



JOSHUA BASIN WATER DISTRICT

P.O. BOX 675 • 61750 CHOLLITA ROAD • JOSHUA TREE • CALIFORNIA 92252
TELEPHONE (760) 366-8438 FAX (760) 366-9528 E-MAIL jbwd@jbwd.com

JOSHUA BASIN WATER DISTRICT
REGULAR MEETING OF THE BOARD OF DIRECTORS
WEDNESDAY JUNE 3, 2009, 7:00 PM
61750 CHOLLITA ROAD, JOSHUA TREE, CA 92252

AGENDA

1. CALL TO ORDER
 2. PLEDGE OF ALLEGIANCE
 3. DETERMINATION OF QUORUM
 4. APPROVAL OF AGENDA
 5. PUBLIC COMMENT
 6. CONSENT CALENDAR
 - A. Approve Minutes of the Regular Meeting of May 6th, 2009
 - B. Resolution 09-XXX Providing Workers' Compensation Insurance for Volunteer Personnel: Recommend that the Board adopt Resolution 09-XXX
 7. PRESENTATION OF CERTIFICATE OF APPRECIATION FOR FORMER CHAIR PERSON OF THE CITIZENS ADVISORY COMMITTEE.
 8. PRESENTATION BY ASSOCIATION OF CALIFORNIA WATER AGENCIES (ACWA) JOINT POWERS INSURANCE AUTHORITY (JPIA)
Recommend that the Board authorize participation in ACWA JPIA: adopt resolutions, appoint member and alternate, and accept JPIA agreement.
 9. PUBLIC HEARING TO CONSIDER THE WATER AVAILABILITY (STANDBY) CHARGE FOR FISCAL YEAR 2009/2010
Recommend that the Board adopt Resolution 09-XXX.
 - Receive staff report
 - Board questions
 - Open Public Hearing; receive public comments
 - Close Public Hearing
 - Board discussion and action
- Pages 1-3
Pages 4-5
Pages 6-40
Pages 41-51

- Pages 52-108 10. LONG TERM WASTE WATER STRATEGY
Recommend that the Board accept the attached Waste Water Strategy report for information and refer it to the Citizens Advisory Committee and other stakeholders for study and recommendation.
- Pages 109-112 11. RESOLUTION APPROVING AN APPLICATION FOR FEDERAL FUNDS FOR THE GROUNDWATER RECHARGE PROJECT
Recommend that the Board adopt Resolution 09-XXX.
- Pages 113-117 12. AGREEMENT WITH DUDEK ENGINEERING FOR PRELIMINARY DESIGN REPORT FOR GROUNDWATER RECHARGE PROJECT
Recommend that the Board affirm the General Manager's authorization for Dudek Engineering to prepare a preliminary design report for the groundwater recharge project at a cost not to exceed \$39,560.
- Page 118 13. REQUEST TO SOLICIT ENGINEERING DESIGN SERVICES ASSOCIATED WITH THE GROUNDWATER RECHARGE PROJECT
Recommend that the Board authorize the General Manager and District Engineer to prepare two Requests for Proposals; 1 for final design of Recharge Pipeline and 1 for Recharge Facility
- Pages 119-120 14. WELL 17 CLEAN UP OF BIOLOGICAL GROWTH PROBLEMS, RECONSTRUCTION OF PUMP BASE AND PUMP REINSTALLATION
Recommend that the Board authorize the General Manager to finalize negotiations with Bakersfield Well and Pump Company to treat Well 17, reconstruct pump base and reinstall pump at a cost not to exceed \$42,300.
- Pages 121-122 15. DESIGN AGREEMENT WITH NOLTE ENGINEERING FOR A BACKUP WATER SOURCE TO THE HI-DESERT MEDICAL CENTER AND ZONES C, B AND D-3
Recommend that the Board approve the agreement at a cost of \$17,300.
- Pages 123-125 16. CONSIDERATION OF SPONSORSHIP OF SAN BERNARDINO COUNTY WATER CONFERENCE
Recommend that the Board determine whether or not to sponsor the Conference, or otherwise participate.
- Pages 126-128 17. PROJECT PRIORITY LIST
An update on staff's progress with assigned projects.
18. PUBLIC COMMENT
19. GENERAL MANAGER REPORT
- Page 129 20. DIRECTOR COMMENTS/REPORTS
DIRECTOR REYNOLDS: Proposal to initiate meetings with other Morongo Basin Water Districts for more regional influence in legislative matters in Sacramento.
Recommend that the Board discuss participating with other Morongo Basin water districts to maximize regional influence in Sacramento.

21. CLOSED SESSION
Property Acquisition; pursuant to Government Code 54956.8, Conference with Real Property Negotiator regarding price and terms. District negotiator: Joe Guzzetta.
APN: 603-231-05; 603-231-06; 603-191-41.
22. CLOSED SESSION
Public employee performance evaluation; General Manager. Pursuant to government Code 54957.
23. ADJOURNMENT

The Board of Directors reserves the right to take action on items reserved for discussion only.

INFORMATION

During either "Public Comment" Item, please use the podium microphone. State your name and have your information prepared and be ready to provide your comments to the Board. The District is interested and appreciates your comments. A 3-minute time limit may be imposed. Thank you.

Any person with a disability who requires accommodation in order to participate in this meeting should telephone Joshua Basin Water District at (760) 366-8438, at least 48 hours prior to the meeting in order to make a request for a disability-related modification or accommodation.

Materials related to an item on this Agenda submitted to the Board of Directors after distribution of the agenda packet are available for public inspection in the District's office located at 61750 Chollita Road, Joshua Tree, California 92252 during normal business hours.

JOSHUA BASIN WATER DISTRICT
Minutes of the
REGULAR MEETING OF THE BOARD OF DIRECTORS
May 6, 2009

1. **CALL TO ORDER** **7:00 PM**

2. **PLEDGE OF ALLEGIANCE**

3. **DETERMINATION OF QUORUM:**

By roll-call vote:	
Gary Given	Absent
Bill Long	Present
Mickey Luckman	Present
Mike Reynolds	Present
Gary Wilson	Present

STAFF PRESENT:

Joe Guzzetta, General Manager
Susan Greer, Assistant GM/Controller
Terry Spurrier, HR/Administrative Services Supervisor
Marie Salsberry, Executive Secretary

GUESTS: **7**

President Given absent excused on vacation.

4. **APPROVAL OF AGENDA**

It was noted that President Given is on vacation and requested to be excused from this meeting. MSC Reynolds/Luckman 4/0 (1 Absent) to approve the agenda for the May 6, 2009 Regular Meeting of the Board of Directors.

5. **PUBLIC COMMENT**

None.

6. **CONSENT CALENDAR**

MSC Luckman/Long 4/0 (1 Absent) to approve the minutes of the regular meeting of April 15th, 2009 and to approve the financial report for March 2009.

7. **PRESENTATION OF CERTIFICATE OF APPRECIATION FOR FORMER CHAIR PERSON OF THE CITIZENS ADVISORY COMMITTEE**

Continued to a later meeting as recipient is not present at the meeting.

8. **UPDATE ON ENVIRONMENTAL IMPACT REPORT FOR GROUND WATER RECHARGE PROJECT**

General Manager Guzzetta introduced Tom Barnes of ESA who prepared the draft Environmental Impact Report for the District's Recharge Project. Mr. Barnes presented information including a description of the project, key issues affecting the project,

technical studies that have been completed, and comments received in response to the Notice of Preparation. He explained the Environmental Impact Report process and schedule.

Al Marquez of Joshua Tree asked for approximate start and completion dates, total cost for the project, and how much of the cost will be paid by ratepayers. He agreed that recharge is a good idea.

MSC Reynolds/Luckman 4/0 (1 absent) to accept the report for information.

9. AGREEMENT WITH JOE BOCANEGRA FOR CONSULTING SERVICES

GM Guzzetta reported that the District is currently recruiting for the Chief of Operation position; Mr. Bocanegra has served as interim Chief of Operations for the past several months; his excellent experience and expertise in the field of water operations and degree in engineering will make him a valuable consultant for the District.

Al Marquez of Joshua Tree commented asking if Mr. Bocanegra would be both the Chief of Operations full time and also a consultant at an hourly rate.

Following discussion the Board took the following action:

MSC Long/Luckman 3/1 (1 Absent) to approve staff recommendation to enter into an agreement with Joe Bocanegra at \$100 per hour to provide on-going engineering and related services as needed.

Given	Absent
Long	Aye
Luckman	Aye
Reynolds	Aye
Wilson	No

10. UPDATE ON PROPERTY, LIABILITY AND WORKERS' COMPENSATION INSURANCE RENEWALS

Assistant General Manager/Controller Susan Greer reported that a quote for insurance was requested of the Association of California Water Agencies Joint Powers Insurance Agency (ACWA JPIA). The proposal from JPIA indicates a nearly \$20,000 savings; in addition, JPIA is proactive in assistance with risk management, including offering many training programs for employees. Board and staff discussion ensued.

11. LOCAL AGENCY FORMATION COMMISSION (LAFCO) ELECTION

GM Guzzetta reported that there are several candidates for the position. Following discussion the Board took the following action:

MSC Luckman/Reynolds 4/0 to, by roll call vote, cast a vote for Bob Smith to serve as alternate LAFCO member to represent

Given	Absent
Long	Yes
Luckman	Yes
Reynolds	Yes
Wilson	Yes

12. PROJECT PRIORITY LIST

GM Guzzetta reported that the site security for the telemetry system is almost complete. The County may soon adopt a landscape ordinance; in that case the District would defer to the County's ordinance and the County would be responsible for enforcing the ordinance.

The Alliance for Water Awareness and Conservation (AWAC) will be working with the County on the part of the ordinance affecting the High Desert. GM Guzzetta also reported that the Wastewater Strategy document draft is completed and will be brought to the Board at the June 3rd meeting.

13. PUBLIC COMMENT

Al Marquez of Joshua Tree asked if the water to be used for recharge is potable.

14. GENERAL MANAGER REPORT

GM Guzzetta reported on a proposal received today from District Engineers Dudek and Associates for the Recharge Basin Pipeline Preliminary Design Report. As the District's Engineers, they may begin the work. Due to the urgency of designing this project for purposes of grant funds, the General Manager will authorize Dudek to initiate work under his authority, and will agendaize this for Board discussion at the next meeting.

15. DIRECTOR COMMENTS/REPORTS

Director Luckman attended the Association of San Bernardino County Special Districts monthly meeting where the speaker was Randall Lewis. She also attended the Mojave Water Agency Board meeting; and the mini-tour at the Mojave Water Agency; she found the tour very interesting. Basinwide Foundation meets tomorrow morning where Kirby Brill, General Manager of MWA will be the featured speaker.

Director Reynolds thanked ratepayers for attending the JBWD Board meeting, and reminded everyone that Board meetings are open to the public and that the Board encourages public participation.

Director Wilson commented that the Board's endorsement of the Mojave Desert Land Trust results in a loss to the District of future funds.

The meeting recessed at 8:17 pm for a short break before going to Closed Session.

16. CLOSED SESSION

Property Acquisition; pursuant to Government Code 54956.8, Conference with Real Property Negotiator regarding price and terms. District negotiator: Joe Guzzetta APN: 603-231-05.

Closed Session began at 8:25 pm; the Board returned to Open Session at 8:40 pm having taken no reportable action during the Closed Session.

17. ADJOURNMENT 8:42 PM

MSC Reynolds/Luckman 4/0 (1 Absent) to adjourn the May 6, 2009 Regular Meeting of the Joshua Basin Water District Board of Directors.

Respectfully submitted;

Joe Guzzetta, General Manager

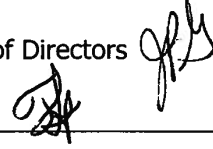
The next Regular Meeting of the Board of Directors is scheduled for May 20, 2009.

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

To: President and Board of Directors
From: Terry Spurrier

June 3, 2009



TOPIC: District volunteers to be covered under District's workers compensation insurance coverage.

RECOMMENDATION: That the Board adopts resolution 09-XXX allowing the District to cover its volunteers under its workers compensation insurance instead of general liability insurance.

ANALYSIS: This resolution would allow Joshua Basin Water District to cover its volunteers under insurance coverages that would reduce liability exposure to both the insurance carrier and the District. District volunteers would include the following examples; members of the Citizens Advisory Committee (CAC), or volunteers that may participate in a disaster event for the District.

Currently, volunteers that have injuries that are work related would be covered under the general liability coverage. The monetary exposure is essentially unlimited.

Approval of resolution 09-XXX would give the District the authority to exercise Labor Code Section 3363.5 from the California Legislature thereby extending workers compensation coverage to unpaid persons authorized to perform volunteer service. Workers Compensation Insurance has limitations on the amount of liability payouts. The net result would limit liability depending to the specific type of accident.

RESOLUTION NO. 09-XXX

A RESOLUTION OF THE BOARD OF DIRECTORS
OF THE JOSHUA BASIN WATER DISTRICT
PROVIDING WORKERS' COMPENSATION INSURANCE
FOR VOLUNTEER PERSONNEL

WHEREAS, this board desires to provide Workers' Compensation Insurance benefits for persons authorized by the District to perform volunteer services for the District, and

WHEREAS, the Legislature of the State of California has provided through legislation (Labor Code Section 3363.5) authorization for the inclusion of such coverage in the District's workers' compensation insurance policy.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Joshua Basin Water District hereby adopts the policy that an unpaid person authorized to perform volunteer service for the District shall be deemed to be an employee of the District for the purposes of Workers' Compensation Insurance benefits provided for by law for any injury or illness sustained by them while engaged in the performance of services for the District under its direction and control.

ADOPTED this 3rd day of June, 2009:

By _____
Gary Given, Board President

Attest _____
Joe Guzzetta, Secretary

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

To: President and Board of Directors
From: Susan Greer



TOPIC: PRESENTATION FROM ACWA JOINT POWERS INSURANCE AUTHORITY AND CONSIDER MEMBERSHIP FOR LIABILITY, PROPERTY AND WORKERS' COMPENSATION INSURANCE

RECOMMENDATION: Receive presentation, approve resolutions, appoint member and alternate and accept JPIA Agreement.

ANALYSIS: Andy Sells, Chief Financial & Operations Officer for the JPIA will attend our meeting and give a presentation on the JPIA programs and services. He will also explain how the District would be affected by the liabilities of the insurance pool.

The District is a member of ACWA and one of the benefits of membership is the ability to join the Joint Powers Insurance Authority (JPIA). The JPIA is a self-funded insurance pool formed in 1979 consisting of nearly 300 member agencies. JPIA is a Special District with a Board formed from the member agencies. They offer a pro-active loss control and risk management program designed to reduce losses and control costs. They also offer many services at little or no cost, such as training, video lending library, property appraisals and risk management consultants. Coverage is also broader with much higher limits (e.g. \$60M vs. \$6M liability coverage).

The District approached JPIA this year for a quote on our property, liability and workers comp insurance. The District's insurances renew on 7/1/09. We are still waiting on quotes from our commercial insurance brokers. Comparisons of the new JPIA proposal versus the actual costs from 7/1/08 policies are presented below. We assume that costs for commercial policies for 7/1/09 will be equal to or more than the 7/1/08 costs and recommend the move to ACWA JPIA in part based on that assumption.

Based upon the 08/09 actual costs, the change to JPIA would save the District \$21,004. This does not include any future potential refund of premiums, based on premiums collected versus claims paid. Recall that historically, over 40% of premiums collected on all three programs has been refunded.

COVERAGE PROPOSAL



Joshua Basin Water District

61750 Chollita Road
Joshua Tree, CA 92552

Date Presented:
April 28, 2009

Important Notice

This summary of proposed coverage is intended to be a brief general review of the proposed coverage. It does not alter, change or modify any of the coverage terms or conditions as found in the proposed Memorandum of Coverage. Please read the Memorandum of Coverage for the specifics as respects your agency's coverage.

This proposal does not ensure membership eligibility. The Executive Committee makes all decisions regarding membership application.

Membership requires an initial three-year commitment per the Joint Powers Agreement Article 22. Compliance with risk assessment recommendations, if any, is required prior to effecting coverage.

Introduction

The JPIA is a public entity, formed in 1979 by 83 water agencies of the state of California. There are now nearly 300 members. Like its members, the JPIA is a special district in the state of California. Its formation and operation are subject to the provisions of the California Government Code, including the Brown Act. It provides risk-sharing pools to meet the needs of its members for property, liability, and workers' compensation coverage.

The JPIA is a partnership of water agencies working together to share the risks associated with purveying water. The risk-sharing pools of the JPIA are a cost-effective form of risk management available only to public entities, allowing them to bypass the high cost of commercial insurance. The coverages provided by this risk-sharing arrangement are unique to water agencies. The water agencies themselves—their directors and managers—have selected and refined these coverages. Not all water agencies are accepted into the JPIA. Prospective members must demonstrate a commitment to effective risk management programs.

Becoming a member is just the beginning. Besides handling covered claims for all members, the JPIA provides risk management services and training programs. Risk management consultants who are specialists in the water industry, not generalists, perform on-site visits. Certified treatment plant operators and distribution system operators are on staff. The risk management services include assistance with Injury and Illness Prevention Programs, ergonomic evaluations, Cal/OSHA regulatory compliance, confined space entry evaluations, noise surveys, and hazard communication programs. In addition, members receive assistance with their personnel policies and procedures as well as help in developing job descriptions and employee handbooks.

The JPIA provides a wide variety of training to its members at little or no cost. An extensive safety video lending library, a risk control manual, a risk transfer manual, monthly safety bulletins, and other risk management tools are provided to members at no additional cost.

The JPIA is managed by the directors and managers of the water agencies it serves. The JPIA is constantly evolving to meet the changing needs of its members. Changes are the result of decisions of the various Committees and Board of Directors. Members have opportunities to influence and control the direction and activities of the JPIA through the democratic process.

The JPIA is not an insurance agency or company. There are no stockholders, no income taxes, no premium taxes, and no property taxes. There is no profit margin and no sales commissions. Any excess funds, as well as investment income, for a given coverage year are returned to the member agencies instead of being retained as profit. Historically, commercial insurers have entered and left the public entity insurance market like a revolving door, seeking only market share and profit. The JPIA provides a secure, stable and highly cost-effective alternative for protecting the assets, liabilities, and employees of public water agencies.

Liability Program

The JPIA's Liability Program is designed specifically for public water agencies. It provides protection to members against liability for bodily injury, property damages, errors and omissions, employment practices, fiduciary responsibilities, products, and pollution. The Program provides each member with liability limits of \$50 million per occurrence.

Commercial insurance programs typically require the issuance of multiple policies, often with conflicting coverage grants and exclusions, creating dangerous gaps in coverage. The JPIA's Memorandum of Coverage combines these needed coverages into a single form, specifically tailored to meet members' needs.

Members of the Liability Program also share in the direction of the Program, helping to craft the coverage and risk financing as well as the membership selection process.

Unlike fixed-cost commercial insurance programs, the JPIA's Liability Program affords members the opportunity to share in the benefits of effective risk management and loss prevention programs as well as thorough and knowledgeable claims handling. Since the inception of the Program in 1979, the JPIA has made retrospective premium adjustments (return premiums) of \$23 million, or approximately 10 percent of the deposit premiums.

Property Program

The JPIA's Property Program is a highly cost-effective method for members to protect their physical assets, such as buildings and infrastructure, vehicles, and equipment. Like the Liability Program, the Property Program's single Memorandum of Coverage eliminates the need for multiple and often conflicting or redundant commercial policies.

Some unique features of the Program include:

- Full Replacement Coverage for Buildings, Fixed Equipment, and Personal Property
- Machinery Breakdown and Electrical Injury of Fixed Equipment
- Coverage for earth movement and flood (except quake and rising bodies of water)
- Coverage for newly acquired, rented, or borrowed property, including autos
- Coverage for Business Interruption, Extra Expense, Valuable Papers, and Accounts Receivable
- Coverage for Employee Dishonesty and Forgery/Alteration
- Members also receive free replacement cost appraisals of their fixed assets

Since the Program began in 1983, the JPIA has returned over \$8 million to its members, or more than 37 percent of the deposit premiums.

Workers' Compensation Program

A water agency's employees are its most valuable asset. Injuries and lost time have hidden costs, such as the loss of productivity and lowered morale. The critical components of a successful workers' compensation program include effective loss prevention programs and claims handling.

The JPIA's Risk Management staff consists of highly qualified consultants that are experienced in the water industry. Some are state-certified water treatment and distribution operators. Each member is assigned a consultant who will work to help develop effective Injury and Illness Prevention Programs, Cal/OSHA regulatory compliance, and Return-to-Work programs. Extensive training programs are provided to help reduce employee injury and illness.

Members have free access to the services of Occu-Med for evaluation of pre-employment and fit-for-duty physical examinations.

A key to effective claims handling is good communication. The JPIA's Claims staff has a case load that is less than half of the industry standard, allowing them to work closely with members, injured workers, and treating physicians. They try to ensure that the employee is treated promptly and fairly, while working to eliminate abuse of the system and reduce costs.

Through a pro-active approach to reducing employee injuries and controlling claims costs, the JPIA has succeeded in avoiding the up and down cycles of the market while consistently remaining competitive with commercial insurers.

Additional Programs & Services

Coverage Programs (Group Purchase)

Public Official Bonds
Underground Storage Tank Liability
Dam Failure Liability
Earthquake and Flood
Special Event Liability

Services Provided at Little or No Additional Cost to Members

- Risk Management Consultations by Specialists in the Water Industry
- Cal/OSHA Regulatory Compliance Assistance
- DOT Drug & Alcohol Testing Consortium
- Injury & Illness Prevention Programs
- ADA Compliant JOB Descriptions
- Ergonomic Evaluations
- Hazard Identification & Coverage Evaluations
- Risk Transfer Consultants
- Video Lending Library with over 500 Videos on Safety, Health and Water Issues

Professional Development Program – provides training opportunities to members' employees, offering more than 40 different safety, management, and human resources classes at members' sites and other locations throughout the state. Certifications are available in the areas of Human Resources, Supervision, Risk Management, and Training. Many courses are approved for meeting the continuing education requirements of the California Department of Health Services.

LIABILITY COVERAGE QUOTATION

April 28, 2009

Comprehensive General Liability \$ 60,000,000
Per Occurrence Form

Public Officials Liability \$ 60,000,000

Automobile Liability \$ 60,000,000

Retrospective Allocation Point \$ 10,000

10/1/08 to 10/1/09 Deposit Premium:

Participation in 1 JPIA Program \$ 45,575

Participation in 2 JPIA Programs \$ 44,664

Participation in 3 JPIA Programs \$ 43,297

(Subject to payroll audit)

Excess Coverage Providers

AM Best Rating

Insurance Company of the State of Pennsylvania

A:XV

Lexington Insurance Company

A:XV

Everest National Insurance Company

A+:XV

Allied World National Assurance Company

A: XV

EXCLUSIONS: Including, but not limited to selenium, asbestos, punitive damages, nuclear energy, dam failure.

PROPERTY PROGRAM QUOTATION
April 28, 2009

Deductible:	\$ 1,000	\$ 2,500	\$ 2,500
\$ 12,642,897 Buildings, Personal Property, Fixed Equipment			

\$ 10,000,000 Valuable Papers
 \$ 10,000,000 Accounts Receivable
 \$ 10,000,000 Business Interruption
 \$ 10,000,000 Extra Expense
 \$ 250,000 Money & Securities
 \$ 100,000 Employee Dishonesty

Deductible:	\$ 1,000	\$ 1,000	\$ 2,500
\$ 350,000 Mobile Equipment			
\$ 250,000 Leased, Borrowed or Rented	Included	Included	Included

Deductible:	\$ 500	\$ 1,000	\$ 1,000
0 Fleet Rated Private Passenger			
10 Fleet Rated Light Trucks			
1 Fleet Rated Sport Utility Vehicles			
0 Fleet Rated Vans			
10 Non-Fleet Rated Vehicles & Trailer Mounted Equipment			

4/1/09 to 4/1/10 Deposit Premium:

Participation in 1 JPIA Program	\$ 20,123	\$ 18,581	\$ 18,528
Participation in 2 JPIA Programs	\$ 19,721	\$ 18,209	\$ 18,157
Participation in 3 JPIA Programs	\$ 19,117	\$ 17,652	\$ 17,602

Reinsurance Provider
 Federal Insurance Co.

AM Best Rating
 A++:XV

EXCLUSIONS: *Including, but not limited to perils of earthquake, flood, and computer virus. Limited coverage for mold or fungus, and terrorism.*

Note: Property values are estimates derived from information provide. Actual premium could vary upon appraisal by JPIA.

BOILER & MACHINERY COVERAGE
April 28, 2009

Property Damage	\$ 100,000,000
Including,	
Expediting Expenses	\$ 100,000,000
Ammonia Contamination	\$ 100,000,000
Hazardous Substance	\$ 250,000
Water Damage	\$ 250,000
Loss of Income	\$ 10,000,000
Extra Expense	\$ 10,000,000

Property Damage Deductibles:

Turbines Units	\$25,000 or \$5/kilowatt, whichever is greater
Internal Combustion Engines	\$10,000 or \$10/hp, whichever is greater
Electrical Generators driven by Internal Combustion Engines	\$25,000 or \$5/kilowatt, whichever is greater
Pumps and Pump Shafts	\$10,000 or \$10/hp, whichever is greater
Electric Motors and Motor Controllers	\$10,000 or \$8/hp, whichever is greater
Transformers	\$10,000 or \$25/kilovolt-ampere based upon largest voltage, whichever is greater
All other objects	\$10,000

Loss of Income/Extra Expense Deductibles:

Turbine Units	30 times 100% of the Average Daily Value
All other Objects	1 times 100% of the Average Daily Value

Annual Premium: **Included with Property Coverage**

Reinsurance Provider
Pacific Indemnity Co.

AM Best Rating
A++:XV

EXCESS CRIME QUOTATION

April 28, 2009

The JPIA's Property Program automatically provides members with coverage for Employee Dishonesty including Faithful Performance, Forgery/Alteration and Computer Fraud. Coverage is extended to include Treasurers and Board Members. The limit of coverage is \$100,000 per loss with a \$1,000 deductible.

The following is a quotation for additional coverage to apply in excess of the coverage provided by the Property Program.

Form O – Public Employee Dishonesty

Limit: \$ 150,000

Deductible: \$ 100,000

Form B – Forgery or Alteration

Limit: \$ 150,000

Deductible \$ 100,000

Form F – Computer Fraud

Limit: \$ 150,000

Deductible \$ 100,000

Est. Annual Premium: \$ 200

JPIA Administrative Fee: \$ 50

TOTAL \$ 250 *

Faithful Performance of Duty per limit

of coverage Form O	Included
Chairman or Members of any Committee	Included
Welfare & Pension Plan (ERISA)	Included
Treasurer as an Employee	Included

Excess Coverage Provider

Travelers Casualty & Surety Co. of America

AM Best Rating

A+:XIV

*Subject to Travelers' review of completed application.

**WORKERS' COMPENSATION & EMPLOYER'S LIABILITY
COVERAGE QUOTATION
April 28, 2009**

Workers' Compensation	Statutory Limits
Employer's Liability	
Bodily Injury by Accident	\$ 2,000,000
Bodily Injury by Disease - each employee	\$ 2,000,000
Bodily Injury by Disease - policy limit	\$ 2,000,000

Class Code	Classification	Estimated Annual Payroll	Rate 7/1/2008	Estimated Annual Deposit
7520	Waterworks Operation	\$ 498,600	.0510	\$ 25,429
8742	Salespersons – Meter Readers	\$ 703,712	.0116	\$ 8,163
Total		\$ 1,202,312		\$ 33,592
Economy of Size Discount – 8%				\$ (2,687)
Discounted Premium				\$ 30,904
Experience Modification Factor				0.81
Estimated 7/1/08-09 Deposit Premium				\$ 25,033

Participation in 2 JPIA Programs \$ 24,532
Participation in 3 JPIA Programs \$ 23,781

Deposit premium is payable on a quarterly reporting basis. No up-front deposit is required. Retrospective Allocation Point \$2,500 minimum.

Excess Coverage Provider
Arch Insurance Co.

AM Best Rating
A:XV

RESOLUTION 09-XXX

A RESOLUTION OF THE BOARD OF DIRECTORS OF
Joshua Basin Water District
CONSENTING TO ENTER THE JOINT PROTECTION
PROGRAMS OF THE ASSOCIATION OF CALIFORNIA
WATER AGENCIES/JOINT POWERS INSURANCE AUTHORITY

WHEREAS, pursuant to the provisions of Section 990, 990.4, 990.8, and 6500 of the Government Code, this District wishes to enter into an agreement with various other districts entitled "Joint Powers Agreement: Creating the Association of California Water Agencies/Joint Powers Insurance Authority" (the Authority), for the purpose of participating in the Joint Powers Insurance Authority created thereby, which since its formation has provided for and administered joint protection programs as more fully set forth in said agreement; and

WHEREAS, said joint protection programs offer significant advantages to this District in terms of cost, liability protection, property protection, workers' compensation protection, and services, and entering such programs, on the conditions hereinafter set forth, appears to be in the best interest of the District.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of Joshua Basin Water District:

Section 1. That Joshua Basin Water District hereby consents pursuant to the above-mentioned Joint Powers Agreement, and the resolutions and policies enacted in implementation of such Agreement, to enter said joint protection programs.

Section 2. That the District hereby elects to join the Liability, Property, and Workers' Compensation Programs sponsored by the Authority.

Section 3. That the District hereby selects \$5,000 as its Retrospective Allocation Point (RAP) for the first partial year of participation under the Authority's cost allocation formula for liability exclusive of Dam Failure Liability.

Section 4. That the District hereby selects \$2,500 as its Retrospective Allocation Point (RAP) for the first partial year of participation under the Authority's cost allocation formula for workers' compensation liabilities.

Section 5. That the Treasurer of this District is hereby authorized to pay to the ACWA/Joint Powers Insurance Authority its first deposit premium.

Section 6. That the Secretary of the Board of Directors of this District is directed to certify a copy of this resolution and to forward the same resolution, the signed Joint Powers Agreement, and the JPIA deposit premium payment promptly by mail to the Association of California Water Agencies/Joint Powers Insurance Authority, 5620 Birdcage Street, Suite 200, Citrus Heights, California, 95610, at which time coverage will commence the 1st day of July , 2009.

PASSED, APPROVED, AND ADOPTED this 3rd day of June, 2009 by the following vote:

AYES:
NOES:
ABSENT:

ATTEST:

Secretary

President

RESOLUTION 09-XXX

A RESOLUTION OF THE BOARD OF DIRECTORS OF
JOSHUA BASIN WATER DISTRICT
AUTHORIZING APPLICATION TO THE
DIRECTOR OF INDUSTRIAL RELATIONS, STATE OF CALIFORNIA
FOR A CERTIFICATE OF CONSENT TO SELF-INSURE
WORKERS'COMPENSATION LIABILITIES

WHEREAS, the Joshua Basin Water District is a public entity organized and existing under laws of the State of California; and

WHEREAS, pursuant to the provisions of Section 3700 of the California Labor Code, said Agency may self-insure for Workers' Compensation Liabilities in a joint protection program; and

WHEREAS, said Agency desires to participate in the ACWA/Joint Powers Insurance Authority joint protection program for Workers' Compensation coverage.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Joshua Basin Water District authorizes and empowers the General Manager to make application to the Director of Industrial Relations, State of California, for a Certificate of Consent to Self-Insure workers' compensation liabilities, and to execute any and all documents required for such application on behalf of said Agency.

PASSED AND ADOPTED by said Board of Directors this 3rd day of June, 2009, by the following vote:

AYES:

NOES:

ABSENT:

Signature

Title

Date

JPIA Board of Directors - Member/Alternate

An excerpt from the JPIA Agreement:

"Article 7 - Board of Directors"

(a) The Authority shall be governed by the Board of Directors which is hereby established and which shall be composed of one representative from each Member, who shall be a Member director selected by the governing board of that Member. Each Member, in addition to appointing its member of the Board, shall appoint at least one alternate who shall be an officer, member of the governing board or employee of that Member. The alternate appointed by a Member shall have the authority to attend and participate in any meeting of the Board when the regular member of whom he or she is an alternate is absent from said meeting.

(b) Each member or alternate of the Board shall serve until a successor is appointed. Each member or alternate shall serve at the pleasure of the Member by which he or she has been appointed.

(c) Each Board member representing a District or his or her alternate shall have one vote. Board members representing Allied Entities and their alternates shall not have any vote.

(d) The unexcused absence of a member and alternate of the Board from two consecutive meetings of the Board shall be cause for the appointment of a new director and/or alternate by the governing body of the Member affected.

Member Agency: Joshua Basin Water District

JPIA Director Representative: _____

Preferred Mailing

Address: _____

Phone: _____

JPIA Alternate Representative: _____

Preferred Mailing

Address: _____

Phone: _____

Authorized Representative

Date



Joint Powers Agreement

Creating The

**Association of California Water Agencies
Joint Powers Insurance Authority**

**Adopted May 9, 1979
Revised on November 26, 2007**

Joint Powers Agreement — Table of Contents

Article 1 — Definitions	2
Article 2 — Purposes	3
Article 3 — Parties to Agreement	4
Article 4 — Term of Agreement	4
Article 5 — Creation of Authority	4
Article 6 — Powers of Authority	4
Article 7 — Board of Directors	5
Article 8 — Powers of The Board of Directors	5
Article 9 — Meetings of The Board of Directors.....	6
Article 10 — Executive Committee	6
Article 11 — Powers of The Executive Committee	7
Article 12 — Meetings of The Executive Committee.....	7
Article 13 — Officers of The Authority	8
Article 14 — Standing Committee.....	8
Article 15 — Insurance Coverage	8
Article 16 — Initial Implementation of The Joint Protection Program.....	9
Article 17 — Accounts and Records	10
Article 18 — Responsibility for Monies	11
Article 19 — Responsibilities of The Authority.....	11
Article 20 — Responsibilities of Members	12
Article 21 — New Members	13
Article 22 — Withdrawal	13
Article 23 — Cancellation	14
Article 24 — Effect of Withdrawal or Cancellation	15
Article 25 — Termination and Distribution	15
Article 26 — Provision for Bylaws and Manual	16
Article 27 — Notices	16
Article 28 — Amendment.....	16
Article 29 — Prohibition Against Assignment.....	16
Article 30 — Agreement Complete	16

Joint Powers Agreement

Creating The

Association Of California Water Agencies

Joint Powers Insurance Authority

THIS AGREEMENT is made and entered into in the County of Sacramento, State of California, by and among the water districts and agencies (hereinafter "Districts") and other public entities (hereinafter "Allied Entities") organized and existing under the laws of the State of California, which are parties signatory to this agreement and listed in Appendix "A", which is attached hereto and made a part hereof. Said Districts and Allied Entities are sometimes referred to herein as "parties" or "Members".

Recitals

WHEREAS, California Government Code Section 6500 et seq. provides that two or more public agencies may by agreement jointly exercise any power common to the contracting parties; and

WHEREAS, California Government Code Section 990.4 provides that a local public entity may self-insure, purchase insurance through an authorized carrier, or purchase insurance through a surplus line broker, or any combination of these; and

WHEREAS, California Government Code Section 990.8 provides that two or more local entities may, by a joint powers agreement, provide insurance for any purpose by any one or more of the methods specified in Government Code Section 990.4; and

WHEREAS, the parties to this Agreement desire to join together for the purpose of establishing pools for self-insured losses and purchasing excess insurance and administrative services in connection with joint protection programs for said parties; and

WHEREAS, it appears economically feasible and practical for the parties to this Agreement to do so;

NOW THEREFORE, for and in consideration of all of the mutual benefits, covenants and agreements contained herein, the parties hereto agree as follows:

Article 1 — Definitions

The following definitions shall apply to the provisions of this agreement:

- (a) **"Allied Entities"** shall mean those public agencies that do not meet the definition of **"District"** who are members of the Association of California Water Agencies ("ACWA") or are affiliated with ACWA based on their meeting the criteria currently specified by ACWA for ACWA Affiliates – "Friends of ACWA," and who are also signatories to this agreement.
- (b) **"Auditor/Controller"** shall mean that person, designated by the Executive Committee from the financial staff of a District who is required to draw warrants on behalf of the Authority and provide for an annual audit.
- (c) **"Authority"** shall mean the Association of California Water Agencies Joint Powers Insurance Authority created by this Agreement.
- (d) **"Board of Directors" or "Board"** shall mean the governing body of the Authority.
- (e) **"Claim"** shall mean demands made against Members which are within the Authority's joint protection programs as developed by the Board of Directors.
- (f) **"Deposit Premium"** shall mean the amount determined by the Executive Committee annually, as necessary to fund each joint protection program of the Authority.
- (g) **"District"** shall mean those entities of local government empowered by law to replenish ground waters, distribute, control, treat, develop, acquire, use, store or supply water or empowered by laws to protect, drain or reclaim lands within the State of California including but not limited to irrigation districts, California water districts, municipal water districts, county water districts, municipal utility districts, and drainage, water replenishment and reclamation districts which are signatories to this Agreement and, are members of the Association of California Water Agencies, or are affiliated with ACWA based on their meeting the criteria currently specified by ACWA for ACWA Affiliates – "Friends of ACWA."
- (h) **"Duly Constituted Board Meeting"** shall mean any Board of Directors meeting noticed and held in the required manner and at which a Quorum was determined to be present at the beginning of the meeting.
- (i) **"Excess Insurance"** shall mean that insurance which may be purchased on behalf of the Authority to protect the funds of the Members against catastrophe losses or an unusual frequency of losses during a single year.
- (j) **"Executive Committee"** shall mean the Executive Committee of the Board of Directors of the Authority.

- (k) **"Finance and Audit Committee"** shall mean the committee of the Authority composed of the finance officers of districts appointed by the Executive Committee and ratified by their Districts.
- (l) **"Fiscal Year"** shall mean that period of twelve months which is established as the fiscal year of the Authority.
- (m) **"Chief Executive Officer/Secretary"** shall mean that employee of the Authority who is so appointed by the Executive Committee.
- (n) **"Insurance"** shall mean and include a joint protection program, self-insurance through a funded program and/or any commercial insurance contract.
- (o) **"Member"** shall mean either an **"Allied Entity"** or a **"District"**.
- (p) **"Policy Year"** shall mean a period of time, usually 12 months, determined by the Executive Committee into which each joint protection program is segregated for ease in determining deposit premiums, incurred losses and retrospective premium calculations.
- (q) **"Retrospective Premium Adjustment"** shall include the terms **"Retrospective Premium"** and **"Retrospective Adjustment"** and shall mean the amount, determined by the cost allocation plan and formula adopted by the Board as a Member's share of losses, expenses, and contribution to catastrophe fund or other reserve.

Article 2 — Purposes

This Agreement is entered into by Members pursuant to the provisions of California Government Code sections 990, 990.4, 990.8 and 6500 et seq. in order to provide comprehensive and economical public liability, workers' compensation, unemployment, health, accident and/or dental coverage, or coverage for other risks to which the Board of Directors may agree.

Additional purposes are to reduce the amount and frequency of losses, and to decrease the cost incurred by Members in the handling and litigation of claims. These purposes shall be accomplished through the exercise of the powers of such Members jointly in the creation of a separate entity, the Association of California Water Agencies Joint Powers Insurance Authority (the Authority), to administer joint protection programs wherein Districts and Allied Entities will separately pool their losses and claims, and jointly purchase excess insurance and administrative and other services, including claims adjusting, data processing, risk management consulting, loss prevention, legal and related services.

It is also the purpose of this Agreement to provide, to the extent permitted by law, for the inclusion at a subsequent date of such additional Members organized and existing under the laws of the State of California as may desire to become parties to the Agreement and members of the Authority, subject to approval by the Board of Directors.

It is the further purpose of this Agreement that a protection program for dam failure liability shall be a matter of primary priority of the Board of Directors.

Article 3 — Parties To Agreement

Each party to this Agreement certifies that it intends to and does contract with all other parties who are signatories of this Agreement and, in addition, with such other parties as may later be added as parties to and signatories of this Agreement pursuant to Article 21. Each party to this Agreement also certifies that the deletion of any party from this Agreement, pursuant to Articles 22 and 23 shall not affect this Agreement nor such party's intent to contract as described above with the other parties to the Agreement then remaining.

Article 4 — Term Of Agreement

This Agreement shall become effective on the date of execution hereof by the last of sixty (60) Districts with a combined 1978/79 liability policy premium of \$2 million, and shall continue until and unless terminated as hereinafter provided.

Article 5 — Creation Of Authority

Pursuant to Section 6500 et seq. of the California Government Code, there is hereby created a public entity separate and apart from the parties hereto, to be known as the Association of California Water Agencies Joint Powers Insurance Authority. Pursuant to Government Code Section 6508.1, the debts, liabilities and obligations of the Authority shall not constitute debts, liabilities or obligations of any party to this Agreement or of any District or Allied Entity.

Article 6 — Powers Of Authority

- (a) The Authority shall have the powers common to Members and is hereby authorized to do all acts necessary for the exercise of said common powers, including, but not limited to, any or all of the following:
 - (1) To make and enter into contracts;
 - (2) To incur debts, liabilities or obligations;
 - (3) To acquire, hold or dispose of property, contributions and donations of property, funds, services and other forms of assistance from persons, firms, corporations and governmental entities;
 - (4) To sue and be sued in its own name; and
 - (5) To exercise all powers necessary and proper to carry out the terms and provisions of this Agreement, or otherwise authorized by law.
- (b) Said powers shall be exercised pursuant to the terms hereof and in the manner provided by law, and in accordance with Government Code Section

6509, the foregoing powers shall be subject to the restrictions upon the manner of exercising such powers pertaining to the Walnut Valley Water District as specified in The California Water District Law. (California Water Code Sections 34000 et seq.)

Article 7 — Board Of Directors

- (a) The Authority shall be governed by the Board of Directors which is hereby established and which shall be composed of one representative from each Member, who shall be a Member director selected by the governing board of that Member. Each Member, in addition to appointing its member of the Board, shall appoint at least one alternate who shall be an officer, member of the governing board, or employee of that Member. The alternate appointed by a Member shall have the authority to attend and participate in any meeting of the Board when the regular member for whom he or she is an alternate is absent from said meeting.
- (b) Each member or alternate of the Board shall serve until a successor is appointed. Each member or alternate shall serve at the pleasure of the Member by which he or she has been appointed.
- (c) Each Board member representing a District or his or her alternate shall have one vote. Board members representing Allied Entities and their alternates shall not have any vote.
- (d) The unexcused absence of a member and alternate of the Board from two consecutive meetings of the Board shall be cause for the appointment of a new director and/or alternate by the governing body of the Member affected.

Article 8 — Powers Of The Board Of Directors

The Board of Directors of the Authority shall have the following powers and functions:

- (a) The Board shall elect from its voting members pursuant to Article 10 of this Agreement an Executive Committee.
- (b) The Board may review all acts of the Executive Committee, and shall have the power to modify and/or reverse any decision or action of the Executive Committee upon a majority vote of the voting directors present at any Duly Constituted Board Meeting.
- (c) The Board shall review, modify if necessary, and approve the annual operating budget of the Authority, prepared by the Executive Committee pursuant to Article 11 (d).
- (d) The Board shall receive and review periodic accountings of all funds under Articles 17 and 18 of this Agreement.

- (e) The Board shall have the power to conduct on behalf of the Authority all business of the Authority, including that assigned to the Executive Committee, which the Authority may conduct under the provisions hereof and pursuant to law.
- (f) The Board shall have such other powers and functions as are provided for in this Agreement or in the Bylaws.

Article 9 — Meetings Of The Board Of Directors

- (a) **Meetings.** The Board shall provide for its regular, adjourned regular and special meetings or upon call of the President of the Board; provided, however, that it shall hold at least one regular meeting annually as set forth in the Bylaws.
- (b) **Minutes.** The Chief Executive Officer/Secretary of the Authority shall cause minutes of regular, adjourned regular and special meetings to be kept and shall, as soon as possible after each meeting, cause a copy of the minutes to be forwarded to each member of the Board and to each District.
- (c) **Quorum.** Any fifty voting members of the Board shall constitute a quorum for the transaction of business, except that less than a quorum may adjourn from time to time. A vote of the majority of those voting members present and voting in the prescribed manner at any Duly Constituted Board Meeting shall be sufficient to constitute action by the Board except as otherwise specifically set forth in this Agreement or in the Bylaws.
- (d) **Compliance with the Brown Act.** All meetings of the Board, including, without limitation, regular, adjourned regular and special meetings, shall be called, noticed, held and conducted in accordance with the provisions of the Ralph M. Brown Act, California Government Code Section 54950 et seq.

Article 10 — Executive Committee

- (a) There shall be an Executive Committee of the Board of Directors which shall consist of ten members, as provided in the Bylaws. The members of the Executive Committee shall be the President of the Board of Directors, the Vice President of the Board of Directors, the Vice President of the Association of California Water Agencies who shall be an ex officio member of the Executive Committee, and seven members elected by the Board of Directors from its voting members as provided in the Bylaws.
- (b) The President of the Authority, or the Vice President in his or her absence, shall serve as the Chairperson of the Executive Committee.
- (c) The unexcused absence of a member of the Executive Committee, other than the Vice President of the Association of California Water Agencies, from two consecutive meetings shall be the cause for the removal of said member and appointment of a new member to the Executive Committee.

- (d) Vacancies on the Executive Committee shall be filled as provided in the Bylaws.

Article 11 — Powers Of The Executive Committee

The Executive Committee shall have the following powers:

- (a) The Executive Committee shall determine details of and select the joint protection program or programs of the Authority.
- (b) The Executive Committee shall determine and select all insurance, including excess insurance, necessary to carry out the joint protection program or programs of the Authority.
- (c) The Executive Committee shall have authority to contract for or develop various services for the Authority, including, but not limited to, claims adjusting, loss control and risk management consulting.
- (d) The Executive Committee shall cause to be prepared the operating budget of the Authority for each fiscal year, subject to review, modification and approval by the Board, as provided for in Article 8 (c).
- (e) The Executive Committee shall receive and act upon reports of all other committees and from the Chief Executive Officer/Secretary.
- (f) The Executive Committee shall appoint the Treasurer, Chief Executive Officer/Secretary and Auditor/Controller of the Authority.
- (g) The Executive Committee shall have the authority to engage, retain, and discharge persons, firms, or other organizations as the Executive Committee deems necessary for the administration of the Authority.
- (h) The Executive Committee shall exercise general supervisory and policy control over the Chief Executive Officer/Secretary.
- (i) Additional committees and sub-committees shall be established by the Executive Committee as it deems necessary to best serve the interests of the Authority.
- (j) The Executive Committee shall have such other powers and functions as are provided for pursuant to this Agreement.

Article 12 — Meetings Of The Executive Committee

The meetings of the Executive Committee shall be held and conducted as provided in the Bylaws. The Committee shall make periodic reports to the Board of Directors, advising the Board of its decisions and activities.

Article 13 — Officers Of The Authority

- (a) **President and Vice President.** The Board shall elect a President and Vice President of the Authority from its voting members for three year terms. In the event the President or Vice President so elected ceases to be a member of the Board, the resulting vacancy in the office of President or Vice President shall be filled at the next regular meeting of the Board held after such vacancy occurs. The Executive Committee may appoint an interim President or Vice President, who shall be voting members of the Board, pending action by the Board of Directors. In the absence or inability of the President to act, the Vice President shall act as President. The President, or in his or her absence the Vice President, shall preside at and conduct all meetings of the Board, and shall chair the Executive Committee.
- (b) **Chief Executive Officer/Secretary.** The Chief Executive Officer/Secretary shall have the general administrative responsibility for the activities of the Authority and shall appoint all necessary employees thereof, subject to prior authorization of each position by the Executive Committee, and shall be responsible for all minutes, notices and records of the Authority and shall perform such other duties as may be assigned by the Executive Committee.
- (c) **Auditor/Controller.** The Auditor/Controller shall be appointed by the Executive Committee. The duties of the Auditor/Controller shall be as set forth in Articles 17 and 18 of this Agreement.
- (d) **Treasurer.** The Treasurer shall be appointed by the Executive Committee. The duties of the Treasurer shall be as set forth in Articles 17 and 18 of this Agreement.
- (e) The Executive Committee shall have the power to appoint such other officers as may be necessary to carry out the purposes of this Agreement.

Article 14 — Standing Committee

There shall be established a Finance and Audit Committee composed of finance officers of Districts of the Authority appointed by the Executive Committee. The number of members of this Committee and its duties shall be set forth in the Bylaws. This Committee shall meet from time to time as directed by the Executive Committee, and shall make recommendations to the Executive Committee based upon the expertise of its members.

Article 15 — Insurance Coverage

- (a) The Authority shall maintain such levels of insurance coverage for Members as may be determined by the Executive Committee. Such coverage may provide for binding arbitration before an independent arbitration panel of any disputes concerning coverage between the Authority and a Member.
- (b) The Insurance coverages provided for Members by the Authority may include protection for comprehensive and economical public liability,

workers' compensation, unemployment, health, accident and/or dental coverage, or coverage for other risks which the Executive Committee may determine to be advisable.

- (c) The Executive Committee may arrange for group policies to be issued for Members interested in obtaining additional coverage, at an additional cost to those participating Members.
- (d) The Executive Committee may arrange for the purchase of Excess Insurance. The Executive Committee may discontinue purchase of this Excess Insurance, if at a future time it is no longer needed to protect the Authority's funds.

Article 16 — Initial Implementation Of The Joint Protection Program

- (a) As soon as practicable after the effective date of this Agreement, but prior to the effective date of each joint protection program, the Board of Directors shall establish the insurance coverages provided for in Article 15, the amount of deposit premiums, the precise cost allocation plans and formulas, provide for the handling of claims, the pro forma financial statements of each joint protection program, and specify the amounts and types of Excess Insurance to be procured.
- (b) The Deposit Premium for each Member for each joint protection program shall be determined by the Executive Committee.
- (c) The cost allocation plans and formulas adopted by the Board shall provide for an adjustment in each Member's premiums following the first year of operation of each program, and annually thereafter, to produce a premium for each year, for each Member, for each joint protection program equal to the sum of the following five items:
 - (1) The Member's incurred losses for each joint protection program, limited to a specified amount, as determined or allowed by the Executive Committee; and
 - (2) The Member's share of pooled incurred losses and other expenses for each joint protection program, as determined by the Executive Committee; and
 - (3) The Member's contribution to a reserve for research and development, and to reserves for incurred but not reported losses and catastrophic losses for each joint protection program; and
 - (4) The Member's share of costs to purchase excess insurance for each joint protection program; and
 - (5) The Member's share of costs to purchase additional coverage for each joint protection program as provided in Article 15 (c).

The Executive Committee may make such premium adjustments retrospective to prior years and each Member shall pay any additional premium required by such Retrospective Adjustment.

- (d) The Retrospective Premium Adjustment shall be made annually, and notices of Retrospective Premiums for prior years and Deposit Premiums for the next year shall be distributed at least sixty (60) days prior to the close of each Policy Year. The first Retrospective Premium Adjustment shall not take place until sixty (60) days prior to the end of the fourth full year of operations of each program of the Authority. All premiums shall be due and payable within thirty (30) days of receipt of such notices.
- (e) Inasmuch as some Members may experience an unusual frequency of losses during a single Policy Year, which would increase their Retrospective Premium substantially above the Deposit Premium for that joint protection program for that Policy Year and cause budgetary problems, the Executive Committee may allow for payment of a portion of such additional Retrospective Premium to be made over a period of time, not to exceed five years, with reasonable interest.
- (f) In no event shall a Member's Policy Year premium for each joint protection program, including any Retrospective Adjustment, during the first three years of the joint protection program following its effective date exceed an amount equal to five times its Deposit Premium for the first year for that joint protection program. Thereafter, a Member's Policy Year premium, including any Retrospective Adjustment, for that year for that joint protection program, shall not in any event exceed five times its average Policy Year premium, including Retrospective Adjustment, for the preceding three years for that joint protection program.
- (g) The Executive Committee shall have the power to disburse or distribute the reserve funds contributed for research and development and catastrophic losses for their intended purposes.

Article 17 — Accounts And Records

- (a) **Annual Budget.** The Authority shall annually adopt an operating budget, pursuant to Article 8 (c) of this Agreement.
- (b) **Funds and Accounts.** The Treasurer of the Authority shall establish and maintain such funds and accounts as required by the Executive Committee and as required by generally accepted accounting principles. Books and records of the Authority in the hands of the Treasurer shall be open to any inspection at all reasonable times by authorized representatives of Members as otherwise required by law.
- (c) **Treasurer's Report.** The Treasurer, within 120 days after the close of each fiscal year, shall give a complete written report of all financial activities for such fiscal year to the Board and to each Member.

- (d) **Annual Audit.** The Auditor/Controller shall provide for a certified, annual audit of the accounts and records of the authority, which audit shall be made by a certified public accountant and shall conform to generally accepted auditing standards. A report thereof shall be filed as a public record with each of the Members. Such report shall be filed within six months of the end of each year under examination.

Article 18 — Responsibility For Monies

- (a) The Treasurer of the Authority shall have the custody of and disburse the Authority's funds. He or she shall have the authority to delegate the signatory function of Treasurer to such persons as are authorized by the Executive Committee.
- (b) A bond in the amount determined adequate by the Executive Committee shall be required of all officers and personnel authorized to disburse funds of the Authority, such bond to be paid for by the Authority.
- (c) The Treasurer of the Authority shall assume the duties described in California Government Code Section 6505.5, including:
 - (1) Receive and acknowledge receipt for all money of the Authority and place it in the treasury of the Authority;
 - (2) Be responsible upon his or her official bond for the safekeeping and disbursement of all of the Authority's money so held by him or her;
 - (3) Pay, when due, out of money of the Authority so held by him or her, all sums payable on outstanding bonds and coupons of the Authority;
 - (4) Pay any other sums due from Authority money only upon warrants approved by the President of the Board or his or her designee and the Chief Executive Officer/Secretary. The warrants shall be drawn by the Auditor/Controller who shall be the auditor or controller of a District and selected by the Executive Committee;
 - (5) Verify and report in writing on the first day of July, October, January and April of each year to the Authority and to Members the amount of money held for the Authority, the amount of receipt since the last report, and the amount paid out since the last report.

Article 19 — Responsibilities Of The Authority

The Authority shall perform the following functions in discharging its responsibilities under this Agreement:

- (a) Provide insurance coverage as necessary, including but not limited to a self-insurance fund and commercial insurance, as well as excess coverage and umbrella insurance, by negotiation or bid, and purchase, as necessary.

- (b) Assist Members in obtaining insurance coverage for risks not included within the coverage of the Authority.
- (c) Assist each Member's designated risk manager with the implementation of that risk management function as it relates to risks covered by the joint protection programs within the Member.
- (d) Provide loss prevention and safety consulting services to Members as required.
- (e) Provide claims adjusting and subrogation services for Claims covered by the Authority's joint protection programs.
- (f) Provide loss analysis and control by the use of statistical analysis, data processing, and record and file keeping services, in order to identify high exposure operations and to evaluate proper levels of self-retention and deductibles.
- (g) Review Member contracts to determine sufficiency of indemnity and insurance provisions when requested.
- (h) Conduct risk management audits to review the participation of each Member in the programs.
- (i) The Authority shall have such other responsibilities as deemed necessary by the Board of Directors or Executive Committee.

Article 20 — Responsibilities Of Members

Members shall have the following responsibilities:

- (a) The governing board of each Member shall appoint a representative and at least one alternate representative to the Board of Directors, pursuant to Article 7 of this Agreement.
- (b) Each Member shall appoint an employee of the Member to be responsible for the risk management function within that Member and to serve as a liaison between the Member and the Authority as to risk management.
- (c) Each Member shall maintain an active safety officer and/or committee, and shall consider all recommendations of the Authority concerning unsafe practices.
- (d) Each Member shall maintain its own set of records, including a loss log, in all categories of risk covered by the joint protection program to insure accuracy of the Authority's loss reporting system until no longer deemed necessary by the Executive Committee.
- (e) Each Member shall pay its deposit premium and premium adjustments, including any Retrospective Adjustment, within thirty (30) days of the invoice date. After withdrawal or termination, each Member or its successor shall

pay promptly to the Authority its share of any additional premium, when and if required of it by the Executive Committee under Article 24 or 25 of this Agreement.

- (f) Each Member shall provide the Authority with such other information or assistance as may be necessary for the Authority to carry out the joint protection programs under this Agreement.
- (g) Each Member shall in any and all ways cooperate with and assist the Authority, and any insurer of the Authority, in all matters relating to this Agreement and covered claims and will comply with all Bylaws, rules and regulations adopted by the Board of Directors and Executive Committee.

Article 21 — New Members

The Authority shall allow entry into its joint protection programs of new Members only upon approval by the Board, or by the Executive Committee if specifically delegated such authority by resolution of the Board, which resolution may impose such conditions or limitations upon such authority of the Executive Committee as the Board deems appropriate. Members entering under this Article shall be required to pay their share of the organizational expenses as determined by the Executive Committee, including expenses necessary to analyze their loss data and determine their Deposit Premiums.

Article 22 — Withdrawal

- (a) A Member may withdraw as a party to this Agreement any time prior to its consenting in writing to enter the joint protection program.
- (b) A Member whose premium exceeds the estimated deposit Premium that does not consent in writing to enter the joint protection program must withdraw as a party to this Agreement prior to the effective date of the program, or it will be considered to have voluntarily withdrawn upon such effective date.
- (c) A Member which enters or has entered any pooled joint protection program may not withdraw as a participant of that program, a party to this Agreement or Member of the Authority for a three-year period commencing on the Member's date of entry into said pooled joint protection program.
- (d) After the initial three-year noncancellable commitment to each pooled joint protection program, a Member may withdraw only at the end of said program's Policy Year, provided it has given the Authority a twelve-month written notice of its intent to withdraw from said pooled joint protection program.
 - (1) No later than 90 days prior to the end of said pooled joint protection program's Policy Year, any Member having given an Article 22 (d)

conditional notice shall make clear to the Authority its final decision on withdrawal. Final notice of actual withdrawal must be given and received by that date in clear, unambiguous form. The staff is instructed to rely on such final notice received on or before 90 days prior to the end of the program's Policy Year, and no rescission of such final notice can be made after close of business 90 days prior to the end of the program's Policy Year. If no such final notice is received by close of business on the required date, staff shall treat the original notice with all its conditions and ambiguities as final notice of withdrawal.

- (2) After the final notice required by Subsection (1) above is given, the withdrawing Member must remain a non-member of the Program for at least the subsequent full Policy Year. Any participation by the former Member in said program thereafter must be effected as a new Member. No benefits will be held over from the withdrawing Member's former status as a previous program participant.
- (e) Members may withdraw from any group purchase program at the conclusion of its Policy Year, without being required to give the twelve-month written notice required for withdrawal from pooled joint protection programs.
- (f) A Member may not withdraw as a party to this Agreement nor as a member of the Authority until it has withdrawn from all of the programs of the Authority.

Article 23 — Cancellation

- (a) Notwithstanding the provisions of Article 22, the Authority shall have the right to cancel any Member's participation in any joint protection program upon a two-thirds vote of the voting directors present at any Duly Constituted Board Meeting, provided that a reasonable time shall be afforded, in the discretion of the Board of Directors, to place coverage elsewhere.
- (b) Notwithstanding any other provisions of this Agreement, the participation of any Member of the Authority, including participation in any of the Authority's programs, shall cease and be canceled automatically at the end of the next complete Policy Year for each program whenever such Member's membership in the Association of California Water Agencies, or its affiliation with said Association based on its meeting the criteria currently specified by ACWA for ACWA Affiliates – "Friends of ACWA," ceases. Such automatic cancellation shall not relieve the Member of its responsibilities as provided for in Article 24 (b).
- (c) Notwithstanding any other provisions of this Agreement, the participation of any Member of the Authority, including participation in any of the Authority's programs, may be canceled at the discretion of the Executive Committee whenever such Member is dissolved, consolidated, merged or annexed. A reasonable time shall be afforded, in the discretion of the Executive

Committee, to place coverage elsewhere. Any such cancellation shall not relieve the Member of its responsibilities as provided for in Article 24 (b).

Article 24 — Effect Of Withdrawal Or Cancellation

- (a) The withdrawal or cancellation of any Member from this Agreement shall not terminate the same and a Member by withdrawing or being canceled shall not be entitled to payment or return of any premium, consideration or property paid, or donated by the Member to the Authority, or to any distribution of assets, except as provided in Article 25 (c).
- (b) The withdrawal or cancellation of any Member after the effective date of any joint protection program shall not terminate its responsibility to contribute its share of deposit premium, premium adjustments or funds to any funds or insurance program created by the Authority until all claims, or other unpaid liabilities, covering the Program period any part of which the Member was signatory hereto have been finally resolved and a determination of the final amount of payments due by the Member or credits to the Member for the period of its participation has been made by the Executive Committee. In connection with this determination, the Executive Committee may exercise similar powers to those provided for in Article 25 (b) of this Agreement.

Article 25 — Termination And Distribution

- (a) This Agreement may be terminated any time by the written consent of three-fourths of the voting Members provided, however, that this Agreement and the Authority shall continue to exist for the purpose of disposing of all claims, distribution of assets and all other functions necessary to wind up the affairs of the Authority.
- (b) The Executive Committee is vested with all powers of the Authority for the purpose of winding up and dissolving the business affairs of the Authority. These powers shall include the power to require Members, including those which were signatory hereto at the time the Claim arose or was incurred, to pay their share of any additional amount of premium in accordance with loss allocation formulas for final disposition of all Claims and losses covered by this Agreement. A Member's share of such additional premium shall be determined on the same basis as that provided for Retrospective Premiums in Article 16 (c) and (d) of this Agreement.
- (c) Upon termination of this Agreement all assets of the Authority shall be distributed only among the Members that have been signatories hereto, including any of those Members which previously withdrew pursuant to Article 22 (d) or were canceled pursuant to Article 23 of this Agreement, in accordance with and proportionate to their cash contributions (including premium payments and property at market value when received) made during the term of this Agreement. The Executive Committee shall determine such distribution within six months after disposal of the last pending Claim or loss covered by this Agreement.

- (d) In the absence of an Executive Committee, the Chief Executive Officer/Secretary shall exercise all powers and authority under this Article. The decision of the Executive Committee or Chief Executive Officer/Secretary under this Article shall be final.

Article 26 — Provision For Bylaws And Manual

As soon as practicable after the first meeting of the Board of Directors, the Board shall cause to be developed Authority Bylaws and Policy Statement and a Procedure Manual to govern the day-to-day operations of the Authority. Each Member shall receive a copy of any Bylaws, Policy Statement or Manual developed under this Article.

Article 27 — Notices

Notices to Members hereunder shall be sufficient if delivered to the principal office of the respective Member.

Article 28 — Amendment

This Agreement may be amended at any time by a two-thirds vote of the voting directors present at any Duly Constituted Board Meeting.

Article 29 — Prohibition Against Assignment

No Member may assign any right, claim or interest it may have under this Agreement, and no creditor, assignee or third party beneficiary of any Member shall have any right, claim or title or any part, share, interest, fund, premium or asset of the Authority.

Article 30 — Agreement Complete

The foregoing constitutes the full and complete Agreement of the parties. There are no oral understandings or agreements not set forth in writing herein.

IN WITNESS WHEREOF, the parties hereto have first executed this Agreement by authorized officials thereof on the date indicated below:

DATE: _____

Member

BY:

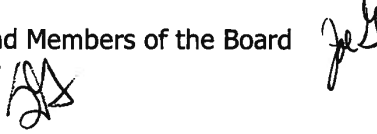
Signature of Authorized Representative

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET
AGENDA ITEM

Regular Meeting of the Board of Directors

June 3, 2009

To: President and Members of the Board
From: Susan Greer



TOPIC: PUBLIC HEARING TO CONSIDER THE WATER AVAILABILITY (STANDBY) CHARGE FOR FISCAL YEAR 2009/2010.

RECOMMENDATION: Adopt Resolution 09-XXX, establishing water availability charges for 09/10 and authorizing collection by San Bernardino County.

HISTORY: The public hearing is a legal requirement, necessary each year whether or not there is a rate change. The proposed rates are unchanged since 1996 and authorized by the Uniform Standby Charge Procedures Act (Government Code 54984 et seq.).

The public hearing should be conducted as follows:

1. Receive Staff Report
2. Board Questions
3. Open Public Hearing; receive public comments
4. Close Public Hearing
5. Board Discussion and action

As required, the updated Engineer's Report from John Egan is attached for 2009/2010. Although no change to the standby charges is proposed, the District is legally required to advertise and hold a public hearing and adopt a resolution setting the rates annually.

Water availability charges are levied annually on all non-exempt parcels within the District, whether or not there is water service to the parcel. Since 1992, the Board of Directors has designated the standby assessments primarily for the Morongo Basin Pipeline expense. Remaining water availability charge revenues will be used exclusively for capital costs and operation and maintenance of the District's water facilities benefiting the properties assessed.

As indicated in the report, the water availability (or standby) charges are generated exclusively to finance the capital costs or maintenance and operation expenses of the District. For 09/10 the anticipated standby revenues and corresponding payments are estimated on the next page.

RESOLUTION 09-XXX

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE JOSHUA BASIN WATER DISTRICT ESTABLISHING A WATER AVAILABILITY CHARGE FOR FISCAL 2009-2010 AND AUTHORIZING THE COLLECTION THEREOF BY THE COUNTY OF SAN BERNARDINO

WHEREAS, the Board of Directors of the District has found and determined that the availability of a dependable supply of high quality water for domestic uses and purposes is a benefit conferred upon the lands proposed to be charged and, conversely, that the lack of such a supply diminishes the value of such lands; and

WHEREAS, that as a result of steadily-increasing overdraft of its groundwater supplies and in anticipation of the need for a supplemental source of water, the voters approved the formation of assessment districts and the issuance of bonds for the purpose of financing the construction of a supplemental water supply project, thereby obligating the District to repay the bonded indebtedness incurred thereunder; and

WHEREAS, in 1996, the Board of Directors engaged the services of a qualified engineer for the purpose of establishing a schedule of water availability charges varying according to land uses and benefit derived or to be derived from the use and availability of facilities to provide potable water for domestic uses and purposes, which schedule was the subject of a published and mailed notice of hearing and a public protest hearing; and

WHEREAS, the water availability charge for fiscal year 2009-2010 is proposed to be continued at the same rate and in the same manner, and pursuant to the same methodology as established in 1996, and which has been continued from year-to-year since then; and

WHEREAS, pursuant to Section 54984.7 of the Uniform Standby Charge Procedures Act, the Board of Directors conducted a public hearing pursuant to published notice in order to hear any and all objections to the proposed renewal of the water availability charge for fiscal year 2009-2010; and

WHEREAS, the written protests received represent less than _____ percent of the parcels subject to the water availability charge.

NOW, THEREFORE, the Board of Directors of the Joshua Basin Water District hereby resolves as follows:

1. District Zones of Benefit. There is hereby established within the District four Zones of Benefit:

ZONE 1: Any size parcel served by one or more meters.

ZONE 2: Any size parcel within a half mile of a water mainline and in the same pressure zone as the mainline.

ZONE 3: Any size parcel within one mile of a water main and within one pressure zone of the mainline.

ZONE 4: All other parcels.

2. Adoption of Water Availability Charge. That there shall be adopted, for each parcel in the District, for fiscal year 2009-2010, a water availability charge established in accordance with the benefit conferred and in the amount as determined by the applicable District Zone of Benefit and the land use zoning adopted by the County of San Bernardino, which charge is more specifically shown on Exhibit "A" attached hereto and made a part hereof.

3. Rate and Methodology. The rate and methodology of the water availability charge adopted herein is the same and remains unchanged for this Fiscal Year, and that such charge is reasonable and necessary, and does not exceed the actual cost to the District of providing the service.

4. Dedication and Use of Revenue. The revenue generated by the water availability charge is hereby dedicated and shall be used to finance the capital costs of the District's water system, to repay bonded indebtedness incurred by the voters and operation and maintenance of the District's water facilities benefiting the properties assessed.

5. Exemptions. The water availability charge established hereunder is exempt from the California Environmental Quality Act in accordance with Section 21080 (b) (8) of the Public Resources Code, because the revenue generated by such charge shall be used for the repayment of debt related to capital projects necessary to maintain water service, and is also exempt from Article XIID of the California Constitution because (a) the charge was in existence prior to November 6, 1996, (b) because the rate and methodology used to establish the schedule of charges is the same as in previous years, and (c) because the charges are imposed to finance the capital cost of the District's water system and to repay bonded indebtedness. If and to the extent any charge is higher than in previous years, such increase is attributable solely to events other than an increased rate or revised methodology, such as a change in the density, intensity or nature of use of land, or consent of the landowner.

6. Water Service to Exempt Property. No new connection to the District's water system shall be allowed to any parcel which has been exempted from the water availability charge unless the applicant for water service pays an in-lieu water availability fee calculated as the total amount of water availability charges which would have been assessed against that parcel had it not been exempt, and unless the applicant agrees that the parcel will be subject to the water availability charge from that date forward.

7. Delinquent Charge. Water availability charges that have become delinquent shall, with a basic penalty of 6% for non-payment of the charge and

interest at the rate of 1/2 of 1 percent per month for each month of non-payment, become a lien on the property when a certificate is recorded in the office of the San Bernardino County Recorder pursuant to Government Code, Section 54984.9 (b) which lien shall have the force, effect and priority of a judgment lien.

8. Collection by the County. The water availability charge shall be collected on the San Bernardino County Tax Roll in the same manner, and by the same persons and at the same time as, together with and not separately from, the District's general taxes. The Secretary of the District is hereby authorized and directed to forthwith file a certified copy of this Resolution in the office of the Auditor of the County of San Bernardino on or before August 10, 2009.

9. Effective Date. The effective date of this Resolution is the 30th day following the date of its adoption.

PASSED AND ADOPTED this 3rd day of June, 2009 pursuant to the following votes:

AYES: _____
NOES: _____
ABSTAIN: _____
ABSENT: _____

JOSHUA BASIN WATER DISTRICT

By _____
William C. Long
President, Board of Directors

Attest _____
Joe Guzzetta
Secretary, Board of Directors

**JOSHUA BASIN WATER DISTRICT
WATER AVAILABILITY (STANDBY) CHARGES 09/10**

**SCHEDULE A
MINIMUM PER PARCEL UP TO 1.25 ACRES**

COUNTY ZONE	DISTRICT ZONE 1	DISTRICT ZONE 2	DISTRICT ZONE 3	DISTRICT ZONE 4
20MRM40M	\$30.00	\$50.00		
3MRM	\$40.00	\$60.00		
4MRM	\$40.00	\$60.00	\$50.00	
RS8M	\$30.00	\$50.00		
RS10M	\$30.00	\$50.00		
RS18M	\$30.00	\$50.00		
RS20M	\$30.00	\$50.00		
RC40	\$40.00	\$60.00	\$40.00	\$40.00
RL20	\$30.00	\$50.00	\$40.00	\$40.00
RL10	\$30.00	\$50.00	\$40.00	\$40.00
RL5	\$30.00	\$50.00	\$40.00	\$40.00
RL2.5	\$30.00	\$50.00	\$40.00	\$40.00
COMMERCIAL / INDUSTRIAL / OTHER	\$40.00	\$60.00	\$50.00	
RS1	\$40.00	\$60.00	\$50.00	

**SCHEDULE B
COST PER ACRE FOR PARCELS OVER 1.25 ACRES**

DISTRICT ZONE 1	DISTRICT ZONE 2	DISTRICT ZONE 3	DISTRICT ZONE 4	ACREAGE
\$20.00	\$30.00			0+ Acres
\$20.00	\$30.00			0-40 Acres
	\$25.00			41+ Acres
\$20.00	\$35.00	\$25.00		0-40 Acres
	\$25.00	\$15.00		41+ Acres
\$20.00	\$30.00			0+ Acres
\$20.00	\$35.00			0-40 Acres
\$15.00	\$25.00			41-80 Acres
\$10.00	\$15.00			81-160 Acres
	\$10.00			161-320 Acres
	\$1.00			321+ Acres
\$20.00	\$30.00			0-40 Acres
	\$25.00			41+ Acres
\$20.00	\$30.00			0+ Acres
\$15.00	\$25.00	\$15.00	\$15.00	0-40 Acres
	\$12.00	\$10.00	\$8.00	41-160 Acres
	\$5.00	\$4.00	\$3.00	161-320 Acres
	\$1.00	\$1.00	\$1.00	321+ Acres
\$20.00	\$30.00	\$20.00	\$15.00	0+ Acres
\$20.00	\$30.00	\$20.00	\$15.00	0-40 Acres
\$15.00				41+ Acres
\$20.00	\$30.00	\$20.00	\$15.00	0-40 Acres
\$12.00	\$25.00	\$15.00	\$12.00	41-80 Acres
\$8.00	\$10.00	\$8.00	\$8.00	81-160 Acres
\$4.00	\$5.00	\$4.00	\$3.00	161-320 Acres
\$1.00	\$1.00	\$1.00	\$1.00	321+ Acres
\$20.00	\$30.00	\$20.00	\$15.00	0-40 Acres
\$15.00	\$25.00	\$15.00	\$12.00	41-80 Acres
\$10.00	\$15.00	\$10.00	\$10.00	81-160 Acres
\$5.00	\$8.00	\$5.00	\$4.00	161-320 Acres
\$1.00	\$1.00	\$1.00	\$1.00	321+ Acres
\$25.00	\$35.00	\$25.00		0-40 Acres
	\$25.00			41+ Acres
\$20.00	\$30.00	\$20.00		0-40 Acres
	\$25.00			41+ Acres

EXHIBIT A

Water Availability (Standby) Zoning Descriptions

DISTRICT ZONE DESCRIPTIONS

- ZONE 1 Any size parcel served by one or more meters
- ZONE 2 Any size parcel within 1/2 mile of a water mainline and in the same pressure zone as the mainline
- ZONE 3 Any size parcel within one mile of a water mainline and within one pressure zone of the mainline
- ZONE 4 All other parcels

COUNTY ZONE DESCRIPTIONS

- 3MRM Residential, multi-family, 3,000 sq. ft. per unit, 14.5 units per acre
- 4MRM Residential, multi-family, 4,000 sq.ft. per unit, 10.8 units per acre
- 20MRM40M Residential, multi-family, 20,000 sq. ft. per unit, 2.18 units per acre

- RS1 Residential, single family, 1 unit per acre
- RS8M Residential, single family, 8,000 sq.ft. per unit, 5.4 units per acre
- RS10M Residential, single family, 10,000 sq. ft. per unit, 4.3 units per acre
- RS18M Residential, single family, 18,000 sq. ft. per unit, 2.4 units per acre
- RS20M Residential, single family, 20,000 sq. ft. per unit, 2.1 units per acre

- RL2.5 Rural Living, one residence per 2.5 acres
- RL5 Rural Living, one residence per 5 acres
- RL10 Rural Living, one residence per 10 acres
- RL20 Rural Living, one residence per 20 acres

- RC40 Resource Conservation, one residence per 40 acres
- CS, CC, CG, Commercial Properties
- CO, CN Commercial Properties
- IC Industrial Properties

ENGINEER'S REPORT
FOR
JOSHUA BASIN WATER DISTRICT
2009-2010 FISCAL YEAR
WATER AVAILABILITY CHARGE

JUNE 2009

ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC.
1820 COMMERCENTER CIRCLE
SAN BERNARDINO, CA 92408

ENGINEER=S REPORT
FOR
JOSHUA BASIN WATER DISTRICT
2009-2010 FISCAL YEAR WATER AVAILABILITY CHARGE

BACKGROUND AND PURPOSE

The Joshua Basin Water District owns and operates significant water-related infrastructure facilities within the District. Purpose of the existence and construction of these facilities and, therefore, responsibility of the District, is to provide potable water to property owners and residents within the District.

The District obtains its supply of water from underlying groundwaters. A USGS study completed some years ago determined that the amount of water extracted by the District exceeds the inflow or supply to the District groundwater basins. In anticipation of the need for additional or supplemental water, the District's voters, in 1963, approved inclusion in the formation of the Mojave Water Agency which would have access to State Water Project (SWP) water. As additional insurance, in 1991, voters of the District together with those of other nearby water districts, approved a bond issue to finance the construction of the 72-mile Morongo Basin Pipeline to convey SWP water to the Morongo Basin area. The pipeline has been constructed and is maintained by the Mojave Water Agency. The Joshua Basin Water District signed a contract and is responsible for a portion of the pipeline construction and maintenance costs.

Availability of the supplemental water benefits all of the land within the District. Therefore, a water availability charge is collected from all of the +/-12,000 parcels within the District, with the exception of those exempt. A primary use of the water availability charge revenues, since its enactment in 1996, has been to pay the debt obligation and operation and maintenance costs for the Morongo Basin Pipeline as required by the District's agreement with the Mojave Water Agency. For the 2009-2010 fiscal year, that obligation has been reduced to debt payment only, and is calculated at \$217,000. Water availability charge revenues in excess of that amount will be used exclusively for capital costs and operation and maintenance of the District's water facilities benefiting the properties assessed.

The water availability charge is estimated to generate revenues of \$1,159,817 for the 2009-2010 fiscal year, which revenues are dedicated to the following purposes as authorized by Resolution No. 96-564 under which the water availability charge was enacted.

Morongo Basin Pipeline Debt Payment	\$ 217,000
Capital Improvement Bond Principle	490,000
Capital Improvement Bond Interest	50,508
Property Insurance	72,315
Power Expense for System Operation	250,000
Preventative Maintenance Programs:	
Reservoirs	173,562
Booster Stations	<u>50,000</u>
	\$1,303,385

To the extent the identified expenses exceed water availability charge revenues, they will be paid out of revenues from metered water sales and basic fees.

Water availability charge revenues are dedicated to the lawful purposes of (a) meeting the District's expenses of maintaining and operating permanent public improvements constituting the water system, (b) purchasing or leasing supplies, equipment, or material necessary for the operation of the District's water system, (c) meeting debt repayment obligations and financial reserve requirements under the Mojave Pipeline Project agreement, and (d) obtaining funds for capital projects necessary to maintain service within existing service areas.

Publicly owned property including lands owned by the federal government and the local school district was exempted from the water availability charge. In 1996, California voters approved Proposition 218, "The Right to Vote on Taxes Act." Among other things, Proposition 218 provided that property owned by local, state, and federal governmental agencies may not be exempted from a benefit assessment, such as the District's water availability charge, unless it receives no special benefit from the services or facilities for which that charge is levied. (California Constitution Article XIII D, 4(a).) When the District sent an assessment notice to the U.S. Bureau of Land Management ("BLM"), which owns extensive property within the District, the BLM responded by claiming exemption under the California Statehood Act and declined to pay. The local school district was not assessed based upon the California Supreme Court decision in *San Marcos Water District v. San Marcos Unified School District*.

The water availability charge has been in effect at the current rate since 1996, prior to the enactment of Proposition 218 and is entitled to an exemption from the procedural requirements of Proposition 218 unless and until it is increased. (California Constitution Article XIII D, 5.) Legislation interpreting Proposition 218 clarifies that, as an exempt assessment, it is also exempt from the requirement that government-owned parcels be assessed. (Government Code 53753.5.) Unless and until the water availability charge is increased, it may be re-authorized from year-to-year pursuant to the Uniform Standby Charge Procedures Act (Government Code 54984 *et seq.*) without complying with the Proposition 218 procedures and without requiring assessment of the BLM or school properties.

DESCRIPTION AND METHOD OF AVAILABILITY CHARGE

Procedures and bases of the water availability charges are as set forth in the California Government Code, Sections 54984 to 54984.9, Uniform Standby Charge Procedures Act.

In recognition of the benefit to all properties, the District proposes to assess and collect from each benefiting property, an amount related to the benefit received. Because BLM lands and other publicly owned lands not previously assessed are, for practical purposes, not subject to assessment, the District proposes to clarify that such lands, which are not subject to the water availability charge and are not currently connected to the water system, shall not be entitled to connect to the District's water system or to receive water service from the District, unless a fee is paid which is equivalent to the water standby charge which would have been assessed against the property had it not been exempt and unless the owner agrees to be subject to future assessment of water availability charges.

Availability charge, once determined, will be indicated on the yearly tax bill distributed by the County of San Bernardino, collected by the County, and disbursed to the District.

COMPILATION OF CHARGES

A tabulation of the availability charge for each of the +/-12,000 non-exempt parcels in the District, calculated as described herein, is contained in a separate computer printout prepared by the District and maintained at District offices. Contained therein is the dollar amount proposed to be assessed to each parcel, and the Assessors parcel number, all of which will appear on the County tax bill for each parcel.

METHODOLOGY USED FOR AVAILABILITY CHARGE

All properties within the District receive a general benefit by virtue of the existence of the District in its sole power to extract and sell water within its boundaries. Properties within the District also receive a special benefit due to the availability of the supplemental SWP water source.

Benefit is related to the size and development potential of each parcel and proximity to an existing usable pipeline. Derivation of an availability amount, therefore, is based on the County's zoning, parcel size, and District-designated zone - the location related to a pipeline from which service can be provided. Larger parcels within the same District zone receive a greater benefit and, therefore, will be assessed a larger amount than smaller parcels. Additionally, parcels closer, but not connected to usable pipelines, will be assessed more than those further away as there is greater benefit due to the availability of those existing pipelines, and therefore, accessibility to water. Parcels currently connected will be assessed less than others as they are already paying a basic fee in their user charge, a portion of which is used for system maintenance.

Adoption of the zoning, parcel size and proximity results in the use of three factors by which availability charges are determined.

1. Parcel size,
2. County of San Bernardino zoning for land use,
3. District zone, based on proximity to existing District pipeline.

Attached are exhibits which indicate the bases of the assessment amount per parcel and per acre for lands within the District related to the County zone designation and District zone location.

The assessment charges and schedule pre-date the adoption of Proposition 218 by the State's voters and follows the methodology and rates existing prior to the adoption of Proposition 218.

In my judgment each and every parcel proposed to be assessed an availability charge in the District for Fiscal Year 2009-2010 receives a special benefit.

BY: JOHN G. EGAN, R.C.E. 14853

ENGINEERING RESOURCES OF SOUTHERN CALIFORNIA, INC.

DATE

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Joe Guzzetta, General Manager

TOPIC: LONG-TERM WASTEWATER TREATMENT STRATEGY

RECOMMENDATION: That the Board accept the attached Wastewater Treatment Strategy report for information and refer it to the Citizens Advisory Committee and other stakeholders for study and recommendation.

ANALYSIS: One of the Board's goals for the year is the development of a long-term wastewater treatment strategy to protect the groundwater aquifer from contamination by nitrates resulting from new development. Dudek and staff have developed the attached strategy.

The strategy identifies 7,000 parcels in one-third of the District's service area (35-square miles), mostly along Twentynine Palms Highway, where densities are currently zoned at rates that would require new development to provide wastewater treatment beyond that of standard septic systems.

Simplified, the strategy provides for a three-prong mechanism to address the future wastewater needs of the Joshua Tree community:

- 1) In compliance with recent rulings of the Colorado River Basin Regional Water Quality Control Board, local "**package wastewater treatment plants**" would be installed by developers in projects exceeding 15 dwelling units. These treatment facilities would be designed to JBWD specifications, and would be owned and operated by JBWD. A "**community facilities district**" would be established only for those properties served by the package treatment facility to provide an annual fee to pay for **replacement** of the package plant in the future. The replacement cost would vary depending on the size of the project and type of package plant implemented, but could range between \$200 and \$500 per year with a typical useful life of 15 years. If the customers within the community facilities district later connect to a regional

wastewater treatment facility, funds remaining in the community facilities district could be used to help connect those customers to the regional collection and treatment system.

- 1.a) Depending on location, size, and other factors, the package treatment facilities may have the flexibility of being coalesced into larger package plants over time. For example, two small package plants might be moved or eliminated and connected into a larger package plant that becomes available in an adjacent area at a later date. The treatment strategy must be flexible as it is difficult to project in advance which areas will develop and to what extent.
- 2) Eventually, it is projected that sufficient development will occur, resulting in significant numbers of customers tributary to package treatment facilities, to justify eliminating the package plants and conveying wastes to a centralized **wastewater treatment plant**. As a means of paying for the needed future regional collection and treatment facilities, each new property within the established wastewater zone would pay a development impact, or **connection fee**, at the time of development. This fee would be placed in a dedicated fund until such time as construction of the regional system is required. Currently, it is projected that the connection fee would be approximately \$5,000 per equivalent dwelling unit (EDU). An EDU is the equivalent wastewater flow from one residential dwelling unit. Funding resulting from the connection fees would pay for the regional treatment plant and main interceptors needed to convey collected wastewater to the facility. Smaller pipelines would be constructed by developers initially, and from funds remaining in the community facilities district accounts in the future (reference Item 1 above).
- 3) Customers tributary to a new wastewater system would receive a **monthly service fee for operation & maintenance** of the collection system and package treatment plant. The annual operation & maintenance cost would vary significantly depending on size and complexity of the facilities, and are currently projected to range between \$15 to \$70 per month (in addition to administrative and billing costs).

The proposed Wastewater Treatment Strategy provides for an equitable means of assuring that future development pays the

costs of needed wastewater collection and treatment, as well as assuring that the District's groundwater resources are protected. The proposed strategy also provides a wastewater strategy that doesn't force existing customers to pay, unless those customers later connect to the collection and treatment system. While this strategy adds cost for new builders, not addressing these wastewater needs today leaves fewer, more onerous options for future Board members to consider.

If the Board approves, staff proposes to refer this report to the Citizens Advisory Committee and other interested parties for later consideration by the Board.

Executive Summary

The Joshua Basin Water District (District) encompasses an area of approximately 96 square miles, and serves the unincorporated area of Joshua Tree, California. The District relies on local groundwater for its drinking water supply, encompassing two subbasins of the greater Morongo Groundwater Basin – the Joshua Tree and Copper Mountain Subbasins. It has been estimated that recharge from individual septic systems may currently represent as much as 80 percent of the annual recharge within the District's groundwater basins. These septic return flows result in increased nitrate and total dissolved solids degradation of the groundwater. The long-term cumulative impact of wastewater discharges continues to be a primary concern for the District. Prohibition of new individual septic systems will gradually be required, replaced by local package treatment facilities that provide better treatment – thus protecting the District's local groundwater resources.

The development and implementation of localized and/or regional wastewater collection, treatment and disposal facilities is not something that is enacted quickly. For this reason, the District commissioned the development of its Wastewater Treatment Strategy (WTS). The WTS identifies both the short- and long-term strategies for implementation of needed groundwater protection facilities.

The WTS study area encompasses approximately 35 square miles, draining from the west to the east along the 29 Palms Highway corridor. The existing development is predominantly residential, with smaller areas of commercial and institutional development. Vacant undeveloped land within the study area is assumed to potentially become tributary to a near- or long-term wastewater collection and treatment system. Occupied parcels are included in the WTS evaluation only where the general plan indicates a potential for denser development in the future. Existing developed parcels are assumed to be safely treating and discharging wastewater flows through use of septic tanks in accordance with existing environmental law. More importantly, the cost of implementing the WTS is assumed to be born by future development, and not existing customers.

In the development of the WTS, existing and future development was projected, as well as the wastewater flows from those developments. The average existing development density across the study area was determined to be approximately 0.30 EDU per acre. Existing customers are projected to continue to be served by individual on-site septic systems. Existing vacant land will not be allowed to use on-site septic systems as development occurs. Ultimate wastewater flow from the study area, for new developments only, is projected to be approximately 3.8 million gallons per day.

The WTS evaluates various wastewater treatment options, ranging from conventional activated sludge treatment to more advanced Membrane Bio Reactor (MBR) equipment. The WTS also evaluates the treatment needs of various development sizes, and how these treatment facilities will be constructed over time as development occurs. Regulatory issues and requirements are also considered, which may increase treatment needs in the future. Treated effluent and biosolids disposal consideration are also addressed for projected District needs.

Development pressure will determine the wastewater treatment requirements on a case by case basis. In addition, the development conditions will impact the wastewater treatment decision process. For example, if development progresses in smaller, geographically diverse tracts, the District will be required to evaluate the size and number of package treatment facilities it is managing. Minimizing the number of individual treatment plants will be beneficial from a cost and maintenance standpoint for the District.

However, if a large development is proposed that facilitates construction of the regional collection and treatment facilities, the District will benefit through elimination of multiple package treatment plant construction. It is projected that development will likely progress at a slower rate, with larger developments built in the distant future. However, there is no way to fully predict which development schedule will occur. For purposes of planning, the following treatment thresholds are defined and evaluated:

- Single Home Developers – Up to 15 EDUs
- Small Developments – 15 to 300 EDUs
- Medium Developments – 300 to 1,500 EDUs
- Large Developments – 1,500 to 2,500 EDUs
- Regional Facilities – Greater than 2,500 EDUs

These thresholds represent the approximate levels at which wastewater treatment requirements will progress as the WTS is implemented. Implementation of the WTS will dictate the transition from one threshold to another.

Funding of the needed collection and treatment facilities is a primary consideration within the WTS. In summary, the District is projected to use three funding mechanisms, including connection fees, community facility district (CFD) fees and service fees. Initial collection and treatment facilities are intended to be paid for and constructed by the individual developers. The District will collect CFD fees for the replacement of the treatment facilities. These fees are anticipated to range between \$200 and \$700 per year. Annual operation and maintenance of the wastewater collection and treatment facilities will be paid through a monthly service charge – projected to range between \$20 and \$50 per month.

Ultimately, the WTS projects the need for construction of a regional wastewater treatment facility and interceptor sewer system to limit the proliferation of small package treatment plants throughout the District. A regional plant provides cost benefits and economies of scale that lower overall cost to the customers. The projected cost of these regional facilities is approximately \$91,000,000. The WTS proposes use of connection fees to collect the funding for construction of these regional facilities. Current projections result in a connection fee for new development of approximately \$5,200 per equivalent dwelling unit.

The WTS provides the District with a timely strategy for planning its wastewater collection and treatment future. More importantly, the WTS establishes a mechanism whereby the District can protect its long-term water supplies from potential degradation. The WTS implementation is further enhanced by eliminating the need for existing residents to participate in payment for the needed facilities, as least until such time as they may need to abandon their septic systems and connect to the regional wastewater system.



JOSHUA BASIN WATER DISTRICT

WASTEWATER TREATMENT STRATEGY

DRAFT SUBMITTAL

Prepared for:

**Joshua Basin Water District
61750 Chollita Road
P.O. Box 675
Joshua Tree, California 92252**

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024

In association with:

Willdan Financial Services
27368 Via Industrial, Suite 110
Temecula, California 92590

May 2009

Page 57 of 129

CONTENTS

Section	Description	Page
SECTION 1	INTRODUCTION.....	4
SECTION 2	PROJECT STUDY AREA.....	5
2.1	Existing Development.....	7
2.1.1	<i>Undevelopable Land</i>	8
2.2	Vacant Parcels.....	8
2.2.1	<i>Development Projected for Drainage Area 2</i>	10
2.2.2	<i>Development Potential for Drainage Area 4</i>	10
2.2.3	<i>Development Potential for Drainage Area 1</i>	10
2.2.4	<i>Commercial Institutional and Retail Development</i>	10
2.3	Wastewater Flows.....	11
2.3.1	<i>Commercial, Institutional, and Retail Development</i>	11
2.3.2	<i>Existing Development Flows</i>	11
2.3.2	<i>Future Development Flows</i>	13
2.4	Projected Collection System.....	13
2.5	Raw Wastewater Characteristics.....	13
SECTION 3	REGULATORY CONSIDERATIONS.....	15
3.1	Existing RWQCB Considerations.....	15
3.2	Future Regulatory Requirements.....	16
SECTION 4	WASTEWATER TREATMENT ALTERNATIVES.....	16
4.1	Conventional Treatment (Primary and Secondary).....	16
4.2	Treatment Equipment Alternatives.....	17
4.3	Cost Comparisons.....	18
4.3.1	<i>Cost Comparison for 20,000 gpd Plants</i>	18
4.3.2	<i>Cost Comparison for 200,000 gpd Plants</i>	19
4.4	Preferred Treatment System(s).....	20
4.5	Effluent Disposal Options.....	20
4.6	Biosolids Handling and Disposal.....	21
SECTION 5	WASTEWATER TREATMENT STRATEGY.....	21
5.1	Wastewater Treatment “Thresholds”.....	22
5.1.1	<i>Single Home (less than 15 EDU per project)</i>	22
5.1.2	<i>Small Developments (15 to 300 EDUs)</i>	22
5.1.3	<i>Medium Development (300 to 1,500 homes)</i>	24
5.1.4	<i>Large Developments (1,500 to 4,000 EDUs)</i>	25
5.1.5	<i>Regional Treatment (greater than 4,000 EDUs)</i>	26
5.2	Strategic Plan Implementation Issues.....	27
5.2.1	<i>Effluent, Biosolids and Siting Considerations</i>	27
5.2.2	<i>Package Treatment Plant Relocation</i>	28
SECTION 6	WASTEWATER FACILITIES COSTS.....	30
6.1	Collection Pipelines.....	30
6.1.1	<i>Cost Estimating Assumptions</i>	31
6.1.2	<i>Collection System Costs</i>	31

6.2	Effluent Disposal and Biosolids Handling	32
6.3	Treatment Facility Costs	33
6.3.1	<i>Treatment Facility Cost Assumptions</i>	33
6.4	Regional Conveyance Systems	33
6.5	Clustered Treatment Facilities	33
SECTION 7 FINANCIAL ALTERNATIVES FOR WTS IMPLEMENTATION.....		33
7.1	Financial Alternatives	33
7.1.1	<i>Assessment Districts</i>	34
7.1.2	<i>Community Facilities Districts</i>	34
7.1.3	<i>Connection Fees</i>	35
7.1.4	<i>Parcel Taxes</i>	36
7.1.5	<i>Sewer Rates</i>	36
7.1.6	<i>Revenue Bonds</i>	37
7.1.7	<i>Certificates of Participation (COPs)</i>	37
7.1.7	<i>State and Federal Financial Assistance</i>	37
7.1.8	<i>State Revolving Fund Loans</i>	38
7.1.9	<i>USDA Rural Utilities Service</i>	38
7.2	Comparative Analysis of Financial Alternatives.....	39
7.3	Annual Cost Considerations	43
7.4	Financial Recommendations	Error! Bookmark not defined.

FIGURES

Figure 1	Conceptual Drainage Areas and Topography.....	6
Figure 2	Conceptual Drainage Areas and Undevelopable Land.....	9
Figure 3	Conceptual Drainage Areas and Sewer Mains.....	14
Figure 4	Type A Development 15-16 Units	23
Figure 5	Type B Development Section 33	25
Figure 6	Development Types C, D and Ultimate.....	26
Figure 7	Typical Package Plant Site	28
Figure 8	Concept to Move Package Plants (Step 1).....	29
Figure 9	Concept to Move Package Plants (Step 2 & 3).....	30

TABLES

Table 1	JBWD Drainage Area Parcel Analysis.....	7
Table 2	Estimate of Residential Parcel Distribution and Contributing Wastewater Flow.....	12
Table 3	20,000 GPD Treatment Capacity Cost Comparison.....	18
Table 4	200,000 GPD Treatment Capacity Cost Comparison	19
Table 5	Interceptor and Trunk Sewer Cost by Drainage Basin	32
Table 6	Package Plant Scenario Related to Figure 4 Development Activity.....	Error! Bookmark not defined.
Table 7	Bond Financing – Drainage Areas 1 - 4	Error! Bookmark not defined.
Table 8	Drainage Areas 1 – 4, Cost per Unit.....	Error! Bookmark not defined.

Section I Introduction

The Joshua Basin Water District (District) is located in the southern portion of San Bernardino County, approximately seven miles east of Yucca Valley, and 14 miles west of Twenty-nine Palms. The District encompasses an area of approximately 96 square miles, and serves the unincorporated area of Joshua Tree, California. Historically, the District has served the water supply needs of its constituency, with wastewater disposal accomplished through the exclusive use of on-site septic systems.

The District has traditionally relied on local groundwater for its drinking water supply, encompassing two subbasins of the greater Morongo Groundwater Basin – the Joshua Tree and Copper Mountain Subbasins. The District maintains approximately 4,500 water connections within its service area. With an average annual rainfall of approximately 4.5 inches, protection of its groundwater quality is a primary goal of the District.

It has been estimated that recharge from individual septic systems may currently represent as much as 80 percent of the annual recharge within the District's groundwater basins. These septic return flows result in increased nitrate and total dissolved solids degradation of the groundwater. As a result, local groundwater protection agencies have increased regional emphasis on local and regional wastewater treatment to curtail the long-term degradation of regional water supplies. The District has also increased its activity relative to local groundwater supply protection by activating its wastewater management powers and conduct of various local groundwater studies targeted at identifying the impact of local septic discharges.

The long-term cumulative impact of wastewater discharges continues to be a primary concern for the District. Despite the current downturn in local development pressure, population increases are projected for the District's service area. As a result of this projected growth, development and implementation of alternative wastewater treatment and disposal strategies is needed to adequately protect the District's local water supplies. Prohibition of new individual septic systems will gradually be required, replaced by local package treatment facilities that provide better treatment – thus protecting the District's local groundwater resources. Ultimately, regional wastewater treatment and disposal facilities may be required to assure regional water supply protection.

The development and implementation of localized and/or regional wastewater collection, treatment and disposal facilities is not something that is enacted quickly. The planning, design and construction of such facilities require significant investment of time and money. For this reason, the District commissioned the development of its Wastewater Treatment Strategy (WTS). The primary purpose of the WTS is to identify how the District will, over time, economically implement needed wastewater treatment facilities for protection of its groundwater resources.

Recent groundwater studies^{1,2} have shown that a relatively small portion of the District's overall service area currently exhibits localized groundwater impacts from septic discharges. This area is located approximately either side of 29 Palms Highway, as shown on Figure I. Because of this areas impact on

¹ Groundwater Availability Evaluation - Joshua Basin Water District, Dudek, May 2006

² Evaluation of Geohydrologic Framework, Recharge Estimates, and Ground-water Flow of the Joshua Tree Area, San Bernardino County, California; Tracy Nishkawa, et. al.; Scientific Investigations Report 2004-5267; U.S. Department of the Interior, U.S. Geological Survey; 2004

District groundwater supplies, it has been selected as the study area for WTS development. Over time, additional areas will be required to implement the WTS, as development and growth pressures dictate.

This report identifies both the short- and long-term strategies for implementation of needed groundwater protection facilities. This report identifies the strategic requirements of such a program, not the individual sizing and exact location of needed facilities. Over time, implementation of the WTS will result in identification of the exact sizing and location of the required facilities, particularly in the form of a wastewater system master plan. For now, the goal is the development of the overall strategy and the financial mechanisms needed to provide the framework of the overall District plan.

Section 2 Project Study Area

The project study area is shown on Figure 1. The study area encompasses approximately 35 square miles, and drains predominantly from the west to the east along the 29 Palms Highway corridor. Drainage north of the highway slopes generally southward, while the areas south of the highway slope northward. A small area along Rocking Chair Road is also included in the study area. For purposes of this study, the study area was divided into 15 Drainage areas (as shown on Figure 1), corresponding to the general topography of the land, the major road alignments, and the 29 Palms Highway alignment.

The existing development is predominantly residential, with smaller areas of commercial and institutional development. Developing over the last 40 years, the existing development uses on-site septic systems exclusively for treatment and disposal of wastewater flows. Based on previous studies and considering an increasing water conservation trend in California, wastewater production is estimated to be 220 gallons per day per equivalent dwelling unit (EDU). An EDU is the equivalent wastewater production of a single family home. Using this measure, wastewater production is evaluated and expressed in a common unit value.

For the purposes of this study, vacant undeveloped land within the study area is assumed to potentially become tributary to a near- or long-term wastewater collection and treatment system. Currently, occupied parcels are included in the WTS evaluation only where the general plan indicates a potential for denser development in the future.

The reason for this assumption is two fold. First, existing developed parcels are assumed to be safely treating and discharging wastewater flows through use of septic tanks in accordance with existing environmental law. As such, it would be unnecessary to require changes to existing conditions. Secondly, and more importantly, the cost of implementing the WTS is assumed to be born by future development, and not existing customers. As such, future impacts to local groundwater resources will be curtailed.

It is noted that septic treatment systems do not last forever. Eventually, septic systems exhaust the percolation capacity of the local soils and can become ineffective. In these cases, the owner of the parcel may more cost-effectively connect to the local or regional wastewater system, rather than install a new septic system. For the purposes of this study, no existing customers are assumed to have these conditions. It is noted that the future wastewater system will have sufficient capacity to accommodate additional future participants, as required.

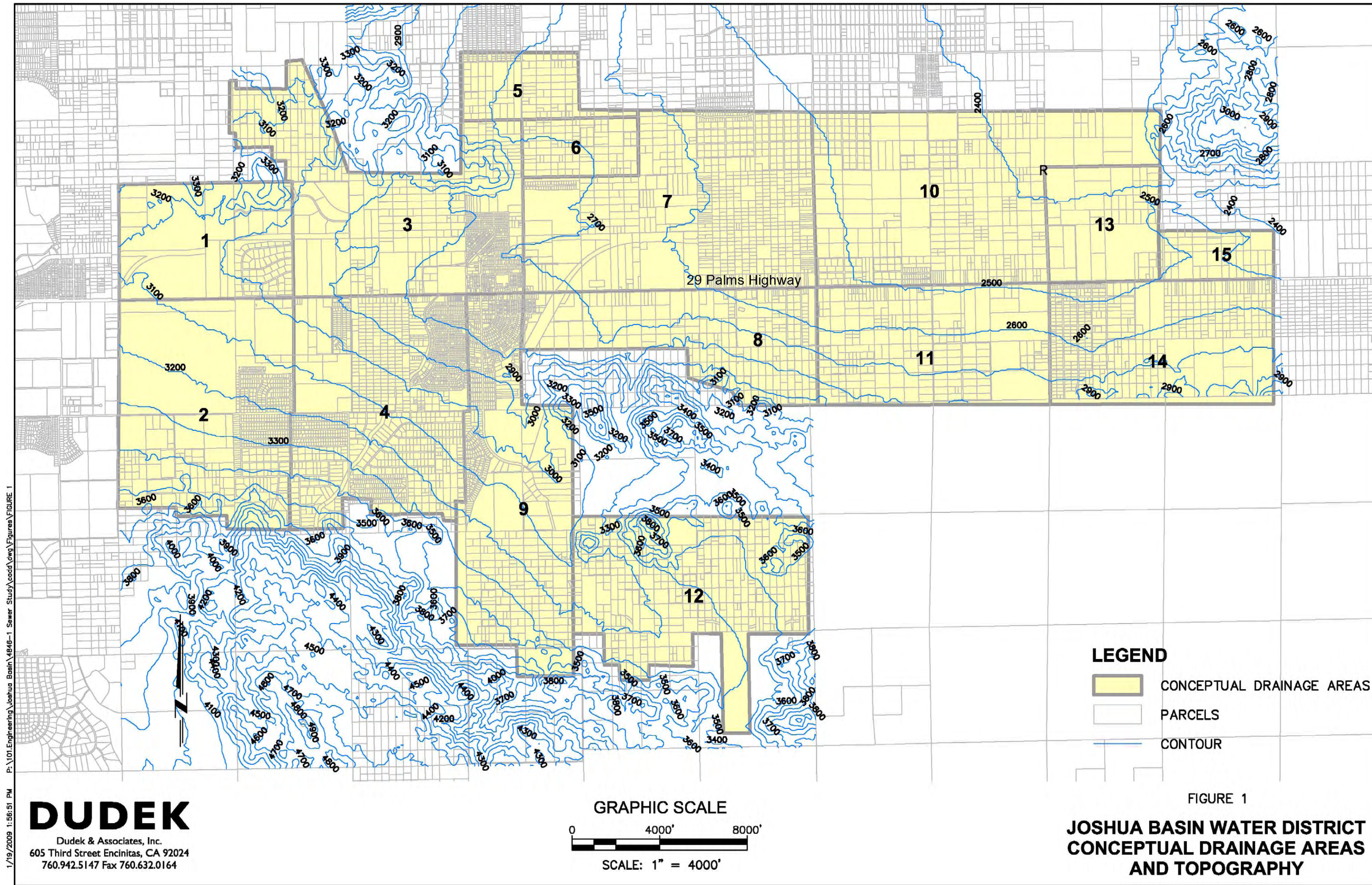


Figure 1 Conceptual Drainage Areas and Topography

2.1 Existing Development

It is necessary to identify the existing developed and undeveloped parcels within the project study area. To accomplish this task, the District's geographic information system (GIS) was used. The GIS data was reviewed, and a parcel analysis conducted for the entire study area. Parcels were categorized into the aforementioned drainage areas for analysis. The results of that parcel-level analysis are presented in Table I.

Table I JBWD Drainage Area Parcel Analysis

Drainage Area	Drainage Area in Acres	Total Parcels	Occupied Parcels	Occupied Acres	Occupied EDU/acre	Unoccupied Parcels	Unoccupied Acres
1	1,001	88	4	46	0.09	84	956
2	1,952	575	295	1,001	0.29	280	951
3	2,325	881	439	1,159	0.38	442	1,166
4	1,744	1,671	927	967	0.96	744	777
5	511	187	91	249	0.37	96	262
6	319	101	51	161	0.32	50	158
7	2,047	740	118	326	0.36	622	1,721
8	1,811	324	103	576	0.18	221	1,235
9	2,617	942	549	1,525	0.36	393	1,092
10	2,004	461	21	91	0.23	440	1,913
11	1,206	240	33	166	0.20	207	1,040
12	2,526	373	211	1,429	0.15	162	1,097
13	832	55	5	76	0.07	50	756
14	1,223	447	123	337	0.37	324	886
15	316	47	1	7	0.15	46	309
Totals	22,434	7,132	2,971	8,115	0.30	4,161	14,319

The number of currently developed parcels (assumed to be those parcels having an existing active water meter) was determined. The project study area was determined to have a total of 2,971 existing developed parcels. It was assumed that these parcels have one EDU per developed parcel. The highest existing development density was calculated to be approximately 0.96 EDU per acre for Drainage Area No. 4. This drainage area is roughly bordered by Sunny Vista Road on the west, 29 Palms Highway on the north, and Quail Haven Road on the east.

Existing occupied parcels vary in size, ranging from less than 1/10 of an acre to greater than 20 acres. In many cases, the General Plan for Land Use in the Joshua Basin area identifies higher densities on these parcels that currently exist.

The minimum existing development density within the project study area was determined to be approximately 0.07 EDU per acre for Drainage Area No. 13. Drainage Area 13 is located on the eastern side of the study area, in the vicinity of Copper Mountain College.

The average existing development density across the entire study area was determined to be approximately 0.30 EDU per acre. As stated previously, each of these existing parcels are currently served by individual on-site septic treatment and disposal systems.

2.1.1 Undevelopable Land

Within the project study area, specific areas have lower potential to be developed. This land includes areas within the Federal Emergency Management Agency (FEMA) flood plain, as well as steeply sloped and rocky areas, as shown on Figure 2. The flood plain is located longitudinally across the center of the study area, primarily impacting Drainage Areas 1, 3, 7, 8, 10 and 13. The flood plain extends to the northeast outside the study area. From aerial photos documentation, several sparse isolated developments are evident within the flood zone. However, no additional development is currently proposed within the flood plain. The total flood plain area is approximately 3,070 acres, equivalent to 14 percent of the total study area.

There are also smaller areas which would be very difficult to develop. These areas include land that has steep slopes or is covered with large rock outcrops. Areas of these types are found in Drainage Area 14, along the south edge, Drainage Area 8, along the lower portion to the south, Drainage Area 3, in the northeast portion south of Drainage Area 5, in several spots along the north edge of Drainage Area 12, and several small spots along the south edge of Drainage Area 2. The total rock area amounts to approximately 1,147 acres, or 5 percent of the total study area. Subtracting these undevelopable areas leave a total of approximately 18,388 acres available for development.

The Roy Williams Airport, located in the northern part of Drainage Area 10, is approximately 80 acres and is also considered to be non-developable for the future.

2.2 Vacant Parcels

As stated previously, the WTS evaluation assumed that existing vacant land within the project study area will not be allowed to use on-site septic systems for future wastewater treatment and disposal, unless the development is on large lots (larger than 0.5 acres per EDU, or larger than ½ acre each). As a result, these parcels are assumed to become tributary to the District's future wastewater collection and treatment systems.

It is projected that larger developed parcels will eventually become more valuable, and be subdivided. For example, a ten-acre parcel with a total of one EDU may be purchased and subdivided providing a more dense development. In these cases, with denser proposed development, the new development would be expected to be tributary to the future wastewater systems, and would not be allowed to be constructed with individual on-site septic systems.

The total number of potential vacant parcels within the project study area, based on proposed development densities, is approximately 15,377 parcels. The existing average density across the study area is approximately 0.30 EDU per acre. The planned land uses for existing occupied and vacant parcels have been reviewed to determine the total number of ultimate developed parcels.

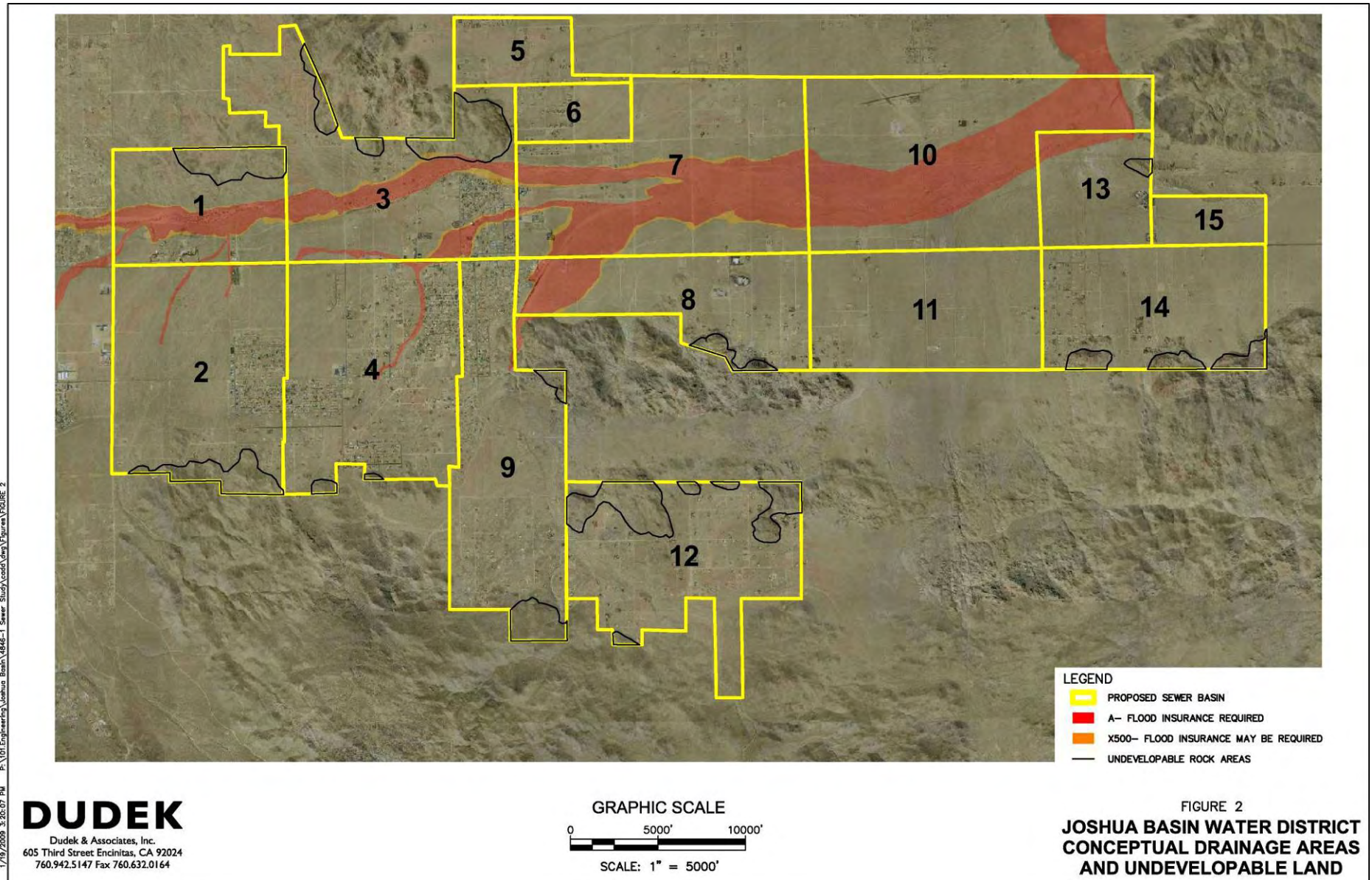


Figure 2 Conceptual Drainage Areas and Undevelopable Land

2.2.1 Development Projected for Drainage Area 2

For known planned developments such as the proposed development in Section 33 of Drainage Area 2, specific development plans have been included in the WTS analysis. The development of Section 33 is proposed to include a total of 2,700 EDUs within its one square mile area. This development provides for a potential development density of approximately 4.2 EDU per acre. The total development area of Drainage Area 2 is approximately 1,952 acres, with approximately 295 currently occupied parcels.

The Land Use Plan projects 4,021 EDUs for Drainage Area 2 on existing vacant parcels, and 1,028 EDUs on currently occupied land, for a total of approximately 5,049 EDUs. Existing occupied land development is projected to increase from 295 EDUs to 1,028 EDUs. Approximately 406 EDUs are proposed to be developed on vacant land in Drainage Area 2. These larger lots may be serviced by new septic systems. The total density for Drainage Area 2 is projected to be approximately 5,455 EDUs over the 1,952 acres, or approximately 2.8 EDU/acre.

2.2.2 Development Potential for Drainage Area 4

Within Drainage Area 4, another proposed development includes the addition of 220 homes in the Friendly Hills development. Drainage Area 4 has an existing development density of approximately 0.96 EDU per acre. The total development projected for vacant land in this area is approximately 2,329 EDUs. However, approximately 472 of these EDUs are projected to be on larger lots, and will not be connected to the new sewer systems. Occupied developments in Drainage Area 4 total approximately 1,944 EDUs. Of these, approximately 1,463 EDUs are projected to be tributary to future collection systems. There are approximately 879 existing water meters in the area, indicating existing septic tank usage, leaving approximately 584 new EDUs contributing to future sewer systems. The total development which will contribute wastewater from Drainage Area 4 is project to be approximately 2,441 EDUs. The future density for Drainage Area 4 will therefore be approximately 2.4 EDU/acre.

2.2.3 Development Potential for Drainage Area 1

Another proposed development includes an additional 232 units in Drainage Area 1. Drainage Area 1 has a total projected development of approximately 304 EDUs on vacant land, with 223 contributing flow to future sewer systems and approximately 710 EDUs proposed for occupied land. Of these approximate 710 EDUs, 690 EDUs are projected to contribute to future sewer systems, approximately 685 EDUs not currently existing. The total development projected for Drainage Area 1 is approximately 907 EDUs, resulting in a density of approximately 1.01 EDU/acre.

2.2.4 Commercial Institutional and Retail Development

Planned commercial, institutional, light industrial and retail acreage were assigned a development value of 4.0 EDU per acre. These development categories comprise approximately 651 acres in vacant land and 436 acres of developed land within the study area. This area, using an average of 4.0 EDU per acre, results in total development of approximately 4,348 EDUs.

It is noted that Drainage Area 12 has a projected residential development so sparse that no residential wastewater flow is anticipated. Approximately 20 acres of commercial development is projected for vacant land, resulting in approximately 18,000 gpd of wastewater flow. It is therefore consistent with the WTS that this commercial area install septic systems, to serve such a small wastewater flow rate. The total revised development, excluding Drainage Area 12, is approximately 4,268 EDUs.

2.3 Wastewater Flows

As a part of the WTS analysis, it is necessary to project the needed facilities for the various interim and ultimate treatment and disposal systems. As such, wastewater flow projections were made for each drainage area, including both existing and future developable parcels within each drainage area.

The basic premise of the WTS is that denser developments will require construction of a wastewater collection and treatment system, and existing or less densely developed area will continue to use septic systems. Using the Joshua Basin Land Use Projections for both vacant land and occupied land, development and wastewater flow projections are computed as shown in Table 2.

The upper portion of Table 2 presents the development for identified vacant land. The leftmost columns provide the Land Use Designations and the development acres per EDU. The top three land uses have residential development densities ranging from 0.1 to 0.25 acres per EDU, resulting in development densities ranging from 4 to 10 EDU per acre.

The land uses highlighted in red represent development that is projected to require between 1 and 20 acres per EDU or development densities ranging from 0.05 to 1.0 EDU per acre. Because these densities are less than 2.0 EDU per acre, these developments are projected to continue to be served by septic systems. Conversely, the other land uses have densities between 2.2 and 5 EDU per acre, and are projected to wastewater collection and treatment systems.

The bottom half of the table projects development for currently occupied land. Land use planning projects higher development densities for occupied land than currently exists. Table 1 identifies a total of approximately 2,971 occupied parcels, assumed to be 2,971 EDUs on occupied land in Table 2. This assumption results in a total of approximately 9,613 EDUs projected for occupied land in the future.

2.3.1 Commercial, Institutional, and Retail Development

Section 2.2.4 identified the total development of commercial, institutional, and retail area to be approximately 4,268 EDUs. Based on a flow rate of 220 gpd per EDU, the estimated ultimate non-residential wastewater flow is approximately 0.94 mgd. Primary non-residential areas are along 29 Palms Highway. However, some non-residential development is projected within each of the 15 drainage areas. Non-residential flow is projected to range from approximately 4,000 gpd in Drainage Area 15 to 190,000 gpd in Drainage Area 7. Other significant areas of non-residential development include Drainage Areas 3, 8, 10, and 13, primarily along the frontage along 29 Palms Highway.

2.3.2 Existing Development Flows

Wastewater flow from each occupied developed parcel was computed within each drainage area. Table 2 presents the total number of projected EDUs which are proposed for currently occupied land, totaling approximately 9,613 EDUs. A total of 3,072 EDU are projected to occupy low density development, with lot sizes ranging from 1 to 20 acres. The remaining development includes approximately 6,542 EDUs, which is reduced by the number of existing EDUs to a remaining development count of 4,045 EDUs. The ultimate wastewater flow projected from currently developed and vacant non-residential development is approximately 890,000 gpd.

Table 2 Estimate of Residential Parcel Distribution and Contributing Wastewater Flow

Vacant Residential Land

Land Use Designation	Acres/EDU	Drainage Area															Total EDUs	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
20m-RM-40m - MULTIPLE RESIDENTIAL	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	308	0	308
3m-RM; MULTIPLE RESIDENTIAL	0.1	0	0	215	0	0	0	3	22	174	0	0	0	0	0	0	0	413
4m-RM; MULTIPLE RESIDENTIAL	0.15	146	629	251	286	0	0	220	119	0	237	301	0	307	291	0	0	2785
R-HR; HILLSIDE RESERVE (1 DU/20 AC)	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RL; RURAL LIVING	1	62	406	244	75	217	172	567	445	352	831	735	601	0	416	0	0	5122
RL-10; RURAL LIVING	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RL-20; RURAL LIVING	20	13	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	33
RL-5; RURAL LIVING	5	0	0	1	0	0	0	0	11	30	12	27	9	69	53	51	0	262
RS-1; SINGLE RESIDENTIAL	1	6	0	0	397	0	0	178	0	4	53	178	0	0	0	0	0	816
RS-10m; SINGLE RESIDENTIAL	0.23	76	2888	0	1035	0	0	0	0	0	4	0	0	0	0	0	0	4003
RS-18m; SINGLE RESIDENTIAL	0.41	0	95	0	168	19	0	50	0	206	0	0	0	0	0	0	0	538
RS-20m; SINGLE RESIDENTIAL	0.46	0	0	0	0	0	0	0	0	0	0	1	0	0	229	0	0	230
R-S-5 (SP); RESIDENTIAL SINGLE FAMILY	0.2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
RS-8m; SINGLE RESIDENTIAL	0.18	0	0	107	369	0	0	0	42	346	0	0	0	0	0	0	0	864
EDUs		304	4021	837	2329	236	172	1017	638	1113	1136	1241	611	376	1296	51		15377
Net EDUs Contributing Sewage Flow		223	3615	573	1858	19	0	272	182	726	240	301	0	307	828	0		9143

Occupied Residential Land

Land Use Designation	Acres/EDU	Drainage Area															Total EDUs	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
20m-RM-40m; MULTIPLE RESIDENTIAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	0	96
3m-RM; MULTIPLE RESIDENTIAL	0	0	0	508	3	0	0	15	79	440	0	0	0	0	0	0	0	1045
4m-RM; MULTIPLE RESIDENTIAL	0	495	285	92	182	0	0	156	11	45	175	21	0	61	93	15	0	1632
R-HR; HILLSIDE RESERVE (1 DU/20 AC)	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RL; RURAL LIVING	1	19	206	88	127	158	151	189	168	487	134	165	637	0	104	0	0	2633
R-L-1; RURAL LIVING (1 DU/1 AC)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RL-10; RURAL LIVING	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RL-20; RURAL LIVING	20	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	11
RL-5; RURAL LIVING	5	0	0	0	0	0	0	0	1	17	1	5	1	1	1	2	0	28
RS-1; SINGLE RESIDENTIAL	1	1	0	0	355	0	0	11	0	9	16	9	0	0	0	0	0	400
RS-10m; SINGLE RESIDENTIAL	0	194	246	0	118	0	0	0	0	0	1	0	0	0	0	0	0	559
RS-18m; SINGLE RESIDENTIAL	0	0	290	1	373	47	0	82	0	173	0	0	0	0	0	0	0	967
RS-20m; SINGLE RESIDENTIAL	0	0	0	0	0	0	0	0	0	0	0	8	0	0	245	0	0	253
R-S-5 (SP); RESIDENTIAL SINGLE FAMILY	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
RS-8m; SINGLE RESIDENTIAL	0	0	0	353	787	0	0	0	49	800	0	0	0	0	0	0	0	1989
EDUs		710	1028	1053	1944	205	151	454	308	1970	327	208	638	63	538	17		9613
Net EDUs Contributing Sewage Flow		690	822	954	1463	47	0	254	139	1457	176	29	0	61	434	15		6542
Metered EDUs (Deducted)		5	303	415	879	77	54	97	82	510	15	29	191	1	113	1		2772
Net Net EDUs Contributing Sewage Flow		685	519	539	584	0	0	157	57	947	161	0	0	60	321	14		4045

Total Estimated Sewer Flow

	Drainage Area															Total EDUs		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
Total EDUs Contributing Ultimate Sewage Flow	907	4134	1112	2441	19	0	429	240	1673	401	301	0	367	1148	14			13188
Estimated Ultimate Residential Flow, MGD	0.200	0.909	0.245	0.537	0.004	0.000	0.094	0.053	0.368	0.088	0.066	0.000	0.081	0.253	0.003			2.901
Estimated Ultimate Commercial Flow, MGD	0.047	0.024	0.104	0.051			0.190	0.187	0.024	0.135	0.026	0.000	0.110	0.037	0.004			0.939
Total Ultimate Estimated Flow, MGD	0.246	0.934	0.349	0.588	0.004	0.000	0.284	0.240	0.392	0.223	0.092	0.000	0.191	0.290	0.007			3.840
Percent of Total Flow	6.4%	24.3%	9.1%	15.3%	0.1%	0.0%	7.4%	6.3%	10.2%	5.8%	2.4%	0.0%	5.0%	7.5%	0.2%			

2.3.2 Future Development Flows

Currently vacant land within each drainage area yields the potential development shown in the upper portion of Table 2. There are a total of 15,377 EDUs projected for currently vacant land across the 15 drainage areas. Of this total, approximately 6,233 EDUs are projected to reside in low density areas, and these EDU's were subtracted from the total EDU count to determine wastewater production. The total development count of 9,143 EDU's generates an ultimate wastewater flow rate of 2.01 mgd.

2.4 Projected Collection System

A computerized sewer model was developed based on parcel information developed from the District's GIS data. The number of parcels and assumed density within the project study area comprised the basis for development of tributary wastewater flows.

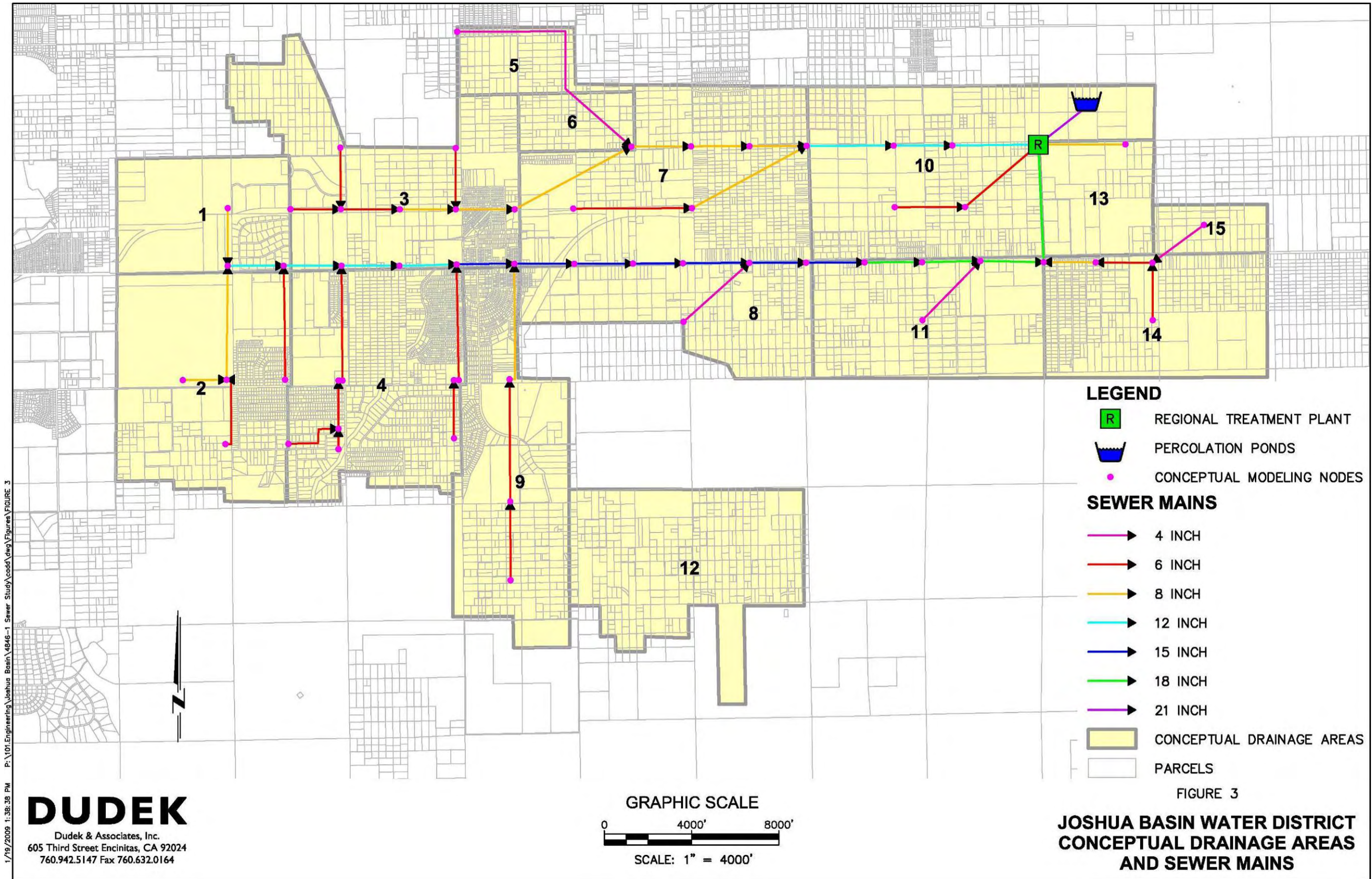
Traditional sewer system design requires a minimum velocity of at least 2.0 feet per second within the collection system. The study area exhibits a substantial slope from west to east. The analysis generally assumes the minimum sewer size to be 8 inches in diameter. However, the projected flow rates in several drainage areas are forecast to produce flows such that only a 4-inch or 6-inch sewer could be used. It may be best to have a few additional homes use septic system in these cases.

Trunk sewers were sized to flow half full for sewers 12 inches and smaller, and $\frac{3}{4}$ full for sewers larger than 12 inches in diameter. The proposed trunk sewer sizing for ultimate development of the study area is shown on Figure 3. Projected pipe sizes range between 4 and 21 inches in diameter.

Pipe sizes represent the "backbone" of the future District wastewater collection system. As development occurs in remote areas, the main trunk sewers will need to be constructed to the sizes as shown to allow District wide development.

2.5 Raw Wastewater Characteristics

As a result of water conservation, many agencies experience significantly reduced wastewater flow. The resulting strength of the raw wastewater is proportionately increased as less water is used to transport the same amount of waste material. The District's 2006 Wastewater Study estimated BOD5 and TSS loadings of 250 mg/L. As water conservation is increased, flow estimates are reduced and wastewater strength is correspondingly increased. Therefore, District treatment facilities need to be designed for the lower flow rate and an influent BOD5 and TSS concentration of 300 mg/L, each.



1/19/2009 1:38:38 PM P:\101.Engineering\Joshua Basin\4846-1 Sewer Study\cadd\vw\Figures\FIGURE 3

DUDEK
Dudek & Associates, Inc.
605 Third Street Encinitas, CA 92024
760.942.5147 Fax 760.632.0164

Figure 3 Conceptual Drainage Areas and Sewer Mains

Section 3 Regulatory Considerations

The District lies within the California Regional Water Quality Control Board (RWQCB) – Colorado River Region (Regional Board, Region 7). The Regional Board is responsible for water quality planning in each of its hydrologic units. It also regulates the discharge of treated waste within its area of responsibility.

3.1 Existing RWQCB Considerations

The District overlies the Joshua Tree hydrologic unit planning area, which is where the District currently derives its water supply. Also, the District is pursuing import and recharge of State Project Water (SPW) to supplement local natural recharge.

The RWQCB's Basin Plan requires that groundwater designated for use as domestic or municipal water supply comply with Title 22, Chapter 15, Article 4. Biochemical oxygen demand (BOD5) and total suspended solids (TSS) are required to be less than 30 mg/L for discharges from wastewater treatment facilities. The Regional Board has an informal policy that conforms to AB 885 and Senate Bill 390, requiring the following:

- Projects equal to or greater than 10 EDU require a report of waste discharge.
- Board staff reviews the project and evaluates each project for impacts referenced in AB 885.
- Following an analysis of the site conditions, density and other factors, a permit may be issued.
- The primary regulated discharge limit parameter is nitrogen.
- The limit is 10 mg/L total inorganic nitrogen (TIN); there is no waiver for discharges.
- Individual homes generally do not require permits.

The United States Geological Survey (USGS) analyzed the nature and capacity of the District's local groundwater basin in 2004. That study concluded that nitrogen from septic tanks in the Joshua Basin region will, if unregulated, eventually reach the water table. The USGS concluded that regulation of nitrate in the groundwater will be required in the near future by the RWQCB.

Title 22 requires that nitrogen levels not exceed 45 mg/L (10 mg/L as nitrogen) and TDS not exceed 500 mg/L. Additionally, the State of California adopted regulations for Groundwater Recycled Recharge Projects (Title 22, Division 4, Chapter 3, Article 5.1). These regulations require, for continuing use of groundwater as a drinking water source, protection of groundwater through reducing or eliminating the use of septic system discharges and compliance with Groundwater Recycled Recharge Projects criteria.

Therefore, septic systems which do not nitrify and denitrify will be required to be eliminated in the future. There are available commercial septic systems that provide nitrification and denitrification. However, these facilities are very expensive. Wastewater treatment technology exists, and it is more cost-effective on a larger wastewater treatment scale, to accomplish nitrogen removal.

The RWQCB is in the process of establishing the regulations that will govern the nutrient limits in wastewater discharges. Based on our discussions with the agency, the RWQCB is currently considering an effluent limit of between 10 and 15 mg/L as N. Future nitrogen regulations have been discussed with RWQCB staff, and they indicated that any wastewater discharged within Joshua Basin will be regulated to a level below 10 mg/L total inorganic nitrogen (TIN).

3.2 Future Regulatory Requirements

Draft groundwater recycled recharge project requirements indicate that recharge of groundwater with recycled water requires a limited percentage of recycled water in the recharge water, as low as 20 to 50 percent. Assembly Bill 885 addresses Onsite Wastewater Treatment System (OWTS). The legislation requires the adoption of regulations or standards for the permitting and operation of the following OWTS in the state:

- Any system that is constructed or replaced
- Any system that is subject to a major repair
- Any system that pools or discharges to the surface
- Any system that discharges waste that has the potential to cause a violation of water quality objectives or to impair the present or future beneficial uses of water, to cause pollution, nuisance, or contamination of waters of the state.

The draft RWQCB regulations are divided into four articles:

- Definitions, applicability of the regulations, and general requirements
- Groundwater level determinations for new OWTS
- Requirements for supplemental treatment and OWTS dispersal systems
- Requirements for protecting impaired surface waters.

For the proposed regulations, an OWTS includes individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal. The proposed regulations apply to new or replaced OWTS discharges of 3,500 gallons-per-day (gpd) and greater. Therefore, for discharges greater than 3,500 gpd, a Notice of Waste Discharge must be filed with the RWQCB. The Colorado River RWQCB will likely retain a 10 mg/L limit for TIN.

Section 4 Wastewater Treatment Alternatives

4.1 Conventional Treatment (Primary and Secondary)

There are several levels of wastewater treatment (preliminary, primary, secondary and tertiary) which are considered for potential use for Joshua Basin. In general, wastewater treatment plants (WWTP) include several levels of treatment, including:

- Preliminary Treatment – consists of bar screens, flow measurement, grit removal, and often pumping, to lift the wastewater to the elevation of the next treatment process.
- Primary Treatment – includes primary clarifiers, and primary sludge pumping. Primary treatment will often reduce the influent total suspended solids (TSS) by 50-60 percent, and can reduce the biochemical oxygen demand (BOD) by 30-35 percent.
- Secondary Treatment – typically includes a secondary BOD removal process, such as an aeration basin, followed by a solids removal step, usually a secondary clarifier. The secondary treatment process functions as a TSS and BOD removal process through recycling sludge settled in the secondary clarifier. The secondary treatment portion of the plant typically lowers BOD and TSS remaining after primary treatment down to the regulated level, i.e. BOD and TSS of 30 mg/L.

- Nitrogen Removal – Removal of nitrogen is accomplished by processes which are part of secondary treatment process – nitrification and denitrification. Nitrification converts ammonia to nitrate. Denitrification is where nitrate is removed in an anoxic or anaerobic zone, when nitrate is converted by denitrifying organisms to nitrogen gas.
- Tertiary Treatment – Tertiary treatment is Title 22 recycled water, which is approved for full body contact recreation, and use in lakes for boating and fishing. Tertiary treatment consists of coagulation and filtration, followed by disinfection with chlorine or ultraviolet light. Title 22 requires disinfection for irrigation of parks and schools to produce a bacteria and virus kill to a level of 2.2 coliform bacteria per 100 ml of water.
- Advanced Treatment – Membrane Bioreactors (MBRs) are a technology that accomplishes the production of high quality tertiary water and both secondary and tertiary treatment in a single process. The MBR process uses an aeration basin which operates at a much higher mixed liquor suspended solids (MLSS) level of 8,000 to 12,000 mg/L. The MBR process has ultrafiltration membranes. The water from an MBR plant has higher quality effluent water than conventional Title 22 water, and, because the TSS is very low, disinfection works very well.

4.2 Treatment Equipment Alternatives

Smaller “package” treatment facilities range in size from 5,000 gallons per day (gpd) up to 100,000 or 200,000 gpd. The smallest package plants are typically constructed of steel tanks that rest on a below grade slab. Steel tank package treatment plants can be relocated, if desired. Larger wastewater treatment facilities (200,000 gpd and larger) are typically constructed of cast-in-place concrete tanks, which are more permanent facilities.

There are a number of potential manufacturers of package extended aeration treatment plants. For the purposes of this evaluation, the following list of manufacturers was developed. The criteria for development of the list required that the manufacturer provide and market a California-approved package plant that successfully nitrifies and denitrifies (NDN) to a level under 10 mg/L TIN. The three most viable manufacturers of these package plants include:

- Smith & Loveless ADDIGEST with NDN – in a fabricated steel tank
- Purestream BESST process with NDN, in a steel tank
- Aero-mod BNR (Biological Nutrient Removal) process – concrete tank

As discussed in Section 2, a large range of wastewater flows are being considered under this study. Package plant manufacturers have different characteristics and costs for different flow ranges. The summaries below discuss the various strengths of each proposed unit. The flow rate after the equipment name is each manufacturer’s most competitively priced flow range for consideration.

- Smith & Loveless (10,000 gpd to 1.0 mgd). Smith and Loveless has extended aeration package plants with flow capacities from 10,000 gpd to 500,000 gpd. Two 500,000 gpd plants would be combined for a 1.0 mgd plant. Processes include Flow Equalization, Aeration, Anoxic Zone, Secondary Clarifier, and Effluent Filtration. S&L includes aerobic digestion to stabilize the sludge, and has the Titan MBR treatment process, which can treat a flow rate of 20,000 gpd.
- Purestream BESST (5,000 gpd to 140,000 gpd). The Purestream Biologically-Engineered Single Stage Treatment (BESST) process accomplishes secondary treatment with nitrogen removal, achieving typical effluent quality of 10 mg/L for both BOD5 and TSS, with total N less than 10 mg/L. The BESST process is an activated sludge plant with both aerobic and anoxic zones, and is regularly installed for flow rates as low as 5,000 gpd, and can be cost-competitive in flow rates

up to 140,000 gpd. The largest steel tank is 50,000 gpd in capacity, and a 140,000 gpd plant is composed of two 50,000 gpd plant tanks, and an extra tank which has space for pretreatment and a special anoxic zone. The manufacturer provides an aerated sludge holding tank, which can function as a simple aerobic digester.

- **Aero-Mod BNR Process (50,000 gpd to 1.0 mgd).** Aero-Mod provides a BNR process, titled the Sequox Process. The process has a selector, first stage aeration nitrification, second stage sequencing aeration and denitrification, then a secondary clarifier. There is also available an add-on optional effluent filter, if tertiary treatment is ever required. The Sequox process can easily be modular, starting at a flow rate of 50,000 gpd up to 500,000 gpd. The Aero-Mod package plant also includes aerobic digestion to stabilize the sludge. The AeroMod basic design business model is for providing equipment into a cast-in-place concrete tank, and is more competitive in plant flows greater than 50,000 gpd.
- **Conventional Activated Sludge and Oxidation Ditches.** For wastewater flows greater than 1.0 mgd, it is more likely to require a conventional activated sludge process. Conventional activated sludge system requires an aeration detention time of only 4 to 6 hours. Extended aeration Oxidation Ditches requires 24 hours. The Oxidation Ditch plant is easier to operate, but because of the huge aeration basin, have a higher capital cost. The conventional activated sludge process is somewhat more difficult to operate, but it is much more efficient than an oxidation ditch at NDN.

4.3 Cost Comparisons

Construction, operation and maintenance costs for each vendor were developed for the anticipated range of tributary wastewater flows, including 20,000 gpd and 200,000 gpd. In the following tables, construction costs are defined for each alternative system. Capital costs include an additional 35 percent for project soft costs. Package treatment facilities have an estimated life of 15 years. Assuming an interest rate of 5 percent, capital costs are annualized over 15 years and combined with annual O&M costs to estimate the total annual cost of each alternative.

4.3.1 Cost Comparison for 20,000 gpd Plants

For treatment systems with capacity up to 20,000 gpd, the following four manufacturers were identified for potential use by the District: 1) Smith & Loveless ADDIGEST; 2) Aero-Mod; 3) Purestream; and 4) Smith & Loveless MBR. The anticipated expenditures for each of these alternatives are summarized in Table 3.

Table 3 20,000 GPD Treatment Capacity Cost Comparison

Capacity (gpd)	Vendor	Treatment Process	Construction Cost (\$)	Cost per Gallon	Capital Cost (\$)	Annual O&M (\$)	Total Annual Cost (\$)
20,000	Smith & Loveless	ADDIGEST Ext. Arr. NDN	\$375,000	\$19	\$510,000	\$60,400	\$110,000
20,000	Aero-Mod	Sequox BNR Ext. Aer.	\$347,000	\$17	\$468,000	\$59,500	\$105,000
20,000	Purestream	BESST Act. Sludge w/ NDN	\$320,000	\$16	\$432,000	\$50,500	\$92,000
20,000	Smith & Loveless	Titan MBR, Adv. Tertiary	\$615,000	\$31	\$830,000	\$86,000	\$166,000

Consideration of cost competitiveness is not the primary consideration for the District. The Purestream system is constructed of steel tankage, making the systems easier to relocate. Relocation capability is a primary consideration relative to overall WTS planning. Also, the MBR process produces a significantly higher effluent quality. Consideration of existing and emerging regulatory requirements may necessitate that MBR processes be used to attain higher effluent quality and better environmental

protection. Selection of the appropriate treatment technology will be decided by the District at the time of implementation, and will be based on the identified treatment requirements which the District will be required to meet. The developer will be required to implement the identified treatment technology for WTS implementation.

4.3.2 Cost Comparison for 200,000 gpd Plants

For treatment systems with capacity greater than 20,000 gpd up to 200,000 gpd, the following three manufacturers were identified for potential use by the District: 1) Smith & Loveless ADDIGEST; 2) Aero-Mod; and 3) Purestream. The anticipated expenditures for each of these alternatives are summarized in Table 4.

Table 4 200,000 GPD Treatment Capacity Cost Comparison

Capacity (gpd)	Vendor	Treatment Process	Construction Cost (\$)	Cost per Gallon	Capital Cost (\$)	Annual O&M (\$)	Total Annual Cost (\$)
200,000	Smith & Loveless	ADDIGEST Ext. Arr. NDN	\$3,290,000	\$16	\$4,442,000	\$220,000	\$648,000
200,000	Aero-Mod	Sequox BNR Ext. Aer.	\$2,562,000	\$13	\$3,459,000	\$212,000	\$545,000
200,000	Purestream	BESST Act. Sludge w/ NDN	\$2,745,000	\$14	\$3,706,000	\$208,000	\$565,000

Aero-Mod equipment is typically installed in cast-in-place concrete basins at these capacities. Where relocation ability remains a consideration at this capacity level, the Purestream BESST system would emerge as the preferred system selection. As with previous discussions, the required treatment requirements for regulatory compliance will dictate the treatment alternatives to be implemented.

For treatment capacities beyond the 200,000 gpd range, the Aero-Mod system represents the best selection, particularly for its nitrogen removal efficiency. As a comparative value, the costs for a 600,000 gpd Aero-Mod facility are provided as follows:

- Construction cost is approximately \$9,000,000
- Total Annual O&M is estimated to be approximately \$490,000 per year

As noted previously, the long-term strategy for the District may include the development of a centralized regional wastewater treatment facility. Based on the information developed in Section 2, the approximate capacity of this long-term alternative would be approximately 3.8 million gallons per day (mgd). Treatment of such large volumes of wastewater will require construction of a more conventional activated sludge treatment facility. For purposes of comparison, the costs of a traditional oxidation ditch treatment facility are provided below. The oxidation ditch provides relative ease of operation and maintenance.

- Construction cost is approximately \$42,000,000 (not including collection system costs)
- Total Annual O&M cost is estimated to be approximately \$1,300,000 per year

A comparatively sized MBR treatment plant would provide higher quality and reliable treatment, as well as provide capability to accommodate future treatment requirements. MBR costs are estimated to be:

- Construction cost is approximately \$65,000,000 (not including collection system costs)
- Total Annual O&M cost is estimated to be as much as \$2,000,000 to \$2,500,000 per year

It is noted that future treatment requirements, beyond those currently in force, may require that higher levels of treatment (i.e. MBR treatment) be considered. These considerations will be taken into account at the time of design and construction of the regional treatment facilities. As the need for such a facility is well out into the future, no attempt is made to further develop these considerations at this time.

4.4 Preferred Treatment System(s)

Based on the analyses performed for the 20,000 gpd and less flow capacity, the Purestream BESST system was found to provide the lowest overall capital and annual operation cost. This system also provides for steel tank construction that can be relocated as the District's wastewater treatment needs increase. The system is also modular to allow a single treatment plant to be expanded as wastewater flows increase. Also, as necessary, several existing or new treatment units may be combined at a new location to accommodate existing and new wastewater treatment needs. Purestream systems are currently installed at several locations within in the 29 Palms area. These installations report a successful local track record and RWQCB support of the installations. Therefore, Purestream BESST is identified as the preferred technology for treatment capacities between 5,000 gpd and approximately 150,000 gpd.

As the District develops into the near-term future and treatment capacities exceed 150,000 gpd, approaching the 200,000 gpd capacity, the Purestream BESST process begins to exceed its target capabilities. In addition, these treatment facilities are anticipated to be more permanent in design, providing a longer period of service to the District. As a result, the preferred treatment system for these higher tributary flows is the Aero-Mod system. Aero-Mod facilities have been successfully installed throughout California, providing treatment of flows between 200,000 and 1,000,000 gpd. These facilities typically involve construction of cast-in-place tankage.

As stated previously, the MBR process provides both better overall treatment and potential protection against future emerging regulations. The District may require the MBR process preferentially over other methods.

As the District continues to develop into the long-term future, the need for a more centralized wastewater treatment capability will emerge. The time frame of this need may exceed 50 to 75 years. Tributary wastewater flows will exceed 1,000,000 gpd, approaching the estimated ultimate capacity of 3.8 mgd. At these capacities, oxidation ditches and other conventional activated sludge treatment processes will be necessary. Due to the lower construction costs and high treatment effectiveness of conventional activated sludge plants, design and construction of a conventional activated sludge process would be recommended for plants larger than 1.5 mgd.

As noted previously, emerging regulations may result in the need for higher treatment requirements in the future. As a result, it may be in the best interest of the District to standardize treatment facilities to accommodate unknown future treatment requirements. In this case, the MBR becomes the preferred treatment alternative. The District will be able to make the decision on treatment facility selection at the time of development and thereby address these concerns.

4.5 Effluent Disposal Options

Consideration of the long-term effluent disposal needs of the District is a key component to development of a workable WTS plan. Existing effluent is discharged through individual leach fields from

local septic systems, subsequently percolating into the underlying aquifer. Thus, the current concerns for potential impact to the District's groundwater supplies.

Availability of effluent disposal options is limited within high desert communities, typically involving the use of percolation or infiltration basins to achieve disposal goals. In these basins, treated effluent is discharged and allowed to percolate into the ground for disposal. The effluent, receiving the higher levels of treatment to remove harmful nutrients, is no longer harmful to the underlying groundwater supplies. Percolation of treated effluent is considered a beneficial reuse of the water resources of the District.

Another option for the District is direct non-potable reuse of the treated effluent. This option would involve the development of a secondary non-potable water distribution system, through which the District would provide non-potable water for landscape irrigation purposes. However, the development of a secondary distribution system can be costly, both in capital construction costs as well as long-term maintenance. Yet, the availability of treated water for non-potable uses may represent a valuable resource to the District in the future.

Based on current understanding of the District's water use patterns, it is anticipated that percolation basins will be used for effluent disposal at all levels of treatment identified for the WTS plan. Each treatment facilities, regardless of capacity, will be required to provide sufficient area for percolation and disposal of its treated effluent. Based on recent information developed for the District, a percolation capacity of 1.0 feet per day is anticipated for percolation pond design. However, site specific evaluations will be required to fully identify the percolation area needs on a case by case basis.

4.6 Biosolids Handling and Disposal

Biosolids are the residual materials left behind from the overall wastewater treatment process. It is traditionally accepted that on-site treatment of wastewater biosolids is only cost-effective for treatment capacities greater than approximately 1.0 mgd. As a result, the majority of the District's initial package treatment installations will not be capable of cost effective on-site solids handling. The alternative is the storage and hauling of these biosolids to off-site facilities.

Assuming that residual solids contain approximately 3.5 percent solids (the remainder of which is water), a 20,000 gpd facility would be expected to produce approximately 1,600 gpd of waste activated sludge, including some screenings or other waste solids. Therefore, a 25,000 gallon aerated holding tank could store approximately 15 days of residual biosolids prior to needing to be hauled to an off-site facility. These biosolid volumes can be reduced by the use of aerobic digestion facilities. However, aerobic digestion results in additional operation costs. The Purestream BESST and Aero-Mod processes include aerobic digester facilities with detention times of approximately 10 days. The preferred option for District facilities will be determined on a case by case basis, with all facilities providing an aerated holding tank, at a minimum. In this manner, a liquid sludge haul truck can be use to haul sludge to an ultimate disposal site.

Section 5 Wastewater Treatment Strategy

Development of the District's WTS involves consideration of a variety of currently undefined growth and development concepts. These considerations include, but are not limited to:

- Identification of conditions under which septic systems will continue to be used,
- Identification of conditions where small package treatment systems will be required,
- Identification of conditions where larger treatment systems are required,
- Definition of strategies for relocation and clustering of smaller treatment facilities,
- Determination of when regional treatment facilities are required, and
- Definition of appropriate effluent and biosolids handling alternatives.

The following discussions address the “thresholds” at which these various treatment alternatives are to be implemented. The timing of when a given threshold will be exceeded is highly dependent on development pressure and patterns. The intent of this discussion is to identify the thresholds and the facilities needed to accommodate the resulting wastewater flows.

5.1 Wastewater Treatment “Thresholds”

Establishment of the various treatment thresholds will be handled on a case by case basis at the time of development. For the purpose of defining the WTS, the following discussions identify the probable levels of development necessary for transition from one level of treatment to another.

For example, it is generally accepted that developments producing less than 3,500 gpd, with a development density less than 2 EDU per acre, will likely continue the use of septic systems for wastewater treatment. As development size and density increase to the level of a small neighborhood, it is anticipated that the treatment threshold will be exceeded requiring installation of a localized package treatment system. If the development exceeds the treatment capacity of a single treatment facility, construction of multiple, clustered or larger treatment facilities will be required. As the overall treatment requirements continue to increase, larger clusters of treatment facilities will be required, leading ultimately to the development of a regional treatment facility. Of course, planning of conveyance piping, effluent disposal and biosolids handling will be required at each level of treatment as well.

5.1.1 Single Home (less than 15 EDU per project)

The majority of development throughout the District is anticipated to involve the construction of single homes on relative large parcels of land. As such, these developments are not anticipated to exceed the criteria for continued use of on-site septic systems. Each development will be evaluated on a case by case basis, with overall protection of the District’s groundwater supplies as the primary objective. In general, where developments involve construction of less than two homes per acre, septic systems will continue to be allowed. It is noted that all septic systems will be required to be designed in a manner to allow discontinuation of the septic system and connection to a local collection system in the future. This requirement will allow the District to adjust treatment requirements as future growth occurs.

As developments increase in density, local treatment facilities will be required. It is anticipated that developments with as few as eight homes on a single street may require construction of a localized collection and treatment system.

5.1.2 Small Developments (15 to 300 EDUs)

Figure 4 provides an illustration of the anticipated conditions for small development within the District. Small developments are defined to be those that contain more than 15 dwelling unit, but less than approximately 300 EDUs. As with all developments, the District will evaluate the pre-construction

conditions and set the treatment requirements based on the projected impact to the groundwater supplies.

1/19/2009 1:59:35 PM P:\101.Engineering\Joshua_Basin\4846-1 Sewer_Study\cadd\dwg\Figures\FIGURE 4

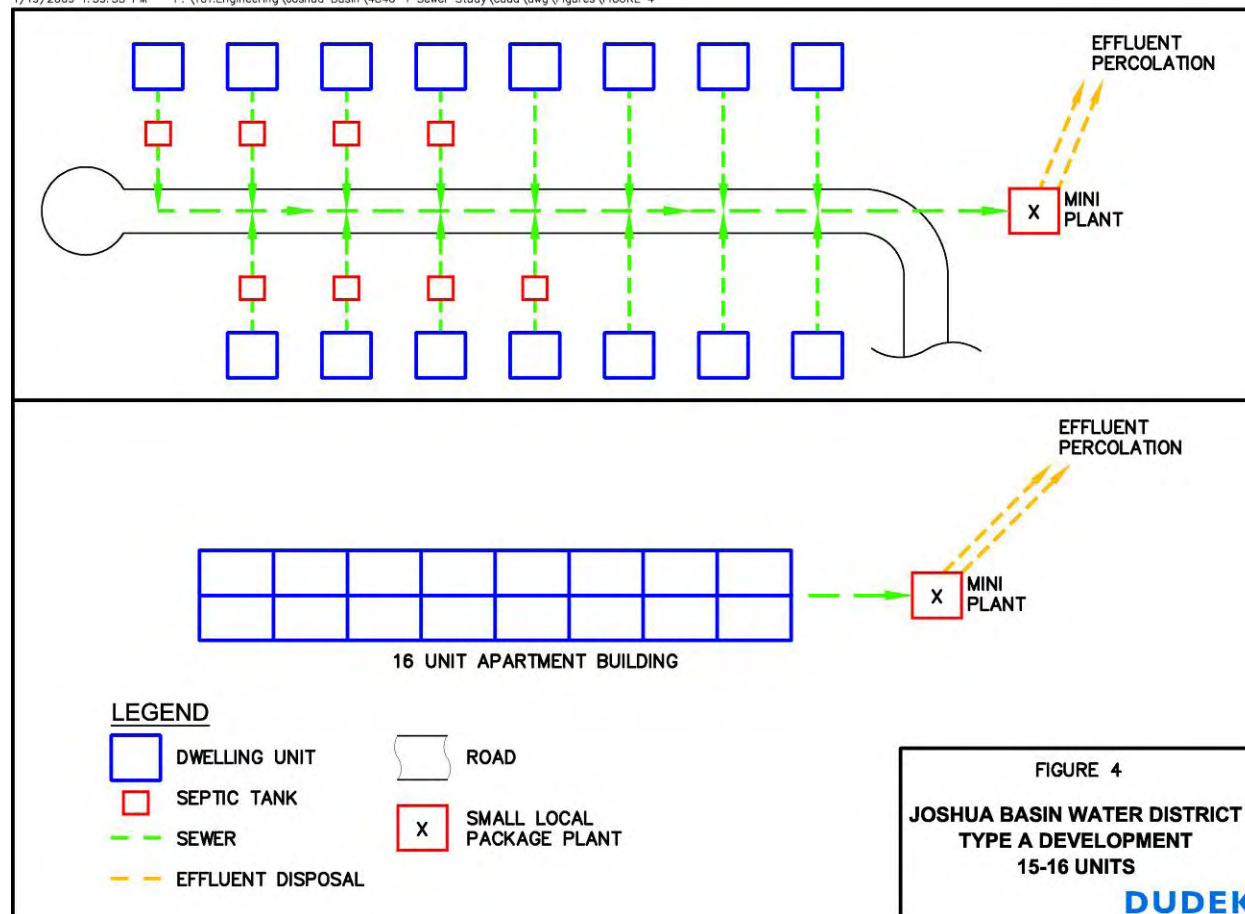


Figure 4 Type A Development 15-16 Units

Based on the conditions shown in Figure 4, the initial EDUs may be required to construct temporary septic systems. It is noted that the District will more likely require the developer to construct the collection and treatment system initially. The defining factor will be the ability of the small development to sustain treatment plant operations. Treatment facilities require a minimum amount of tributary wastewater to sustain operations. Depending on the speed of the development, the initial homes may not produce sufficient wastewater to support the treatment process. In this case, the initial homes would be placed on septic systems, with an agreement that all homes would be converted to a localized treatment facility prior to full occupancy of the development. The developer will be responsible for construction and operation of the treatment facility until such time as all homes are sold.

Once the development attains sufficient wastewater production, the developer will be required to install a sewer line and package wastewater treatment facility. The treatment facility will be required to meet the District’s treatment requirements at the time of construction. Treated effluent will be percolated into the ground using a small percolation pond, which will be provided by the developer with necessary security and safety facilities. Waste biosolids will be stored on-site in an aerated tank, and hauled away periodically.

Based on these assumptions, the Type A development of 15 homes, or 15 EDU's, will produce a total wastewater flow rate of 3,750 gpd. A package treatment plant for a flow rate of 4,000 gpd would be required, with an estimated cost of approximately \$90,000, or \$22 per gallon per day of treatment.

The critical threshold issue of these developments will be the initiation of treatment facility installation. For example, if one homeowner builds their house isolated from the other homes, that home would require and could realistically justify installation of an individual septic system. In the future, when additional homes are constructed, the District may require the installation of the collection and treatment facilities. At what point will the District require the original homeowner to connect to the collection system? This issue will be required to be addressed at the time of development approval – eliminating the later argument. Also, the developer will be required to accommodate these connections during design of the homes to facilitate the connection process – as the developer will not be allowed to occupy the remainder of the homes until the collection system and treatment systems are installed, connected and operational. However, if the development is a series of smaller single home developers, the District will be faced with the need to collect the funds from the individual home owners for subsequent installation of the needed facilities.

5.1.3 Medium Development (300 to 1,500 homes)

Medium developments are defined to exceed 300 homes, but not more than 1,500 homes. Figure 5 provides an illustration of several development concepts, including:

- A single package plant (X1) serving several early residential developments
- A single package plant (X2) serving a larger development within the same vicinity
- A clustered package plant involving a new package plant (X3) combined with relocation of both previously constructed package plans (X1 and X2)

It is noted that each subsequent treatment facility requires that the collection systems of the previously developed facilities be re-routed to the future treatment location. As such, evaluation of the overall collection and treatment system will be necessary to make certain that elevation is available to maintain gravity flow from home to treatment facility.

The general concept illustrated by the described sequence of construction can, and will be required to, be flexible based on the site specifics of each location. Ideally, each development will be guided by development approval requirements and the District's WTS to assure that development occurs such that appropriate gravity flow conditions are maintained.

The District will participate though the addition of trunk sewers between the various treatment sites, with pipelines becoming larger as development proceeds. This participation can be accomplished through direct construction by the District using collected fees for future wastewater system development, or through requirements for subsequent developers to provide the needed or upsized facilities.

Based on this level of development, treatment facilities with capacities of 100,000 gpd are projected to have a capital construction cost of approximately \$1,700,000, or \$17 per gallon treated.

1/19/2009 1:59:40 PM P:\101.Engineering\Joshua_Basin\4846-1 Sewer Study\cadd\dwg\Figures\Figure 5

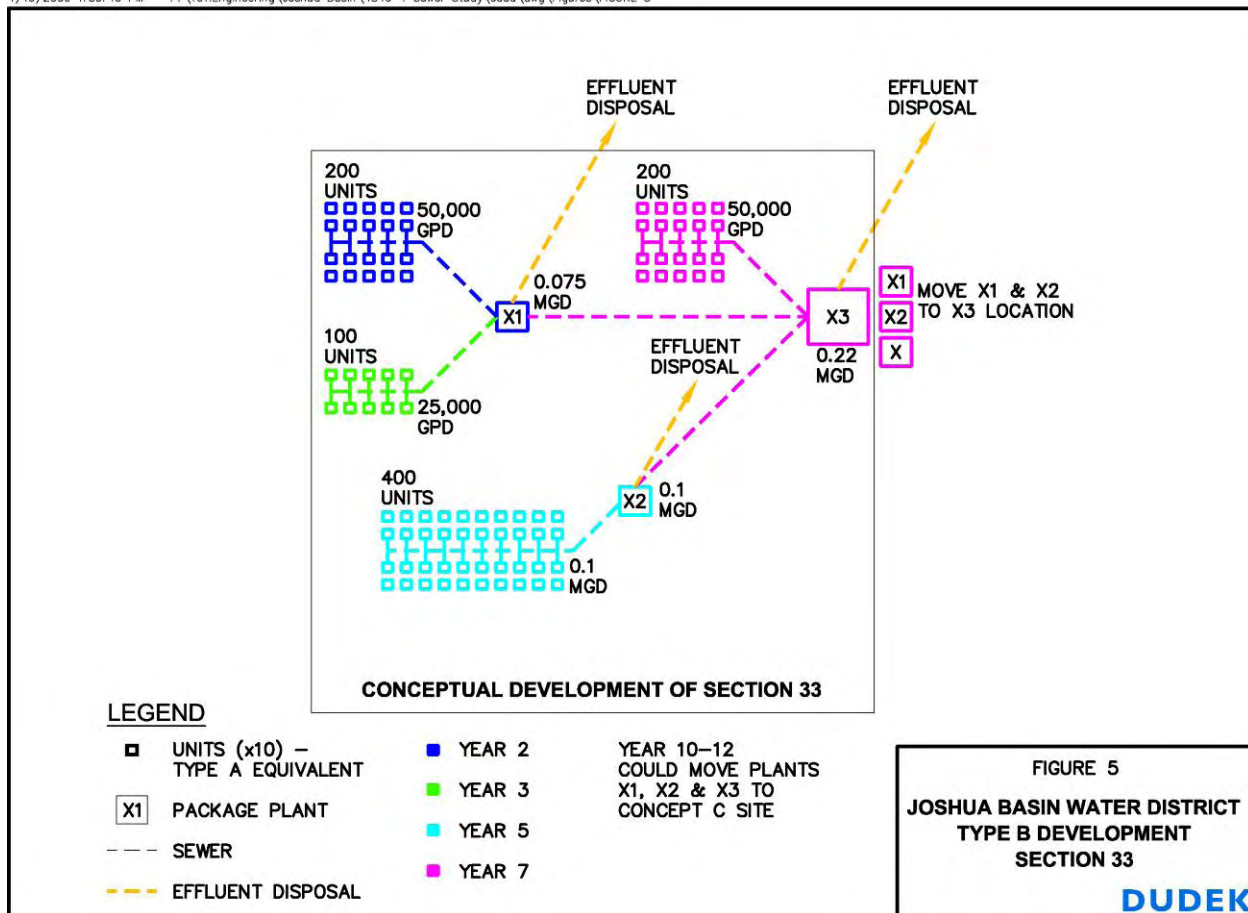


Figure 5 Type B Development Section 33

5.1.4 Large Developments (1,500 to 2,500 EDUs)

Depending on overall development pressure, the number of small to medium sized treatment facilities could become excessive. Yet, at this point in the District’s development, the need for a regional treatment facility may not have been established. Figure 6 illustrates a potential scenario under such a condition.

In this example, a single treatment facility may be serving the needs of the Section 33 development, along with other treatment plants operating at another location (TP2 on the figure). There may also be other treatment facilities serving various other locations throughout the District. Depending on development pressure, additional trunk sewers will be installed and treatment plants built and/or relocated, to reduce the overall number of treatment facilities. The District will be required to coordinate these activities with fee collection to assure that funding is maintained to accommodate the necessary facilities. In this manner, the overall number of treatment facilities will be controlled and District operational cost minimized.

It is noted, under the WTS plan, that a treatment facility will eventually be constructed on the site of the future regional treatment facility. As development progresses, the District will need to identify the location of the regional facility, and actively direct collection system construction toward the site. In this

manner, the long-term objective of the WTS is maintained. As the treatment facilities become larger in capacity, the cost of construction and operation will increase. Based on the discussions above, the treatment facilities will be approaching 220,000 gpd, with a construction cost of approximately \$3,500,000, or \$16 per gallon treated.

1/19/2009 1:59:43 PM P:\101.Engineering\Joshua Basin\4846-1 Sewer Study\cadd\dwg\Figures\FIGURE 6

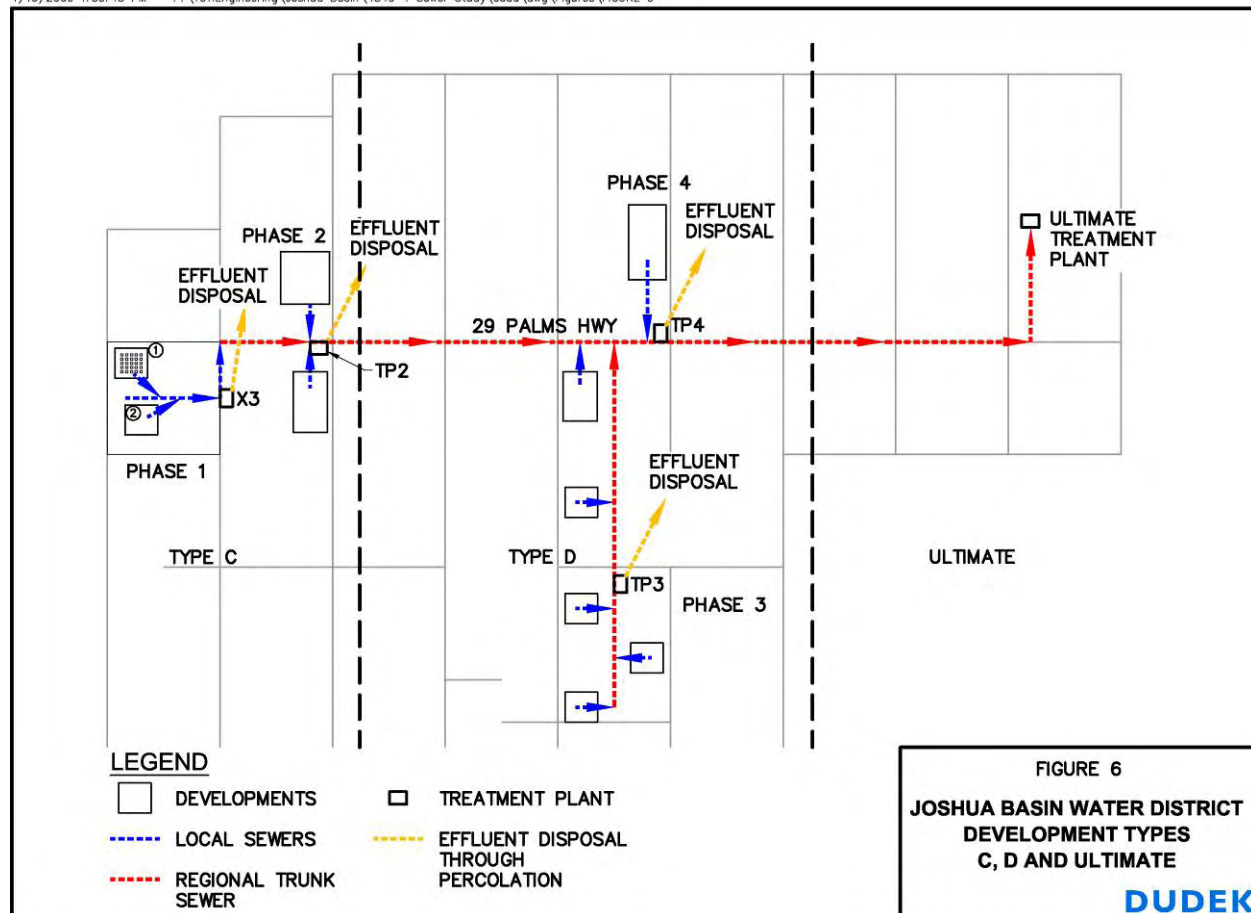


Figure 6 Development Types C, D and Ultimate

5.1.5 Regional Treatment (greater than 2,500 EDUs)

As the District continues to implement the WTS, development will continue to increase to a point when regional treatment will be economical and viable. Based on the WTS plan, the funding for construction of the regional plant will be collected prior to the need for such a facility. Furthermore, the regional treatment site will be identified, acquired, and a smaller treatment facility may be already operating on the regional treatment site.

The necessary wastewater collection system to transport wastewater to the regional treatment site should be substantially complete as a result of the previous phases of development, particularly if larger developments along the 29 Palms Highway alignment are realized. The District would construct the necessary additional conveyance pipelines to transport wastewater to the regional site.

Depending on the amount of wastewater transported to the regional site, the treatment facility could have a capacity of as much as 3,800,000 gpd. Based on these assumptions, the regional treatment plant will cost approximately \$42,000,000, or \$11 per gallon treated.

5.1.6 Summary of Treatment Thresholds

As previously noted, development pressure will determine the wastewater treatment requirements on a case by case basis. In addition, the development conditions will impact the wastewater treatment decision process. For example, if development progresses in smaller, geographically diverse tracts, the District will be required to evaluate the size and number of package treatment facilities it is managing. Minimizing the number of individual treatment plants will be beneficial from a cost and maintenance standpoint for the District. However, if a large development is proposed that facilitates construction of the regional collection and treatment facilities, the District will benefit through elimination of multiple package treatment plant construction. It is projected that development will likely progress at a slower rate, with larger developments built in the distant future. However, there is no way to fully predict which development schedule will occur. For purposes of planning, we have defined the following treatment thresholds (as discussed in previous sections):

Single Home Developers – Up to 15 EDUs
Small Developments – 15 to 300 EDUs
Medium Developments – 300 to 1,500 EDUs
Large Developments – 1,500 to 2,500 EDUs
Regional Facilities – Greater than 2,500 EDUs

The above thresholds represent the approximate levels at which wastewater treatment requirements will progress as the WTS is implemented. Treatment requirements will range from small local package treatment facilities to larger, clustered package treatment facilities to the establishment of a regional treatment facility. The following discussions summarize how these thresholds are to be used in the implementation of the WTS.

5.2 Strategic Plan Implementation Issues

It is important to reiterate that implementation of the WTS plan will require additional studies to be completed. The WTS is merely a strategic plan of how the District will pursue the transition from septic systems to localized and/or regional wastewater treatment. A wastewater master plan will be required to evaluate the overall location and alignment of wastewater facilities, allowing the District to manage the overall implementation process with certainty in the adequacy of installed facilities. The master planning process will also provide clarity with respect to where facilities will be required, how much those facilities will actually cost, and what fees will need to be collected to assure funding of the overall system. In addition, the District will require the development of a master plan to allow the opportunity to apply for various funding assistance, either in the form of grants or low interest loans.

5.2.1 Effluent, Biosolids and Siting Considerations

The concepts for accommodating the requirements of effluent and biosolids disposal have been presented previously in this report. Figure 7 provides an illustration of how a typical treatment plant site might be arranged. As stated previously, the developer will be required to provide the site and design of needed treatment facilities. However, the District will review and approve all facilities, consistent with its standards and WTS planning needs.

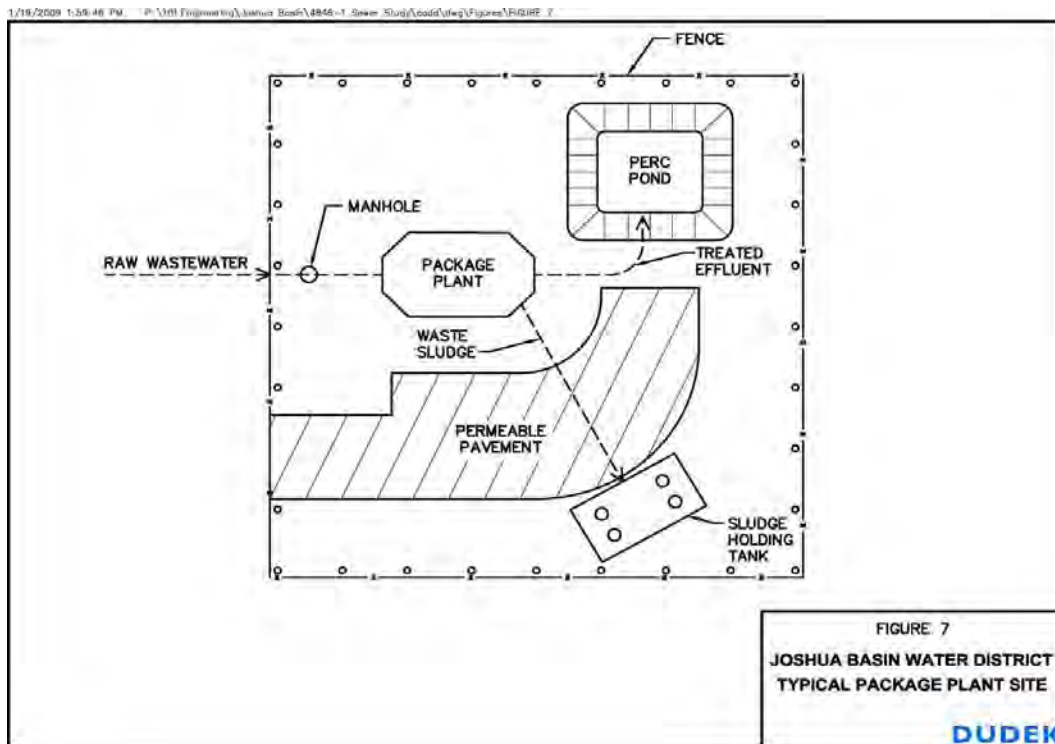


Figure 7 Typical Package Plant Site

A typical package treatment plant will be located on a secure site, with an appropriately sized and located percolation pond. Location of the treatment site may be as much dictated by the topography as by the percolation capacity of the site. The site will include waste sludge (or biosolids) holding facilities, with appropriate access for off-site hauling trucks. Treated effluent will flow to the unlined percolation pond, where it will percolate into the ground. Waste biosolids, stored in aerated on-site tanks, will be hauled away for disposal.

Of course, additional site specific requirements may be added based on the location and proximity of the site to local residents. The District will need to negotiate all site improvements with the developer to assure that all costs are borne by the appropriate developer.

5.2.2 Package Treatment Plant Relocation

The potential to relocate smaller treatment facilities is a significant cost-saving measure for the District. As stated previously, development will likely begin with smaller single family homes. These single developments will likely be allowed to continue to use individual septic systems where impact to the groundwater is determined to not be an issue. However, smaller developments of more than six homes may require the construction of a localized collection and treatment system. However, the District will not want a situation where a large number of these small treatment facilities are active at one time.

Relocation of existing treatment plants will allow the District to maintain control on the overall number and location of smaller treatment facilities. As areas become more developed, the smaller facilities can be relocated and clustered together to form larger, more cost effective treatment facilities. Of course,

package treatment facilities have a useful life, and that life expectancy will dictate the cost effectiveness of relocation. Each facility will require a site specific evaluation at the time of development to determine the appropriate course of action.

Figure 8 and Figure 9 illustrate the general concept of physically relocating a package treatment facility. Treatment of the wastewater tributary to the existing treatment facility must be maintained at all times. Figure 8 illustrates how the initial developments might progress. The initial developments will design and construct the necessary pipelines, manholes, and initial treatment facility.

1/19/2009 1:59:51 PM P:\101.Engineering\Joshua_Basin\4846-1_Sewer_Study\cadd\dwg\Figures\FIGURE_8

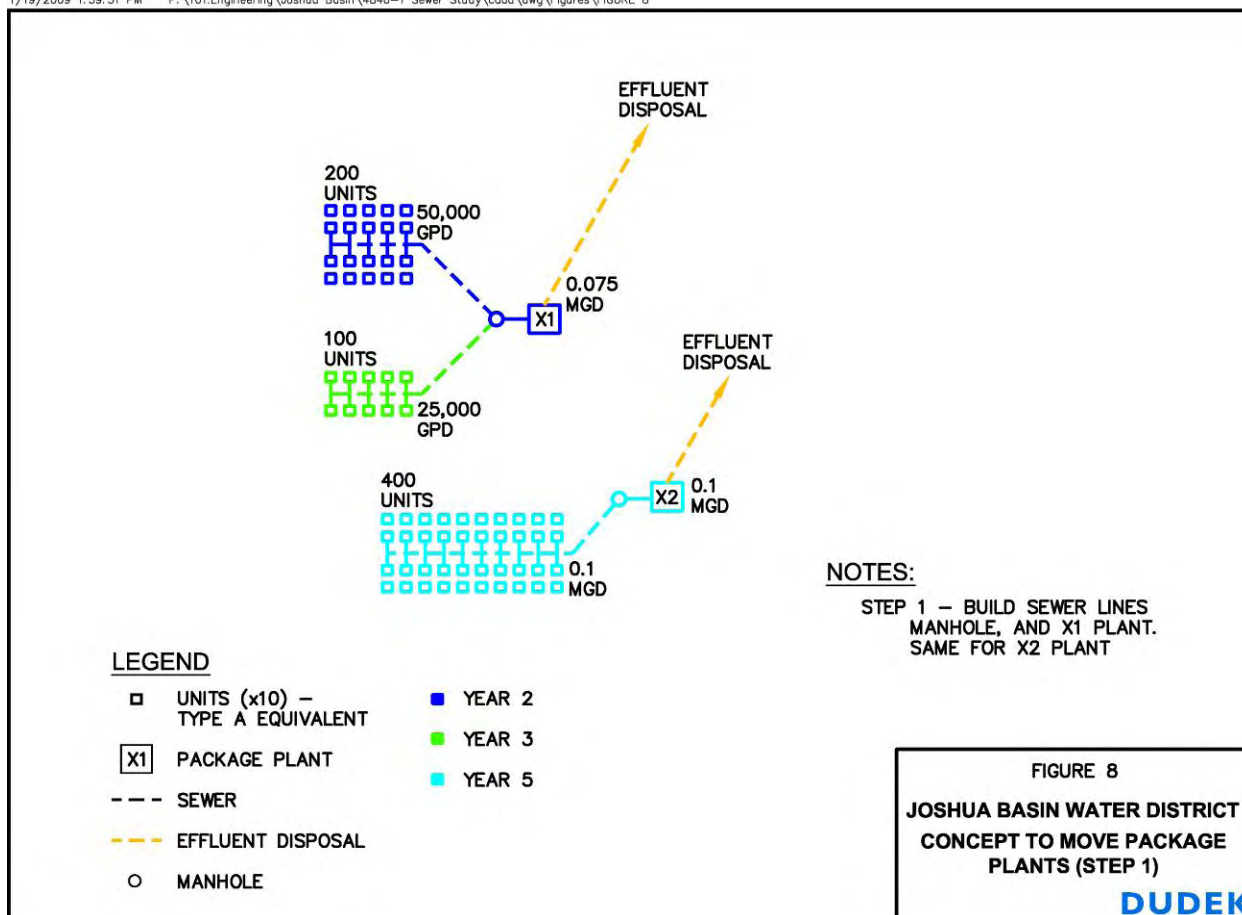


Figure 8 Concept to Move Package Plants (Step 1)

Figure 9 illustrates how the two existing treatment facilities might be combined and relocated to a third site, creating a larger facility serving a larger area. Application of this relocation methodology will limit the number of overall treatment facilities, lowering cost and operational considerations.

It is noted that the relocation scheme is only valid up to the point where the treatment plant size exceeds approximately 200,000 gpd. At that capacity, the Purestream BESST facilities are no longer cost effective, and Aero-Mod facilities are preferred. However, it may be possible to relocate several Purestream systems to a single site, and thereby forego the construction of the more permanent Aero-Mod facility. Actual conditions at the time of development will dictate the appropriate course of action. In the end, relocation of existing treatment facilities will be dependant on the remaining useful life of the existing equipment, the size of the development under consideration, and the time available for

construction. Any of these characteristics could result in the District making the decision that relocation of the existing facility is not appropriate, and that a new facility will be required. As stated previously, the developer will be burdened with the cost of design and construction of the appropriate facilities, based on the decision of the District.

1/19/2009 1:59:55 PM P:\101.Engineering\Joshua Basin\4846-1 Sewer Study\cadd\dwg\Figures\FIGURE 9

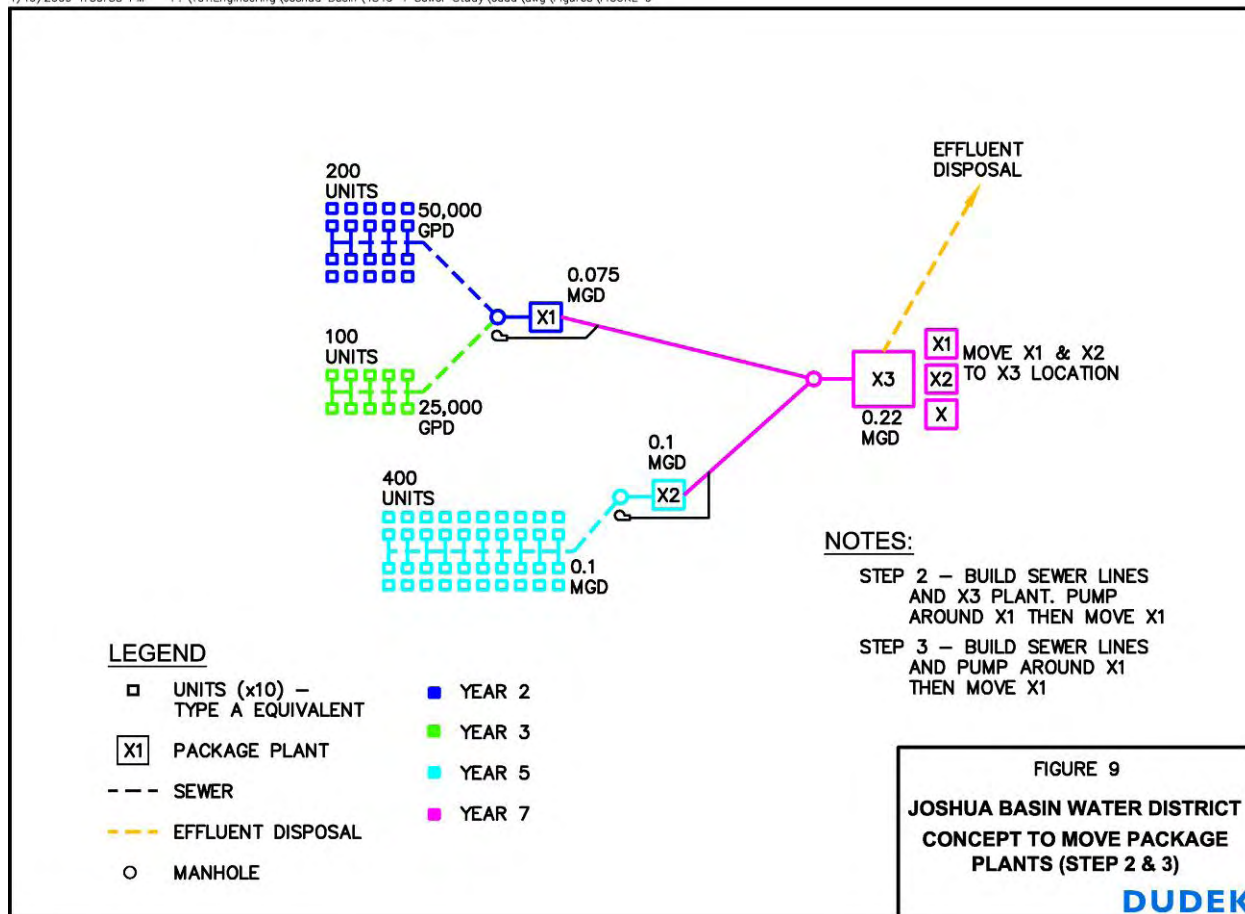


Figure 9 Concept to Move Package Plants (Step 2 & 3)

Section 6 Wastewater Facilities Costs

A primary objective of the WTS planning effort is the development of a sound financial plan that allows the District to successfully acquire the needed funding for near- and long-term maintenance of the plan. To identify the financial needs of the plan, it is necessary to project the approximate cost of the needed facilities over the WTS planning horizon. As such, planning-level cost opinions have been developed for a variety of needed collection system improvements, including gravity sewers, manholes, pump stations, package treatment plants, intermediate sized treatment plants, percolation ponds, and sludge holding tanks. Sizing of the overall wastewater collection and conveyance facilities were presented previously in Section 2, summarized into 15 drainage areas.

6.1 Collection Pipelines

Gravity collection systems were defined and presented in Section 2 of this report. The following discussions present the identified cost of those facilities, for subsequent use in the financial analyses of this study.

6.1.1 Cost Estimating Assumptions

The following assumptions were incorporated to facilitate the identification of future District collection and conveyance facilities:

- Preliminary cost opinions are developed based 2008 construction costs
- Gravity pipelines are estimated at a cost of \$12 per inch diameter per foot of pipeline
- Manhole are estimated at a cost of \$7,000 each
- Manholes are assumed to be required every 450 feet
- Design standards are typical of sewer construction for 2008
- Interceptor and trunk sewers are assumed to previously collected connection fees
- Local collection sewers with developments are paid for by developers

Identifying the alignment of collection pipelines within each Drainage area requires an assumed level of development density within each development. In Section 33 of Drainage Area 2, the proposed development of 2,700 homes per square mile is a density of 4.2 EDU per acre. Much of the proposed development in the Joshua Basin area is for a density of 3 to 10 EDU per acre. Application of development densities was presented in Section 2 of this report.

6.1.2 Collection System Costs

The interceptor and trunk sewer system presented in Figure 3 does not identify each of the individual sewers necessary for proper collection of wastewater within each Drainage area. For example, in Drainage Area 2, which is 1,952 acres in size, approximately 18,300 linear feet of the trunk sewer is located inside the Drainage area, and 3,500 linear feet is located on the northern boundary with Drainage Area 1. It is estimated that service to the entire Drainage Area will require installation of additional lengths of collection sewers. This additional sewer and manholes in Drainage Area 2 is estimated to cost approximately \$3,000,000. However, this cost is assumed to be borne entirely by the developers within that drainage area.

The construction cost estimate for the entire study area, necessary to serve all 15 Drainage Areas, in 2008 dollars is approximately \$25,900,000. This value is detailed by approximate apportionment to each drainage area in Table 5. Of this value, approximately \$8,500,000 is projected to be associated with construction of the main trunk interceptor within Twentynine Palms Highway.

As an example, the main trunk sewer cost for Drainage Area 2 is estimated to be approximately \$5,358,000. Therefore, the total sewer collection system cost in Drainage Area No. 2 would be approximately \$8,358,000 (adding the \$3,000,000 identified above). In addition, the cost of the 900,000 gpd of treatment capacity would increase the cost by approximately \$13,000,000. Dividing the total Drainage Area 2 cost of \$21,358,000 by the estimated development within Drainage Area No. 2, estimated to be 4,134 EDUs, results in a cost per EDU of approximately \$5,200.

Table 5 Interceptor and Trunk Sewer Cost by Drainage Basin

Drainage Basin	Construction Cost
1	\$ 1,194,000
2	\$ 5,358,000
3	\$ 5,180,000
4	\$ 3,134,000
5	\$ 877,000
6	\$ 0
7	\$ 2,852,000
8	\$ 833,000
9	\$ 3,169,000
10	\$ 1,368,000
11	\$ 409,000
12	\$ 0
13	\$ 513,000
14	\$ 838,000
15	\$ 214,000
Sub Total	\$ 25,939,000

6.2 Effluent Disposal and Biosolids Handling

Costs for effluent disposal consist of construction of unlined percolation ponds, corresponding to the individual treatment facilities capacity. As can be determined, the infiltration rate for these facilities will greatly impact their size and cost. For purposes of this evaluation, we have assumed an infiltration rate of 1.0 feet per day. For percolation of treated secondary effluent, there is the potential for partial blinding of the soil surface. The following provides estimated area and cost for needed percolation facilities based on the anticipated treatment facility capacities:

- A 20,000 gpd treatment facility will require a 750 square-foot percolation basin. This basin would be approximately 27 linear feet square, and is estimated to have a construction cost of approximately \$15,000.
- A 200,000 gpd treatment facility will require a percolation basin size of 7,500 square feet, or 90 linear feet square. The estimated construction cost of this earthen basin is approximately \$90,000.

As for percolation basins, biosolids handling is required at each treatment facility. As stated previously, it is assumed that biosolids will be stored on site and truck to ultimate disposal. The following provide the estimated costs of these facilities:

- Biosolids handling at a 20,000 gpd facility will required an aerated storage tank size of 25,000 gallons. A tank of that capacity, with appropriate aeration systems, is estimated to have a construction cost of approximately \$40,000.
- For a 200,000 gpd facility, the required storage system will be approximately 150,000 gallons. An aerated storage tank of that size is estimated to have a construction cost of approximately \$210,000.

6.3 Treatment Facility Costs

In addition to the costs associated with collection, disposal and solids handling, the largest cost will involve the actual treatment of wastewater. The following delineate the costs for various capacities of required treatment for the anticipated flows.

6.3.1 Treatment Facility Cost Assumptions

The cost for various package treatment systems were presented in Section 4 for both 20,000 gpd and 200,000 gpd, as well as for the anticipated regional treatment requirement. The capital cost for a typical 20,000 gpd package plant, using the Purestream BESST system, is approximately \$430,000. The anticipated annual O&M cost is projected to be approximately \$59,500 per year. The projected capital cost for a typical 200,000 gpd treatment facility, using the Aero-Mod process, is approximately \$3,460,000, with an annual O&M cost of approximately \$212,000 per year. As presented previously, the actual cost will be determined by the develop-specific conditions, and will be borne by the developer in each circumstance.

6.4 Regional Conveyance Systems

Regional conveyance systems are defined to comprise those facilities that will be needed to connect the various package treatment systems, over time, into a larger, regional collection system. These facilities will be developed over a long period of time, depending on development pressure. The development of an overall wastewater master plan will be needed to accurately predict facilities to be constructed. For this reason, costs for these facilities are not identified at this time. Instead, the cost of anticipated ultimate conveyance system has been identified, as discussed in Section 6.1 above.

6.5 Clustered and Regional Treatment Facilities

Actual costs for these facilities will be based on the ability and opportunity for clustering of existing treatment facilities for cost and operational savings. Site specific conditions will dictate the ability for clustered treatment facilities. For purposes of comparison, the following treatment levels have been developed:

- The preliminary capital cost for a 200,000 gpd treatment facility is estimate to be approximately \$3,460,000, with an annual O&M cost of approximately \$212,000 per year.
- The preliminary capital cost of a 600,000 gpd treatment facility is estimate to be approximately \$9,000,000, with an annual O&M cost of approximately \$490,000 per year.
- The preliminary capital cost of a 3.8 mgd extended aeration treatment facility is estimated to be approximately \$42,000,000, with an annual O&M cost of approximately \$1,300,000 per year.
- The preliminary capital cost of a 3.8 mgd MBR treatment facility is estimated to be approximately \$ 65,000,000, with an annual O&M cost of approximately \$2,500,000 per year.

Section 7 Financial Alternatives for WTS Implementation

7.1 Financial Alternatives

The following discussions identify options available to the Joshua Basin Water District for financing the construction and ongoing maintenance of its future wastewater collection and treatment facilities. This section provides descriptions of the most viable financing options, service these financing options can

provide, the relevant state statues involved, how the financing options are implemented, and the advantages and disadvantages of each option. The financing options considered include Assessment Districts, Community Facilities Districts (CFDs - otherwise known as “Mello-Roos Districts”), Connection Fees, Parcel Taxes, Sewer Rates, Revenue Bonds, Certificates of Participation (COPs), and State and Federal Financial Assistance.

7.1.1 Assessment Districts

Assessment Districts are special benefit districts that are formed to pay for certain public facilities, such as water distribution and treatment, and wastewater collection, transmission and treatment. An assessment lien is attached against the properties within the district based upon the benefit that each property receives from those public facilities. The majority of Assessment Districts for public facilities are formed under the Municipal Improvement Act of 1913. If bonds are issued in conjunction with the Assessment District, they are usually issued under the Improvement Bond Act of 1915. To form an Assessment District, an Engineer’s Report must be prepared, assessment ballots must be mailed out to all property owners within the district, and the ballots must be tabulated. The Assessment District is approved if 50% or greater of the ballots are in favor of the assessment, with the ballots being weighted according to the proportional financial obligation of the affected property.

An advantage of forming an Assessment District is that the costs of the public facilities can be financed over an extended period of time, typically 30 years, using tax-exempt bonds with relatively lower interest rates than standard bonds. Since the costs of the public facilities are financed, the developer’s costs are lower and theoretically these savings could result in a lower purchase price for the homes. One of the disadvantages in forming an Assessment District is that the district is subject to the benefit nexus requirements of Articles XIII C and XIII D of the California Constitution (Proposition 218). Each property can only be assessed for the special benefit that it receives from the public facilities. An Engineer’s Report must be prepared that develops an assessment methodology that spreads the costs of the public facilities to each property based upon the special benefit that the property receives. Only special benefits are assessable, and the agency must separate the general benefits from the special benefits conferred upon the property.

If bonds are issued, that creates some additional duties. The Agency would be responsible for annual disclosure requirements regarding the district and the bonds. Additionally, the Agency would be responsible for managing delinquency issues within the district. If delinquencies become extreme, then bond delinquency covenants may call for the Agency to proceed with foreclosure proceedings to cure the delinquencies. Agencies frequently hire third party consultants to handle these various additional duties. In any case, the bonds are limited obligations, and the Agency is not directly liable for payment of debt service.

7.1.2 Community Facilities Districts

A community facilities district (“CFD”) is a financing tool that may be used to pay for the cost of, among other things, public facilities with a useful life greater than five years. A CFD imposes a “special tax” upon a property, as opposed to an assessment lien imposed by an assessment district. Bonds may be issued in conjunction with a CFD.

Community Facilities Districts are authorized to be formed under the Mello-Roos Community Facilities Act of 1982 (the “Act”). The Act was passed in order to give agencies an alternative financing tool to fund certain public facilities and/or services. The Act allows for the formation of a CFD in order to finance the purchase, construction, expansion, improvement, or rehabilitation of any real property with an estimated useful life of five years or longer, or may finance the planning and design work related to such real property. The CFD can also be used to pay for incidental expenses such as costs associated with the creation of the district, issuance of bonds, determination of the amount of taxes, and collection of taxes. Bonds are usually issued in conjunction with a public facility CFD in order to pay for the public facility improvements.

In order to provide funds to make the bond payments and pay for incidental expenses, a special tax lien is placed upon the taxable properties within the district. A document called the Rate and Method of Apportionment (the “RMA”) dictates which properties are taxable and specifies how the annual special tax requirement (the amount necessary to service the bond payments and pay for incidental expenses) is spread among taxable property within the district. The RMA specifies the annual maximum special tax rates for each class of property, as well as the method of apportionment used to allocate the special tax requirement among the different property classes.

However, the Agency would have some constraints in setting the maximum special tax rates. Bond underwriting requirements, and the Act, state that revenues from special taxes must be sufficient to provide at least 110% coverage for debt service requirements, throughout the life of the bonds. That is, the maximum special tax rates and the method of apportionment must allow the issuer the ability to collect at least 10% more than is necessary for the bond payments and the incidental expenses.

The Agency would receive the proceeds from the sale of the bonds, and would be able to use the proceeds to pay for public facilities. A Notice of Special Tax Lien would be filed with the County Recorder, placing a special tax lien upon the taxable property within the district. Each fiscal year, the special tax requirement for the district would be determined and the amount of special taxes to be levied on each class of property would have to be calculated. The special taxes would be collected by the County on the property tax bills, and the proceeds of these taxes would be delivered to the Agency. The Agency would then in turn use the special tax proceeds to pay for the debt service on the bonds and to pay for the incidental expenses associated with the district.

7.1.3 Connection Fees

The use of development impact fees is a common method of ensuring that new development pays for the costs of its needed infrastructure. Sewer connection fees are development impact fees that are charged to new development in order to mitigate the costs to the Agency for the new development’s wastewater treatment capital needs. Sewer connection fees are paid by developers typically when a building permit is issued. These fees are authorized by the Mitigation Fee Act, contained in Government Code Sections 66000 through 66025.

Sewer connection fees only need a majority vote of the legislative body for adoption. However, the Mitigation Fee Act requires five statutory findings in order for the Agency to adopt the fees. The five statutory findings are listed below:

- Identify the purpose of the fee.

- Identify the use to which the fee is to be put.
- Determine how there is a reasonable relationship between the fee's use and the type of development project on which the fee is imposed.
- Determine how there is a reasonable relationship between the need for the public facility and the type of development project on which the fee is imposed.
- Determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility attributable to the development on which the fee is imposed.

The District may levy connection fees on developers for the construction of the treatment plants and related capital facilities that serve the new development. They are typically not allowed for maintenance and operation of the facilities although there is one exception to this rule. A connection fee may be utilized for operations and maintenance of wastewater facilities if the improvement is to serve only the specific development on which the fee is imposed and the improvement serves 19 or few lots or units. The caveat with this approach is that the District would have to make findings, citing substantial evidence that it is infeasible or impractical to form an assessment district or to annex.

7.1.4 Parcel Taxes

A parcel tax is a special tax that may be passed for a wide range of general services or may be specific to public projects such as wastewater treatment facilities. Similar to a CFD, a parcel tax is considered a special tax, as opposed to an assessment lien associated with an Assessment District. Revenues generated from the tax can be used for any District purpose, capital, operating or debt service, as specified in the ballot language for the tax. Registered voters within District boundaries would be eligible to vote on the tax measure.

Parcel taxes are authorized under Government Code Section 37100.5. The taxes are primarily levied on a flat per-parcel rate (thus the term "parcel tax"). However, a parcel tax can also be levied on a variable rate based upon land use, size of the parcel, or the number of units on the parcel. Parcel taxes may be excise taxes that are based on the use or availability of facilities and/or services. Parcel taxes may also be subject to a proportionality requirement. This concept requires a tax to be based upon a measure that reflects the proportion of the taxed activity that is actually carried on within the jurisdiction. A parcel tax can be levied for a predetermined number of years, although it is possible to adopt a permanent parcel tax.

7.1.5 Sewer Rates

Sewer rates are fees that could be charged by the District for wastewater utility services. They are charges that are paid on an ongoing basis by the users of the Districts wastewater systems. Most costs associated with the operation of the wastewater system can be factored into the sewer rates, including capital expenditure costs, operation & maintenance costs, and debt servicing. These fees or rates are supported by a cost of service study showing the revenue requirement that will be met through the collection of the fees as well as the method for reasonably apportioning the revenue to customers.

Fees for sewer service in California are considered to be property-related and therefore the substantive and procedural requirements of Article XIII D of the California Constitution (Proposition 218). For the District to impose new or increased sewer rates to finance wastewater operations and capital needs, the Proposition 218 noticing and public hearing requirement would be mandatory. Notices of the

proposed new rates or rate increase must be sent to all affected customers. The notice must also announce the date, time and place for a public hearing regarding the rate increase. If more than 50% of the affected customers protest the rate increase *in writing*, the increase must be abandoned. If there is not a majority protest, the District would be able to adopt the new rates. If the sewer rates were designed to pay all or a portion of revenue bonds, the procedural requirements of the Revenue Bond Law of 1941 would likely apply as well.

7.1.6 Revenue Bonds

Revenue bonds, issued pursuant to the Sewer Revenue Bond Act of 1933 (Health and Safety Code Section 4950 et seq) or the Revenue Bond Law of 1941 (Government Code Section 54300 et seq), are issued to acquire, construct or expand public projects, including wastewater systems, for which fees, charges or admissions are charged. In the case of the District, the sources of bond repayment could be wastewater service charges, connection fees, leases, rents and standby charges identified for purposes of debt service related to the financed facilities. Because the debt service is directly paid from the income generated by the financed facilities, such debt is considered self liquidating and generally does not constitute debt of the District. To authorize a revenue bond issue, the District would be required to pass a resolution or ordinance and hold a public hearing to set rate or fees to support the debt service. Additionally, many types of revenue bonds require majority voter approval to authorize the size and purpose of the bond issue. Voter approval is not required if statutes specifically permit, or in certain cases if bonds are sold through joint powers authorities. It is our understanding that the District would require voter approval prior to issuing debt under either statutory authority.

7.1.7 Certificates of Participation (COPs)

This financing technique provides long-term financing through a lease or installment sale agreement that does not require voter approval. COP financing is based upon the same theory as non-profit corporation financing, which is, providing long-term financing through a long-term lease arrangement. COPs represent a proportionate interest of the holder's right to receive a portion of each payment made by the public agency (District) under the installment sale agreement or lease between the District and a third party.

The issuance of COPs is not subject to the statutory requirements applicable to the issuance of revenue bonds of a non-profit corporation. COPs are not considered debt under the California Constitution and voter approval is not required as may be the case with revenue bonds. The project and site are leased to the obligator and, in exchange for the right to use the project and the site, the obligator makes lease payments to a lessor. Bonds are payable solely from these payments made by the obligator. Similar to revenue bonds, reserves are typically required with COPs and may take the form of a reserve fund account. Reserves are typically required with COPs and may take the form of a reserve fund account.

7.1.7 State and Federal Financial Assistance

There are several sources of state and federal financial assistance for wastewater system design and construction. The two more popular options available to the District are: 1) State Revolving Fund Loans and 2) USDA Rural Utilities Service Loans and Grants.

7.1.7.1 State Revolving Fund Loans

The Clean Water State Revolving Fund (SRF) programs operate like banks. Federal and state contributions are used to set up the programs. These assets, in turn, are used to make low interest loans for projects such as wastewater collection and treatment facilities. Funds are then repaid to the SRF over terms as long as 20 years. Repaid funds are recycled to fund other water quality projects. These SRF resources can help supplement the limited financial resources currently available for decentralized treatment systems. The sources of repayment by the District would need to be identified prior to application. Such sources may include District property tax revenue, sewer rates, assessment or tax funds, and connection fees.

7.1.7.2 USDA Rural Utilities Service

USDA Rural Utilities Service Water and Wastewater Disposal Loans and Grants are available to develop water and wastewater disposal systems in rural areas and towns with a population of less than 10,000. The grant funds are available to reduce water and waste disposal costs to a reasonable level for rural users. Grants may be made for up to 75 percent of eligible project costs in some cases. The Rural Utilities Service also guarantees water and waste disposal loans made by banks and other eligible lenders. The facilities financed must be owned and controlled by the borrower/grantee. Financed decentralized systems within the District would have to be owned and managed by the RUS borrower/grantee.

7.2 Comparative Analysis of Financial Alternatives

Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
<p align="center">Special Assessments</p>	<p>A benefit assessment imposed on real property for financing capital facilities and operations and maintenance of wastewater systems that directly benefits that property.</p>	<p>Pro</p> <ul style="list-style-type: none"> • Flexible financing mechanism capable of funding wastewater capital and O&M needs • Economic efficiency (only those who benefit pay) • Developers more motivated to develop projects with assessment district formed • Simple majority vote required rather than super-majority (2/3) • Assessment bonds are not a financial obligation of the District <p>Con</p> <ul style="list-style-type: none"> • Must conduct benefit finding test and prepare Engineer’s report • Must go through Proposition 218 noticing and balloting procedure (easier to do when one property owner is single voter) • Potential adverse property owner reaction to an assessment lien • Lien could impact future value or ability to resell improved property • Ongoing administration of assessment district • Cash flow governed by County tax reimbursements to JBWD 	<p>Bond proceeds and annual assessments can only be used for capital and O&M needs related to wastewater systems and administration of assessment district. Assessments appear on property owners’ tax bill.</p>	<p>Proposition 218 noticing and balloting requirements. Majority protest procedure weighted by the dollar amount of the ballots cast. County Registrar of Voters is not required to conduct balloting procedure.</p>

Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
<p style="text-align: center;">CFDs (“Mello Roos”)</p>	<p>A special tax district that may be used to pay for the cost of wastewater facilities with a useful life greater than five years. Bonds may be issued in conjunction with a CFD.</p>	<p>Pro</p> <ul style="list-style-type: none"> • Flexible financing mechanism capable of funding wastewater capital needs • No benefit nexus requirements • Greater flexibility than assessment district in annexing land to CFD in the future as more users come on line to the system(s) • New development pays its fair share • Developers more motivated to develop projects with CFD formed • CFD bonds are not a financial obligation of the JBWD <p>Con</p> <ul style="list-style-type: none"> • Can only fund wastewater capital needs, not O&M • Special election procedure • Higher voter threshold (2/3 vote of registered voters within CFD or landowners if less than 12 registered voters) • Potential adverse property owner reaction to a special tax • Ongoing administration of CFD and related bonds • Cash flow governed by County tax reimbursements to JBWD 	<p>Bond proceeds and annual tax payments can only be used for capital needs.</p>	<p>Special election procedures can be held at any time during the year. Registered voter vote or landowner vote is less than 12 registered voters within CFD boundaries. County Registrar of Voters is not required to conduct election.</p>

Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
<p align="center">Connection Fees</p>	<p>Sewer connection fees utilized to fund the cost of wastewater system design and construction. Fees are charged to new development for its fair share of costs associated with wastewater collection and treatment facilities.</p>	<p>Pro</p> <ul style="list-style-type: none"> • “Growth pays for growth” • Fee is paid upfront by developer • “Pay as you go” financing often more desirable than issuing long-term debt <p>Con</p> <ul style="list-style-type: none"> • A clear and defensible nexus must be determined to implement fees • Can only pay for capital not O&M • Annual administration and accounting of fees • Can be politically-charged within the development community • Risk of development slowdown which will reduce fee revenues 	<p>Fee revenues can only be utilized for capital needs. Fee revenues must be accounted for annually and spent on identified facilities within 5 years; however, some latitude does exist in this requirement.</p>	<p>No voter approval necessary. Must go through legislative body-conducted public hearing. 60-day protest period must transpire before implementing and collecting fees.</p>
Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
<p align="center">Parcel Taxes</p>	<p>Special non ad valorem tax on parcels of property generally based on either a flat per-parcel rate or a variable rate.</p>	<p>Pro</p> <ul style="list-style-type: none"> • No benefit nexus requirements • Often are passed successfully because they are tied to specific purposes • Can fund capital, O&M and debt service needs <p>Con</p> <ul style="list-style-type: none"> • Super-majority approval requirement (2/3 of registered votes in JBWD boundaries) • Vote can only occur on certain dates in a year • Cash flow restricted to County disbursement of taxes • Special election can be costly 	<p>Parcel tax revenues can only be allocated to specific purposes identified in ballot materials.</p>	<p>Registered voter approval process conducted through the County Registrar of Voters. Special election can be costly to the District.</p>

Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
<p>Sewer Rates</p>	<p>A property-related charge imposed on a parcel or upon a person as an incident of property ownership for wastewater service</p>	<p>Pro</p> <ul style="list-style-type: none"> • Can fund capital, O&M and debt service needs • Regular cash flow if billed on a regular basis • No voter approval requirement <p>Con</p> <ul style="list-style-type: none"> • Strict cost of service analysis must be performed • Mailed notice and public hearing requirement with majority protest component • Cash flow restricted to County disbursement of rate revenue if charge placed on County tax rolls 	<p>Use of funds must be specified in cost of service report and Proposition 218 notices.</p>	<p>Mailed notices must go to each property owner and/or ratepayer affected by new or increased sewer rate. Public hearing must be conducted with JBWD Board no earlier than 45 days after notices mailed. Majority written protest requirement.</p>
Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
<p>Revenue Bonds</p>	<p>Bonds issued to design and construct capital facilities secured through revenue sources identified by the District, typically user charges.</p>	<p>Pro</p> <ul style="list-style-type: none"> • Depending on revenue stream, significant capital can be raised to construct wastewater systems • Longer term of maturity for bonds (30 years) than low-interest SRF loans <p>Con</p> <ul style="list-style-type: none"> • Likely voter approval requirement • Cannot fund O&M requirements • Debt coverage ratios must be adequate to issue bonds • Must identify stable revenue stream to pay annual debt service 	<p>Bond proceeds can only be utilized for wastewater capital projects identified in bond covenants. Debt coverage ratios and other covenants must be met.</p>	<p>Public hearing process with District Board. Voter approval likely.</p>

Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
Certificates of Participation	A financing technique that provides long-term financing through a lease or installment sale agreement.	Pro <ul style="list-style-type: none"> Flexible financing mechanism that does not incur bonded indebtedness for the District No voter approval requirement Con <ul style="list-style-type: none"> Can be complex to set up financing framework Cannot fund O&M requirements Debt coverage ratios must be adequate to issue COPs 	Bond proceeds can only be utilized for wastewater capital projects identified in bond covenants. Debt coverage ratios and other covenants must be met.	District Board approval required. No voter approval requirement.
Funding Option	Description	Pros/Cons	Funding Restrictions	Approval Procedure
State and Federal Financial Assistance	Grants and low-interest loans made available to agencies through a competitive process for wastewater system design and construction.	Pro <ul style="list-style-type: none"> Low interest loans Provides financial bridge for projects that are close to being viable Con <ul style="list-style-type: none"> Risk associated with loans for projects Competitive process for loan and grant assistance CA budget crisis may restrict amount of funds available Shorter term (20 years) than other forms of debt financing Grants can only cover a portion of eligible costs 	Funds can only be used for capital facilities. Grants can only cover up to 75 percent of eligible facility costs. For low-interest loans, sufficient revenue sources must be identified to repay loans.	No voter approval required. District must go through competitive application process.

7.3 Annual Cost Considerations

Development of a long-range financial plan makes use of hypothetical scenarios, defining a range of options to meet the needs of the District as it grows. This approach is challenging, as development activity and related infrastructure requirements are difficult to predict when the planning horizon extends beyond five years. Future planning is particularly difficult for the District as it attempts to project development activity throughout the study area boundary, along with related wastewater collection and treatment facility needs and regulations.

For this analysis, three recommended financial mechanisms are defined for capital and O&M needs related to wastewater collection, treatment facilities and services. The three financing alternatives include Connection Fees, Community Facilities Districts, and Sewer Service Charges. These mechanisms are used concurrently at the time of development, or can be adopted separately depending

on the development type. This report serves as the nexus study analysis for adoption of connection fees. This report does not serve as a Special Tax Report for CFD formation, nor does it serve as a basis for setting Sewer Service Charges. It is recommended that separate reports for these mechanisms be developed at the time of development to ensure that the report accurately assesses the amount of funding needed and the number of development units, or EDUs, that will be created in each development. This approach assures the most technically defensible reporting and justification for each funding mechanism.

7.3.1 Connection Fee Analysis

Utility connection fees are suggested to finance the estimated costs associated with wastewater collection and treatment facility construction. Connection fees, however, cannot be used to fund the annual operations and maintenance costs of these facilities. To fund the O&M costs, the District will need to impose sewer rates - to be billed regularly to the property owner/ratepayer of each account within a particular development.

This approach centers on the costs associated with the assumed future connection to a larger, regional collection and treatment system. Should the regional treatment facilities not be constructed within the useful life of a single developments package treatment facility, the connection fee revenue collected would be used for replacement of that package treatment plant. If the connection fee funds are not sufficient to finance the entire package plant, the District will use a CFD, formed at the time the development project is constructed, to fund the additional revenue needed. This arrangement should be noted in the accompanying Special Tax Report for CFD formation.

The primary policy objective of the District's connection fee program is to assure that new users and/or new development pays their fair share of the capital costs associated with demands on the wastewater collection and treatment system. To fulfill this objective, the District will review and update its connection fee schedule and charge periodically to incorporate the best available information at the time.

Connection fees are one-time fees, typically paid when applying for new or increased service, and are imposed on development projects by local agencies. To guide the widespread imposition of such charges, the State Legislature adopted the Mitigation Fee Act ("Act") with Assembly Bill 1600 in 1987 and subsequent amendments. The Act, contained in California Government Code (beginning with Section 66000), establishes requirements on local agencies for the imposition and administration of fee and charge programs. The Act requires local agencies to document five findings when adopting a fee. The five findings in the Act required for adoption of the maximum justified fees documented in this report are: 1) Purpose of fee, 2) Use of fee revenues, 3) Benefit relationship, 4) Burden relationship, and 5) Proportionality. These findings are discussed below and supported throughout this report.

7.3.1.1 Purpose of Fee

- ◆ *Identify the purpose of the fee (§66001(a)(1) of the Act).*

It is the expressed desire that new users and/or new development not burden existing users with the cost of public facilities required to accommodate growth. The purpose of a Connection Fee, as documented by this Report, is to implement a system whereby a funding source is developed from new

users for needed infrastructure. The exaction of the fee advances a legitimate interest by enabling the District to meet the wastewater collection and treatment needs of new users.

7.3.1.2 Use of Fee Revenues

- ◆ *Identify the use to which the fees will be put. If the use is financing facilities, the facilities shall be identified. That identification may, but need not, be made by reference to a capital improvement plan as specified in §65403 or §66002, may be made in applicable general or specific plan requirements, or may be made in other public documents that identify the facilities for which the fees are charged (§66001(a)(2) of the Act).*

The Connection Fee, as documented by this Report, will be used to create new capacity for wastewater collection and treatment as development occurs within the defined service area. Collected revenues will then be used by the District for capital investments resulting from new development for new wastewater collection and treatment facilities, to upgrade existing facilities, or for other capital infrastructure costs to keep the system operating at acceptable levels.

7.3.1.3 Benefit Relationship

- ◆ *Determine the reasonable relationship between the fees' use and the type of development project on which the fees are imposed (§66001(a)(3) of the Act).*

The District's new collection and treatment facilities establish a district-wide network of service accessible to the buildings and other facilities resulting from new users and/or new development. Fee revenues will be used to develop new wastewater facilities, which will benefit those new users. Thus, there is a reasonable relationship between the use of fee revenues and the types of new users or new development that will pay these charges.

7.3.1.4 Burden Relationship

- ◆ *Determine the reasonable relationship between the need for the public facilities and the types of development on which the fees are imposed (§66001(a)(4) of the Act).*

The need for the new wastewater facilities is based on the cumulative demand for wastewater collection and treatment imposed on the District based on the estimated wastewater flows within each proposed development project. Thus, there is a reasonable relationship based on sound engineering principles for the charges imposed.

7.3.1.5 Proportionality

- ◆ *Determine how there is a reasonable relationship between the fees amount and the cost of the facilities or portion of the facilities attributable to the development on which the fee is imposed (§66001(b) of the Act).*

This reasonable relationship between the Connection Fee, for a specific development project, and the cost of the facilities, attributable to wastewater demand resulting from that development project, will reflect the estimated system capacity demand of that project. The total charge for a specific project is

based on the project’s projected use of wastewater system capacity. The schedule of charges converts the estimated capacity that a development project will use in the system into a charge based on the wastewater flow generated by that project. Thus, the schedule of charges assures a reasonable relationship between the fee for a specific development project and the cost of the facilities associated with demand resulting from that development project.

7.3.2 Connection Fee Quantification

The table below presents the unit cost per gallon per day (gpd) of estimated wastewater flow (cost per capacity demand), which is used as the basis of determining the connection fee. Using conservative estimates defined in previous sections of this report for construction costs of the regional treatment facility (\$65 million for MBR treatment) and the collection system (\$26 million) and the projected capacity needs at build out within the study area boundary, the unit cost is determined. Assuming a 3.8 mgd MBR treatment facility will ultimately be required to serve future development within the study area, the cost per gallon per day would be approximately \$23.95.

Unit cost per GPD (Regional Facility)

Wastewater Collection & Treatment Capital Cost	\$	91,000,000
Demand Flow of Future Users		<u>3,800,000</u>
Capital Cost per GPD	\$	23.95

The following table identifies the cost, in terms of system cost, per residential unit. The cost of system infrastructure needed to provide adequate capacity to serve development is based on the cost per gpd (\$23.95) multiplied by the average daily effluent flow of a single EDU - defined to be approximately 220 gallons per day. Although the basis for the connection fee is the cost per gpd flow, the fees will ultimately be assessed based on development type and would need to be modified should development vary significantly from a predominantly single-family residential environment.

Fee per Equivalent Dwelling Unit (EDU)

Capital Cost per GPD	\$	23.95
Flow per EDU (gpd)		<u>220</u>
Fee per EDU	\$	5,270

Connection fees are required, under the Act, to fund new development's fair portion of needed facilities. Should the District opt to use fee revenue for projects that serve both new and existing development, the District should consider how deficiencies (related to existing development) might be supplemented through the use of alternative funding sources. Potential sources of revenue may include CFD special taxes and/or sewer service charges.

It is noted that the above analysis is based on an assumed MBR treatment plant for the District's regional wastewater treatment facility. This assumption has been made to develop the most conservative estimate of potential costs per EDU. As development progresses, the District may decide that less costly alternatives will sufficiently meet current or near-term regulation requirements. As such, the District may enforce less stringent treatment requirements. For the purposes of establishing the District wastewater treatment strategy, the most conservative estimates have been used.

7.3.2.1 Inflation Adjustment

Appropriate inflation indexes will be identified in a connection fee ordinance, including an automatic annual adjustment to the charge. The annual increase can be based on a construction cost index, which may be based on recent capital project experience or taken from any reputable source (such as the Engineering News Record). To calculate prospective fee increases, each index is weighed against its share of total planned facility costs represented by land or construction, as appropriate.

7.3.2.1 Annual Reporting

The District will comply with the annual reporting requirements of the Act, as detailed in California Government Code Section 66000 et seq. For facilities to be funded by a combination of connection fees and other revenues, identification of the source and amount of these non-fee revenues is essential. Identification of the timing of receipt of other revenues to fund the facilities is also important.

The District will deposit connection fee revenues into a restricted account. Capacity charges collected for a given facility category will only be expended consistent with the "Use of Fee Revenues" finding documented in the previous discussions.

7.3.2.3 Programming Revenues and Projects with the CIP

The District will maintain a Capital Improvement Plan (CIP) to adequately plan its future infrastructure needs. The District will commit projected connection fee revenues and fund balances to specific projects. These commitments represent the types of facilities needed to serve new growth as described in this report. The use of the CIP in this manner documents a reasonable relationship between new development and the use of collected revenues.

7.3.2.4 Estimated Sewer Service Charges for Regional Plant Operations

Under this scenario, there will be ongoing annual operations and maintenance expenses associated with the proposed MBR treatment plant. We recommend the District utilize sewer service charges to fund these O&M costs. Assuming that the MBR treatment plant would cost \$2.5 million in today's dollars to operate annually (see page 19 of this report) and would serve approximately 17,272 EDUs each year (3.8 million gallons / 220 gpd per EDU), the estimated annual sewer service charge would be \$145 per

EDU per year. We recommend the District conduct a comprehensive sewer rate study at the time the plant is near completion to accurately reflect all costs associated with the plant operations and maintenance as well as include an inflator to the rate schedule to keep rates in line with rising costs.

7.4 CFD and Sewer Service Charge Scenarios

The District will adopt a connection fee similar to the one identified in the preceding discussions. This approach allows the District to collect fee revenues for capital facilities associated with large-scale growth, which will take place over time as development activity ensues. Using the build-out approach, the establishment of a fee at the time of the writing of this report is reasonable and affords the District the opportunity to appropriately plan for needed facilities as development occurs.

Before large-scale development occurs, however, the District also needs additional funding sources to cover shorter-term capital and O&M needs. Because these near-term needs and development activity is relatively fluid at this time, we have developed several representations of near-term growth and related capital and O&M requirements to address those needs.

We do not recommend that the District develop a CFD with an accompanying Special Tax Report and Rate and Method of Special Tax Apportionment or a Sewer Service Charge until the District has definitive understanding of the status of the development schedule and product mix. Adopting a CFD and/or Sewer Service Charge without knowing the number of development units, development type and related wastewater facilities would be premature and cause significant re-formation and Proposition 218 noticing challenges in the future. However, the following discussions provide the District with general CFD and Sewer Service Charge guidelines that may help the District plan for growth and provides an order-of-magnitude approximation for the taxes and charges needed.

7.4.1 Scenario I – Incremental, Small-scale Development within next 15 Years

This first discussion relates to the development scenario portrayed in Figure 4 of this report. The assumption is that small-scale development projects, ranging from 15 units to 400 residential units, would be created within a long-term time frame of 10 to 20 years. This scenario assumes that a large-scale development project has not occurred within the 20 years period, and that few smaller subdivisions would be developed such that a regional treatment facility is not warranted.

This development scenario consists of several small development projects, each connecting to a package or smaller clustered wastewater treatment plant. Under the District's plan, each initial package treatment plant and its associated collection system would be constructed by the developer as part of the development agreement process. Once units are occupied, each subdivision and related dwelling unit would be responsible for the annual operations and maintenance costs associated with the plant serving its respective subdivision. We have assumed that each package plant has a life expectancy of approximately fifteen (15) years.

7.4.1.1 Recommended Financing Mechanism(s)

Because each developer would be responsible for initial construction of a 15-year package treatment plant, each subdivision would initially be responsible solely for the annual operations and maintenance of the plant. At the point in time that the package treatment plant needs to be replaced, the existing

development units would be responsible for this expense (unless the District exacts an additional payment from the developer at time of initial construction commensurate with the estimated value of the replacement of the plant and held in a separate fund by the District for this purpose). This development scenario requires flexible funding and financing arrangements because development is sporadic and small-scale.

7.4.1.2 Recommended: Combination of Community Facilities District and Sewer Service Charges

It is recommended that the District use of Community Facilities Districts (CFDs) to finance the estimated cost associated with replacement of each development's package treatment plant, once the initial plant has reached its useful life. However, CFDs cannot fund the annual operations and maintenance costs of the proposed facilities. To fund the O&M costs, it is recommended that the District impose a sewer service charge, to be billed regularly to the property owner/ratepayer of each account within the development.

If the CFD mechanism is used to fund future replacement of each package treatment plant, it could also be utilized to consolidate nearby package treatment plants at neighboring development projects should the District decide it is the most effective means of effluent collection and treatment. This consolidation would be implemented through an annexation to one of the existing CFDs. This approach could also benefit the District by providing the means to finance future expansion and connection to a regional treatment plant, if the connection fee revenues were not sufficient. If either scenario were to occur, the rate and method of apportionment of each CFD would need to account for these possibilities in the future, thus requiring solid development and cost projections at the time of initial formation of each CFD. The tax rate would be established for each property within the CFD boundaries and any amount tax up to the maximum tax rate could be imposed by the District for the identified facilities.

7.4.1.3 Who Pays the CFD Special Tax?

Property owners pay the annual CFD tax on their general property tax bills. The property owners could be the developer or the homeowner, depending on ownership of the property at the time tax bills are distributed by the County.

7.4.1.4 Not Recommended: 1913/15 Act Assessment District

A 1913/15 Act Assessment District mechanism would not be appropriate to fund the annual operations and maintenance of the initial package plants. The statute governing these assessment districts limits O&M funding to facilities constructed by bonds issued through the assessment district itself. Because the initial plants are proposed to be constructed by the developer, there would be no 1913/15 Act bonds issued to construct facilities. At the point in time when the initial package plant would need to be repaired or replaced, an assessment district arrangement could be explored to issue bonds for construction and subsequent O&M. However, this process could not occur until the actual facility and related costs are identified and the existing property owners approve such an assessment district through a Proposition 218 notice and balloting process.

The table below illustrates the estimated revenue sources to be paid based under the Scenario 1 approach. In this approach, we assume a small development project of 90 residential dwelling units or

EDU requiring a 20,000 gpd Purestream treatment plant with estimated capital costs of \$432,000 and annual operations and maintenance expenses of \$50,500 (see Table 3). Utilizing an assumed 90 EDU count allows us to calculate the maximum estimated annual CFD tax rate and sewer service charge that the District could charge for Scenario 1 development projects. Larger development projects would enjoy economies of scale and the resulting tax rates and sewer charges might be lower per EDU.

The resulting CFD annual special tax rate beginning in Fiscal Year 2009/10 is estimated at \$320 per dwelling unit and the estimated annual sewer rate would be \$561 per dwelling unit, or \$47 per month. Each annual amount could be subject to an inflation adjustment each year by a factor determined by the District. Should the District choose the CFD option, we recommend that the District establish the CFD once it is known the product mix and size the development project will be and its timeline for completion.

Scenario 1, Estimated Funding Amounts, FY 2009/10

20,000 gpd Purestream Treatment Plant

CFD

Estimated Annual Costs Allocated to Construction ¹	\$	28,800
Assumed Number of Taxable Dwelling Units		<u>90</u>
Estimated Maximum Annual Special Tax per Unit	\$	320

Sewer Rates - Annual O&M

Estimated Annual O&M	\$	50,500
Assumed Total EDU		<u>90</u>
Estimated Annual O&M Cost per EDU	\$	561
Estimated Monthly O&M Cost per EDU	\$	47

1. Assumes \$432,000 capital costs spread over 15-year period.

Sources: Joshua Basin Water District; Dudek Engineering.

7.4.2 Scenario 2 – Incremental, Small-scale Development, Followed by a Large-scale Development Project within next 15 Years

The assumption under this scenario is that small-scale development projects ranging from 15 units to 400 residential units would be created within a medium-term time frame of 5 - 10 years followed by a large-scale development project of a minimum dwelling unit count of 900 homes developing within a 15 year period. The smaller development projects would rely on small package treatment plants to treat effluent until the larger development project warrants construction of a larger treatment facility of up to 200,000 gpd capacity. The smaller developments would subsequently connect to the larger facility, along with the larger development, via construction of interceptors and collectors.

Similar to Scenario 1, this scenario consists of several small residential subdivision projects ranging from 15 to 400 residential units, each connecting to a package or small cluster wastewater treatment plant.

Each package treatment plant would be constructed by the developer as part of the development agreement process. Once units are occupied, each subdivision and related dwelling unit would be responsible for the annual operations and maintenance costs associated with the plant serving its respective subdivision. We have assumed that each package plant has a life expectancy of fifteen (15) years. Within the 15-year time frame, the larger dwelling unit project would be developed and a larger treatment plant would be constructed to serve this project as well as existing small subdivisions.

All dwelling units would be responsible for their proportionate share of the annual O&M costs of the larger facility. The larger development project would be responsible for its fair share of the construction costs of the facility. The existing smaller subdivisions would be responsible for their fair share of the regional facility construction costs in addition to the costs of construction their proportionate share of the interceptors and collectors serving their respective development projects.

7.4.2.1 Recommended Financing Mechanism(s)

Because each developer would be responsible for initial construction of a 15-year package treatment plant, each smaller subdivision would initially be responsible solely for the annual operations and maintenance of the plant (this situation is similar to Scenario 1). We assume in Scenario 2 that the smaller development projects will connect to the larger treatment facility before their initial package treatment plants reach the end of their useful life. Therefore, any existing financing mechanism established would be utilized for the larger facility rather than for the replacement of the package treatment plant.

7.4.2.2 Recommended: Combination of Community Facilities District and Sewer Rates for the Smaller Development Projects; CFDs, Previously Established Connection Fees and Sewer Rates for the Larger Projects

We recommend the District use Community Facilities Districts (CFDs) and connection fees to finance the estimated costs associated with connection to the larger facility for the smaller development projects. To fund the O&M costs of the package plants and subsequently the regional facility, we recommend the imposition of sewer rates to be billed regularly to the property owner/ratepayer of each account within the subdivision.

For the larger development project of an assumed dwelling unit count of 900, we recommend the District consider a CFD to fund the capital facilities *if the previously collected connection fee revenues are insufficient to fund all facilities*. The annual O&M expenses could be funded via sewer rates.

7.4.2.3 Who Pays the CFD Special Taxes?

Property owners pay CFD taxes on their general property tax bills. The property owners could be the developer or the homeowner, depending on ownership of the property at the time tax bills are distributed by the County.

7.4.3 CFD Revenue Quantification

The table below illustrates the estimated revenue sources to be paid based on the Scenario 2 approach at the time that the large development project is developed and the appropriate facility is constructed. In this approach, we assume the small development type consists of 90 residential dwelling units with similar cost structures to connect to the larger facility and the large development project consists of 900 dwelling units. The figures included in this table are considered to be in FY 2009/10 dollars and the resulting rates and sewer service charges can be inflated should the District decide to implement inflation factors.

Scenario 2, Estimated Funding Amounts, FY 2009/10

200,000 gpd Purestream Reg Treatment Plant

CFD

Estimated Annual Debt Service ¹	\$	265,584
Assumed Number of Taxable Units		900
Estimated Max Annual Special Tax/Unit	\$	295

Sewer Rates - Annual O&M

Estimated Annual O&M	\$	208,000
Assumed Total EDU		900
Estimated Annual O&M Cost per EDU	\$	231
Estimated Monthly O&M Cost per EDU	\$	19

1. Assumes \$3,706,000 construction costs, 30-year term, 5.75% interest rate, 10% reserve fund, 3% costs of issuance and 1-year capitalized interest.

Sources: Table 4; Joshua Basin Water District; Dudek Engineering.

The resulting CFD annual special tax rate beginning in Fiscal Year 2009/10 is estimated at \$295 per dwelling unit. The estimated annual O&M assessment would be approximately \$231 per dwelling unit. Please note that these figures assume the 900 dwelling units are the only contributors to the larger facility. We performed this calculation to demonstrate the estimated maximum amounts for each funding mechanism. Previously collected revenues, such as connection fees, and additional dwelling units added to the calculations would likely reduce the funding amounts.


In summary, we recommend that the District adopt connection fees in accordance with this report prior to development activity ensuing within the study area boundaries. Adopting these fees will afford the District the opportunity to collect capital facilities fees before development activity begins and keeping these revenues in a separate account to be used for larger facility needs once development levels require the need for a regional wastewater system. As soon as the first development activity begins, the District should then consider forming CFDs for each development and sewer service charges should be imposed on properties once they have connected to a package treatment plant or a larger wastewater facility, whichever comes first.

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET
AGENDA ITEM #

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Joe Guzzetta, General Manager



TOPIC: RESOLUTION APPROVING AN APPLICATION FOR FEDERAL FUNDS FOR THE GROUND WATER RECHARGE PROJECT

RECOMMENDATION: That the Board adopt a resolution authorizing the General Manager to submit an application to the Bureau of Reclamation for the ground water recharge project in the amount of \$4 million.

ANALYSIS: Staff has submitted a grant to the Bureau of Reclamation for \$4million for the ground water recharge project. Applications were due May 22, and the project allows for the Board to adopt a resolution within 30 days of the submittal.

The application proposes that the \$4 million be matched with \$1.5 million from Joshua Basin Water District, \$1 million from Mojave Water Agency, and the balance from state funding. Total cost of the project as submitted is \$9,600,000 including work that has already been completed, such as the USGS and environmental studies.

Attached is the most current project budget as prepared by Dudek & Associates.

Approval of the resolution will authorize submittal of the grant.

**Joshua Basin Water District
Pipeline and Recharge Basin Design and Construction**

5/15/2009

Opinion of Probable Construction Cost - Recharge Pipeline					
Item	Item/Description	Unit	Quantity	Unit Price	Total Amount
1	Mobilization/Demob, Insurance & Bonds	LS	1	\$ 250,000	\$ 250,000
2	Pothole to Locate Existing Utilities	LS	100	\$ 500	\$ 50,000
3	Furnish and Install 16" PVC Pipe, Fittings, Excavation, Thrust Blocks, Backfill, Compaction, Repaving, and Pavement Striping	LF	25,889	\$ 144	\$ 3,728,000
4	Furnish and Install Air/Vacuum Valve Assembly	EA	12	\$ 4,500	\$ 54,000
5	Furnish and Install Blow-off Assembly	EA	12	\$ 5,900	\$ 70,800
6	Furnish and Install New 16" In-Line Valve (250 psi)	EA	9	\$ 6,423	\$ 57,800
7	Connection to existing Raw Water Line	EA	1	\$ 20,000	\$ 20,000
8	Obtain Traffic Control Permits	LS	1	\$ 10,000	\$ 10,000
9	Provide Traffic Control	LF	18,500	\$ 7	\$ 129,500
10	Testing and Disinfection	LF	25,889	\$ 2	\$ 38,800
11	Clean-Up and Disposal	LS	1	\$ 50,000	\$ 50,000
12	Sheeting/Shoring Required Line Item for Section Nos. 06705 and 06707 of the California Labor Code.	LS	1	\$ 75,000	\$ 75,000
<i>Subtotal - Pipeline Construction</i>					\$ 4,533,900
13	CEQA Compliance	LS	1	\$ 225,000	\$ 225,000
14	Engineering Design	LF	25,889	\$ 14	\$ 349,500
15	Geotechnical Investigation	LF	25,889	\$ 2	\$ 51,800
16	Surveying	AC	119	\$ 505	\$ 60,100
17	Construction Management and Inspection	LF	25,889	\$ 10	\$ 258,900
18	Administration & Legal	LS	1	\$ 75,000	\$ 75,000
<i>Subtotal - Soft Costs</i>					\$ 1,020,300
Estimate of Probable Construction Cost - Pipeline					\$ 5,554,200

Opinion of Probable Construction Cost - Recharge Basin					
Item	Item/Description	Unit	Quantity	Unit Price	Total Amount
1	Mobilization/Demob, Insurance & Bonds	LS	1	\$ 50,000	\$ 50,000
2	Clearing and Grubbing	AC	30	\$ 1,025	\$ 30,800
3	Excavation Safety Measures	LS	1	\$ 2,000	\$ 2,000
4	Flow Control Facility	EA	1	\$ 75,000	\$ 75,000
5	Excavation of Recharge Basins Area (31.22.16.10.0016)	SF	720,000	\$ 0	\$ 259,200
6	Earthen Berms	CY	21,978	\$ 4	\$ 87,900
7	Furnish and Install 12-inch PVC Distribution Piping	LF	2,250	\$ 96	\$ 216,000
8	Furnish and Install 12-inch Valves	EA	8	\$ 2,400	\$ 19,200
9	18-inch Thick Grouted Rip-Rap for overflow (31.37.13.10.0110)	SY	480	\$ 118	\$ 56,600
10	Valves, Pipe Supports and Appurenances	LS	1	\$ 50,000	\$ 50,000
11	SCADA and Instrumentation	LS	1	\$ 50,000	\$ 50,000
<i>Subtotal - Recharge Basin Construction</i>					\$ 896,700
12	CEQA Compliance	LS	1	\$ 125,000	\$ 125,000
13	USGS Monitoring Well Construction & Studies	LS	1	\$ 550,000	\$ 550,000
14	Recharge Land Acquisition	AC	30	\$ 30,000	\$ 900,000
15	Construction Management and Inspection	LS	1	\$ 75,000	\$ 75,000
16	Surveying	AC	30	\$ 505	\$ 15,200
17	Engineering Design	LS	1	\$ 100,000	\$ 100,000
18	Landscaping	AC	115,200	\$ 4	\$ 512,600
19	Administration & Legal	LS	1	\$ 50,000	\$ 50,000
<i>Subtotal - Soft Costs</i>					\$ 2,327,800
Estimate of Probable Construction Cost - Recharge Basin					\$ 3,224,500

Opinion of Probable Construction Cost	\$ 8,778,700
Contingency (10%)	\$ 877,900
Opinion of Probable Project Cost	\$ 9,656,600

RESOLUTION 09-XXX

A RESOLUTION OF THE JOSHUA BASIN WATER DISTRICT BOARD OF DIRECTORS
SUPPORTING THE SUBMITTAL OF A GRANT PROPOSAL TO THE BUREAU OF
RECLAMATION FOR A PIPELINE AND GROUND WATER RECHARGE FACILITY

WHEREAS, the Mojave Desert Communities and Joshua Basin Water District have experienced a significant increase in growth since the 1980's; and

WHEREAS, studies by the United States Geological Survey (USGS) have determined that there is essentially no net natural recharge of the Joshua Basin or Copper Mountain Basin within the Joshua Basin Water District; and

WHEREAS, these events make it clear that the Joshua Basin is in a condition of overdraft and will have an increased need for water as growth continues; and

WHEREAS, analyses based on the USGS studies indicate that continuing to draw down the aquifer without recharge will result in a lower ground water table, diminished water quality, and resulting problems and costs such as for dry wells, increased pumping costs, and the necessity for water treatment; and

WHEREAS, the JBWD encompasses a community that is disadvantaged by low income levels and high unemployment; and

WHEREAS, notwithstanding the disadvantaged status of the Joshua Tree community, the voter of the JBWD have voted to impose a tax for the purpose of constructing a 70 mile pipeline to bring water to the District's edge which tax has thus far contributed over \$10 million toward payment of the pipeline; and

WHEREAS, due to this self-assessment by the people of Joshua Tree, JBWD is "entitled" to access water from the Mojave Water Agency through the Morongo Pipeline until 2022; and;

WHEREAS, this project
would construct a series of groundwater recharge ponds and would construct a pipeline from the existing terminus at the District's boundary, to the proposed ponds; and

WHEREAS the Joshua Basin Water District Groundwater Management Plan, the Joshua Basin Urban Water Management Plan, and the Mojave Water Agency Integrated Regional Water Management Plan all identify the need for and importance importing water to the JBWD; and

WHEREAS, the United States Department of the Interior Bureau of Reclamation has a water conservation grant available the intent of which is to fund proposals that will result in water banking and water efficiency; and

WHEREAS this proposal is endorsed by the Mojave Water Agency and has thereby its stakeholders through the Mojave Water Agency Technical Advisory Committee;

NOW THEREFORE, BE IT RESOLVED that the Joshua Basin Water District Board of Directors agrees and authorizes that:

- 1) The Board of Directors supports the proposal being submitted; and
- 2) The Joshua Basin Water District is capable of providing the amount of funding and in-kind contributions specified in the funding plan; and
- 3) If selected for a grant through the Challenge Grant Program: Recovery Act of 2009 Water Marketing and Efficiency Grants, the Joshua Basin Water District will work with the Bureau of Reclamation to have the project constructed to meet established deadlines; and
- 4) The Board authorizes the General Manager to sign the application and all related documents that were submitted within the deadline for the grant application.

ADOPTED this 3rd day of June 2009.

By _____
Gary Given, President

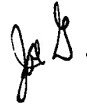
Attest _____
Joe Guzzetta, Board Secretary

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Joe Guzzetta, General Manager



TOPIC: AGREEMENT WITH DUDEK ENGINEERING FOR PRELIMINARY
DESIGN REPORT FOR GROUNDWATER RECHARGE PROJECT

RECOMMENDATION: That the Board affirm the General Manager's authorization for
Dudek Engineering, District Engineer, to prepare a preliminary
design report for the groundwater recharge project at a cost
not to exceed \$39,560.

ANALYSIS: A preliminary engineering design report (PDR) is necessary
before the detailed engineering can be completed for the
groundwater recharge basins and pipeline. The PDR will
account for about 25% to 30% of the total engineering work.
Once completed, we will be able to seek competitive proposals
from engineering firms to design the detailed engineering and
specifications to go to construction bid.

Dudek has been heavily involved in the groundwater recharge
project and is best position to prepare the PDR expeditiously
with their extensive knowledge of the project. Timing is
essential in order to be able to award construction contracts in
time to meet federal requirements if we are successful in
receiving federal stimulus funds. If we do not receive the
hoped-for grants, the engineering plans will be ready for future
grant opportunities. Cost of the PDR is \$39,560.

Due to the time sensitivity of this project the General Manager
has authorized Dudek to proceed with the design. Affirmation
of this expenditure will move the District a step closer to being
prepared to receive federal funds if we are fortunate enough
to receive grant funds.

DUDEK

75-150 SHERYL AVENUE
PALM DESERT, CALIFORNIA 92211
T 760 341 6660 F 760 346 6118

May 14, 2009

209044

Mr. Joe Guzzetta
General Manager
Joshua Basin Water District
61750 Chollita Road
Joshua Tree, CA 92252

Subject: Recharge Basin Pipeline Preliminary Design Report

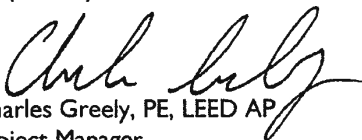
Dear Mr. Guzzetta:

As requested, we are submitting the following scope for engineering services to prepare the Preliminary Design Report (PDR) for the District's water recharge pipeline project. The project will connect with the existing Mojave Water Agency 16-inch pipeline located at Yucca Mesa Road. The proposed pipeline route will be located within existing public rights-of-way adjacent to and north of Twenty-nine Palms Highway. The pipeline will terminate at the proposed recharge, east of Sunburst Street off Verbena Road.

We have provided a discussion of the project scope of services, project schedule based on an assumed notice to proceed date of May 18, 2009, and fee estimate for completion as outlined in the project scope. Based on preparing the PDR for the proposed pipeline alignment, and our review and assessment of the project requirements, we propose to complete the project on a time-and materials not-to-exceed fee of \$37,710.00.

We appreciate the opportunity to be of continued service to you and the District. We are prepared to begin work immediately upon your written or verbal notice to proceed. If you have any questions or concerns, please do not hesitate to contact me or Mike Metts.

Respectfully Submitted,


Charles Greely, PE, LEED AP
Project Manager

SCOPE OF SERVICES

1.0 MEETINGS, SITE VISITS, AND RESEARCH

1.1 Site Investigation and Research

Following a project kick-off meeting, Dudek will contact utility owners in the project area to obtain record information for underground and/or overhead utilities present along the corridor. Dudek will also coordinate with Mojave Water Agency to secure as-built information and connection requirements for the tie-in location. Once existing utility information has been obtained, Dudek engineers will walk the alignment to verify the accuracy and identify other potential utilities.

1.2 Progress Meetings

We will meet with District staff during the development of the preliminary design report at 70 and 100 percent completion milestones.

2.0 TOPOGRAPHIC SURVEY AND BASEMAP PREPARATION

Based on preliminary analysis of the project alignment, we propose to develop aerial topographic survey data as the basis for preparation of preliminary design drawings. The proposed alignments will be flown and digital topographic and orthophoto mapping prepared. This effort will produce 1-foot contour intervals at 40-scale for a 200-foot-wide area along the alternative project alignments. Dudek will set the ground control and provide alignment control through existing monuments and right-of-way extents incidental to the alignment corridor.

Dudek will provide necessary field note reduction for ground survey and alignment and provide as-needed survey services to locate existing features not shown on the orthophoto maps. Easement and records research are assumed to be provided by the District's on-call right-of-way consultant.

Using the information from the surveying task, we will prepare plan sheets at a scale of 1" = 40'. It is anticipated that approximately 12 to 18 plan sheets will be prepared, depending on the need for alignment profile information. Pipeline profiles will be prepared only at those locations where potential interference with existing utilities is determined to be an issue.

3.0 PRELIMINARY DESIGN DOCUMENTS

3.1 Pipeline Hydraulic Analysis

In accordance with District standards, minimum diameters for the proposed pipelines will be established that provide for adequate pressure and delivery flow rates at the recharge basin pipeline site. Available pressure head will be determined for the existing pipeline connection using available records. Hydraulic calculations will be performed to determine static head for the system using elevation obtained from the topographic survey, as well as head loss and minor losses associated with pipe fittings and valves. It is anticipated that gravity flow conditions will be maintained throughout the alignment, with verification provided from an analysis of total dynamic head for the pipeline.

3.2 Preliminary Design and Document Preparation

The preliminary plans will show existing topography along the alignment, existing utilities based upon applicable utility owners' records, property data, and, most importantly, proposed alignment of the pipeline construction.

The preliminary design analysis will consider hydraulic limitations, constructability, total estimated costs, impacts to the public, and potential impacts to the project schedule. The analyses will include a detailed description of the recommended alignment, a cost summary, and recommendations for pipeline appurtenances.

The PDR will address design issues, such as maintaining minimum pressure, depth of installation, avoiding existing utility conflicts, traffic control, system reliability, and minimizing project costs. It is our intent that the PDR provide the District with sufficient engineering analysis, cost data, and recommendations to proceed with final design of the project.

4.0 PROJECT SCHEDULE

The following schedule assumes a notice to proceed date of May 18, 2009.

TASK	START DATE	COMPLETION DATE
Project Kick-off Meeting	5/18/09	5/18/09
Site Investigation and Research	5/18/09	5/22/09
Topographic Survey and Basemap Preparation	5/18/09	6/5/09
70 Percent PDR Document Prep	5/18/09	6/12/09
100 Percent PDR Document Prep	6/12/09	6/29/09
Final PDR Submittal	6/29/09	7/3/09

**Professional Engineering Services Cost Estimate
Recharge Basin Pipeline Project Preliminary Design Report**

Task	Hours of Professional Engineering Services					Line Total
	Project Manager 145	Senior Engineer 125	CADD Operator I 85	2-Man Survey Crew 205	Admin 70	
\$/Hr:						
1. Meetings/Site Visits/Research						
1.1 Site Investigation and Research	8	16			2	\$ 3,300
1.2 Progress Meetings	4	4				\$ 1,080
Subtotal:						\$ 4,380
2. Topographic Survey & Basemap	4		16	20		\$ 6,040
Aerial Sub						\$ 12,650
Subtotal:						\$ 18,690
3. Preliminary Design Documents						
3.1 Pipeline Hydraulic Analysis	4	12	4			\$ 2,420
3.2 Prelim Design & Doc Preparation	16	40	56		2	\$ 12,220
Subtotal:						\$ 14,640
Subtotal:	36	72	76	20	4	
Total:						\$ 37,710

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Joe Guzzetta, General Manager



TOPIC: REQUEST TO SOLICIT ENGINEERING DESIGN SERVICES
ASSOCIATED WITH THE GROUNDWATER RECHARGE PROJECT

RECOMMENDATION: That the Board authorize the General Manager and District Engineer to prepare two independent Requests for Proposal (RFPs) for final design of the Groundwater Recharge Pipeline and Groundwater Recharge Facility projects, respectively.

ANALYSIS: The District's Groundwater Recharge Project CEQA process is nearing completion, with adoption of the environmental documentation projected for mid-July-2009. Funding constraints require that construction of the project be completed prior to September 30, 2010. To meet this construction deadline, it is necessary to solicit final design proposals from qualified engineering firms prior to the end of July 2009. As such, we are requesting approval to prepare and distribute two RFPs – one RFP for final design of the 16-inch raw water pipeline that will supply water to the Groundwater Recharge Facility and one RFP for final design of the Groundwater Recharge Facility with an average annual recharge capacity of 4,000 acre-feet per year. Results of these solicitations will be compiled and returned to the Board for approval and award at a later date.

Since the Board has not yet determined the specific location of the recharge facility, the RFPs will be based on the site identified in the Draft Environmental Impact Report as the "preferred site," but will have the flexibility of designing for a different site based on the final Board decision. The important action at this time is to select the designing engineers.

Approval for these RFPs will proceed with the groundwater recharge project as well as meet construction deadlines should federal funding be awarded.

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Joe Bocanegra, Interim Chief of Operations



TOPIC: WELL 17 CLEAN UP OF BIOLOGICAL GROWTH PROBLEMS, RECONSTRUCTION OF PUMP BASE AND PUMP REINSTALLATION

RECOMMENDATION: That the Board Authorize the General Manager to finalize negotiations with Bakersfield Well and Pump Company to chemically and mechanically treat well 17 to eliminate the biological problems and to reconstruct the pump base and reinstall the pump for an amount not to exceed \$42,300.00.

ANALYSIS: Since July/August of 2008 the District has had an on-going water quality issue with its water production well 17. The routine bacteriological tests have tested positive indicating a potential biological growth within the well's gravel pack. On September 18, 2008 the District had the submersible pump pulled and the well video logged. The videolog survey found some minor debris at the bottom of the well; however the well casing and screen were relatively clean with no indications of biological growths.

In order to sample and test material from the upper portion of the gravel pack, the concrete pump base had to be removed for direct access through a straight portion of the gravel tube. The tests indicated some poly-bore material in the gravel pack that was not completely removed during well construction; however the poly-bore material is Baroid poly-bore, a non-fermenting material which will not provide a food source for bacteria.

Continuing its investigation into the source of the bacteria, the District has over the last several months utilized the services of various experts to determine the cause and or source of the bacteria. The exact cause continues to be a mystery; however there is general consensus on a clean up method.

The clean up consists of heavy chlorination and mechanical pre-treatment efforts of scratching and swabbing the well utilizing the cable tool method and reinstalling the pump base and pump with a 1 inch PVC pipe for chlorination and pump well clear. Further cleaning after permanent pump is installed.

One verbal quote to do the above work with substantially more effort was provided by Layne-Western Pumps in an amount \$100,000 plus. A substantially lesser amount has been discussed with Bakersfield Well Pump Co.

Bakersfield Well and Pump drilled well 17 in early 2006 and later installed the pumping equipment. Being the driller and pump contractor of record, it was felt that they should participate in the cost of well 17 clean-up. Discussions between the District's Engineer, District staff and Bakersfield Well and Pump Company officials has yielded what is believed to be a reasonable cost to perform the well clean up, pump base reconstruction and pumping equipment reinstallation. Negotiations are continuing with a preliminary amount of \$42,285.50 for Bakersfield Pump Co. to do the work. Since time is of essence due to the hot weather approaching, staff is recommending that the Board approve that the General Manager finalized the negotiations with an amount not to exceed \$42,300.00 and proceed with putting well 17 back into operation.

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Joe Bocanegra, Interim Chief of Operations



TOPIC: DESIGN AGREEMENT WITH NOLTE ENGINEERING FOR A BACKUP WATER SOURCE TO THE HI-DESERT MEDICAL CENTER AND ZONES C, B AND D-3

RECOMMENDATION: That the Board approve the design agreement with Nolte Engineering for a backup water supply to the Hi-Desert Medical Center and Zones C, B and D-3. The lump sum fee for the work is \$17,300.00

ANNALYSIS: The Hi-Desert Medical Center in Joshua Tree is the only trauma center serving Twenty Nine Palms, Joshua Tree, Yucca Valley and other surrounding communities. Water service for the medical center consists of one four inch domestic service and two six inch fire services which are in turn served from a 12 inch water main in White Feather Road.

The 12" water main in White Feather Road is a long single line extension which originates at the intersection of Center Avenue and 29 Palms Highway. From that intersection it extends easterly approximately 4,300 feet to White Feather Road thence southerly 900 feet to the hospital service line, a total of approximately 5,200 feet.

A critical medical center such as this one should have a back up water supply in an event of natural disaster or any other water outage such as a mainline leak or outages for routine maintenance such as meter or backflow device testing. Routine maintenance on the mainline valves in the area and maintenance on the hospital service have been postponed for fear of a breakage causing the hospital to be out of water.

Several backup water supply alternatives have been reviewed with the following found to be the most cost effective and overall best alternative:

Install a 12" pipeline along Mojave Ranch Road from just north of Highway 62 to the southeast end of the High Desert Medical Center, a distance of approximately 1,200 lineal feet. The pipeline will be installed beneath Highway 62, within Caltrans right of way, using jack and bore methods. This new pipeline has other benefits besides being a second source of supply for the hospital. This project will connect the south of Highway 62 Zone B with north of the Highway Zone B. This will eliminate the need for a pressure reducing station that serves the Highway Patrol and San Bernardino County offices which are currently served from the higher pressure Zone C. Another benefit for the hospital is the ability to use water from wells 16 and 17 which have a much lower total dissolved solid (TDS) content than the well 15 which currently serves the hospital. The lower TDS will extend the cycle of the hospital cooling towers reducing their water use substantially. This will also allow the hospital to better operate within their waste discharge permit. The added economic benefits to the hospital open opportunities for cost sharing discussions.


A request for proposals to engineer the project was requested from Dudek and Associates and from Nolte engineering. Nolte's proposal was substantially less than Dudek's, therefore staff is recommending that the Board accept Nolte Engineering's proposal to prepare the design and specifications for the project for the amount of \$17,300.00.

The District's Budget allocates \$300,000 for year 2009 and \$300,000 for year 2010 for system reliability upgrade for the hospital, county complex and zones C, B and D-3.

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Joe Guzzetta, General Manager 

TOPIC: CONSIDERATION OF SPONSORSHIP OF SAN BERNARDINO
COUNTY WATER CONFERENCE

RECOMMENDATION: That the Board determine whether or not to be a sponsor of
the annual San Bernardino County Water Conference, or
otherwise participate in the event.

ANALYSIS: The 2009 San Bernardino County Water Conference will take
place on August 20 at the Ontario Convention Center, and
Joshua Basin Water District has been asked if we would
consider being a sponsor of the event. The District has been a
"co-host" in the past at no cost to the District. The District
could participate in any of the following ways:

- Attendance is \$125 per seat or \$1,250 for a table of 10
seats. Several Board Members, some Citizen Advisory
Committee members and some staff have attended in
the past.
- Advertisements are available from \$250 for ¼ page to
\$1,000 for a full page.
- Sponsorships are available as shown on the attached
sheet. The Board could also propose a different
sponsorship level.

The event is co-produced by the County of San Bernardino and
the Baldy View Building Industry Association. Since Director
Reynolds is President of the Morongo Basin Chapter of the
Baldy View Building Industry Association Division he has asked
the Fair Political Practices Commission whether or not he may
vote on this item. He was advised that he may due to various
factors and since he receives no salary from the BIA.



SAN BERNARDINO COUNTY
WATER CONFERENCE

HOSTED BY:

Supervisor Gary Ovitt,
Chairman

Supervisor Josie Gonzales,
Vice-Chair

Jim Bowman,
Ontario Mayor Pro Tem
BIA Baldy View Chapter

Co-hosts (partial list)

- Senator Bob Dutton
- Assemblyman Paul Cook
- Assemblyman Bill Emmerson
- Assemblyman Curt Hagman
- Supervisor Paul Blanc
- Supervisor Neil Derry
- Supervisor Brad Mizelfelt
- City of Adelanto
- City of Big Bear Lake
- City of Chino
- City of Chino Hills
- City of Fontana
- City of Hesperia
- City of Ontario
- City of Rancho Cucamonga
- City of Upland
- City of Victorville
- Town of Yucca Valley
- Chino Basin Water Conservation District
- Cucamonga Valley Water District
- Inland Empire Utilities Agency
- Joshua Basin Water District
- League of California Cities - Desert Mountain Division
- Metropolitan Water District
- Mojave Water Agency
- San Bernardino Valley MWD
- Santa Ana Watershed Project Authority
- Twentynine Palms Water District
- Victor Valley Wastewater Reclamation Authority

JOIN US

**2009 San Bernardino County Water Conference
August 20, 2009 - Ontario Convention Center**



Dear Water Stakeholder:

On August 20, 2009, the Building Industry Association Baldy View Chapter, San Bernardino County Supervisors Gary Ovitt, Josie Gonzales and Ontario Mayor Pro Tem Jim Bowman will join California's premier water experts and business leaders to host the Third Annual San Bernardino County Water Conference.

This year's conference will be held at the Ontario Convention Center from 8:30 am to 1:00 pm. The theme for 2009 – Identifying Solutions to Bolster Our Ailing Economy.

Maximizing our water supply is vital to the future prosperity of San Bernardino County and the Inland Empire. It is imperative that water agencies, local government and key stakeholders work together at this event to identify practical conservation policies and practices for businesses and local residents.

Due to the demand at each of the two previous sold-out events we are expanding the sponsorship opportunities. Each sponsor level will receive a coinciding allotment of tickets, recognition in the event program, website and in all other conference materials.

As an added benefit, this year we will also be introducing our water conservation showcase to provide participants with an opportunity to secure a booth and feature their respective products, goods and services at the event.

We urge you to act fast. We expect yet another sell-out and sponsorship packages as well as the water conservation showcase booths are limited. To determine which sponsorship level is the best fit for your organization or to secure a booth, please go to www.sbcwater.com and call Nicole Desmond at (909) 795-7760.

Thank you in advance for your generous participation at the 2009 San Bernardino County Water Conference.

Sincerely,

Gary Ovitt
Chairman, 4th District
San Bernardino County

Josie Gonzales
Vice-chair, 5th District
San Bernardino County

Frank Williams
CEO, BIA
Baldy View Chapter

Kirby Brill
General Manager,
Mojave Water Agency

Richard Atwater
General Manager,
Inland Empire
Utilities Agency

Randy Van Gelder
General Manager,
San Bernardino Valley
Municipal Water District

Celeste Cantu
General Manager,
SAWPA

Robert DeLoach
General Manager,
Cucamonga Valley
Water District

Ali Sahabi
Chairman/Founder,
Green Institute for
Village Empowerment

Charley Wilson
Chairman,
Southern California
Water Committee

Kevin Wolf
President,
Germania



SAN BERNARDINO COUNTY WATER CONFERENCE

HOSTED BY:

Supervisor Gary Oviitt, Chairman
Supervisor Josie Gonzales, Vice-Chair

Co-hosts (partial list)

- Senator Bob Dutton
Assemblyman Bill Emerson
Assemblyman Paul Cook
Assemblyman Curt Hagman
Supervisor Paul Blaine
Supervisor Brad Mirsdiecht
Supervisor Ned Derry
Big Bear Municipal Water District
Big Bear Lake
Chino Basin Water Conservation District
City of Adelanto
City of Chino
City of Chino Hills
City of Fontana
City of Hesperia
City of Ontario
City of Rancho Cucamonga
City of Rialto
City of Upland
City of Victorville
Town of Yucca Valley
Chino Basin Water Conservation District
Cucamonga Valley Water District
Hesperia Water District
In-Desert Water District
Inland Empire Utilities Agency
Joshua Basin Water District
League of California Cities - Desert Mountain Division
Metropolitan Water District
Morongo Water Agency
San Bernardino Valley MWD
Santa Ana Watershed Project Authority
Twentynine Palms Water District
Victor Valley Wastewater Reclamation Authority



Presenting Sponsor \$20,000 (Limited to one company)

- Listed in promotional materials
Prominent placement of company logo on www.sbcwater.com with hyperlink
Opportunity to serve as Master of Ceremonies for event
1-minute promotional video to be played at event
Company logo on cover of program and full page ad in program
Priority position for 2 exhibit booth tables (Booth staff need tickets)
Company banner displayed in registration area
Four tables of ten (40) tickets with priority placement
Recognized in event follow up materials including post-event thank you letters
Copy of event video

Platinum Sponsor \$15,000

- Listed in promotional materials
Prominent placement of company logo on www.sbcwater.com with hyperlink
Full page ad in program
Opportunity to introduce a speaker
Priority position for 2 exhibit booth tables (Booth staff need tickets)
Company banner displayed in registration area
Three tables of ten (30) tickets with priority placement
Recognized in event follow up materials including post-event thank you letters
Copy of event video

Gold Sponsor \$10,000

- Listed in promotional materials
Placement of company logo on www.sbcwater.com with hyperlink
1/2 page ad in program
Priority position for 1 exhibit booth table (Booth staff need tickets)
Company banner displayed in registration area
Two tables of ten (20) tickets with priority placement
Copy of event video

Silver Sponsor \$7,000

- Listed in promotional materials
Placement of company logo on www.sbcwater.com with hyperlink
1/4 page ad in program
One exhibit booth table (Booth staff need tickets)
Company banner displayed in registration area
One tables of ten (10) tickets with priority placement

Bronze Sponsor \$4,000

- Listed in promotional materials
Placement of company logo on www.sbcwater.com with hyperlink
One exhibit booth table (Booth staff need tickets)
Company banner displayed in registration area
Five event tickets

Booth Sponsor \$2,000

- Placement of company logo on www.sbcwater.com with hyperlink
One exhibit booth table (2 staff tickets included)

Program Advertising:
Full page: \$1,000
1/2 page: \$500
1/4 page: \$250

Project Priority List

PROJECTS NEARING COMPLETION

- **Complete Wastewater Treatment Strategy and Implementation Mechanisms**
(Joe Guzzetta, Susan Greer, Joe Bocanegra)
Draft has been submitted to the Board and the Citizens Advisory Committee.
- **Package Treatment Plant Policy Regarding Construction and Maintenance**
Study is underway by Dudek & Associates.
- **Miscellaneous Pipeline Replacement Project: Juniper north of Hwy 62, Veterans Way and Center St. between Chollita Rd. and Commercial St., easement behind Hwy 62 (south side) between El Reposo Circle and Sunset Rd., easement behind Hwy 62 (south side) Conejo Ave. and Outpost Rd; Torres Ave., Division St., San Angelo Way; Sunflower Rd., Sun Mesa Rd. between Sunever Ave. and Sun Kist Rd.**
Project is ready to go to bid, awaiting possible grant funds
- **Conservation Landscape Demonstration Garden & Residential Landscape Designs**
District has advertised for bids for construction of demonstration gardens. Bids to be publicly opened Thursday May 28.

Site Security and Telemetry System Upgrades: Enhancements to site security including motion sensors and intrusion alarms is approximately 95% complete.

Review of Community Service District (CSD)

The Board referred to the Citizens Advisory Committee consideration of the impacts of a CSD on Joshua Basin Water District. Committee recommendations were presented at the July 18th 2007 Board meeting and continued to a later date.

Conduct Fee Study (Susan)

Water rates, capacity and inter-agency fee studies have been completed. Miscellaneous fees are being developed, based upon resources used – staff, vehicle, equipment, etc.

Well #16 (Joe Bocanegra)

Tri-Star Contracting, Inc. of Desert Hot Springs has completed installation of approximately 3,664 feet of electrical conduit. Staff is updating proposals to install and connect pumps.

Personnel Policy Manual (Joe Guzzetta)

Completed and under review by the labor counsel.

Landscape Ordinance (Joe Guzzetta)

AWAC will draft a new model ordinance to comply with new state legislation AB 8118

PROJECTS UNDERWAY

Implement “Best Management Practices” of the California Urban Water Conservation Council (Terry Spurrier)

Information was presented at March 18th Board meeting.

Develop Public Outreach Program

An Ad Hoc committee was appointed. Public information for the Groundwater Recharge Project and the Water and Land Use Forum are underway.

Land Use/Water Policy Forum (Joe Guzzetta)

Staff and Ad Hoc Public Information committee met with Water Resources Institute to continue planning for a forum. Agreement with CSUSB was approved at March 18th Board meeting.

Record Archival System (Susan)

Staff had second presentation.

Recharge Site Evaluation/USGS Study

Contract for environmental studies has been issued to ESA Environmental consulting firm. Notice of Preparation of EIR is being prepared together with initial surveys.

C-2 Tank Relocation (Joe Bocanegra)

Ready to go to bid pending funding.

Tank Recoating (Joe Bocanegra)

D-1-1 tank has been recoated and painted per contract with Utility Services Co., Inc. Proceeding with recoating and painting second tank (D3) in March and a 3rd tank in the spring.

PROJECTS NOT BEGUN

Final Phase of 4" Pipe Replacement (Joe Guzzetta, Joe Bocanegra, Keith Faul)

Develop/Update Board Policies and Procedures (Susan Greer)

Emergency Preparedness/Response Exercises

Update 3030 Plan (Joe Guzzetta)

Staff intends to solicit proposals for this project.

Equipment Carport at Shop (Joe Bocanegra)

Needs are being evaluated.

Election to Charge Private Wells for Replacement Water

Attorney is reviewing election options.

PROJECTS COMPLETED

Replace Accounting Mainframe (Susan)

First water bills using new system were mailed.

Emergency Generator (Joe Bocanegra)

Generators have been delivered.

Remote Meter Policy (Susan)

Board has adopted revised policy.

Website Development /Establish District Public Information Program (Joe Guzzetta)

The website is up and running.

Property Acquisition for Future Water Facilities

Property acquisition consultant was selected at the September 9th Board meeting.

Construction of H Zone Phase II Pipeline Replacement Project

Completed. Notice of Completion filed.

Replace Line Printer (Susan)

Replaced with smaller printers.

Develop Cross-Connection Control Program

Program is being implemented.

Replace JD310 Tractor

Complete.

Replace Septic Tank at Shop

Complete.

Sewer Management Authority

LAFCO designated JBWD as the wastewater authority on August 15th.

Construction of H Zone Phase I Pipeline Replacement Project

Construction of Phase I is complete.

Well 17 Wellhead Construction

Well became operational in July.

Organization Study

Completed. Staff is implementing the study.

Closed Circuit Security System

Video monitoring system is in place.

Safety Consultant; Program

Initial safety plans are complete.

JOSHUA BASIN WATER DISTRICT
SUPPLEMENTAL DATA SHEET

Regular Meeting of the Board of Directors

June 3, 2009

Report to: President and Members of the Board
From: Mike Reynolds, Director

TOPIC: PROPOSAL TO INITIATE MEETINGS WITH OTHER MORONGO
BASIN WATER DISTRICTS FOR MORE REGIONAL INFLUENCE
IN LEGISLATIVE MATTERS IN SACRAMENTO

RECOMMENDATION: That the Board discuss the advantages of participating with
other Morongo Basin water districts to maximize our regional
influence in Sacramento, benefiting the Basin in legislative
matters.

ANALYSIS: One of the matters discussed at the recent conference of the
Association of California Water Agencies (ACWA) was to
encourage water districts to join with other local districts in
meeting with their state legislators and in other activities to
increase their regional influence in Sacramento. Some
agencies in the Lake Elsinore area have provided a model for
such an affiliation.

I am proposing that the Board discuss the advantages of
initiating informal monthly meetings with other Morongo Basin
water agencies, during the legislative season, or as needed, to
address legislative matters of importance to the Basin.

Recently the Board heard a presentation from Mike Stevens,
Mojave Water Agency, and approved participation in a
Legislative Alliance in the MWA service area. A Morongo Basin
group could provide valuable input to a larger MWA alliance.

If the Board approves this concept, I will volunteer to be
appointed by the President to work with another board
member and staff to meet with the other water districts.

With all of the changes occurring in the world of water, it is
increasingly important to be aware of actions in Sacramento
and to work with other water agencies to define our positions
and be heard in Sacramento.