 280.85 |
| 273.58 | 302.18 | 215.97 | 214.88 | 302.18 | 92.43 | 178.85 | 271.28 |
| 280.85 | 313.74 | 297.74 | 296.88 | 313.74 | 88.85 | 190.29 | 279.14 |
| 269.68 | 301.57 | 289.65 | 287.29 | 301.57 | 86.93 | 181.21 | 268.14 |
| 277.28 | 312.87 | 302.45 | 299.97 | 312.87 | 88.76 | 187.09 | 275.85 |
| 3,224.18 | 3,621.88 | 2,734.55 | 2,749.87 | 3,621.88 | 831.08 | 2,365.89 | 3,196.97 |
| 6.83 | 9.92 | 7.49 | 7.53 | 9.92 | 2.28 | 6.48 | 8.76 |
| 6.90 | 7.83 | 0.72 | 0.72 | 7.83 | 0.00 | 4.50 | 6.76 |
| 10.01 | 11.93 | 11.35 | 11.41 | 11.93 | 3.74 | 9.32 | 9.96 |

| Reclaimed | | Plant Service Water | | Estimated | | Reclamed Water | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Total Flow mg | 3W Flow mg | Well Water Usage mg | Total Flow mg | Plant Irrigation mg | SCLA Irrigation mg | Compost Facility mg | Construct Grading mg |
| 2002 | JAN | 9.018 | 8.951 | 0.050 | 0.485 | 0.067 | 0.000 | 0.349 | 0.069 |
| 2002 | FEB | 11.495 | 11.448 | 0.045 | 1.026 | 0.047 | 0.000 | 0.886 | 0.093 |
| 2002 | MAR | 17.568 | 17.432 | 0.050 | 0.384 | 0.136 | 0.000 | 0.243 | 0.005 |
| 2002 | APR | 13.569 | 13.315 | 0.048 | 0.531 | 0.254 | 0.000 | 0.277 | |
| 2002 | MAY | 11.399 | 11.128 | 0.050 | 0.576 | 0.271 | 0.000 | 0.305 | |
| 2002 | JUN | 15.845 | 15.426 | 0.048 | 4.182 | 0.375 | 0.000 | 3.807 | |
| 2002 | JUL | 17.777 | 17.422 | 0.050 | 2.322 | 0.355 | 0.000 | 1.967 | |
| 2002 | AUG | 18.397 | 18.077 | 0.050 | 1.302 | 0.320 | 0.000 | 0.983 | |
| 2002 | SEP | 16.423 | 16.203 | 0.048 | 1.219 | 0.220 | 0.000 | 0.999 | |
| 2002 | OCT | 15.244 | 15.119 | 0.050 | 0.407 | 0.125 | 0.000 | 0.283 | |
| 2002 | NOV | 15.056 | 14.993 | 0.048 | 0.277 | 0.063 | 0.000 | 0.214 | |
| 2002 | DEC | 17.152 | 17.030 | 0.050 | 0.266 | 0.122 | 0.000 | 0.144 | |
| TOTAL | | 178.943 | 176.543 | 0.584 | 12.978 | 2.356 | 0.000 | 10.455 | 0.167 |
| DAILY AVG | | 0.490 | 0.484 | 0.002 | 0.036 | 0.006 | 0.000 | 0.029 | 0.000 |
| DAILY MIN | | 0.178 | 0.176 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| DAILY MAX | | 0.827 | 0.822 | 0.002 | 1.163 | 0.107 | 0.000 | 1.154 | 0.008 |

**VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY**
**Annual Treatment Process & Discharge Monitoring Report**
**2003**

VVWRA Regional Treatment Facility

| Influent Flow mg | Primary Effluent Flow mg | Equal Basin Influent mg | Equal Basin Effluent mg | Sec Effluent Flow mg | Effluent to Perc Pond mg | Effluent to River mg | Total Effluent Flow mg |
|---|---|---|---|---|---|---|---|
| 278.27 | 314.07 | 302.48 | 300.17 | 314.07 | 90.39 | 186.44 | 276.83 |
| 253.94 | 287.44 | 197.70 | 196.75 | 287.44 | 91.59 | 161.00 | 252.59 |
| 285.45 | 320.29 | 105.95 | 105.52 | 320.29 | 93.64 | 190.42 | 284.06 |
| 270.22 | 305.69 | 50.32 | 38.82 | 305.69 | 88.91 | 179.93 | 268.84 |
| 283.31 | 322.60 | 52.09 | 36.40 | 322.60 | 101.14 | 181.18 | 282.32 |
| 280.49 | 315.00 | 25.33 | 36.45 | 315.00 | 101.64 | 177.43 | 279.07 |
| 294.12 | 327.74 | 35.73 | 35.26 | 327.74 | 103.53 | 188.45 | 291.98 |
| 299.97 | 335.87 | 33.40 | 37.34 | 335.87 | 105.18 | 192.93 | 298.11 |
| 294.78 | 330.86 | 32.43 | 36.67 | 330.86 | 108.58 | 184.71 | 293.29 |
| 300.87 | 339.41 | 34.23 | 38.26 | 339.41 | 120.41 | 178.63 | 299.04 |
| 293.80 | 338.84 | 36.68 | 39.35 | 338.84 | 117.57 | 175.09 | 292.66 |
| 294.73 | 343.59 | 36.49 | 41.19 | 343.59 | 120.53 | 173.16 | 293.69 |
| | | | | | | | |
| 3,429.95 | 3,881.40 | 942.83 | 942.18 | 3,881.40 | 1,243.11 | 2,169.37 | 3,412.48 |
| 9.40 | 10.63 | 2.58 | 2.58 | 10.63 | 3.41 | 5.94 | 9.35 |
| | | | | | | | |
| 7.60 | 8.14 | 0.09 | 0.41 | 8.14 | 0.00 | 4.56 | 7.53 |
| 10.71 | 12.81 | 11.45 | 11.97 | 12.81 | 4.94 | 9.80 | 10.64 |

**Reclaimed**

| Year | Month | Plant Service Water Total Flow mg | Plant Service Water 3W Flow mg | Estimated Well Water Usage mg | Reclaimed Water Total Flow mg | Reclaimed Water Plant Irrigation mg | Reclaimed Water SCLA Irrigation mg | Reclaimed Water Compost Facility mg |
|---|---|---|---|---|---|---|---|---|
| 2003 | JAN | 18.007 | 17.901 | 0.050 | 0.266 | 0.106 | 0.000 | 0.160 |
| 2003 | FEB | 13.653 | 13.620 | 0.045 | 0.707 | 0.033 | 0.000 | 0.674 |
| 2003 | MAR | 15.105 | 15.015 | 0.050 | 0.186 | 0.090 | 0.000 | 0.096 |
| 2003 | APR | 14.480 | 14.291 | 0.048 | 0.332 | 0.189 | 0.000 | 0.144 |
| 2003 | MAY | 16.619 | 16.347 | 0.050 | 0.375 | 0.272 | 0.000 | 0.103 |
| 2003 | JUN | 14.166 | 13.574 | 0.048 | 0.862 | 0.592 | 0.000 | 0.269 |
| 2003 | JUL | 16.826 | 16.286 | 0.050 | 0.728 | 0.540 | 0.000 | 0.188 |
| 2003 | AUG | 15.364 | 15.067 | 0.050 | 0.403 | 0.297 | 0.000 | 0.106 |
| 2003 | SEP | 12.781 | 12.696 | 0.048 | 0.161 | 0.085 | 0.000 | 0.076 |
| 2003 | OCT | 10.077 | 9.892 | 0.050 | 0.485 | 0.185 | 0.000 | 0.300 |
| 2003 | NOV | 11.961 | 11.817 | 0.048 | 0.227 | 0.144 | 0.000 | 0.083 |
| 2003 | DEC | 10.223 | 10.147 | 0.050 | 0.194 | 0.076 | 0.000 | 0.118 |
| TOTAL | | 169.262 | 166.654 | 0.584 | 4.925 | 2.608 | 0.000 | 2.317 |
| DAILY AVG | | 0.464 | 0.457 | 0.002 | 0.013 | 0.007 | 0.000 | 0.006 |
| DAILY MIN | | 0.168 | 0.168 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 |
| DAILY MAX | | 0.788 | 0.787 | 0.002 | 0.266 | 0.071 | 0.000 | 0.266 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2004

VVWRA Regional Treatment Facility

| Influent Flow mg | Primary Effluent Flow mg | Equal Basin Influent mg | Equal Basin Effluent mg | Sec Effluent Flow mg | Effluent to Perc Pond mg | Effluent to River mg | Total Effluent Flow mg |
|---|---|---|---|---|---|---|---|
| 294.48 | 340.11 | 35.89 | 39.68 | 340.11 | 115.49 | 177.34 | 292.83 |
| 287.87 | 321.34 | 31.54 | 37.37 | 321.34 | 133.86 | 152.38 | 286.24 |
| 320.09 | 348.48 | 35.21 | 41.27 | 348.48 | 144.60 | 173.77 | 318.37 |
| 311.86 | 331.02 | 31.78 | 36.88 | 331.02 | 143.17 | 167.07 | 310.24 |
| 325.62 | 342.99 | 34.03 | 38.18 | 342.99 | 167.30 | 156.37 | 323.67 |
| 321.07 | 339.95 | 32.26 | 36.95 | 339.95 | 149.35 | 169.70 | 319.05 |
| 332.04 | 348.21 | 35.08 | 37.36 | 348.21 | 159.39 | 170.53 | 329.92 |
| 332.32 | 360.09 | 37.10 | 40.00 | 360.09 | 159.67 | 170.77 | 330.44 |
| 318.07 | 353.57 | 34.68 | 38.41 | 353.57 | 148.41 | 168.75 | 317.16 |
| 351.34 | 369.43 | 69.58 | 75.77 | 369.43 | 169.14 | 180.54 | 349.68 |
| 338.31 | 349.46 | 40.14 | 43.96 | 349.46 | 159.93 | 176.73 | 336.66 |
| 357.52 | 367.45 | 38.07 | 41.23 | 367.45 | 177.17 | 178.44 | 355.61 |
| 3,890.59 | 4,172.10 | 455.56 | 507.06 | 4,172.10 | 1,827.47 | 2,042.39 | 3,669.86 |
| 10.63 | 11.40 | 1.24 | 1.39 | 11.40 | 4.99 | 5.58 | 10.57 |
| 7.62 | 7.66 | 0.09 | 0.44 | 7.66 | 2.61 | 0.00 | 7.59 |
| 13.68 | 13.80 | 4.00 | 4.94 | 13.80 | 12.15 | 7.72 | 13.61 |

Reclaimed

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

cess & Discharge Monitoring Report

2004

| | | Plant Service Water | | Estimated | eclaimed Water | | | |
|---|---|---|---|---|---|---|---|---|
| | | Total | 3W | Well Water | Total | Plant | SCLA | Compost |
| | | Flow | Flow | Usage | Flow | Irrigation | Irrigation | Facility |
| Year | Month | mg | mg | mg | mg | mg | mg | mg |
| 2004 | JAN | 9.542 | 9.416 | 0.050 | 0.303 | 0.126 | 0.000 | 0.177 |
| 2004 | FEB | 10.612 | 10.489 | 0.046 | 0.256 | 0.123 | 0.000 | 0.133 |
| 2004 | MAR | 17.761 | 17.615 | 0.050 | 0.366 | 0.146 | 0.000 | 0.220 |
| 2004 | APR | 8.813 | 8.580 | 0.048 | 0.394 | 0.233 | 0.000 | 0.161 |
| 2004 | MAY | 12.643 | 12.313 | 0.050 | 0.533 | 0.330 | 0.000 | 0.203 |
| 2004 | JUN | 14.840 | 14.460 | 0.048 | 0.767 | 0.380 | 0.000 | 0.387 |
| 2004 | JUL | 16.562 | 16.162 | 0.050 | 0.662 | 0.400 | 0.000 | 0.262 |
| 2004 | AUG | 17.672 | 17.341 | 0.050 | 0.564 | 0.331 | 0.000 | 0.233 |
| 2004 | SEP | 16.027 | 15.762 | 0.048 | 0.432 | 0.265 | 0.000 | 0.167 |
| 2004 | OCT | 11.863 | 11.724 | 0.050 | 0.234 | 0.139 | 0.000 | 0.095 |
| 2004 | NOV | 9.630 | 9.608 | 0.048 | 0.134 | 0.022 | 0.000 | 0.112 |
| 2004 | DEC | 9.984 | 9.940 | 0.050 | 0.106 | 0.044 | 0.000 | 0.062 |
| TOTAL | | 155.949 | 153.410 | 0.586 | 4.750 | 2.539 | 0.000 | 2.211 |
| DAILY AVG | | 0.427 | 0.420 | 0.002 | 0.013 | 0.007 | 0.000 | 0.006 |
| DAILY MIN | | 0.196 | 0.194 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 |
| DAILY MAX | | 0.709 | 0.703 | 0.002 | 0.041 | 0.020 | 0.000 | 0.033 |

**VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY**
**Annual Treatment Process & Discharge Monitoring Report**
**2005**

VVWRA Regional Treatment Facility

| Influent Flow mg | Primary Effluent Flow mg | Equal Basin Influent mg | Equal Basin Effluent mg | Sec Effluent Flow mg | Effluent to Perc Pond mg | Effluent to River mg | Total Effluent Flow mg |
|---|---|---|---|---|---|---|---|
| 373.52 | 393.34 | 39.16 | 42.79 | 393.34 | 190.18 | 161.82 | 372.00 |
| 332.17 | 350.00 | 32.02 | 35.89 | 350.00 | 166.95 | 164.98 | 331.93 |
| 376.02 | 386.86 | 35.92 | 41.39 | 386.86 | 179.84 | 195.06 | 374.90 |
| 361.21 | 382.94 | 37.41 | 42.89 | 382.94 | 127.66 | 232.40 | 360.06 |
| 381.59 | 399.32 | 37.47 | 42.60 | 399.32 | 88.18 | 291.03 | 379.21 |
| 363.45 | 371.56 | 35.83 | 39.98 | 371.56 | 84.43 | 273.08 | 357.51 |
| 376.95 | 385.34 | 39.05 | 42.65 | 385.34 | 63.96 | 301.42 | 365.38 |
| 389.06 | 397.72 | 44.57 | 49.77 | 397.72 | 109.08 | 267.67 | 376.75 |
| 366.32 | 374.47 | 38.58 | 43.24 | 374.47 | 131.81 | 224.64 | 356.45 |
| 379.88 | 388.34 | 44.16 | 45.37 | 388.34 | 149.78 | 224.50 | 374.28 |
| 370.26 | 378.50 | 49.38 | 46.03 | 378.50 | 170.32 | 195.61 | 365.93 |
| 379.55 | 388.01 | 49.04 | 53.34 | 388.01 | 173.80 | 201.00 | 374.80 |
| 4,449.97 | 4,596.41 | 482.59 | 525.94 | 4,596.41 | 1,636.00 | 2,753.20 | 4,389.21 |
| 12.19 | 12.59 | 1.32 | 1.44 | 12.59 | 4.48 | 7.54 | 12.03 |
| 9.97 | 10.76 | 0.36 | 0.17 | 10.76 | 0.69 | 2.32 | 9.92 |
| 15.60 | 14.34 | 4.82 | 5.83 | 14.34 | 11.51 | 12.77 | 16.34 |

| Reclaimed | | Plant Service Water | | Estimated | Reclaimed Water | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Total Flow mg | 3W Flow mg | Well Water Usage mg | Total Flow mg | Plant Irrigation mg | SCLA Irrigation mg | Compost Facility mg | Construct Grading mg |
| 2005 | JAN | 9.363 | 9.341 | 0.050 | 0.111 | 0.022 | 0.061 | 0.028 | 0.000 |
| 2005 | FEB | 11.388 | 11.368 | 0.045 | 0.061 | 0.020 | 0.000 | 0.041 | 0.000 |
| 2005 | MAR | 20.952 | 20.924 | 0.050 | 0.224 | 0.028 | 0.000 | 0.196 | 0.000 |
| 2005 | APR | 21.242 | 21.076 | 0.048 | 0.588 | 0.166 | 0.171 | 0.252 | 0.000 |
| 2005 | MAY | 25.282 | 24.988 | 0.050 | 0.639 | 0.294 | 0.093 | 0.247 | 0.005 |
| 2005 | JUN | 23.484 | 23.125 | 0.048 | 4.519 | 0.359 | 0.090 | 0.182 | 3.888 |
| 2005 | JUL | 26.366 | 25.863 | 0.050 | 10.222 | 0.503 | 3.407 | 0.244 | 6.068 |
| 2005 | AUG | 21.518 | 21.164 | 0.050 | 10.833 | 0.354 | 8.490 | 0.103 | 1.886 |
| 2005 | SEP | 14.515 | 14.194 | 0.048 | 8.203 | 0.321 | 6.858 | 0.048 | 0.977 |
| 2005 | OCT | 12.130 | 11.949 | 0.050 | 3.954 | 0.181 | 3.584 | 0.065 | 0.124 |
| 2005 | NOV | 19.276 | 19.228 | 0.048 | 2.677 | 0.048 | 2.293 | 0.055 | 0.282 |
| 2005 | DEC | 16.894 | 16.871 | 0.050 | 2.254 | 0.023 | 2.193 | 0.006 | 0.033 |
| TOTAL | | 222.410 | 220.092 | 0.584 | 44.286 | 2.318 | 27.239 | 1.466 | 13.263 |
| DAILY AVG | | 0.609 | 0.603 | 0.002 | 0.121 | 0.006 | 0.075 | 0.004 | 0.036 |
| DAILY MIN | | 0.224 | 0.224 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| DAILY MAX | | 1.394 | 1.383 | 0.002 | 0.628 | 0.030 | 0.387 | 0.092 | 0.389 |

VVWRA
Flows per Month
2006

**JANUARY**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 11.85 | 15.42 | 0.93 | 4.18 | 6.64 | 11.75 | | |
| 2 | 13.18 | 17.88 | 2.02 | 4.50 | 6.56 | 13.08 | | |
| 3 | 12.97 | 15.74 | 1.19 | 4.81 | 6.92 | 12.92 | 26,023 | |
| 4 | 13.01 | 15.17 | 1.61 | 4.53 | 6.79 | 12.93 | 18,502 | |
| 5 | 12.99 | 14.81 | 1.90 | 4.01 | 7.01 | 12.92 | 17,364 | |
| 6 | 13.00 | 15.66 | 1.11 | 4.75 | 7.04 | 12.90 | 20,831 | |
| 7 | 13.03 | 17.14 | 1.70 | 4.44 | 6.78 | 12.92 | | |
| 8 | 12.49 | 17.14 | 2.26 | 4.00 | 6.13 | 12.39 | | |
| 9 | 13.09 | 15.38 | 1.69 | 4.42 | 6.54 | 12.65 | 24,633 | 0.365 |
| 10 | 13.16 | 15.22 | 1.13 | 5.07 | 6.87 | 13.07 | 12,819 | |
| 11 | 12.66 | 14.95 | 1.34 | 4.27 | 6.96 | 12.57 | 19,229 | |
| 12 | 12.63 | 15.14 | 1.26 | 3.87 | 7.04 | 12.17 | 24,450 | 0.379 |
| 13 | 13.33 | 14.97 | 0.92 | 5.02 | 7.33 | 13.27 | 25,425 | |
| 14 | 12.73 | 16.59 | 2.93 | 3.58 | 6.14 | 12.65 | | |
| 15 | 12.14 | 17.26 | 0.63 | 4.03 | 7.40 | 12.06 | | |
| 16 | 13.25 | 16.95 | 0.45 | 4.92 | 7.39 | 12.76 | | 0.367 |
| 17 | 13.00 | 15.08 | 1.28 | 4.02 | 7.59 | 12.89 | 25,989 | |
| 18 | 12.72 | 14.95 | 1.91 | 3.43 | 7.28 | 12.62 | 26,644 | |
| 19 | 12.69 | 14.92 | 0.90 | 2.20 | 9.05 | 12.15 | 24,957 | 0.396 |
| 20 | 13.45 | 14.73 | 1.97 | 1.64 | 9.74 | 13.35 | 21,069 | |
| 21 | 12.75 | 17.50 | 2.25 | 2.19 | 8.20 | 12.64 | | |
| 22 | 12.79 | 17.23 | 1.44 | 2.14 | 9.13 | 12.71 | | |
| 23 | 12.32 | 15.50 | 2.91 | 3.33 | 5.56 | 11.80 | 16,778 | 0.387 |
| 24 | 10.88 | 17.19 | 2.16 | 7.01 | 1.59 | 10.76 | 14,030 | |
| 25 | 15.60 | 15.13 | 4.48 | 7.03 | 3.56 | 15.07 | 20,609 | 0.397 |
| 26 | 10.23 | 15.12 | 0.37 | 1.25 | 8.48 | 10.10 | 14,788 | |
| 27 | 12.97 | 14.73 | 1.84 | 7.80 | 3.21 | 12.85 | 27,161 | |
| 28 | 12.72 | 17.36 | 3.60 | 2.31 | 6.73 | 12.64 | | |
| 29 | 13.21 | 16.81 | 1.80 | 2.36 | 8.60 | 12.76 | | 0.364 |
| 30 | 13.41 | 16.84 | 2.35 | 1.50 | 9.45 | 13.30 | 19,697 | |
| 31 | 12.94 | 26.93 | 2.47 | 1.12 | 9.17 | 12.76 | 17,442 | |
| Total (mg) | 385.34 | | 53.87 | 115.55 | 210.24 | 379.68 | 0.418 | 2.655 |
| Average (mgd) | 12.84 | 16.33 | 1.80 | 3.85 | 7.01 | 12.66 | | |
| Maximum (mgd) | 15.60 | 26.93 | | | | | | |
| | | | | | % Difference | 1.47 | | |

VVWRA
Flows per Month
2006

**FEBRUARY**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.72 | 14.97 | 6.26 | 1.11 | 4.865 | 12.23 | 25,582 | 0.402 |
| 2 | 13.04 | 14.94 | 7.60 | 3.43 | 1.911 | 12.94 | 22,906 | |
| 3 | 11.67 | 14.81 | 3.92 | 2.91 | 4.722 | 11.55 | 13,249 | |
| 4 | 12.82 | 17.57 | 2.46 | 2.62 | 7.65 | 12.73 | | |
| 5 | 13.05 | 17.94 | 1.49 | 2.07 | 9.383 | 12.95 | | |
| 6 | 13.21 | 15.2 | 1.62 | 0.96 | 9.655 | 12.24 | 22,369 | 0.847 |
| 7 | 12.81 | 15.16 | 1.03 | 1.11 | 10.53 | 12.67 | 19,834 | |
| 8 | 12.91 | 15.22 | 0.58 | 1.12 | 10.64 | 12.34 | 13,556 | 0.416 |
| 9 | 13.12 | 15.26 | 2.27 | 0 | 10.693 | 12.97 | 15,087 | |
| 10 | 12.82 | 15.01 | 2.00 | 0 | 10.711 | 12.71 | 28,344 | |
| 11 | 13.24 | 17.6 | 1.45 | 0 | 11.698 | 13.15 | | |
| 12 | 12.81 | 17.13 | 0.95 | 0.94 | 10.412 | 12.31 | | 0.421 |
| 13 | 13.50 | 16.51 | 1.93 | 1.03 | 10.015 | 12.98 | 9,306 | 0.388 |
| 14 | 12.63 | 14.73 | 1.20 | 0.97 | 10.329 | 12.50 | 18,081 | |
| 15 | 12.79 | 15.82 | 0.74 | 0.89 | 11.034 | 12.67 | 21,887 | |
| 16 | 12.99 | 15.27 | 1.61 | 0.51 | 10.357 | 12.48 | 24,433 | 0.393 |
| 17 | 13.04 | 15.08 | 2.01 | 0.73 | 10.179 | 12.92 | 29,134 | |
| 18 | 13.16 | 17.84 | 1.08 | 1.08 | 10.914 | 13.07 | | |
| 19 | 12.67 | 16.56 | 0.67 | 1.08 | 10.832 | 12.58 | | |
| 20 | 13.76 | 17.64 | 2.97 | 1.02 | 9.494 | 13.48 | | 0.132 |
| 21 | 12.29 | 14.76 | 1.30 | 1.56 | 9.332 | 12.19 | 44,661 | |
| 22 | 13.01 | 15.35 | 1.29 | 1.18 | 10.415 | 12.89 | 21,453 | |
| 23 | 12.85 | 14.81 | 1.69 | 0.85 | 10.193 | 12.73 | 24,401 | |
| 24 | 13.00 | 15.05 | 1.77 | 0.87 | 10.21 | 12.85 | 31,519 | |
| 25 | 13.07 | 17.45 | 1.90 | 0.97 | 10.11 | 12.98 | | |
| 26 | 13.11 | 16.78 | 1.43 | 0.84 | 10.315 | 12.59 | | 0.439 |
| 27 | 13.37 | 15.43 | 1.88 | 0.92 | 9.98 | 12.78 | 24,264 | 0.396 |
| 28 | 13.51 | 15.46 | 1.65 | 0.83 | 10.864 | 13.35 | 14,385 | |
| Total (mg) | 362.96 | | 56.77 | 31.60 | 267.44 | 355.81 | 0.424 | 3.835 |
| Average (mgd) | 12.96 | 15.91 | 2.03 | 1.13 | 9.55 | 12.71 | | |
| Maximum (mgd) | 13.76 | 17.94 | | | | | | |
| | | | | | % Difference | 1.97 | | |

VVWRA
Flows per Month
2006

MARCH

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.96 | 14.87 | 1.46 | 0.98 | 10.38 | 12.82 | 16,195 | |
| 2 | 13.08 | 16.07 | 2.00 | 0.86 | 10.09 | 12.95 | 29,626 | |
| 3 | 12.80 | 14.7 | 1.91 | 0.22 | 10.54 | 12.67 | 25,603 | |
| 4 | 13.23 | 17.6 | 2.39 | 0.3 | 10.47 | 13.17 | | |
| 5 | 13.43 | 17.13 | 2.21 | 0.39 | 10.70 | 13.30 | | 0.0495 |
| 6 | 13.37 | 15.71 | 2.23 | 1.59 | 9.43 | 13.25 | 20,979 | |
| 7 | 12.80 | 15.09 | 1.94 | 1.24 | 9.50 | 12.68 | 31,026 | |
| 8 | 13.08 | 15.27 | 1.26 | 0.96 | 10.51 | 12.73 | 16,708 | 0.215 |
| 9 | 12.78 | 15.46 | 2.70 | 0.95 | 8.99 | 12.65 | 20,793 | |
| 10 | 12.85 | 14.97 | 0.94 | 0.82 | 10.96 | 12.71 | 20,233 | |
| 11 | 13.03 | 17.55 | 2.79 | 0.33 | 9.82 | 12.94 | | |
| 12 | 13.29 | 17.63 | 2.05 | 0.88 | 10.27 | 13.20 | | |
| 13 | 13.32 | 15.36 | 2.33 | 0.84 | 10.07 | 13.23 | 15,067 | |
| 14 | 13.22 | 15.31 | 2.96 | 0.88 | 9.30 | 13.14 | 25,522 | |
| 15 | 12.92 | 15.3 | 2.11 | 0.89 | 9.87 | 12.87 | 19,167 | |
| 16 | 12.92 | 15.25 | 2.56 | 0.94 | 9.34 | 12.84 | 26,285 | |
| 17 | 12.76 | 15.39 | 1.93 | 0.77 | 9.96 | 12.69 | 20,570 | |
| 18 | 13.15 | 17.16 | 1.08 | 0.89 | 11.11 | 13.08 | | |
| 19 | 13.57 | 16.94 | 2.30 | 0.77 | 9.96 | 13.03 | | 0.4123 |
| 20 | 11.55 | 15.05 | 2.08 | 1.29 | 8.08 | 11.45 | 20,932 | 0.039 |
| 21 | 12.83 | 15.26 | 1.62 | 0.84 | 10.33 | 12.79 | 23,417 | |
| 22 | 12.91 | 15.07 | 1.43 | 0.61 | 10.59 | 12.83 | 11,180 | 0.013 |
| 23 | 12.90 | 14.95 | 0.38 | 0.65 | 11.63 | 12.86 | 35,852 | |
| 24 | 12.88 | 15.25 | 1.97 | 0.76 | 10.09 | 12.82 | 33,076 | |
| 25 | 12.84 | 17.05 | 1.02 | 0.8 | 10.94 | 12.76 | | |
| 26 | 13.21 | 16.71 | 1.26 | 0.81 | 10.87 | 12.94 | | 0.1935 |
| 27 | 13.20 | 15.27 | 1.02 | 0.79 | 11.33 | 13.14 | 31,931 | |
| 28 | 13.56 | 20.63 | 2.39 | 0.54 | 10.56 | 13.49 | 19,655 | |
| 29 | 12.86 | 15.05 | 2.38 | 0.39 | 10.03 | 12.80 | 23,599 | |
| 30 | 13.07 | 15.33 | 2.15 | 0 | 10.85 | 13.00 | 20,276 | |
| 31 | 12.94 | 15.06 | 1.96 | 0 | 10.91 | 12.88 | 26,441 | |
| Total (mg) | 390.34 | | 57.37 | 22.40 | 307.11 | 386.88 | 0.518 | 0.922 |
| Average (mgd) | 13.01 | 15.95 | 1.91 | 0.75 | 10.24 | 12.90 | | |
| Maximum (mgd) | 13.57 | 20.63 | | | | | | |
| | | | | | % Difference | 0.89 | | |

# VVWRA
## Flows per Month
## 2006

**APRIL**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 11.49 | 15.08 | 0.00 | 0 | 11.40 | 11.40 | | |
| 2 | 11.39 | 16.99 | 0.19 | 0 | 11.31 | 11.50 | | |
| 3 | 11.56 | 16.91 | 0.00 | 0.89 | 10.56 | 11.45 | 15,590 | |
| 4 | 12.65 | 15.08 | 1.13 | 0.83 | 8.63 | 10.59 | 21,954 | 0.314 |
| 5 | 11.84 | 15.97 | 0.00 | 1.4 | 9.36 | 10.76 | 13,591 | |
| 6 | 11.58 | 15.97 | 0.37 | 0.52 | 10.35 | 11.25 | 13,363 | |
| 7 | 11.77 | 16.90 | 0.00 | 1.53 | 9.54 | 11.07 | 24,447 | 0.022 |
| 8 | 11.70 | 15.13 | 0.00 | 0 | 11.15 | 11.15 | | 0.000 |
| 9 | 11.66 | 15.87 | 0.30 | 0 | 11.02 | 11.32 | | 0.019 |
| 10 | 9.95 | 17.35 | 1.92 | 0 | 5.21 | 7.13 | 15,758 | 0.107 |
| 11 | 11.49 | 20.28 | 0.19 | 2 | 9.15 | 11.34 | 25,696 | 0.129 |
| 12 | 11.72 | 14.64 | 0.00 | 0.56 | 9.86 | 10.42 | 34,718 | 0.531 |
| 13 | 11.40 | 15.22 | 0.20 | 0.58 | 9.42 | 10.20 | 21,595 | 0.192 |
| 14 | 11.77 | 15.38 | 0.82 | 1.67 | 9.23 | 11.72 | 20,249 | 0.113 |
| 15 | 11.21 | 15.88 | 1.75 | 1.15 | 2.97 | 5.87 | | 0.008 |
| 16 | 11.69 | 17.66 | 2.98 | 0.87 | 10.72 | 14.56 | | 0.016 |
| 17 | 11.66 | 17.78 | 0.06 | 0.8 | 10.10 | 10.97 | 27,506 | 0.254 |
| 18 | 11.50 | 15.74 | 0.00 | 0.02 | 10.78 | 10.80 | 25,563 | 0.152 |
| 19 | 11.68 | 15.63 | 0.00 | 0.02 | 11.16 | 11.18 | 21,828 | 0.193 |
| 20 | 12.07 | 15.47 | 1.85 | 0 | 10.58 | 12.43 | 14,041 | 0.193 |
| 21 | 11.50 | 15.28 | 0.00 | 0.55 | 10.52 | 11.07 | 14,875 | 0.105 |
| 22 | 11.73 | 15.66 | 0.00 | 0.17 | 9.07 | 9.24 | | 0.001 |
| 23 | 11.88 | 17.34 | 0.00 | 0 | 11.75 | 11.75 | | 0.025 |
| 24 | 12.03 | 17.33 | 0.00 | 0 | 11.25 | 11.25 | 28,063 | 0.449 |
| 25 | 11.55 | 15.95 | 0.00 | 0.57783 | 10.50 | 11.07 | 16,722 | 0.163 |
| 26 | 11.58 | 15.63 | 0.00 | 0.23817 | 10.84 | 11.08 | 26,839 | 0.174 |
| 27 | 11.65 | 15.53 | 0.00 | 0.42743 | 10.72 | 11.15 | 29,118 | 0.169 |
| 28 | 11.56 | 15.34 | 0.00 | 0.00153 | 11.11 | 11.12 | 17,244 | 0.125 |
| 29 | 11.82 | 15.15 | 0.00 | 0 | 11.69 | 11.69 | | 0.023 |
| 30 | 12.08 | 17.04 | 0.59 | 0 | 10.90 | 11.49 | | 0.071 |
| Total (mg) | 349.16 | | 12.36 | 14.80 | 300.87 | 328.03 | 0.429 | 3.547 |
| Average (mgd) | 11.64 | 16.17 | 0.41 | 0.49 | 10.03 | 10.93 | | |
| Maximum (mgd) | 12.65 | 20.28 | | | | | | |
| | | | | | % Difference | 6.05 | | |

VVWRA
Flows per Month
2006

MAY

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 11.72 | 17.11 | 0.00 | 0.00 | 11.30 | 11.30 | 30,778 | 0.228 |
| 2 | 11.82 | 15.60 | 0.23 | 0.00 | 11.27 | 11.51 | 18,412 | 0.111 |
| 3 | 11.65 | 15.55 | 0.13 | 0.74 | 10.43 | 11.30 | 27,607 | 0.136 |
| 4 | 11.78 | 15.47 | 0.00 | 0.79 | 10.67 | 11.46 | 31,979 | 0.103 |
| 5 | 11.68 | 15.19 | 0.00 | 0.83 | 10.20 | 11.03 | 21,838 | 0.425 |
| 6 | 12.28 | 15.19 | 0.43 | 0.21 | 11.51 | 12.15 | | 0.037 |
| 7 | 11.77 | 17.37 | 0.22 | 0.23 | 11.14 | 11.59 | | 0.087 |
| 8 | 12.08 | 17.38 | 1.47 | 0.00 | 10.35 | 11.82 | 26,291 | 0.144 |
| 9 | 11.60 | 15.71 | 0.00 | 0.00 | 11.40 | 11.40 | 28,139 | 0.088 |
| 10 | 11.96 | 15.41 | 0.00 | 0.00 | 11.69 | 11.69 | 27,870 | 0.158 |
| 11 | 11.34 | 15.49 | 0.11 | 0.00 | 10.66 | 10.76 | 18,796 | 0.464 |
| 12 | 11.76 | 15.26 | 0.00 | 0.00 | 11.25 | 11.25 | 21,202 | 0.392 |
| 13 | 12.15 | 15.00 | 0.00 | 0.00 | 11.91 | 11.91 | | 0.139 |
| 14 | 11.91 | 17.55 | 0.00 | 0.00 | 11.66 | 11.66 | | 0.134 |
| 15 | 12.04 | 15.93 | 0.00 | 0.38 | 11.16 | 11.54 | 18,707 | 0.364 |
| 16 | 11.83 | 15.76 | 0.54 | 0.00 | 10.75 | 11.30 | 17,510 | 0.438 |
| 17 | 12.13 | 15.76 | 0.28 | 0.00 | 11.23 | 11.51 | 22,044 | 0.529 |
| 18 | 11.81 | 15.18 | 0.00 | 0.00 | 11.16 | 11.16 | 21,472 | 0.546 |
| 19 | 12.33 | 15.23 | 0.36 | 0.00 | 9.97 | 10.33 | 18,090 | 1.214 |
| 20 | 11.42 | 16.94 | 0.12 | 0.00 | 10.59 | 10.71 | | 0.575 |
| 21 | 12.40 | 17.00 | 0.07 | 0.00 | 11.71 | 11.78 | | 0.514 |
| 22 | 11.39 | 15.70 | 0.00 | 0.00 | 10.75 | 10.75 | 19,478 | 0.520 |
| 23 | 11.94 | 15.64 | 0.00 | 0.00 | 11.39 | 11.39 | 26,475 | 0.428 |
| 24 | 11.78 | 15.33 | 0.55 | 0.00 | 10.60 | 11.14 | 19,316 | 0.511 |
| 25 | 11.86 | 15.33 | 0.00 | 0.00 | 11.16 | 11.16 | 22,102 | 0.523 |
| 26 | 11.93 | 15.49 | 0.00 | 0.00 | 11.31 | 11.31 | 22,250 | 0.529 |
| 27 | 11.73 | 17.41 | 0.00 | 0.00 | 11.03 | 11.03 | | 0.548 |
| 28 | 11.46 | 16.89 | 0.00 | 0.00 | 10.74 | 10.74 | | 0.555 |
| 29 | 12.33 | 18.53 | 1.09 | 0.00 | 10.65 | 11.74 | | 0.487 |
| 30 | 12.02 | 15.51 | 0.41 | 0.00 | 11.03 | 11.44 | 29,278 | 0.492 |
| 31 | 11.80 | 15.30 | 0.48 | 1.44 | 9.24 | 11.16 | 28,511 | 0.468 |
| Total (mg) | 355.96 | | 6.48 | 4.62 | 328.61 | 339.72 | 0.487 | 11.659 |
| Average (mgd) | 11.87 | 15.97 | 0.22 | 0.15 | 10.95 | 11.32 | | |
| Maximum (mgd) | 12.40 | 18.53 | | | | | | |
| | | | | | % Difference | 4.56 | | |

# VVWRA
## Flows per Month
## 2006

**JUNE**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 11.797 | 15.11 | 0.30 | 0.00 | 10.54 | 10.84 | 34,851 | 0.616 |
| 2 | 11.663 | 15.03 | 0.13 | 0.00 | 10.58 | 10.71 | 18,737 | 0.524 |
| 3 | 12.136 | 17.33 | 0.46 | 0.87 | 10.50 | 11.83 | 28,899 | 0.522 |
| 4 | 12.23 | 17.26 | 0.00 | 0.92 | 10.66 | 11.58 | | 0.526 |
| 5 | 11.499 | 15.44 | 0.65 | 0.37 | 10.45 | 11.46 | | 0.532 |
| 6 | 11.997 | 15.5 | 0.00 | 0.00 | 11.27 | 11.27 | 14,250 | 0.561 |
| 7 | 11.96 | 15.02 | 0.00 | 0.39 | 10.88 | 11.27 | 23,142 | 0.596 |
| 8 | 12.076 | 14.96 | 0.27 | 0.11 | 11.28 | 11.66 | 33,293 | 0.594 |
| 9 | 12.074 | 15.47 | 0.00 | 0.00 | 11.40 | 11.40 | 25,602 | 0.588 |
| 10 | 11.831 | 17.85 | 0.00 | 0.00 | 11.14 | 11.14 | | 0.568 |
| 11 | 12.219 | 17.35 | 0.00 | 0.00 | 11.51 | 11.51 | | 0.557 |
| 12 | 12.067 | 17.35 | 0.00 | 0.00 | 11.33 | 11.33 | 24,851 | 0.608 |
| 13 | 11.911 | 15.13 | 0.00 | 0.00 | 11.22 | 11.22 | 15,031 | 0.581 |
| 14 | 12.062 | 26.71 | 0.80 | 0.00 | 11.39 | 12.19 | 21,020 | 0.589 |
| 15 | 11.33 | 14.97 | 0.00 | 0.00 | 10.64 | 10.64 | 21,399 | 0.601 |
| 16 | 11.815 | 16.33 | 0.12 | 0.00 | 11.08 | 11.20 | 20,804 | 0.593 |
| 17 | 12.263 | 17.26 | 0.18 | 0.00 | 11.61 | 11.78 | | 0.534 |
| 18 | 12.755 | 17.26 | 0.48 | 0.00 | 12.01 | 12.50 | | 0.599 |
| 19 | 12.016 | 16.36 | 0.00 | 0.00 | 11.44 | 11.44 | 19,845 | 0.431 |
| 20 | 11.927 | 15.77 | 0.00 | 0.00 | 11.33 | 11.33 | 26,511 | 0.462 |
| 21 | 11.856 | 15.3 | 0.00 | 0.00 | 11.02 | 11.02 | 14,640 | 0.701 |
| 22 | 11.891 | 15.4 | 0.00 | 0.00 | 11.15 | 11.15 | 22,173 | 0.631 |
| 23 | 11.766 | 15.9 | 0.00 | 0.00 | 11.00 | 11.00 | 16,200 | 0.641 |
| 24 | 11.725 | 17.05 | 0.00 | 0.00 | 10.95 | 10.95 | | 0.618 |
| 25 | 11.931 | 16.53 | 0.00 | 0.00 | 11.13 | 11.13 | | 0.634 |
| 26 | 11.837 | 15.65 | 0.00 | 0.00 | 11.17 | 11.17 | 18,933 | 0.566 |
| 27 | 11.641 | 15.14 | 0.00 | 0.00 | 11.00 | 11.00 | 20,834 | 0.542 |
| 28 | 11.862 | 15.47 | 0.00 | 0.00 | 11.66 | 11.66 | 29,894 | 0.116 |
| 29 | 11.812 | 15.18 | 0.00 | 0.00 | 11.16 | 11.16 | 15,962 | 0.544 |
| 30 | 11.834 | 15.67 | 0.29 | 0.00 | 11.10 | 11.39 | 17,307 | 0.613 |
| Total (mg) | 357.78 | | 3.67 | 2.66 | 333.61 | 339.94 | 0.484 | 16.788 |
| Average (mgd) | 11.93 | 16.36 | 0.12 | 0.09 | 11.12 | 11.33 | | |
| Maximum (mgd) | 12.76 | 26.71 | | | | | | |
| | | | | | % Difference | 4.99 | | |

VVWRA
Flows per Month
2006

JULY

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 11.98 | 16.90 | 0.00 | 0.00 | 11.88 | 11.88 | | 0.7094 |
| 2 | 11.32 | 16.60 | 0.00 | 0.00 | 12.03 | 12.03 | | 0.3245 |
| 3 | 12.22 | 16.35 | 0.87 | 0.00 | 11.11 | 11.98 | 11,892 | 0.0972 |
| 4 | 11.20 | 18.56 | 0.00 | 0.00 | 11.18 | 11.18 | | 0.553 |
| 5 | 11.90 | 15.14 | 0.00 | 0.00 | 11.49 | 11.49 | 14,689 | 0.5311 |
| 6 | 11.98 | 15.57 | 0.00 | 0.00 | 11.52 | 11.52 | 23,913 | 0.5817 |
| 7 | 11.91 | 15.61 | 0.00 | 0.00 | 11.57 | 11.57 | 19,559 | 0.6738 |
| 8 | 11.83 | 17.22 | 0.90 | 0.00 | 10.17 | 11.07 | 16,006 | 0.6617 |
| 9 | 11.90 | 16.78 | 0.00 | 0.00 | 11.75 | 11.75 | | 0.6163 |
| 10 | 12.32 | 15.51 | 0.01 | 0.00 | 11.64 | 11.65 | | 0.5466 |
| 11 | 11.74 | 15.22 | 0.00 | 0.00 | 11.19 | 11.19 | 20,783 | 0.5549 |
| 12 | 11.87 | 15.00 | 0.00 | 0.00 | 11.81 | 11.81 | 20,250 | 0.5485 |
| 13 | 12.14 | 15.29 | 0.00 | 0.00 | 11.85 | 11.85 | 16,223 | 0.6355 |
| 14 | 12.46 | 15.85 | 0.00 | 0.00 | 12.52 | 12.52 | 22,259 | 0.7228 |
| 15 | 11.49 | 17.00 | 0.55 | 0.00 | 10.18 | 10.73 | | 0.6515 |
| 16 | 12.08 | 16.78 | 0.00 | 0.00 | 12.22 | 12.22 | | 0.6137 |
| 17 | 11.98 | 15.52 | 0.00 | 0.00 | 11.47 | 11.47 | 10,733 | 0.5659 |
| 18 | 11.99 | 15.36 | 0.00 | 0.00 | 11.85 | 11.85 | 13,707 | 0.5385 |
| 19 | 12.20 | 15.03 | 0.14 | 0.00 | 11.42 | 11.56 | 18,001 | 0.5399 |
| 20 | 11.99 | 15.97 | 0.00 | 0.00 | 11.57 | 11.57 | 16,551 | 0.6254 |
| 21 | 12.32 | 15.97 | 0.00 | 0.00 | 12.47 | 12.47 | 20,544 | 0.6812 |
| 22 | 11.94 | 16.39 | 0.00 | 0.00 | 12.13 | 12.13 | | 0.6462 |
| 23 | 12.49 | 16.89 | 0.00 | 0.00 | 11.79 | 11.79 | | 0.5806 |
| 24 | 11.38 | 15.85 | 0.09 | 0.00 | 10.64 | 10.73 | 15,401 | 0.5512 |
| 25 | 12.06 | 15.60 | 0.00 | 0.00 | 12.52 | 12.52 | 14,928 | 0.1307 |
| 26 | 12.21 | 15.08 | 0.56 | 0.00 | 11.37 | 11.93 | 14,670 | 0.1534 |
| 27 | 12.01 | 15.58 | 0.00 | 0.00 | 11.45 | 11.45 | 19,397 | 0.5545 |
| 28 | 12.48 | 16.21 | 0.00 | 0.00 | 12.36 | 12.36 | 12,591 | 0.6465 |
| 29 | 12.16 | 17.44 | 0.00 | 0.00 | 11.49 | 11.49 | | 0.6376 |
| 30 | 12.32 | 17.11 | 0.00 | 0.00 | 11.67 | 11.67 | | 0.529 |
| 31 | 12.24 | 16.40 | 1.44 | 0.00 | 12.23 | 13.67 | 21,394 | 0.5064 |
| Total (mg) | 360.11 | | 4.56 | 0.00 | 348.63 | 353.19 | 0.343 | 16.200 |
| Average (mgd) | 12.00 | 16.10 | 0.15 | 0.00 | 11.62 | 11.77 | | |
| Maximum (mgd) | 12.49 | 18.56 | | | | | | |
| | | | | | % Difference | 1.92 | | |

VVWRA
Flows per Month
2006

**AUGUST**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.21 | 15.92 | 0.00 | 0.00 | 11.58 | 11.58 | 18,060 | 0.503 |
| 2 | 12.48 | 15.63 | 0.01 | 0.00 | 11.91 | 11.91 | 16,061 | 0.509 |
| 3 | 11.64 | 18.38 | 0.29 | 0.00 | 11.35 | 11.64 | 15,073 | 0.639 |
| 4 | 12.27 | 16.42 | 0.41 | 0.00 | 12.39 | 12.80 | 16,242 | 0.661 |
| 5 | 12.18 | 17.46 | 0.03 | 0.00 | 10.34 | 10.36 | | 0.621 |
| 6 | 12.29 | 17.37 | 0.04 | 0.00 | 11.43 | 11.47 | | 0.521 |
| 7 | 12.10 | 15.87 | 0.00 | 0.00 | 11.61 | 11.61 | 11,734 | 0.517 |
| 8 | 12.62 | 15.84 | 1.69 | 0.00 | 12.06 | 13.74 | 36,795 | 0.519 |
| 9 | 11.61 | 16.03 | 0.00 | 0.00 | 11.05 | 11.05 | 28,294 | 0.554 |
| 10 | 12.15 | 15.55 | 0.00 | 0.00 | 12.21 | 12.21 | 8,432 | 0.609 |
| 11 | 12.76 | 16.29 | 0.93 | 0.00 | 11.74 | 12.67 | 22,015 | 0.679 |
| 12 | 11.63 | 17.62 | 0.00 | 0.00 | 10.01 | 10.01 | | 0.624 |
| 13 | 12.51 | 17.53 | 0.00 | 0.00 | 11.33 | 11.33 | | 0.639 |
| 14 | 12.45 | 16.14 | 0.00 | 0.00 | 11.92 | 11.92 | 22,634 | 0.652 |
| 15 | 12.43 | 15.70 | 1.49 | 0.00 | 11.64 | 13.13 | 15,979 | 0.713 |
| 16 | 12.24 | 15.63 | 0.00 | 0.00 | 11.78 | 11.78 | 14,403 | 0.809 |
| 17 | 12.14 | 15.47 | 0.00 | 0.00 | 11.30 | 11.30 | 16,708 | 0.674 |
| 18 | 12.36 | 16.24 | 0.00 | 0.00 | 11.11 | 11.11 | 18,087 | 0.663 |
| 19 | 12.13 | 18.10 | 0.07 | 0.00 | 11.42 | 11.49 | | 0.605 |
| 20 | 12.57 | 17.56 | 0.27 | 0.00 | 12.08 | 12.35 | | 0.626 |
| 21 | 12.48 | 16.08 | 0.00 | 0.00 | 10.78 | 10.78 | 20,100 | 0.662 |
| 22 | 12.37 | 15.95 | 0.00 | 0.00 | 11.34 | 11.34 | 19,742 | 0.669 |
| 23 | 12.11 | 15.58 | 0.00 | 0.00 | 11.66 | 11.66 | 25,790 | 0.711 |
| 24 | 11.88 | 15.47 | 0.59 | 0.00 | 11.94 | 12.54 | 20,137 | 0.745 |
| 25 | 12.25 | 15.81 | 0.00 | 0.00 | 11.02 | 11.02 | 10,786 | 0.633 |
| 26 | 12.34 | 18.01 | 0.68 | 0.00 | 11.79 | 12.47 | | 0.718 |
| 27 | 12.32 | 17.73 | 0.19 | 0.00 | 11.46 | 11.66 | | 0.672 |
| 28 | 12.27 | 15.74 | 0.00 | 0.00 | 11.41 | 11.41 | 13,859 | 0.677 |
| 29 | 12.22 | 15.86 | 0.00 | 0.00 | 11.89 | 11.89 | 23,157 | 0.640 |
| 30 | 12.32 | 15.79 | 0.00 | 0.00 | 11.50 | 11.50 | 16,662 | 0.635 |
| 31 | 12.28 | 15.85 | 1.44 | 0.00 | 12.94 | 14.38 | 16,689 | 0.718 |
| Total (mg) | 367.38 | | 8.14 | 0.00 | 346.39 | 354.53 | 0.409 | 19.314 |
| Average (mgd) | 12.25 | 16.42 | 0.27 | 0.00 | 11.55 | 11.82 | | |
| Maximum (mgd) | 12.76 | 18.38 | | | | | | |
| | | | | | % Difference | 3.50 | | |

VVWRA
Flows per Month
2006

**SEPTEMBER**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.51 | 15.52 | 0.00 | 0.00 | 10.88 | 10.88 | 18,841 | 0.573 |
| 2 | 11.48 | 18.44 | 0.00 | 0.00 | 11.98 | 11.98 | 0 | 0.560 |
| 3 | 11.68 | 17.25 | 0.00 | 0.00 | 12.25 | 12.25 | 0 | 0.554 |
| 4 | 12.88 | 18.82 | 0.02 | 0.00 | 8.89 | 8.91 | 0 | 0.567 |
| 5 | 12.19 | 15.72 | 0.01 | 0.00 | 12.78 | 12.79 | 28,504 | 0.605 |
| 6 | 12.69 | 16.39 | 0.00 | 0.00 | 12.66 | 12.66 | 18,701 | 0.333 |
| 7 | 13.36 | 16.05 | 0.00 | 0.00 | 12.84 | 12.84 | 22,876 | 0.498 |
| 8 | 10.56 | 15.36 | 0.00 | 0.00 | 11.76 | 11.76 | 28,441 | 0.512 |
| 9 | 12.49 | 17.95 | 0.00 | 0.00 | 12.39 | 12.39 | 0 | 0.481 |
| 10 | 12.82 | 17.99 | 0.00 | 0.00 | 13.27 | 13.27 | 0 | 0.497 |
| 11 | 12.34 | 16.18 | 0.95 | 0.00 | 12.83 | 13.78 | 7,201 | 0.462 |
| 12 | 12.86 | 15.88 | 0.01 | 0.00 | 11.73 | 11.74 | 23,340 | 0.486 |
| 13 | 12.72 | 15.90 | 0.03 | 0.00 | 11.81 | 11.84 | 16,659 | 0.471 |
| 14 | 12.86 | 15.81 | 0.00 | 0.00 | 12.80 | 12.80 | 25,078 | 0.476 |
| 15 | 12.72 | 15.41 | 0.00 | 0.00 | 11.99 | 11.99 | 25,345 | 0.449 |
| 16 | 11.79 | 18.28 | 0.00 | 0.00 | 12.15 | 12.15 | 0 | 0.426 |
| 17 | 11.69 | 17.86 | 0.00 | 0.00 | 12.84 | 12.84 | 0 | 0.423 |
| 18 | 12.63 | 16.43 | 0.00 | 0.00 | 12.52 | 12.52 | 21,374 | 0.497 |
| 19 | 12.43 | 16.16 | 0.00 | 0.00 | 12.75 | 12.75 | 33,791 | 0.450 |
| 20 | 12.77 | 15.62 | 0.00 | 0.00 | 12.69 | 12.69 | 21,683 | 0.447 |
| 21 | 12.65 | 16.17 | 0.00 | 0.00 | 12.20 | 12.20 | 17,662 | 0.442 |
| 22 | 12.77 | 15.33 | 0.00 | 0.00 | 7.69 | 7.69 | 8,030 | 0.000 |
| 23 | 11.94 | 16.80 | 0.00 | 0.00 | 9.30 | 9.30 | 0 | 0.512 |
| 24 | 11.58 | 17.99 | 0.00 | 0.00 | 10.29 | 10.29 | 0 | 0.448 |
| 25 | 12.63 | 16.10 | 0.00 | 0.00 | 12.42 | 12.42 | 27,667 | 0.437 |
| 26 | 12.70 | 16.17 | 0.00 | 0.00 | 12.80 | 12.80 | 12,076 | 0.499 |
| 27 | 12.68 | 15.70 | 0.00 | 0.00 | 12.48 | 12.48 | 20,537 | 0.420 |
| 28 | 12.68 | 15.74 | 0.00 | 0.00 | 11.31 | 11.31 | 23,927 | 0.433 |
| 29 | 12.76 | 15.41 | 0.00 | 0.00 | 12.56 | 12.56 | 7,248 | 0.000 |
| 30 | 11.96 | 18.23 | 0.00 | 0.00 | 11.60 | 11.60 | 0 | 0.443 |
| Total (mg) | 359.32 | | 1.02 | 0.00 | 345.59 | 346.61 | 0.390 | 12.829 |
| Average (mgd) | 12.39 | 16.59 | 0.04 | 0.00 | 11.92 | 11.95 | | |
| Maximum (mgd) | 13.36 | 18.82 | | | | | | |
| | | | | | % Difference | 3.54 | | |

VVWRA
Flows per Month
2006

**OCTOBER**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 11.54 | 17.68 | 0.00 | 0.00 | 12.09 | 12.09 | 0 | 0.000 |
| 2 | 12.55 | 16.22 | 0.00 | 0.00 | 12.56 | 12.56 | 32,166 | 0.442 |
| 3 | 12.57 | 16.32 | 0.01 | 0.00 | 12.77 | 12.78 | 19,825 | 0.423 |
| 4 | 12.62 | 15.88 | 0.00 | 0.00 | 13.06 | 13.06 | 17,952 | 0.466 |
| 5 | 12.54 | 15.74 | 0.00 | 0.00 | 12.78 | 12.78 | 8,761 | 0.469 |
| 6 | 12.81 | 15.76 | 0.00 | 0.00 | 9.83 | 9.83 | 24,430 | 0.000 |
| 7 | 11.83 | 18.34 | 0.00 | 0.00 | 11.68 | 11.68 | 0 | 0.000 |
| 8 | 12.04 | 18.64 | 0.00 | 0.00 | 11.85 | 11.85 | 0 | 0.475 |
| 9 | 12.46 | 5.87 | 0.04 | 0.00 | 12.99 | 13.03 | 36,133 | 0.475 |
| 10 | 12.41 | 16.89 | 0.00 | 0.00 | 12.99 | 12.99 | 0 | 0.477 |
| 11 | 12.71 | 15.99 | 0.00 | 0.00 | 12.67 | 12.67 | 33,047 | 0.000 |
| 12 | 12.73 | 15.80 | 0.00 | 0.00 | 12.32 | 12.32 | 20,186 | 0.468 |
| 13 | 12.60 | 15.71 | 0.00 | 0.00 | 13.01 | 13.01 | 17,775 | 0.000 |
| 14 | 11.69 | 17.47 | 0.00 | 0.00 | 11.37 | 11.37 | 0 | 0.000 |
| 15 | 11.54 | 18.02 | 0.00 | 0.00 | 7.94 | 7.94 | 0 | 0.470 |
| 16 | 12.64 | 16.56 | 0.00 | 0.00 | 13.03 | 13.03 | 28,879 | 0.463 |
| 17 | 12.20 | 16.29 | 0.00 | 0.00 | 13.02 | 13.02 | 18,477 | 0.000 |
| 18 | 12.60 | 16.05 | 0.00 | 0.00 | 12.53 | 12.53 | 22,327 | 0.472 |
| 19 | 12.78 | 16.15 | 1.31 | 0.00 | 12.93 | 14.24 | 25,627 | 0.429 |
| 20 | 12.81 | 15.68 | 0.00 | 0.00 | 11.75 | 11.75 | 17,924 | 0.000 |
| 21 | 11.69 | 17.99 | 0.00 | 0.00 | 9.96 | 9.96 | 0 | 0.000 |
| 22 | 11.54 | 18.14 | 0.00 | 0.00 | 8.36 | 8.36 | 0 | 0.461 |
| 23 | 12.55 | 16.35 | 0.00 | 0.00 | 12.36 | 12.36 | 17,684 | 0.398 |
| 24 | 12.42 | 16.31 | 0.00 | 0.00 | 11.83 | 11.83 | 18,207 | 0.110 |
| 25 | 12.60 | 15.92 | 0.00 | 0.00 | 13.30 | 13.30 | 21,273 | 0.439 |
| 26 | 12.58 | 16.00 | 0.02 | 0.00 | 12.35 | 12.37 | 18,414 | 0.405 |
| 27 | 12.63 | 15.31 | 0.78 | 0.00 | 12.18 | 12.96 | 9,952 | 0.000 |
| 28 | 11.69 | 18.15 | 0.00 | 0.00 | 11.53 | 11.53 | 0 | 0.000 |
| 29 | 11.69 | 18.23 | 0.00 | 0.00 | 11.99 | 11.99 | 0 | 0.000 |
| 30 | 11.65 | 16.06 | 0.00 | 0.00 | 12.42 | 12.42 | 11,556 | 0.457 |
| 31 | 11.80 | 16.08 | 2.68 | 0.00 | 9.95 | 12.63 | 24,507 | 0.008 |
| Total (mg) | 368.96 | | 4.84 | 0.00 | 357.30 | 362.14 | 0.445 | 7.808 |
| Average (mgd) | 12.30 | 16.26 | 0.16 | 0.00 | 11.91 | 12.07 | | |
| Maximum (mgd) | 12.81 | 18.64 | | | | | | |
| | | | | | % Difference | 1.85 | | |

VVWRA
Flows per Month
2006

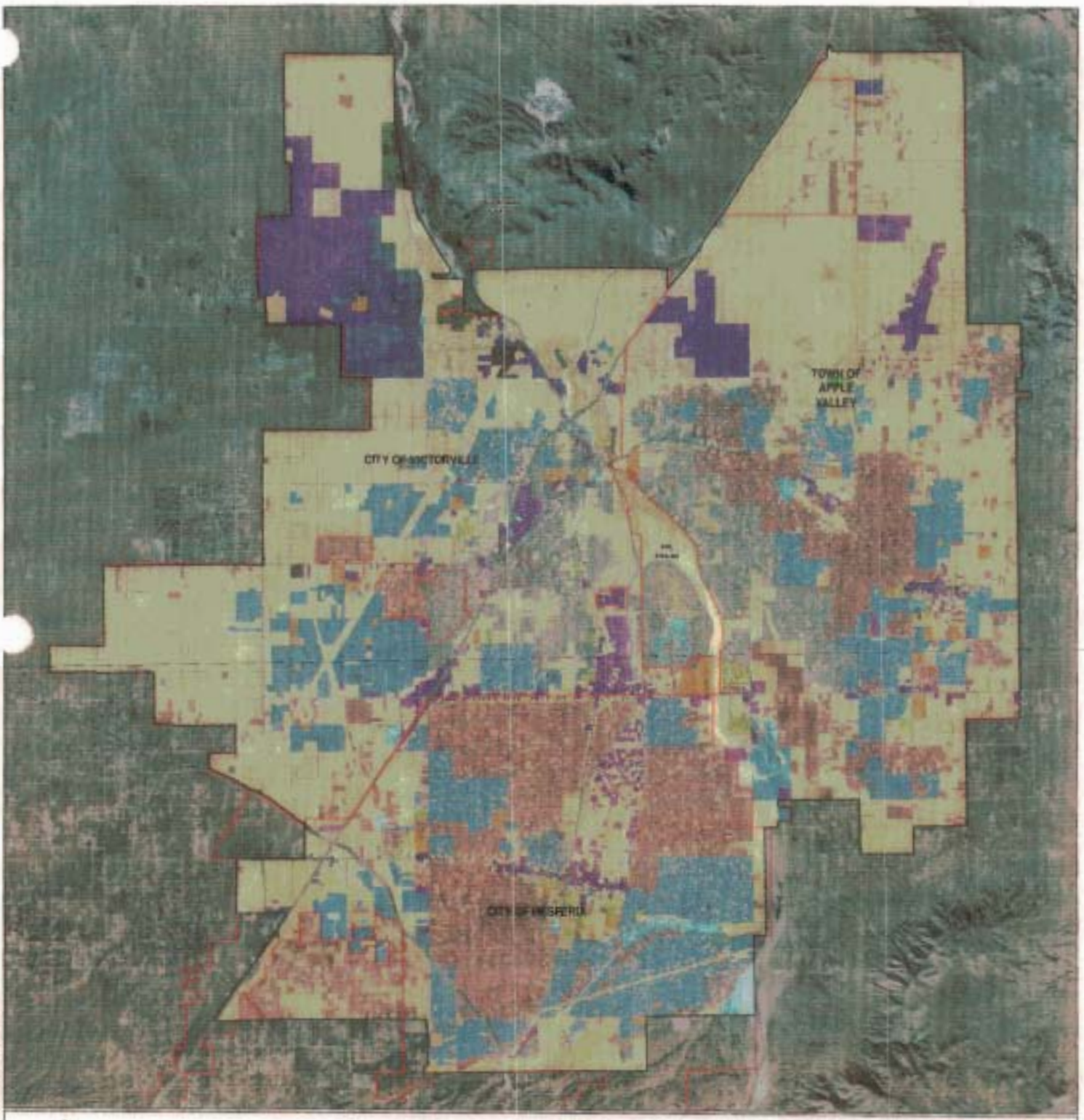
**NOVEMBER**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.19 | 15.50 | 0.00 | 1.05 | 11.42 | 12.47 | 16,983 | 0.439 |
| 2 | 12.58 | 15.66 | 0.00 | 0 | 11.46 | 11.46 | 20,734 | 0.464 |
| 3 | 12.50 | 15.85 | 0.00 | 0.77 | 12.86 | 13.63 | 15,513 | 0.418 |
| 4 | 12.84 | 18.13 | 0.00 | 1.11 | 8.99 | 10.10 | | 0.000 |
| 5 | 11.93 | 18.12 | 0.00 | 0.90 | 11.29 | 12.19 | | 0.000 |
| 6 | 11.75 | 15.98 | 0.00 | 1.01 | 11.95 | 12.96 | 22,249 | 0.451 |
| 7 | 12.50 | 15.68 | 0.00 | 1.05 | 11.56 | 12.61 | 16,322 | 0.000 |
| 8 | 12.52 | 15.85 | 0.00 | 1.15 | 11.96 | 13.11 | 18,538 | 0.451 |
| 9 | 12.65 | 15.38 | 0.00 | 1.38 | 11.42 | 12.80 | 27,946 | 0.424 |
| 10 | 12.40 | 17.41 | 0.00 | 1.43 | 10.61 | 12.04 | | 0.000 |
| 11 | 11.94 | 17.65 | 0.00 | 1.53 | 11.29 | 12.82 | | 0.000 |
| 12 | 11.76 | 18.12 | 0.00 | 1.34 | 11.14 | 12.48 | | 0.088 |
| 13 | 11.50 | 16.19 | 0.00 | 1.51 | 11.11 | 12.62 | 19,222 | 0.407 |
| 14 | 11.99 | 16.10 | 0.00 | 1.49 | 10.66 | 12.15 | 34,814 | 0.000 |
| 15 | 12.56 | 15.68 | 0.00 | 1.48 | 11.17 | 12.64 | 12,202 | 0.446 |
| 16 | 12.58 | 15.63 | 0.00 | 5.80 | 11.26 | 17.06 | 18,812 | 0.416 |
| 17 | 12.61 | 15.70 | 0.00 | 6.01 | 5.53 | 11.55 | 21,193 | 0.000 |
| 18 | 12.81 | 18.14 | 0.00 | 5.50 | 7.05 | 12.55 | | 0.000 |
| 19 | 11.88 | 17.48 | 0.00 | 5.08 | 4.74 | 9.83 | | 0.077 |
| 20 | 11.58 | 15.83 | 0.00 | 5.49 | 4.19 | 9.68 | 13,349 | 0.414 |
| 21 | 12.46 | 16.38 | 0.00 | 5.53 | 4.77 | 10.30 | 24,103 | 0.382 |
| 22 | 12.47 | 16.89 | 0.00 | 5.48 | 3.10 | 8.58 | 11,587 | 0.368 |
| 23 | 12.92 | 20.53 | 0.00 | 5.58 | 7.16 | 12.73 | | 0.000 |
| 24 | 12.36 | 16.79 | 0.00 | 5.68 | 7.01 | 12.69 | | 0.054 |
| 25 | 12.95 | 18.40 | 0.00 | 5.41 | 6.29 | 11.70 | | 0.000 |
| 26 | 11.57 | 18.21 | 0.00 | 4.85 | 2.69 | 7.54 | | 0.053 |
| 27 | 11.53 | 16.48 | 0.00 | 5.45 | 7.13 | 12.58 | 20,113 | 0.384 |
| 28 | 12.59 | 16.39 | 0.00 | 3.91 | 7.27 | 11.18 | | 0.000 |
| 29 | 12.62 | 16.15 | 0.00 | 5.71 | 6.65 | 12.37 | | 0.080 |
| 30 | 12.18 | 5.68 | 0.00 | 5.42 | 3.00 | 8.42 | | 0.043 |
| Total (mg) | 356.52 | | 0.00 | 97.05 | 245.33 | 342.38 | 0.297 | 5.421 |
| Average (mgd) | 12.29 | 16.43 | 0.00 | 3.47 | 8.46 | 11.81 | | |
| Maximum (mgd) | 12.95 | 20.53 | | | | | | |
| | | | | | % Difference | 3.97 | | |

# VVWRA
## Flows per Month
## 2006

**DECEMBER**

| Date | Influent Flow (mgd) | Influent Peak (mgd) | North Percolation Pond Flow (mgd) | South Percolation Pond Flow (mgd) | Mojave River Flow (mgd) | Sum of Discharged Flows (mgd) | Septage Flow (gpd) | Reclaimed Flow to SCLA (mgd) |
|---|---|---|---|---|---|---|---|---|
| 1 | 12.17 | 15.68 | 0.00 | 4.05 | 5.66 | 9.71 | 0 | 0.0003 |
| 2 | 12.31 | 18.04 | 0.00 | 3.96 | 6.31 | 10.27 | 0 | 0.0007 |
| 3 | 12.67 | 18.32 | 0.00 | 4.28 | 6.34 | 10.62 | 0 | |
| 4 | 11.42 | 15.19 | 0.00 | 3.76 | 5.90 | 9.66 | 0 | 0.0007 |
| 5 | 13.33 | 17.27 | 0.00 | 4.12 | 6.69 | 10.81 | 0 | 0.0035 |
| 6 | 12.48 | 16.22 | 0.00 | 3.70 | 7.24 | 10.94 | 0 | 0.005 |
| 7 | 12.17 | 16.12 | 0.00 | 3.98 | 6.52 | 10.50 | 0 | 0.0137 |
| 8 | 12.51 | 15.66 | 0.00 | 3.34 | 8.35 | 11.69 | 0 | 0.0285 |
| 9 | 12.64 | 18.53 | 0.00 | 3.27 | 8.74 | 12.01 | 0 | 0.0005 |
| 10 | 12.78 | 18.30 | 0.00 | 3.50 | 7.92 | 11.42 | 0 | |
| 11 | 12.40 | 22.35 | 0.00 | 3.57 | 7.76 | 11.33 | 0 | 0.0054 |
| 12 | 12.07 | 15.81 | 0.00 | 3.78 | 4.63 | 8.41 | 0 | 0.0377 |
| 13 | 10.07 | 15.82 | 0.00 | 4.35 | 5.16 | 9.51 | 0 | 0.0104 |
| 14 | 13.10 | 15.65 | 0.00 | 2.29 | 8.28 | 10.57 | 0 | 0.018 |
| 15 | 11.61 | 15.36 | 0.00 | 3.39 | 7.31 | 10.70 | 0 | 0.0143 |
| 16 | 13.32 | 17.87 | 0.00 | 3.33 | 6.30 | 9.63 | 0 | |
| 17 | 12.72 | 18.27 | 0.00 | 3.16 | 7.72 | 10.88 | 0 | |
| 18 | 12.19 | 15.85 | 0.00 | 0.37 | 8.36 | 8.73 | 0 | 0.0098 |
| 19 | 12.22 | 15.96 | 0.00 | 0.36 | 7.06 | 7.42 | 0 | 0.0055 |
| 20 | 12.37 | 15.60 | 0.00 | 2.90 | 7.04 | 9.94 | 0 | 0.0174 |
| 21 | 12.15 | 15.97 | 0.00 | 2.79 | 6.34 | 9.13 | 0 | 0.017 |
| 22 | 12.68 | 17.18 | 0.00 | 2.93 | 7.57 | 10.50 | 0 | |
| 23 | 12.81 | 19.00 | 0.00 | 2.85 | 7.44 | 10.29 | 0 | 0.001 |
| 24 | 12.96 | 19.38 | 0.00 | 2.78 | 7.64 | 10.42 | 0 | 0.0004 |
| 25 | 11.10 | 17.14 | 0.00 | 2.74 | 7.82 | 10.56 | 0 | 0.0002 |
| 26 | 12.38 | 17.31 | 0.00 | 3.06 | 7.98 | 11.04 | 0 | 0.0107 |
| 27 | 13.33 | 17.13 | 0.00 | 2.99 | 4.02 | 7.01 | 0 | 0.027 |
| 28 | 11.31 | 17.11 | 0.00 | 2.98 | 7.31 | 10.29 | 0 | 0.0203 |
| 29 | 12.38 | 17.25 | 0.00 | 2.35 | 7.90 | 10.25 | 0 | 0.0064 |
| 30 | 12.43 | 18.47 | 0.00 | 2.33 | 7.19 | 9.52 | 0 | 0.004 |
| 31 | 12.67 | 18.34 | 0.00 | 2.29 | 7.07 | 9.36 | 0 | 0.0005 |
| Total (mg) | 370.56 | | 0.00 | 91.50 | 211.89 | 303.39 | - | 0.259 |
| Average (mgd) | 12.35 | 17.22 | 0.00 | 3.05 | 7.06 | 10.11 | | |
| Maximum (mgd) | 13.33 | 22.35 | | | | | | |
| | | | | | % Difference | 18.13 | | |




VVWRA Boundary
City Boundaries

Built, Undeveloped
Built, Commercial/Industrial
Built, Electrical Power Facilities
Built, Low Density Residential (2 du's per acre and less)
Built, Medium Density Residential (greater than 2 du's per acre)
Built, Multifamily Residential Apartments/Condos

Built, Parks
Built, Schools
Built, Water/Sewer Facilities
Built, Military Bases
Built, Prisons
Vacant

**Figure 1**
**VVWRA Service Area**
**Currently Occupied Parcels**

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2000

| Date | Day | Secondary Treatment Effluent Secondary Flow mg | Secondary Clarifier No. 6 mgd | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | NO2-N mg/l | NO3-N mg/l | Alkalinity mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % | Turbidity 24-hr comp ntu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | JAN | 134.33 | 2.2 | 6.7 | 26.7 | 6.7 | 0.2 | 0.1 | 7.5 | 138.5 | 244 | 242 | 6.9 | 95.8 | 93.7 | 99.4 | 1.7 |
| 2000 | FEB | 123.54 | 2.3 | 6.3 | 24.5 | 5.2 | 0.2 | 0.1 | 7.8 | 130.3 | 224 | 188 | 6.2 | 95.5 | 94.3 | 99.4 | 1.7 |
| 2000 | MAR | 114.93 | 2.2 | 7.8 | 30.9 | 8.9 | 0.3 | 0.2 | 7.8 | 132.8 | 240 | 274 | 8.0 | 94.3 | 89.8 | 99.1 | 5.3 |
| 2000 | APR | 121.99 | 2.1 | 11.3 | 44.8 | 12.7 | 0.3 | 0.1 | 8.6 | 127.4 | 382 | 430 | 10.5 | 91.7 | 84.1 | 98.9 | 5.1 |
| 2000 | MAY | 128.44 | 2.2 | 8.3 | 36.1 | 13.2 | 0.3 | 0.1 | 7.7 | 133.8 | 288 | 455 | 9.4 | 93.6 | 81.7 | 99.0 | 5.3 |
| 2000 | JUN | 125.06 | 2.2 | 8.8 | 28.8 | 6.8 | 0.2 | 0.1 | 8.7 | 126.0 | 235 | 306 | 7.7 | 94.6 | 85.9 | 99.2 | 3.3 |
| 2000 | JUL | 126.45 | 2.1 | 8.2 | 34.9 | 5.1 | 0.3 | 0.2 | 8.2 | 122.4 | 210 | 175 | 10.8 | 91.8 | 93.3 | 98.8 | 2.7 |
| 2000 | AUG | 130.54 | 2.2 | 5.0 | 28.7 | 8.3 | 0.3 | 0.2 | 8.3 | 125.2 | 177 | 222 | 9.9 | 95.5 | 90.8 | 98.9 | 3.9 |
| 2000 | SEP | 128.40 | 2.7 | 5.8 | 29.2 | 8.0 | 0.2 | 0.1 | 7.5 | 124.3 | 200 | 286 | 8.9 | 94.9 | 88.5 | 99.2 | 3.9 |
| 2000 | OCT | 132.47 | 2.8 | 8.1 | 32.3 | 11.4 | 0.2 | 0.1 | 8.2 | 128.8 | 218 | 407 | 7.0 | 94.4 | 85.2 | 99.2 | 3.8 |
| 2000 | NOV | 128.98 | 2.9 | 8.9 | 32.8 | 8.4 | 0.3 | 0.1 | 8.6 | 125.9 | 249 | 300 | 3.6 | 93.5 | 88.8 | 99.0 | 4.3 |
| 2000 | DEC | 131.82 | 2.7 | 8.1 | 26.1 | 8.0 | 0.2 | 0.1 | 9.7 | 136.7 | 269 | 284 | 8.2 | 94.8 | 91.2 | 99.2 | 3.8 |
| TOTAL | | 1,526.94 | | | | | | | | | | | | | | | |
| DAILY AVG | | 4.17 | 2.4 | 7.1 | 31.3 | 8.8 | 0.2 | 0.1 | 8.2 | 129.3 | 246 | 297 | 7.9 | 94.2 | 88.9 | 99.1 | 3.7 |
| DAILY MIN | | 8.18 | 0.0 | 2.2 | 8.0 | 0.8 | 0.1 | 0.1 | 5.9 | 113.0 | 172 | 56 | 4.3 | 73.7 | 41.4 | 95.5 | 1.0 |
| DAILY MAX | | 11.87 | 3.1 | 17.0 | 96.0 | 45.0 | 1.2 | 0.3 | 11.0 | 180.0 | 2,557 | 3,810 | 93.1 | 98.3 | 98.8 | 99.7 | 9.9 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2000

| Date | Day | Tertiary Treatment Effluent TBF Flow mg | DynaSand Flow mg | Ratio to TBF's | Total Flow mg | Backwash Waste mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | JAN | 111.47 | 131.72 | 48% | 243.19 | 14.90 | 1.0 | 20.5 | 1.2 | 0.2 | 65 | 81 | 11 | 86.8 | 81.3 | 18.2 |
| 2000 | FEB | 107.53 | 136.18 | 44% | 243.71 | 15.71 | 1.0 | 20.5 | 0.9 | 0.2 | 70 | 64 | 11 | 85.1 | 83.8 | 18.8 |
| 2000 | MAR | 115.51 | 146.46 | 44% | 261.97 | 17.25 | 1.0 | 21.5 | 1.8 | 0.2 | 70 | 129 | 12 | 85.7 | 78.3 | 27.2 |
| 2000 | APR | 178.07 | 59.19 | 75% | 237.26 | 18.13 | 1.0 | 28.4 | 2.8 | 0.2 | 66 | 186 | 15 | 91.8 | 73.5 | 33.2 |
| 2000 | MAY | 139.36 | 128.02 | 52% | 267.38 | 24.09 | 1.5 | 23.2 | 2.3 | 0.2 | 107 | 163 | 16 | 79.7 | 75.5 | 18.3 |
| 2000 | JUN | 112.23 | 131.75 | 48% | 243.98 | 19.82 | 1.0 | 21.9 | 2.2 | 0.2 | 66 | 147 | 14 | 86.6 | 75.8 | 20.3 |
| 2000 | JUL | 120.73 | 128.95 | 48% | 249.68 | 23.18 | 1.0 | 21.0 | 1.0 | 0.2 | 67 | 67 | 14 | 87.3 | 77.9 | 32.1 |
| 2000 | AUG | 126.59 | 118.02 | 52% | 244.61 | 20.70 | 1.0 | 19.1 | 1.7 | 0.2 | 66 | 110 | 12 | 82.2 | 70.7 | 34.2 |
| 2000 | SEP | 125.11 | 123.10 | 50% | 248.21 | 18.99 | 1.0 | 18.1 | 2.1 | 0.3 | 69 | 148 | 18 | 84.6 | 75.9 | 24.3 |
| 2000 | OCT | 120.92 | 119.43 | 50% | 240.35 | 19.53 | 2.0 | 18.2 | 1.4 | 1.1 | 126 | 92 | 71 | 69.4 | 86.2 | -415.4 |
| 2000 | NOV | 116.23 | 112.80 | 51% | 229.03 | 18.90 | 1.0 | 22.1 | 1.5 | 1.0 | 64 | 95 | 82 | 85.4 | 83.5 | -225.8 |
| 2000 | DEC | 123.93 | 119.26 | 51% | 243.19 | 19.73 | 2.2 | 19.2 | 1.2 | 1.5 | 143 | 78 | 99 | 79.8 | 87.8 | -447.1 |
| TOTAL | | 1,487.70 | 1,454.88 | | 2,952.57 | 230.94 | | | | | | | | | | |
| DAILY AVG | | 4.09 | 3.98 | 51% | 8.07 | 0.63 | 1.2 | 21.1 | 1.7 | 0.4 | 82 | 113 | 30 | 83.7 | 79.2 | -71.8 |
| DAILY MIN | | 0.81 | 0.00 | 20% | 0.81 | 0.30 | 1.0 | 4.0 | 0.0 | 0.1 | 45 | 13 | 4 | -8.0 | -146.5 | -961.5 |
| DAILY MAX | | 7.69 | 5.40 | 100% | 9.45 | 1.31 | 8.4 | 42.0 | 16.2 | 3.1 | 589 | 1,135 | 185 | 96.8 | 97.4 | 85.5 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2001

| | | Secondary Treatment Effluent | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Secondary Flow mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | NO2-N mg/l | NO3-N mg/l | Alkalinity mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % | Turbidity 24-hr comp ntu |
| 2001 | JAN | 298.03 | 7.7 | 32.4 | 9.3 | 0.4 | 0.1 | 8.6 | 137 | 618 | 742 | 34 | 94.0 | 88.3 | 98.5 | 4.6 |
| 2001 | FEB | 267.07 | 8.4 | 41.9 | 18.7 | 0.3 | 0.1 | 8.9 | 153 | 643 | 1,433 | 23 | 94.0 | 82.1 | 99.0 | 4.0 |
| 2001 | MAR | 290.43 | 6.1 | 32.2 | 11.2 | 0.2 | 0.1 | 9.4 | 126 | 473 | 873 | 16 | 95.1 | 86.4 | 99.3 | 3.3 |
| 2001 | APR | 279.73 | 7.4 | 36.4 | 9.0 | 0.2 | 0.1 | 10.4 | 123 | 577 | 702 | 16 | 94.6 | 90.3 | 99.3 | 3.2 |
| 2001 | MAY | 292.40 | 11.7 | 38.8 | 13.9 | 0.3 | 0.2 | 8.1 | 132 | 923 | 1,091 | 22 | 91.7 | 85.1 | 98.9 | 2.8 |
| 2001 | JUN | 288.53 | 3.8 | 26.1 | 5.3 | 0.3 | 0.1 | 9.3 | 140 | 305 | 427 | 27 | 97.4 | 93.5 | 98.7 | 2.4 |
| 2001 | JUL | 300.45 | 5.2 | 24.8 | 4.5 | 0.2 | 0.1 | 8.7 | 159 | 422 | 367 | 20 | 96.3 | 94.6 | 99.0 | 1.6 |
| 2001 | AUG | 306.32 | 7.1 | 30.4 | 8.7 | 0.7 | 0.2 | 8.3 | 175 | 586 | 719 | 55 | 94.2 | 86.8 | 97.3 | 2.8 |
| 2001 | SEP | 299.63 | 7.5 | 25.6 | 5.9 | 0.5 | 0.1 | 8.3 | 168 | 624 | 492 | 42 | 94.7 | 92.6 | 98.0 | 2.2 |
| 2001 | OCT | 311.05 | 14.1 | 37.9 | 22.5 | 0.8 | 0.2 | 7.8 | 164 | 1,181 | 1,880 | 66 | 91.4 | 80.6 | 96.9 | 3.4 |
| 2001 | NOV | 285.92 | 9.7 | 33.8 | 16.3 | 0.8 | 0.1 | 9.0 | 136 | 769 | 1,293 | 8 | 93.1 | 84.3 | 97.6 | 3.9 |
| 2001 | DEC | 298.38 | 13.8 | 34.8 | 13.1 | 1.6 | 0.4 | 8.5 | 124 | 1,108 | 1,051 | 127 | 91.9 | 88.4 | 95.0 | 3.6 |
| TOTAL | | 3,517.92 | | | | | | | | | | | | | | |
| DAILY AVG | | 9.64 | 8.5 | 32.9 | 11.5 | 0.5 | 0.2 | 8.8 | 145 | 686 | 922 | 38 | 94.0 | 87.7 | 98.1 | 3.1 |
| DAILY MIN | | 8.13 | 1.0 | 7.0 | 1.0 | 0.1 | 0.1 | 0.4 | 115 | 78 | 76 | 7 | 76.0 | -4.9 | 81.6 | 0.7 |
| DAILY MAX | | 11.72 | 39.2 | 121.0 | 88.0 | 6.2 | 1.0 | 11.0 | 190 | 2,657 | 6,697 | 538 | 99.1 | 98.8 | 99.7 | 8.5 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2001

| Year | Month | Tertiary Treatment Effluent TBF Flow mg | DynaSand Flow mg | Ratio to TBF's | Total Flow mg | Backwash Waste mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | JAN | 135.93 | 130.03 | 51% | 265.96 | 22.13 | 1.5 | 20.3 | 1.6 | 1.6 | 104 | 114 | 117 | 83.3 | 83.1 | -410.1 |
| 2001 | FEB | 116.23 | 120.20 | 49% | 236.43 | 20.55 | 1.4 | 22.7 | 2.6 | 1.3 | 96 | 177 | 89 | 85.0 | 81.9 | -355.8 |
| 2001 | MAR | 127.11 | 124.55 | 51% | 251.66 | 18.74 | 1.0 | 22.8 | 1.3 | 1.2 | 68 | 88 | 80 | 84.3 | 87.4 | -493.0 |
| 2001 | APR | 130.21 | 115.50 | 53% | 245.71 | 17.91 | 1.5 | 25.3 | 2.2 | 1.2 | 100 | 149 | 85 | 83.3 | 75.7 | -489.8 |
| 2001 | MAY | 143.35 | 118.60 | 55% | 261.95 | 19.99 | 1.2 | 20.7 | 1.9 | 1.0 | 87 | 134 | 68 | 88.8 | 80.7 | -248.1 |
| 2001 | JUN | 131.19 | 119.01 | 52% | 250.20 | 21.27 | 1.0 | 19.8 | 1.5 | 1.3 | 70 | 106 | 92 | 76.3 | 71.5 | -343.3 |
| 2001 | JUL | 148.32 | 127.73 | 54% | 276.05 | 24.47 | 1.5 | 20.0 | 1.4 | 0.7 | 108 | 106 | 55 | 73.3 | 68.2 | -205.6 |
| 2001 | AUG | 141.73 | 124.30 | 53% | 266.03 | 24.67 | 1.0 | 23.9 | 2.1 | 1.3 | 72 | 149 | 90 | 80.4 | 74.9 | -194.5 |
| 2001 | SEP | 135.40 | 121.80 | 53% | 257.20 | 23.78 | 2.8 | 20.3 | 3.0 | 0.4 | 198 | 217 | 31 | 68.6 | 54.0 | 17.8 |
| 2001 | OCT | 145.87 | 124.10 | 54% | 269.97 | 27.41 | 3.5 | 23.8 | 5.7 | 1.0 | 256 | 415 | 76 | 76.4 | 70.1 | -28.3 |
| 2001 | NOV | 115.26 | 118.80 | 49% | 234.06 | 20.40 | 6.4 | 25.5 | 5.8 | 2.0 | 414 | 378 | 131 | 40.5 | 68.8 | -244.6 |
| 2001 | DEC | 133.81 | 112.45 | 54% | 246.26 | 24.43 | 5.8 | 23.6 | 3.0 | 2.3 | 383 | 202 | 154 | 65.2 | 76.9 | -251.0 |
| TOTAL | | 1,604.41 | 1,457.07 | | 3,061.48 | 265.75 | | | | | | | | | | |
| DAILY AVG | | 4.40 | 3.99 | 52% | 8.39 | 0.73 | 2.4 | 22.4 | 2.7 | 1.3 | 163 | 186 | 89 | 75.5 | 74.4 | -270.5 |
| DAILY MIN | | 1.32 | 1.06 | 18% | 5.31 | 0.00 | 1.0 | 1.0 | 0.1 | 0.1 | 60 | 7 | 6 | -70.2 | -5.9 | -1,651.3 |
| DAILY MAX | | 7.76 | 6.00 | 86% | 10.10 | 1.11 | 10.0 | 45.0 | 14.5 | 6.2 | 677 | 1,098 | 419 | 95.8 | 99.2 | 69.4 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2002

| | | Secondary Treatment Effluent | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Secondary Flow mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | NO2-N mg/l | NO3-N mg/l | Alkalinity mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % | Turbidity 24-hr comp ntu |
| 2002 | JAN | 300.19 | 12.2 | 33.6 | 10.2 | 1.7 | 0.3 | 7.6 | 110 | 988 | 824 | 137 | 91.6 | 91.1 | 94.9 | 3.1 |
| 2002 | FEB | 275.50 | 16.7 | 41.7 | 12.0 | 4.5 | 0.9 | 8.1 | 137 | 1,369 | 981 | 373 | 90.8 | 90.8 | 85.8 | 3.9 |
| 2002 | MAR | 304.57 | 11.9 | 34.0 | 7.7 | 1.6 | 2.9 | 4.5 | 113 | 976 | 630 | 132 | 93.6 | 94.9 | 95.2 | 3.3 |
| 2002 | APR | 300.92 | 8.4 | 31.5 | 14.0 | 0.5 | 0.2 | 8.7 | 105 | 703 | 1,167 | 41 | 95.1 | 88.7 | 98.4 | 4.2 |
| 2002 | MAY | 300.15 | 7.6 | 25.2 | 12.6 | 0.6 | 0.1 | 8.6 | 107 | 611 | 1,017 | 47 | 96.2 | 91.0 | 98.2 | 4.3 |
| 2002 | JUN | 292.34 | 6.7 | 29.5 | 6.1 | 0.9 | 0.1 | 10.0 | 105 | 542 | 495 | 74 | 96.4 | 94.7 | 97.1 | 3.0 |
| 2002 | JUL | 304.33 | 5.9 | 28.8 | 7.1 | 1.1 | 0.2 | 10.0 | 104 | 479 | 584 | 88 | 96.7 | 94.6 | 96.4 | 2.4 |
| 2002 | AUG | 313.54 | 5.9 | 30.8 | 6.3 | 0.9 | 0.1 | 8.6 | 105 | 500 | 533 | 74 | 96.3 | 92.7 | 96.9 | 2.2 |
| 2002 | SEP | 302.18 | 7.7 | 36.2 | 8.9 | 0.4 | 0.1 | 9.2 | 105 | 648 | 745 | 37 | 95.2 | 90.6 | 98.5 | 3.2 |
| 2002 | OCT | 313.74 | 6.9 | 25.6 | 6.4 | 0.3 | 0.2 | 8.8 | 0 | 579 | 544 | 23 | 95.6 | 94.0 | 99.1 | 2.9 |
| 2002 | NOV | 301.57 | 6.3 | 29.5 | 4.6 | 0.3 | 0.1 | 8.8 | 110 | 527 | 390 | 8 | 95.8 | 95.8 | 99.0 | 3.1 |
| 2002 | DEC | 312.87 | 6.9 | 32.4 | 5.5 | 0.6 | 0.2 | 8.8 | 113 | 577 | 462 | 48 | 96.1 | 96.7 | 98.4 | 4.1 |
| TOTAL | | 3,621.88 | | | | | | | | | | | | | | |
| DAILY AVG | | 9.92 | 8.6 | 31.6 | 8.4 | 1.1 | 0.4 | 8.5 | 101 | 708 | 698 | 90 | 94.9 | 93.0 | 96.5 | 3.3 |
| DAILY MIN | | 7.83 | 2.0 | 1.0 | 1.0 | 0.1 | 0.1 | 1.5 | 100 | 170 | 73 | 7 | 79.3 | 47.6 | 72.5 | 1.1 |
| DAILY MAX | | 11.93 | 29.0 | 125.0 | 80.0 | 9.0 | 6.4 | 22.0 | 150 | 2,489 | 5,848 | 830 | 98.9 | 99.6 | 99.7 | 9.6 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2002

| Year | Month | Tertiary Treatment Effluent TBF Flow mg | DynaSand Flow mg | Ratio to TBF's | Total Flow mg | Backwash Waste mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2002 | JAN | 135.15 | 116.25 | 54% | 251.40 | 19.25 | 5.4 | 24.4 | 2.5 | 2.3 | 364 | 167 | 155 | 58.1 | 75.7 | -96.7 |
| 2002 | FEB | 130.08 | 106.65 | 55% | 236.73 | 16.86 | 7.9 | 35.1 | 5.0 | 3.6 | 560 | 352 | 257 | 59.3 | 61.1 | 19.8 |
| 2002 | MAR | 145.42 | 125.60 | 54% | 271.02 | 22.25 | 5.4 | 30.9 | 3.8 | 2.3 | 392 | 274 | 169 | 59.0 | 40.5 | -115.7 |
| 2002 | APR | 139.40 | 133.20 | 51% | 272.60 | 20.06 | 3.6 | 25.3 | 4.9 | 1.4 | 276 | 370 | 105 | 59.4 | 48.3 | -243.2 |
| 2002 | MAY | 100.88 | 100.34 | 50% | 201.22 | 7.00 | 5.5 | 14.9 | 3.7 | 1.6 | 300 | 202 | 89 | 38.0 | 65.3 | -118.5 |
| 2002 | JUN | 88.66 | 103.97 | 46% | 192.63 | 5.86 | 2.4 | 25.1 | 3.6 | 1.9 | 129 | 190 | 100 | 76.5 | 62.3 | -92.7 |
| 2002 | JUL | 112.27 | 92.70 | 55% | 204.97 | 7.34 | 3.4 | 26.0 | 3.8 | 2.0 | 185 | 208 | 110 | 65.6 | 54.0 | -47.8 |
| 2002 | AUG | 124.25 | 95.80 | 56% | 220.05 | 8.52 | 1.9 | 25.1 | 2.6 | 1.8 | 111 | 155 | 104 | 77.9 | 65.1 | -50.5 |
| 2002 | SEP | 117.81 | 89.10 | 57% | 206.91 | 11.64 | 5.9 | 30.0 | 3.9 | 1.2 | 338 | 222 | 72 | 45.1 | 59.7 | -156.1 |
| 2002 | OCT | 115.94 | 101.90 | 53% | 217.84 | 12.31 | 6.8 | 23.2 | 3.0 | 1.3 | 399 | 177 | 74 | 23.2 | 62.5 | -288.5 |
| 2002 | NOV | 108.07 | 100.10 | 52% | 208.17 | 11.91 | 6.0 | 25.8 | 2.3 | 1.3 | 346 | 134 | 76 | 30.1 | 64.2 | -224.1 |
| 2002 | DEC | 114.68 | 103.00 | 53% | 217.68 | 13.44 | 7.3 | 29.7 | 2.3 | 1.9 | 429 | 133 | 111 | 19.8 | 69.8 | -191.7 |
| TOTAL | | 1,432.60 | 1,268.61 | | 2,701.21 | 156.42 | | | | | | | | | | |
| DAILY AVG | | 3.92 | 3.48 | 53% | 7.40 | 0.43 | 5.1 | 26.3 | 3.4 | 1.9 | 319 | 216 | 119 | 51.0 | 60.7 | -133.8 |
| DAILY MIN | | 0.60 | 1.40 | 12% | 5.20 | 0.11 | 1.0 | 1.0 | 0.0 | 0.2 | 43.4 | 5.3 | 10.7 | -100.6 | -273.8 | -868.5 |
| DAILY MAX | | 6.35 | 5.94 | 78% | 10.60 | 1.30 | 13.0 | 128.0 | 22.5 | 7.8 | 884.4 | 1,436.6 | 570.7 | 93.5 | 98.8 | 81.3 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2003

| | | Secondary Treatment Effluent | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Secondary Flow mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | NO2-N mg/l | NO3-N mg/l | Alkalinity mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % | Turbidity 24-hr comp ntu |
| 2003 | JAN | 314.07 | 6.1 | 35.9 | 7.2 | 0.2 | <0.1 | 17.6 | 103 | 514 | 610 | 18 | 96.6 | 95.6 | 99.4 | 3.0 |
| 2003 | FEB | 287.44 | 9.0 | 36.5 | 7.4 | 1.1 | 0.2 | 9.5 | 110 | 769 | 632 | 93 | 94.5 | 93.3 | 96.8 | 3.5 |
| 2003 | MAR | 320.29 | 7.5 | 31.9 | 8.0 | 0.5 | 0.2 | 9.2 | 136 | 644 | 689 | 40 | 96.3 | 94.0 | 98.8 | 2.8 |
| 2003 | APR | 305.69 | 6.6 | 29.7 | 6.3 | 1.0 | 0.3 | 9.7 | 113 | 564 | 533 | 87 | 96.4 | 93.6 | 97.4 | 1.1 |
| 2003 | MAY | 322.60 | 9.8 | 36.8 | 8.2 | 0.8 | 0.3 | 9.5 | 115 | 846 | 714 | 73 | 94.8 | 93.0 | 97.6 | 1.3 |
| 2003 | JUN | 315.00 | 8.1 | 32.5 | 5.8 | 1.3 | 0.3 | 10.4 | 165 | 708 | 511 | 118 | 95.6 | 95.0 | 95.1 | 1.4 |
| 2003 | JUL | 327.74 | 4.8 | 23.9 | 5.7 | 0.6 | 0.2 | 8.1 | 125 | 427 | 503 | 51 | 95.8 | 93.8 | 98.3 | 1.1 |
| 2003 | AUG | 335.87 | 6.4 | 26.1 | 5.9 | 0.5 | 0.1 | 7.2 | 115 | 578 | 537 | 49 | 96.0 | 94.1 | 98.2 | 1.0 |
| 2003 | SEP | 330.86 | 7.4 | 29.5 | 7.3 | 0.4 | 0.1 | 7.9 | 134 | 683 | 672 | 40 | 95.4 | 92.5 | 98.5 | 1.0 |
| 2003 | OCT | 339.41 | 5.9 | 23.2 | 5.3 | 0.5 | 0.2 | 9.4 | 105 | 535 | 485 | 50 | 96.5 | 95.2 | 98.2 | 1.0 |
| 2003 | NOV | 338.84 | 8.4 | 30.2 | 6.3 | 0.6 | 0.1 | 10.7 | 105 | 788 | 590 | 9 | 94.8 | 93.7 | 98.1 | 1.1 |
| 2003 | DEC | 343.59 | 8.2 | 36.7 | 5.7 | 1.0 | 0.2 | 9.9 | 102 | 753 | 526 | 88 | 94.8 | 94.4 | 97.1 | 1.1 |
| TOTAL | | 3,881.40 | | | | | | | | | | | | | | |
| DAILY AVG | | 10.63 | 7.3 | 31.1 | 6.6 | 0.7 | 0.2 | 9.9 | 119 | 651 | 583 | 60 | 95.6 | 94.0 | 97.8 | 1.6 |
| DAILY MIN | | 8.14 | 2.3 | 3.0 | 1.8 | 0.1 | 0.1 | 6.7 | 90 | 202 | 154 | 7 | 90.2 | 71.9 | 84.9 | 0.5 |
| DAILY MAX | | 12.81 | 14.8 | 60.0 | 32.0 | 4.9 | 0.5 | 41.0 | 220 | 1,395 | 2,906 | 453 | 98.5 | 98.9 | 99.8 | 7.5 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2003

| Year | Month | Tertiary Treatment Effluent TBF Flow mg | DynaSand Flow mg | Ratio to TBF's | Total Flow mg | Backwash Waste mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | JAN | 123.35 | 94.90 | 57% | 218.25 | 13.80 | 2.9 | 27.6 | 2.5 | 1.3 | 168 | 144 | 79 | 69.6 | 72.3 | -370.5 |
| 2003 | FEB | 110.38 | 77.60 | 59% | 187.98 | 13.33 | 4.4 | 28.5 | 2.5 | 2.0 | 249 | 141 | 111 | 65.4 | 77.4 | -170.9 |
| 2003 | MAR | 132.69 | 87.10 | 60% | 219.79 | 14.27 | 3.3 | 26.2 | 2.4 | 1.5 | 196 | 143 | 90 | 65.9 | 75.3 | -240.1 |
| 2003 | APR | 125.68 | 80.50 | 61% | 206.18 | 11.77 | 3.7 | 25.1 | 2.2 | 2.2 | 212 | 128 | 129 | 59.7 | 72.5 | -111.3 |
| 2003 | MAY | 121.34 | 86.50 | 58% | 207.84 | 10.04 | 4.1 | 31.8 | 3.0 | 1.8 | 231 | 167 | 101 | 71.8 | 74.9 | -84.2 |
| 2003 | JUN | 127.71 | 72.90 | 64% | 200.61 | 9.02 | 3.9 | 29.3 | 3.8 | 2.3 | 215 | 212 | 127 | 68.8 | 50.7 | -55.0 |
| 2003 | JUL | 141.44 | 76.00 | 65% | 217.44 | 12.16 | 2.4 | 22.0 | 2.6 | 2.2 | 139 | 152 | 130 | 67.4 | 69.2 | -208.7 |
| 2003 | AUG | 142.36 | 79.10 | 64% | 221.46 | 13.17 | 2.8 | 23.3 | 2.1 | 2.5 | 167 | 123 | 151 | 70.6 | 73.8 | -268.5 |
| 2003 | SEP | 135.01 | 74.40 | 64% | 209.41 | 11.92 | 2.2 | 23.3 | 1.8 | 2.1 | 127 | 106 | 122 | 81.4 | 78.6 | -223.2 |
| 2003 | OCT | 125.12 | 74.60 | 63% | 199.72 | 11.01 | 1.2 | 19.7 | 1.8 | 1.8 | 66 | 95 | 99 | 87.5 | 81.3 | -130.4 |
| 2003 | NOV | 131.65 | 77.10 | 63% | 208.75 | 21.69 | 3.1 | 23.6 | 1.5 | 1.5 | 182 | 87 | 85 | 76.7 | 84.7 | -127.6 |
| 2003 | DEC | 125.45 | 78.60 | 61% | 204.05 | 20.67 | 2.9 | 28.3 | 1.5 | 2.1 | 161 | 80 | 115 | 78.2 | 84.7 | -168.7 |
| TOTAL | | 1,542.19 | 959.30 | | 2,501.49 | 162.85 | | | | | | | | | | |
| DAILY AVG | | 4.23 | 2.63 | 62% | 6.85 | 0.45 | 3.1 | 25.7 | 2.3 | 2.0 | 176 | 132 | 112 | 71.9 | 74.6 | -179.9 |
| DAILY MIN | | 2.33 | 0.90 | 34% | 5.43 | 0.18 | 1.0 | 2.0 | 0.5 | 0.5 | 45 | 27 | 30 | -1.8 | -24.8 | -685.5 |
| DAILY MAX | | 8.30 | 4.60 | 88% | 10.64 | 0.99 | 8.9 | 43.0 | 12.1 | 5.6 | 520 | 707 | 283 | 95.5 | 98.1 | 81.9 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2004

| | | Secondary Treatment Effluent | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Secondary Flow mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | NO2-N mg/l | NO3-N mg/l | Alkalinity mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % | Turbidity 24-hr comp ntu |
| 2004 | JAN | 340.11 | 7.7 | 34.9 | 8.2 | 0.4 | 0.2 | 9.5 | 103 | 708 | 753 | 33 | 95.6 | 93.6 | 98.9 | 1.1 |
| 2004 | FEB | 321.34 | 8.6 | 34.6 | 8.4 | 0.6 | 0.2 | 9.8 | 99 | 826 | 802 | 60 | 94.9 | 92.3 | 98.3 | 2.0 |
| 2004 | MAR | 348.48 | 8.4 | 32.6 | 9.4 | 0.5 | 0.2 | 9.3 | 99 | 788 | 880 | 50 | 94.5 | 90.1 | 98.5 | 1.7 |
| 2004 | APR | 331.02 | 6.2 | 33.2 | 7.2 | 0.3 | <0.1 | 10.0 | 92 | 572 | 662 | 30 | 96.1 | 92.5 | 99.1 | 1.1 |
| 2004 | MAY | 342.99 | 6.1 | 30.5 | 6.3 | 0.3 | 0.2 | 9.9 | 102 | 567 | 582 | 32 | 96.2 | 93.2 | 99.0 | 1.3 |
| 2004 | JUN | 339.95 | 6.4 | 30.4 | 8.4 | 0.4 | 0.2 | 9.4 | 113 | 607 | 798 | 33 | 95.7 | 90.5 | 98.9 | 1.5 |
| 2004 | JUL | 348.21 | 5.3 | 31.8 | 5.1 | 0.7 | 0.2 | 9.2 | 110 | 495 | 476 | 66 | 96.7 | 94.8 | 97.9 | 1.1 |
| 2004 | AUG | 360.09 | 5.1 | 29.3 | 6.5 | 0.4 | 0.2 | 9.7 | 106 | 491 | 630 | 39 | 96.6 | 92.8 | 98.7 | 1.0 |
| 2004 | SEP | 353.57 | 5.1 | 24.2 | 6.0 | 0.3 | 0.1 | 10.3 | 103 | 501 | 586 | 31 | 96.7 | 94.1 | 98.9 | 1.0 |
| 2004 | OCT | 369.43 | 5.8 | 27.0 | 6.7 | 0.4 | 0.1 | 10.6 | 108 | 571 | 666 | 36 | 96.0 | 93.8 | 98.8 | 1.1 |
| 2004 | NOV | 349.46 | 7.2 | 30.0 | 7.7 | 1.3 | 0.2 | 10.1 | 105 | 703 | 746 | 10 | 95.1 | 93.2 | 96.7 | 1.4 |
| 2004 | DEC | 367.45 | 9.2 | 32.6 | 8.0 | 0.8 | 0.4 | 10.1 | 102 | 913 | 795 | 81 | 95.0 | 95.3 | 98.1 | 1.2 |
| TOTAL | | 4,172.10 | | | | | | | | | | | | | | |
| DAILY AVG | | 11.40 | 6.8 | 30.9 | 7.3 | 0.5 | 0.2 | 9.8 | 103 | 645 | 698 | 42 | 95.8 | 93.0 | 98.5 | 1.3 |
| DAILY MIN | | 7.66 | 1.0 | 2.0 | 2.5 | 0.1 | 0.1 | 6.5 | 87 | 95 | 248 | 9 | 88.7 | 71.2 | 86.0 | 0.4 |
| DAILY MAX | | 13.80 | 15.7 | 66.0 | 31.8 | 6.7 | 0.6 | 12.0 | 130 | 1,565 | 2,920 | 699 | 99.3 | 99.1 | 99.7 | 5.9 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2004

| | | Tertiary Treatment Effluent | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | TBF Flow mg | DynaSand Flow mg | Ratio to TBF's | Total Flow mg | Backwash Waste mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % |
| 2004 | JAN | 127.68 | 78.40 | 62% | 206.08 | 19.20 | 1.6 | 26.6 | 1.3 | 2.1 | 90 | 73 | 119 | 88.3 | 87.8 | -318.7 |
| 2004 | FEB | 108.03 | 70.40 | 61% | 178.43 | 15.44 | 3.9 | 26.8 | 1.9 | 2.2 | 208 | 99 | 118 | 75.1 | 87.0 | -190.4 |
| 2004 | MAR | 130.43 | 77.80 | 63% | 208.23 | 16.70 | 1.8 | 22.5 | 1.9 | 2.0 | 103 | 106 | 112 | 86.7 | 87.6 | -191.6 |
| 2004 | APR | 127.03 | 71.90 | 64% | 198.93 | 23.05 | 2.6 | 26.0 | 2.0 | 2.1 | 144 | 109 | 114 | 75.1 | 83.9 | -304.5 |
| 2004 | MAY | 121.75 | 71.00 | 63% | 192.75 | 23.74 | 1.0 | 21.8 | 1.2 | 2.4 | 52 | 62 | 125 | 90.6 | 87.3 | -284.3 |
| 2004 | JUN | 122.60 | 86.30 | 59% | 208.90 | 24.36 | 1.6 | 20.6 | 1.3 | 2.2 | 92 | 78 | 126 | 77.8 | 88.6 | -294.6 |
| 2004 | JUL | 129.28 | 80.30 | 62% | 209.58 | 22.49 | 1.0 | 22.9 | 1.9 | 2.0 | 56 | 109 | 111 | 88.5 | 75.8 | -138.8 |
| 2004 | AUG | 121.43 | 90.20 | 57% | 211.63 | 23.19 | 1.0 | 19.9 | 1.3 | 1.7 | 57 | 76 | 98 | 87.9 | 86.0 | -203.4 |
| 2004 | SEP | 120.48 | 86.20 | 58% | 206.68 | 21.90 | 1.0 | 20.1 | 1.4 | 1.9 | 57 | 81 | 110 | 87.7 | 85.9 | -263.2 |
| 2004 | OCT | 118.06 | 92.70 | 56% | 210.76 | 18.36 | 1.3 | 22.0 | 1.6 | 2.2 | 72 | 88 | 127 | 86.8 | 86.0 | -305.2 |
| 2004 | NOV | 116.70 | 89.60 | 57% | 206.30 | 19.94 | 3.2 | 24.3 | 1.9 | 2.4 | 185 | 108 | 138 | 71.5 | 85.1 | -198.5 |
| 2004 | DEC | 117.53 | 89.13 | 57% | 206.66 | 18.24 | 1.8 | 23.9 | 1.9 | 2.5 | 99 | 105 | 141 | 87.7 | 85.8 | -131.8 |
| TOTAL | | 1,461.02 | 983.93 | | 2,444.95 | 246.61 | | | | | | | | | | |
| DAILY AVG | | 3.99 | 2.69 | 60% | 6.68 | 0.67 | 1.8 | 23.1 | 1.6 | 2.1 | 101 | 91 | 120 | 83.6 | 85.6 | -235.4 |
| DAILY MIN | | 0.16 | 0.00 | 6% | 0.28 | 0.05 | 1.0 | 1.0 | 0.1 | 0.3 | 27 | 7 | 16 | 10.4 | -44.2 | -636.1 |
| DAILY MAX | | 6.42 | 4.10 | 100% | 8.79 | 1.08 | 9.2 | 45.0 | 20.4 | 5.1 | 533 | 1,066 | 298 | 96.5 | 98.8 | 87.9 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2005

| | | Secondary Treatment Effluent | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | Secondary Flow mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | NO2-N mg/l | NO3-N mg/l | Alkalinity mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % | Turbidity 24-hr comp ntu |
| 2005 | JAN | 393.34 | 11.7 | 39.4 | 13.7 | 1.5 | 0.4 | 9.1 | 103 | 1,240 | 1,446 | 163 | 93.1 | 91.6 | 95.1 | 1.4 |
| 2005 | FEB | 350.00 | 11.0 | 41.7 | 11.7 | 1.6 | 0.3 | 10.7 | 98 | 1,149 | 1,215 | 165 | 94.0 | 91.6 | 96.6 | 1.9 |
| 2005 | MAR | 386.86 | 11.7 | 41.6 | 15.9 | 1.5 | 0.3 | 12.1 | 104 | 1,219 | 1,650 | 156 | 93.7 | 87.6 | 97.0 | 2.1 |
| 2005 | APR | 382.94 | 16.7 | 51.3 | 18.1 | 0.7 | 0.2 | 10.2 | 113 | 1,781 | 1,930 | 75 | 91.3 | 86.3 | 97.9 | 0.0 |
| 2005 | MAY | 399.32 | 9.1 | 32.9 | 9.8 | 1.4 | 0.4 | 8.4 | 112 | 979 | 1,052 | 155 | 95.1 | 93.0 | 96.4 | 2.1 |
| 2005 | JUN | 371.56 | 6.5 | 32.0 | 8.8 | 0.4 | 0.2 | 9.0 | 105 | 675 | 905 | 45 | 96.8 | 93.7 | 98.9 | 1.8 |
| 2005 | JUL | 385.34 | 5.8 | 31.3 | 7.4 | 0.5 | 0.2 | 7.8 | 110 | 605 | 766 | 51 | 96.7 | 93.7 | 98.6 | 2.1 |
| 2005 | AUG | 397.72 | 5.8 | 32.0 | 8.0 | 0.6 | 0.2 | 7.3 | 116 | 621 | 857 | 65 | 96.4 | 93.3 | 98.0 | 2.6 |
| 2005 | SEP | 374.47 | 9.2 | 37.8 | 9.6 | 0.6 | 0.3 | 7.5 | 118 | 958 | 1,000 | 67 | 96.1 | 93.1 | 98.2 | 1.9 |
| 2005 | OCT | 388.34 | 8.2 | 35.5 | 7.3 | 0.6 | 0.8 | 7.9 | 112 | 857 | 766 | 60 | 96.4 | 94.4 | 98.4 | 1.8 |
| 2005 | NOV | 378.50 | 12.4 | 42.7 | 15.5 | 0.9 | 1.0 | 6.2 | 120 | 1,301 | 1,632 | 11 | 94.7 | 87.6 | 97.8 | 3.5 |
| 2005 | DEC | 388.01 | 11.1 | 46.2 | 19.2 | 1.2 | 0.3 | 7.3 | 105 | 1,160 | 2,000 | 123 | 95.2 | 84.8 | 97.6 | 1.3 |
| TOTAL | | 4,596.41 | | | | | | | | | | | | | | |
| DAILY AVG | | 12.59 | 9.9 | 38.7 | 12.1 | 1.0 | 0.4 | 8.6 | 110 | 1,045 | 1,268 | 95 | 95.0 | 90.9 | 97.5 | 1.9 |
| DAILY MIN | | 10.76 | 2.8 | 4.0 | 2.8 | 0.1 | 0.1 | 4.0 | 88 | 293 | 283 | 11 | 69.5 | 45.3 | 87.2 | 0.7 |
| DAILY MAX | | 20.40 | 60.3 | 120.0 | 64.5 | 8.2 | 1.6 | 15.0 | 130 | 6,529 | 6,854 | 1,021 | 98.5 | 98.2 | 99.8 | 12.6 |

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Annual Treatment Process & Discharge Monitoring Report
2005

| | | Tertiary Treatment Effluent | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Month | TBF Flow mg | DynaSand Flow mg | Ratio to TBF's | Total Flow mg | Backwash Waste mg | BOD mg/l | COD mg/l | TSS mg/l | NH3-N mg/l | BOD lbs/day | TSS lbs/day | NH3-N lbs/day | BOD Removal % | TSS Removal % | NH3-N Removal % |
| 2005 | JAN | 109.48 | 99.00 | 53% | 208.48 | 17.30 | 4.1 | 23.9 | 1.8 | 3.1 | 230 | 101 | 172 | 79.6 | 91.2 | -38.7 |
| 2005 | FEB | 103.27 | 84.00 | 55% | 187.27 | 10.90 | 5.3 | 32.4 | 2.6 | 3.4 | 298 | 143 | 189 | 73.4 | 87.5 | -97.8 |
| 2005 | MAR | 121.07 | 110.00 | 52% | 231.07 | 15.06 | 2.5 | 30.1 | 2.9 | 3.0 | 158 | 179 | 186 | 85.7 | 88.0 | -91.2 |
| 2005 | APR | 122.22 | 154.64 | 44% | 276.86 | 23.22 | 4.4 | 37.1 | 5.9 | 2.0 | 341 | 454 | 154 | 68.9 | 66.9 | -133.6 |
| 2005 | MAY | 125.41 | 217.50 | 37% | 342.91 | 26.60 | 4.7 | 26.4 | 4.1 | 2.3 | 430 | 374 | 212 | 57.2 | 63.0 | -97.3 |
| 2005 | JUN | 103.50 | 205.10 | 34% | 308.60 | 12.03 | 3.2 | 27.7 | 3.0 | 1.3 | 278 | 261 | 115 | 57.2 | 64.5 | -215.3 |
| 2005 | JUL | 131.85 | 211.00 | 38% | 342.85 | 15.07 | 2.4 | 26.0 | 3.1 | 1.3 | 220 | 287 | 120 | 64.5 | 60.9 | -163.5 |
| 2005 | AUG | 122.70 | 183.60 | 40% | 306.30 | 17.11 | 1.8 | 27.7 | 3.1 | 1.6 | 151 | 257 | 130 | 73.9 | 63.2 | -129.4 |
| 2005 | SEP | 98.60 | 150.45 | 40% | 249.05 | 9.90 | 4.0 | 28.1 | 3.1 | 1.8 | 279 | 218 | 124 | 64.6 | 75.3 | -93.8 |
| 2005 | OCT | 90.93 | 155.30 | 37% | 246.23 | 9.60 | 2.1 | 26.5 | 2.5 | 1.6 | 140 | 162 | 106 | 82.5 | 76.9 | -87.5 |
| 2005 | NOV | 69.36 | 154.90 | 31% | 224.26 | 9.38 | 2.4 | 27.0 | 3.3 | 2.2 | 150 | 208 | 139 | 89.1 | 86.3 | -97.7 |
| 2005 | DEC | 119.61 | 104.67 | 53% | 224.28 | 6.39 | 1.3 | 26.7 | 3.6 | 2.9 | 79 | 216 | 173 | 92.9 | 88.2 | -84.3 |
| TOTAL | | 1,318.00 | 1,830.16 | | 3,148.16 | 172.55 | | | | | | | | | | |
| DAILY AVG | | 3.61 | 5.01 | 43% | 8.63 | 0.47 | 3.2 | 28.3 | 3.2 | 2.2 | 229 | 238 | 152 | 74.1 | 76.0 | -110.9 |
| DAILY MIN | | 0.00 | 0.00 | 0% | 3.68 | 0.01 | 1.0 | 1.0 | 0.5 | 0.6 | 31 | 44 | 37 | 7.0 | -36.4 | -659.1 |
| DAILY MAX | | 6.83 | 7.50 | 100% | 12.62 | 1.14 | 8.6 | 53.0 | 9.0 | 15.9 | 808 | 820 | 965 | 99.1 | 96.7 | 51.6 |

VVWD

1. Historical groundwater production records for 2000 - 2006 on a monthly basis with ramp-down and replacement water information; Please include the amount of Base Annual Production and a breakdown of the amount of water produced as Free Production Allowance and amount of replacement water (water produced in excess of Free Production Allowance) for each year.
2. Historical customer (or service connections) records for 2000-2006 defining how many customers VVWD served annually between 2000 and 2006
3. Approximate percentages of indoor vs. outdoor water use by VVWD customers;

| VVWD Production Data | 1999-2000 | 2000-01 | 2001 -02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 |
|---|---|---|---|---|---|---|---|---|
| Free Production Allowance | 24,127 | 21,563 | 21,079 | 17,405 | 12,823 | 11,907 | 11,946 | 11,946 |
| Total Pumped | 17,219 | 16,355 | 17,413 | 17,921 | 19,785 | 19,629 | 22,147 | 22,396 |
| Surplus Carried Forward/(Replacement Water) | 6,908 | 5,208 | 3,666 | (516) | (6,962) | (7,722) | (10,201) | (10,450) |

**Note: Dates reflects MWA Fiscal Year (October 1**

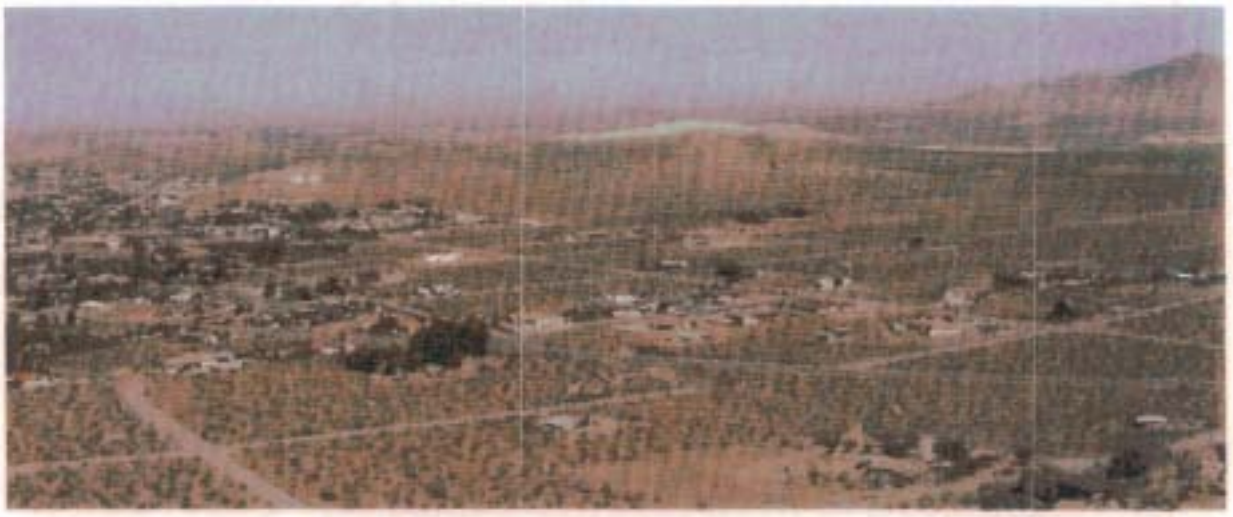
Item 3: Based on a response from VVWD's Conservation Department, the percentage of indoor vs. outdoor water use by VVWD customers is approximately 50%.

| VVWD | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|
| **Customer Connections** | 16,042 | 16,856 | 17,523 | 18,842 | 20,885 | 22,257 | 24,672 |
| | | | | | | | |
| | *2004-2006 Received From Donna Martin, Customer Service Supervisor* | | | | | | |
| | *2000-2003 Received From Steve Borrowman, Finance Manager* | | | | | | |

Apple Valley

1. Apple Valley Ranchos Water Company Urban Water Management Plan dated November 2005;
2. Apple Valley Water Conservation Plan (Ordinance);
3. Apple Valley Ranchos Water Company historical water production reports for 2000 - 2006;
4. Historical customer (or service connections) records for 2000 - 2006;

APPLE VALLEY RANCHOS
WATER COMPANY



YEAR 2005

# URBAN WATER MANAGEMENT PLAN

NOVEMBER 2005

# 2005 Urban Water Management Plan

## Contact Sheet

Date plan will be submitted to the Department of Water Resources: December 2005

Water Agency:

Apple Valley Ranchos Water Company
21760 Ottawa Road
Apple Valley, CA 92307

Name of persons preparing this plan: Lilburn Corporation - Cheryl Tubbs, Principal and Parul Agarwala, Planner, under direction of Scott Weldy, AVR Assistant General Manager

Phone: (760) 247-6484

Fax: (760) 247-0325

E-mail address: scott@avrwater.com

The Water supplier is an: Investor Owned Utility

The Water supplier is a: Retailer

Utility services provided by the water supplier include: Potable Water and Irrigation Water

Is This Agency a Bureau of Reclamation Contractor? No

Is This Agency a State Water Project Contractor? No

# Table of Contents


1.0 PUBLIC PARTICIPATION ..... 1
- 1.1 Public Involvement ..... 2
- 1.2 Agency Coordination ..... 2
- 1.3 Plan Adoption ..... 3

2.0 SUPPLIER SERVICE AREA ..... 4
- 2.1 Climate ..... 4
- 2.2 History, Service Area, and Demographics ..... 5
- 2.3 Past Drought, Water Demand, and Conservation Information ..... 6

3.0 WATER SOURCES (SUPPLY) ..... 11
- 3.1 Water Supply Sources ..... 11
- 3.2 Recycled Water ..... 15

4.0 RELIABILITY PLANNING ..... 17
- 4.1 Reliability ..... 17
- 4.2 Frequency and Magnitude of Supply Deficiencies ..... 18
- 4.3 Plans to Assure a Reliable Water Supply ..... 19
- 4.4 Reliability Comparison ..... 19
- 4.5 Three Year Minimum Water Supply ..... 19
- 4.6 Transfer or Exchange Opportunities ..... 20

5.0 WATER USE PROVISIONS ..... 21
- 5.1 Past, Current and Projected Water Use ..... 21
- 5.2 Residential Sector ..... 21
- 5.3 Commercial Sector ..... 22
- 5.4 Industrial Sector ..... 22
- 5.5 Institutional/Government ..... 22
- 5.6 Landscape and Other ..... 22

6.0 SUPPLY AND DEMAND COMPARISON PROVISIONS ..... 24
- 6.1 Supply and Demand Comparison ..... 24

7.0 WATER DEMAND MANAGEMENT MEASURES ..... 30

8.0 WATER SHORTAGE CONTINGENCY PLAN ..... 42
- 8.1 Apple Valley Ranchos Adopted Contingency Plan ..... 42
- 8.2 Revenue and Expenditure Impacts and Measures to Overcome Impacts ..... 45

# Appendix

APPENDIX A Notice of Public Hearing
APPENDIX B Notification
APPENDIX C Town of Apple Valley's Water Conservation Plan
APPENDIX D Demand Management Measures (DMMs) Proformas
APPENDIX E Water Wasting and Water Conservation Rules from the California Public Utilities Commission

# List of Tables

Table 1: Coordination and Public Involvement ..... 3
Table 2: Climate ..... 5
Table 3: Population - Current and Projected ..... 6
Table 4: Rainfall Apple Valley Airport Station ..... 10
Table 5: Apple Valley Ranchos Water Company Well & Well Pump Data As Of 7/31/05 ..... 13
Table 6: AVR System Production 1999-2005 ..... 14
Table 7: Current And Planned Water Supplies - AFY ..... 15
Table 8: Jess Ranch Irrigation Production ..... 16
Table 9: Supply Reliability - AF Year ..... 19
Table 10: AVR Water Supply and Demand During Multiple Dry Water Years (In AFY) ..... 20
Table 11: Past, Current and Projected Water Deliveries (AFY) ..... 22
Table 12: Additional Water Uses And Losses - AF Year ..... 23
Table 13: Total Water Use - AF Year ..... 23
Table 14: Projected Normal Water Supply - AF Year ..... 24
Table 15: Projected Normal Water Demand (Incl. Losses) - AF Year ..... 24
Table 16: Projected Supply and Demand Comparison - AF Year ..... 25
Table 17: Projected Single Dry Year Water Supply - AF Year ..... 25
Table 18: Projected Single Dry Year Water Demand - AF Year ..... 25
Table 19: Projected Single Dry Year Supply And Demand Comparison - AF Year ..... 25
Table 20: Projected Supply During Multiple Dry Year Period Ending In 2010 - AF Year ..... 26
Table 21: Projected Demand - Multiple Dry Year Period Ending In 2010 - AFY ..... 26
Table 22: Projected Supply and Demand Comparison During Multiple Dry Year Period Ending In 2010-AF Year ..... 26
Table 23: Projected Supply During Multiple Dry Year Period Ending In 2015 – AF Year ..... 27
Table 24: Projected Demand Multiple Dry Year Period Ending In 2015 – AFY ..... 27
Table 25:Projected Supply and Demand Comparison During Multiple Dry Year Period Ending In 2015-AF Year ..... 27
Table 26: Projected Supply During Multiple Dry Year Period Ending In 2020 – AF Year ..... 27
Table 27: Projected Demand Multiple Dry Year Period Ending In 2020 - AFY ..... 27
Table 28: Projected Supply and Demand Comparison During Multiple Dry Year Period Ending In 2020-AF Year ..... 28
Table 29: Projected Supply During Multiple Dry Year Period Ending In 2025 – AF Year ..... 28
Table 30: Projected Demand Multiple Dry Year Period Ending In 2025 - AFY ..... 28
Table 31: Projected Supply and Demand Comparison During Multiple Dry Year Period Ending In 2025-AF Year ..... 29
Table 32: Best Management Practices Cost Benefit Analysis ..... 40

# List of Tables

Table 33: Water Supply Shortage Stages ..... 43
Table 34: AVR Revenue and Expenses ..... 47

# List of Figures

Figure 1: Apple Valley Ranchos Water Company Service Area ..... 7
Figure 2: Pressure Zones ..... 12

# Section 1

# Public Participation

## Law

> **10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan. Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection and shall hold a public hearing thereon. Prior to the hearing, notice of the time and place of hearing shall be published ... After the hearing, the plan shall be adopted as prepared or as modified after the hearing.**

This Urban Water Management Plan (Plan) has been prepared in response to Water Code Sections 10610 through 10656 of the Urban Water Management Planning Act (Act), which were added by Statute 1983, Chapter 1009, and became effective on January 1, 1984. This Act requires that "every urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually prepare and adopt, in accordance with prescribed requirements, an urban water management plan." The Plan describes and evaluates water uses and supplies, conservation practices, and reclamation activities within the service area of Apple Valley Ranchos Water Company (AVR) over the next 20 years until 2025.

This Plan must be filed with the California Department of Water Resources (DWR) by December 31, 2005, and be updated every five years. This report follows the guidance materials provided by DWR to assist in preparation of urban water management plans. This document is divided into eight sections. This first section addresses the public participation effort undertaken during plan preparation. The second section describes Apple Valley Ranchos Water Company's regional and geographic setting, climate, demographic information and the historic trends of water demand and conservation efforts. The third section discusses the sources of water supply available currently and through the year 2025. The reliability of water supply during historic drought conditions and available arrangements for water transfer-exchange if such a situation may arise in future is discussed in Section 4. Section 5 describes the past, current and projected water use by different sectors. Supply and Demand comparison is discussed in detail in Section 6. Section 7 summarizes the Demand Management Measures including the analysis of

the Best Management Practices, and the cost-benefit study for implementing those practices. The final section describes AVR's water shortage contingency plan.

## 1.1 Public Involvement

Apple Valley Ranchos Water Company (AVR) has encouraged community participation in its urban water management planning efforts since the first plan was developed in 1985. Notice of a public meeting, held October 18, 2005, was posted in the AVR's lobby where customers pay their bills, at the Mojave Water Agency's office, at the Town of Apple Valley's facilities, and at the San Bernardino County library branch in Apple Valley (Newton T. Bass Apple Valley Branch). A copy of the public notice is included in Appendix A. Copies of the Plan are available at AVR and were distributed to the agencies listed in the next section.

## 1.2 Agency Coordination

### Law

> 10620 (d) (2). Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

Apple Valley Ranchos is one of several water suppliers providing domestic water supply to residents of the Town of Apple Valley. AVR is within the service area of the Mojave Water Agency, a state contractor for State Project Water and Watermaster for the Mojave Groundwater Basin. On August 5, 2005, AVR sent letters (see Appendix B) to the agencies listed below informing them of the 2005 update to AVR's UWMP.

- Mojave Water Agency
- Town of Apple Valley
- Victor Valley Wastewater Reclamation Authority
- Apple Valley Fire Protection District
- Rancheritos Mutual Water Company
- Juniper Riviera County Water District
- Navajo Mutual Water Company
- Mariana Ranchos County Water District
- Thunderbird County Water District

- Apple Valley Heights County Water District
- San Bernardino County Special Districts Department

Table 1 summarizes the efforts of AVR to include agencies, customers, and the general public in the preparation of this plan.

Table 1
Coordination and Public Involvement

| Entities | Coordination and Public Involvement Actions | | | | | |
|---|---|---|---|---|---|---|
| | Helped write the plan | Was contacted for assistance | Was sent a copy of the draft | Commented on the draft | Attended public meetings | Was sent a notice of intention to adopt |
| Wholesaler | | ✓ | ✓ | | | ✓ |
| Retailers | | ✓ | | | | |
| Wastewater Agency | | ✓ | ✓ | | | ✓ |
| General Public | | | | | | ✓ |
| Public Library | | | | | | ✓ |

## 1.3 Plan Adoption

The Urban Water Management Planning Act requires that the UWMP be made available to the public for review and that a public hearing be held before adopting the Plan. Apple Valley Ranchos Water Company's Board of Directors set a public hearing and noticed the date in the local newspaper. The plan was adopted following the public hearing at which no public comments were received, at a regular Board meeting held on November 28, 2005. This Urban Water Management Plan was submitted to the California Department of Water Resources by the deadline of December 31, 2005.

# Section 2

# Supplier Service Area

**Law**

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

10631(a). Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

## 2.1 Climate

The High Desert is in a modified Mediterranean climate zone. Mediterranean climates are distinguished by hot dry summers and mild winters with moderate rainfall. In the Mojave Desert, this is modified by the San Gabriel and San Bernardino Mountains forming barriers to precipitation. The rain shadow causes the aridity of the High Desert climate, while leaving the summers hot and the winters generally mild. Apple Valley is at an average elevation of 3,000 feet in the high desert. This region experiences many days of sunshine and an average rainfall of 5.58 inches. The temperature data derived from the Western Regional Climatic Center reflect summer highs ranging from 80 Fahrenheit to 97.9 Fahrenheit and average winter lows between 29.8 degrees Fahrenheit and 33.6 degrees Fahrenheit. The annual average maximum temperature recorded between 1948 and 2005 is 77.3 degrees Fahrenheit while the annual average minimum temperature is 44.4 degrees Fahrenheit. The month of July records the highest maximum monthly temperatures, averaging 97.9 degrees Fahrenheit from 1948 to 2005. December shows the lowest minimum monthly temperature, averaging 30.4 degrees Fahrenheit. Table 2 gives the summary of average evapo-transpiration rates, rainfall and temperature for the region as measured at the Victorville Station managed by the Western Regional Climate Center. The Victorville weather stations are nearest to Apple Valley where a significant historic climatological database occurs.

| Table 2 Climate | | | | | | |
|---|---|---|---|---|---|---|
| | January | February | March | April | May | June |
| Standard Average ETo | 1.55 | 2.24 | 3.72 | 5.1 | 6.82 | 7.8 |
| Average Rainfall | 1.02 | 1.04 | 0.83 | 0.34 | 0.15 | 0.05 |
| Average Max. Temperature | 58.5 | 62.2 | 66.8 | 73.7 | 81.9 | 91.4 |
| Average Min. Temperature | 30.4 | 33.6 | 37.1 | 41.7 | 48.1 | 54.6 |

| Table 2 Climate (continued) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | July | August | Sep. | Oct. | Nov. | Dec. | Annual |
| Average ETo | 8.68 | 7.75 | 5.7 | 4.03 | 2.1 | 1.55 | 57.04 |
| Average Rainfall | 0.15 | 0.19 | 0.28 | 0.3 | 0.51 | 0.73 | 5.58 |
| Average Max. Temperature | 97.9 | 97.1 | 91.2 | 80.6 | 67.4 | 59.2 | 77.3 |
| Average Min. Temperature | 61.2 | 60.4 | 54.8 | 45.0 | 35.5 | 29.8 | 44.4 |

*Source: NOAA webpage-www.wrcc.dri.edu/CLIMATEDATA.html (1927-2004)*
*CIMIC webpage: wwwcimis.water.ca.gov/cimis/welcome.jsp*

The average annual rainfall as recorded at the Victorville Station between 1948 and 2005 is 5.58 inches. The summer and winter rainfall averages are 0.39 inches and 2.78 inches respectively. Historically, the month of February has recorded maximum rainfall at 1.04 inches.

Although the High Desert is 80 miles from the ocean, the sea breeze is a dominant weather feature. The sea breeze is caused by differential heating of land and water. Land heats faster than the ocean, and because hot air rises, air warmed over land during the day rises, and cooler denser air from the ocean moves in to replace it. Normally limited to within a few miles of a coastline, the extreme differences in temperature between the desert and the Pacific Ocean make the sea breeze a regional phenomenon in southern California. The combination of extreme temperature differences and physical restraint on the air movements means there is a consistent source for strong wind blowing through Cajon Pass and across the Victor Valley.

The wind records for the Southern California Logistics Airport in Victorville, show that southerly winds average 10 mph compared with an overall wind average of 8.2 mph. Approximately 51 percent of the time, the winds had a southerly component, showing the influence of the sea breeze through Cajon Pass. The winter storms, however, bring the region strong westerly or northerly winds.

## 2.2 History, Service Area, and Demographics

Apple Valley Ranchos Water Company (AVR) is an investor-owned utility that provides domestic water service to customers in the Town of Apple Valley and an unincorporated area in San Bernardino County,

adjacent to the City of Victorville. A few (less than 50) customers are within the City of Victorville. AVR was created in 1947 by Apple Valley Ranchos Development Company. Over the years, ownership changed a few times and in 1987 the company was purchased by Park Water Company (PWC). Park Water Company, incorporated in the State of California in 1937, is currently the parent company of AVR.

The current AVR service area covers approximately 43 square miles encompassing the vast majority of the Town of Apple Valley and portions of the surrounding area (see Figure 1). Approximately 81 percent of the Town's population is served by AVR; the remainder is served by other public and private water providers.

The Town of Apple Valley is located in the High Desert region of San Bernardino County and is bordered by Victorville and Hesperia on the west. San Bernardino County has experienced continuous population growth, especially since 1970, with a five to six percent growth rate through the 1970's, 1980's, and 1990's. The High Desert and West Valley regions of the County have experienced the highest growth rates. During the 1980s, the High Desert communities along the I-15 corridor experienced dramatic growth with Hesperia increasing its population by 272 percent and Victorville by 177 percent. During the same period, the County as a whole grew by 59 percent. The recession of the 1990's slowed growth in the High Desert region to approximately two percent per year; in the year 2000, Southern California Associated Governments (SCAG) projections for future annual growth rates were in the two to three percent range.

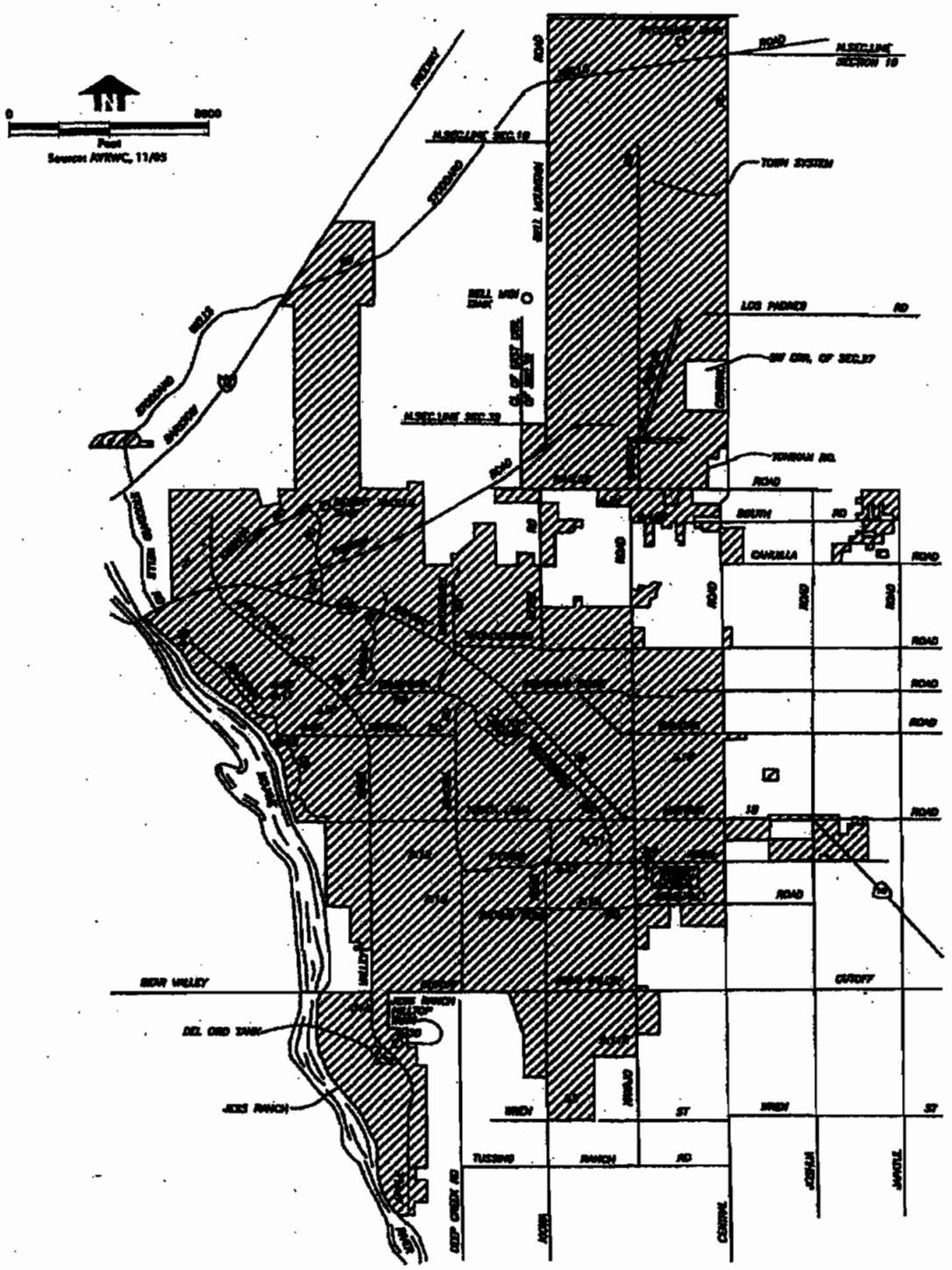
The Town of Apple Valley has seen a steady growth in population from 51,065 persons in 2000 to 62,294 persons in 2005, which is approximately four percent per year. With a projected growth of approximately 18 percent each five-year period between 2005 and 2030, the total population of the Town of Apple Valley would be 143,777 persons. This is the build-out population presently estimated by the Town, based on their General Plan, and included in their 2005 Fee Schedule. Based on the assumptions discussed above, the total customers of the AVR would be approximately 98,435 persons by 2025 (see Table 3) and would reach build-out sometime between 2025 and 2030.

Table 3
Population - Current and Projected

| AVR | 2005 | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|---|
| **Service Area Population** | 50,415 | 59,595 | 70,446 | 83,273 | 98,435 |

## 2.3 Past Drought, Water Demand, and Conservation Information

The region's major water supply is groundwater from the Mojave Basin. Continuous and high growth rates in the Mojave River Basin during the 1950's and 1960's, and again in the 1980's caused water demands to exceed local water supplies. The resulting imbalance in supply and demand led to an overdraft of the




LEGEND

- Tank
- Well
- Service Area (42.5 Square Miles)

# Service Area

Apple Valley Ranchos Water Company
Apple Valley, California

**Figure 1**

groundwater basin. The lowering of the groundwater table led to an adjudication process. The purpose of the resulting stipulated judgment is to: 1) create incentives to conserve local water, 2) guarantee that downstream producers will not be adversely affected by upstream producers, and 3) assess producers to obtain funding for the purchase of imported water.

The Mojave Water Agency (MWA) serves as the Watermaster for the Adjudication and is also a State Water Project Contractor. MWA's service area, which includes AVR, is divided into two major surface water drainage areas:

1. The Mojave River Area that drains into the Mojave River or local terminal dry lakes.
2. The Morongo Basin/Johnson Valley Area that drains into the Colorado River drainage or local terminal dry lakes.

The Mojave River is the main surface water drainage feature within the MWA service area. The surface water drainage of the Mojave River covers an area of 3,800 square miles. It is fed by rainfall and snow pack from the San Bernardino Mountains. The river is formed by the confluence of two smaller streams descending from the mountains at a place called The Forks. The Mojave River is perennial only along a short section downstream of the Forks, in the vicinity of Upper and Lower Narrows and Afton Canyon, and in the section immediately downstream of the Victor Valley Wastewater Reclamation Authority's treatment plant, about 4 miles downstream of the Lower Narrows. The Mojave River Groundwater basin encompasses a total area of 1,400 square miles and has an estimated total water storage capacity of nearly 5 million acre-feet. As this is a closed basin, very little groundwater enters or exits the basin. The groundwater recharge is primarily through infiltration of water from the Mojave River, storm water run-off from the mountains, and manmade recharge from irrigation, wastewater, fish hatcheries, and imported water.

For management purposes, the Mojave River watershed and associated groundwater basins are divided into five subareas (Oeste, Este, Alto, Centro, and Baja). AVR overlies the Alto subarea, which is the southern portion of the Mojave Basin Area. The Alto, Centro and Baja subareas contain two interconnected aquifers referred to as the Floodplain Aquifer and the Regional Aquifer. The Floodplain Aquifer is located along the path of the Mojave River and is directly recharged by the river. The Regional Aquifer underlies and surrounds the Floodplain Aquifer, encompassing the remainder of the Mojave River Groundwater Basin. Prior to development in the area, groundwater flowed primarily from the Regional Aquifer to the Floodplain Aquifer. However, the groundwater flows have reversed in recent years, and the groundwater flow from the Floodplain Aquifer is currently the primary recharge component for the Regional Aquifer. The Regional Aquifer is also recharged to a lesser degree by deep percolation of precipitation and storm runoff from ungaged tributaries.

During the earlier decades when groundwater levels subsided, leading to the Adjudication, the Alto subarea experienced a groundwater level decline from an elevation of 2,815 feet in 1960 to approximately 2,755 feet in 1995. Similar data records for the Flood Plain aquifer in the Alto subarea indicate that the groundwater levels fell by approximately 40 feet between the years 1955 to 1995. Presently, overdraft conditions exist in almost all of the basins within the MWA.

The average annual net water supply for the Mojave Basin Area and subareas is estimated in Mojave Water Agency's 2004 Regional Water Management Plan (adopted February 2005). The volume of water available to meet water supply needs averages 63,400 acre-feet (for the period 1931 – 2001). The Alto Subarea has the largest water supply, primarily due to its proximity to the headwaters of the Mojave River. The data presented in the Plan reflect average value and do not take into account annual variations in water supply. The gross water supply available to the Alto Subarea is 82,400 acre feet, with outflows and losses calculated at 47,700 acre-feet. The estimates provided for recent years are higher than the period ending 1990, attributed to above-average streamflow and increased wastewater imports since 1990. Inflows to the basin were 660 percent of the 1931-90 average. The water years 1992-93 and 1997-98 were also substantially wetter than average. Generally, the previous 35 years have been considerably wetter than average when compared to the 1931 – 90 period, illustrating the extreme variation in water supply (source: *Mojave Water Agency 2004 Regional Water Management Plan).*

Total rainfall, measured at the Apple Valley Airport over the past fifteen years has been 3.9 inches, as shown in Table 4. This shows rainfall amounts lower than the historic (57-year) Victorville station average of 5.58 inches. However a fifty-plus year record could not be located for Apple Valley and therefore the Victorville data is assumed sufficiently representative for purposes of this plan.

Table 4
Rainfall Apple Valley Airport Station

| Water Year (Oct-Sep) | Rainfall in Inches |
|---|---|
| 1989-90 | 2.62 |
| 1990-91 | 4.57 |
| 1991-92 | 6.44 |
| 1992-93 | 10.27 |
| 1993-94 | 2.12 |
| 1994-95 | 4.71 |
| 1995-96 | 2.00 |
| 1996-97 | 2.56 |
| 1997-98 | 8.75 |
| 1998-99 | 1.80 |
| 1999-00 | 0.96 |
| 2000-01 | 3.48 |
| 2001-02 | 1.18 |
| 2002-03 | 4.78 |
| 2003-04 | 2.60 |

AVR has met customer demands during drought and wet periods by groundwater production, purchases of replacement water above its free production allowance from MWA, leases of groundwater pumping rights from unused agricultural production, purchase of additional water rights, and water conservation awareness programs.

# Section 3

# Water Sources

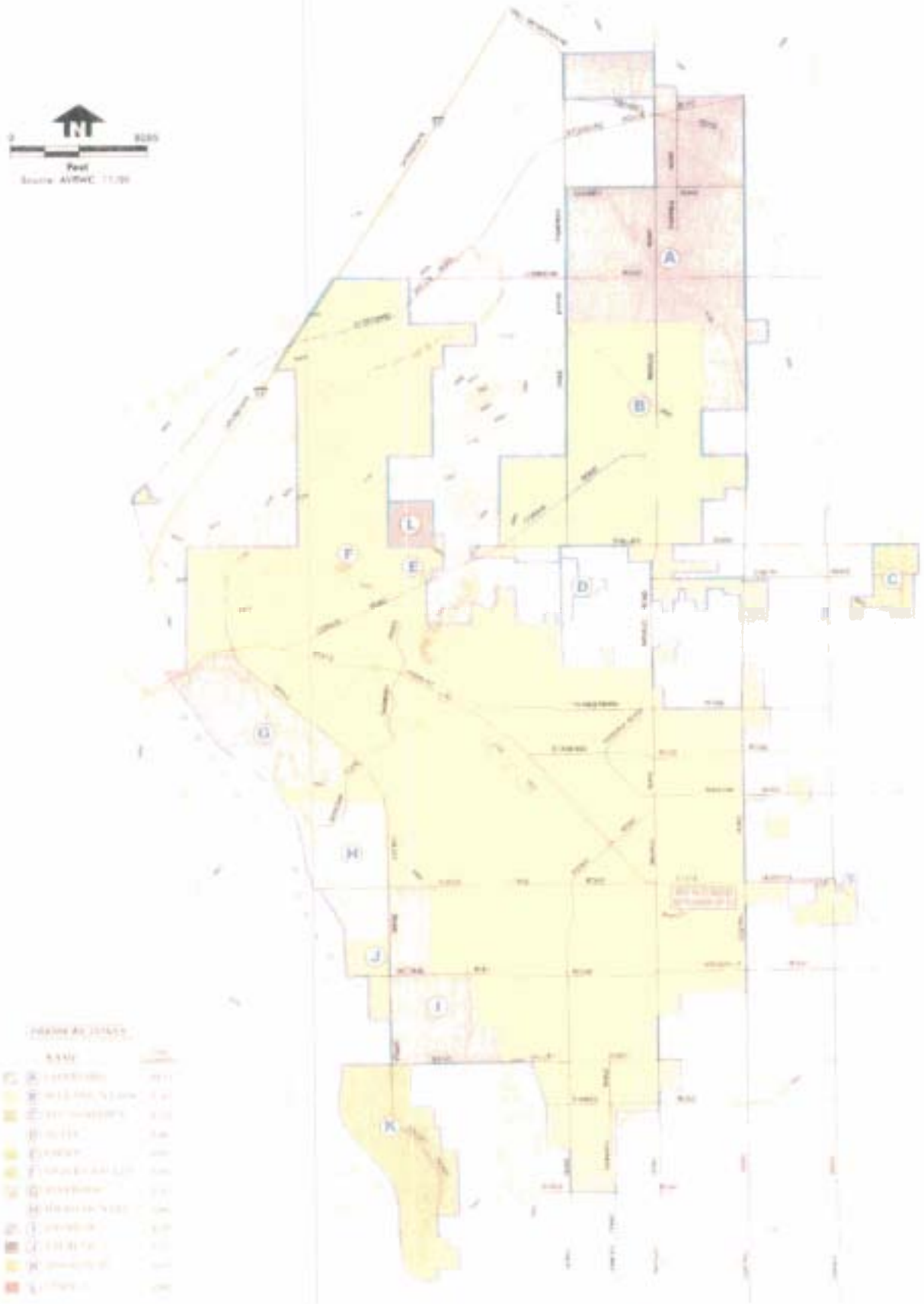
**Law**

> **10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:**
>
> **10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments [to 20 years or as far as data is available.]**

## 3.1 Water Supply Sources

AVR provides domestic water from 22 wells within its service area in Apple Valley. The present capacity of these wells totals approximately 31.7 million gallons per day (see Table 5). All wells are located in the Mojave Ground Water Basin. The Mojave River runs along the western edge of the service area. This river, which is dry much of the year, is actually the center of a huge source of groundwater flowing north from the San Bernardino Mountains. Water is recharged to the basin through percolation and sub-surface flow from adjoining basins. This groundwater is the only source of supply for the AVR system.

The AVR water system facilities also include approximately 350 miles of pipeline and 8.6 million gallons(MG) of storage. Because of varying elevations, the water system is segregated into 12 interconnected pressure zones in order to maintain appropriate pressures (see Figure 2). The majority of the wells pump directly into the portion of the distribution system referred to as the Main Pressure Zone. This zone is equipped with elevated storage that is capable of supplying the entire system by gravity flow. AVR also has a small, isolated system north of Victorville, with 49 customers that are served by one well equipped with automatic backup power. This system also has an emergency interconnect with Victor Valley Water District.




## Pressure Zones

Apple Valley Ranchos Water Company
Apple Valley, California

**Figure 2**

Based on the production capacity of the existing wells, the maximum water that can be supplied by the current AVR system is 35,552 acre-feet per year or 31.7 million gallons per day without considering the production capacity of wells 33 and 34 that are under construction. AVR has been regularly increasing the number of wells to meet the increasing demands of the Town. The oldest wells were drilled beginning in 1953 and have a total capacity for supplying 24.9 million gallons of water per day. Recent wells added to the system since 2000 (Wells 29-32) and the two wells under construction will bring the total capacity to 37.8 million gallons of water per day (or 26,241 gpm). Projected water supplies based on well capacities are summarized in Table 5.

Table 5
Apple Valley Ranchos Water Company Well & Well Pump Data as of 7/31/05

| Well Number | Depth to Water (Feet) | Year Drilled | Capacity (GPM) |
|---|---|---|---|
| 4 | 162.0 | 1953 | 1,126 |
| 7 | 73.8 | 1956 | 292 |
| 9 | 222.3 | 1953 | 919 |
| 11R | 202.5 | 1991 | 1,976 |
| 12 | 88.0 | 1962 | 980 |
| 16 | 74.1 | 1966 | 1,267 |
| 17 | 91.1 | 1967 | 598 |
| 18 | 91.8 | 1969 | 1,055 |
| 19 | 179.0 | 1969 | 987 |
| 20 | 112.5 | 1975 | 565 |
| 21 | 173.2 | 1984 | 1,230 |
| 22 | 183.5 | 1987 | 1,561 |
| 23 | 143.1 | 1987 | 448 |
| 24 | 185.5 | 1985 | 799 |
| 25 | 113.1 | 1990 | 492 |
| 26 | 114.9 | 1991 | 1,744 |
| 27 | 207.0 | 1984 | 452 |
| 28 | 45.0 | 1987 | 770 |
| 29 | 67.0 | 2003 | 2,125 |
| 30 | 86.2 | 1987 | 1,719 |
| 31 | 51.7 | 1988 | 500 |
| 32 | 55.1 | 1960 | 436 |
| ***Sub Total*** | | | ***22,041*** |
| 33 | | 2005 | 2,500* |
| 34 | | 2005 | 1,700* |
| **Total** | | | **26,241** |

* Estimated – Well under construction

AVR's water production has increased directly proportional to climatic conditions and to meet water supply demands of the Town of Apple Valley. The town's growth rate was approximately 14 percent

between 1999-2004. The current year's water production has been reduced due to high rainfall experienced in early 2005 and resulting lower customer demands.

Table 6
AVR System Production 1999-2005

| Year | Acre-Feet | Million Gallons |
|---|---|---|
| 1999 | 14,916 | 4,860 |
| 2000 | 16,002 | 5,214 |
| 2001 | 14,741 | 4,803 |
| 2002 | 15,853 | 5,166 |
| 2003 | 15,536 | 5,062 |
| 2004 | 16,100 | 5,246 |
| 2005 | 16,189 | 5,275 |

To carry out the Mojave Basin Judgment (the Adjudication), the MWA assigned Base Annual Production (BAP) amounts to each producer using 10-acre feet per year or more, based on historical production (1986-1990). Each pumper has been assigned a variable Free Production Allowance (FPA), which is a uniform percentage of BAP set for each area. A substantial make-up water assessment is charged (proposed rate of $246/AF for Water Year 2005-06) for water pumped in excess of the assigned FPA. Water purveyors also have the option of leasing additional water rights from the open market. AVR's original base production was set at 13,022 acre-feet. This has been ramped down annually to a Free Production Allowance that is currently 8,567 acre-feet. Any groundwater that AVR pumps over and above the FPA is subject to replacement. Replacement can occur either by paying the Watermaster to purchase supplemental water from MWA or by transferring unused production rights within that sub area from another party to the Judgment. The Watermaster's target ramp-down of 60 percent (which is the point where imports and inflows, and consumption achieve safe yield) will be achieved in the 2005/06 water year. Table 7 shows the projected water supply categorized by the available FPA, additional water rights planned for acquisition, and replacement water payments required for adequate supply to meet customer demands. The current well capacity of AVR's system totals 42,327 acre-feet per year. All water sources shown in Table 7 are pumped groundwater. Therefore, the current system has the capacity to provide a supply to meet demands nearly to the year 2025.

| Table 7<br>Current and Planned Water Supplies - AFY | | | | | |
|---|---|---|---|---|---|
| **Water Supply Sources** | **2005** | **2010** | **2015** | **2020** | **2025** |
| **Groundwater Replacement Water purchased from MWA** | 9,055 | 20,000 | 21,250 | 27,250 | 33,760 |
| **Groundwater (FPA)** | 8,567 | 8,567 | 8,567 | 8,567 | 8,567 |
| **Purchased Water Rights** | 196 | *500* | *1,500* | *1,500* | *1,500* |
| **Total** | **17,818** | **29,067** | **31,317** | **37,317** | **43,827** |
| **Water Purchased as % of Planned Supplies** | *51%* | *69%* | *68%* | *73%* | *77%* |

These projections are based on current per capita water consumption that is expected to decrease over the next five to ten year period. The Mojave Water Agency's Regional Water Management Plan (RWMP) identifies steps that will make it possible to meet the year 2020 water demand of the agency's service area. The RWMP, once implemented, is expected to:

- Bring all groundwater aquifers into balance,
- Meet 99% of MWA demand with no significant shortage in any subarea or demand sector,
- Attain 10% municipal conservation,
- Provide water quality improvements over existing conditions, and
- Provide benefit to all the Agency's five subareas without negatively impacting other areas.

## 3.2 Recycled Water Supply

The Victor Valley Wastewater Reclamation Authority (VVWRA) is the regional wastewater treatment authority that serves the Victor Valley including the Town of Apple Valley. The following information is taken from the "Sewerage Facilities Plan Update Year 2005 Amendment", prepared by VVWRA and adopted August 1, 2005. VVWRA operates a 12.5 million gallon per day (mgd) tertiary wastewater treatment facility. The plant is designed to discharge 8.3 mgd to the Mojave River and 4.2 mgd to percolation ponds. Expansion of the plant to 14.5 mgd began in April 2005. Construction will begin in 2006 to expand the capacity to 18.0 mgd. The 2005 flows to the plant are estimated at approximately 12.5 mgd and expected to increase to over 31 mgd by the year 2025.

Effluent from the treatment plant is either recycled for irrigation, industrial processes, or similar beneficial uses, or it is discharged directly to the Mojave River. Discharge of treated water to the Mojave River sustains a riparian habitat and provides recharge to the upper Mojave hydrologic subunit. For the 2004-05 water year, VVWRA's treatment plant effluent provided approximately 10,000 acre-feet of recharge water to the river.

The majority of the Town of Apple Valley uses private septic systems. About 37 percent of the town is sewered; those connected generated an average of 1.76 mgd of flow to VVWRA's wastewater treatment plant. Fifty percent of the new growth is expected to be sewered so that by the year 2025, about 75 percent of the Town will be sewered.

To recycle water for potential landscape irrigation purposes, VVWRA is considering building new interceptors to serve the City of Hesperia and the Town of Apple Valley, and two sub-regional treatment facilities to produce reclaimed water from all captured wastewater produced in those two communities. In VVWRA's "Sewerage Facilities Plan Update – Year 2005 Amendment", it is recommended that the sub-regional reclamation facilities and interceptors be constructed and operational no later than 2012. In VVWRA's "Sewerage Facilities Plan Update", dated December 1997, retail agencies within VVWRA's service area were identified as potential recycled water users such as golf courses, schools, parks, and public facilities.

Therefore, AVR presently has no immediate source of recycled water (until the projected year of 2012) for irrigation, commercial, or industrial users. Currently, the only generator of recycled water available to the AVR system is the Jess Ranch Irrigation System that operates at a small scale. This facility produces water for aquaculture that is reused for irrigation of golf courses. The fish species require a constant temperature and water flow to propagate. The water flows from the fishing lakes into the water hazard area on the golf course, which is pumped for landscaping and irrigating grass. These lakes, which are breeding grounds for fish, are also used by the public for sport fishing. Table 8 lists the recycled water generated by the facility between 1999 and 2004.

Table 8
Jess Ranch Irrigation Production

| | AFY | MGY |
|---|---|---|
| **1999** | 2,875 | 937 |
| **2000** | 2,249 | 733 |
| **2001** | 2,796 | 911 |
| **2002** | 5,384 | 1,754 |
| **2003** | 5,929 | 1,932 |
| **2004** | 5,752 | 1,874 |

The amount of water recycled since 1999 has more than doubled by 2004 increasing to 5,752 acre-feet per year. AVR would continue to provide assistance to this recycling facility and increase the capacity of the system to recycle additional water.

# Section 4

# Reliability Planning

## Law

**10631 A plan shall be adopted in accordance with this chapter and shall do all of the following:**

**10631 (a) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable.**

**10631 (b) For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.**

**10631 (c) Provide data for each of the following: (1) An average water year, (2) A single dry water year, (3) Multiple dry water years.**

**10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:**

**10632 (b) An estimate of the minimum water supply available during each of the next three-water years based on the driest three-year historic sequence for the agency's water supply.**

## 4.1 Reliability

The costs of demand management or supply augmentation options to reduce the frequency and severity of shortages are now high enough that planners must look more carefully at the costs of unreliability to make the best possible estimate of the net benefit of taking specific actions, hence the term "reliability

planning." Reliability is a measure of a water service system's expected success in managing water shortages.

To plan for long-term water supply reliability, planners examine an increasingly wide array of supply augmentation and demand reduction options to determine the best courses of action for meeting water service needs. Such options are generally evaluated using the water service reliability planning approach. In addition to climate, other factors that can cause water supply shortages are earthquakes, chemical spills, and energy outages at treatment and pumping facilities. Planners include the probability of catastrophic outages when using the reliability planning approach.

Reliability planning requires information about: (1) the expected frequency and severity of shortages; (2) how additional water management measures are likely to affect the frequency and severity of shortages; and (3) how available contingency measures can reduce the impact of shortages when they occur.

## 4.2 Frequency and Magnitude of Supply Deficiencies

Historically AVR has been able to supply water to meet the demands of its customers. The MWA is the local State Water Contractor, with a total State Water Project allocation of 75,800 acre-feet per year. MWA uses a portion of this imported water allocation for recharge of the Mojave River Basin System. Between 1996 and 2004, the average water deliveries from the supplemental State Water Project water was 6,348 acre-feet, which was released into the Mojave River for ground water replenishment. The Alto sub-basin, which underlies the AVR system received 4,495 acre-feet on an annual average between 1996 and 2004. The maximum water deliveries occurred in 2003, when the Alto region received 25,708 acre-feet and MWA imported 31,589 acre-feet. The total imported water that was purchased and recharged as Replacement Water for the Alto sub-region from 1996 through 2004 was 1,424 acre-feet. Of this total amount more than 65 percent i.e. 919 acre-feet was purchased in the year 2003. There were no Replacement Water purchases or other imports during 2004 and 2005 (year-to-date) for the Alto Basin. The imported water allocation for recharge is expected to supplement AVR's supply of water for the next twenty years.

The previous droughts have had no significant effect on water supply to the AVR area. More efficient use of water was encouraged during the 1976-77 drought. An even greater awareness of water conservation occurred during the 1987-1992 drought and has contributed towards the practice of saving water. The Town of Apple Valley has adopted a water conservation ordinance that calls for voluntary conservation (see Appendix C.) AVR's customers have responded to this by reducing water usage by approximately

10 percent. AVR employees work closely with the Town of Apple Valley's Code Compliance staff to contact and educate customers on good conservation practices.

## 4.3 Plans to Assure a Reliable Water Supply

AVR primarily supplies water to roughly 80 percent of the Town of Apple Valley. With the Town of Apple Valley expected to reach its build-out population in 2030, AVR needs to continuously supplement its sources of water supply to meet growing demands. AVR' customer base has been increasing at a growth rate of approximately 3 percent annually between 2000 and 2005.

AVR added two new wells (Nos. 33 and 34) to the system with combined capacity of supplying 4,200 gallons per minute or 6,775 acre-feet of water per year. AVR will continue to increase its capacity by adding new wells and pursue opportunities to purchase additional water rights to meet future water demands.

## 4.4 Reliability Comparison

Table 9 shows the reliability of water supply associated with single and multiple dry weather conditions. These assumptions are provided by DWR in its guidelines for preparing UWMPs: single dry year is assumed with 25 percent reduction in normal water supply and multiple dry year with 15 percent reduction in available water supply in consecutive years. The average/normal water supply year is assumed to be water year 2003, based on the precipitation data for the Apple Valley Airport Station measured from 1989. During 2003, AVR had well capacity totaling 35,552 acre-feet and produced 15,536 acre-feet to meet customer demands. The average water supply during the single dry water year would be 11,652 acre-feet while during multiple dry water conditions, 13,206 acre-feet per year would be the resulting supply based on year 2003 production.

Table 9
Supply Reliability - AF Year

| Average / Normal Water Year (2003) | Single Dry Water Year | Multiple Dry Water Years | | | |
|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 4 |
| 15,536 | 11,652 | 13,206 | 13,206 | 13,206 | 13,206 |
| *% of Normal* | *75.0%* | *85.0%* | *85.0%* | *85.0%* | *85.0%* |

## 4.5 Three Year Minimum Water Supply

The driest three-year historic sequence that has recently occurred was water years 1999-2000 through 2001-2002. In 2000, AVR had 22 production wells and associated pumping facilities with a total rated capacity of 30.6 MGD, or 34,277 acre-feet per year (*Urban Water Management Plan, Apple Valley*

*Ranchos Water Company, 2000*). Table 10 shows AVR's production and water use (as metered) during this multiple-year dry period. During this period, AVR would have had diminished supplies of 2,330 acre-feet in each year.

Table 10
AVR Water Supply and Demand During Multiple Dry Water Years (in AFY)

| YEAR | PRODUCTION | USE |
|---|---|---|
| 2000 | 16,002 | 12,538 |
| 2001 | 14,741 | 11,904 |
| 2002 | 15,853 | 11,874 |

## 4.6 Transfer or Exchange Opportunities

### Law

> **10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:**
>
> **10631 (d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.**

As mentioned above, AVR leases additional water rights in the basin to meet customer demands. However, the acquisition of additional water supplies through water exchanges is also pursued by the Mojave Water Agency. For example, MWA has a water exchange agreement with Solano County Water Agency to recharge the Mojave groundwater basin with a portion of Solano's State Water Project entitlement during wet years. During dry years, Solano may take delivery of MWA's State Water Project entitlement for up to one-half the amount of Solano's entitlement already delivered to MWA.

# Section 5

# Water Use Provisions

## Law

**10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:**

**10631 (e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors including, but not necessarily limited to, all of the following uses:**

**(A) Single-family residential; (B) Multifamily; (C) Commercial; (D) Industrial; (E) Institutional and governmental; (F) Landscape; (G) Sales to other agencies; (H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof; and (I) Agricultural.**

**(2) The water use projections shall be in the same 5-year increments to 20 years or as far as data is available.**

## 5.1 Past, Current and Projected Water Use

AVR serves residential, commercial, irrigation, industrial, and public authority customers. Residential is the largest customer class and is comprised mainly of single-family homes. The residential class of metered customers includes single-family and multi-family residential. The Apple Valley area does not have a substantial industrial base with only two AVR industrial customers. AVR has a public authority sector that includes government, schools, hospitals and parks. Table 11 shows projected water use by customer type between 2000 and 2025.

## 5.2 Residential Sector

In 2005 the number of residential accounts with AVR increased by over 3,500 from 12,922 accounts in 2000. This increased the demand of water by 17 percent (see Table 11). The average consumptive use within AVR has declined by 14 gallons per capita per day (gpcpd) from 2000 to 2005 and is currently at 208 gpcpd for the single and multi-family residential customers.

## 5.3 Commercial Sector

The commercial Sector of AVR's customers comprise primarily small business enterprises. There were 1,077-metered connections in this sector in 2000. Between 2000 and 2005, approximately 300 connections were added which increased the demand by approximately 130 acre-feet. The growth rate in this sector is expected at 5 percent per year between 2005 and 2025. The projected water demand by the commercial sector is expected to be 5,617 acre-feet in 2025.

## 5.4 Industrial Sector

Apple Valley is primarily a residential community with a very small industrial base. The AVR serves only two industrial customers at present, which presently consume 3 acre-feet of water per year. The current projections assume that the number of industrial customers would double, increasing the total water consumption to 6 acre-feet per year by 2025.

## 5.5 Institutional/Government

Public services constitute 6 percent of the AVR customer base. The number of institutional/government users is projected to increase from 52 in 2005 to 102 in 2025. This would increase the demand from 895 acre-feet to 1,747 acre-feet of water annually.

## 5.6 Landscape and Others

The landscape customers are primarily schools, institutional areas, public sector, parks and private business that have large open space areas. The landscape sector constitutes 6.5 percent of the customer base with 73 connections in 2005. This sector is also the most water-intensive, consuming more than 13,000 gpd of water per connection. The projected demand for water by this sector is 2,194 acre-feet per year in 2025.

Table 11
Past, Current And Projected Water Deliveries (AFY)

| Water Use Sectors | 2000 Metered | | 2005 Metered | | 2010 Metered | |
|---|---|---|---|---|---|---|
| | # of accounts | Deliveries AFY | # of accounts | Deliveries AFY | # of accounts | Deliveries AFY |
| Residential (Single and Multi-family) | 12,922 | 9,796 | 16,562 | 12,954 | 19,578 | 13,588 |
| Commercial | 1,077 | 2,451 | 1,346 | 2,843 | 1,591 | 3,400 |
| Industrial | 2 | 2 | 2 | 3 | 3 | 3 |
| Institutional/Gov. | 44 | 847 | 52 | 895 | 73 | 1,058 |
| Landscape | 61 | 911 | 73 | 1,123 | 86 | 1,328 |
| Totals | 14,106 | 14,008 | 18,036 | 17,818 | 21,331 | 19,378 |

| Table 11 (continued) - Past, Current and Projected Water Deliveries (AFY) | | | | | | |
|---|---|---|---|---|---|---|
| | 2015 Metered | | 2020 Metered | | 2025 Metered | |
| Water Use Sectors | # of accounts | Deliveries AFY | # of accounts | Deliveries AFY | # of accounts | Deliveries AFY |
| Residential (Single and Multi-family) | 23,143 | 16,062 | 27,357 | 18,987 | 32,338 | 22,444 |
| Commercial | 1,881 | 4,020 | 2,223 | 4,751 | 2,628 | 5,617 |
| Industrial | 3 | 4 | 4 | 5 | 5 | 6 |
| Institutional/Gov. | 73 | 1,250 | 86 | 1,478 | 102 | 1,747 |
| Landscape | 102 | 1,570 | 121 | 1,856 | 143 | 2,194 |
| **Totals** | **25,202** | **22,906** | **29,791** | **27,077** | **35,215** | **32,007** |

Past trends indicate that the overall loss of water in the supply system has been 14 percent of the total water produced on an average. This water loss results from main breaks, leaks, system flushing, and fire services. The total water loss in 2000 was 1,632 acre-feet. AVR has pursued methods to limit this loss and it is currently estimated to be 9.5 percent of total production (see Table 12). This implies a projected loss of 3,360 acre-feet of water in 2025.

| Table 12<br>Additional Water Uses and Losses - AF Year | | | | | | |
|---|---|---|---|---|---|---|
| Water Use | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |
| Unaccounted-for system losses | 1,632 | 1,693 | 2,325 | 2,749 | 3,249 | 3,841 |
| **Totals** | **1,632** | **1,693** | **2,034** | **2,405** | **2,842** | **3,360** |

The total water use including a 9.5% water loss would be approximately 19,511 in 2005 and is projected to be 35,367 acre-feet in 2025 (see Table 13).

| Table 13<br>Total Water Use - AF Year | | | | | | |
|---|---|---|---|---|---|---|
| Water Use | 2000 | 2005 | 2010 | 2015 | 2020 | 2025 |
| Total of Tables 11, 12 | 15,640 | 19,511 | 21,412 | 25,311 | 29,919 | 35,367 |

# Section 6

# Supply and Demand Comparison Provision

## Law

**10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from the state, regional, or local agency population projections within the service area of the urban water supplier.**

## 6.1 Supply and Demand Comparison

This section evaluates the ability of the AVR to meet the demand for water with future population growth. The projected water supply and demand during normal weather conditions are listed in tables 14 and 15. Table 14 shows that in year 2020 the supply would almost double in comparison to 2003 and increase by approximately 2.8 times by the year 2025. As seen in Table 16, AVR would have sufficient water resources to meet the water requirements of various customers. In the years 2015 and 2020, the AVR would increase its supply by purchasing additional water rights to meet demand.

Table 14
Projected Normal Water Supply - AF Year

| | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| **Supply** | 29,067 | 31,317 | 37,317 | 43,827 |
| **% of year 2003** | 187% | 202% | 240% | 282% |

Table 15
Projected Normal Water Demand (incl. Losses) - AF Year

| | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| **Demand** | 21,412 | 25,311 | 29,919 | 35,367 |
| **% of year 2003** | 186% | 220% | 260% | 307% |

| Table 16<br>Projected Supply and Demand Comparison - AF Year | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| **Supply totals** | 29,067 | 31,317 | 37,317 | 43,827 |
| **Demand totals** | 21,412 | 25,311 | 29,919 | 35,367 |
| **Difference** | 7,655 | 6,006 | 7,398 | 8,460 |
| **Difference as % of Supply** | 26% | 19% | 20% | 19% |
| **Difference as % of Demand** | 36% | 24% | 25% | 24% |

Tables 17 through 31 presents a supply and demand comparison during a single dry-year and multiple dry years beginning in 2005. The analysis assumes that in a single dry year, the water supply would reduce by 25 percent while the multiple dry years would experience reduction in availability of water by 15 percent. The demand in AVR's service area is expected to increase in hot, dry years, because customers typically increase their usage in response to these conditions. Retail demand is expected to decline in response to appeals for conservation and market pressures (e.g. water cost to customers) during drought conditions.

| Table 17<br>Projected single dry year Water Supply - AF Year | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| **Supply** | 21,800 | 23,488 | 27,988 | 32,870 |
| **% of normal (2003)** | 140% | 151% | 180% | 212% |

| Table 18<br>Projected single dry year Water Demand - AF Year | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| **Demand** | 19,378 | 22,906 | 27,077 | 32,007 |
| **% of normal (2003)** | 168% | 199% | 235% | 278% |

| Table 19<br>Projected single dry year Supply and Demand Comparison - AF Year | 2010 | 2015 | 2020 | 2025 |
|---|---|---|---|---|
| **Supply totals** | 21,800 | 23,488 | 27,988 | 32,870 |
| **Demand totals** | 19,378 | 22,906 | 27,077 | 32,007 |
| **Difference** | 2,422 | 581 | 911 | 863 |
| **Difference as % of Supply** | 11.1% | 2.5% | 3.3% | 2.6% |
| **Difference as % of Demand** | 12.5% | 2.5% | 3.4% | 2.7% |

For the purpose of this analysis, it is assumed that during a single dry year the water supply would reduce to 75 percent of normal water year. This would imply a surplus water supply of approximately 2,422 acre-feet in 2010 which would reduce to 863 acre-feet in 2025. The projection for water demand in Table 18 has not considered water savings from various conservation methods under such dry conditions. Further,

AVR purchases replacement water from MWA based on the current needs and would continue these purchases. Leased water rights and replenishment purchases of imported water from MWA would assist in meeting this projected demand. AVR and MWA are discussing the need to increase water costs to customers in order to decrease demands.

The projected water supply during 2006 through 2010 for multiple dry years is listed in Table 20. The projections assume that the available supplies would reduce by 15 percent during such drought periods. With this assumption, 24,707 acre-feet of water would be available in 2010, which is approximately 9,000 acre-feet more than the water available in 2003 (average/normal water year).

Table 20
Projected supply during multiple dry year period ending in 2010 - AF Year

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| **Supply** | 17,058 | 18,970 | 20,882 | 22,795 | 24,707 |
| **% of normal (2003)** | 110% | 122% | 134% | 147% | 159% |

The demand for water during 2006 through 2010 is listed in Table 21. The analysis does not assume any reduction in demand from conservation practices, which may considerably reduce the water requirement of the customers. The amount of water required to meet demand would increase by 14.1 percent between 2006 and 2010 during this multiple dry year period.

Table 21
Projected Demand - Multiple Dry Year Period ending in 2010 - AFY

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| **Demand** | 16,990 | 17,587 | 18,184 | 18,781 | 19,378 |
| **% of projected normal** | 148% | 153% | 158% | 163% | 168% |

The water demand and supply for the multiple dry water year extending from 2006 to 2010 is analyzed in Table 22. The water supply available would be more than the projected demand until the year 2010. On an average, AVR would have a surplus water supply of 11.3 percent in this drought period.

Table 22
Projected Supply and Demand Comparison during Multiple Dry Year Period ending in 2010- AF Year

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| **Supply totals** | 17,058 | 18,970 | 20,882 | 22,795 | 24,707 |
| **Demand totals** | 16,990 | 17,587 | 18,184 | 18,781 | 19,378 |
| **Difference** | 68 | 1,383 | 2,698 | 4,014 | 5,329 |
| **Difference as % of Supply** | 0.4% | 7.3% | 12.9% | 17.6% | 21.6% |
| **Difference as % of Demand** | 0.4% | 7.9% | 14.8% | 21.4% | 27.5% |

Similar analysis for multiple dry years from 2011-2015, 2016-2020 and 2021-2025 is provided in Tables 23 through 37.

| Table 23<br>Projected supply during multiple dry year period ending in 2015 – AF Year | | | | | |
|---|---|---|---|---|---|
| | **2011** | **2012** | **2013** | **2014** | **2015** |
| **Supply** | 25,089 | 25,472 | 25,854 | 26,237 | 26,619 |
| **% of projected normal** | 161% | 164% | 166% | 169% | 171% |

| Table 24<br>Projected demand multiple dry year period ending in 2015 – AFY | | | | | |
|---|---|---|---|---|---|
| | **2011** | **2012** | **2013** | **2014** | **2015** |
| **Demand** | 20,084 | 20,789 | 21,495 | 22,201 | 22,906 |
| **% of projected normal** | 175% | 181% | 187% | 193% | 199% |

| Table 25<br>Projected Supply and Demand Comparison during multiple dry year period ending in 2015- AF Year | | | | | |
|---|---|---|---|---|---|
| | **2011** | **2012** | **2013** | **2014** | **2015** |
| **Supply totals** | 25,089 | 25,472 | 25,854 | 26,237 | 26,619 |
| **Demand totals** | 20,084 | 20,789 | 21,495 | 22,201 | 22,906 |
| **Difference** | 5,006 | 4,683 | 4,359 | 4,036 | 3,713 |
| **Difference as % of Supply** | 20.0% | 18.4% | 16.9% | 15.4% | 13.9% |
| **Difference as % of Demand** | 24.9% | 22.5% | 20.3% | 18.2% | 16.2% |

With the growth in population and corresponding demand for water, the amount of surplus water available would reduce during drought periods. However, this will not impact AVR's capacity to meet the demand of its customers.

| Table 26<br>Projected supply during multiple dry year period ending in 2020 – AF Year | | | | | |
|---|---|---|---|---|---|
| | **2016** | **2017** | **2018** | **2019** | **2020** |
| **Supply** | 27,639 | 28,659 | 29,679 | 30,699 | 31,719 |
| **% of projected normal** | 178% | 184% | 191% | 198% | 204% |

| Table 27<br>Projected demand multiple dry year period ending in 2020 - AFY | | | | | |
|---|---|---|---|---|---|
| | **2016** | **2017** | **2018** | **2019** | **2020** |
| **Demand** | 23,740 | 24,575 | 25,409 | 26,243 | 27,077 |
| **% of projected normal** | 206% | 214% | 221% | 228% | 235% |

| Table 28<br>Projected Supply and Demand Comparison during multiple dry year period ending in 2020- AF Year | | | | | |
|---|---|---|---|---|---|
| | **2016** | **2017** | **2018** | **2019** | **2020** |
| **Supply totals** | 27,639 | 28,659 | 29,679 | 30,699 | 31,719 |
| **Demand totals** | 23,740 | 24,575 | 25,409 | 26,243 | 27,077 |
| **Difference** | 3,899 | 4,085 | 4,271 | 4,457 | 4,642 |
| **Difference as % of Supply** | 14.1% | 14.3% | 14.4% | 14.5% | 14.6% |
| **Difference as % of Demand** | 16.4% | 16.6% | 16.8% | 17.0% | 17.1% |

The projected water supply during the multiple dry-water-year period from 2016 to 2020 would increase from 27,639 acre-feet to 31,719 acre-feet. AVR would continue to rely on the groundwater as its main source of supply. Replacement water costs for quantities used above its Free Production Allowance and roll–over credits would be paid to MWA. The demand for water as under normal conditions would be adequately met. The above scenario does not account for the potential reduction in water demand due to water conservation measures.

| Table 29<br>Projected supply during multiple dry year period ending in 2025 – AF Year | | | | | |
|---|---|---|---|---|---|
| | **2021** | **2022** | **2023** | **2024** | **2025** |
| **Supply** | 32,826 | 33,933 | 35,040 | 36,146 | 37,253 |
| **% of projected normal** | 211% | 218% | 226% | 233% | 240% |

| Table 30<br>Projected demand multiple dry year period ending in 2025 - AFY | | | | | |
|---|---|---|---|---|---|
| | **2021** | **2022** | **2023** | **2024** | **2025** |
| **Demand** | 28,063 | 29,049 | 30,035 | 31,021 | 32,007 |
| **% of projected normal** | 244% | 252% | 261% | 270% | 278% |

The projected water demand in 2021 would be 28,063 acre-feet while the available supplies would be 32,826 acre-feet. There would be no water shortages if drought conditions occur during this period. The demand for additional water is expected to stabilize by 2025 as Apple Valley reaches it build-out population. The AVR supply system would be able to meet demands with a reduction in available water during multiple drought periods.

| Table 31<br>Projected Supply and Demand Comparison during multiple dry year period ending in 2025- AF Year | | | | | |
|---|---|---|---|---|---|
| | **2021** | **2022** | **2023** | **2024** | **2025** |
| **Supply totals** | 32,826 | 33,933 | 35,040 | 36,146 | 37,253 |
| **Demand totals** | 28,063 | 29,049 | 30,035 | 31,021 | 32,007 |
| **Difference** | 4,763 | 4,884 | 5,004 | 5,125 | 5,246 |
| **Difference as % of Supply** | 14.5% | 14.4% | 14.3% | 14.2% | 14.1% |
| **Difference as % of Demand** | 17.0% | 16.8% | 16.7% | 16.5% | 16.4% |

The multiple dry water years reflect changes in water supply with a 15 percent reduction in available water for four years successively. Tables 20 through 31 present the analysis of demand and supply for the years 2005 through 2025. Although the analysis shows that AVR would have adequate water supply to meet demand under normal and drought conditions, AVR's ability to increase the efficiency of water use with implementation of Best Management Practices (BMPs) is discussed in the following section.

# Section 7

# Water Demand Management Measures

## Law

**10631 (f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:**
**(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:**
**(2) A schedule of implementation for all water demand management measures proposed or described in the plan.**
**(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.**
**(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.**
**(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:**
**(j) Urban water supplies that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).**

AVR has long recognized the need for water conservation and has pursued an active program to promote water conservation with its customers. Although AVR is not a signatory to the Memorandum of

Understanding regarding Urban Water Conservation in California, AVR has implemented many of the demand management measures (DMM) within its legal authority. This section describes AVR's activities under each demand management measure (DMM) and cost-benefit analysis to evaluate the feasibility of each DMM.

The analysis is based on the " BMP Costs and Savings Study, A Guide to Data and Methods for Cost-Effectiveness Analysis of Urban Water Conservation Best Management Practices" prepared for The California Urban Water Conservation Council (CUWCC) in December 2003. The technical data pertaining to the water savings resulting from retrofitting conservation equipment, the cost of equipment and other information for implementing the DMMs has been used directly from this report and brought to present value assuming an inflation rate of 1.5 percent each year.

AVR currently purchases replacement water from MWA at a rate of $246/acre-feet. This value has been applied to the potential water saved from implementing BMPs in the service area. The proformas with cost and savings analysis are included in Appendix C. The following is a discussion of each BMP.

## BMP 1 – Interior and Exterior Water Audits and Incentive Programs for Single Family and Multi-Family Customers

Upon customer request, AVR will conduct an on-site water audit for single-family and multi-family residential, governmental, and institutional customers. AVR employees have received special training in the area of water audits. Since 1990, AVR has completed about 400 surveys. To evaluate the effectiveness of this DMM, the audit team completes a customer data form to analyze the customer's water use and estimate water savings. AVR expects to conduct an additional 40 surveys per year and has budgeted about $2,000 per year for this effort.

Based on the CUWCC study, the present value cost for carrying out 1,000 surveys each year from 2006-2010 is $297,718, which would save 61.6 acre-feet of water cumulatively. The cost associated with water saved is $15,156. Implementation of this DMM on a large scale is therefore currently unfeasible. However, AVR would continue to conduct about 40 surveys per year and has currently budgeted a total amount of $2,000/yr for this effort. These surveys are estimated to result in the conservation of approximately 2.5 acre-feet per year.

CUWCC also considers retrofitting hot water demand units that have the potential to reduce water use when fixed with faucets or showers. These units deliver hot water without having to drain the cold water sitting in the pipes between the water heater and the fixture. The analysis assumes that at the end of the program in 2010, 30% of the households would be retrofitted with this device. Four gallons of water would

be saved per run based on the CUWCC technical report. AVR would provide a rebate of $20 per device to the customers. The total cost for implementing this program would be $166,090 in present value while the total water saved is estimated to be 907 acre-feet (value of saved water $223,100).

Overall, the total cost associated with the implementation of this BMP would be $463,809 while the value of water saved would be $238,256. This BMP is currently not feasible from a financial stand point, beyond the surveys presently conducted by AVR. Implementation would also require approval from the California Public Utilities Commission (CPUC).

## BMP 2 – Plumbing Standards and Retrofits

This BMP includes retrofitting gray-water devices, residential retrofits of low-flow showerheads, toilet replacement devices, faucet aerators and providing ultra-low flush toilets. This UWMP has analyzed the savings from retrofitting 1,027 devices each year until 2010. The total water savings between 2006 and 2010 would be approximately 1,948 acre-feet at a total cost savings of over $420,000. The cost of each conservation kit used for residential retrofits is assumed to be $5 and the total cost of implementing the program would be $31,699. The cost associated with providing rebates on ultra-low flush toilet units would be more than $640,000 and save approximately 130 acre-feet of water from 2006 – 2010. AVR would provide a rebate of $115 per device (as estimated by CUWCC) for implementing an ultra-low flush toilet replacement program, while the savings per device would be about 7.5 gpd.

The cost of implementing a graywater reuse program for is estimated by the CUWCC to be $6,419 per site. Based on the assumption that each year 50 households would install graywater systems and AVR would give a rebate of $500 to each graywater system installed, the total water savings would be approximately 50 acre-feet at the end of 2010 while the total cost would be approximately $154,568 in present value.

AVR has distributed more than 5,000 conservation kits. These kits consist of a device to displace water in the toilet tank, a low-flow showerhead, and a dye tablet to locate leaks in the toilet. Conservation kits are available to customers at a nominal fee. These kits are annually distributed during the Desert Communities Water Awareness Expo. Quantitative data as to the effectiveness of the conservation kits in Apple Valley are not available. Since the new plumbing codes require water-saving devices and because new construction in the Town of Apple Valley requires low-flush plumbing fixtures, the demand for these kits continues to diminish.

AVR is a retail water service provider and can provide rebates only for limited number of programs. Because they are regulated by the CPUC, all programs require CPUC approval. Therefore, the

implementation of all DMMs in this program is outside the purview of AVR. Implementation of the BMPs would also require partnership with Town of Apple Valley that has jurisdiction over building codes.

## BMP 3 – Distribution System Water Audits, Leak Detection, and Repair

AVR's surveillance of the water system to detect leaks is an on-going operation. The community has jointly assisted AVR in identifying any leaks. AVR recognizes the urgency of repairing leaks and responds to any leak in an expedient manner. Field employees have received special training in detection of leaks and signs of unauthorized use of water. They are also instructed to notify customers observed wasting water. In addition, the customer billing system flags high or unusual water bills, which are then investigated for possible leaks in consumer piping. Customers are aided in identifying possible leaks so repairs can be made.

AVR actively pursues a water main replacement program (see Photo 1). Many of the older water mains are steel, subject to corrosion and leaking. When a leak is first noticed, the pipeline is inspected and promptly repaired. A record of the location of the leak is kept. When it is evident, either from the number of leaks or the pipeline inspection, that a pipeline has badly deteriorated, the line is replaced. This program allows the replacement of many miles of corroded water mains, thereby reducing water losses due to leakage.

Photo 1
AVR installs a new water main for better service and water conservation.

AVR has a meter replacement program to monitor the age of all small meters (2 inches and under) and replace meters older than 13 years. This program assists in reducing the unaccounted-for-water.

AVR has contracted to have all large meters (3" or more) tested every year. Any large meters that are not registering accurately are identified on a timely basis. This meter replacement program has a measurable effect on reducing the unaccounted-for-water.

AVR has a valve-exercising program that calls for the operation and inspection of all valves each year. This program enables AVR to make emergency shutdowns due to leaks in a timely manner. Through all of these efforts, AVR continues to reduce its unaccounted-for-water losses.

Water main replacement, meter replacement, and meter inspections are budgeted every year. In 2005, about $2,223,335 was budgeted for these distribution system conservation measures. Funding for these programs is expected to continue at a similar level over the next few years. The CUWCC indicates there is low to moderate confidence in the methods used for estimating water savings from leak detection programs. The AVR is estimating that approximately 240 acre-feet of water annually is saved by its unaccounted-for-water monitoring programs (16,100 acre-feet production x 1.5%).

### BMP 4 – Metering with Commodity Rates

All existing and new AVR customers are metered. The amount of the customer's bill is based on a basic monthly service charge and a commodity charge based on the quantity of water used. Since AVR is an investor-owned utility subject to regulation by the CPUC, the rate structure is established by the CPUC.

### BMP 5 – Large Landscape Conservation Programs and Incentives

AVR does not have any large landscape customers that have not already been audited. AVR, an investor-owned utility subject to CPUC regulation, does not have the authority to implement a landscape water conservation ordinance. Recognizing the importance of water conservation, the Town of Apple Valley has an adopted Water Conservation Plan in its Municipal Code (see Appendix D).

AVR worked jointly with Mojave Water Agency, Hesperia Water District, Victor Valley Water District, and San Bernardino County to develop a handbook entitled "A Guide to High Desert Landscaping" (see Photo 2). Specifically designed for the high desert environment, the handbook is a guide to designing, planting, and maintaining attractive and water efficient native plant landscapes. In addition, AVR works in partnership with the Town of Apple Valley, local nurseries, and landscape designers to help educate landowners about water efficient landscapes.

Photo 2

A Guide to High Desert Landscaping

## BMP 6 – High Efficiency Washing Machine Rebate Programs

This program is currently not an established AVR program. The successful implementation of this program strongly correlates to the number of owner-occupied residential units. AVR could potentially save up to 176 acre-feet of water, based on the assumption that 25 percent of the total households by the end of the year 2010 (1,027 every year) would have high efficiency washing machines. The analysis assumed a savings of about 11 gpd per machine for each household based on the CUWCC document. The cost of implementing this program to AVR is over $560,000 in comparison to the $46,963 of water saved. This implies a loss of more than $520,000 for AVR. Implementation of this program would require CPUC approval and is currently outside the financial capability of AVR.

## BMP 7 – Public Information

AVR recognizes the continued need for a public information program to maintain and increase the community's awareness of water and the need to use it wisely. The on-going programs have proven successful and are well received by customers. Continued educational programs are especially important during non-drought periods. Providing current water conservation information is a key part of AVR's activities. This includes imprinting bills with slogans promoting water conservation. Pamphlets on water conservation are available in the lobby of the company office where customers pay their bills. In addition, AVR has articles published in the local newspaper, which not only keeps customers informed of activities such as system improvement programs and new projects, but also contains conservation suggestions.

As mentioned in BMP 5, AVR was involved in the development of a joint effort that resulted in "A Guide to High Desert Landscaping" and promotes water conservation at the Desert Communities Water Awareness Expo (see Photo 3). At the expo, an extensive display of low-water-use trees, shrubs, and plants is maintained that illustrate the aesthetic appeal of water efficient landscaping.

Photo 3
AVR staff talks with customers about water efficient landscaping in the demonstration garden at the Desert Communities Awareness Expo.

Park Water Company, the owner of Apple Valley Ranchos Water Company, maintains a web page (www.parkwater.com) on the Internet that provides information on water conservation and frequently asked questions. AVR's website includes similar water conservation information.

AVR includes consumption information for the same month last year on the customer's bills. This is an effective tool for customers to monitor their monthly water usage and see the effectiveness of household water conservation measures.

AVR has no method to quantify the savings from this DMM but believes on continuing these efforts. About $6,000 is budgeted each year for these activities.

## BMP 8 – School Education

AVR is very active in water education through the local school district. Between 1990 and 2002, AVR in conjunction with the Town of Apple Valley, sponsored a live theater production at the schools, which teaches students about the importance of water conservation. The National Theatre for Children's

program incorporated classroom learning guides and activities for the teacher and the students that reinforce and expand on the concepts addressed in the live program. The program was very successful, resulting in children bringing home the message of efficient water use. Presently, AVR provides in-school education programs to 3rd, 5th, and 8th graders.

AVR currently seeks to involve children in the annual Desert Communities Water Awareness Expo. The mission of Desert Communities Water Awareness Expo is to promote water awareness and encourage water conservation. AVR as a subsidiary to the Desert Communities Water Awareness Expo also participates in the spring Home and Garden Show held annually at the San Bernardino County Fairgrounds in Victorville. The Expo sponsors a display featuring low-water-use landscaping and informational booth for the public Poster-making and Coloring contests specifically designed to create interest and awareness in children, are organized.

AVR participates in the Kids Fest, which is an annual event primarily for children and covers health, safety and water conservation issues. For the past seven years AVR has been a participant in the annual Garden Party that consists of exhibits, displays, demonstrations, composting and other water conservation models. In addition, the Mojave Desert Resources Conservation District has a desert adaptive plant sale. These plants are conducive to growing well in the High Desert. AVR has no method to quantify the savings from this DMM but plans to continue these school activities.

## BMP 9 – Conservation Programs for Commercial, Industrial and Institutional

The Town of Apple Valley is primarily a residential community. Approximately seven percent of AVR's meter connections are in the commercial sector; the industrial customer base is currently two connections; and the public sector represents less than one percent of the total AVR customer base.

The conservation programs for the Commercial, Industrial and Institutional (C.I.I.) sector require conducting surveys, installing self-closing faucets, low flush urinals and ultra low flush toilets in the program.

It was assumed that 10 percent of C.I.I. sector would be surveyed each year; the survey costs are $1,484 per survey (based on CUWCC estimates for consultants). The C.I.I. survey questionnaire gathers customer data for potential water savings from sanitation, irrigation, kitchen, industrial, cooling towers, laundry, wastewater cooling and others. The total water savings resulting from implementation of this program would be approximately 38 acre-feet from 2006 through 2010 while the associated costs would be over $1.4 million.

The analysis for retrofitting self-closing faucets and urinals assumes that each year, 30 percent of the old connections and all new establishments would install the equipment. The combined savings would be approximately 9 gallons of water per day. The water savings from implementing this program would be approximately 75 acre-feet between 2006 and 2010 savings water worth $19,000, while the total cost would be over $140,000.

The analysis for ultra low flush toilets is based on the assumption that each year all new customers and 15 percent of existing customers would install ultra low flush toilets that have savings of 32 gpd per unit. The total cost of implementing this program by AVR is projected at over $100,000 between 2006 and 2010 while the water saved would equal approximately 147 acre-feet. The total cost of water saved is $36,170, which shows a net financial impact to the AVR for implementing this program.

The cost to AVR would be approximately $1.5 million to implement this BMP. Implementation of such a program would be cost prohibitive and could only occur with CPUC approval and agreement with the Town of Apple Valley for implementation of plumbing and building codes.

### BMP 10 – Wholesale Agency Programs

AVR is a retailer and relies on any water conservation programs for wholesalers to be implemented by the Mojave Water Agency. CUWCC guidelines list water conservation measures through the use of Ultra Low Flush Toilets in C.I.I. facilities as part of this BMP. The UWMP Guidelines require that the water provider assess the cost-benefit associated with the DMMs not currently implemented and therefore, a discussion of ultra low flush toilets is included in BMP 9.

### BMP 11 – Conservation Pricing, Water Service and Sewer Service

AVR is subject to the rate design policies of the CPUC. The current CPUC rate design policy does not include conservation pricing structures. The rates are designed to recover the cost of service and are based on a fixed service charge and metered water use. The rate structure is a single, uniform rate per 100 cubic feet regardless of the amount used.

### BMP 12 – Water Conservation Coordinator

Since 1991, a part-time water conservation coordinator directs water conservation activities. The coordinator evaluates the effectiveness of the demand management practices and recommends program improvements. However, AVR has no method to quantify the savings of having a Water Conservation Coordinator. Approximately $6,000 per year is budgeted for conservation coordinator staff time and activities.

## BMP 13—Water Waste Prohibition

AVR uses Rule No. 20 - Water Conservation, of the CPUC (See Appendix E). Rule No. 20 discourages the wasteful use of water and promotes the use of certain water saving devices. The rule states, "The purpose of this rule is to ensure that water resources available to the utility are put to a reasonable beneficial use and that the benefits of the utility's water supply and service extend to the largest number of persons." AVR also implements CPUC Rule 11.B (3) which prohibits the wasting of water. It states, "Where negligent or wasteful use of water exists on a customer's premises, the utility may discontinue the service if such practices are not remedied within five days after it has given the customer written notice to such effect." It further states, "In order to protect itself against serious and unnecessary waste or misuse of water, the utility may meter any flat rate service and apply the regularly established meter rates where the customer continues to misuse or waste water beyond five days after the utility has given the customer written notice to remedy such practices".

AVR's field staff patrols for water wasters. Although AVR has no enforcement authority, AVR notifies the Town of Apple Valley of any chronic water wasters. AVR has no method to quantify the water savings from this DMM.

## BMP 14 – Residential Ultra-Low-Flush Toilet Replacement

Ultra-Low Flush Toilets are now a requirement of Title 24 and are provided in all new residential construction in the Town of Apple Valley. For the purpose of this analysis the cost-benefit analysis associated with the residential ultra-low-flush toilet retrofits has been considered in the BMP-2 (Residential Plumbing Retrofits).

## Summary

Table 32 summarizes the cost effectiveness of implementation of certain of the BMPs and compares the water savings in terms of the dollar value. The total cost of implementing the BMPs listed would be approximately $5.8 million while the cost of water saved is $851,584. The analysis identifies that some demand management measures such as residential retrofits and installing ultra-low flush toilet units in residential and commercial sectors may reduce water consumption. However, as AVR is regulated by the CPUC, any new water conservation programs not currently implemented would require CPUC approval. Therefore, a cost/benefit analysis is not provided for all BMPs as they would either require CPUC approval or are outside the purview of the AVR is that they do not have building or plumbing code enforcement powers. The CPUC Rule No. 20 provides for the encouragement of water conservation by the utilities' customers and the provision of water-saving kits by the utilities is regulates (devices to reduce toilet flush and shower flow water requirements, dye tablets, and other devices from time to time approved by the utility).

| Table 32<br>Best Management Practices Cost Benefit Analysis | | | | | | |
|---|---|---|---|---|---|---|
| BMPs | | | Total values from 2006-2010 | | | |
| | | | Total Cost | Total Water Savings in acre-feet | Cost of Water Saved | Difference Cost/(Benefit) |
| 1 | Water survey programs for single-family residential and multi-family residential customers | DMM 2.8-Residential Surveys | $463,809 | 968.52 | $238,256 | $225,553 |
| 2 | Residential plumbing retrofit* | DMM 2.2-Graywater, DMM 2.7-Residential Retrofits, DMM 2.9-Ultra Low Flow Flush Toilets | $833,811 | 839.04 | $206,404 | $627,407 |
| 3 | System water audits, leak detection, and repair* | DMM 2.17-System Audits and Leak Detection | $2,223,385 | 1200.00 | $295,200 | $1,928,185 |
| 4 | Metering with commodity rates for all new connections and retrofit of existing connections* | DMM 2.5-Metering | | | | |
| 5 | Large landscape conservation programs and incentives * | DMM 2.16-Large Landscape Devices | | | | |
| 6 | High-efficiency washing machine rebate programs* | DMM 2.3-High Efficiency Washing Machine | $568,173 | 190.91 | $46,963 | $521,210 |
| 7 | Public information programs | | $119,982 | | | $119,982 |
| 8 | School education programs | | *Budget included in BMP 7* | | | |
| 9 | Conservation programs for C.I.I. accounts* | DMM 2.10-C.I.I. Surveys, DMM 2.13-Self Closing Faucets, DMM 2.15-Urinals | $1,518,923 | 263.25 | $64,760 | $1,454,163 |
| 10 | Wholesale agency programs | DMM 2.14-Ultra Low Flush Toilets (C.I.I.) | *Included in BMP 9* | | | |
| 11 | Conservation pricing* | DMM 2.6-Conservation Pricing | | | | |
| 12 | Water conservation coordinator | | $32,326 | | | $32,326 |
| 13 | Water waste prohibition (n/a) | CPUC Rules | | | | |
| 14 | Residential ultra-low-flush toilet replacement programs * | DMM 2.9-Ultra Low Flow Flush Toilets | *Included in BMP 2* | | | |
| | TOTAL-ALL BMPs | | $5,760,409 | 3,462 | $851,584 | $4,908,825 |
| | | | | | Cost of water in acre-feet: | $246 |

* Requires CPUC Approval

# Section 8

# Water Shortage Contingency Plan

## Law

> **10632. The plan shall provide an urban water shortage contingency analysis which includes each of the following elements which are within the authority of the urban water supplier:**
>
> **10632 (g) An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier…**
>
> **10632 (g) [An analysis of the impacts of each of the] proposed measures to overcome those [revenue and expenditure] impacts, such as the development of reserves and rate adjustments.**

## 8.1 Apple Valley Ranchos: Adopted Contingency Plan

This Water Shortage Contingency Plan provides a plan of action to be followed during various stages of a water shortage. This Plan covers the shortage stages, prohibitions, allocations, consumption reduction methods, penalties, and appeals.

### Water Supply Shortage Stages

Apple Valley Ranchos Water Company has developed four stages of action to be taken in response to water supply shortages up to 50 percent. The stages, demand reduction goals, and type of program are listed in Table 1. Apple Valley Ranchos Water must obtain approval from the California Public Utilities Commission (CPUC) prior to implementing any mandatory stages, as stated in Tariff Rule 14.C.

| Table 33<br>Water Supply Shortage Stages | | | |
|---|---|---|---|
| | Shortage | Demand Reduction Goal | Type of Program |
| | | | |
| I | Minimum | 5 -10 Percent | Voluntary |
| | | | |
| II | Moderate | 10 - 20 Percent | Mandatory Conservation Stage<br>Voluntary Allotments and/or Mandatory Conservation Rules |
| | | | |
| III | Severe | 20 - 35 Percent | Rationing Stage<br>Allotments and Mandatory Conservation Rules |
| | | | |
| IV | Critical | 35 - 50 Percent | Critical Rationing Stage<br>Allotments and Mandatory Conservation Rules |

Stage 1 During Stage 1, the drought conditions will be explained to our customers and voluntary conservation will be encouraged.

Stage 2 Apple Valley Ranchos Water will continue public outreach and education about the water supply conditions, and customers will be asked to reduce consumption by 10 to 20 percent. Depending on the desired reduction goal, mandatory conservation may be required. Prior to implementation of mandatory restrictions, CPUC approval will be required. Each customer would be notified of their allotment by mail before the effective date of the Water Shortage Emergency. In a disaster, prior notification may not be possible. Apple Valley Ranchos Water Company will also work with appropriate governmental agencies for the passage of drought ordinances.

Stage 3 During stage 3, allotments and mandatory conservation rules will be required to meet reductions of 20 to 35 percent. Rate changes will be implemented to penalize excess usage. If a customer consistently abuses water, a flow restrictor may be installed. Apple Valley Ranchos Water would monitor

production daily for compliance with conservation reduction requirements. Apple Valley Ranchos Water may read customer meters on a more frequent basis.

Stage 4 During this stage, the shortage is critical and 35 to 50 percent reduction will be required. The steps taken in the prior stages will be increased, and production will be monitored daily.

**Prohibitions**

Nonessential or unauthorized uses will be prohibited during shortage conditions. Voluntary compliance will be requested in Stage 1, and mandatory compliance will be necessary in Stages 2 – 4. The nonessential or unauthorized uses are listed below:

- Use of water for more than minimal landscaping with any new construction.
- Use of water by a customer when the Company has notified the customer to repair broken or defective plumbing or sprinkler system and the customer failed to make such repairs within 5 days after receiving the written notice.
- Use of water which results in flooding or runoff into gutters or streets.
- Use of water for washing vehicles without a positive automatic shut-off valve on the outlet of the hose.
- Use of water through a hose for washing buildings, driveways, sidewalks, and other hard-surfaced areas, except for sanitary purposes.
- Use of water to clean, fill, or maintain water in non-recycling decorative fountains.
- Use of water for construction purposes, such as consolidation of backfill, unless no other source of water or other method can be used.
- Service of water by any restaurant except upon request of a patron.
- Use of water from fire hydrants shall be limited to fire fighting and related activities and other uses shall be limited to activities necessary to maintain the public health, safety, and welfare.

**Allocations**

Requirements set forth in the California Water Code Sections 350-359 conserve water supply for the greatest public benefit especially with regard to domestic use, sanitation, and fire protection. Water allocations would be based on the following ranking system:

Minimum health and safety allocations for interior residential needs such as single family, multi-family, hospitals, retirement communities, student housing, and fire fighting and public safety.

Commercial, industrial, institutional/governmental (where water is used for manufacturing and for minimum health and safety allocations for employees), to maintain jobs and economic base of the community.

Existing landscaping.
New customers, proposed projects without permits when the shortage is declared.

**Consumption Reduction Methods**
To reduce water use during the most severe stages of shortage, the following methods may be employed:

- Education programs
- Water conservation kits
- Flow restrictions
- Restrict use for only priority uses
- Percentage reduction by customer type
- Plumbing fixture replacement
- Excess use penalty
- Termination of service

**Penalties or Charges for Excessive Use**
Apple Valley Ranchos Water will obtain approval from the California Public Utilities Commission prior to implementing an excess use penalty per 100 cubic feet of water used in excess of the applicable allocation during each billing period, and shall be charged by the Company for all service rendered. The Company may, after one written warning, install a flow-restricting device on the service line of any customer observed by Company personnel to be using water for any nonessential or unauthorized water use. If, despite installation of flow-restricting device, nonessential or unauthorized water use continues, the Company may discontinue water service to such customer.

**Appeal Procedure**
Any customer may seek a variance from any of the provisions of the water rationing plan by notifying the Company in writing, setting forth the grounds for a variance in detail. Any customer not satisfied with the Company's response may file an appeal with the CPUC.

## 8.2 Revenue and Expenditure Impacts and Measures to Overcome

AVR's 2004-05 Water Budget projects total revenue of $13,564,110 and expenses (inclusive of depreciation and taxes) of $11,384,985. The source of supply budget is $866,640, and pumping, water

treatment and transmission and distribution costs are budgeted at $2,609,441. AVR has been allocating funds for undertaking capital projects such as constructing new tanks, water mains, fire hydrants and metered connections. The capital budget for the year 2005 is estimated at $4,506,835. The five-year fund total for years 2005 through 2009 is $18,576,135, which includes funds for transmission and distribution, production and general plant. Table 35 provides a summary of the budget and the projected revenue impacts that would occur as a result of 10 percent and 25 percent water shortage conditions (e.g. implementation of the Water Conservation ordinance).

In the event of a water shortage, a three-point program (in order of preference) has been developed to meet the fiscal shortfall as a result of reduced water revenues:

a. Reduce operation and maintenance expenses.
b. Defer selected capital improvement projects until water shortage situation improves.
c. Utilize the restricted capital reserve account for critical capital improvement projects needed to meet demands.

During the last drought, the CPUC allowed AVR to track expense and revenue shortfalls caused by voluntary conservation efforts. The conservation memorandum account was established to allow AVR to accumulate revenues lost due to conservation. Other reserves, such as a Rate Stabilization Fund, to minimize impacts from conservation are not available because AVR is subject to CPUC rate regulation.

| Table 34<br>Impact of Emergency Water Shortage on AVR Revenue and Expenses (FY 2004-2005) Budget | NORMAL | (10%) | (25%) |
|---|---|---|---|
| | STAGE 1 | STAGE 2 | STAGE 3 |
| **OPERATING REVENUES** | | | |
| Metered Sales to General Customers | $ 13,504,854 | $ 12,154,369 | $ 10,128,641 |
| Sales to irrigation customers | $ 439,771 | $ 395,794 | $ 329,828 |
| Private fire protection service | $ 88,890 | $ 80,001 | $ 66,668 |
| Other sales or service | $ (504,059) | $ (453,653) | $ (378,044) |
| **Total water service revenues** | **$ 13,529,456** | **$ 12,176,510** | **$ 10,147,092** |
| Other Water Revenues | | | |
| Misc. service revenues | $ 30,289 | $ 27,260 | $ 22,717 |
| Other Water Revenues | $ 4,365 | $ 3,929 | $ 3,274 |
| Total other water revenues | $ 34,654 | *$ 31,189* | *$ 25,991* |
| **TOTAL REVENUES** | **$ 13,564,110** | **$ 12,207,699** | **$ 10,173,083** |
| | | | |
| **OPERATING EXPENSES** | | | |
| **SOURCE OF SUPPLY** | | | |
| Operation supervision and engineering | $ 12,351 | $ 12,351 | $ 12,351 |
| Misc. expenses | $ 851,630 | $ 851,630 | $ 851,630 |
| Maintenance of wells | $ 2,598 | $ 2,598 | $ 2,598 |
| Maintenance of other source of supply plant | $ 61 | $ 61 | $ 61 |
| **Total source of supply expense** | **$ 866,640** | **$ 866,640** | **$ 866,640** |
| | | | |
| **PUMPING** | | | |
| Pumping labor and expenses | $ 117,623 | $ 117,623 | $ 117,623 |
| Misc. expenses | $ 84,313 | $ 84,313 | $ 84,313 |
| Fuel or power purchased for pumping Maintenance | $ 1,165,661 | $ 1,049,095 | $ 786,821 |
| Maintenance of structures and improvements | $ 31,957 | $ 31,957 | $ 31,957 |
| Maintenance of pumping equipment | $ 151,778 | $ 151,778 | $ 151,778 |
| **Total pumping expenses** | **$ 1,551,332** | **$ 1,434,766** | **$ 1,172,492** |
| | | | |
| **WATER TREATMENT** | | | |
| Operation labor and expenses | $ 178,552 | $ 178,552 | $ 178,552 |
| Misc. Expenses | $ 437 | $ 437 | $ 437 |
| Chemicals and filtering materials | $ 17,783 | $ 16,005 | $ 12,004 |
| Maintenance of structures and improvements | $ 44 | $ 44 | $ 44 |
| Maintenance of Water treatment expenses | $ 28,850 | $ 28,850 | $ 28,850 |
| **Total Water Treatment Expenses** | **$ 225,666** | **$ 223,888** | **$ 219,887** |
| | | | |

| | | | |
|---|---|---|---|
| **TRANSMISSION AND DISTRIBUTION** | | | |
| Operation supervision and engineering | $ 83,057 | $ 83,057 | $ 83,057 |
| Storage facilities expense | $ 17,517 | $ 17,517 | $ 17,517 |
| Transmission and distribution lines expenses | $ 120,964 | $ 120,964 | $ 120,964 |
| Meter expenses and customer installation | $ 103,385 | $ 103,385 | $ 103,385 |
| Misc. expense | $ 31,293 | $ 31,293 | $ 31,293 |
| Maintenance | $ 476,227 | $ 476,227 | $ 476,227 |
| **Total transmission and distribution expenses** | **$ 832,443** | **$ 832,443** | **$ 832,443** |
| | | | |
| **Customer Account Expense** | **$ 457,596** | **$ 457,596** | **$ 457,596** |
| | | | |
| **Sales** | **$ 28,395** | **$ 28,395** | **$ 28,395** |
| | | | |
| **ADMIN. AND GENERAL** | | | |
| Administrative and general salaries | $ 506,665 | $ 506,665 | $ 506,665 |
| Office supplies and other expenses | $ 256,325 | $ 256,325 | $ 256,325 |
| Property insurance | $ 10,737 | $ 10,737 | $ 10,737 |
| Injuries and damages | $ 584,659 | $ 584,659 | $ 584,659 |
| Employees' pensions and benefits | $ 947,235 | $ 947,235 | $ 947,235 |
| Franchise requirements | $ 139,891 | $ 125,902 | $ 94,426 |
| Regulatory commission expenses | $ 48,314 | $ 48,314 | $ 48,314 |
| Outside services employed | $ 274,073 | $ 274,073 | $ 274,073 |
| Misc. | $ 1,618,007 | $ 1,618,007 | $ 1,618,007 |
| **Total administrative and general expense** | **$ 4,385,906** | **$ 4,371,917** | **$ 4,340,441** |
| | | | |
| **MISCELLANEOUS** | | | |
| Rents | $ 1,300 | $ 1,300 | $ 1,300 |
| Administrative expenses | $ (311,271) | $ (311,271) | $ (311,271) |
| Clearing expense | $ 391,709 | $ 391,709 | $ 391,709 |
| **Total miscellaneous** | **$ 81,738** | **$ 81,738** | **$ 81,738** |
| | | | |
| **Total Operating Expense** | **$ 8,429,716** | **$ 8,297,383** | **$ 7,999,632** |
| | | | |
| Depreciation | $ 1,202,542 | *$ 1,202,542* | *$ 1,202,542* |
| Taxes and Others | $ 1,752,727 | *$ 1,752,727* | *$ 1,752,727* |
| **Total Operating Revenue Deduction After Taxes** | **$ 11,384,985** | **$ 11,252,652** | **$ 10,954,901** |
| | | | |
| Income available for Fixed Charges | $ 2,165,587 | $ 1,949,028 | $ 1,461,771 |
| Interest Expense | $ 106,520 | $ 106,520 | $ 106,520 |
| Net Income (Loss) Available for Common Stock | *$ 2,059,067* | *$ 2,055,548* | *$ 1,568,291* |
| | | | |
| **Capital Projects (Construction)** | **$ 4,506,835** | **$ 4,506,835** | **$ 4,506,835** |

# Appendix A

## Notice of public hearing

# NOTICE OF PUBLIC HEARING

**For Release on Thursday, October 13, 2005**

For more information contact:
Jack Clarke
Vice President and General Manager

Apple Valley Ranchos Water Company
21760 Ottawa Road
P.O. Box 2619
Apple Valley
California 92307
Phone 760-247-6484
Fax 706-247-0325

Apple Valley Ranchos Water Company (AVRWC) will conduct a public meeting to receive comments on its proposed Urban Water Management Plan Update process. The Plan describes and evaluates water demands and supplies, conservation practices, and reclamation activities in the AVRWC service area of Apple Valley. The meeting will be held at 10:00 AM on Tuesday, October 18, as a part of a Regular Board Meeting of the AVRWC, at 21760 Ottawa Road, Apple Valley. All comments will be considered and a final report will be adopted by Resolution of the Board of Directors in December. The Final adopted Plan will be submitted to the State of California Department of Water Resources by December 31, 2005. A copy of the proposed Final Plan will be made available for public review at the Ottawa Road location, during the month of November, between the hours of 8 AM and 5 PM.

# Appendix B

## Notification Letters

# Agencies Involved in Preparing the 2000 UWMP

- Mojave Water Agency
- Town of Apple Valley
- Victor Valley Wastewater Reclamation Authority
- Apple Valley Fire Protection District
- Rancheritos Mutual Water Company
- Juniper Riviera County Water District
- Navajo Mutual Water Company
- Mariana Ranchos County Water District
- Thunderbird County Water District
- Apple Valley Heights County Water District
- San Bernardino County Special Districts Department

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21780 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1654

August 5, 2005

Mr. Norm Caouette
Assistant General Manager
Mojave Water Agency
22450 Headquarters
Apple Valley CA 92307

SUBJECT: 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Caouette:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21760 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1854

August 5, 2005

Mr. Ken Henderson
Community Development Director
Town of Apple Valley
14955 Dale Evans Parkway
Apple Valley CA 92307

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Henderson:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21780 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1654

August 5, 2005

Mr. Dan Gallagher
General Manager
Victor Valley Wastewater Reclamation Authority
20111 Shay Road
Victorville CA 92394

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Gallagher:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21760 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1654

August 5, 2005

Mr. Doug Qualls
Fire Chief
Apple Valley Fire Protection District
22400 Headquarters Drive
Apple Valley CA 92307

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Qualls:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21760 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1654

August 5, 2005

Mr. Frank Aubel
General Manager
Rancheritos Mutual Water Company
P.O. Box 348
Apple Valley CA 92307

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Aubel:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21780 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1854

August 5, 2005

Mr. Mike Mines
General Manager
Juniper Riviera County Water District
P.O. Box 386
Apple Valley CA 92307

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Mines:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21760 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1854

August 5, 2005

Mr. Jim Hansen
Navajo Mutual Water Company
16010 Osage
Apple Valley CA 92307

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Hansen:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21780 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 - FAX (760) 247-1654

August 5, 2005

Ms. Brenda Bitonti
Office Manager
Mariana Ranchos County Water District
9600 Manzanita Street
Apple Valley CA 92307

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Ms. Bitonti;

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21760 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-8484 • FAX (760) 247-1654

August 5, 2005

Mr. Roy Shull
General Manager
Thunderbird County Water District
P.O. Box 1105
Apple Valley CA 92307

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Shull:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21760 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1654

August 5, 2005

Mr. Carlos Hardy II
Board President
Apple Valley Heights County Water District
9429 Cerra Vista Street
Apple Valley CA 92308

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Hardy II:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

**APPLE VALLEY RANCHOS WATER CO.**
P.O. BOX 7005
21780 OTTAWA ROAD
APPLE VALLEY, CA 92307
(760) 247-6484 • FAX (760) 247-1654

August 5, 2005

Mr. Jim Oravets
Water and Sanitation Division
San Bernardino County Special Districts Dept.
157 West Fifth Street
San Bernardino CA 92415

**SUBJECT:** 2005 Update of Apple Valley Ranchos Water Company's Urban Water Management Plan

Dear Mr. Oravets:

Before December 31, 2005, Apple Valley Ranchos Water Company ("AVR"), as a supplier of domestic water to more than 3,000 customers, is required to update its existing Year 2000 Urban Water Management Plan (UWMP) and submit the Plan to the State Department of Water Resources (DWR). DWR carries out the Urban Water Management Planning Act and reviews plans submitted by water suppliers every five years. DWR encourages urban water suppliers to solicit input from other water suppliers, water management agencies, and relevant public agencies that would have an interest or "stake" in water supply and long-range planning to meet urban demands.

AVR has initiated its Year 2005 Update of the UWMP and is soliciting your agency's input. Our consultant, Cheryl Tubbs, Lilburn Corporation may be contacting you to collect data and information necessary for compiling the Plan Update.

We would also encourage you to provide us with written or verbal comments between now and mid-September. We will also hold a public meeting at 10:00 am on October 18, 2005 so that interested members of the public may also provide input. It is presently anticipated that a Draft Plan will be available for review in late September. Please let us know if you would like to receive a copy of the Draft Plan.

Sincerely,

Scott Weldy
Assistant General Manager

# Appendix C

## Demand Management Measures (DMMs) Proformas

| Best Management Practices Cost Benefit Analysis | | | | | | |
|---|---|---|---|---|---|---|
| BMPs | | | Total values from 2006-2010 | | | |
| | | | Total Cost | Total Water Savings in acre-feet | Cost of Water Saved | Difference Cost/(Benefit) |
| 1 | Water survey programs for single-family residential and multi-family residential customers | DMM 2.8-Residential Surveys | $463,809 | 968.52 | $238,256 | $225,553 |
| 2 | Residential plumbing retrofit* | DMM 2.2-Graywater, DMM 2.7-Residential Retrofits, DMM 2.9-Ultra Low Flow Flush Toilets | $833,811 | 839.04 | $206,404 | $627,407 |
| 3 | System water audits, leak detection, and repair* | DMM 2.17-System Audits and Leak Detection | $2,223,385 | 1200.00 | $295,200 | $1,928,185 |
| 4 | Metering with commodity rates for all new connections and retrofit of existing connections* | DMM 2.5-Metering | | | | |
| 5 | Large landscape conservation programs and incentives * | DMM 2.16-Large Landscape Devices | | | | |
| 6 | High-efficiency washing machine rebate programs* | DMM 2.3-High Efficiency Washing Machine | $568,173 | 190.91 | $46,963 | $521,210 |
| 7 | Public information programs | | $119,982 | | | $119,982 |
| 8 | School education programs | | *Budget included in BMP 7* | | | |
| 9 | Conservation programs for C.I.I. accounts* | DMM 2.10-C.I.I. Surveys, DMM 2.13-Self Closing Faucets, DMM 2.15-Urinals | $1,518,923 | 263.25 | $64,760 | $1,454,163 |
| 10 | Wholesale agency programs | DMM 2.14-Ultra Low Flush Toilets (C.I.I.) | *Included in BMP 9* | | | |
| 11 | Conservation pricing* | DMM 2.6-Conservation Pricing | | | | |
| 12 | Water conservation coordinator | | $32,326 | | | $32,326 |
| 13 | Water waste prohibition (n/a) | CPUC Rules | | | | |
| 14 | Residential ultra-low-flush toilet replacement programs * | DMM 2.9-Ultra Low Flow Flush Toilets | *Included in BMP 2* | | | |
| | TOTAL-ALL BMPs | | $5,760,409 | 3,462 | $851,584 | $4,908,825 |
| | | | | | Cost of water in acre-feet: | $246 |

* Requires CPUC Approval

## 2.2 Graywater BMP 2

*Typical Equipment Costs*

| Program Cost | 1994 $ |
|---|---|
| plumbing parts | 121 |
| tank parts | 233 |
| pump | 150 |
| drip parts or | 253 |
| leachfield parts | 230 |
| total drip | 757 |
| total leachfields | 734 |

| | | | |
|---|---|---|---|
| program costs | Whitney et al. (1999) | | |
| capital costs | $5400/site | Including $1250 for equipment, $4150 for labor | $6,419 |
| energy cost/pump | $100 | over 15 year | |
| back-wash water | $20 | over 15 year | |

**Water Savings Calculation Formula**

S=PPH*Graywater_PPH_Day*Percent_Irrigation_Saved

S=gpd/HH system

*percent_irrigation_saved* 4 to 8.5 months/year irrigation

| | DWR 1994 |
|---|---|
| showers,bathtubs and wash | 25 gal/day/occupant |
| clothes washers | 15gal/day/occupant |

| | Savings gpd/system |
|---|---|
| With 6 months irrigation and 3.0 persons/HH | 60 |

| | | | | SAVINGS | | | | |
|---|---|---|---|---|---|---|---|---|
| Year | No. of HHs | No. of new HHs | HHs with graywater systems | per HH/ gpd/system | all HHs /gpd (assuming 50HH are added each year) | all HHs/gallons per year/system | Total water savings (only new HHs) | Total Water saved (Cumulative) |
| 2005 | 17,385 | - | - | 60 | 3,000 | 1,095,000 | 1,095,000 | 1,095,000 |
| | | | | | | | | |
| 2006 | 18,018 | 633 | 50 | 60 | 3,000 | 1,095,000 | 1,095,000 | 1,095,000 |
| 2007 | 18,651 | 633 | 50 | 60 | 3,000 | 1,095,000 | 1,095,000 | 2,190,000 |
| 2008 | 19,284 | 633 | 50 | 60 | 3,000 | 1,095,000 | 1,095,000 | 3,285,000 |
| 2009 | 19,917 | 633 | 50 | 60 | 3,000 | 1,095,000 | 1,095,000 | 4,380,000 |
| 2010 | 20,550 | 633 | 50 | 60 | 3,000 | 1,095,000 | 1,095,000 | 5,475,000 |
| | | | 50 | 60 | 3,000 | 1,095,000 | 1,095,000 | |
| Total water saved (gallons) | | | | | | | | 16,425,000 |
| Total water saved (acre-feet) | | | | | | | | 50 |

Assuming at the end of the program in 2010, 25% of HHs will have graywater systems installed.
This implies an addition of 1,027 systems approximately every year.

## 2.2 Graywater — BMP 2

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | 50 | $500 | $25,000 | | | | | | $25,000 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | $ 5,000 | | | | | | $5,000 |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $5,000 |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | | | | | | | | | |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $30,000 |

## 2.2 Graywater BMP 2

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | $25,000 | $5,000 | | | $30,000 | $30,000 |
| 1 | 2007 | $25,000 | $5,000 | | | $30,000 | $30,450 |
| 2 | 2008 | $25,000 | $5,000 | | | $30,000 | $30,907 |
| 3 | 2009 | $25,000 | $5,000 | | | $30,000 | $31,370 |
| 4 | 2010 | $25,000 | $5,000 | | | $30,000 | $31,841 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| **Total** | | | | | | **$150,000** | **$154,568** |

## 2.3 High Efficiency Washing Machines BMP 6

### Program Costs

***Supplier program costs may include***
staff time to develop rebate program
rebate costs
administration
contractors
marketing

***Washing machine costs***

| *Type* | *Retail price $ 1998* |
|---|---|
| front loading | 700-1600 |
| top loading | 300-600 |

***Assumptions***
6.7 loads/week
60% loads using warm/hot water
$0.0835 per kWh
$0.002011 per gallon of water
$0.002362 per gallon of wastewater

### Water Savings Calculation Formula

S=Savings_per_Load*Water_Use_per_load*Loads_per_Person*PPH

S=gpd/machine
SF PPH
MF PPH 25% for maximum fill
Savings_per_Load 10% for minimum
**48.5 gallons/load**
Water use per load
Loads per person-.3 loads per capita per day to .45 loads per day
**0.3 loads per person used in analysis**

**Savings in gpd/machine/HH** **11.058**

| | | | | SAVINGS | | | | |
|---|---|---|---|---|---|---|---|---|
| Year | No. of HHs | No. of new HHs | HHs with high efficiency Washing machines (25% of totalHHs) | per HH/ gpd/machine | all HHs /gpd (assuming 1027HH are added each year) | all HHs/gallons per year/machines | Total wter savings (only new HHs) | Total Water saved (Cumulative) |
| 2005 | 17385 | | | 11.058 | | | | |
| | | | | | | | | |
| 2006 | 18,018 | 633 | 1,027 | 11 | 11,362 | 4,147,158 | 4,147,158 | 4,147,158 |
| 2007 | 18,651 | 633 | 1,027 | 11 | 11,362 | 4,147,158 | 4,147,158 | 8,294,316 |
| 2008 | 19,284 | 633 | 1,027 | 11 | 11,362 | 4,147,158 | 4,147,158 | 12,441,474 |
| 2009 | 19,917 | 633 | 1,027 | 11 | 11,362 | 4,147,158 | 4,147,158 | 16,588,632 |
| 2010 | 20,550 | 633 | 1,027 | 11 | 11,362 | 4,147,158 | 4,147,158 | 20,735,791 |
| | | | | | | | | |
| Total water saved (gallons) | | | | | | | | 62,207,372 |
| Total water saved (acre-feet) | | | | | | | | 191 |

Assuming at the end of the program in 2010 25% of HHs will have new high efficiency washing machines
This implies an addition of 1027 washing machines approximately every year

## 2.3 High Efficiency Washing Machines — BMP 6

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | 20 | $30.00 | $600 | | | | | | $600 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $600 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | $5,000 | | | | | | $5,000 |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $5,000 |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | 40 | $30 | $1,200 | | | | | | $1,200 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | 1027 | $100 | $102,700 | | | | | | $102,700 |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $103,900 |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $109,500 |

## 2.3 High Efficiency Washing Machines BMP-6

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement & Verification | Total | Present Value Total (1.5%) |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | $600 | $5,000 | $103,900 | $0 | $109,500 | $109,500 |
| 1 | 2007 | $600 | $5,000 | $103,900 | $0 | $109,500 | $111,143 |
| 2 | 2008 | $600 | $5,000 | $103,900 | $0 | $109,500 | $112,810 |
| 3 | 2009 | $600 | $5,000 | $103,900 | $0 | $109,500 | $114,502 |
| 4 | 2010 | $600 | $5,000 | $103,900 | $0 | $109,500 | $116,219 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| Total Costs | | | | | | | $568,173 |

## 2.4 Hot Water Demand Unit — not included in the BMP: 1-residential water surveys

### Program Costs

| | | | | |
|---|---|---|---|---|
| $500/unit | 1998 | | 2006 | |
| $208 | 1999 | without labor | $241.22 | with 2.5% inflation rate |

Saving figures only for retrofits
depends on the layout of the water system-radial, straight line and also on the distance between fixtures from the trunk line/water heater
shorter branches are better

### Water Savings Calculation formula

S=Cold_Start_hot_Water_Runs*Savings_per_Run*Plumbing_Factor
S=gpd/hot water demand unit
Cold_Start_Hot_water_Runs=PPH*Hot_Water_Runs*Scale_Factor

| | | |
|---|---|---|
| Hot_Water_Runs | number of times water is heated up at the faucet | 6/person/day or 4/person/day |
| Scale_factor | degree to which hot water runs are reduced as persons per household increases-like .8-1.0 | |
| | | used .9 |
| Savings_Per_Runs | 1-4 gal | |
| Plumbing Factor | ability of HH to realize savings because of the configuration of the plumbing system .75-1 | |
| | | used .75 |

**Savings in gpd/hot water demand unit** 43.776

| | | | | SAVINGS | | | | |
|---|---|---|---|---|---|---|---|---|
| Year | No. of HHs | No. of new HHs | HHs with Hot Water Demand Unit (30% of total HHs) | per HH/ gpd/machine | all HHs /gpd (assuming 1233HH are added each year) | all HHs/gallons per year/hot water unit | Total water savings (only new HHs) | Total Water saved (Cumulative) |
| 2005 | 17,385 | 23,362 | 3,504 | 44 | 69,156 | 25,245,619 | 25,245,619 | 25,245,619 |
| | | | | | | | | |
| 2006 | 18,018 | 633 | 1,233 | 44 | 53,976 | 19,701,139 | 19,701,139 | 19,701,139 |
| 2007 | 18,651 | 633 | 1,233 | 44 | 53,976 | 19,701,139 | 19,701,139 | 39,402,277 |
| 2008 | 19,284 | 633 | 1,233 | 44 | 53,976 | 19,701,139 | 19,701,139 | 59,103,416 |
| 2009 | 19,917 | 633 | 1,233 | 44 | 53,976 | 19,701,139 | 19,701,139 | 78,804,555 |
| 2010 | 20,550 | 633 | 1,233 | 44 | 53,976 | 19,701,139 | 19,701,139 | 98,505,694 |
| | | | | | | | | |
| Total water saved (gallons) | | | | | | | | 295,517,081 |
| Total water saved (acre-feet) | | | | | | | | 907 |

Assuming at the end of the program in 2010 30% of HHs will have the hot water unit
This implies an addition of 1233 hot water units approximately every year

$223,100

## 2.4 Hot Water Demand Unit — BMP 2

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | 20 | $30 | $600 | | | | | | $600 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $600 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | $5,000 | | | | | | $5,000 |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $5,000 |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | 40 | $30 | $1,200 | | | | | | $1,200 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | 1233 | $20 | $24,660 | | | | | | $24,660 |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $25,860 |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $31,460 |

## 2.4 Hot Water Demand Unit — BMP 2

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | $600 | $5,000 | $25,860 | $0 | $31,460 | $31,460 |
| 1 | 2007 | $600 | $5,000 | $25,860 | $0 | $31,460 | $31,932 |
| 2 | 2008 | $600 | $5,000 | $25,860 | $0 | $31,460 | $32,411 |
| 3 | 2009 | $600 | $5,000 | $25,860 | $0 | $31,460 | $32,897 |
| 4 | 2010 | $600 | $5,000 | $25,860 | $0 | $31,460 | $33,390 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 16 | 2019 | | | | | | |
| 17 | 2020 | | | | | | |
| 18 | 2021 | | | | | | |
| 19 | 2022 | | | | | | |
| 20 | 2023 | | | | | | |
| 21 | 2024 | | | | | | |
| 22 | 2025 | | | | | | |
| Total | | | | | | $157,300 | $166,090 |

## 2.7 Residential Plumbing Retrofits — use in BMP-2 — BMP-1.2

### Program Costs

Staff time to contact building departments, developers and plumbing supply outlets
Retrofit Kits: showerheads, toilet displacement devices, and installation costs
administration
contractors
marketing

| | | |
|---|---|---|
| low flow showerhead kits | $2 | 1995 |
| Low flow showerheads, direct install | $10-15 | 1995 |

### Water Savings Calculation Formula

**Retrofit Device Savings**

| Device | Initial Savings | method 1<br>device life span | method 2<br>Device decay rate per year |
|---|---|---|---|
| low flow showerheads | 5.5 gpd | 3-7 years | 20-30 % |
| toilet displacement devices | 4 gpd | 2-5 years | 40-60 % |
| faucet aerators | 1.5 gpd | 1-3 yrs | 40-60 % |
| toilet leak detection | .64 gpd (8 gpd per repaired leaking toilet; 8 percent of toilets leak) | 7-10 yrs | 1-2 % |
| other household leak check | .5 gpd (12.4 gpd per HH repair; 4 percent of HHs with leaks) | 7-10 yrs | 1-2 % |
| turf audit | 12.2 | 4 yrs | 40-60 % |
| turf audit with timer | 25.9 gpd (12.2 gpd for turf audit plus13.7 if timer) | 4 yrs | 40-60 % |
| source | field studies | judgement | judgement |

Water Savings = Device_savings*Probability_of_installation*lifespan

**Savings/device/gpd** 46.56

Probability=80%
Lifespan=5 years

| | | | | SAVINGS | | | | |
|---|---|---|---|---|---|---|---|---|
| Year | No. of HHs | No. of new HHs | HHs with Retrofit | per HH/ gpd/machine | all HHs /gpd (assuming 1000HH are added each year) | all HHs/gallons per year/hot water unit | Total water savings (only new HHs) | Total Water saved (Cumulative) |
| 2005 | 17,365 | - | 1,000 | 47 | 46,560 | 16,994,400 | 16,994,400 | 16,994,400 |
| | | | | | | | | |
| 2006 | 18,018 | 633 | 1,000 | 47 | 46,560 | 16,994,400 | 16,994,400 | 16,994,400 |
| 2007 | 18,651 | 633 | 1,000 | 47 | 46,560 | 16,994,400 | 16,994,400 | 33,988,800 |
| 2008 | 19,284 | 633 | 1,000 | 47 | 46,560 | 16,994,400 | 16,994,400 | 50,983,200 |
| 2009 | 19,917 | 633 | 1,000 | 47 | 46,560 | 16,994,400 | 16,994,400 | 67,977,600 |
| 2010 | 20,550 | 633 | 1,000 | 47 | 46,560 | 16,994,400 | 16,994,400 | 84,972,000 |
| | | | | | | | | |
| Total water saved (gallons) | | | | | | | | 254,916,000 |
| Total water saved (acre-feet) | | | | | | | | 782 |

Assuming 1000 devices will be retrofitted each year or 24% of total by 2010

## 2.7 Residential Plumbing Retrofits — BMP-1.2

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | 20 | $30 | $600 | | | | | | $600 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $600 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | 1000 | $5 | $5,000 | | | | | | $5,000 |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $5,000 |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $5,600 |

## 2.7 Residential Plumbing Retrofits — BMP-1,2

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| 0 | 2003 | | | | | | |
| 1 | 2004 | | | | | | |
| 2 | 2005 | | | | | | |
| 3 | 2006 | $600 | $0 | $5,000 | | $5,600 | $6,031 |
| 4 | 2007 | $600 | $0 | $5,000 | | $5,600 | $6,181 |
| 5 | 2008 | $600 | $0 | $5,000 | | $5,600 | $6,336 |
| 6 | 2009 | $600 | $0 | $5,000 | | $5,600 | $6,494 |
| 7 | 2010 | $600 | $0 | $5,000 | | $5,600 | $6,657 |
| 8 | 2011 | | | | | | |
| 9 | 2012 | | | | | | |
| 10 | 2013 | | | | | | |
| 11 | 2014 | | | | | | |
| 12 | 2015 | | | | | | |
| 13 | 2016 | | | | | | |
| 14 | 2017 | | | | | | |
| 15 | 2018 | | | | | | |
| 16 | 2019 | | | | | | |
| 17 | 2020 | | | | | | |
| 18 | 2021 | | | | | | |
| 19 | 2022 | | | | | | |
| 20 | 2023 | | | | | | |
| 21 | 2024 | | | | | | |
| 22 | 2025 | | | | | | |
| Total | | | | | | | $31,699 |

## Program and Device/Activity Cost Estimates

**Program costs**
staff time (if not contracted out)
survey equipment and devices
administration
contractors
marketing

| other costs | 1995 (A&N Technical Services) |
|---|---|
| *Survey, targeted indoor/outdoor* | |
| survey, untargeted indoor | 40 |
| low flow showerheads, kit | 2 |
| moisture sensor, residential | 125 |
| irrigation timer, residential | 230 |
| swimming pool/spa covers | 5-150 |
| low flow showerheads, direct install | $10-15 |

**CCWD 1994**
**Cost of Residential Audit**

| Action | | Hours | Costs |
|---|---|---|---|
| labor | | | |
| | audit | 1.25@15.43/hr | 19.28 |
| | administrative costs | | 5.86 |
| | labor subtotal | | 25.14 |
| Equipment | | | |
| | showerhead | 0.61@$2.49 | 1.52 |
| | toilet dam | 1.54@$1.20 | 1.85 |
| | bucket (1993 only) | | |
| | faucet aerator | | |
| | information material | | 3.5 |
| | hose nozzel | | 0.99 |
| | milage | 17 mi.@$.28/mi. | 4.76 |
| | equipment subtotal | | 12.62 |
| **Total** | | | **37.76** |

## Calculations

Water savings=Survey_Savings*Number_of_Surveys

| | | |
|---|---|---|
| **Savings** | 11,000 | |
| | *Survey savings* | *11 gpd* |
| | *No. of surveys* | *1000/yr* |

11,000gpd per 1000 surveys=(5.5gpd+4gpd+1.5gpd)*1000 surveys

| Year | Savings (gallons/day) | Savings (gallons/year) |
|---|---|---|
| 2005 | 11,000 | 4,015,000 |
| | | |
| 2006 | 11,000 | 4,015,000 |
| 2007 | 11,000 | 4,015,000 |
| 2008 | 11,000 | 4,015,000 |
| 2009 | 11,000 | 4,015,000 |
| 2010 | 11,000 | 4,015,000 |
| | | |
| Total | | 20,075,000 |
| Acre-feet | | 62 |

## 2.8 Residential Surveys BMP 1

| Elapsed Year | Calendar Year | No. of CII surveys | Cost/survey | Total | Present Value |
|---|---|---|---|---|---|
| | 2003 | | | | |
| | 2004 | | | | |
| | 2005 | | | | |
| 0 | 2006 | 1500 | $38 | $56,640 | $56,640 |
| 1 | 2007 | 1500 | $38 | $56,640 | $58,056 |
| 2 | 2008 | 1500 | $38 | $56,640 | $59,507 |
| 3 | 2009 | 1500 | $38 | $56,640 | $60,995 |
| 4 | 2010 | 1500 | $38 | $56,640 | $62,520 |
| 5 | 2011 | | | | |
| 6 | 2012 | | | | |
| 7 | 2013 | | | | |
| 8 | 2014 | | | | |
| 9 | 2015 | | | | |
| 10 | 2016 | | | | |
| 11 | 2017 | | | | |
| 12 | 2018 | | | | |
| 13 | 2019 | | | | |
| 14 | 2020 | | | | |
| 15 | 2021 | | | | |
| 16 | 2022 | | | | |
| 17 | 2023 | | | | |
| 18 | 2024 | | | | |
| 19 | 2025 | | | | |
| Total | | | | | $297,718 |

## 2.9 Ultra Low Flush Toilets (Residential) BMP-1,2,13,14

### Program Costs

staff time to administer rebate program
rebate incentive
administration
contractors
marketing

| Sector | Toilet cost | Installation | Rebate | Other costs | Participant costs | Supplier costs | Total society costs |
|---|---|---|---|---|---|---|---|
| single family rebate | 120 | 70 | 75 | 40 | 115 | 115 | 230 |
| single family direct | 60 | 65 | | 40 | 35 | 130 | 165 |
| multi-family direct | 60 | 55 | | 40 | 35 | 120 | 155 |

*source: CUWCC guidelines*

### Water Savings Calculation Formula

savings calculation primary method: toilet savings adjusted for HH density
S (sf)=6.683*Persons_Dwelling-0.529*(Persons_dwelling)^2+7.826
S (mf)=19.138*Persons_Unit-0.942*(Persons_unit)^2+2.181

Savings per HH gpd 7.5271371

| | | | | SAVINGS | | | | |
|---|---|---|---|---|---|---|---|---|
| Year | No. of HHs | No. of new HHs | HHs with Ultra Low Flush Toilets | savings per HH/ gpd/machine | all HHs /gpd (assuming 1027HH are added each year) | all HHs/gallons per year/machines | Total water savings (only new HHs) | Total Water saved (Cumulative) |
| 2005 | 17,385 | - | - | - | - | - | - | - |
| | | | | | | | | |
| 2006 | 18,018 | 633 | 50 | 8 | 376 | 137,370 | 137,370 | 137,370 |
| 2007 | 18,651 | 633 | 50 | 8 | 376 | 137,370 | 137,370 | 274,741 |
| 2008 | 19,284 | 633 | 50 | 8 | 376 | 137,370 | 137,370 | 412,111 |
| 2009 | 19,917 | 633 | 50 | 8 | 376 | 137,370 | 137,370 | 549,481 |
| 2010 | 20,550 | 633 | 50 | 8 | 376 | 137,370 | 137,370 | 686,851 |
| | | | | | | | | |
| Total water saved (gallons) | | | | | | | | 2,060,554 |
| Total water saved (acre-feet) | | | | | | | | 6 |

Assuming at the end of the program in 2010 25% of HHs will have ULTFs installed
This implies an addition of 1,027 systems approximately every year

## 2.9 Ultra Low Flush Toilets (Residential) — BMP 2

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | 20 | $30 | $600 | | | | | | $600 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $600 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | $5,000 | | | | | | $5,000 |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $5,000 |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | 40 | $30 | $1,200 | | | | | | $1,200 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | 1027 | $115 | $118,105 | | | | | | $118,105 |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $119,305 |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $124,905 |

## 2.9 Ultra Low Flush Toilets (Residential) BMP 2

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, & Outreach | Direct Implementation | Evaluation, Measurement, & Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | $600 | $5,000 | $119,305 | $0 | $124,905 | $124,905 |
| 1 | 2007 | $600 | $5,000 | $119,305 | $0 | $124,905 | $126,779 |
| 2 | 2008 | $600 | $5,000 | $119,305 | $0 | $124,905 | $128,680 |
| 3 | 2009 | $600 | $5,000 | $119,305 | $0 | $124,905 | $130,610 |
| 4 | 2010 | $600 | $5,000 | $119,305 | $0 | $124,905 | $132,570 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| Total | | | | | | | $647,544 |

## Program Costs

staff time to audit water usres and make recommendation, if not contracted out
administration
contractors
marketing

cost of full implementation of recommendations

| | median | mean |
|---|---|---|
| analyst surveys | 1014 | 3598 |
| consultant surveys | 6828 | 12387 |
| water efficiency studies | 30035 | 97527 |

costs of surveys

| | analyst survey | consultant survey | water efficiency study |
|---|---|---|---|
| average survey cost | $600 | $1,484 | $8,121 |
| average potential savings/yr. | 3.3 AF | 8.4 AF | 35.9 AF |

| | Cost of Saved Water ($/AF) | | |
|---|---|---|---|
| 100% of average potential | 43 | 42 | 54 |
| 80% of average potential | 54 | 52 | 67 |
| 60% of average potential | 72 | 70 | 89 |
| 40% of average potential | 108 | 105 | 134 |
| 20% of average potential | 216 | 210 | 268 |

Total cost=cost of survey+cost of implementation

**Water Savings Calculation Formula**

S=Use*SavingsPotential*ImplementationPercentage

S=savings in gpd per site from cooling towers
Use=water consumption in gpd

SavingsPotential is the technical potential for water savings identified by the water survey (percent savings from pre-program use)
ImplementationPercentage=percent savings potential that is implemented

| End Use | Percentage Use | Potential Savings |
|---|---|---|
| Sanitary | 9.3 | 24.6 |
| Cooling | 10.8 | 14.2 |
| Irrigation | 15.7 | 22.5 |
| Other | 64.2 | 38.7 |
| Total use in Comm. Est | 20.1 | |
| Total Savings in Commercial establishments | | 38.8 |

| | Total Connections | | Estimated connections | | Water Use Total | | Water Use percentage | | Savings | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Commercial-Indu | Irrigation | Commercial-Industria | Irrigation | Commercial-Indu | Irrigation | Commercial-I | Irrigation | Commercial- | Irrigation |
| 2005 | 1348 | 76 | 135 | 8 | 89 | 0.51 | 17.89 | 0.08 | 6.94 | 0.02 |
| | | | | 0 | 0 | 0.00 | | | | |
| 2006 | 1397 | 78 | 140 | 8 | 92 | 0.53 | 18.54 | 0.08 | 7.19 | 0.02 |
| 2007 | 1447 | 81 | 145 | 8 | 95 | 0.55 | 19.19 | 0.09 | 7.45 | 0.02 |
| 2008 | 1496 | 84 | 150 | 8 | 99 | 0.57 | 19.84 | 0.09 | 7.70 | 0.02 |
| 2009 | 1545 | 87 | 154 | 9 | 102 | 0.58 | 20.49 | 0.09 | 7.95 | 0.02 |
| 2010 | 1594 | 89 | 159 | 9 | 105 | 0.60 | 21.14 | 0.09 | 8.20 | 0.02 |
| | | | | | | | | | | |
| Savings | | | | | | | | | 38.49 | 0.10 |
| Total Savings | | | | | | | | | | 38.59 |

assuming 10% of the connections will be surveyed

## COMMERCIAL

**CONNECTIONS**

| | 2005 | 2010 |
|---|---|---|
| Commercial + Domestic | 17908 | 21169 |
| Commercial (8%) | 1346 | 1591 |
| Difference (2010-2005) | 245 | |
| Diference / 5 | 49 | |

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| Connections | 1346 | 1395 | 1444 | 1493 | 1542 | 1591 |
| WATER USE (in AFY) | 2843 | 2955 | 3066 | 3178 | 3289 | 3400 |
| Difference / 5 | 111 | | | | | |
| Consumption per connectic | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 | 0.47 |

## IRRIGATION

**CONNECTIONS**

| | 2005 | 2010 |
|---|---|---|
| IRRIGATION | 76 | 89 |
| Difference | 14 | |
| Diference / 5 | 3 | |

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| Connections | 76 | 78 | 81 | 84 | 87 | 89 |
| WATER USE (in AFY) | 1123 | 1164 | 1205 | 1246 | 1287 | 1328 |
| Difference / 5 | 41 | | | | | |
| Consumption per connectic | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 | 0.067 |

## INDUSTRIAL

**CONNECTIONS**

| | 2005 | 2010 |
|---|---|---|
| | 2 | 3 |
| Difference / 5 | 0.086 | |

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| Connections | 2 | 2 | 3 | 3 | 3 | 3 |
| WATER USE (in AFY) | 3 | 3 | 3 | 3 | 3 | 3 |
| Difference / 5 | 0.11 | | | | | |
| Consumption per connectic | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |

| 2.10 CII Surveys | | | BMP 9 | | |
|---|---|---|---|---|---|
| Elapsed Year | Calendar Year | No. of CII surveys | Cost/survey | Total | Present Value Total |
| | 2003 | | | | |
| | 2004 | | | | |
| | 2005 | | | | |
| 0 | 2006 | 148 | $1,484 | $219,033 | $229,038 |
| 1 | 2007 | 153 | $1,484 | $226,729 | $240,642 |
| 2 | 2008 | 158 | $1,484 | $234,425 | $252,542 |
| 3 | 2009 | 163 | $1,484 | $242,121 | $264,745 |
| 4 | 2010 | 168 | $1,484 | $249,817 | $277,258 |
| 5 | 2011 | | | | |
| 6 | 2012 | | | | |
| 7 | 2013 | | | | |
| 8 | 2014 | | | | |
| 9 | 2015 | | | | |
| 10 | 2016 | | | | |
| 11 | 2017 | | | | |
| 12 | 2018 | | | | |
| 13 | 2019 | | | | |
| 14 | 2020 | | | | |
| 15 | 2021 | | | | |
| 16 | 2022 | | | | |
| 17 | 2023 | | | | |
| 18 | 2024 | | | | |
| 19 | 2025 | | | | |
| Total | | | | | $1,264,225 |

## 2.13 Self-Closing Faucets — BMP-9 — CII

### Program Costs

| | | | |
|---|---|---|---|
| faucet and purchase of faucets | 1995 | | |
| administration | Infrared | $200 | 238 |
| contractors | Spring Valve | $50 | 59 |
| marketing | | | |

### Water Savings Calculation Formula

S (high to IRLow)=Washes_per_Day*(GP_Wash_High_Flow_Faucet-GP_Wash_IRSelfClosing_Faucet)

S=savings per day
Washes_per_Day=avg washes per day at a faucet during working day
gallons_per_Wash=units of gpd per self closing faucet

***WATER USE***

*Gallons_per_Wash*

| | | |
|---|---|---|
| old high flow faucets | .5gpd | Behling and Bartilucci 1992 |
| New faucets | .33 gpd | Behling and Bartilucci 1993 |
| new faucets with IR self closing | .2 gpd | McCuen 1975, 1988 |
| new faucets with spring self closing | .25 gpd | McCuen 1975, 1989 |
| | *working days/year* | *260* |

Savings in gallons per year 650

| | | | | | SAVINGS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | No. of Commercial/ Industrial est. | No. of new Comm. | old connections | new connections | per old connection (gpyr) | per new connection (gyr) | all old Cils /gpy | all new Cils /gpy | Total water savings/year | Total Water saved (Cumulative) |
| 2005 | 1,348 | - | | | 650 | 650 | - | - | - | - |
| | | | | | | | - | | - | |
| 2006 | 1,397 | 49 | 449 | 49 | 650 | 650 | 291,663 | 31,917 | 323,580 | 323,580 |
| 2007 | 1,447 | 49 | 449 | 49 | 650 | 650 | 291,663 | 31,917 | 323,580 | 647,160 |
| 2008 | 1,496 | 49 | 449 | 49 | 650 | 650 | 291,663 | 31,917 | 323,580 | 970,739 |
| 2009 | 1,545 | 49 | 449 | 49 | 650 | 650 | 291,663 | 31,917 | 323,580 | 1,294,319 |
| 2010 | 1,594 | 49 | 449 | 49 | 650 | 650 | 291,663 | 31,917 | 323,580 | 1,617,899 |
| | | | | | | | | | | |
| Total water saved (gallons) | | | | | | | | | | 4,853,697 |
| Total water saved (acre-feet) | | | | | | | | | | 15 |

Assuming 30% of old connections will have self closing faucets
All new connections will have self-closing faucets

## 2.13 Self-Closing Faucets — BMP 9

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | 20 | $ 30 | $ 600 | | | | | | $ 600 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $ 600 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | $ 5,000 | | | | | | $ 5,000 |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $ 5,000 |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | 40 | $ 30 | $ 1,200 | | | | | | $ 1,200 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | 498 | $ 20 | $ 9,960 | | | | | | $ 9,960 |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $ 11,160 |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $ 16,760 |

## 2.13 Self-Closing Faucets BMP 9

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | $600 | $5,000 | $11,160 | $0 | $16,760 | $16,760 |
| 1 | 2007 | $600 | $5,000 | $11,160 | $0 | $16,760 | $17,011 |
| 2 | 2008 | $600 | $5,000 | $11,160 | $0 | $16,760 | $17,267 |
| 3 | 2009 | $600 | $5,000 | $11,160 | $0 | $16,760 | $17,526 |
| 4 | 2010 | $600 | $5,000 | $11,160 | $0 | $16,760 | $17,788 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| Total | | | | | | | $90,352 |

## 2.14 Ultra Low Flush Toilets (CII) — BMP-10

**Program Costs**

staff time to administer rebate program
rebate incentive
administration
contractors
marketing

ULF toilets retail (1995): $150-$170

| 2006 | $175 |
|---|---|

**Water Savings Calculation Formula**

Monthly_water_use (ccf)=f(Number_of_retrofits_installed, Net_irrigation_requirements, region, season, time_trend)

**Savings**

| | | | | | SAVINGS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | No. of Commercial est. | No. of new Comm. | old connections | new connections | per old connection (gpy/) | per new connection (gy/) | all old Cils /gpy | all new Cils /gpy | Total water savings/year | Total Water saved (Cumulative) |
| 2005 | 1,348 | - | | | 11,680 | 11,680 | - | - | - | - |
| | | | | | | | | | | |
| 2006 | 1,397 | 49 | 224 | 49 | 11,680 | 11,680 | 2,620,477 | 573,525 | 3,194,003 | 3,194,003 |
| 2007 | 1,447 | 49 | 224 | 49 | 11,680 | 11,680 | 2,620,477 | 573,525 | 3,194,003 | 6,388,005 |
| 2008 | 1,496 | 49 | 224 | 49 | 11,680 | 11,680 | 2,620,477 | 573,525 | 3,194,003 | 9,582,008 |
| 2009 | 1,545 | 49 | 224 | 49 | 11,680 | 11,680 | 2,620,477 | 573,525 | 3,194,003 | 12,776,011 |
| 2010 | 1,594 | 49 | 224 | 49 | 11,680 | 11,680 | 2,620,477 | 573,525 | 3,194,003 | 15,970,014 |
| | | | | | | | | | | |
| Total water saved (gallons) | | | | | | | | | | 47,910,041 |
| Total water saved (acre-feet) | | | | | | | | | | 147 |

Assuming 15% of old connections will have Ultra Low flush toilets
All new connections will have ultra low flush toilets

## 2.14 Ultra Low Flush Toilets (CII) — BMP 10

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | 20 | $ 30 | $ 600 | | | | | | $ 600 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $ 600 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | $ 5,000 | | | | | | $ 5,000 |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $ 5,000 |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | 40 | $ 30 | $ 1,200 | | | | | | $ 1,200 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | 273 | $ 50 | $ 13,673 | | | | | | $ 13,673 |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $ 14,873 |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $ 20,473 |

## 2.14 Ultra Low Flush Toilets (CII) BMP 10

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | $600 | $5,000 | $14,873 | $0 | $20,473 | $21,408 |
| 1 | 2007 | $600 | $5,000 | $14,873 | $0 | $20,473 | $21,729 |
| 2 | 2008 | $600 | $5,000 | $14,873 | $0 | $20,473 | $22,055 |
| 3 | 2009 | $600 | $5,000 | $14,873 | $0 | $20,473 | $22,386 |
| 4 | 2010 | $600 | $5,000 | $14,873 | $0 | $20,473 | $22,722 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| **Total** | | | | | | | **$114,300** |

## 2.15 Urinals BMP-9

| Program costs | 1995 A&N Technical Services | |
|---|---|---|
| Faucet and purchase of faucets | Low Flow Valve | $20 |
| administration | Waterless Urinal | $100-$400 |
| contractors | | |
| marketing | 23.77 | |

**Water Savings Calculation Formula**

S=Flushes_per_day*(GP_Flush_High_Flow_Urinal - GP_Flush_Low_Flow_Urinal)

* for replacing with waterless urinal, GP_Flush_Waterless=0

S=savings per day in gallons

**Savings** 7.5 *10 flushes per day and low flush valve replaces high flush valve*

| | | | | | SAVINGS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | No. of Commercial est. | No. of new Comm. | old connections | new connections | per old connection (gpy) | per new connection (gpy) | all old Cts /gpy | all new Cts /gpy | Total water savings/year | Total Water saved (Cumulative) |
| 2005 | 1,348 | | | | 2,738 | 2,738 | - | - | - | - |
| | | | | | | | | | | |
| 2006 | 1,397 | 49 | 449 | 49 | 2,738 | 2,738 | 1,228,349 | 134,420 | 1,362,769 | 1,362,769 |
| 2007 | 1,447 | 49 | 449 | 49 | 2,738 | 2,738 | 1,228,349 | 134,420 | 1,362,769 | 2,725,537 |
| 2008 | 1,496 | 49 | 449 | 49 | 2,738 | 2,738 | 1,228,349 | 134,420 | 1,362,769 | 4,088,306 |
| 2009 | 1,545 | 49 | 449 | 49 | 2,738 | 2,738 | 1,228,349 | 134,420 | 1,362,769 | 5,451,075 |
| 2010 | 1,594 | 49 | 449 | 49 | 2,738 | 2,738 | 1,228,349 | 134,420 | 1,362,769 | 6,813,844 |
| | | | | | | | | | | |
| Total water saved (gallons) | | | | | | | | | | 20,441,531 |
| Total water saved (acre-feet) | | | | | | | | | | 63 |

Assuming 30% of old connections will have low flush urinals
All new connections will have low flush urinals

## 2.15 Urinals — BMP-9

| | Item | Utilities Unit | Utilities Unit Cost | Utilities Subtotal | Utilities Time (year) | Contractors Unit | Contractors Unit Cost | Contractors Subtotal | Contractors Time (year) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | **Administration** | | | | | | | | | |
| | 1 Direct labor | 20 | $30.00 | $600 | | | | | | $600 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 General and Administrative Costs | | | | | | | | | |
| | 4 Travel | | | | | | | | | |
| | 5 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $600 |
| B | **Marketing, Advertising, and Outreach** | | | | | | | | | |
| | 1 Direct labor | | | | | | | | | |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Brochures and Marketing Material | | | | | | | | | |
| | 4 Training materials (for canvasses/installers) | | | | | | | | | |
| | 5 Letters, Postage, Mailing Costs | | | $5,000 | | | | | | $5,000 |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $5,000 |
| C | **Direct Implementation** | | | | | | | | | |
| | 1 Direct Labor | 40 | $30 | $1,200 | | | | | | $1,200 |
| | 2 Benefits & Overhead | | | | | | | | | |
| | 3 Materials | | | | | | | | | |
| | 4 Rebates or other payments | 498 | $5 | $2,489 | | | | | | $2,489 |
| | 5 Travel | | | | | | | | | |
| | 6 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | $3,689 |
| D | **Evaluation, Measurement, and Verification** | | | | | | | | | |
| | 1 Measurement: tracking of water use | | | | | | | | | |
| | 2 Verification: field inspections | | | | | | | | | |
| | 3 Evaluation: savings analysis | | | | | | | | | |
| | 4 Other (specify) | | | | | | | | | |
| | *Subtotal* | | | | | | | | | |
| | **Total** | | | | | | | | | $9,289 |

**2.15 Urinals** **BMP 9**

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | $600 | $5,000 | $3,689 | $0 | $9,289 | $9,713 |
| 1 | 2007 | $600 | $5,000 | $3,689 | $0 | $9,289 | $9,859 |
| 2 | 2008 | $600 | $5,000 | $3,689 | $0 | $9,289 | $10,007 |
| 3 | 2009 | $600 | $5,000 | $3,689 | $0 | $9,289 | $10,157 |
| 4 | 2010 | $600 | $5,000 | $3,689 | $0 | $9,289 | $10,309 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| **Total** | | | | | | | **$50,046** |

## 2.16 Large Landscape Devices

BMP-5

*Program Costs*
landscape measurement
financial incentives
administration
contractors
marketing

mean reported costs of conservation (CUWCC 1999)

| | *per customer* | | *per acre* | | |
|---|---|---|---|---|---|
| **action** | *initial* | *ongoing* | *initial* | *ongoing* | |
| adjusted timers | 482 | 247 | 137 | 77 | |
| upgrade equipment | 2571 | 1540 | 953 | 54 | |
| repaired irrigation system | 793 | 2571 | 560 | 399 | |
| external audit | 45 | 126 | 43 | 46 | |
| other | 185 | 77 | 141 | 80 | 2006 |
| | | | $1,834 | | $2,035 |

| | | |
|---|---|---|
| Water Budget Program | $50-300/site | |
| Water Survey Costs | $500-1500/site | |
| Cost of Audit for site with 1 acre of turfgrass | $309.80 | $15,490.00 |

**Water Savings Calculation Formula**

Water_Savings=Savings_per_acre * Acres_per_site * Number_of_sites

| | MGD | MGY | AFY |
|---|---|---|---|
| **Total Savings=gallons/day** | | 0 | 0 |

Savings per acre=445 gpd
Total acreage=50 acres

## BMP 7 Public Information

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | | | | $0 | $22,270 | $23,287 |
| 1 | 2007 | | | | $0 | $22,270 | $23,637 |
| 2 | 2008 | | | | $0 | $22,270 | $23,991 |
| 3 | 2009 | | | | $0 | $22,270 | $24,351 |
| 4 | 2010 | | | | $0 | $22,270 | $24,716 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| **Total** | | | | | | | **$119,982** |

**BMP-12 Water Conservation Co-ordinator**

| Elapsed Year | Calendar Year | Administration | Marketing, Advertising, and Outreach | Direct Implementation | Evaluation, Measurement, and Verification | Total | Present Value Total |
|---|---|---|---|---|---|---|---|
| | 2003 | | | | | | |
| | 2004 | | | | | | |
| | 2005 | | | | | | |
| 0 | 2006 | | | | $0 | $6,000 | $6,274 |
| 1 | 2007 | | | | $0 | $6,000 | $6,368 |
| 2 | 2008 | | | | $0 | $6,000 | $6,464 |
| 3 | 2009 | | | | $0 | $6,000 | $6,561 |
| 4 | 2010 | | | | $0 | $6,000 | $6,659 |
| 5 | 2011 | | | | | | |
| 6 | 2012 | | | | | | |
| 7 | 2013 | | | | | | |
| 8 | 2014 | | | | | | |
| 9 | 2015 | | | | | | |
| 10 | 2016 | | | | | | |
| 11 | 2017 | | | | | | |
| 12 | 2018 | | | | | | |
| 13 | 2019 | | | | | | |
| 14 | 2020 | | | | | | |
| 15 | 2021 | | | | | | |
| 16 | 2022 | | | | | | |
| 17 | 2023 | | | | | | |
| 18 | 2024 | | | | | | |
| 19 | 2025 | | | | | | |
| **Total** | | | | | | | **$32,326** |

# Appendix D

## Town of Apple Valley's Water Conservation Plan

**6.30.240 Emergency Abatement--Authority--Notice.** Whenever any nuisance as defined herein constitutes an immediate hazard to life, health or property and, in the opinion of the Town Manager or his designee, abatement must be undertaken immediately, the Town Manager may abate or cause to be abated all or any portion of the nuisance as may be necessary to protect life, health or property after giving such notice to the parties concerned as the circumstances will permit or without any notice whatever when, in the opinion of the Town Manager or designee, immediate action is necessary.

**6.30.250 Emergency Abatement--Notice to Town Council.** Whenever an emergency abatement action is taken pursuant to Section 6.30.240, the Town Manager or his designee shall submit to the Town Council a written report indicating the location of the nuisance and the reasons requiring emergency abatement thereof. A copy of this report shall be attached to or included as a part of notice to the owner of record when notice is given as previously provided in this chapter.

**6.30.260 Alternative Actions Available--Violation an Infraction.** Nothing in this chapter shall be deemed to prevent the Council from ordering the commencement of a civil proceeding to abate a public nuisance pursuant to applicable law or from pursuing any other remedy available under applicable law. Violation of the provisions of this chapter may be enforced pursuant to provisions of Section _____ of this code.

**6.30.270 Violation and Penalties--Enforcement Authority.**

A. Each person, firm or corporation shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of this chapter is committed, continued or permitted by such person and shall be punishable accordingly.

B. The Town Manager shall have the power to designate by written order that particular officers or employees shall be authorized to enforce particular provisions of this chapter. Officers or employees so designated shall have the authority to arrest persons who violate any of said provisions.

***(Entire Chapter 6.30 adopted Urgency Ord. #157 10-24-95, effective immediately; Entire Chapter 6.30 amended Ord 219, 6-13-00).***

## Chapter 6.40

## WATER CONSERVATION PLAN

**Sections:**

**6.40.010 Findings.**
**6.40.020 Purpose.**
**6.40.030 Water Regulations.**
**6.40.040 Exceptions.**
**6.40.050 Notice and Penalties.**

**6.40.010 Findings.** The Town Council finds that by reason of an apparent overdraft of the water table and because of the current problem existing with respect to the over use of the waste of water in connection with the irrigation of landscape and other outdoor vegetation, lawns and other growth, it is necessary to adopt and enforce a water conservation plan to conserve the water supplies of the Town for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection; and it is the intent of the Town Council to achieve at least an approximately 10% reduction in water use.

**6.40.020 Purpose.** The Town finds that certain water uses regulated or prohibited in this ordinance are non-essential and if allowed would constitute wastage of water.

**6.40.030 Water Regulations.**

A. No water user within the Town of Apple Valley shall knowingly make, cause, use, or permit the use of water for residential, commercial, industrial, agricultural or any other purpose in the manner contrary to any provision of this Chapter.

B. All water users in the Town of Apple Valley shall abide by the following water conservation measures.

(1) The use of water for any purpose shall not result in flooding or runoff in gutters, driveways, streets or adjacent lands.

(2) Lawns, trees, shrubs, and other landscaping shall not be watered beyond what they need for growth and to sustain life, and water shall not be permitted to pool or to run off property onto streets or adjacent land.

(3) Sidewalks, walkways, driveways, parking areas, patios, porches or verandahs or any other like area shall not be washed off with water from hoses or by any other means. The exception to this shall be the washing of flammable or other similar dangerous substances that require direct hose flushing using recognized safety control measures for the benefit of the public health and safety. Notification to the Town of such wash down is required.

(4) Water, sprinkling, aerial watering or irrigating of any landscaped or vegetated areas, including lawns, trees, shrubs, grass, ground cover, plants, vines, gardens, vegetables, flowers, or other landscaping shall not occur between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September provided, however, that these restrictions shall not apply to hand-held hose or drip irrigation systems or to establishment of new lawns, landscaping, or gardens.

(5) Non-commercial washing of privately owned vehicles, trailers, motor homes, buses, boats and mobile homes is prohibited except from a bucket, and except that a hose equipped with an automatic shut-off nozzle may be used for a quick rinse.

(6) Water shall not be used to clean, fill, operate or maintain levels in decorative fountains unless such water is for replenishment of a recycling system.

(7) Water lines, faucets, and other facilities shall be maintained so that they do not leak water. Existing leaks shall be repaired in a timely manner.

(8) Restaurants, other food establishments, or other public places where food is served, shall not routinely provide glasses of drinking water to customers unless specifically requested by the customer.

(9) Water for construction purposes including, but not limited to, debrushing of vacant land, compaction of fills and pads, trench backfill and other construction uses, shall be used in an efficient manner. The use of aerial type sprinklers is not recommended but, if used, shall not be operated between the hours of 9:00 a.m. and 6:00 p.m..

(10) All new residential, commercial and industrial construction shall be equipped with low-flush toilets and low-flow showers and faucets.

(11) Water used for cooling systems must be recycled to the extent possible.

(12) Evaporation resistant covers are required for all new swimming pools and hot tubs and are encouraged to be installed for existing pools. The covers required by this ordinance shall, at the time of purchase, installation and all subsequent maintenance, meet or exceed current standards and specifications for swimming pool, spa and hot tub covers adopted by the American Society for Testing and Materials (ASTM).

(13) Hotels/motels are required to post a notice in substantially the form provided by the Town of Apple Valley urging guests to conserve water.

(14) All current and future water customers are encouraged to install flow restrictors or pressure reducers and to install toilet tank displacement devices (dams, bottles or bags), and as appliances or fixtures wear out, replace them with water-saving models.

(15) Parks, schools, golf courses, cemeteries, school grounds and all public use lands shall not irrigate between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September inclusive and are encouraged to use water conservation irrigation equipment.

(16) The use of drought tolerant or native plant material is encouraged for exterior landscaping in all new residential, and required for new commercial and industrial construction.

(17) The use of low precipitation sprinkler heads, bubblers, drip irrigation and timing devices are required in the exterior landscaping in all new residential, commercial and industrial construction.

(18) At least 50% of all new model homes shall include as a part of the exterior landscape development low water use, drought-tolerant or native plants.

(19) Projects, including Commercial and Planned Unit Developments, which utilize recycled water from sewage treatment or agricultural operations, may receive an exemption from paragraphs (15) through (18) of this Section by approval of the Town Council.

**6.40.040 Exception.** The prohibited or restricted uses of water under this Chapter shall not be applicable in those instances when the Town Manager or his designee finds: (1) The use is essential to avoid an undue hardship for a water user; (2) Special circumstances exist for a particular water user, as distinguished from other water users, which justify allowing an exception; (3) The use is essential for required government or public utility services, including but not limited to police protection, fire protection, sanitation, and other critical or emergency services; or (4) The use is essential to maintain the public health and safety. ***(Amended - Ord. #58, 7-24-90)***

**6.40.050 Penalties.**

Any person who violates any provision or who fails to comply with any of the requirement of this Chapter shall be guilty of an infraction and, upon conviction thereof, shall be punished in accordance with the provisions of Sections 1.01.200 through 1.01.230 of Chapter 1.01 of Title 1 of this Code. ***(Amended Ord. 156, adopted 11-14-95)***

# Appendix E

## Water Wasting and Water Conservation Rules From the California Public Utilities Commission

Rule No. 11 –Discontinuance and Restoration of Service

Rule No. 20 –Water Conservation

# RULE NO. 11

## DISCONTINUANCE AND RESTORATION OF SERVICE

A. Customer's Request for Discontinuance of Service

1. A customer may have service discontinued by giving not less than two days' advance notice thereof to the utility. Charges for service may be required to be paid until the requested date of discontinuance or such later date as will provide not less than the required two days' advance notice.

2. When such notice is not given, the customer will be required to pay for service until two days after the utility has knowledge that the customer has vacated the premises or otherwise has discontinued water service.

B. Discontinuance of Service by Utility

1. For Nonpayment of Bills

a. Past-Due Bills. When bills are rendered monthly or bimonthly, they will be considered past due if not paid within 19 days from the date of mailing. The utility shall allow ever residential customer at least 19 days from the Date of mailing its fill for services, postage prepaid, to make payment of The bill. The utility may not discontinue residential service for nonpayment of a delinquent account unless the utility first gives notice of the delinquency and impending discontinuance, by means of a notice mailed, Postage prepaid, to the customer to whom the service is provided if Different than to whom the service is billed, not earlier than 19 days From the date of mailing the utility's bill for services. T/he 10-day dis-Continuance of service notice shall not commence until five days after Mailing of the notice. (T)

b. When a bill for water service has become past due and a 10-day discontinuance of residential service notice or a 7-day discontinuance of nonresidential service notice for nonpayment has been issued, service may be discontinued if bill is not paid within the time required by such notice. The customer's service, however, will, not be discontinued for nonpayment until the amount of any deposit made to establish credit for that service has been fully absorbed.

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. c. Any customer, residential as well as non-residential, who has initiated a billing complaint or requested an investigation within 5 days of receiving a disputed bull or who has, before discontinuance of service made a request for extension of the payment period of a bill asserted to be beyond the means of the customer to pay in full within the normal period for payment, shall not have residential water service discontinued for nonpayment during the pendency of an investigation by the utility of such customer complaint or request and shall be given an opportunity for review of the complaint, investigation, or request by a review manager of the utility. The review shall include consideration of whether a residential customer shall be permitted to make installment payments on any unpaid balance of the delinquent account over a reasonable period of time, not to exceed 12 months. Such service shall not be discontinued for nonpayment for any customer complying with an installment payment agreement entered into with the utility, provided the customer also keeps current his account for waster service as charges accrue in each subsequent billing period. If a residential customer fails to comply with an installment payment agreement, the utility will give a 10-day discontinuance of service notice before discontinuing such service, but such notice shall not entitle the customer to further investigation by the utility.

d. Any customer whose complaint or request for an investigation pursuant to subdivision (c) has resulted in an adverse determination by the utility may appeal the determination to the Commission. Any subsequent appeal of the dispute or complaint to the Commission shall be in accordance with the Commission adopted Rules of Practice and Procedure.

e. Service to a residential water customer will not be discontinued for nonpayment when the customer has pre4viously established to the satisfaction of the utility that:

(1) The customer is elderly (age 62 or over) or handicapped,* or upon certification of a licensed physician or surgeon that to discontinue water will be life threatening to the customer; and

?? Proof of age must be supported by certificate of birth, driver's license, passport or other reliable document. Proof of handicap must be by certification from a licensed physician, surgeon, public health nurse or social worker.

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. e. (2) The customer is temporarily unable to pay for such service in accordance with the provisions of the utility's tariffs; and

(3) The customer is willing to arrange installment payments satisfactory to the utility, over a period not to exceed 12 months, including arrangements for prompt payment of subsequent bills.

However, service may be discontinued to any customer who does not comply with an installment payment agreement or keep current his account for water service as charges accrue in each subsequent billing period.

f. A customer's residential service may be discontinued for nonpayment of a bill for residential service previously rendered him at any location service by the utility.

g. Service will not be discontinued by reason of delinquency in payment for service on any Saturday, Sunday, legal holiday, or at any time during which the business offices of the utility are not open to the public.

h. Where water service is provided to residential users in a mulit-unit residential structure, mobile home park, or permanent residential structures in a labor camp, where the owner, manager, or operator is listed by the utility as the customer or record, the utility will make every good faith effort to inform the users, when the account is in arrears, that service will be discontinued. Notice will be as prescribed in subdivision (a) above, and in Rules Nos. 5 and 8. (T) (T)

(1) Where said users are individually metered. (N)

The utility is not required to make service available to these users unless each user agrees to the terms and conditions of service and meets the requirement of the law and the utility's rules and tariffs. However, if one or more users are willing and able to assume responsibility for subsequent charges by these users to the account to the satisfaction of the utility, and if there is a practical physical means, legally available to the utility of (N)

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. h. selectively providing services to these users who have met the requirements of the utility's rules and tariffs., the utility will make service available to these users. For these selected users establishment of credit will be as prescribed in Rule No. 6, except that where prior service for a period of time is a condition for establishing credit with the utility, proof that is acceptable to the utility of residence and prompt payment of rent or other credit obligation during that period of time is a satisfactory equivalent. (N)

(2) Where said users are mater metered.

The utility is not required to make service available to these users unless each user agrees to the terms and conditions of service, and meets the requirements of the law and the utility's rules and tariffs and the following.

The same Rule 11 item B.1.h. (1) above which applies to individually metered users also applies to master metered users, except a representative may act on the behalf of a master metered user, and the utility will not discontinue service in any of the following situations:

(a) During the pendency of an investigation by the utility of a master-metered customer dispute or complaint.

(b) When the mater metered customer has been granted an extension of the period for repayment of a bill.

(c) For an indebtedness owed by the mater metered customer to any other person or corporation or when the obligation represented by delinquent account or other indebtedness was incurred with a person or corporation other than the utility demanding payment therefor.

(d) When a delinquent account relates to another property owned, managed, or operated by the mater-metered customer. (N)

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. h. (e) When a public health or building officer certifies that, determination would result in a significant threat to the health or safety of the residential occupants or the public. Proof of age or handicap are described in Rule 11.B.1.e. (N) (N)

i. A reasonable attempt must be made by the utility to personally contact an adult person on the residential customer's premises either by telephone or in person, at hours prior to discontinuance. For elderly or handicapped residential customers, the utility shall provide at least 48 hours' notice by telephone or in person. For these customers, if telephone or personal contact cannot be made, a notice of discontinuance of service shall be posted in a conspicuous location at the service address at least 48 hours prior to discontinuance. Such notice shall be independent of, other notice(s) as may be prescribed in the utility's tariffs. (C) (N) (N)

j. Residential Customer's Remedies Upon Receipt of Discontinuance Notice

(1) If upon receipt of a 10-day discontinuance notice, a residential customer is unable to pay, he must contact the utility before discontinuance of service to make payment arrangements to avoid discontinuance of service.

(2) If, after contacting the utility, the residential customer alleges to the Commission an inability to pay and that he is unable to make payment arrangements with the utility he should write to the Commission's Consumer Affairs Branch (CAB) to make an informal complaint. This action must be taken within the 10-day discontinuance of service notice.

(3) The CAB's resolution of the matter will be reported to the utility and the residential customer within ten business days after receipt of the informal complaint. If the customer is not satisfied with such resolution, he must file, with in ten business days after the date of the CAB's letter, a formal complaint with the Commission under Public Utilities Code Section 1702 on a form provided by the CAB.

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 1. j. (4) Failure of the residential as well as nonresidential customer to observe these time limits shall entitle the utility to insist upon payment or, upon failure to pay, to discontinue the customer's service.

k. Designation of a Third-Party Representative (Elderly or Handicapped only)

(1) Customer must inform utility if he desires that a third party receive discontinuance or other notices on his behalf.

(2) Utility must be advised of name, address, and telephone number of third party with a letter from third party accepting this responsibility.

(3) Only customers who certify that they are elderly or handicapped are entitled to third-party representation.*

2. For Noncompliance with Rules

The utility may discontinue service to any customer for violation of these rules after it has given the customer at least five days' written notice of such intention. Where safety of water supply is endangered, service may be discontinued immediately without notice.

3. For Waste Water

a. Where negligent or wasteful use of water exists on a customer's premises, the utility may discontinue the service if such practices are not remedied within five days after it has given the customer written notice to such effect.

b. In order to protect itself against serious and unnecessary waste or misuse of water, the utility may meter any flat rate service and apply the regularly established meter rates where the customer continues to misuse or waste water beyond five days after the utility has given the customer written notice to remedy such practices.

* Proof of age must be supported by certificate of birth, driver's license, passport or other reliable document. Proof of handicap must be by certification from a licensed physician, public health nurse, or social worker.

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

B. 4. For Unsafe Apparatus of Where Service is Detrimental or Damaging to the Utility or its Customers

If an unsafe or hazardous condition is found to exist on the customer's premises, or if the use of water thereon by apparatus, appliances, equipment or otherwise is found to be detrimental or damaging to the utility or its customers, the service may be shut off without notice. The utility will notify the customer immediately of the reasons for the discontinuance and the corrective action to be taken by the customer before service can be restored.

5. For Fraudulent Use of Service

When the utility has discovered that a customer has obtained service by fraudulent means, or has diverted the water service for unauthorized use, the service to that customer may be discontinued without notice. The utility will not restore service to such customer until that customer has complied with all filed rules and reasonable requirements of the utility and the utility has been reimbursed for the full amount of the service rendered and the actual cost to the utility incurred by reason of the fraudulent use.

C. Restoration of Service

1. Reconnection Charge

Where service has been discontinued for violation of these rules or for non-payment of bills, the utility may charge $10.00 for reconnection of service during regular working or $15.00 for reconnection of service at other than regular working hours when the customer has requested that the reconnection Be made at other than regular working hours.

2. To Be Made During Regular Working Hours

The utility will endeavor to make reconnections during regular working hours on the day of the request, if conditions permit, otherwise reconnection will be made on the regular working day following the day the request is made.

(Continued)

RULE NO. 11
(Continued)

DISCONTINUANCE AND RESTORATION OF SERVICE

C. 3. To Be Made At Other Than Regular Working Hours

When a customer has requested that the reconnection be made at other than regular working hours, the utility will reasonably endeavor to so make the reconnection if practicable under the circumstances.

4. Wrongful Discontinuance

A service wrongfully discontinued by the utility must be restored without charge for the restoration to the customer within 24 hours.

D. Refusal to Serve

1. Conditions for Refusal

The utility may refuse to serve an applicant for service under the following conditions:

a. If the applicant fails to comply with any of the rules as filed with the Public Utilities Commission.

b. If the intended use of the service is of such a nature that it will be detrimental or injurious to existing customers.

c. If, in the judgment of the utility, the applicant's installation for utilizing the service is unsafe or hazardous, or of such nature that satisfactory service cannot be rendered.

d. Where service has been discontinued for fraudulent use, the utility will not service an applicant until it has determined that all conditions of fraudulent use or practice has been corrected.

2. Notification to Customers

When an applicant is refused service under the provisions of this rule, the utility will notify the applicant promptly of the reason for the refusal to service and of the right of applicant to appeal the utility's decision to the Public Utilities Commission.

# RULE NO. 20

## WATER CONSERVATION

A. Purpose

The purpose of this rule is to ensure that water resources available to the utility are put to a reasonable beneficial use and that the benefits of the utility's water supply and service extend to the largest number persons.

B. Waste of Water Discouraged

Refer to Rule 11B.(3).

C. Use of Water-Saving Devices and Practices

Each customer of the utility is urged to install devices to reduce the quantity of water to flush toilets and to reduce the flow rate of showers. Each customer is further urged to adopt such other water usage and reusage practices and procedures as are feasible and reasonable.

D. Water-Saving Kits

The utility will make available, without initial cost to the customer, for use in each residence receiving water service from the utility, a water-saving kit containing the following:

(1) A device or devices for reducing toilet flush water requirements;

(2) A device or devices for reducing shower flow rates;

(3) A dye table or tables for determining if a toilet tank leaks;

(4) Other devices from time to time approved by the utility'

(5) Installation and other instructions and information pertinent to conservation of water.

# RULE NO. 20

## WATER CONSERVATION

A. Purpose

The purpose of this rule is to ensure that water resources available to the utility are put to a reasonable beneficial use and that the benefits of the utility's water supply and service extend to the largest number persons.

B. Waste of Water Discouraged

Refer to Rule 11B.(3).

C. Use of Water-Saving Devices and Practices

Each customer of the utility is urged to install devices to reduce the quantity of water to flush toilets and to reduce the flow rate of showers. Each customer is further urged to adopt such other water usage and reusage practices and procedures as are feasible and reasonable.

D. Water-Saving Kits

The utility will make available, without initial cost to the customer, for use in each residence receiving water service from the utility, a water-saving kit containing the following:

(1) A device or devices for reducing toilet flush water requirements;

(2) A device or devices for reducing shower flow rates;

(3) A dye table or tables for determining if a toilet tank leaks;

(4) Other devices from time to time approved by the utility'

(5) Installation and other instructions and information pertinent to conservation of water.

# TOWN OF APPLE VALLEY, CALIFORNIA

## MUNICIPAL CODE

### TITLE 6

### HEALTH SANITATION

**Chapters**


| | |
|---|---|
| 6.20 | Solid Waste Regulations |
| 6.30 | Nuisances |
| 6.40 | Water Conservation Plan |
| 6.50 | Inspection Grading Of Food Establishments |
| 6.80 | Smoking Regulations - Repealed |


### Chapter 6.20

### SOLID WASTE REGULATIONS

**Sections:**


| | |
|---|---|
| 6.20.010 | Definitions. |
| 6.20.015 | Declaration of policy. |
| 6.20.020 | Collection and disposal; to be provided for and supervised by Town. |
| 6.20.025 | Solid Waste handling services; to be provided for and supervised by Town. |
| 6.20.030 | Recycling and solid waste processing services; to be provided for and supervised by Town. |
| 6.20.035 | Persons authorized to collect, transport or dispose of solid waste. |
| 6.20.040 | Insurance required. |
| 6.20.045 | Surety Bond Required. |
| 6.20.050 | Contractor to indemnify and hold harmless the Town. |
| 6.20.055 | Worker's compensation insurance. |
| 6.20.060 | Person's authorized to provide recycling and process solid waste services. |
| 6.20.065 | Owner may contract for excess collection. |
| 6.20.070 | Collection schedule. |
| 6.20.075 | Collection hours. |
| 6.20.080 | Contract fees. |
| 6.20.085 | Fees to be based on types of occupancies; types of occupancies defined. |
| 6.20.090 | Collection fees. |
| 6.20.095 | Solid waste collection fee a debt. |
| 6.20.100 | Collection procedure for delinquent accounts; creation of lien. |
| 6.20.105 | Disposal, recycling and processing; locations and conditions. |
| 6.20.110 | Disposal, recycling and processing, to be on same day as collection. |
| 6.20.115 | Vehicle requirements. |

6.20.120 Container for solid waste.
6.20.125 Uses for containers provided.
6.20.130 Uses for container provided; condemnation.
6.20.135 Container; removal and storage
6.20.140 Uses for container provided; hazardous waste not allowed.
6.20.145 Solid waste; placement for collection.
6.20.150 Container, manner of placement.
6.20.155 Inspection and supervision.
6.20.160 Placement of trash bins; screened.
6.20.165 Information to be furnished to Finance Department by contractor each month.
6.20.170 Special permits in hardship cases.
6.20.175 Violations of chapter declared a nuisance.
6.20.176 Annual review.

**6.20.010 Definitions.** As used in this chapter:

(a)."Authorized recycling agent" means a person that the Town authorizes to collect its recyclable waste material. An authorized recycling agent may be a municipal collection service, private refuse hauler, private recycling enterprise or private nonprofit corporation or association.

(b) "Contractor" means any person, persons, firm, corporation or partnership that has been issued a contract or franchise by the Town Council for the exclusive purpose of handling collecting, transporting and recycling solid waste.

(c) "Curb Collection" means the collection of solid waste recycle material placed in a location at curbside of a residence so as not to obstruct the flow of traffic.

(d) "Designated recycling collection location" means the place where an authorized recycling agent has contracted with the Town to pick up recyclable material segregated from other waste material. Designated recycling collection location includes, but is not limited to, the curbside of a residential neighborhood, or the service alley or trash enclosure of a commercial enterprise.

(e) "Detachable container service" means the collection of solid waste and recycle material from a container serviced by mechanical means located at a commercial establishment where such material is produced, kept or accumulated.

(f) Dwelling, single family. "Single family dwelling" means a detached building designed for occupancy by one family and consisting of a single living unit.

(g) "Dwelling, multiple family" means a residential building designed for occupancy by more than one family and consisting of more than one living unit even when there is not more than one water meter on such premises, but excluding hotels, motels and other premises designed for transient occupancy.

(h) "exclusive solid waste handling services" means any action by the Town, whether by franchise, contract, license, permit or otherwise whereby the Town itself or one or more other local agencies or solid waste enterprises has the exclusive right to provide solid waste handling services of any class or type within all or any of the territory of the local agency.

(i) "Franchise" or "Contract fees" means a sum equal to 5% of the gross annual receipts.

(j) "Hazardous waste" means any waste material or mixture of wastes which is toxic, corrosive, flammable, an irritant, a strong sensitizer or which generates pressure through decomposition, heat or other means if such waste or mixture of wastes may cause substantial injury, serious illness or harm to humans,

domestic livestock or wildlife. It shall also include all wastes so defined by the California Health and Safety Code including "infectious waste".

(k) "Health officer" means the Town Manager or his designated representative.

(l) "Industrial waste" means solid waste resulting from industrial processes and manufacturing operations including, but not limited to, wholesale and volume food processing waste, boiler house cinders, lumber scraps and shavings, metal scraps and shavings and chemical wastes.

(m) "Municipal waste stream" means solid waste, recyclable and otherwise disposed of materials commonly found in general collection process systems within a municipal jurisdiction.

(n) "Processing" means the reduction, separation, recovery, conversion or recycling of solid waste.

(o) "Property owner" means the person, persons, partnership or corporation to whom the taxes on the property are assessed, as shown on the last equalized assessment roll of the County of San Bernardino, or alternatively, from such other records of the County Assessor or Tax Collector as contain more recent information.

(p) "Recycle" or "recycling" means the process of collecting, sorting, cleansing, treating and reconstituting materials that would otherwise become solid waste and returning them to the economic mainstream in the form of raw material for new, reused or reconstituted products which meet the quality standards necessary to be used in the marketplace.

(q) "Segregated from other waste material" means any of the following:

(1) The placement of recyclable materials in separate containers;

(2) The binding of recyclable material separately from other waste material;

(3) The physical separation of recyclable materials from other waste material.

(r) "Solid waste" means all putrescible and nonputrescible solid and semisolid wastes including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes and other discarded solid and semisolid wastes. Solid waste does not include hazardous waste as defined by the State or low-level radioactive waste. Solid waste does not include medical waste which has not been treated for disposal at a solid waste facility.

(s) "Solid waste disposal" means the final disposition of solid wastes onto land, into the atmosphere or into the waters of the State.

(t) "Solid waste enterprise" means any individual, partnership, joint venture, unincorporated private organization or private corporation regularly engaged in the business of providing solid waste handling services.

(u) "Solid waste handling" or "handling" means the collection, transportation, storage and transfer of solid wastes.

(v) "Solid waste handling services" means the collection, transportation, storage and transfer of solid wastes for residential, commercial, institutional or industrial users or customers.

(w) "Standard container" means a metallic or plastic can with a close-fitting cover, cover handle and side bails of 36 gallons or less gross capacity and weighing not more than 65 pounds when filled; or such other container as may be approved by the Town to be provided by the solid waste handling service and by the authorized recycling agent.

**6.20.015 Declaration of Policy.**

(a) In compliance with State Legislation Assembly Bill 939 (1990), the Town shall recover, through recycling, 25% of its waste stream by 1995 and 50% by the year 2000. Following practice common to high volume recovery of recyclable commodities found in municipal waste streams, the Town must control the complete flow and thereby collect 100% of the municipal waste stream.

(b) The Town shall provide for solid waste handling services including, but not limited to, the collection, transfer and disposal of solid waste within the Town. The Town Council finds that to give practical effect to his policy, a comprehensive system for the periodic collection, removal and disposal of solid waste from all premises in the Town is essential and benefits all occupants of premises in the Town and, therefore, all such occupants, unless exempt, are made liable for the solid waste collection charges established by the Town Council for solid waste handling services.

(c) The Town may also provide for recycling and solid waste processing services which may include recycling of solid waste from any or all premises within the Town. The Town Council finds that provision of recycling and solid waste processing services benefits all occupants or premises in the Town and, therefore, all such occupants, unless exempt, are liable for recycling and solid waste processing service charges established by the Town Council for recycling and solid waste processing.

(d) It is further in the best interests of the public health, safety and welfare that refuse collection, transfer and disposal services within the Town be provided either by Town officers and employees directly or by exclusive contract with a qualified provider of such services.

**6.20.020 Collection and Disposal; to be provided for and supervised by Town.** The Town shall provide for the collection and disposal of all solid waste and waste material from all premises within the Town at least once each calendar week. Such provisions may be made either by letting a contract or franchise, with or without advertising for bids, for a period not to exceed six years with renewal periods not to exceed three years. The Town Manager shall have charge and supervision of such collection and removal of solid waste and waste materials from the various parts of the Town so as to conform to the provisions of this chapter and may change the same from time to time. When such routes or days of collection are established or changed, he shall give notice thereof in such manner as he deems best. Every person shall place and keep the same in such receptacles as are required in this Chapter.

**6.20.025 Solid waste handling services; to be provided for and supervised by Town.**

(a) The Town shall provide for solid waste handling services which shall include collection of all solid waste from all premises within the Town as may be specified by agreement. The Town may determine all of the following:

(1) Compliance in disposal of solid waste in a manner described herein shall be mandatory for all waste generators within the Town of Apple Valley.

(2) Aspects of solid waste handling which are of local concern including, but not limited to, frequency of collection, means of collection and transportation, level of services, charges and fees and nature, location and extent of providing solid waste handling services.

(3) Whether the services are to be provided by means of non-exclusive franchise or contract, either with or without competitive bidding, or if, in the opinion of the Town Council, the public health, safety and well-being so require, the authority to provide solid waste handling services may be granted under terms and conditions prescribed by the Town Council by resolution or ordinance. The Town

Council may grant an option for an additional period for such solid waste handling services.

(4) The Town Manager or his designee shall have charge and supervision of such solid waste handling services from the various parts of the Town so as to conform to the provisions of this Chapter. When such routes or days of collection are established or changed, he shall give notice thereof in such a manner as he deems best. Every person shall place and keep refuse or waste material from any premise in the Town in receptacles as are required in this Chapter.

**6.20.030 Recycling and solid waste processing services; to be provided for and supervised by Town**

(a) The Town may provide recycling and solid waste processing services which may include recycling from all premises within the Town. Such services may include designation of an authorized recycling agent. The Town may determine all of the following:

(1) Aspects of recycling and solid waste processing which are of local concern including, but not limited to, recycle material segregation from other material, designated recycling collection location, level of services, charges and fees and nature, location and extent of providing solid waste processing services;

(2) Whether the services are to be provided by means of non-exclusive franchise or contract, either with or without competitive bidding, or if in the opinion of the Town Council, the public health, safety and well-being so require the authority to provide recycling and solid waste processing services may be granted under terms and conditions prescribed by the Town Council by resolution or ordinance. The Town Council may grant an option for an additional period for such recycling and solid waste processing services.

(3) The Town Manager shall have charge and supervision of authorized recycling agency services from the various parts of the Town so as to conform to the provisions of this Chapter. When such routes or days of collection are established or changed, he shall give notice thereof in such manner as he deems best. Every person in the Town shall place recycle materials in such receptacles as are required in this Chapter for collection at designated recycling collection locations.

**6.20.035 Persons authorized to collect, transport or dispose of solid waste.** The Town and its duly authorized agents, servants and employees, or any contractors with whom the Town may at any time enter into a contract or franchise therefore, and the agents, servants and employees of such contractors, while any such contract shall be in force, shall have the exclusive right to provide solid waste handling services from all premises in the Town; and no person other than those above specified shall provide solid waste handling services, convey or transport any solid waste material in, along or over any public street, alley or highway in the Town, or take any refuse or waste material for any receptacle in which the same may be placed for collection or removal, or interfere with or disturb any such receptacle, or remove any such receptacle from any location where the same is placed by the owner thereof, except as follows:

(a) Contractors or builders removing debris, rubbish and trash from construction sites; or

(b) Any person holding a valid Town business license to engage in the nursery or gardening business or to any person removing shrubbery, grass, tree cuttings, tree trimmings or other agricultural debris from any property owned or occupied by such person; or

(c) Any person removing industrial wastes, as defined in Section 6.20.010; or

(d) Any person removing large or oversized items of rubbish from their premises; or

(e) Any person applying and obtaining a permit in writing from the Town for removing debris and solid waste; or

(f) Any person may recycle his or her own recyclables generated within his or her principle residence to the extent permitted by law.

**6.20.040 Insurance Required:**

(a) The contractor shall provide the Town Clerk with certificates from insurance companies, acceptable to the Town Manager, showing that the Town is named as an additional insured, that the insurance is primary and not contributing with any other insurance available to the Town and that the liability coverage provides the following minimum limits:

| | | |
|---|---|---|
| 1. | Bodily Injury | $10,000,000.00 each person<br>$10,000,000.00 each occurrence; |
| 2. | Property Damage | $10,000,000.00 each person<br>$10,000,000.00 each occurrence; or |
| 3. | Combined single | $10,000,000.00 aggregate bodily limit injury and property damage. |

(b) Such insurance shall be in full force and effect during the terms of the contract.

(c) The Town reserves the right to increase the amounts of insurance consistent with the terms and conditions of contract, and the contractor shall immediately comply with said increase.

**6.20.045 Surety Bond Required.** The contractor who contracts with the Town for the removal and disposal of garbage, rubbish and swill shall be required to furnish a surety bond to the Town in the sum of Twenty-five Thousand Dollars ($25,000), conditioned upon the faithful performance of the contract and the provisions of this Chapter, to collect all garbage, rubbish and swill in the Town and transport the same through the streets and public ways of the Town to such destination as provided in this Chapter.

**6.20.050 Contractor to Indemnify and hold harmless the Town.** The contractor shall indemnify and hold harmless the Town, its officers, agents and employees for and from any and all claims, losses, liabilities, demands, actions or suits of every kind or nature arising or resulting from the contract, excepting Town take-over and operation of contractor's equipment, or any operation of the contractor hereunder or in exercising any license or privilege granted to him by the contract or by an ordinance of the Town. Contractor shall upon demand of the Town, at his sole cost and expense and with attorneys selected by the Town, provide a defense for the Town and its officers, agents, and employees against any and all claims, actions or suits brought against the Town or its officers, agents and employees arising or resulting from or in any connection with the operations of contractor pursuant to the contract.

**6.20.055 Worker's Compensation Insurance.** The contractor and his subcontractors, if any, shall obtain and maintain in full force and effect throughout the entire term of the contract, full worker's compensation insurance in accordance with the provisions and requirements of the Labor Code of the State of California and any other applicable law. Certificates of such insurance, subject to approval by the Town Attorney, shall be filed with the Town Clerk. Said certificate shall provide that the Town shall be given 30 days written notice by certified or registered mail prior to cancellation.

**6.20.060 Persons authorized to provide recycling and process solid waste.** The Town and its duly authorized agents, servants and employees, or any contractors with whom the Town may at any time enter into a contract or franchise therefore, and the agents, servants and employees of such contractors, while any such contract shall be in force, shall have the exclusive right to provide recycling and solid waste processing services from all premises in the Town; and no person other than those above specified shall provide recycling and solid waste processing services, convey or transport any recyclable waste material in, along or over any public street, alley or highway in the town, or take any recyclable waste material from any receptacle in which the same may be placed for collection or removal, or interfere with or disturb any such receptacle, or remove any such receptacle from any location where the same is placed by the owner thereof, except as follows:

(a) Contractors or builders removing recyclable waste material from construction sites;

(b) Any person holding a valid Town business license to engage in the nursery or gardening business or to any person removing shrubbery, grass, tree cuttings, tree trimmings or other agricultural debris from any property owned or occupied by such person, for the purpose of composting;

(c) Any person removing industrial recyclable waste material as defined in Section 6.20.010 or any person removing large or oversized items of recyclable waste material from their premises; or

(d) Any person applying and obtaining a permit in writing from the Town for removing recyclable waste material; or

(e) Any person may recycle his or her own recyclables generated within his or her principal residence to the extent permitted by law.

**6.20.065 Owner may contract for excess collection.** Any owner or occupant of any premises may contract with the contractor for special services for handling solid waste and recycle material in excess of regular services.

**6.20.070 Collection schedule.** All solid waste shall be collected and removed at least weekly. All solid waste accumulated in hotels, restaurants and markets within the Town shall be collected and removed at least twice weekly.

**6.20.075 Collection hours.** All refuse collection shall be made as quietly as possible. The Town Council may fix and determine the hours of collection by resolution.

**6.20.080 Contract Fees.** The Town shall be responsible for collecting all sums due for garbage and rubbish collection services as set by rates adopted by resolution of the Town of Apple Valley and shall remit to the Contractor on a monthly basis all moneys collected, less franchise or contract charges, administrative service fees, dump site fees and any liquidated damage fees assessed under the contract or franchise set by the Town.

**6.20.085 Fees to be based on types of occupancies; types of occupancies defined.** The fees to be paid for solid waste handling services and recycling services shall be placed on the type of occupancy and use of the place or premises in the Town. The different occupancies and uses are defined as follows:

(a) "Commercial use" is premises upon which is located at any type of business requiring a business license under the provisions of this Code or other ordinances of the Town and multi-family dwelling units.

(b) "Residential use" is premises upon which is located only one dwelling unit.

**6.20.090 Collection Fees.**

(a) Every person in the Town who has the occupancy, charge or control of any place or premises, with the exception of residential and commercial rental units, within the Town, where any refuse accumulates, shall pay, or cause to be paid, to the Town a fee in such amounts and in such manner as shall be established or required by the Town Council for the service of having such refuse collected and removed from the place or premises. In the case of residential and commercial rental units, the property owner of record shall be responsible for the fees established.

(b) Nothing in this section is intended to prevent an arrangement, or the continuance of an existing arrangement, under which payments of refuse collection fees are made by a tenant or tenants or any agent on behalf of the owner. However, any such arrangement will not affect the property owner's obligation to the contractor.

(c) All fees for residential service shall be billed and collected in accordance with rules and regulations adopted by the Town Council.

(d) All fees for commercial service shall be billed and collected in accordance with rules and regulations adopted by the Town Council.

**6.20.095 Solid waste collection fee a debt.** The solid waste collection fee shall be a civil debt owing the Town from the owner, occupant or person in possession, charge or control of a residential unit. If an invoice for refuse collection service in unpaid 60 days after mailing, a penalty of ten percent (10%) shall be charged and an additional 1-1/2% (one and one-half percent) per month shall be charged until the charges and penalties are paid in full. If court action is taken to enforce non-payment of charges, the user or property owner shall pay all reasonable attorney fees incurred by the Town.

**6.20.100 Collection Procedure for Delinquent Accounts – Creation of Lien.** Any fees authorized pursuant to Section 6.20.090 which remain unpaid after the delinquent date as set forth in Sections 6.20.095 may be collected thereafter by the Town as provided in this Section.

(a) The Town Council shall cause a report of delinquent solid waste handling and recycling fees to be prepared periodically. The Council shall fix a time, date and place for hearing the report and any objections or protests thereto.

(b) The Town Council shall cause notice of hearing to be mailed to the landowners listed on the report not less than fifteen (15) days prior to the date of hearing.

(c) At the hearing, the Town Council shall hear any objections or protests of landowners liable to be assessed for delinquent fees. The Town Council may make such revisions or corrections to the report as it deems just, after which, by resolution, the report shall be confirmed.

(d) The delinquent fees set forth in the report as confirmed shall constitute special assessments against the respective parcels of land, and are a lien on the property for the amount of such delinquent fees plus administrative costs. A certified copy of the confirmed report shall be filed with the Town for the amount of the respective assessments against the respective parcels of land as they appear on the current assessment roll. The lien created attaches, upon recordation in the Office of the County Recorder, a certified copy of the Resolution of Confirmation. The assessment may be collected and shall be subject to the same penalties and the same procedure and sale in case of delinquency as provided for such taxes. All laws applicable to the levy, collection and enforcement of Town ad valorem property taxes shall be applicable to such assessment.

**6.20.105 Disposal, recycling and processing; locations and conditions.** All solid waste and recycle material collected in the Town for disposal, recycling or processing shall be delivered by the contractor to such locations and under such conditions as the Town Council may designate.

**6.20.110 Disposal, recycling and processing; to be on same day as collection.** Solid waste shall be delivered to the place provided for the disposal thereof, as provided for in this Chapter, on the same day that such solid waste is collected.

**6.20.115 Vehicle requirements.** All refuse shall be transported in metal lined containers that are leak proof and so constructed as to prevent refuse from falling, leaking, spilling or escaping or any odor therefrom. The refuse, from the time that the last pickup of the refuse is placed upon the truck and to the point of disposal, shall be covered by a tarpaulin or other suitable covering. Every truck so used for the hauling of refuse shall be washed at least once a week and steam-cleaned once a month and kept in a well-painted condition. All refuse shall be removed, conveyed and disposed of in such a manner as not to be a nuisance, menace or danger to the public peace, health and safety and shall be in accordance with any rules or obligations as provided by the Town Council.

**6.20.120 Container for solid waste.** The Town shall provide a watertight container for holding solid waste and recycling. It shall be the responsibility of the resident to maintain containers provided by the Town. Containers shall have a close-fitting cover to prevent insects, including flies, rodents and other animals, from coming into contact with solid waste. No container shall have irregular surfaces or be in a condition which is likely to cause injury to persons moving or lifting them. Such receptacles shall be standard containers as defined in Section 6.20.010. Handling of solid waste where weight limits are exceeded shall be made in accordance with special rules and regulations provided by resolution of the Town Council. It shall be the duty of every person served to keep the solid waste receptacle used in the service of such person in a clean and sanitary condition.

**6.20.125 Uses for containers provided.** The Town shall provide two or more containers for the expressed and respective purpose of recycling and disposal of garbage. The container for recyclables shall be identified by color. Recyclable commodities shall be placed in a commingled fashion and may include, but not limited to, all plastic containers, paper, newsprint and glossy paper, cardboard and aluminum. All garbage material shall be placed in a separate container designated by color for disposal.

**6.20.130. Uses for container, condemnation.** If the provisions of Section 6.20.120 are not fully complied with, the collector shall place a red tag on the container. No collection shall be made therefrom until such container is fully cleaned, sanitized or otherwise repaired.

**6.20.131 - Added per Ord. 123; deleted per Ord. 128, adopted 11-09-93**

**6.20.135. Container; removal and storage.**

(a) Pursuant to California Administrative Code, Title 14, Chapter 3, Section 17.331(H), all refuse created, produced or accumulated in or about a residential unit in the Town shall be removed from the premises at least once each week. It is

unlawful and a misdemeanor for the occupant of any of the above-described premises to fail or neglect to provide for the removal of refuse at least as often as prescribed in this section. Each day's violation of this section shall be treated and considered as a separate and distinct offense.

(b) It is unlawful and a misdemeanor for any person to burn, bury or dump refuse within the Town at any time unless a special permit for such burning, burial or dumping has been issued pursuant to authority conferred by the Town Council and/or the agency providing fire protection services within the Town.

(c) Pursuant to California Administrative Code, Title 14, Chapter 3, Section 17.331(H), it is unlawful and a misdemeanor for any person to store or accumulate any refuse, rubbish or miscellaneous debris in any container or at any location other than as hereinabove set forth, or for any length of time other than as follows:

(1) Refuse shall not be stored or accumulated for a period of time in excess of one week (seven days).

**6.20.140 Uses for container provided; hazardous waste not allowed.** It is unlawful for any person to deposit hazardous waste or household hazardous waste, as defined by the State, in any container to be collected for disposal by the Town's solid waste handler. The Town's solid waste handler shall not provide solid waste handling for any hazardous waste or household hazardous waste.

**6.20.145 Solid waste; placement for collection. (Entire Section repealed Ordinance 245 10/9/2001).**

**6.20.150 Container; manner of placement.** Each solid waste container shall be kept or placed in the following manner: It shall be kept on the premises of the person receiving the contained. It shall be placed for collection as follows: On the curb (or at the street) in front of the premises occupied by the person placing the same or on the curb (or at the street) at the side of the premises where the premises are adjacent to more than one street. Each container containing solid waste shall be so placed for each respective collection period not later than the hour upon which the collection is scheduled to so commence in the district in which the premises are located for this period, and shall not be placed earlier than 12 hours prior to the time that the collection is scheduled to so commence and shall not remain when placed at the curb for more than 12 hours after the time of collection. **(Amended Ordinance 245 10/9/2001).**

**6.20.155 Inspection and supervision.** It shall be the duty of the Town Manager, or his designee, to inspect and supervise all trucks, carts or other vehicles used by the contractor in the collection and disposal of solid waste and see that the same are kept clean and sanitary. The Town Manager, or his designee, shall enforce the provisions of this Chapter, inspect any and all premises where solid waste is kept or accumulated for the purposed of determining sanitary conditions and investigate whether the provisions of this Chapter and all laws and ordinances of the Town and the State are in compliance.

**6.20.160 Placement of trash bins; screened.**

A. All trash bins and enclosures shall be located out of easement areas, public rights of way, and the clear sight triangle.

B. Trash bins and enclosures shall not be located in a manner that requires the waste handler to park perpendicular to the roadway while emptying the bins.

C. All trash bin and enclosure locations must be approved and built to Town standards.

D. Every person utilizing bin service shall sign a liability waiver form.

E. Paved access shall not be required. However, when the bin cannot be serviced because of inadequate access, the bin may be replaced with carts or paving may be required.

F. Failure to comply with the provisions of this ordinance shall result in the removal of the bin and placement of carts at a minimum ratio of one green trash cart and one blue commingled recycle cart per residential unit.

G. In the event that a property has adequate space and access, a bin may be left unenclosed and placed behind the structure where it is not visible from the frontage street.

H. Commercial/Industrial Use.

1. Existing commercial or industrial use property shall be evaluated with each tenant improvement application to determine if an intensification of use is to occur. Upon the determination of an intensified and/or expanded use, then a masonry block enclosure will be required to be installed to the Town standards prior to the issuence of a Certificate of Occupancy.

2. In the event there is inadequate land area behind the structure or paved access does not exist for the placement of bins and/or enclosures behind the setbacks, approval may be applied for to place a bin enclosure within the required setback.

I. Multiple family residential use.

1. All existing multiple family residential property shall be required to enclose bins per Town standards.

2. Gates shall not be required on enclosures that are constructed perpendicular to the roadway.

3. In the event there is inadequate land area behind the structure or paved access does not exist for the placement of bins and/or enclosures behind the setbacks, approval may be applied for to place a bin enclosure within the setback.

4. As an alternative to property constructed and located bin enclosures, multiple family residential property may use carts provided by the waste hauler at a minimum ratio of one green trash cart and one blue commingled recycle cart per residential unit. The Town Manager or his designee may, upon petition by the property owner, consider alternative numbers of the blue recycling carts.

5. For multiple family residential developments, annual inspections of compliance will occur at the time of the Property Maintenance Inspection conducted by the Town.

**J. Single Family Residential Use.**

1. Single family residential use properties utilizing bin/dumpster service shall be required to maintain the bin in compliance with this code. The bin shall not be stored on the frontage street or directly in front of the residence, except as allowed by paragraph (c ) below: **(Amended per Ordinance 334, 2/13/07)**

a. Single family residential properties less than two and one-half acres shall be required to locate the bin in accordance with one of the following:

(1) The bin may be located behind the residence.

(2) The bin may be located against the residence wall or a garage wall;

(3) The bin may be located so that it abuts the front setback.

b. Single family residential properties two and one-half acres or more may place the bin, with an enclosure, in front of the residence and in compliance with this code.

c. For purpose of this section, a legal nonconforming use is one which lawfully existed prior to the effective date of this sub-paragraph c. The continuance of the legal nonconforming use will be allowed for any single family residence with an existing enclosure constructed prior to February 26, 1998. If a legal nonconforming use is discontinued for thirty (30) consecutive days or longer, it shall lose its legal nonconforming status hereunder.

2. Single family residential use properties that locate the bin behind the structure shall move the bin to the front of the property on collection day and replace it behind the structure after it is emptied.

3. Nothing in this section shall be construed to relieve bin service customers from required recycling using the blue recycling barrels in accordance with Section 6.20.015 (c) of this chapter.

**K. Minimum Clearance.**

All trash bins are required to be located a minimum of five feet from all combustible construction.

**L. New Construction.**

Nothing in this Ordinance shall nullify or supersede an ordinance or standard for enclosures for bin placement for new construction. The placement of trash containers and enclosure standards herein shall apply to existing commercial, industrial, multiple residential, and single family residential properties.

**M. Authority and Enforcement.**

The provisions of this Chapter shall be enforced by the Town Manager or designee.

**N. Removal Frequency.**

The Town Manager or his designee may require a greater number of collections per week or larger capacity bin(s) or cart(s) upon finding that an unhealthy, unsightly, or public nuisance condition is created by adhering to the minimum collection frequency.

**0. Violation and Penalties.**

Any person who violates any provision or who fails to comply with any of the requirements of this Chapter shall be guilty of an infraction and, upon conviction thereof, shall be punished in accordance with the provisions of Sections 1.01.200 through 1.01.230 of Chapter 1.01 of Title 1 of this Code.
***((Ord. # 123, 1993., amended Ord #128 adopted 11-09-93; amended Ord. 150, adopted 6-27-95, operative 07-01-96; Amended Ord. 156, adopted 11-14-95; Entire Section 6.20.160 amended per Ord. 191, adopted 01-27-98.))***

**6.20.165 Information to be furnished to Finance Department by contractor each month.**

(a) It shall be the duty of the Town's solid waste handling services contractor to furnish, on or before the fifteenth (15th) day of each calendar month, to the Finance Department or to other officials of the Town, the names and addresses of all persons who shall be liable for the payment of fees under this Chapter. In addition, all commercial accounts will include size and number of containers and the scheduled number of pickups per week.

(b) It shall be the duty of the Town's authorized recycling agent contractor to furnish, on or before the fifteenth (15th) days of each calendar month, to the Finance Department or to other proper officials of the Town, the names and addresses of all persons who shall be liable for the payment of fees under this Chapter.

In addition, all commercial accounts will include type and quantity of materials diverted for each previous month. Type and quantity of materials diverted from all other accounts for each previous month also shall be reported.

**6.20.170 Special Permits in Hardship Cases.** Where practical difficulties make it impossible or extremely difficult to carry out the strict letter of this Chapter with respect to any particular premises, the Town Manager may issue special written permits authorizing variations from the provision of this Chapter subject to satisfying the requirements below so that the spirit of this Chapter shall be observed, public health and safety secured and substantial justice done.

(a) **Financial.** Any owner or occupant of a single family residence may be eligible for a reduction in fees associated with the refuse collection and disposal program upon satisfying the following criteria:

(1) Complete and submit a Town of Apple Valley Financial Hardship Application along with a copy of the most recent Southwest Gas or Southern California Edison bill showing eligibility for a current financial hardship status.

(2) The approved applicant will be eligible to receive rubbish collection at the reduced bi-monthly hardship rate for a period of 1 year. The application will automatically expire after 1 year. It will be the responsibility of the applicant to submit a Town of Apple Valley Financial Hardship application annually to avoid interruption of the reduced hardship rate.

(b) **Physical Hardship Exemption.** An applicant may be exempted from the provisions of the refuse collection and disposal ordinance requiring placement of refuse at curbside or roadside upon a showing and/or certification by a physician of a physical condition which would not allow the applicant to carry or otherwise transport refuse from the

dwelling unit to the curb or roadside. In the event such exemption is granted, arrangements will be made by the trash collection contractor to collect the trash at the dwelling unit.

(c) **Other.** An applicant may be exempted from collection and disposal fees where other special circumstances exist under which the Town Manager finds that the criteria and purposes contained in this section are met. **(Amended per Ordinance 311 dated 4-25-06)**

**6.20.175 Violations of Chapter Declared a Nuisance.** All violations of any portion of this Chapter are declared to be a nuisance and may be abated as such in the manner provided by law.

**6.20.176 Annual Review.** The Town Council will annually review the Town's recycling program and activities, including performance of recycling and solid waste processing services including contractors, franchises and authorized recycling agents.***(Entire Chapter 6.20 added per Ord. 34, adopted 08-15-89; Entire chapter amended per Ord. #128, adopted 11-09-93)***

## Chapter 6.30

## NUISANCES

**Sections:**


| | |
|---|---|
| 6.30.010 | Definitions. |
| 6.30.020 | Purpose. |
| 6.30.030 | Unlawful nuisances. |
| 6.30.040 | Abatement of public nuisance generally. |
| 6.30.050 | Notification of nuisance. |
| 6.30.060 | Administrative hearing to abate nuisance. |
| 6.30.070 | Notice of hearing. |
| 6.30.080 | Administrative hearing by Town Manager. |
| 6.30.090 | Abatement procedure in absence of appeal. |
| 6.30.100 | Appeal procedure--Hearing by Town Council. |
| 6.30.110 | Decision by Council |
| 6.30.120 | Service of order to abate. |
| 6.30.130 | Hearing procedure before Town Manager and Council. |
| 6.30.140 | Abatement by Town. |
| 6.30.150 | Filing of judicial action--Limitation. |
| 6.30.160 | Demolition authorized when. |
| 6.30.170 | Notice of intent to demolish. |
| 6.30.180 | Record of cost of abatement. |
| 6.30.190 | Protests and objections |
| 6.30.200 | Hearing of protests. |
| 6.30.210 | Special assessment and personal obligation. |
| 6.30.220 | Assessment lien. |
| 6.30.230 | Abatement proceedings costs--Collection. |
| 6.30.240 | Emergency abatement--Authority--Notice. |

**6.30.250 Emergency abatement--Notice to Town Council.**
**6.30.260 Alternative actions available--Violation an infraction.**
**6.30.270 Violation and penalties--Enforcement authority.**

**"6.30.010 Definitions.**

As used in this chapter:

(a) Back yard means that portion of property between a building and the back property line.

(b) Building means any house, garage, duplex, apartment, condominium, stock cooperative, and other residential and nonresidential structures.

(c) Driveway means the vehicular accessway between the street and the garage or carport.

(d) Front yard means that portion of property between the street and a building.

(e) Owner means any person owning property, as shown on the last equalized assessment roll for Town taxes or the lessee, tenant or other person having control or possession of the property.

(f) Person means any individual, partnership, corporation, association or other organization, however formed.

(g) Property means (a) all nonresidential zoned real property and any building located on such property (referred to as "nonresidential property"), and (b) front yards, the unfenced portions of side yards, the unfenced portion of back yards of corner lots, driveways, walkways and sidewalks of all residential real property and shall include any building located on such property (referred to herein as "residential property").

(h) Public Nuisance means a thing, act, occupation, condition or use of property which shall continue for such length of time as to: substantially annoy, injure or endanger the comfort, health, repose or safety of the public; in any way render the public insecure in life or in the use of property; greatly offend the public morals or decency; unlawfully and substantially interfere with, obstruct or tend to obstruct or render dangerous for passage any street, alley, highway, or other public way or the use of public property.

(i) Side yard means that portion of property between a building and the side property line.

(j) Town means the Town of Apple Valley.

(k) Town Manager means the Town Manager or a designee.

(l) Vehicle means a device by which any person or property may be propelled, moved, or drawn upon a highway, excepting a device moved exclusively by human power or used exclusively upon stationary rails or tracks."

***(Chapter 6.30.10 amended per Ordinance No. 302, adopted 10-25-05)***

**6.30.020 Purpose.**

Blight, consisting of fire hazards, polluted air and water, abandoned vehicles and improperly maintained property, among others, creates an unsightly appearance, creates a hazard to the public health, safety and welfare, and is a nuisance. It is hereby declared to be in the public interest to promote the public health, safety and welfare of the residents of the Town of Apple Valley by providing a procedure for the abatement of

nuisances which shall be in addition to all other procedures allowed by this code or any other manner provided by law.

**6.30.030 Unlawful Nuisances**

Each and every one of the following conditions or acts is declared to be a nuisance:

A. Fire Hazards. Dry or dead shrub, dead tree, combustible refuse and waste or any material growing upon a street, sidewalk or private property within the Town which constitutes a fire hazard to a building, improvement, crop or which, when dry, will in reasonable probability constitute a fire hazard;

B. Hazardous Obstructions. An obstacle, landscaping or object installed, planted or maintained within the sight triangle corner setback area reaching a height higher than 30 inches above the nearest street elevation. Hazardous obstructions do not mean existing or future permanent buildings, otherwise constructed or maintained in accordance with applicable building and zoning regulations, public utility poles, trees trimmed at the trunk at least six feet above the level of the ground surface provided trees are spaced so that trunks do not obstruct the vision of motorists;" ***(Section B – Amended per Ordinance 302 adopted 10-25-05)***

C. Polluted Water. A swimming pool, pond or other body of water which is abandoned, unattended, unfiltered, or not otherwise maintained, resulting in the water becoming polluted. Polluted water means water contained in a swimming pool, pond or other body of water, which includes but is not limited to bacterial growth, including algae, remains of deceased animals, reptiles, rubbish, refuse, debris, papers and any other foreign matter or material which because of its nature or location constitutes an unhealthy, unsafe or unsightly condition;

D. Public Burning. The intentional outdoor burning of any material, structure, matter or thing unless specifically authorized;

E. Refuse and Waste. Refuse and waste matter, which by reason of its location and character is unsightly and interferes with the reasonable enjoyment of property by neighbors, detrimentally affects property values in the surrounding neighborhood or community or which would materially hamper or interfere with the prevention or suppression of fire upon the premises. "Refuse and Waste" means unused or discarded matter and material having no substantial market value and which consists of such matter and material as rubbish, refuse, debris and matter of any kind including, but not limited to rubble, asphalt, concrete, plaster, tile, rocks, brick, soil, building materials, crates, cartons, containers, boxes, machinery or parts thereof, scrap metal and other pieces of ferrous or nonferrous metal, furniture, inoperative vehicles and parts, trimmings from plants and trees, cans, bottles and barrels;

1. Animal Waste. All animal waste must be cleaned up every seventy-two hours, excluding all large animal waste (i.e., horses, cattle, sheep) which will be required to be cleaned up once a week.

F. Maintenance of Property. It is declared a public nuisance for any person owning, leasing, occupying or having charge of any premises in this Town to maintain or to allow to be maintained such property in such manner that any of the following conditions are found to exist thereon;

1. Buildings, which are abandoned, boarded up, partially destroyed or left in a state of partial construction for a period of more than thirty days.

a. A building may be boarded up when special circumstances are present. This could include planned demolition of the structure or rehabilitation. This provision shall only apply when the boards have been painted to match the existing structure. If at any time the boards are removed or the paint is not maintained (fades, chips, peels . . .) this provision may be revoked.

2. Unpainted buildings or portions of buildings or structures causing dry rot, warping and termite infestation,

3. Broken windows constituting hazardous conditions and inviting trespassers and malicious mischief,

4. Overgrown vegetation:

a. Causing detriment to neighboring properties or property values or causing a hazardous condition to pedestrian and/or vehicular traffic, or

b. Likely to harbor rats, vermin and other nuisances,

5. Dead trees, weeds and debris:

a. Constituting unsightly appearance, or

b. Dangerous to public safety and welfare, or values,

c. Detrimental to nearby property or property

6. Stored vehicles or trailers, campers, boats and other objects parked or stored in a manner which extends or otherwise encroaches over, under or upon the Town's right-of-way.

7. Any vehicle or trailer containing any advertising matter, words, symbols or pictures, parked whether on public or private property, for the primary purpose of advertising or directing attention to a business or vehicle for sale. Exception: This chapter shall not apply to one (1) vehicle, which is parked legally on the vehicle owner's occupied residential property or commercially zoned properties licensed for vehicle sales.

Any person in violation of this Condition 7 of Paragraph F of Section 6.30.030 may be issued a parking citation, and the fine for that infraction shall be fifty

dollars ($50). ***(Item 7 of Section F amended per Ordinance 302, adopted 10-25-05)***

8. Operative vehicles parked or stored on the premises shall be limited to six (6) vehicles per single-family residential lot. The vehicles must be operative at all times and in compliance with Chapter 11.80 of the Town of Apple Valley Municipal Code. All vehicles located in the front yard area between the front of the home and the public right-of-way must be parked on a driveway or on a concrete, asphalt or gravel parking surface. The following shall be exceptions to this provision and will not be included in the maximum vehicles permitted as described in this section:

a. Vehicles completely screened from public view by a wooden fence, concrete block wall, brick wall, or chain link fence with approved screening materials, in accordance with Chapter 6.30.030 F.15.e. of the Town of Apple Valley Municipal Code or solid landscaping that completely screens the vehicle from view, provided the vehicles are located behind the structure;

b. Vehicles provided to the resident that are owned by the resident's employer and used by the resident for business. This exemption shall not apply to vehicles related to a Home Occupation Permit.

c. Operable motorcycles and mopeds;

d. Vehicles owned by visitors to the property that will be parked for less than twenty-four hours.

e. Vehicles located in an enclosed garage are not included in the maximum number of vehicles.

9. Attractive nuisances dangerous to children in the form of:

a. Abandoned and/or broken equipment,

b. Hazardous pools, ponds and excavations,

c. Neglected machinery, broken or discarded furniture and household equipment, stoves, refrigerators, freezers, cans, packing boxes and similar debris,

d. Any attractive nuisance which is potentially detrimental to children whether in a building, on the premises of a building or upon an unoccupied lot or parcel. This includes, but is not limited to, any abandoned wells, shafts, basements or excavations; abandoned refrigerators and motor vehicles; any structurally unsound fences or structures; or any lumber, trash, fences, debris or vegetation which may prove a hazard for inquisitive minors,

10. Broken or discarded furniture and household equipment in visible yard areas,

11. Clothesline or clothes hanging in front yard areas,

12. Packing boxes and other debris stored in yards and visible from public streets,

13. Toxic materials, hazardous waste or chemicals that are improperly or unlawfully stored, which includes the disposal of sewage, human excrement or other liquid waste in any place or manner,

14. Maintenance of premises in such condition as to be detrimental to the public health, safety or general welfare or in such a manner as to constitute a public nuisance as defined by Civil Code Section 3480,

15. Property including, but not limited to, building exteriors which are maintained in such condition as to become so defective, unsightly, or in such condition of deterioration or disrepair that the same causes depreciable diminution of the property values of surrounding property or is materially detrimental to proximal properties and improvements. This includes, but is not limited to, the keeping or disposing of or the scattering over the property or premises of any of the following:

a. Lumber, junk, trash or debris,

b. Abandoned, discarded or unused objects of equipment such as automobiles, furniture, stoves, refrigerators, freezers, cans or containers,

c. Stagnant water or excavations,

d. Any device, decoration, design, fence or structure which is unsightly by reason of its condition or its inappropriate location,

e. Fences shall be maintained using approved fencing material. Approved screening material to shield, conceal or hide shall consist of solid block, stucco, wood slat fencing and chain link fencing with plastic, wood or metal inserts. Materials including, but not limited to, plywood, particleboard, garage doors, plastic tarps or canvas are prohibited screening materials. All fences shall be in compliance with Section 9.08.1300 Walls and Fences of the Town of Apple Valley Development Code.

f. Permitting or allowing any graffiti to remain on any building, wall, fence or structure,

16. Any building, driveway or structure which has any of the following conditions or defects:

a. Whenever any door, aisle, passageway, stairway or other means of exit is not of sufficient width or size, or is not so arranged as to provide safe and adequate means of exit, in case of fire or panic, for all persons housed or assembled therein who would be required to, or might use such door, aisle, passageway, stairway or other means of exit,

b. Whenever any portion thereof has been damaged by earthquake, wind, flood, or by any other cause, in such a manner that the structural strength or stability thereof is appreciably less than the minimum requirements of this code for a new building or similar structure, purpose or location,

c. Whenever any portion or member or appurtenance thereof is likely to fall or to become detached or dislodged or to collapse and thereby injure persons or damage property,

d. Whenever any building, portion of a building, or any member, appurtenance or ornamentation on the exterior thereof is not of sufficient strength or stability or is not so anchored, attached or fastened in place so as to be capable of resisting wind pressure, earthquake forces, live-load or dead-load as specified in the Uniform Building Code without exceeding the stresses permitted in the Uniform Building Code,

e. Whenever any portion thereof has settled to such an extent that walls or other structural portions have materially less resistance to winds or earthquake than is required in new construction,

f. Whenever the building or structure, or any portion thereof, because of dilapidation, deterioration, decay, faulty construction or because of the removal or movement of some portion of the ground necessary for the purpose of supporting such building or portion thereof, or some other cause is likely to completely collapse or some portion of the foundation or underpinning is likely to fall or give way,

g. Whenever, for any reason whatsoever, the building or structure, or any portion thereof is unsafe for the purpose for which it is used,

h. Whenever the building or structure has been so damaged by fire, wind, earthquake or flood, or has become so dilapidated or deteriorated as to become an attractive nuisance to children who might play therein to their danger or as to afford a harbor for vagrants, criminals or immoral persons, or as to enable persons to resort thereto for the purpose of committing nuisance or unlawful or immoral acts,

i. Whenever any building or structure which has been constructed or which now exists or is maintained in violation of any specific requirement or prohibition applicable to such building or structure, of the building regulations of this Town as set forth in the Uniform Building Code, or Uniform Housing Code or of any law or

ordinance of this state or Town relating to the condition, location or structure of buildings,

j. Whenever a building or structure, used or intended to be used for dwelling purposes, because of dilapidation, decay, damage or faulty construction or arrangement, or otherwise is unsanitary or unfit for human habitation or is in a condition that is likely to cause sickness or disease when so determined by the health officer, or is likely to work injury to the health, safety or general welfare of those living within,

k. Whenever any building or structured used, or intended to be used, for dwelling purposes has light, air and sanitation facilities inadequate to protect the health, safety or general welfare of persons living within,

l. Whenever any building or structure, by reason of obsolescence, dilapidated condition, deterioration, damage, electric wiring, gas connections, heating apparatus, or other cause, is in such condition as to be a fire hazard and is so situated as to endanger life or other buildings or property in the vicinity or provide a ready fuel supply to augment the spread and intensity of fire arising from any cause,

m. Any building which meets the definitions of a sub-standard building in § 17920.3 of the Health & Safety Code." **(Effective 3-15-07)**

n. Any building that does not have the exterior fire resistive requirements of the Uniform Building Code,

o. Buildings or structures maintained in violation of Section 203(a) of the Uniform Building Code of the Town,

p. Any curb, gutter, sidewalk or driveway which is debilitated, broken damaged or raised one-half inch or more above the surrounding grade.
**(Amended per Ordinance 333 adopted 2-13-07)**

**6.30.040 Abatement of Public Nuisance Generally.** Any property found to constitute a public nuisance in violation of Section 6.30.030 may be abated by rehabilitation, removal, demolition, or repair pursuant to the procedures set forth in this chapter. The procedures for abatement set forth in this chapter shall not be exclusive and shall not in any manner limit or restrict the Town from enforcing other Town ordinances or abating public nuisances in any other manner provided by law."

**6.30.050 Notification of Nuisance.**

A. Whenever the Town Manager, or a designee thereof, determines that all or any part of any real property within the Town is being maintained contrary to one or more of the provisions of Section 6.30.030, he shall give written notice (notice to abate) to the owner(s) of said property of the violation(s) or public nuisance conditions (hereafter collectively the "nuisance"). A notice to abate shall contain the following information:

1. The names and addresses, according to county assessor records, of each owner. When applicable pursuant to Section 6.30.050 (d), the notice shall recite similar information for interested persons.

2. The street address and assessor parcel number for the real property on which the nuisance exists.

3. A description of each condition or violation constituting a nuisance on the real property. Applicable sections of the Town Municipal Code shall be included. Omission of any such section shall not invalidate the notice.

4. A description of the corrective method(s) proposed or required for abatement or termination of the nuisance. If Town approvals, licenses, or permits are required, they shall be identified in the notice. Omission of any such approval, license, or permit shall not invalidate the notice.

5. The deadline or deadlines for completion of the corrective method(s) and to pass all required Town inspections of the real property.

6. A recital that it is unlawful to cause, permit or allow a nuisance to exist and that the owner may incur substantial sanctions and other consequences if the nuisance is not promptly and fully corrected or otherwise abated.

B. The notice may be served upon the owner(s) in person, by first class mail, or by certified mail to their last known address according to county assessor records. Service shall be deemed complete at the time notice is personally served or deposited with the U.S. Postal Service. Failure of any person to receive the notice to abate shall not affect the validity of any proceedings hereunder.

C. The notice to abate may contain the Town's election to establish the right to abate a nuisance with Town or contract forces. In this event, the notice shall also contain the following recital:

"The Town has elected to establish the right to abate a nuisance with Town or contract forces. If you object to the determination of a nuisance, or to the proposed method(s) of its abatement, in this notice, you may tender a request for a hearing on a Town approved form to the Town Clerk's Office at Town Hall within ten (10) calendar days of the date of service of the notice to abate. There is no fee for filing this request. Failure of the Town Clerk to receive a request for hearing from an owner of the subject real property in a timely manner shall constitute a waiver of the right to a hearing. In this event, the determination of a nuisance and the method(s) of its abatement in this notice shall be final and the Town may cause abatement thereof. If a nuisance is abated by Town or contract forces, all personal property and any demolition debris involved in the abatement action at the subject real property may be removed therefrom and discarded or destroyed without regard to its salvage or other value. Recovery of the Town's abatement costs for the nuisance shall be sought pursuant to Section 6.30.180 and other sections of Chapter. 6.30 of the Town Code."

D. If abatement of a nuisance includes the possible demolition of a permitted building or other structure by Town or contract forces, the notice to abate shall also be served upon lienholders and other interested persons with recorded instruments that are on file with the San Bernardino County Recorder's Office as of the date of the notice to abate.

E. Establishment of the Town's right to abate a nuisance with Town or contract forces shall not obligate the Town to do so.

F. Owners or other interested persons shall not be entitled to a hearing pursuant to Chapter 6.30 if the Town elects instead to exercise its criminal or civil and injunctive remedies to cause the abatement of a nuisance, whereupon owners or interested persons are entitled to receive a hearing and other due process rights in court. Nothing contained in this subsection shall prevent the Town, in its sole discretion, from nevertheless voluntarily undertaking the administrative hearings set forth in this Chapter concerning any nuisance."

**6.30.060 Timely Request; Right to Administrative Hearing.** In the event the Town Clerk receives a timely request for a hearing as a result of the Town's election pursuant to Section 6.30.050 (c), the Town Manager, or a designee thereof, shall conduct an administrative hearing to confirm the existence of a violation or public nuisance and the method(s) of its abatement."

**6.30.070 Notice of Hearing.**

A. Notice of hearing before the Town Manager, or a designee thereof, shall be served upon the owner(s), and other interested persons, where applicable pursuant to Section 6.30.050 D, not less than seven calendar days before the date fixed for hearing. This notice may be served in person, by first class mail, or by certified mail to the address(es) of the owner(s) or other interested persons as recited in the request for a hearing. Service shall be deemed complete at the time the notice of hearing is personally served or deposited with the U.S. Postal Service. Failure of any person to receive a notice of hearing shall not affect the validity of any proceedings hereunder. The notice shall contain the date, location, address and time of the hearing, as well as the following recitals:

1. That the hearing is informal and technical rules of evidence do not apply.

2. That owners or interested person(s) may bring an interpreter to the hearing at their sole expense.

B. The Town Manager, or a designee thereof, may continue the hearing with notice to owners or interested persons of the new date, location, address and time thereof.

C. Failure of the owner(s) or interested person(s) to attend a hearing shall constitute a withdrawal of the request and a waiver of the right to a hearing. In this event, the determination of a nuisance and the method(s) of its abatement in the notice to abate shall be final and the Town may cause abatement thereof."

**6.30.080 Administrative Hearing by Town Manager or a Designee Thereof.**

A. At the time stated in the notice, the Town Manager or designee shall hear and consider all relevant evidence, objections or protests, and shall receive testimony under oath relative to such alleged public nuisance and to proposed rehabilitation, repair, removal or demolition of such property. Said hearing may be continued from time to time.

B. If the Town Manager or designee finds that such public nuisance does exist and that there is a sufficient cause to rehabilitate, demolish, remove or repair the same, the Town Manager shall prepare findings and an order, which shall specify the nature of the nuisance, the method(s) of abatement and the time within which the work shall be commenced and completed. The order shall include reference to the right to appeal set forth in Section 6.30.100. A copy of the findings and order shall be served on all owners of the subject property in accordance with the alternative methods stated in Section 6.30.070 and, when applicable under Section 6.30.050 (d), upon other interested persons. In addition, a copy of the findings and order shall be forthwith conspicuously posted on or near the property."

**6.30.090 Abatement Procedure In Absence of Appeal.** In the absence of any appeal, the property shall be rehabilitated, repaired, removed or demolished in the manner and means specifically set forth in said findings and order. In the event the owner fails to abate the nuisance as ordered, the Town Manager may cause the same to be abated by Town employees or private contract. The costs shall be billed to the owner, as specified in Section 6.30.140. The Town Manager or representative is expressly authorized to enter upon said property for such purposes."

**6.30.100**

A. The owner may appeal the Town Manager's or designee's findings and order to the Town Council ("Council") by filing an appeal with the Town Clerk within seven calendar days of the date of service of the Town Manager's or designee's decision. The appeal shall contain:

1. A specific identification of the subject property;
2. The names and addresses of all appellants;
3. A statement of appellant's legal interest in the subject property;
4. A statement in ordinary and concise language of the specific order or action protested and the grounds for appeal, together with all material facts in support thereof;
5. The date and signatures of all appellants; and
6. The verification of at least one appellant as to the truth of the matters stated in the appeal."

***(Section 6.30.040 through 6.30.100 amended per Ordinance 302, adopted 10-25-05)***

**6.30.110 Decision by Council.** Upon the conclusion of the hearing, the Council shall determine whether the property or any part thereof, as maintained, constitutes a public nuisance. If the Council so finds, the Council shall adopt a resolution declaring such property to be a public nuisance, setting forth its findings end ordering the abatement of the same by having such property rehabilitated, repaired, removed or demolished in the manner and means specifically set forth in said resolution. The resolution shall set forth the time within which such work shall be completed by the owner, in no event less than thirty days. The decision and order of the Council shall be final.

**6.30.120 Service of Order to Abate.** A copy of the resolution of the Council ordering the abatement of the nuisance shall be served upon the owner(s) of the property in accordance with the alternative methods stated in Section 6.30.070. Upon abatement in full by the owner, the proceedings hereunder shall terminate."

***(Section 6.30.120 amended per Ordinance 302, adopted 10-25-05)***

**6.30.130 Hearing Procedure Before Town Manager and Council.**

A. All hearings shall be tape recorded.

B. Hearings need not be conducted according to the technical rules of evidence.

C. Hearsay evidence may be used for the purpose of supplementing or explaining any direct evidence, but shall not be sufficient in itself to support a finding unless it would be admissible over objection in civil actions in courts of competent jurisdiction in this state. Any relevant evidence shall be admitted if it is the type of evidence on which reasonable persons are accustomed to rely in the conduct of serious affairs, regardless of the existence of any common law or statutory rule which might make improper the admission of such evidence over objection in civil actions in courts of competent jurisdiction in this state.

D. Oral evidence shall be taken only on oath or affirmation.

E. Irrelevant and unduly repetitious evidence shall be excluded.

**6.30.140 Abatement by Town.**

A. If such nuisance is not abated as ordered within said abatement period, the Town Manager shall cause the same to be abated by Town employees or private contract. The Town Manager or representative is expressly authorized to enter upon said property for such purposes. The cost, including incidental expenses, of abating the nuisance shall be billed to the owner and shall become due and payable thirty days thereafter. The term "incidental expenses" shall include, but not be limited to, personnel costs incurred in documenting the nuisance; the actual expenses and costs of the Town

in the preparation of notices, specifications and contracts, and in inspecting the work; and the costs of printing and mailing required hereunder.

B. A person shall not obstruct, impede or interfere with the Town Manager, or his representative, or with any person who owns, or holds any interest or estate in, any property in the performance of any necessary act, preliminary to or incidental to, carrying out an abatement order issued pursuant to Section 6.30.080 and 6.30.110.

C. In the event the Town incurs attorney fees in any action or proceeding to abate a nuisance under Title 6 or under any other ordinance or title of the Town of Apple Valley Municipal Code, pursuant to Government Code Section 38773.5, attorney fees are recoverable by the prevailing party, in those actions or proceedings in which the town elects at the initiation of the action or proceeding, to seek recovery of its own attorney fees. **(Section C Added per Ordinance 311 dated 4-25-06)**

**6.30.150 Filing of Judicial Action--Limitation.**

Any action appealing the Council's decision and order shall be commenced within thirty calendar days of the date of service of the decision.

**6.30.160 Demolition Authorized When.** No property shall be found to be a public nuisance under Section 6.30.030 and ordered demolished unless the order is based on competent sworn testimony and it is found that in fairness and in justice there is no way other than demolition reasonably to correct such nuisance.

**6.30.170 Notice of Intent to Demolish.** A copy of any order or resolution requiring abatement by demolition under Section 6.30.080 or 6.30.120 shall be forthwith recorded with the San Bernardino County Recorder.

**6.30.180 Record of Cost of Abatement.** The Town Manager or his or her designee shall keep an account of the cost, including incidental expenses, of abating the nuisance(s) on each separate lot or parcel of land where the work is done by the Town or under private contract and shall create an itemized statement in writing showing the cost of abatement, including the rehabilitation, demolition or repair of said property, including any salvage value relating thereto.

A. The Record of Cost of Abatement shall contain the following information:

1. The names and addresses, according to county assessor records, of each owner. When applicable pursuant to Section 6.30.050 D, the notice shall recite similar information for interested persons.

2. The street address and assessor parcel number for the real property on which the nuisance was abated.

3. A description of each condition or violation abated by the Town and the approximate date of abatement. Applicable sections of the Town Municipal Code shall be included. Omission of any such section shall not invalidate the notice.

4. The itemized statement showing the cost of each part of any abatement activity and the total cost thereof.

B. The notice may be served upon the owner(s) in person, by first class mail, or by certified mail to their last known address according to county assessor records. Service shall be deemed complete at the time notice is personally served or deposited with the U.S. Postal Service. Failure of any person to receive the notice to abate shall not affect the validity of any proceedings hereunder.

C. The Record of Cost of Abatement shall also contain the following recital:

'If you object to the specified cost of abatement and its recording as a lien against the subject property in accordance with sections 6.30.210 and 6.30.220 of the Municipal Code, you may tender a request for a hearing before the Town Council to the Town Clerk's Office at Town Hall within ten (10) calendar days of the date of service of the Record of Cost of Abatement. There is no fee for filing this request. Failure of the Town Clerk to receive a request for hearing from an owner of the subject real property in a timely manner shall constitute a waiver of the right to a hearing. In this event, recovery of the Town's abatement costs for the nuisance shall be sought pursuant to Section 6.30.180 and other sections of Chapter 6.30 of the Municipal Code.'

D. If abatement of the nuisance(s) included the demolition of a permitted building or other structure by Town or contract forces, the Record of Cost of Abatement shall also be served upon lienholders and other interested persons with recorded instruments that are on file with the San Bernardino County Recorder's Office as of the date of the Record of Cost of Abatement."

***(Section 6.30.180 amended per Ordinance 302, adopted 10-25-05)***

**6.30.190 Protests and Objections.** Any person liable to be assessed for the cost of an abatement action may file written protest or objection to the Town Manager's statement with the Town Clerk at any time prior to the time set for hearing. The Town Clerk shall endorse each protest or objection received and shall present such protests of objections to the Town Council at the time set for the hearing. No other protests or objections shall be considered.

**6.30.200 Hearing of Protests.** Upon the day and hour fixed for the hearing of protests and objections by the Town Council, the Council shall hear and act upon the Town Manager's statement and upon the protests or objections of those liable to be assessed for the cost of abatement. The Council may make such revisions, corrections or modifications to the statement as it may deem just and thereafter shall confirm the statement by motion or resolution. The decision of the Town Council on all protests and objections which may be made shall be final and conclusive.

**6.30.210 Special Assessment and Personal Obligation.** The Town Council shall thereupon order that all costs included in the confirmed statement

constitute a lien against the property to which it relates and that all such costs be made a personal obligation against the property owner (38773 Government Code).

**6.30.220 Assessment Lien.**

A. The total cost for abating such nuisance, as so confirmed by the Town Council, shall constitute a special assessment against the respective lot or parcel of land to which it relates, and upon recordation in the office of the county recorder of a notice of lien, as so made and confirmed, shall constitute a lien on said property for the amount of such assessment.

B. After such confirmation and recordation, a certified copy of the Council's decision shall be filed with the San Bernardino County auditor-controller on or before August 1st of each year, whereupon it shall be the duty of said auditor-controller to add the amounts of the respective assessments to the next regular tax bills levied against said respective lots and parcels of land for municipal purposes and thereafter said amounts shall be collected at the same time and in the same manner as ordinary municipal taxes are collected, and shall be subject to the same penalties and the same procedure and sale in case of delinquency as provided for ordinary municipal taxes. All laws applicable to the levy, collection and enforcement of municipal taxes shall be applicable to such special assessment.

C. In the alternative, after such recordation, such lien may be foreclosed by judicial or other sale in the manner and means provided by law.

D. Such notice of lien for recordation shall be in form substantially as follows:

"NOTICE OF LIEN"
(Claim of Town of Apple Valley)

Pursuant to the authority vested by the provisions of Section _____ of Town of Apple Valley Ordinance No. _____ the Town Manager of the Town of Apple Valley did on or about the ____ day of _____, 20___, cause the property hereinafter described to be rehabilitated or the building or structure on the property hereinafter described, to be repaired or demolished in order to abate a public nuisance on said real property; and the Town Council of the Town of Apple Valley did on the ____ day of _____, 20___, assess the cost of such rehabilitation, repair or demolition upon the real property hereinafter described; and the same has not been paid nor any part thereof; and that said Town of Apple Valley does hereby claim a lien on such rehabilitation, repair or demolition in the amount of said assessment, to wit: the sum of $_____; and the same shall be a lien upon said property until the same has been paid in full and discharged of record.

The real property hereinabove mentioned, and upon which a lien is claimed, is that certain parcel of land lying and being in the Town of Apple Valley, County of San Bernardino, State of California, and particularly described as follows:

*[description]*

Dated this _____ day of _____, 20___.

_____
Town Manager, Town of Apple Valley

**6.30.230 Abatement Proceedings Costs--Collection.** All costs associated with abatement proceedings which are not satisfied through the procedures of Section 6.30.090 shall be collected on behalf of the Town by the Town Attorney using the appropriate legal remedies.

**6.30.240 Emergency Abatement--Authority--Notice.** Whenever any nuisance as defined herein constitutes an immediate hazard to life, health or property and, in the opinion of the Town Manager or his designee, abatement must be undertaken immediately, the Town Manager may abate or cause to be abated all or any portion of the nuisance as may be necessary to protect life, health or property after giving such notice to the parties concerned as the circumstances will permit or without any notice whatever when, in the opinion of the Town Manager or designee, immediate action is necessary.

**6.30.250 Emergency Abatement--Notice to Town Council.** Whenever an emergency abatement action is taken pursuant to Section 6.30.240, the Town Manager or his designee shall submit to the Town Council a written report indicating the location of the nuisance and the reasons requiring emergency abatement thereof. A copy of this report shall be attached to or included as a part of notice to the owner of record when notice is given as previously provided in this chapter.

**6.30.260 Alternative Actions Available--Violation a Misdemeanor.** Any person violating any of the provisions or failing to comply with any of the requirements of this chapter, unless otherwise specified in particular sections of this chapter, shall be guilty of a misdemeanor, and, upon conviction thereof, the penalty shall be a fine of not more than one thousand dollars ($1,000), or imprisonment in the County jail for a period of not more than six months or by both fine and imprisonment.

Nothing in this chapter shall be deemed to prevent the Town from ordering the commencement of a civil proceeding to abate a public nuisance pursuant to applicable law or from pursuing any other remedy available under applicable law. Violations of the provisions of this chapter may be enforced pursuant to provisions of Section 1.01.220 of this code."

***(Section 6.30.260 amended per Ordinance No. 302, adopted 10-25-05)***

**6.30.270 Violation and Penalties--Enforcement Authority.**

A. Each person, firm or corporation shall be guilty of a separate offense for each and every day during any portion of which any violation of any provision of this chapter is committed, continued or permitted by such person and shall be punishable accordingly.

B. The Town Manager shall have the power to designate by written order that particular officers or employees shall be authorized to enforce particular provisions of this chapter. Officers or employees so designated shall have the authority to arrest persons who violate any of said provisions.
***(Entire Chapter 6.30 adopted Urgency Ord. #157 10-24-95, effective immediately; Entire Chapter 6.30 amended Ord 219, 6-13-00).***

## Chapter 6.40

## WATER CONSERVATION PLAN

**Sections:**

**6.40.010 Findings.**
**6.40.020 Purpose.**
**6.40.030 Water Regulations.**
**6.40.040 Exceptions.**
**6.40.050 Notice and Penalties.**

**6.40.010 Findings.** The Town Council finds that by reason of an apparent overdraft of the water table and because of the current problem existing with respect to the over use of the waste of water in connection with the irrigation of landscape and other outdoor vegetation, lawns and other growth, it is necessary to adopt and enforce a water conservation plan to conserve the water supplies of the Town for the greatest public benefit with particular regard to domestic use, sanitation, and fire protection; and it is the intent of the Town Council to achieve at least an approximately 10% reduction in water use.

**6.40.020 Purpose.** The Town finds that certain water uses regulated or prohibited in this ordinance are non-essential and if allowed would constitute wastage of water.

**6.40.030 Water Regulations.**

A. No water user within the Town of Apple Valley shall knowingly make, cause, use, or permit the use of water for residential, commercial, industrial, agricultural or any other purpose in the manner contrary to any provision of this Chapter.

B. All water users in the Town of Apple Valley shall abide by the following water conservation measures.

(1) The use of water for any purpose shall not result in flooding or runoff in gutters, driveways, streets or adjacent lands.

(2) Lawns, trees, shrubs, and other landscaping shall not be watered beyond what they need for growth and to sustain life, and water shall not be permitted to pool or to run off property onto streets or adjacent land.

(3) Sidewalks, walkways, driveways, parking areas, patios, porches or verandahs or any other like area shall not be washed off with water from hoses or by any other means. The exception to this shall be the washing of flammable or other similar dangerous substances that require direct hose flushing using recognized safety control measures for the benefit of the public health and safety. Notification to the Town of such wash down is required.

(4) Water, sprinkling, aerial watering or irrigating of any landscaped or vegetated areas, including lawns, trees, shrubs, grass, ground cover, plants, vines, gardens, vegetables, flowers, or other landscaping shall not occur between the hours of

9:00 a.m. and 6:00 p.m. during the months of April through September provided, however, that these restrictions shall not apply to hand-held hose or drip irrigation systems or to establishment of new lawns, landscaping, or gardens.

(5) Non-commercial washing of privately owned vehicles, trailers, motor homes, buses, boats and mobile homes is prohibited except from a bucket, and except that a hose equipped with an automatic shut-off nozzle may be used for a quick rinse.

(6) Water shall not be used to clean, fill, operate or maintain levels in decorative fountains unless such water is for replenishment of a recycling system.

(7) Water lines, faucets, and other facilities shall be maintained so that they do not leak water. Existing leaks shall be repaired in a timely manner.

(8) Restaurants, other food establishments, or other public places where food is served, shall not routinely provide glasses of drinking water to customers unless specifically requested by the customer.

(9) Water for construction purposes including, but not limited to, debrushing of vacant land, compaction of fills and pads, trench backfill and other construction uses, shall be used in an efficient manner. The use of aerial type sprinklers is not recommended but, if used, shall not be operated between the hours of 9:00 a.m. and 6:00 p.m..

(10) All new residential, commercial and industrial construction shall be equipped with low-flush toilets and low-flow showers and faucets.

(11) Water used for cooling systems must be recycled to the extent possible.

(12) Evaporation resistant covers are required for all new swimming pools and hot tubs and are encouraged to be installed for existing pools. The covers required by this ordinance shall, at the time of purchase, installation and all subsequent maintenance, meet or exceed current standards and specifications for swimming pool, spa and hot tub covers adopted by the American Society for Testing and Materials (ASTM).

(13) Hotels/motels are required to post a notice in substantially the form provided by the Town of Apple Valley urging guests to conserve water.

(14) All current and future water customers are encouraged to install flow restrictors or pressure reducers and to install toilet tank displacement devices (dams, bottles or bags), and as appliances or fixtures wear out, replace them with water-saving models.

(15) Parks, schools, golf courses, cemeteries, school grounds and all public use lands shall not irrigate between the hours of 9:00 a.m. and 6:00 p.m. during the months of April through September inclusive and are encouraged to use water conservation irrigation equipment.

(16) The use of drought tolerant or native plant material is encouraged for exterior landscaping in all new residential, and required for new commercial and industrial construction.

(17) The use of low precipitation sprinkler heads, bubblers, drip irrigation and timing devices are required in the exterior landscaping in all new residential, commercial and industrial construction.

(18) At least 50% of all new model homes shall include as a part of the exterior landscape development low water use, drought-tolerant or native plants.

(19) Projects, including Commercial and Planned Unit Developments, which utilize recycled water from sewage treatment or agricultural operations, may receive an exemption from paragraphs (15) through (18) of this Section by approval of the Town Council.

**6.40.040 Exception.** The prohibited or restricted uses of water under this Chapter shall not be applicable in those instances when the Town Manager or his designee finds: (1) The use is essential to avoid an undue hardship for a water user; (2) Special circumstances exist for a particular water user, as distinguished from other water users, which justify allowing an exception; (3) The use is essential for required government or public utility services, including but not limited to police protection, fire protection, sanitation, and other critical or emergency services; or (4) The use is essential to maintain the public health and safety. ***(Amended - Ord. #58, 7-24-90)***

**6.40.050 Penalties.**

Any person who violates any provision or who fails to comply with any of the requirement of this Chapter shall be guilty of an infraction and, upon conviction thereof, shall be punished in accordance with the provisions of Sections 1.01.200 through 1.01.230 of Chapter 1.01 of Title 1 of this Code. ***(Amended Ord. 156, adopted 11-14-95)***

## Chapter 6.50

## INSPECTION GRADING OF FOOD ESTABLISHMENTS

**Sections:**

**6.50.010 Adoption of County Inspection Grading of Food Establishments Code.**
**6.50.020 Violation-Penalty**

**Section 6.50.010 Adoption of County Inspection Grading of Food Establishments Code.** The Town of Apple Valley adopts by reference and makes part of this chapter by reference the following portions of the San Bernardino County Code:

1. Chapter 14 of Division 3 of Title 3.
2. Subsection 16.0213 B (b) (17) of Chapter 2 of Division 6 of Title 1.
3. The aforementioned County Codes are adopted as the Inspection Grading of Food Establishments Code of the Town of Apple Valley.

**Section 6.50.020 Violation-Penalty.** In accordance with Section 33.1406 (c) of the San Bernardino County Code, "the letter grade card shall not be defaced, marred, camouflaged, hidden or removed. It shall be unlawful to operate a food establishment unless the letter grade is posted. Removal of the letter grade card is a violation of this Chapter and may result in the suspension or revocation of

the Public Health Permit and shall be punishable as specified in Section 33.0112 of the San Bernardino County Code." In addition, violations of this Section may be punishable in accordance with Sections 101.200 through 101.230 of Title 1 of the Town of Apple Valley Municipal Code."

***(Entire Chapter 6.50 added per Ordinance No. 292 adopted 5-10-05)***

## Chapter 6.80

## SMOKING REGULATIONS

***(Chapter 6.80 added Ord. 73, 3-12-91.; Entire Chapter Repealed, Ord. #224 6-13-00)***

Please refer to Explanation (.rtf) for comments on corrections



SCHEDULE D-1
Sources of Supply and Water Developed- WELLS

APPLE VALLEY RANCHOS WATER CO. 2000

| Well No. | Location | Casing Dimension | Depth to Water | Gallons Per Minute | Annual Production 100 Cu. Ft. |
|---|---|---|---|---|---|
| 4 | Ptn SW 1/4, NW 1/4, Sec 27 | 20" | 170' | 1,216 | 42,752 |
| 7 | Ptn NW 1/4, Sec 34, T6N R4W | 14" | 74' | 317 | 12,693 |
| 9 | Lot 262, Tract 5883 | 14" | 228' | 911 | 148,422 |
| 10R | Lot 10, Tract 5205 | 10" | 174' | 483 | 353,515 |
| 11R | Lot 971, Tract 6115 | 14" | 208' | 2,014 | 1,246,280 |
| 12 | Ptn NE 1/4, SW1/4, Sec 30 | 16" | 96' | 1,005 | 432,757 |
| 15 | Ptn NE 1/4, Sec 22, T5N R3W | 16" | 143' | 1,312 | 0 |
| 16 | Ptn SE 1/4, Sec 30, T5N R3W | 16" | 82' | 1,226 | 295,677 |
| 17 | Ptn SW 1/4, Sec 13, T5N R4W | 16" | 96' | 734 | 193,096 |
| 18 | Lot 360, Tract 5704 | 16" | 91' | 1,010 | 357,718 |
| 19 | Lot 1059, Tract 6257 | 16" | 185' | 723 | 171,618 |
| 20 | Ptn SW1/4, Sec 13, T5N R4W | 16" | 124' | 860 | 243,424 |
| 21 | Ptn NW1/4, Sec 28, T5N R3W | 20" | 186' | 1,346 | 281,609 |
| 22 | Ptn NE 1/4,SW 1/4, Sec 28 | 20" | 192' | 1,606 | 1,077,888 |
| 23 | Lot 335, Tract 4053 | 20" | 159' | 290 | 137,501 |
| 24 | Ptn NW 1/4, NE 1/4, Sec 4 | 14" | 188' | 825 | 360,580 |
| 25 | 18555 Tuscola, T5N, R4W,Sec 13 | 16" | 130' | 578 | 206,715 |
| 26 | 18588 Seneca, T5N,R4W, Sec 13 | 20" | 128' | 1,869 | 729,940 |
| 28 | Riverside Drive | 18" | 101' | 808 | 337,423 |
| 30 | 11401 Apple Valley Rd. | 14" | 92' | 1,005 | 170,106 |
| 31 | Apple Valley Rd. | 14" | 58' | 302 | 845 |
| 32 | 19382 Del Oro Road | 10" | 58' | 444 | 102,405 |
| 3 | Agricultural Well | 18" | 63' | 1,000 | 236,048 |
| 4 | Agricultural Well | 18" | 68' | 1,081 | 694,356 |
| 5 | Agricultural Well | 18" | 85' | 2,800 | 49,170 |
| | TOTALS | | | 25,765 | 7,882,538 |

## SCHEDULE D-4
### Number of Active Service Connections

| Classification | Metered-Dec.31 Prior Year | Metered-Dec.31 Current Year | Flat Rate-Dec.31 Prior Year | Flat Rate-Dec.31 Current Year |
|---|---|---|---|---|
| Commercial (including domestic) | 13,972 | 14,325 | 0 | 0 |
| Industrial | 2 | 2 | | |
| Public authorities | 44 | 44 | | |
| Irrigation (landscape) | 54 | 61 | | |
| Irrigation (reclaimed) | 2 | 2 | | |
| Sub-total | 14,074 | 14,434 | 0 | 0 |
| Private fire connections | 84 | 87 | | |
| Public fire hydrants | 1,873 | 1,929 | | |
| Total | 16,031 | 16,450 | 0 | 0 |

## SCHEDULE D-5
### Number of Meters and Services on Pipe Systems at End of Year

| Size | Meters | Services |
|---|---|---|
| 5/8 x 3/4-in. | 13,291 | XXXXXXXX |
| 3/4-in. | 716 | |
| 1-in. | 1,735 | |
| 1-1/2-in. | 199 | |
| 2-in. | 204 | |
| 3-in. | 168 | |
| 4-in. | 30 | |
| 6-in. | 65 | |
| 8-in. | 25 | |
| 10- & 12-in. | 1 | |
| Total | 16,432 | 0 |

## SCHEDULE D-6
### Meter Testing Data

| | |
|---|---|
| **A. Number of Meters Tested During Year as Prescribed** | |
| 1. New, after being received ..... | 1,601 |
| 2. Used, before repair ..... | 0 |
| 3. Used, after repair ..... | 0 |
| 4. Found fast, requiring billing adjustment . | 0 |
| **B. Number of Meters in Service Since Last Test.** | |
| 1. Ten year or less ..... | 13,686 |
| 2. More than 10, but less than 15 years .... | 2,653 |
| 3. More than 15 years ..... | 93 |

## SCHEDULE D-7
### Water delivered to Metered Customers by Months and Years in Ccf (Unit Chosen)1

| Classification of Service | During Current Year: January | February | March | April | May | June | Subtotal |
|---|---|---|---|---|---|---|---|
| Commercial | 261,257 | 294,812 | 211,759 | 381,405 | 351,265 | 613,460 | 2,093,758 |
| Industrial | 0 | 69 | 0 | 83 | 0 | 96 | 228 |
| Public Authorities | 13,777 | 9,404 | 11,364 | 16,172 | 29,156 | 32,935 | 112,808 |
| Irrigation (landscape) | 13,341 | 25 | 6,478 | 35 | 13,833 | 62 | 33,574 |
| Irrigation (reclaimed) | 8,375 | 0 | 18,293 | 0 | 34,246 | 0 | 60,914 |
| | | | | | | | 0 |
| Total | 296,750 | 304,110 | 247,894 | 377,675 | 428,300 | 646,553 | 2,301,282 |

| Classification of Service | During Current Year: July | August | September | October | November | December | Subtotals | Total | Total Prior Year |
|---|---|---|---|---|---|---|---|---|---|
| Commercial | 555,135 | 731,901 | 570,388 | 634,160 | 386,392 | 363,270 | 3,241,244 | 5,335,002 | 4,909,903 |
| Industrial | 0 | 171 | 0 | 210 | 0 | 100 | 481 | 709 | 635 |
| Public Authorities | 62,979 | 55,075 | 56,328 | 35,101 | 31,922 | 14,917 | 256,322 | 369,130 | 343,505 |
| Irrigation (landscape) | 28,126 | 66 | 34,761 | 156 | 28,854 | 411 | 92,194 | 126,768 | 132,225 |
| Irrigation (reclaimed) | 56,149 | | 93,301 | 0 | 60,821 | 0 | 210,271 | 271,185 | 325,860 |
| | | | | | | | 0 | 0 | 0 |
| Total | 702,389 | 787,233 | 754,776 | 669,627 | 507,789 | 378,698 | 3,800,512 | 6,101,794 | 5,712,128 |

Total acres Irrigated: 0 Total Population served: 40,531

1. Quantity units to be in hundreds of cubic feet, thousands of gallons, acre-feet, or miner's inch-days.

SCHEDULE D-1
Sources of Supply and Water Developed- WELLS

APPLE VALLEY RANCHOS WATER CO. ~~2000~~ 2001

| Well No. | Location | Casing Dimension | Depth to Water | Gallons Per Minute | Annual Production 100 Cu. Ft. |
|---|---|---|---|---|---|
| 4 | Ptn SW 1/4, NW 1/4, Sec 27 | 20" | 170' | 1,052 | 37,024 |
| 7 | Ptn NW 1/4, Sec 34, T6N R4W | 14" | 64' | 312 | 13,392 |
| 9 | Lot 262, Tract 5883 | 14" | 231' | 785 | 347,403 |
| 10R | Lot 10, Tract 5205 | 10" | 177' | 633 | 236,119 |
| 11R | Lot 971, Tract 6115 | 14" | 211' | 1,991 | 950,572 |
| 12 | Ptn NE 1/4, SW1/4, Sec 30 | 16" | 99' | 990 | 332,635 |
| 15 | Ptn NE 1/4, Sec 22, T5N R3W | 16" | 146' | 1,232 | 0 |
| 16 | Ptn SE 1/4, Sec 30, T5N R3W | 16" | 86' | 1,272 | 307,877 |
| 17 | Ptn SW 1/4, Sec 13, T5N R4W | 16" | 95' | 699 | 212,668 |
| 18 | Lot 380, Tract 5704 | 16" | 98' | 1,050 | 421,838 |
| 19 | Lot 1059, Tract 6257 | 16" | 198' | 488 | 133,740 |
| 20 | Ptn SW1/4, Sec 13, T5N R4W | 16" | 118' | 860 | 230,679 |
| 21 | Ptn NW1/4, Sec 28, T5N R3W | 20" | 190' | 1,173 | 368,156 |
| 22 | Ptn NE 1/4,SW 1/4, Sec 28 | 20" | 195' | 1,697 | 911,250 |
| 23 | Lot 335, Tract 4053 | 20" | 151' | 427 | 131,771 |
| 24 | Ptn NW 1/4, NE 1/4, Sec 4 | 14" | 189' | 840 | 418,839 |
| 25 | 18555 Tuscola, T5N, R4W,Sec 13 | 16" | 120' | 523 | 164,871 |
| 26 | 18588 Seneca, T5N,R4W, Sec 13 | 20" | 120' | 1,846 | 708,093 |
| 28 | Riverside Drive | 18" | 89' | 825 | 272,733 |
| 30 | 11401 Apple Valley Rd. | 14" | 95' | 1,156 | 97,720 |
| 31 | Apple Valley Rd. | 14" | 60' | 416 | 21 |
| 32 | 19382 Del Oro Road | 10" | 64' | 364 | 123,971 |
| 3 | Agricultural Well | 18" | 63' | 1,000 | 22,037 |
| 4 | Agricultural Well | 18" | 77' | 998 | 695,092 |
| 5 | Agricultural Well | 18" | 85' | 2,800 | 500,824 |
| | TOTALS | | | 25,429 | 7,639,325 |

## SCHEDULE D-4
### Number of Active Service Connections

| Classification | Metered-Dec.31 Prior Year | Metered-Dec.31 Current Year | Flat Rate-Dec.31 Prior Year | Flat Rate-Dec.31 Current Year |
|---|---|---|---|---|
| Commercial (including domestic) | 14,325 | 14,664 | 0 | 0 |
| Industrial | 2 | 2 | | |
| Public authorities | 44 | 46 | | |
| Irrigation (landscape) | 61 | 60 | | |
| Irrigation (reclaimed) | 2 | 2 | | |
| Sub-total | 14,434 | 14,774 | 0 | 0 |
| Private fire connections | 87 | 85 | | |
| Public fire hydrants | 1,929 | 1,963 | | |
| Total | 16,450 | 16,822 | 0 | 0 |

## SCHEDULE D-5
### Number of Meters and Services on Pipe Systems at End of Year

| Size | Meters | Services |
|---|---|---|
| 5/8 x 3/4-in. | 13,224 | XXXXXXXX |
| 3/4-in. | 850 | |
| 1-in. | 1,513 | |
| 1-1/2-in. | 174 | |
| 2-in. | 170 | |
| 3-in. | 104 | |
| 4-in. | 27 | |
| 6-in. | 61 | |
| 8-in. | 23 | |
| 10- & 12-in. | 1 | |
| Total | 15,947 | 0 |

## SCHEDULE D-6
### Meter Testing Data

| | |
|---|---|
| **A. Number of Meters Tested During Year as Prescribed** | |
| 1. New, after being received | 786 |
| 2. Used, before repair | 0 |
| 3. Used, after repair | 0 |
| 4. Found fast, requiring billing adjustment | 0 |
| **B. Number of Meters in Service Since Last Test** | |
| 1. Ten year or less | 13,641 |
| 2. More than 10, but less than 15 years | 2,260 |
| 3. More than 15 years | 46 |

## SCHEDULE D-7
### Water delivered to Metered Customers by Months and Years in Ccf (Unit Chosen)1

| Classification of Service | During Current Year: January | February | March | April | May | June | Subtotal |
|---|---|---|---|---|---|---|---|
| Commercial | 240,162 | 249,485 | 173,398 | 288,535 | 322,268 | 578,627 | 1,850,463 |
| Industrial | 0 | 86 | 0 | 76 | 0 | 169 | 331 |
| Public Authorities | 12,831 | 7,399 | 5,047 | 11,619 | 22,855 | 34,475 | 94,326 |
| Irrigation (landscape) | 10,449 | 112 | 4,929 | 148 | 11,202 | 620 | 27,460 |
| Irrigation (reclaimed) | 22,665 | 0 | 8,089 | 0 | 45,928 | 0 | 76,682 |
| | | | | | | | 0 |
| Total | 286,107 | 257,082 | 191,463 | 298,378 | 402,341 | 613,891 | 2,049,262 |

| Classification of Service | During Current Year: July | August | September | October | November | December | Subtotals | Total | Total Prior Year |
|---|---|---|---|---|---|---|---|---|---|
| Commercial | 537,851 | 696,199 | 573,608 | 647,185 | 409,486 | 371,400 | 3,235,727 | 5,086,190 | 5,336,002 |
| Industrial | 0 | 319 | 0 | 241 | 0 | 127 | 687 | 1,018 | 709 |
| Public Authorities | 63,634 | 47,777 | 60,058 | 39,037 | 37,083 | 15,163 | 262,752 | 357,078 | 369,130 |
| Irrigation (landscape) | 29,737 | 810 | 37,415 | 1,338 | 26,493 | 985 | 96,778 | 124,238 | 125,768 |
| Irrigation (reclaimed) | 100,307 | | 113,216 | 0 | 63,003 | 0 | 276,526 | 353,208 | 271,185 |
| | | | | | | | 0 | 0 | 0 |
| Total | 731,529 | 745,105 | 784,295 | 687,801 | 536,065 | 387,675 | 3,872,470 | 5,921,732 | 6,101,794 |

Total acres irrigated: 0 Total Population served: 41,542

1. Quantity units to be in hundreds of cubic feet, thousands of gallons, acre-feet, or miner's inch-days.

SCHEDULE D-1
Sources of Supply and Water Developed- WELLS

APPLE VALLEY RANCHOS WATER CO. ~~2000~~ 2002

| Well No. | Location | Casing Dimension | Depth to Water | Gallons Per Minute | Annual Production 100 Cu. Ft. |
|---|---|---|---|---|---|
| 4 | Ptn SW 1/4, NW 1/4, Sec 27 | 20" | 162' | 1,133 | 99,021 |
| 7 | Ptn NW 1/4, Sec 34, T6N R4W | 14" | 61' | 262 | 12,808 |
| 9 | Lot 262, Tract 5883 | 14" | 231' | 897 | 341,573 |
| 10R | Lot 10, Tract 5205 | 10" | 171' | 561 | 355,715 |
| 11R | Lot 971, Tract 6115 | 18" | 222' | 1,941 | 1,012,876 |
| 12 | Ptn NE 1/4, SW1/4, Sec 30 | 16" | 93' | 999 | 407,511 |
| 15 | Ptn NE 1/4, Sec 22, T5N R3W | 16" | 148' | 1,232 | 0 |
| 16 | Ptn SE 1/4, Sec 30, T5N R3W | 16" | 84' | 1,192 | 235,851 |
| 17 | Ptn SW 1/4, Sec 13, T5N R4W | 16" | 64' | 756 | 261,585 |
| 18 | Lot 360, Tract 5704 | 16" | 68' | 1,023 | 472,805 |
| 19 | Lot 1059, Tract 6257 | 16" | 203' | 803 | 155,992 |
| 20 | Ptn SW1/4, Sec 13, T5N R4W | 16" | 88' | 686 | 119,925 |
| 21 | Ptn NW1/4, Sec 28, T5N R3W | 20" | 189' | 1,863 | 564,782 |
| 22 | Ptn NE 1/4,SW 1/4, Sec 28 | 20" | 192' | 1,685 | 933,298 |
| 23 | Lot 335, Tract 4053 | 20" | 118' | 416 | 154,196 |
| 24 | Ptn NW 1/4, NE 1/4, Sec 4 | 14" | 202' | 831 | 293,545 |
| 25 | 18555 Tuscola, T5N, R4W,Sec 13 | 16" | 79' | 525 | 214,308 |
| 26 | 18588 Seneca, T5N,R4W, Sec 13 | 20" | 108' | 1,720 | 761,107 |
| 28 | Riverside Drive | 18" | 92' | 867 | ~~323,490~~ |
| 30 | 11401 Apple Valley Rd. | 14" | 96' | 1,059 | 37,273 |
| 31 | Apple Valley Rd. | 14" | 59' | 416 | 0 |
| 32 | 19382 Del Oro Road | 10" | 77' | 423 | 147,824 |
| 3 | Agricultural Well | 18" | 63' | 1,000 | 0 |
| 4 | Agricultural Well | 18" | 80' | 927 | 666,421 |
| 5 | Agricultural Well | 18" | 85' | 2,800 | 1,678,787 |
| | TOTALS | | | 25,817 | 9,250,693 |

Correction

## SCHEDULE D-4
Number of Active Service Connections

| Classification | Metered-Dec.31 Prior Year | Metered-Dec.31 Current Year | Flat Rate-Dec.31 Prior Year | Flat Rate-Dec.31 Current Year |
|---|---|---|---|---|
| | | 15232 | | |
| Commercial (including domestic) | 14,684 | ~~14,662~~ | 0 | 0 |
| Industrial | 2 | 2 | | |
| Public authorities | 46 | 43 | | |
| Irrigation (landscape) | 60 | 63 | | |
| Irrigation (reclaimed) | 2 | 2 | | |
| Sub-total | 14,774 | ~~14,172~~ 15342 | 0 | 0 |
| Private fire connections | 85 | 93 | | |
| Public fire hydrants | 1,983 | 1,985 | | |
| Total | 16,822 | ~~18,250~~ | 0 | 0 |
| | | 17420 | | |

## SCHEDULE D-5
Number of Meters and Services on Pipe Systems at End of Year

| Size | Meters | Services |
|---|---|---|
| 5/8 x 3/4-in. | 13,758 | XXXXXXXX |
| 3/4-in. | 644 | |
| 1-in. | 1,486 | |
| 1-1/2-in. | 184 | |
| 2-in. | 170 | |
| 3-in. | 85 | |
| 4-in. | 32 | |
| 6-in. | 85 | |
| 8-in. | 24 | |
| 10- & 12-in. | 1 | |
| Total | 16,427 | 0 |

## SCHEDULE D-6
Meter Testing Data

| | |
|---|---|
| A. Number of Meters Tested During Year as Prescribed | |
| 1. New, after being received ..... | 1,147 |
| 2. Used, before repair ..... | 0 |
| 3. Used, after repair ..... | 0 |
| 4. Found fast, requiring billing adjustment . | 0 |
| B. Number of Meters in Service Since Last Test. | |
| 1. Ten year or less ..... | 14,294 |
| 2. More than 10, but less than 15 years .... | 2,069 |
| 3. More than 15 years ..... | 64 |

## SCHEDULE D-7
Water delivered to Metered Customers by Months and Years in Ccf (Unit Chosen)1

| Classification of Service | During Current Year January | February | March | April | May | June | Subtotal |
|---|---|---|---|---|---|---|---|
| Commercial | 236,060 | 275,163 | 234,898 | 369,756 | 355,757 | 591,327 | 2,062,961 |
| Industrial | 0 | 88 | 0 | 136 | 0 | 196 | 420 |
| Public Authorities | 9,828 | 7,166 | 9,831 | 16,138 | 30,234 | 31,811 | 105,008 |
| Irrigation (landscape) | 7,770 | 264 | 5,735 | 559 | 15,093 | 4,374 | 33,795 |
| Irrigation (reclaimed) | 10,828 | 0 | 15,439 | 0 | 23,195 | 0 | 49,462 |
| | | | | | | | 0 |
| Total | 264,486 | 282,681 | 265,903 | 386,589 | 424,279 | 627,708 | 2,251,646 |

| Classification of Service | During Current Year July | August | September | October | November | December | Subtotals | Total | Total Prior Year |
|---|---|---|---|---|---|---|---|---|---|
| Commercial | 532,609 | 768,355 | 605,186 | 653,794 | 408,143 | 434,599 | 3,402,684 | 5,465,645 | 5,086,190 |
| Industrial | | 302 | 0 | 284 | 0 | 189 | 755 | 1,175 | 1,018 |
| Public Authorities | 54,258 | 45,923 | 60,300 | 41,270 | 29,110 | 15,290 | 246,151 | 351,159 | 357,078 |
| Irrigation (landscape) | 27,900 | 3,481 | 34,193 | 4,519 | 23,595 | 1,459 | 95,147 | 128,942 | 124,238 |
| Irrigation (reclaimed) | 71,347 | | 64,219 | 0 | 39,074 | 0 | 174,640 | 224,102 | 353,208 |
| | | | | | | | 0 | 0 | 0 |
| Total | 686,114 | 818,061 | 763,898 | 699,847 | 499,920 | 451,537 | 3,919,377 | 6,171,023 | 5,921,732 |

Total acres irrigated: 0 Total Population served: 43,227

1. Quantity units to be in hundreds of cubic feet, thousands of gallons, acre-feet, or miner's inch-days.

SCHEDULE D-1
Sources of Supply and Water Developed- WELLS

APPLE VALLEY RANCHOS WATER CO. ~~2000~~ 2003

| Well No. | Location | Casing Dimension | Depth to Water | Gallons Per Minute | Annual Production 100 Cu. Ft. |
|---|---|---|---|---|---|
| 4 | Ptn SW 1/4 | 20" | 162' | 1,021 | 84,286 |
| 7 | Ptn NW 1/4 | 14" | 61' | 258 | 12,080 |
| 9 | Lot 262, Tr | 14" | 231' | 874 | 268,607 |
| 10R | Lot 10, Tra | 10" | 171' | 531 | 349,008 |
| 11R | Lot 971, Tr | 18" | 222' | 1,938 | 840,391 |
| 12 | Ptn NE 1/4 | 16" | 93' | 996 | 270,206 |
| 15 | Ptn NE 1/4 | 16" | 148' | 0 | 0 |
| 16 | Ptn SE 1/4 | 16" | 84' | 1,148 | 136,459 |
| 17 | Ptn SW 1/4 | 16" | 64' | 650 | 177,810 |
| 18 | Lot 360, Tr | 16" | 68' | 939 | 426,700 |
| 19 | Lot 1059, T | 16" | 203' | 718 | 85,193 |
| 20 | Ptn SW1/4 | 16" | 88' | 687 | 193,926 |
| 21 | Ptn NW1/4 | 20" | 189' | 1,632 | 481,584 |
| 22 | Ptn NE 1/4 | 20" | 192' | 1,677 | 755,923 |
| 23 | Lot 335, Tr | 20" | 118' | 376 | 115,625 |
| 24 | Ptn NW 1/4 | 14" | 202' | 824 | 470,483 |
| 25 | 18555 Tus | 16" | 79' | 497 | 199,987 |
| 26 | 18588 Sen | 20" | 108' | 1,884 | 776,388 |
| 28 | Riverside D | 18" | 92' | 863 | 346,280 |
| 29 | 19237 Yuc | 20" | 80' | 2,191 | 531,620 |
| 30 | 11401 App | 14" | 96' | 962 | 115,122 |
| 31 | Apple Valle | 14" | 59' | 0 | 0 |
| 32 | 19382 Del | 10" | 77' | 415 | 129,646 |
| 3 | Agricultura | 18" | 63' | 1,000 | 0 |
| 4 | Agricultura | 18" | 80' | 876 | 612,989 |
| 5 | Agricultura | 18" | 85' | 2,566 | 1,969,701 |
| | TOTALS | | | 25,323 | 9,349,994 |

## SCHEDULE D-4
## Number of Active Service Connections

CORR

| Classification | Metered - Dec 31 Prior Year (2002) | Metered - Dec 31 Current Year (2003) | Flat Rate - Dec 31 Prior Year | Flat Rate - Dec 31 Current Year |
|---|---|---|---|---|
| Commercial (including domestic) | 15232 ~~14,062~~ | 15,892 | | |
| Industrial | 2 | 2 | | |
| Public authorities | 43 | 45 | | |
| Irrigation | 63 | 65 | | |
| Other (specify) | 2 | 1 | | |
| Subtotal | 15342 ~~14,172~~ | 16,005 | | |
| Private fire connections | 93 | 95 | | |
| Public fire hydrants | 1,985 | 2,014 | | |
| Total | 17422 ~~16,250~~ | 18,114 | | |

## SCHEDULE D-5
## Number of Meters and Services on Pipe Systems at End of Year

| Size | Meters | Services |
|---|---|---|
| 5/8 x 3/4-in. | 14,007 | XXXXXXXXXXXXXXXXXX |
| 3/4-in. | 603 | |
| 1-in. | 1,305 | |
| 1-1/2-in. | 147 | |
| 2-in. | 139 | |
| 3-in. | 71 | |
| 4-in. | 35 | |
| 6-in. | 62 | |
| 8-in. | 24 | |
| 10- & 12-in. | 1 | |
| Total | 16,394 | |

## SCHEDULE D-6
## Meter Testing Data

A. Number of Meters Tested During Year as Prescribed in Section VI of General Order No. 103:

| | |
|---|---|
| 1. New, after being received . . . | 3,357 |
| 2. Used, before repair . . . . . | |
| 3. Used, after repair . . . . . | 6 |
| 4. Found fast, requiring billing adjustment . . . . . | |

B. Number of Meters In Service Since Last Test

| | |
|---|---|
| 1. Ten years or less . . . . . | 14,696 |
| 2. More than 10, but less than 15 years . . . . . | 1,109 |
| 3. More than 15 years . . . . . | 589 |

SCHEDULE D-1
Sources of Supply and Water Developed- WELLS

APPLE VALLEY RANCHOS WATER CO. 2004

| Well No. | Location | Casing Dimension | Depth to Water | Gallons Per Minute | Annual Production 100 Cu. Ft. |
|---|---|---|---|---|---|
| 4 | Ptn SW 1/4, NW 1/4, Sec 27 | 20" | 173' | 1,127 | 25,632 |
| 7 | Ptn NW 1/4, Sec 34, T6N R4W | 14" | 60' | 259 | 12,249 |
| 9 | Lot 262, Tract 5883 | 14" | 235' | 884 | 345,636 |
| 10R | Lot 10, Tract 5205 | 10" | 169' | 467 | 144,931 |
| 11R | Lot 971, Tract 6115 | 18" | 218' | 1,885 | 815,441 |
| 12 | Ptn NE 1/4, SW1/4, Sec 30 | 16" | 99' | 982 | 317,523 |
| 16 | Ptn SE 1/4, Sec 30, T5N R3W | 16" | 61' | 1,139 | 267,993 |
| 17 | Ptn SW 1/4, Sec 13, T5N R4W | 16" | 52' | 552 | 101,352 |
| 18 | Lot 360, Tract 5704 | 16" | 55' | 978 | 436,695 |
| 19 | Lot 1059, Tract 6257 | 16" | 191' | 750 | 37,711 |
| 20 | Ptn SW1/4, Sec 13, T5N R4W | 16" | 79' | 729 | 155,813 |
| 21 | Ptn NW1/4, Sec 28, T5N R3W | 20" | 173' | 1,524 | 374,672 |
| 22 | Ptn NE 1/4,SW 1/4, Sec 28 | 20" | 194' | 1,655 | 769,397 |
| 23 | Lot 335, Tract 4053 | 20" | 120' | 430 | 183,547 |
| 24 | Ptn NW 1/4, NE 1/4, Sec 4 | 14" | 198' | 837 | 432,377 |
| 25 | 18555 Tuscola, T5N, R4W,Sec 13 | 16" | 58' | 496 | 198,257 |
| 26 | 18588 Seneca, T5N,R4W, Sec 13 | 20" | 99' | 1,607 | 733,815 |
| 28 | Riverside Drive | 18" | 46' | 806 | 281,048 |
| 29 | 19237 Yucca Loma | 20" | 77' | 2,158 | 1,029,018 |
| 30 | 11401 Apple Valley Rd. | 14" | 100' | 908 | 144,818 |
| 31 | Apple Valley Rd. | 14" | 70' | 0 | 43,316 |
| 32 | 19382 Del Oro Road | 10" | 74' | 411 | 162,012 |
| 3 | Agricultural Well | 18" | 63' | 1,000 | 0 |
| 4 | Agricultural Well | 18" | 82' | 811 | 565,580 |
| 5 | Agricultural Well | 18" | 85' | 2,760 | 1,940,184 |
| | TOTALS | | | 25,153 | 9,519,017 |

## SCHEDULE D-4
## Number of Active Service Connections

| Classification | Metered - Dec 31 Prior Year | Metered - Dec 31 Current Year | Flat Rate - Dec 31 Prior Year | Flat Rate - Dec 31 Current Year |
|---|---|---|---|---|
| Commercial (including domestic) | 15,892 | 16,727 | | |
| Industrial | 2 | 2 | | |
| Public authorities | 45 | 41 | | |
| Irrigation | 65 | 68 | | |
| Other (specify) | 1 | 6 | | |
| Subtotal | 16,005 | 16,844 | | |
| Private fire connections | 95 | 98 | | |
| Public fire hydrants | 2,014 | 2,091 | | |
| Total | 18,114 | 19,033 | | |

## SCHEDULE D-5
## Number of Meters and Services on Pipe Systems at End of Year

| Size | Meters | Services |
|---|---|---|
| 5/8 x 3/4-in. | 14,910 | xxxxxxxxxxxxxxxxxx |
| 3/4-in. | 582 | |
| 1-in. | 1,287 | |
| 1-1/2-in. | 145 | |
| 2-in. | 138 | |
| 3-in. | 79 | |
| 4-in. | 44 | |
| 6-in. | 64 | |
| 8-in. | 24 | |
| 10- & 12-in. | 3 | |
| Total | 17,276 | |

## SCHEDULE D-6
## Meter Testing Data

| | |
|---|---|
| A. Number of Meters Tested During Year as Prescribed in Section VI of General Order No. 103: | |
| 1. New, after being received . . . | 2,329 |
| 2. Used, before repair . . . . . | |
| 3. Used, after repair . . . . . | 2 |
| 4. Found fast, requiring billing adjustment . . . . . | |
| B. Number of Meters in Service Since Last Test | |
| 1. Ten years or less . . . . . | 18,206 |
| 2. More than 10, but less than 15 years . . . . . | 1,050 |
| 3. More than 15 years . . . . . | 20 |

SCHEDULE D-1
Sources of Supply and Water Developed- WELLS

APPLE VALLEY RANCHOS WATER CO. 2005

| Well No. | Location | Casing Dimension | Depth to Water | Gallons Per Minute | Annual Production 100 Cu. Ft. |
|---|---|---|---|---|---|
| 4 | Ptn. SW 1/4, NW 1/4, Sec 27 | 20" | 173' | 1,127 | 49,846 |
| 7 | Ptn. NW 1/4, Sec 34 T6N R4W | 14" | 63' | 292 | 10,571 |
| 9 | Lot 262, Tract 5885 | 14" | 225' | 919 | 210,077 |
| 11R | Lot 971, Tract 6115 | 18" | 209' | 1,976 | 869,649 |
| 12 | Ptn. NE 1/4, SW 1/4, Sec 30 | 16" | 92' | 980 | 365,324 |
| 16 | Ptn. SE 1/4, Sec 30, T5N R3W | 16" | 82' | 1,267 | 374,006 |
| 17 | Ptn. SW 1/4, Sec 13, T5N R4W | 16" | 67' | 598 | 175,027 |
| 18 | Lot 360, Tract 5704 | 16" | 63' | 1,055 | 268,183 |
| 19 | Lot 1059, Tract 6257 | 16" | 186' | 675 | 51,717 |
| 20 | Ptn. SW 1/4, Sec 13, T5N R4W | 16" | 76' | 565 | 136,696 |
| 21 | Ptn. NW 1/4, Sec 28, T5N R3W | 20" | 173' | 800 | 171,097 |
| 22 | Ptn. NE 1/4, SW 1/4, Sec 28 | 20" | 180' | 1,561 | 598,996 |
| 23 | Lot 335, Tract 4053 | 20" | 114' | 448 | 162,404 |
| 24 | Ptn. NW 1/4, NE 1/4, Sec 4 | 14" | 199' | 799 | 585,141 |
| 25 | 18555 Tuscola, T5N R4W, Sec 13 | 16" | 58' | 492 | 223,700 |
| 26 | 18588 Seneca, T5N, R4W, Sec 13 | 20" | 102' | 1,744 | 543,305 |
| 27 | 21271 Waalew Road | Pending | | | 144,044 |
| 28 | Riverside Drive | 18" | 57' | 770 | 184,561 |
| 29 | 19237 Yucca Loma | 20" | 88' | 2,125 | 1,131,755 |
| 30 | 11401 Apple Valley Road | 14" | 84' | 1,719 | 191,059 |
| 31 | Apple Valley Road | 14" | 48' | 0 | 104,169 |
| 32 | 19382 Del Oro Road | 10" | 51' | 675 | 133,530 |
| 3 | Agricultural Well | 18" | 63' | 1,000 | 0 |
| 4 | Agricultural Well | 18" | 86' | 872 | 663,166 |
| 5 | Agricultural Well | 18" | 85' | 2,760 | 2,028,289 |
| | TOTALS | | | 25,219 | 9,376,312 |

## SCHEDULE D-4
## Number of Active Service Connections

| Classification | Metered - Dec 31 | | Flat Rate - Dec 31 | |
|---|---|---|---|---|
| | Prior Year | Current Year | Prior Year | Current Year |
| Commercial (including domestic) | 16,727 | 17,770 | | |
| Industrial | 2 | 2 | | |
| Public authorities | 41 | 42 | | |
| Irrigation | 68 | 103 | | |
| Other (specify) | 6 | 6 | | |
| Subtotal | 16,844 | 17,923 | | |
| Private fire connections | 98 | 106 | | |
| Public fire hydrants | 2,091 | 2,265 | | |
| Total | 19,033 | 20,294 | | |

## SCHEDULE D-5
## Number of Meters and Services on Pipe Systems at End of Year

| Size | Meters | Services |
|---|---|---|
| 5/8 x 3/4-in. | 15,975 | xxxxxxxxxxxxxxxxxx |
| 3/4-in. | 569 | |
| 1-in. | 1,267 | |
| 1-1/2-in. | 150 | |
| 2-in. | 160 | |
| 3-in. | 112 | |
| 4-in. | 46 | |
| 6-in. | 70 | |
| 8-in. | 24 | |
| 10- & 12-in. | 4 | |
| Other Unknown | 237 | |
| Total | 18,614 | |

## SCHEDULE D-6
## Meter Testing Data

A. Number of Meters Tested During Year as Prescribed in Section VI of General Order No. 103:

1. New, after being received . . . 1,486
2. Used, before repair . . . . . ____
3. Used, after repair . . . . . ____
4. Found fast, requiring billing adjustment . . . . . ____

B. Number of Meters in Service Since Last Test

1. Ten years or less . . . . . 17,368
2. More than 10, but less than 15 years . . . . . 1,131
3. More than 15 years . . . . . 115

SCHEDULE D-1
Sources of Supply and Water Developed- WELLS

APPLE VALLEY RANCHOS WATER CO. 2006

| Well No. | Location | Casing Dimension | Depth to Water | Gallons Per Minute | Annual Production 100 Cu. Ft. |
|---|---|---|---|---|---|
| 4 | Ptn. SW 1/4, NW 1/4, Sec 27 | 20" | 117' | 1,127 | 8,091 |
| 7 | Ptn. NW 1/4, Sec 34 T6N R4W | 14" | 63' | 292 | 10,380 |
| 9 | Lot 262, Tract 5885 | 14" | 223' | 919 | 276,274 |
| 11R | Lot 971, Tract 6115 | 18" | 206' | 1,976 | 791,751 |
| 12 | Ptn. NE 1/4, SW 1/4, Sec 30 | 16" | 87' | 980 | 208,911 |
| 16 | Ptn. SE 1/4, Sec 30, T5N R3W | 16" | 61' | 1,267 | 189,767 |
| 17 | Ptn. SW 1/4, Sec 13, T5N R4W | 16" | 84' | 598 | 194,432 |
| 18 | Lot 360, Tract 5704 | 16" | 66' | 1,055 | 329,795 |
| 19 | Lot 1059, Tract 6257 | 16" | 182' | 675 | 32,350 |
| 20 | Ptn. SW 1/4, Sec 13, T5N R4W | 16" | 79' | 565 | 87,539 |
| 21 | Ptn. NW 1/4, Sec 28, T5N R3W | 20" | 184' | 800 | 131,249 |
| 22 | Ptn. NE 1/4, SW 1/4, Sec 28 | 20" | 176' | 1,561 | 571,275 |
| 23 | Lot 335, Tract 4053 | 20" | 116' | 448 | 148,305 |
| 24 | Ptn. NW 1/4, NE 1/4, Sec 4 | 14" | 197' | 799 | 566,829 |
| 25 | 18555 Tuscola, T5N R4W, Sec 13 | 16" | 78' | 492 | 121,386 |
| 26 | 18588 Seneca, T5N, R4W, Sec 13 | 20" | 91' | 1,744 | 447,769 |
| 27 | 21271 Waslew Road | 10" | 187' | 430 | 0 |
| 28 | Riverside Drive | 18" | 13' | 770 | 234,832 |
| 29 | 19237 Yucca Loma | 20" | 89' | 2,125 | 1,108,222 |
| 33 | 12189 Apple Valley Road | 20" | 93' | 2,492 | 853,133 |
| 34 | 12500 Geronimo Road | 16" | 141' | 1,506 | 505,069 |
| 30 | 11401 Apple Valley Road | 14" | 88' | 1,719 | 466,922 |
| 31 | Apple Valley Road | 14" | 48' | 0 | 0 |
| 32 | 19382 Del Oro Road | 10" | 51' | 675 | 250 |
| 3 | Agricultural Well | 16" | 63' | 1,000 | 0 |
| 4 | Agricultural Well | 16" | 67' | 872 | 674,045 |
| 5 | Agricultural Well | 18" | 85' | 2,760 | 2,046,553 |
| | TOTALS | | | 29,647 | 10,005,079 |

## SCHEDULE D-4
## Number of Active Service Connections

| Classification | Metered - Dec 31 | | Flat Rate - Dec 31 | |
|---|---|---|---|---|
| | Prior Year | Current Year | Prior Year | Current Year |
| Commercial (including domestic) | 17,770 | 18,486 | | |
| Industrial | 2 | 2 | | |
| Public authorities | 42 | 42 | | |
| Irrigation | 103 | 121 | | |
| Other (specify) | 6 | 6 | | |
| Subtotal | 17,923 | 18,657 | | |
| Private fire connections | 106 | 117 | | |
| Public fire hydrants | 2,265 | 2,378 | | |
| Total | 20,294 | 21,152 | | |

## SCHEDULE D-5
## Number of Meters and Services on Pipe Systems at End of Year

| Size | Meters | Services |
|---|---|---|
| 5/8 x 3/4-in. | 16,744 | xxxxxxxxxxxxxxxxxx |
| 3/4-in. | 553 | |
| 1-in. | 1,350 | |
| 1-1/2-in. | 157 | |
| 2-in. | 168 | |
| 3-in. | 114 | |
| 4-in. | 53 | |
| 6-in. | 72 | |
| 8-in. | 27 | |
| 10- & 12-in. | 6 | |
| Other Unknown | | |
| Total | 19,244 | |

## SCHEDULE D-6
## Meter Testing Data

A. Number of Meters Tested During Year as Prescribed in Section VI of General Order No. 103:

1. New, after being received . . . 3,376
2. Used, before repair . . . . . .
3. Used, after repair . . . . . .
4. Found fast, requiring billing adjustment . . . . . .

B. Number of Meters in Service Since Last Test

1. Ten years or less . . . . . 17,931
2. More than 10, but less than 15 years . . . . . 1,043
3. More than 15 years . . . . . 270

**From:** Scott Weldy <scott@AVRWATER.com>
**Date:** August 22, 2007 11:49:47 AM PDT
**To:** Michael Gilmore <michaeljgilmore@mac.com>
**Subject: RE: Data Request 082207.pdf - Adobe Acrobat Standard**

Corrections were made when carry-forward errors were found, typos were made (year, etc.), and any other corrections that may be needed. This is still the backup data you will need.

Scott Weldy
Assistant General Manager
Apple Valley Ranchos Water Company
760-247-9332, Ext 4320

This email message and any attachments are for the sole use of the intended recipient(s) and contain confidential and/or privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message and any attachments.

----Original Message----
From: Michael Gilmore [mailto:michaeljgilmore@mac.com]
Sent: Wednesday, August 22, 2007 11:43 AM
To: Scott Weldy
Subject: Re: Data Request 082207.pdf - Adobe Acrobat Standard

Scott,
After analyzing the data more in depth, I noticed the dates were hand written on the sources page. I see the values are different. (?)
Thank you,
Michael Gilmore
On Aug 22, 2007, at 10:26 AM, Scott Weldy wrote:

Mike,

Attached are copies of our PUC reports from 2000 through 2006. The reports may be backup data in your report.

The conversion from 100 cubic foot to acre feet is this:
Units in 100 cu Ft / 435.6 = Acre Feet
Example;
Year 2000, 7,882,538 Units
7,882,538/435.6=18,095.8 AF of production for

Hesperia

1. Hesperia Water District historical water production reports for 2000 – 2006;
2. Historical customer (or service connections) records for 2000 – 2006;

**Hesperia Water District**

*Table of Historical Water Production & Service Connections (2000-2006)*

| Hesperia Water District | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|
| Connections | 19510 | 19729 | 20199 | 20644 | 20769 | 25417 | 26915 |
| Production (AF) | 15163 | 14533 | 15294 | 14804 | 16634 | 15771 | 17480 |

Customer Connections Provided By: Jill Wyman, Customer Service Supervisor
Production Data Provided By: Jeff Bennington, Engineer

Draft Drainage, Erosion and Sediment Control Plan

1. Replacement pages where descriptions are being revised for chemical storage containment (Section 4.2.1), and water used for dust suppression (Section 4.2.5);

*Preliminary Draft Plan*

# Drainage, Erosion, and Sediment Control Plan

# Victorville 2 Hybrid Power Plant

City of Victorville, California
(07-AFC-01)

Submitted to the:
**California Energy Commission**

Submitted by:
**Inland Energy, LLC**
With Technical Assistance by:
Bibb and Associates
Lenexa, Kansas
July 2007

# Contents


Section Page

1. Introduction ..... 1-1
    1.1 Drainage, Erosion, and Sediment Control Plan Elements ..... 1-1
    1.2 Project Overview ..... 1-2
    1.3 Watercourses and Critical Areas ..... 1-3
    1.4 Project Ownership ..... 1-4

2. Drainage ..... 2-1

3. Clearing and Grading ..... 3-1
    3.1 Areas to be Cleared and Graded ..... 3-1
    3.2 Location of Disposal Areas, Fills, or Other Special Areas ..... 3-1
    3.3 Existing and Proposed Topography ..... 3-1
    3.4 Volumes of Cut and Fill ..... 3-1
        3.4.1 Gas Pipeline ..... 3-1
        3.4.2 Water Pipelines ..... 3-2

4. Best Management Practices ..... 4-1
    4.1 General Erosion Control Measures ..... 4-1
        4.1.1 Access Road, Entrance and Parking, and Laydown Areas ..... 4-2
        4.1.2 WCEP Site and Linear Facilities ..... 4-3
        4.1.3 Foundations ..... 4-4
        4.1.4 Site Stabilization and Demobilization ..... 4-4

    4.2 Other Controls ..... 4-4
        4.2.1 Material Handling and Storage ..... 4-4
        4.2.2 Solid and Hazardous Waste Management ..... 4-5
        4.2.2 Potential Contaminated Soil ..... 4-6
        4.2.3 Groundwater/Dewatering Controls ..... 4-6
        4.2.4 Offsite Vehicle Tracking ..... 4-7
        4.2.5 Dust Suppression and Control ..... 4-7

Drawings
1A, 1B, 1C Regional Location and Project vicinity
2 VICTORVILLE 2 Site Delineation
3 VICTORVILLE 2 Watercourses and Critical Areas
4A, 4B Drainage Map
5A, 5B Clearing and Grading Plans

Appendixes
A Pre- and Post-Construction Drainage Plans
B Drainage Calculations
C Best Management Practices

## SECTION 1
# Introduction

This Preliminary Draft Drainage, Erosion, and Sediment Control Plan (DESCP) has been prepared in anticipation of the California Energy Commission's (CEC) approval of the proposed Victorville 2 Hybrid Power Plant (Victorville 2) Project (07-AFC-01). The Victorville 2 plant includes two natural gas-fired combustion turbine-generators rated at 154 MW each, two heat recovery steam generators, one steam turbine-generator rated at 268 MW, and 250 acres of parabolic solar-thermal collectors with associated heat transfer equipment. The solar-thermal collectors would contribute up to 50 MW of the steam turbine generator's 268 MW output, and with plant auxiliary loads of about 13 MW, Victorville 2's net output would be 563 MW. The plant is located in the City of Victorville, San Bernardino County, California. This preliminary draft DESCP, prepared in response to CEC Staff Data Request #83. In order "to determine the potential impacts to water and soil resources from the construction and operation of the Victorville 2 Energy Center project, the Energy Commission requires a draft and final Drainage Erosion and Sediment Control Plan (DESCP). The DESCP would be updated and revised as the project moves from the preliminary to final design phases and would be a separate document from the Construction Storm Water Pollution Prevention Plan (SWPPP). The DESCP submitted prior to site mobilization must be designed and sealed by a professional engineer/erosion control specialist.

Among staff's specific drainage and erosion concerns is that the solar field would create approximately 250 acres of exposed soil with a high erosion potential, and absent vegetative cover, would need some other form of maintainable erosion control protection. In addition, the project would alter natural drainage and swale features that currently cross the site, and could affect beneficial uses of natural flows.

This draft DESCP is preliminary because it is prepared in advance of the final phase of construction planning and engineering design, during which the details regarding construction schedule and certain aspects of erosion control design will be finalized. This will take place after licensing and will be included in a future draft of the DESCP. This document contains placeholders for some of these future items (detailed schedule, final BMP map).

## 1.1 Drainage, Erosion, and Sediment Control Plan Elements

CEC Data Request #83 requests a draft DESCP "outlining site management activities to be implemented during site mobilization, excavation, and construction." This draft DESCP includes the following elements:

**Vicinity Map** – A map at minimum scale 1"=100' indicating the location of all project elements with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

**Site Delineation** – All areas subject to soil disturbance for the Victorville 2 project (project site, laydown/demolition areas, all linear facilities, landscaping areas, and any other project elements) are delineated showing boundary lines of all construction/demolition areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

**Watercourses and Critical Areas** – The DESCP shows the location of all nearby watercourses including swales, storm drains, and drainage ditches, as well as their proximity to the Victorville 2 project site.

**Drainage** – The DESCP provides a topographic site map at a scale of 1"=100' showing all existing, interim and proposed drainage systems and drainage area boundaries. On the map, spot elevations shown where relatively flat conditions exist.

**Clearing and Grading** – The DESCP provides a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan provides elevations, slopes, locations, and the extent of all proposed grading as shown by contours. Existing and proposed topography are tied together.

**Best Management Practices** – The DESCP describes the location, timing, and maintenance schedule of BMPs to be used. Final design and placement of the BMPs will take place during the final phase of construction planning after licensing.

### 1.2 Project Overview

Victorville 2 will be a 563 MW facility consisting of two natural gas fired turbine generators, one steam turbine generator, and two hundred and fifty (250) acres of solar thermal collectors. The facility will be located near the intersection of Helendale Road and Colusa Road in the City of Victorville, San Bernardino County, California. Figure 1 shows the vicinity map of the Project (all drawings are located at the end of this report). Figure 2 shows the Project site and linear facilities locations. The parcel is a total of roughly two hundred and seventy five (275) acres of mostly undeveloped land. The land cover consists of sandy soil and various small brush. Victorville 2 will be located in an area zoned for industrial uses.

Figure 3 shows the project site plan,watercourses, and electric transmission line, as well as a map of nearby rivers and streams. Victorville 2 will connect to the electrical transmission station through a transmission line leading away from the southeast corner of the site in a southeasterly direction. The Project will receive natural gas through a pipeline that travels beneath Colusa Road. The Project will comply with all local, state, and federal regulatory requirements associated with the protection of water quality and soil resources.

### 1.3 Watercourses and Critical Areas

The project is located within the Mojave River Watershed (MRW). Characteristics of the site are that only natural swales exist, and there are no drainage ditches or storm drains on site. There are no significant creeks. The Mojave River runs north and south roughly 1 mile east of the site.

### 1.4 Project Ownership

Victorville 2 will be owned by Inland Energy.

## SECTION 2
## Drainage

The existing topographic conditions of the Victorville 2 Project site depict an average slope of one percent toward the north. Moreover, a ridgeline located in the middle of the site causes the surface runoff to flow to the west or east of the site. The east side of the proposed site

has a steep slope of 7 to 12 percent to the east, while the west side slopes at 0.8 to 1 percent to the west.

For purposes of developing drainage plans for the Project site, the Power Block (the roughly 25-acre area of the overall site where the combined-cycle generating equipment will be located) and the Solar Field (the remaining approximately 250 acres of the site) were divided into independent drainage systems. Each area has its own discharge location. The Solar Field will discharge along the entire length of the north side of the development area, while the Power Block will discharge through the outlet pipe of the Sediment Retention Facility (see Drawings 4A and 4B which illustrate the conceptual drainage plans).

The Power Block Area, located at the southeast corner of the property, is situated at the high point of the existing site. The Power Block Area will drain to the north and south by means of sheet flow, swales, inlets, and/or storm sewer pipes. At the north and south sides of the Power Block the runoff will be intercepted by a system of channels, culverts and/or storm sewers that will convey the storm water to the east. The storm water runoff will then be discharged into the Sediment Retention Facility located on the east side of the Power Block Area.

The Solar Field will be graded at a 0.5 percent slope and storm water will drain to the north. The small slope will keep storm water flow rates low, thus minimizing the amount of sediments picked up by the runoff. In addition, applying a dust-controlling agent such as Dirt Glue or a similar product will stabilize sediments in the solar field.

The Sediment Retention Facility and all other Project drainage features are designed to contain and/or convey the 100-year frequency return storm as specified on page 1 of the City of Victorville's, Standard Specifications for Public Improvements (City of Victorville, 1976)[1] and in section A.2 of the San Bernardino County Hydrology Manual (County of San Bernardino, 1986).[2] Table 2.1 shows precipitation and discharge data for 2-year and 100-year storm events for predevelopment and post development conditions for both the Power Block and Solar Field areas. These data provide the basis for sizing the Sediment Retention Facility shown on Drawings 4A and 4B. The objective was to size the Sediment Retention Facility and outfall structure such that the discharge from the facility will not exceed the predevelopment conditions. It should be noted that the current design approach is based on preliminary assumptions and may require modifications during final design; however, the design concept will remain the same.

The peak flow rates shown on Table 2.1 were determined using a computer aided, watershed modeling software called Hydraflow Hydrographs. This program utilizes the Natural Resources Conservation Service's TR-55 methods. Precipitation data and soil group information were obtained from the San Bernardino County Hydrology Manual.

---

[1] City of Victorville, California Standard Specifications for Public Improvements. Victorville, 1976.

[2] Williamson and Schmid, Civil Engineers, Irvine, California. County of San Bernardino Hydrology Manual. Irvine, 1986.

**Table 2.1**
**Hydrologic Analyses for Predevelopment and Post Development Conditions**

| | Power Block Predevelopment | Power Block Post Development | Solar Field Predevelopment | Solar Field Post Development |
|---|---|---|---|---|
| Area | 25.85 acres | 25.85 acres | 250.14 acres | 250.14 acres |
| Curve Number[3] | 75 | 97 | 75 | 75 |
| Precipitation - 2-Year Storm | 1.2 inches | 1.2 inches | 1.2 inches | 1.2 inches |
| Precipitation - 100-Year Storm | 3.5 inches | 3.5 inches | 3.5 inches | 3.5 inches |
| Discharge - 2-Year Storm | 0.16 cfs (cubic feet/sec) | 18.09 cfs | 1.53 cfs | 1.53 cfs |
| Discharge - 100-Year Storm | 13.65 cfs | 60.93 cfs | 67.71 cfs | 67.71 cfs |

One purpose of the Sediment Retention Facility is to provide the capacity to make up the difference between the pre- and post development runoff conditions. The facility also provides detention time, which allows sediments to settle out of the runoff before it is discharged to the existing drainage features. The design of the proposed Sediment Retention Facility was based on document SE-2 of the California Stormwater BMP Handbook – Construction (California Stormwater BMP, 2003)[4] and the San Bernardino County Hydrology Manual.[5] The Sediment Retention Facility is protected from erosion by placing riprap stone at all runoff entrance points to the facility. The riprap stone is placed from the discharge point and is continued down the slope to at least the bottom of the facility.

The Sediment Retention Facility will have at least 3 feet of freeboard above the 100-year storm event. The berm of the facility will be protected against storms greater than the 100-year event by a riprap lined emergency overflow spillway. The outlet structure for the Sediment Retention Facility will consist of a concrete riser with a grated opening on top, a small orifice near the bottom, and an outlet pipe to direct the flow to the existing ground. The existing ground at the discharge point of the outlet pipe will be protected from erosion using riprap stone.

During Project construction, silt fence will be constructed to prevent sediments in storm water runoff from leaving the site. The silt fence depicted in figure 6.17-3 will be in place prior to any clearing or grading operations. Since the grading of the site will take place in phases, temporary silt fence will be added around the perimeter of the phase area on the sides not

---

[3] The curve number is a coefficient used in the TR-55 method of the Natural Resources Conservation Service. The number classifies the land use and soil type of the watershed that is being analyzed.

[4] California Stormwater BMP Handbook – Construction. California, 2003.

[5] County of San Bernardino, 1986.

bounded by the Project site silt fence. After silt fence is installed, the Sediment Retention Facility and outlet structure will be constructed first during Power Block grading. A temporary swale on the west side of the Sediment Retention Facility will be constructed as depicted in figure 6.17-3 to drain the Power Block into the Facility during the remaining 3 to 4 months of the Power Block grading. The largest amount of sediments will be produced during construction. Therefore, sediments, which have accumulated in the Sediment Retention Facility during construction, may need to be removed during and at the end of construction to ensure that the facility functions properly. Temporary and permanent ditches that carry runoff to the Sediment Retention Facility will be protected against erosion, during construction, using flow check dams constructed of hay bales. As permanent storm sewer pipes and culverts are added during construction, they will be protected from receiving sediments using silt fence that will enclose the inlets.

Areas disturbed during construction, in the Power Block Area, will be stabilized with straw or other suitable material until the final surface is established. The Solar Field will be stabilized with Dirt Glue or a similar product. All construction entrances will have a granular area to remove soil from vehicle tires prior to leaving the site. Dust will be controlled during construction by watering and using Dirt Glue or a similar product. All erosion control measures will be in accordance to Section 3 of the California Stormwater BMP Handbook – Construction.[6]

## SECTION 3
# Clearing and Grading

### 3.1 Areas to be Cleared and Graded
Victorville 2 site is located entirely within an undeveloped area. Brush and Joshua trees will need to be cleared before grading is performed.

### 3.2 Location of Disposal Areas, Fills, or Other Special Areas
It is anticipated that all excavated soil will be used onsite for grading and leveling purposes. In the event that some of the excavated soil will not be reused onsite, classification of the soil for disposal would be made on the basis of sampling. Sampling would be completed once the soil is excavated and stockpiled. Soil that is determined to be nonhazardous could be suitable for reuse at a construction site or disposal at a regional disposal facility, depending on the chemical quality.

### 3.3 Existing and Proposed Topography
The existing site depicts an average slope of 1% toward the north. However, there is a ridge in the center of the site that would direct runoff to the east or west of the site. Moreover, the east side of the proposed site has steep slopes of 7%-12% in the east, while the west slopes at roughly 1% to the west. At completion of Victorville 2, surface greding will direct storm water runoff off the site via overland flow at a typical slope of 0.5 percent. The main plant complex area will be graded with moderate slopes for effective drainage.

### 3.4 Volumes of Cut and Fill
In order to balance the cut and fill, it is expected that 1.9 million cubic yards of dirt will be cut from the west side of the site and reused as fill material on the east side. It is expected that it will not be necessary to haul dirt onto or off of the site. There will be no topsoil removed from the site.

---

[6] California Stormwater BMP, 2003.

### 3.4.1 Gas Pipeline

The trench excavated for the short pipeline tie-in will be entirely refilled. No surplus soil is expected.

## SECTION 4
# Best Management Practices

The project has been designed to impact as small an area as possible at any given time, thereby limiting the amount of exposed, untreated soil. Construction is expected to proceed as expediently and efficiently as possible, thereby ensuring that as little soil is exposed for as short a time as possible. The following sections present standard construction Best Management Practices (BMPs) most of which are described in the California Storm Water Best Management Practice Handbook (2003) and the Caltrans Storm Water Quality Handbook (2003).

These resource handbooks provide comprehensive details on BMP implementation and will be obtained and reviewed by managers for all construction contractors that may have an impact on implementation of the DESCP.

The following sections present the recommended construction BMPs for stormwater pollution prevention at the WCEP construction laydown areas, plant site, and linear facilities. Each section provides information on BMP implementation as it relates to the activity being performed. BMPs that may have an impact on implementation of the DESCP will be reviewed by managers and construction contractors. While performing the work, the contractors may implement additional control measures if necessary.

## 4.1 General Erosion Control Measures

The project has been designed to impact as small an area as possible at any given time, thereby limiting the amount of exposed, untreated soil. BMPs will be used to help maintain water quality, protect property from erosion damage, and prevent accelerated soil erosion or dust generation. Temporary erosion control measures would be implemented before construction begins and they would be evaluated and maintained during construction. These measures typically include revegetation, mulching, physical stabilization, dust suppression, berms, ditches, and sediment barriers. These measures would be removed from the site after the completion of construction (except for silt fences).

A mitigation monitoring plan will also be developed in conjunction with CEC Staff to set performance standards and monitor the effectiveness of BMPs. This plan will address the timing and methods of such measures, as well as reporting and response requirements. Personnel will receive training to conduct their jobs properly and recognize and report abnormal/adverse situations so that they can be quickly corrected.

The following general control measures may be used during various phases of the project:

- Proper scheduling and sequencing of activities (SS-1)
- Preservation of existing vegetation (EC-2)
- Silt fences and fiber rolls (SC-1 and SC-5)
- Drainage swales (EC-9)
- Straw mulch (SS-6)
- Placement of geotextiles, plastic covers, and erosion control blankets/mats (SS-7)

- Placement of hydro seeding (EC-4), mulching (EC-6), or geotextile/erosion control blankets (EC-7) on slopes
- Gravel bag berm (SC-6)
- Street sweeping (SC-7)
- Sandbag barrier (SC-8)
- Storm drain inlet protection (SC-10)
- Stockpile management (WM-3)
- Dust control (WE-1)
- Solid and hazardous waste management (WM-5 and WM-6)
- Sanitary and septic waste management (WM-9)
- Vehicle and equipment maintenance (NS-10)
- Vehicle and equipment fueling (NS-9)
- Spill prevention and control (WM-4)
- Sediment basins (SC-2)
- Employee and contractor training

### 4.1.1 Access Road, Entrance and Parking, and Laydown Areas

During construction, primary access to the Victorville 2 site will be from an entrance via Colusa Road. The entrance will be maintained to limit sediment tracking and creation of dust. The parking and laydown areas will be stabilized with coarse gravel. All surfaces will be regularly watered to reduce generation of dust, but will not be excessively watered so as to generate runoff. Silt fencing may be used at edges of these areas, as necessary to minimize sediment discharging into swales or ditches.

All construction equipment will be maintained to control leaks and spills, and fueling will only be conducted within contained areas. Any contaminated soils resulting from spills will be dug up as quickly as possible, and then removed from the site for proper disposal.

The following BMPs are recommended for construction access areas:

- Silt fencing (SC-1)
- Stabilizing entrances and surfaces with coarse aggregate (TC-1 and TC- -2)
- Compacting access road surfaces (TC-2)
- Proper scheduling and sequencing of activities (SS-1)
- Street sweeping and vacuuming (SC-7)
- Placement of hydro seeding (SS-4), mulching (SS-6), or geotextile/erosion control blankets (SS-7).
- Dust control (WE-1)
- Temporary drains and swales (SS-9)
- Hay/straw bale barriers (SC-9)
- Vehicle and equipment cleaning (NS-8)
- Establishing vehicle and equipment fueling (NS-9) and maintenance areas (NS-10)

### 4.1.2 Victoville 2 Site and Linear Facilities

The site will be constructed somewhat rolling, dusty ground. Therefore, it will be surrounded by silt fences. These sediment barriers will be used to control sediments transported by runoff, and will remain after construction.

The project linear facilities will be constructed within the rights-of-way associated with Colusa Road and Helendale Road. Temporary erosion control might include asphalt patching in the streets until permanent paving can be completed.

During construction, temporary erosion control might include outlet protection and hay or straw bale barriers. The following BMPs will be considered during site and linear facilities constructions:

- Preservation of existing vegetation (SS-2)
- Temporary drains and swales (SS-9)
- Petroleum-absorbing fabric (WM-4)
- Check dams (SC-4)
- Fiber rolls (SC-5)
- Hay/straw bale barriers (SC-9)
- Sediment basins (SC-2)
- Outlet protection (SS-10)

### 4.1.3 Foundations

During construction of the foundations, a concrete washout area will be required. Dumping of excess concrete and washing out of delivery vehicles will be prohibited at other locations onsite. Notices will be posted to inform all drivers.

The following BMPs will be considered during the construction of foundations:

- Solid waste management (WM-5)
- Concrete waste management (WM-8)

### 4.1.4 Site Stabilization and Demobilization

As construction nears completion, areas used for parking, storage and laydown will be cleared and stabilized. Areas that will continue to be used for parking or storage will have permanent storm water collection and conveyance structures provided.

## 4.2 Other Controls

### 4.2.1 Material Handling and Storage

There will be a variety of chemicals stored and used during the construction and operation of the Victorville 2. Chemicals will be stored in appropriate chemical storage facilities. Bulk chemicals will be stored in storage tanks and other chemicals will be stored in returnable delivery containers. Chemical storage and chemical feed areas will be designed to contain leaks and spills. Berm and drain piping design will allow a full-tank capacity spill without overflowing the berms. For multiple tanks located within the same bermed area, the capacity of the largest single tank will determine the volume of the bermed area and drain piping. Secondary containment will hold 100% for a single tank, 100% of the largest tank it multiple tanks are contained with the same secondary containment structure , 150% of the largest tank if a UST, or 10% of total colume if greater, plus the volume from 25-year, 24 hour storm if exposed to rainfall.

Drain piping for volatile chemicals will be trapped and isolated from other drains to eliminate noxious or toxic vapors. After neutralization, if required, water collected from the chemical storage areas will be directed to the cooling tower basin. The aqueous ammonia storage area will have spill containment and ammonia vapor detection equipment.

Safety showers and eyewashes will be provided in the vicinity of all chemical storage and use areas. Hose connections will be provided near the chemical storage and feed areas to flush spills and leaks to the plant wastewater collection system. Approved personal protective equipment will be used by plant personnel during chemical spill containment and cleanup activities. In case of a chemical spill or accidental release, personnel will be properly trained in the handling of these chemicals and instructed in the procedures to follow. Adequate supplies of absorbent material will be stored onsite for spill cleanup.

The following BMPs will be considered for material handling and storage:

- Solid waste management (WM-5)
- Vehicle and equipment refueling (NS-9)
- Vehicle and equipment maintenance (NS-10)
- Material delivery and storage (WM-1)
- Material use (WM-2)
- Concrete waste management (WM-8)

### 4.2.2 Solid and Hazardous Waste Management

Wastewater. Wastewater generated during construction will include sanitary waste, storm water runoff, equipment washdown water, and water from excavation dewatering during construction (if dewatering is required). Depending on the chemical quality of these wastewaters, they could be classified as hazardous or nonhazardous. Sanitary waste will be collected in portable, self-contained toilets. Storm water runoff will be managed in accordance with a storm water management permit, which will be obtained prior to the start of construction. Equipment washdown water will be contained at designated wash areas and will be disposed of offsite. Excavation dewatering water will be contained in portable tanks and sampled prior to disposal offsite. Water used for dust control and soil compaction during construction will not result in discharge.

Hazardous Waste. Most of the hazardous waste generated during construction will consist of liquid waste, such as water from excavation dewatering, flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Some hazardous solid waste, such as welding materials and dried paint, may also be generated.

Flushing and cleaning waste liquid will be generated as pipes are cleaned and flushed. The volume of flushing and cleaning liquid waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, and paint waste is expected to be minimal. Wastewaters generated during construction could be considered hazardous.

The construction contractor will be considered the generator of hazardous construction waste and will be responsible for proper handling of hazardous waste in compliance with all applicable federal, state, and local laws and regulations. This responsibility will include licensing, personnel training, accumulation limits and times, and reporting and recordkeeping.

The hazardous waste will be collected in satellite accumulation containers near the points of generation. It will be moved daily to the contractor's 90-day hazardous waste storage area located at the site construction laydown area. The waste will be removed from the site by a certified hazardous waste collection company and delivered to an authorized hazardous waste management facility, before expiration of the 90-day storage limit.

The following BMPs will be considered at the designated storage locations:

- Cover or store hazardous materials indoors, if possible (WM-1)
- Material delivery and storage (WM-1)
- Material use (WM-2)
- Spill prevention and control (WM-4)
- Solid waste management (WM-5)
- Hazardous waste management (WM-6)
- Use of covered dumpsters and containers for waste (WM-5)

### 4.2.2 Potential Contaminated Soil

It is unlikely that contaminated soil will be encountered during construction. However, operators and construction personnel will be asked to report unusual conditions to the appropriate personnel and the area and/or material will be properly contained during investigative actions. If soils require temporary stockpiling, piles will be covered with plastic sheeting or tarps that are secured safely with sand bags and bermed with hay bales or silt fencing to prevent runoff from leaving the area. If required, samples will be collected and sent to a certified analytical laboratory for characterization. If contamination is detected, the waste will be handled and properly disposed of in an authorized waste management facility.

### 4.2.3 Groundwater/Dewatering Controls

The construction phase of Victorville 2 will require no groundwater removal. Storm water is expected to result in only several days of dewatering during construction, and this will be in accordance with BMPs. With an unusual storm year, this could be as many as 5 to 10 days.

If any contamination is detected via odors or visible sheens, the collected storm water will be handled and properly disposed in a manner consistent with federal, state, and local regulations. The following control methods will be considered for groundwater/dewatering controls, as necessary:

- Dewatering operations (NS-2)
- Hazardous waste management (WM-6)

### 4.2.4 Offsite Vehicle Tracking

Because sediment reaching public roads generally has a clear path to wetlands and water bodies, controls will be in place to minimize or eliminate soils from being tracked off the project site from vehicles. The site will have paved access roads and entrances/exits made of coarse aggregate to limit the amount of material adhering to tires. These areas will be inspected daily and cleaned as necessary using manual or mechanical street sweepers. The following control methods will be considered for offsite vehicle tracking, as necessary:

- Stabilized construction entrance/exit (TC-1)
- Stabilized construction roadway (TC-2)
- Entrance/exit tire wash (TC-3)

### 4.2.5 Dust Suppression and Control

During construction of the project and the related linear facilities, dust erosion control measures would be implemented to minimize the wind-blown loss of soil from the site.
Reclaimed water of a quality equal to or better than existing surface runoff would be sprayed on the soil in construction areas to control dust during revegetation.
The following control method will be considered for dust suppression, as necessary:

- Wind erosion control (WE-1)

-APPENDIX A
Pre- and Post-Construction Drainage Plans

-APPENDIX B
Drainage Calculations
-APPENDIX C
Best Management Practices

**STATE OF CALIFORNIA**
**ENERGY RESOURCES**
**CONSERVATION AND DEVELOPMENT COMMISSION**

| | | |
|---|---|---|
| In the Matter of: | ) | Docket No. 07-AFC-1 |
| | ) | |
| Application for Certification, | ) | **ELECTRONIC PROOF OF SERVICE** |
| for the VICTORVILLE 2 | ) | **LIST** |
| HYBRID POWER PROJECT | ) | |
| by the City of Victorville | ) | **(revised August 22, 2007)** |
| | ) | |
| | ) | |

☒ Transmission via electronic mail and by depositing one original signed document with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the following:

DOCKET UNIT

**CALIFORNIA ENERGY COMMISSION**
Attn: DOCKET NO. 07-AFC-1
1516 Ninth Street, MS-4
Sacramento, California 95814-5512
docket@energy.state.ca.us

☒ Transmission via electronic mail addressed to the following:

APPLICANT

**Jon B. Roberts**
City Manager
City of Victorville
14343 Civic Drive
P.O. Box 5001
Victorville, CA 92393-5001
JRoberts@ci.victorville.ca.us

APPLICANT'S CONSULTANTS

**Thomas M. Barnett**
Inland Energy, Inc.
South Tower, Suite 606
3501 Jamboree Road
Newport Beach, CA 92660
TBarnett@inlandenergy.com

**Sara Head**
Environmental Manager
ENSR
1220 Avenida Acaso
Camarillo, CA 90012
SHead@ensr.aecom.com

INTERESTED AGENCIES

**Electricity Oversight Board**
770 L Street, Suite 1250
Sacramento, CA 95814
esaltmarsh@eob.ca.gov

INTERVENORS

**California Unions for Reliable Energy (CURE)**
**c/o Gloria D. Smith**
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
gsmith@adamsbroadwell.com

ENERGY COMMISSION

**James Boyd**
Presiding Committee Member
jboyd@energy.state.ca.us

**Jackalyne Pfannenstiel**
Associate Committee Member
JPfannen@energy.state.ca.us

**Raoul Renaud**
Hearing Officer
rrnaud@energy.state.ca.us

**John Kessler**
Project Manager
JKessler@energy.state.ca.us

**Caryn Holmes**
Staff Counsel
CHolmes@energy.state.ca.us

**Mike Monasmith**
Public Adviser
pao@energy.state.ca.us

## DECLARATION OF SERVICE

I, Paul Kihm, declare that on September 17, 2007, I deposited the required original signed copy of the attached:

**APPLICANT'S RESPONSES TO CEC SUPPLEMENTAL DATA REQUESTS**

with FedEx overnight mail delivery service at Costa Mesa, California with delivery fees thereon fully prepaid and addressed to the California Energy Commission. I further declare that transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service List above.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 17, 2007, at Costa Mesa, California.

Paul Kihm