MOHAVE VALLEY IRRIGATION & DRAINAGE DISTRICT

1460 Commercial Street
Mohave Valley, Arizona 86440
Phone: (928) 768-3325 • Fax: (928) 768-5239
Email: office@mvidd.net • Website: MVIDD.net

July 18, 2018

Bureau of Reclamation
Financial Assistance Support Section
Attn: Matthew Reichert
P. O. Box 25007, MS 84-27814
Denver, CO 80225

RE: Mohave Valley Irrigation & Drainage District
Grant Opportunity BOR-DO-18-F009

Dear Matthew:

The Mohave Valley Irrigation & Drainage District (MVIDD or District) is applying for a WaterSMART Grant: (Small-Scale Water Efficiency Projects for Fiscal Year 2018). Enclosed please find the application, Assurances, Technical Proposal, Map of District, budget information and a copy of MVIDD's accepted 2014 Water Conservation Plan.

The District has had great success with it's last grant from the BOR and looks forward to continuing that success with this grant opportunity.

Should you have any questions or if I may be of any further assistance, please do not hesitate to contact the District office.

Sincerely,

Mark R. Clark, CCM
Manager

MRC:cp

cc: Mr. Charles B. ("Chip") Sherrill, Jr.
Mr. Michael Pearce

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Executive Summary

The Mohave Valley Irrigation And Drainage District (MVIDD or District) is located in northwest Arizona in Mohave County just south of Bullhead City along the Colorado River. The District is a special taxing district created under Title 48 of the Arizona Revised Statutes. The District was formed in 1963 under Mohave County Board of Supervisors Resolution Number 248. In 1968 the District entered into contract 14-06-W-204 (41,000 acre-feet net) with the Bureau Of Reclamation (Reclamation or BOR) for the delivery of Colorado River Water. In 2009 the District entered into sub-contract 09-101 with the Mohave County Water Authority (MCWA) for 1,000 acre-feet of additional Colorado River Water which was amended in 2015 to add an additional 250 acre-feet of Colorado River Water.

The District's water use is 81% agricultural, 6% amenity and 13% M & I. Of the 13% M & I, 11% is delivered by five utility companies operating within the District. The District recently completed a well inventory of the agricultural, amenity and utility company wells. This provided the District with information on wells providing approximately 99% of the water used within the District. The District currently has 44 agricultural wells, 10 amenity wells, 25 utility company wells and 1,560 exempt wells. The 44 agricultural wells account for 81% of the water used within the District.

The District is requesting financial assistance in the replacement of well discharge lines. These lines take water from the wellhead to the irrigation ditch. The District is anticipating replacing 15 to 20 well site discharge lines. This would include replacing the existing lines with PVC pipe and fittings. The total cost of this project (labor and material) is estimated at $100,000.00. This project is described in section 7 (Selected Measures and Projected Results) and 9 (Implementation Schedule and Budget for Each Selected Measure) of the District's 2014 Water Conservation Plan. This would allow the District to be able to measure water well flow data that is currently unavailable.

Many of the current discharge lines are old and corroded and as such we are unable to get flow measurement readings on many of the wells. By replacing the current discharge lines with PVC pipe we will be able to get readings on wells we cannot currently test. This will allow the District to take better advantage of the flow meter testing equipment it previously purchased with the assistance of a BOR grant. The District purchased flow meter testing equipment used to flow test

agricultural wells within the District on an annual basis. This gives a very high level of accuracy in the measurement of water resources on the wells we are able to test. This annual measurement provides up to date data on how much water is flowing from the agricultural wells within the District. This allows the farmers to more accurately irrigate their fields since they have current flow rate data for their wells. This allows for the conservation of water resources as well as power savings by not running wells more than necessary and improved accuracy in reporting the water usage within the District to Reclamation. It is anticipated the work will take approximately nine (9) months to complete.

Background Data

The District has a Colorado River Water contract with the BOR (14-06-W-204 for 41,000 acre-feet)) and a subcontract for Colorado River Water through the Mohave County Water Authority (09-101 for 1,250 acre-feet). The District relies totally on Colorado River Water for all uses. There are no groundwater supplies within the District and thus all water used within the District is considered Colorado River Water. The District orders water and provides crop reporting to Reclamation on an annual basis and provides Reclamation with monthly water usage reports. For the calendar year 2017 the District used 31,905 acre-feet of water, 25,982 (81%) was for agricultural irrigation and 5,923 (19%) was used for M & I purposes. Alfalfa (83%) is the primary crop planted in the District with Bermuda Grass (11%) and Sudan (3%) coming in second and third.

The District inspects facilities and flow tests the wells annually.

In 2015 the District received a grant from the BOR for well flow testing equipment. This is a follow up to that grant and will allow the District to put the previously purchased equipment to better use.

Project Location

The Mohave Valley Irrigation and Drainage District is located in northwest Arizona in Mohave County just south of Bullhead City in the floodplain along the Colorado River. The District relies totally on Colorado River Water for all uses. There are no groundwater supplies within the District and as such all water used within the District is considered Colorado River Water.

Technical Project Description

In 2015 the District received a grant from Reclamation for well flow testing equipment. This is a follow up to that grant, this will allow the District to put the previously purchased equipment to better use.

The District has been using the well flow testing equipment for 3 years now and we have found that the equipment has not been effective on some of the well discharge pipes. Some pipes are corroded and the equipment cannot get readings through the pipe. The District would like to replace the pipes that are not readable with new PVC pipe. This would entail removing the existing steel discharge pipes taking water from the wellhead to the irrigation ditch and replacing them with PVC pipe. The PVC pipe would be placed in the same location as the removed steel pipe. This would include all labor and material including mechanical joints at wellheads and any braces and fittings. Since the project entails the replacement of short runs of pipe located in the same location, there are no environmental, biological or cultural issues associated with this project. Therefore there are no NEPA, clean water act, NHPA, issues or EIS requirements and no environmental costs.

We anticipate replacing 15 to 20 sites at an estimated cost of $5,000.00 per site. This would then allow the District to get accurate well flow readings from wells that are currently unreadable.

Evaluation Criteria

Evaluation Criteria A – Project Benefits (35 points)

In 2015 the District received a grant from the Bureau of Reclamation for well flow testing equipment. This is a follow up to that grant and will allow the District to put the previously purchased equipment to better use.

This would include all labor and material including mechanical joints at wellheads and any braces and fittings. We anticipate replacing 15 to 20 sites at an estimated cost of $5,000.00 per site. This would then allow the District to get accurate well flow readings from wells that are currently unreadable.

The result of this implementation would be to obtain well flow readings from those wells currently unreadable. This would allow the District to flow test additional agricultural wells on an annual basis. Utility company wells are metered and tested in accordance with rules and regulations of the Arizona Corporation Commission and thus not included in the District's annual flow testing. We also now require well meters on all amenity wells and as such those wells are not tested annually.

This would provide the District with more accurate information on the water usage within the District. The anticipated benefits of the project include water savings due to farmers having more accurate information of how much water is flowing from their wells. This will allow the farmers to more accurately irrigate their fields since they will know what the flow rate is for their wells. This will allow for the conservation of water resources as well as reducing energy costs by not running wells more than necessary. It will also increase the accuracy of water use reporting to Reclamation and better management of 30,000 acre-feet of water on an annual basis.

The District farmers work closely with NRCS on other projects like new well installation and or rehabilitation, irrigation ditch repair and replacement and repair and replacement of equipment. Through this grant the District will be able to test more wells. With more wells being tested the farmers will know when repairs are required. For example: in testing wells over the last 3 years we have seen a few wells output drop substantially. This then led to the replacement of a few pumps. When those wells were tested earlier this year their output was much higher. All this happened because we were able to test the well flow rates which leads to the wells being run more efficiently and using less power and water to achieve the same results.

The information provided by this project will be more accurate than current devices. This will allow the District to provide more accurate data to Reclamation on water usage within the District. The District will use the data to determine how much water is used per acre of farmland in a given year. The water flow data will be compared to prior years data to determine the efficiency of the wells. This information will alert the owner of the well if production begins to fall off and maintenance can be performed to keep the well operating efficiently. This will ultimately provide the District with the ability to better manage its limited resource.

The District reports its water use monthly to the BOR. This will allow the District to provide better information to the BOR, which will help in planning. With shortages looming on the horizon better information is desperately needed.

Evaluation Criteria B – Planning Efforts Supporting the Projects (35 points)

The District completed their Water Conservation Plan for Reclamation, which received very positive comments from the BOR staff. In accordance with section 7 and 9 of the Water Conservation Plan, which states in part "Develop a new water metering program to more accurately record the usage of water within the District", the District has been using the well flow testing equipment for 3 years now and we have found that the equipment has not been effective on some of the well discharge pipes. Some pipes are too corroded and the equipment cannot get readings through the pipe. The District would like to replace the pipes that are not readable with new PVC pipe. This would entail removing the existing discharge pipes taking water from the wellhead to the irrigation ditch and replacing them with PVC pipe.

The District has contacted a contractor to get assistance with the installation. After inspecting a few sites, it was determined that the installation could be completed rather easily with no engineering required. We will schedule the installation when the wells are out of production. It is estimated it would take a few hours per site to change out the old pipe.

Evaluation Criteria C –Project Implementation (10 points)

The District has contacted a contractor to assist the District in replacing the corroded steel pipe with new PVC pipe from the wellhead to the irrigation ditch. This is not a complex project requiring engineering. Most of the pipe runs are less than 15 feet in length. We have a few that are 30 feet in length. Most sites only need a mechanical joint connection at the wellhead and a 45 or 90-degree fitting to direct water into the ditch. We anticipate the project beginning in October 2018 and being completed in June 2019. The old pipe will be scrapped for reuse by others.

The project complies with the Districts current policies and there are no environmental issues. Since the project entails the replacement of short runs of pipe located in the same location, there are no environmental, biological or cultural issues associated with this project. Thus there are no NEPA, clean water act, NHPA, issues or EIS requirements and no environmental costs.

Evaluation Criteria D –Nexus to Reclamation (10 points)

In 1968 the District entered into contract 14-06-W-204 (41,000 acre-feet net) with Reclamation for the delivery of Colorado River Water. The District reports its monthly water use to the BOR, places an annual water order for project water with the BOR and reports its crop details to the BOR annually.

Evaluation Criteria E –Department of the Interior Priorities (10 points)

This project is in conformity with the Department of Interiority Priority of "Modernizing our infrastructure". This project calls for the replacement of old corroded pipes with new PVC pipes. It also will inform The District of when wells are not producing as designed so they can be

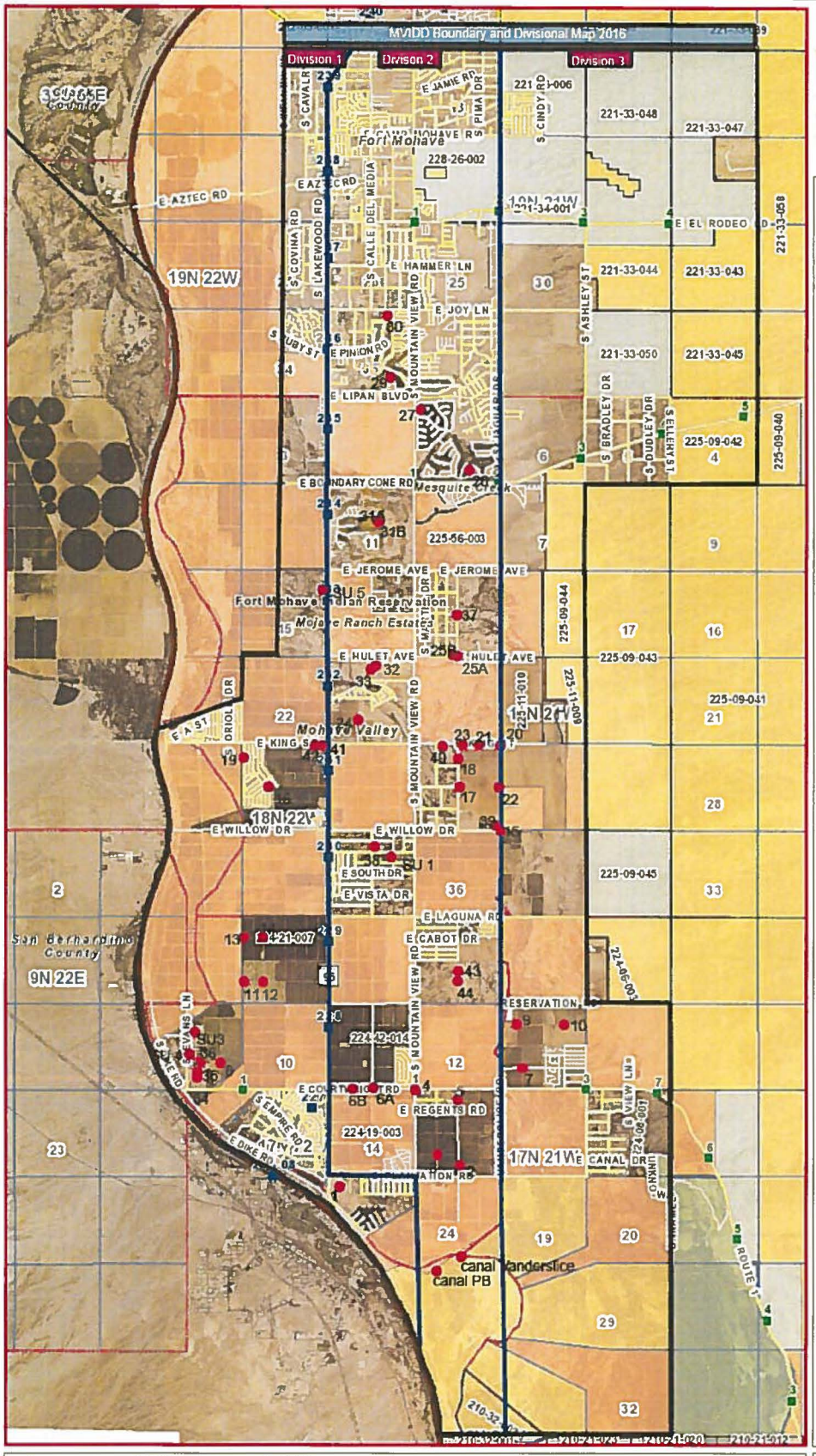
evaluated for repairs or replacement of other additional infrastructure. This project will provide for conservation of water due to farmers having more accurate information of how much water is flowing from their wells. This will allow the farmers to more accurately irrigate their fields since they will know what the flow rate is for the wells. This will allow for the conservation of water resources as well as reducing energy use by not running wells more than necessary. This would also comply with the Department of Interior Priority "Utilizing our natural resources". It will also increase the accuracy of water use reporting to Reclamation and better management of 30,000 acre-feet of water on an annual basis.

The District has contracts for 42,250 acre-feet of Colorado River Water. This water is used 81% agricultural, 6% amenity, 11% M&I through utility companies and 2% other, any unused water remains in the river and becomes excess system water. The District is in close proximity to the Colorado River and as such has water that is recharged into the river system. Any water conserved by the District will remain in the river and become additional excess system water.

At this juncture with shortages looming on the river it is imperative that we not waste any water. This project will help save water and increase the accuracy of the Districts reporting which will have the added benefit of assisting Reclamation in their system planning.

gis.mohavecounty.us

Interactive Map Viewer



Legend

- GVID#1 Admin Infrastructure
  - District Office
  - Standpipe
- Waterlines
- ADOT Mileposts
- COUNTY Mileposts
  - Sign Post Exists
  - Calculated Measure
- Highways
- Main Arterials
- Collectors
- Local
- Railroad
- (greater than 1:200,000 scale)
- Township/Range
- Section
- Surface Management
  - AZ Game and Fish
  - Bureau of Land Management
  - Bureau of Reclamation
  - City or County Parks
  - Indian Reservation
  - Military Reservation
  - National Parks
  - National Wildlife Refuge
  - Other
  - Private
  - State Parks
  - State Trust
  - US Forest Service
- Water Lines
- Sewer Lines
- Named Washes

N
W E
S

1: 89,648

0 7,470.7 14,941.4 Feet
(approximate scale)

Map Created: 9/19/2016

Notes:

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July 18, 2018

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

Potential issues related to environmental and cultural resources compliance—this criterion evaluates whether or not the proposal includes discussion and answers to questions posed in Section D.2.2.6.

Since the project entails the replacement of corroded steel pipe with PVC pipe in the same location, there are no environmental, biological or cultural issues associated with this project. Thus there are no NEPA, clean water act, NHPA, issues or EIS requirements. The preliminary engineering will include the evaluation of regulatory approvals and environmental concerns. If any of these issues arise they will be addressed in future assistance requests.

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REQUIRED PERMITS OR APPROVALS

> Potential issues related to required permits or approvals—this criterion evaluates whether or not the proposal includes discussion and answers to questions posed in Section D.2.2.7.

Since the project entails the replacement of corroded steel pipe with PVC pipe in the same location, there are no permits or approvals needed for this project.

MOHAVE VALLEY IRRIGATION & DRAINAGE DISTRICT

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July 18, 2018

Budget Narrative

The Mohave Valley Irrigation And Drainage District in accordance with its 2014 Water Conservation Plan, is implementing a second phase of its water measurement project (Discharge Pipe Replacement Project). The facilities necessary to institute the project is detailed below.

A. **Replace Well Discharge Pipe with PVC Pipe.** This will allow the previously purchased well metering equipment to read wells that are currently not readable.
B. **Mechanical Connections.** This will be used to connect the new PVC pipe to the wellhead.
C. **PVC Fittings.** This will be used at the end of the pipe to direct the water into the irrigation ditch
D. **Bracing.** This will provide the support structure for the PVC pipe in locations where the pipe will be off the ground.

Total cost estimated at $5,000.00 per site with a total cost of $100,000.00 for 20 sites.

REVIEW OF WATER CONSERVATION PLAN
MOHAVE VALLEY IRRIGATION & DRAINAGE DISTRICT
SUBMITTED AUGUST 2014

I **Requirements of Law and Regulation.**

BACKGROUND: *Section 210(b) of the Reclamation Reform Act of 1982 requires water service contractors to "... develop a water conservation plan which shall contain definite goals, appropriate water conservation measures, and a time schedule for meeting the water conservation objectives." Title 43 Code of Federal Regulation Part 427.1(b) further states that contractors are to "develop and submit to the Bureau of Reclamation a water conservation plan which contains measures which are economically feasible ..."*

1. Does the plan contain definite goals?
   __X__Yes ____No _____Unclear
   Comments: *Included in Steps 3, 5, 6 & 7. Goals are clear and meaningful.*
2. Are economically feasible measures identified?
   __X__Yes ____No _____Unclear
   Comments: *Measures are all economically feasible.*
3. Is there a time schedule for meeting those objectives?
   __X__Yes ____No _____Unclear
   Comments: *Listed in Step 9. Completion dates provided.*

II **Recommended Content.**

BACKGROUND: *Reclamation's Policy for Administering Water Conservation Plans Pursuant to Statutory and Contractual Requirements, dated December 10, 1996, outlines the recommended elements of a water conservation plan. It is Reclamation's view that these elements represent the primary components of an effective plan.*

1. **Description of the District**: Does the plan provide a general understanding of the district?
   _X__Yes ____No _____Unclear
   Comments: Excellent information provided on the district and its history.
2. **Inventory of Water Resources**: Is there an inventory which addresses when, where, and how water is used within the district?
   __X__Yes ____No _____Unclear
   Comments: *Step 2, Thorough compilation of resources.*
3. **Water Management Problems, Opportunities, and Goals**:
   1. Are water management problems and opportunities identified?
   __X__Yes ____No _____Unclear
   Comments: Listed in Step 3, well defined.
   2. Are measurable goals with definite objectives identified?
   __X__Yes ____No _____Unclear
   Comments: *Included in Step 7, clear and well written.*

4. **Existing Water Conservation Measures**:
   1. Is there a description of the district's existing water conservation measures?
      __X__Yes ____No _____Unclear
      Comments: Step 4, appropriate measures
   2. Is there an evaluation of how the district's existing measures have worked?
      __X__Yes ____No _____Unclear
      Comments: *Step 4.B*
5. **Fundamental Water Conservation Measures**: Has the district addressed how it has implemented, or could implement, each of these measures?
   1. **Water Measurement and Accounting**: A system designed to measure and account for water delivered to the water users.
      __X__Yes ____No _____Unclear
      Comments: *Step 5.A, meter installation program since 2010*
   2. **Water Pricing Structure**: A water pricing structure that encourages efficiency.
      __X__Yes ____No _____Unclear
      Comments: *Step 5.B*
   3. **Information and Education Program**: Participation in an information program designed to promote efficient water use.
      __X__Yes ____No _____Unclear
      Comments: *Step 5.C, M&I and Ag customers provide water conservation education to schools, farmers.*
   4. **Water Conservation Coordinator**: A person is identified who is responsible for development and implementation of the water conservation plan?
      __X__Yes ____No _____Unclear
      Comments: *Step 5.D, Mark Clark*
6. **Additional Water Conservation Measures**: Are all potentially applicable water conservation measures, beyond the four fundamental measures, evaluated to determine whether they are feasible or practical?
   __X__Yes ____No _____Unclear
   Comments: Step 6, MVIDD is proactively implementing measures where feasible
7. **Selected Measures and Projected Results**:
   1. Are the four fundamental measures addressed?
      __X__Yes ____No _____Unclear
      Comments: *Step 7*
   2. Are existing measures that have proven to be effective, identified and continued?
      __X__Yes ____No _____Unclear
      Comments: *Effective measures remain in place*

3. Are methods for monitoring the results identified?
__X__Yes ____No _____Unclear
Comments: *MVIDD continues to work closely with BOR*

8. **Environmental Effects**: Have environmental effects of implementing the plan been addressed?
__X__Yes ____No _____Unclear
Comments: *Step 8*

9. **Implementation Schedule and Budget**: Are a schedule and budget for implementation of the plan included in the plan?
__X__Yes ____No _____Unclear
Comments: *Step 9, thorough and clear, definite completion dates*

III **Public Involvement and Support.**
BACKGROUND: Reclamation's *Guidebook for Preparing Agricultural Water Conservation Plans* stresses the importance of public involvement and support. In order for a plan to be credible and effective, it is essential to obtain input from people affected by the plan, and support from the board or governing body.

1. Has development of the plan been a public process?
__X__ Yes ____No _____Unclear
Comments: *Reviewed by the Board of Directors (5) times. Presented to the public for consideration and comment at the May 5, 2014 MVIDD Monthly Board Meeting. Public comments were considered at the June 3, 2014 MVIDD Monthly Board Meeting.*

2. Has the water conservation plan been adopted and approved by the board or governing body?
__X__ Yes ____No _____Unclear
Comments: *Approved by the MVIDD board on August 5, 2014*

IV **General Comments**: *One of the most comprehensive and informative Water Conservation Plans I have seen to date. Tells me everything I need to know about the Mohave Valley Irrigation and Drainage District, the challenges it faces and what it is doing to conserve this limited resource.*

Mohave Valley
Irrigation and Drainage District

Water Conservation Plan

2014

Prepared By:
Mark R. Clark, CCM
QPC, INC.

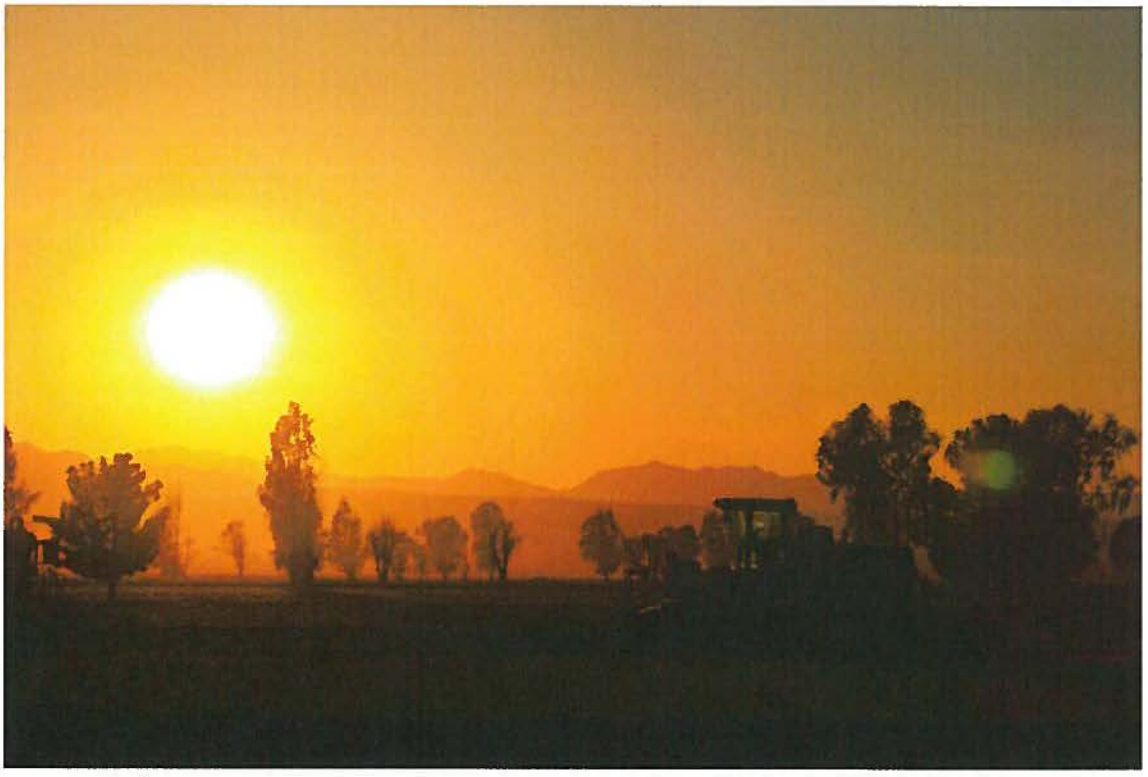
Table of Contents

Step 1 – Description of Contract Area
A. History

The Mohave Valley Irrigation and Drainage District (MVIDD or District) has been in existence for over 50 years. It has been transformed from an almost entirely agrarian area to one with a substantial M & I component (26% in 2013). While the agricultural component has decreased over the years, the importance of it has not.

The District is a special taxing district created under Title 48 of the Arizona Revised Statutes. The District was formed on December 23, 1963, under Mohave County Board of Supervisors Resolution Number 248.

The District is managed by a Board of Directors. Upon the District's formation, 3 directors were elected, 1 from each division. In 2004, the District increased the number of directors to 5. The board is currently comprised of one director from each of the 3 divisions and 2 at large. Elections are held in November and directors take office in January.



The District entered into its first U.S. Bureau of Reclamation (USBR) contract on November 14, 1968, in the amount of 51,000 acre-feet of Colorado River water (contract no. 14-06-W-204). This contract stipulated that a reduction of no more than 10,000 acre-feet of water could be made if the District does not include within its boundaries such areas of additional

lands as may be satisfactory to the Secretary, and if facilities for providing water service to said additional lands and to the residents therein are not available. On July 7, 1982, the USBR entered into contract number 2-07-30-W0027 with Mohave County for said 10,000 acre-feet of Colorado River water. This contract was subsequently transferred to the City of Bullhead City on December 2, 1985. These transactions reduced the District's water entitlement under contract 14-06-W-204 to 41,000 acre-feet. Of the 41,000 acre-feet entitlement, 5,940 acre-feet are Present Perfected Rights (PPR) and 35,060 acre-feet are 4th priority water. Any unused PPR water is converted to 4th priority water on an annual basis.

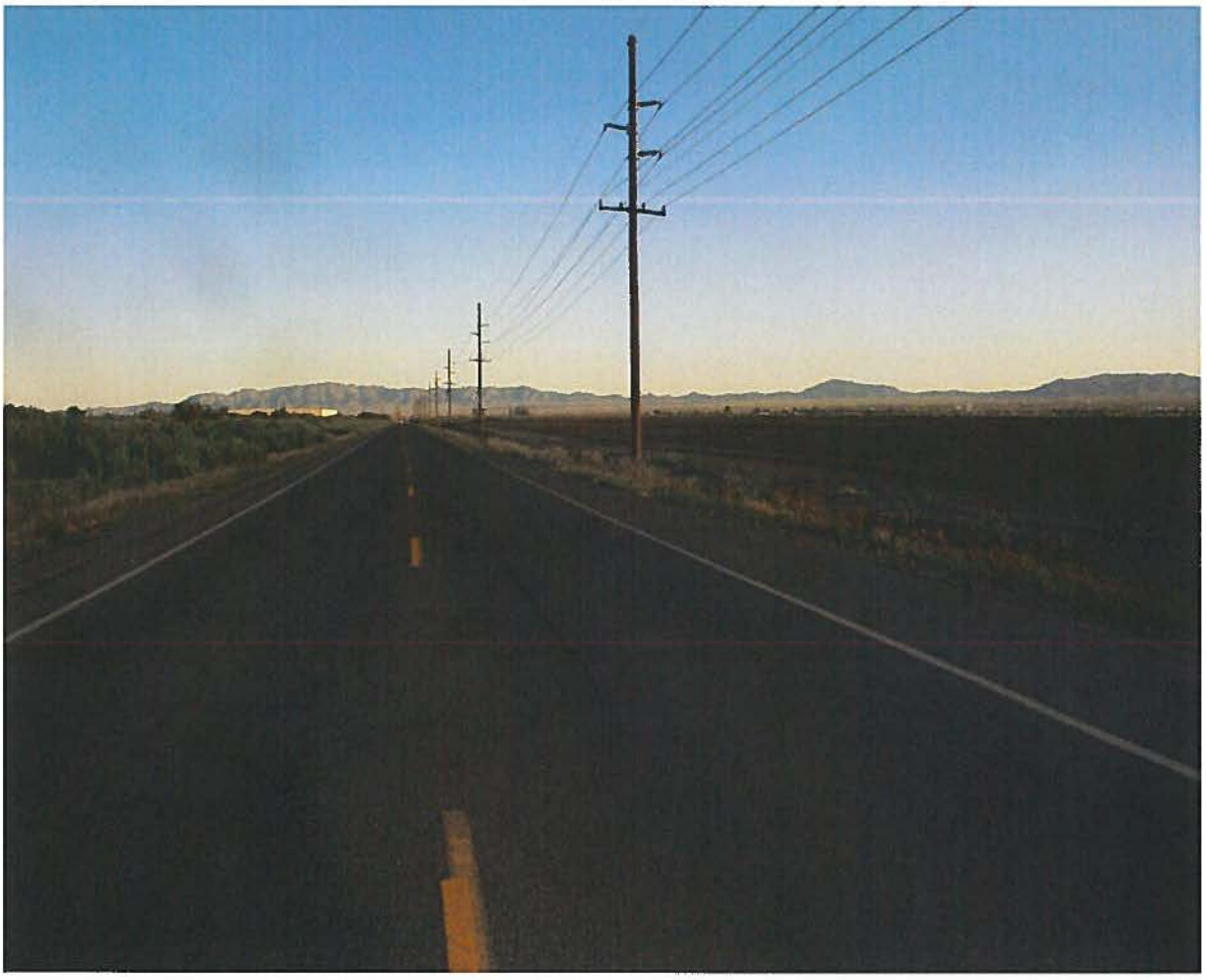
On December 17, 2009, the District entered into sub-contract number 09-101 for the purchase of 1,000 acre-feet of Colorado River water from the Mohave County Water Authority. With the completion of this sub-contract, the District's total water entitlement rose to 42,000 acre-feet.

The District, as the contract holder, has the right to subcontract its entitlement to entities and individuals located within the District boundaries (excluding Fort Mohave Tribal Reservation Lands). This is carried out in compliance with District Policies and Arizona Department of Water Resources (ADWR) guidelines. The District has allocated water to agricultural, amenity, municipal, residential, and commercial subdivisions and individual users within its boundaries.

The District is somewhat unique in that it uses water not only for agricultural irrigation, but also for M & I purposes. M & I uses include amenity (golf courses, water amenity), commercial entities, residential subdivisions. and individual domestic users.

B. Location

The District is located in northwestern Arizona in Mohave County. The District lies along the Colorado River within the rivers flood plain between the cities of Bullhead City, Arizona, to the north and Needles, California. to the south.



The legal description of the District is as follows:

MOHAVE VALLEY IRRIGATION

and

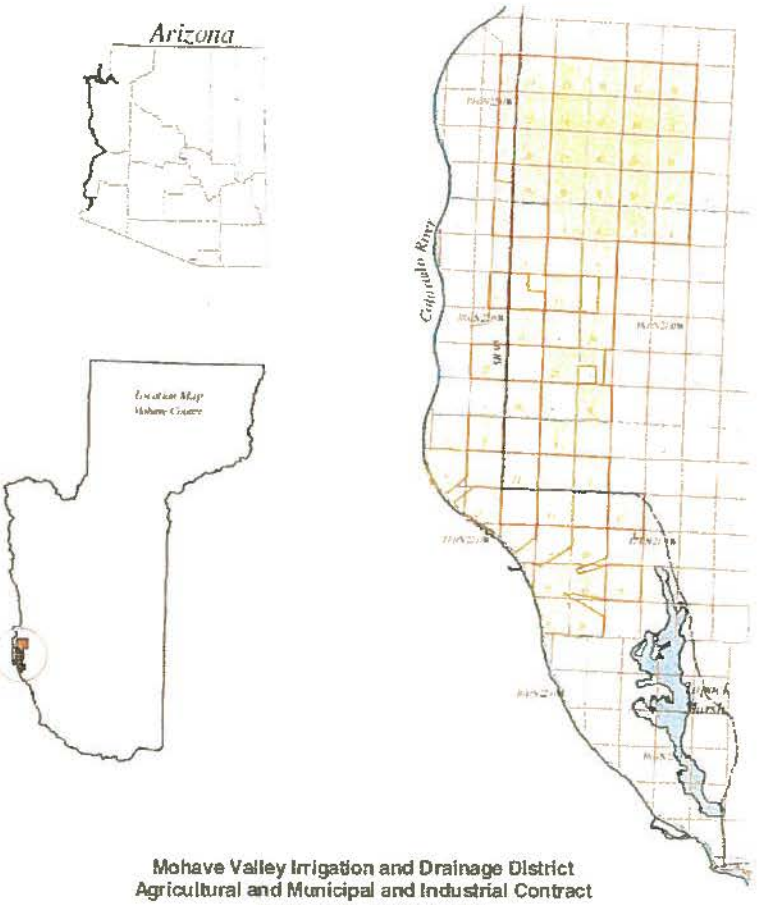
DRAINAGE DISTRICT

District Boundary Description

Beginning at the northeast corner of Section 16, T.19 N., R.21 W., G.&S.R.B.&M.; thence southerly along the east line of Sections 16, 21, 28, and 33, T.19 N., R.21 W., to the southeast corner of said Section 33; thence southerly along the east line of Section 4, T.18 N., R.21 W., G.&S.R.B.&M., to the southeast corner of said Section 4; thence westerly along the south line of Sections 4 and 5 to the southwest corner of said Section 5; thence southerly along the east line of Sections 7, 18, 19, 30, and 31, T.18 N., R.21 W., to the southeast corner of said Section 31; thence southerly along the east line of Section 6, T.17 N., R.21 W., G.&S.R.B.&M., to the southeast corner of said Section 6; thence easterly along the south line of Section 5 to the southeast corner of said Section 5; thence southerly along the east line of Sections 8, 17, 20, 29, and 32, T.17 N., R.21 W., to the southeast corner of said Section 32; thence westerly along the south line of Sections 32 and 31, T.17 N., R.21 W., to the southwest corner of said Section 31; thence westerly along the south line of Section 36, T.17 N., R.22 W., to the easterly bank of the Colorado River; thence northerly following the meanderings of the easterly bank of the Colorado River to its intersection with the south line of the Fort Mohave Indian Reservation, said intersection lying in fractional Section 21, T.18 N., R.22 W, G.&S.R.B.&M.; thence EA westerly along the south line of the Fort Mohave Indian Reservation to its intersection with the west line of Section 22; thence northerly along the west line of Section 22 to the northwest corner of said Section 22; thence easterly along the north line of Section 22 to the southwest corner of fractional Section 15, T.18 N., R.22 W., G.&S.R.B.&M., thence northerly along the west line of fractional Sections 15, 10, and 3, T.18 N., R.22 W., G.&S.R.B.&M. to the northwest corner of said fractional Section 3; thence northerly along the west line of fractional sections

34, 27, 22 and 15, T.19 N., R.22 W., G.&S.R.B.&M., to the northwest corner of said fractional Section 15; thence easterly along the north line of fractional Section 15, 14, and 13, T.19 N., R.22 W. to the northeast corner of said Section 13; thence easterly along the north line of Section 18, 17, and 16, T.19 N., R.21 W., to the point of beginning. Except any portion of the above lying within the State of California.

Mohave Valley Irrigation and Drainage District



Mohave Valley Irrigation and Drainage District
Agricultural and Municipal and Industrial Contract
Contract No. 14-06-W 204
Total Entitlement - 41,000 Acre Feet
1st Priority - 5,940 Acre Feet
4th Priority - 35,060 Acre Feet
5th and/or 6th Priority - 600 Acre Feet

Mohave Valley Irrigation and Drainage District Contract Area

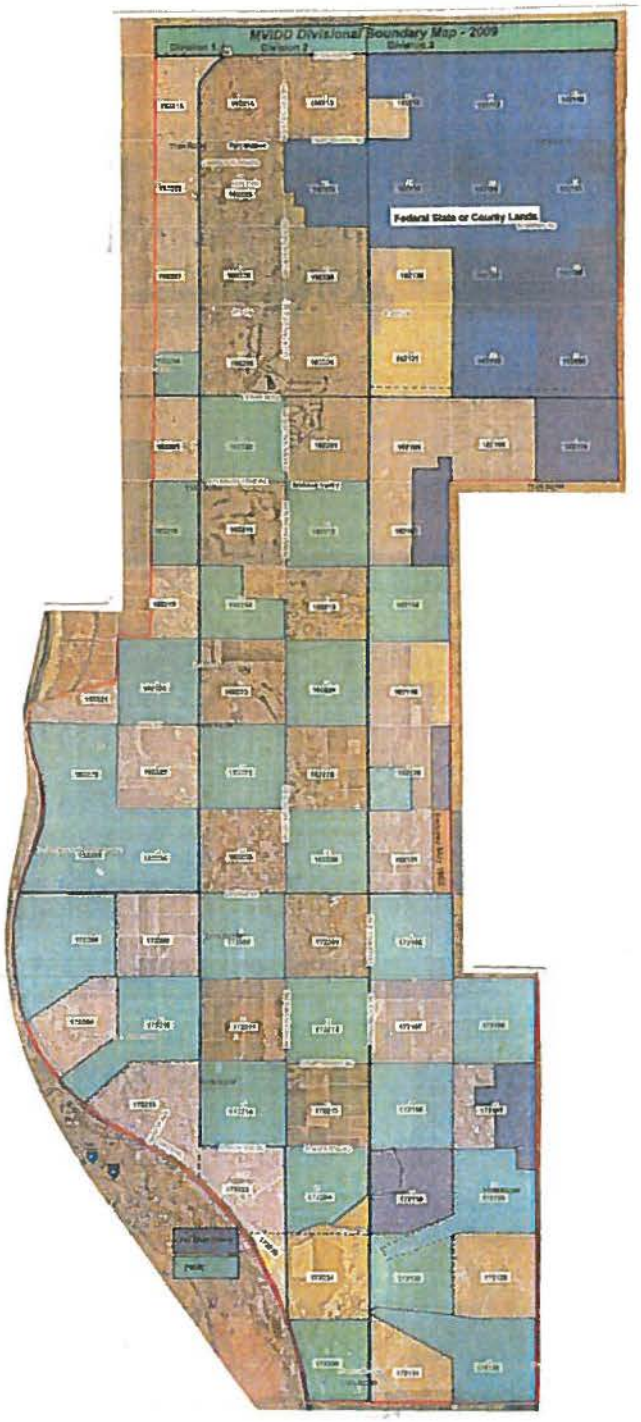
July 23, 2003
c:\gis\projects\bullhead.apr

C. Size

The petition filed to form the District stated that approximately 57,000 acres were to be benefited by the District. This acreage included the lands of the Fort Mohave Indian Tribe, approximately 23,000 acres. Subsequent to the formation of the District petitioners, including the Fort Mohave Indian Tribe, requested and were granted exclusion from the District. Many years later, the petitioners requested and were granted inclusion into the District.

The District's current exterior boundaries encompass 54,381 acres. That acreage includes 23,064 acres that are part of the Fort Mohave Indian Tribe Reservation . This leaves 31,317 acres within the District Boundaries that are under the District's water management authority. The District has recently received a request for lands to be included into the District. These lands amount to 170.19 acres of land. This would increase the total acreage within the external boundaries of the District to 54,551 acres and 31,487 acres under the District's water management authority.

The total agricultural irrigable lands within the District at this time are approximately 5,450 acres. There are also 4 golf courses with approximately 380 acres of irrigated turf within the District.

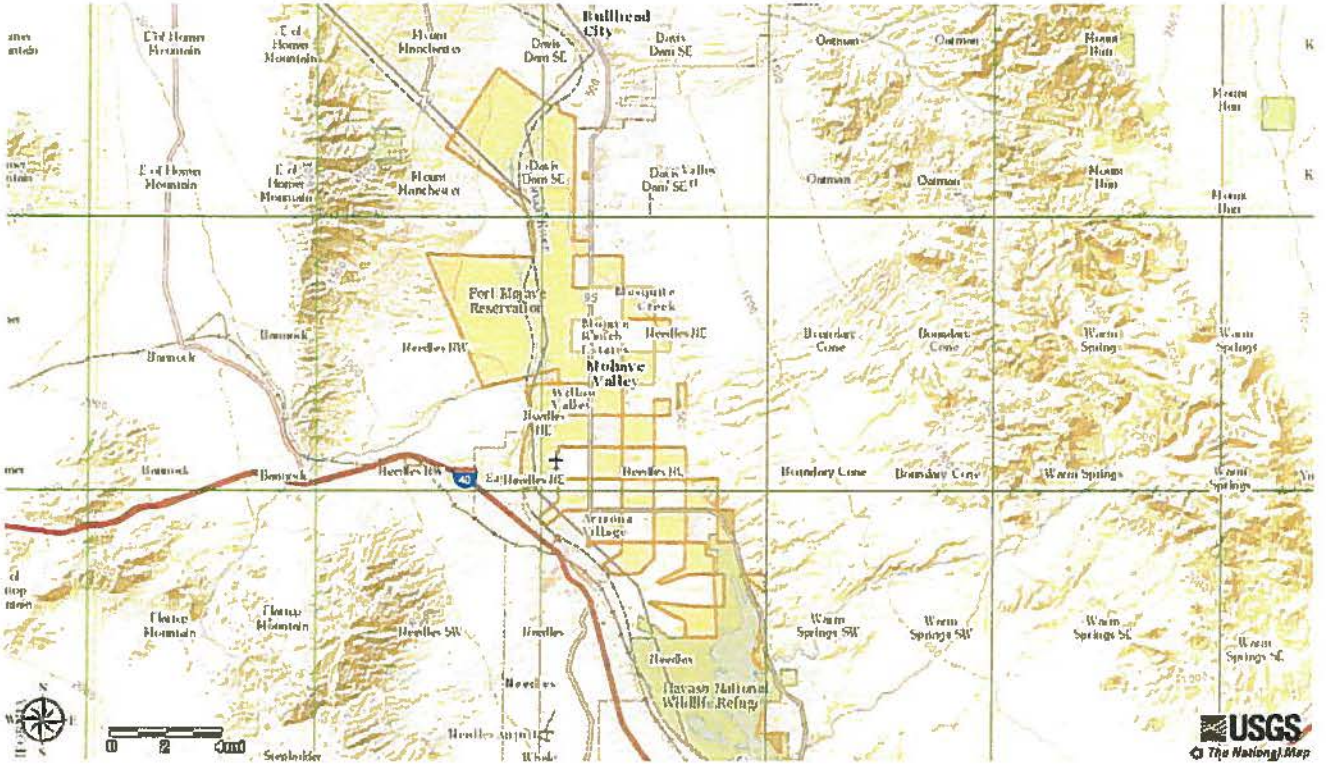

MVIDD Divisional Boundary Map - 2009
Federal State or County Lands

D. Topography

The topography of the District is primarily level to nearly level alluvium along the Colorado River. Some areas downgrade toward the river. The elevation is primarily 500 feet, but rises to approximately 800 feet in the far northeast section of the District.

Mohave Valley Irrigation And Drainage District and Surrounding Area

NOTES: Data available from U.S. Geological Survey, National Geospatial Program



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E. Soils

Soils within the District consist of a variety of compositions. Over 50% are considered "Prime Farmland if Irrigated."

Table 1.0*

Soil Type	Slope Percent	Percent of District	Drainage	Infiltration Rate	Irrigation Limitation	Farmland Rating
Carrizo -River wash Complex	3 – 8	11.3%	Excessively drained	High	Very limited	Not prime
Chuckawalla – River bend Complex	2 – 15	2.5%	Well drained	Moderate	Very limited	Not prime
Coolidge-Denure families complex	1 – 7	4.7%	Well drained	Moderate	Very limited	Not prime
Gadsden silty clay	0 – 1	3.4%	Well drained	Very slow	Somewhat limited	Prime if irrigated
Holtville silty clay	0 – 1	12.6%	Well drained	Very slow	Very limited	Prime if irrigated
Huevi very gravelly loam	2 – 15	0.4%	Well drained	Moderate	Very limited	Not prime
Huevi very gravelly loam	10 - 40	0.5%	Well drained	Moderate	Very limited	Not prime
Indio silt loam	0 – 1	16.1%	Well drained	Moderate	Very limited	Prime if irrigated
Kofa silty clay	0 – 1	5.2%	Well drained	Slow	Very limited	Prime if irrigated
Lagunita sand	0 – 1	16.3%	Excessively drained	High	Very limited	Not prime
Meloland very fine sandy loam	0 – 1	3.8%	Well drained	Slow	Somewhat limited	Prime if irrigated
Ripley silt loam	0 – 1	14.5%	Well drained	Moderate	Very limited	Prime if irrigated
River bend very cobbly sandy loam	2 - 15	1.8%	Excessively drained	High	Very limited	Not prime
Rositas superstition family and torriorthents soils	1 - 60	6.9%	Somewhat excessively drained	High	Very limited	Not prime

* Source of information from N.R.C.S. (See appendix A for soils maps.)

F. Natural Environment

Vegetation –

The District lies within two biomes. The majority of the District lies within the Mohave Desert scrub biome. The southwest portion of the District lies within the Lower Colorado River Sonoran Desert scrub biome.

- Mohave Desert Scrub Biome - This biome consists primarily of creosote bush, brittlebush, diamond cholla, beavertail cactus, white bursage, Mormon tea, catclaw acacia, desert lavender, bebbia, ratney, and desert milkweed.

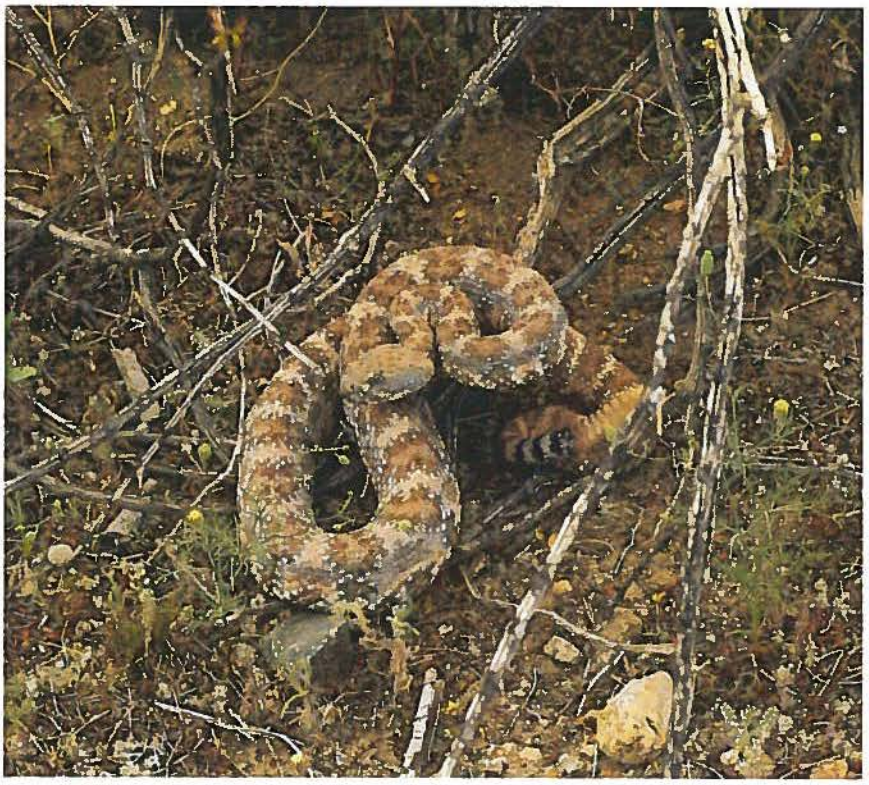
- Lower Colorado River Sonoran Desert Scrub Biome - This biome consists primarily of creosote bush and white bursage. These are two of the most drought resistant plants in America. Annual plant species comprise over 50% of the vegetation. They are mostly winter growing species.

Wildlife –

The abundance of wildlife or lack thereof, is in direct correlation to the amount and type of vegetation available. There are several types of mammals known to inhabit the area including, several small species of mice, desert woodrat, coyote and desert bighorn sheep. Overall densities of these mammals are expected to be low.

There are approximately 25 species of birds that could potentially inhabit the area, and they include the verdins, black-throated sparrows, and black-tailed gnatcatchers. Overall the densities of bird populations are expected to be low.

The area also has many reptile species. These include the side-blotched lizard, western brush lizard, and the Mohave rattlesnake.



In 1995, the U.S. Department of Interior and the States of Arizona, Nevada, and California entered into a Memorandum of Agreement and a Memorandum of Clarification for the development of a Lower Colorado River Multi-Species Conservation Program (LCRMSCP). The LCRMSCP is a partnership between federal, state, tribal, and other public and private stakeholders with an interest in managing water and related resources within the Lower Colorado River Basin. The partnership is pursuing an ecosystem-based approach to developing the LCRMSCP for interim and long-term compliance with applicable endangered species and environmental laws. The District is a participant in this program.

G. Cultural Resources

The District encompasses 54,551 acres of land within its external boundaries. The Fort Mohave Indian Reservation has 23,064 acres of land within the boundaries of the District.

H. Climate

The average annual temperature for the District is above Arizona and the national average. The average precipitation is below Arizona and the national average. The average annual humidity is below Arizona and the national average. The average wind speed is above Arizona and the national average. The climate in the District is hot, dry, and windy.

Table 1.1*

Month	Temperature Average Daily Maximum	Temperature Average Daily Minimum	Precipitation Average (Inches)
January	64.0	42.1	0.63
February	69.7	45.6	0.55
March	76.4	50.1	0.48
April	84.8	57.6	0.23
May	94.3	66.9	0.08
June	104.1	76.1	0.03
July	108.9	83.6	0.32
August	106.8	81.8	0.61
September	100.9	74.1	0.42
October	88.1	61.6	0.29
November	73.5	49.7	0.35
December	63.8	42.2	0.44
Annual	86.3	60.9	4.44

*Source of information from the Western Regional Climate Center, wrcc@dri.edu. Data for the Needles FAA Airport, California. Compiled for the period 7/1/1948 to 3/31/2013.

I. Water Supplies

A summary of the water supplies available within the District service area is detailed in the following tables.

Water Sources
Table 1.2

Water Source	1990 Acre-Feet	2000 Acre-Feet	2005 Acre-Feet	2013 Acre-Feet
Reclamation Water Contract	41,000	41,000	41,000	41,000
Local Surface Water	0	0	0	0
Groundwater	0	0	0	0
Temporary Transfer of Water from MCWA	0	0	0	380
MCWA Contract 2009	0	0	0	1,000
Reclaimed Water	0	69 *	151 *	206 **
Other Water	0	0	0	0
Total	41,000	41,069	41,151	42,586

*Information provided by EPCOR
** Information provided by Bella Vista
All other information provided from District records

District Contract Detail
Table 1.3*

Water Source	Acre-Feet per Year	Contract No.	Notes
Reclamation Water Contract	41,000	14-06-W-204	The District has 7 PPR contracts.
Other MCWA 2007	380	Bella Vista	5th Priority Contract
MCWA Contract 2009	1,000	09-101	None

*Source of information from District records.

There are no ground water basins, ground water recharge areas, or conjunctive use programs currently in place within the District's boundaries. All water is considered Colorado River water with the exception of a limited amount of reclaimed water. Reclaimed water use within the District has been steadily growing since 2000. However, the lack of M & I development, and thus influent to the wastewater treatment plants, has limited the amount of reclaimed water available for re-use. The District

has entered into an Intergovernmental Agreement with the City of Bullhead City to purchase effluent for re-use within the District. However, the ability to get the effluent to the end users has been difficult. The District continues to look for a means to get the re-use water to the end users in an economical form. The increased use of effluent within the District is a primary goal of the District.

The District itself does not own, operate, or maintain any wells. All wells within the District's boundaries are owned, operated, and maintained by non-District entities. These entities include utility companies, farmers, golf courses, and individually owned wells within the District. The owners of these facilities have their own operating and maintenance guidelines that they follow to ensure that their facilities are operating appropriately and not causing undo waste of a limited resource. The operations and maintenance of these facilities as well as the costs associated with the operation, maintenance, and capital improvements to these facilities are the responsibility of their respective owners.

A summary of the wells located within the District and owned by utility companies, amenity users, and agricultural users are included in the table below. The District also has approximately 1,547 individual exempt wells within the District's boundaries. This information obtained from ADWR is included as Appendix B.

Well Information
Table 1.4*

Name	ADWR No.	(T, R & S)	Pumping Capacity (gpm)
Camp Mohave (EPCOR)	55-559559	19N 22W 22	150
Lake Cimarron Primary (Global)	55-604160	18N 22W 23	190
Lake Cimarron Secondary (Global)	55-604161	18N 22W 23	225
King Street (Global)	55-603947	18N 22W 21	300
Unit 17 Primary (Global)	55-608170	18N 22W 27	500
Unit 17 Secondary (Global)	55-603949	18N 22W 27	300
Center Street (Global)	55-603946	18N 22W 21	100
Meadowlark (Global)	55-603948	18N 22W 21	300
Commercial Well (Global)	55-603950	18N 22W 27	150
Unit 1 (Global)	55-603951	18N 22W 35	250
Riding Club Well (Global)	55-603952	18N 22W 35	200
Well 1 (Utilities, Inc.)	55-527191	19N 22W 35	500
Well 2 (Utilities, Inc.)	55-600335	19N 22W 26	500
Well 3 (Utilities, Inc.)	55-600336	19N 22W 14	320
Well 4 (Utilities, Inc.)	55-600337	19N 22W 23	250
Well 6 (Utilities, Inc.)	55-806426	19N 22W 36	450
Well 7 (Utilities, Inc.)	55-532342	19N 22W 35	450
Well 8 (Utilities, Inc.)	55-565030	19N 22W 23	450
Well 9 (Utilities,	55-218355	19N 22W 14	450

Inc.)			
Curcio (FMTUA)	55-532195	17N 22W 23	325
St. George (FMTUA)	55-600333	17N 22W 15	140
Unit 7 (Lagoon Estates)	55-536722	17N 22W 1	1600
Unit 4 (Lagoon Estates)	55-618835	17N 22W 1	360
Unit 2 (Lagoon Estates)	55-618836	17N 22W 35	250
Unit 2 (Lagoon Estates)	55-618837	17N 22W 35	250
Marina Coves	55-537183	17N 22W 23	392
Vanderslice	55-626083	17N 22W 13	2800
Chesney	55-617490	17N 22W 13	3500
H. Kai	55-604351	17N 22W 13	3735
Vanderslice	55-626084	17N 22W 13	2500
Vanderslice	55-536746	18N 22W 25	No Motor
H. Kai	55-604353	17N 22W 9	3816
Becknell	55-642661	17N 21W 7	2430
Tropicana Ranch	55-605579	17N 21W 7	3060
Green Acres Mohave, LLC	55-086484	17N 22W 3	2700
Green Acres Mohave, LLC	55-086485	17N 22W 3	2860
4-B Farms	55-627537	17N 22W 3	3750
4-B Farms	55-627538	17N 22W 3	3750
4-B Farms	55-627535	17N 22W 11	4000
4-B Farms	55-627534	17N 22W 11	4000
Green Acres Mohave, LLC	55-086486	18N 21W 31	3000
J. Kai	**	18N 22W 27	3173
WP 919 Farm AZ	55-222859	18N 22W 13	2900
WP 919 Farm AZ	55-617628	18N 22W 13	2000
WP 919 Farm AZ	55-617630	18N 22W 25	2500
WP 919 Farm AZ	55-220500	18N 22W 25	2700
WP 919 Farm AZ	55-535885	18N 22W 25	4000
WP 919 Farm AZ	55-545571	18N 22W 25	3500
J. Kai	55-222707	18N 22W 23	990
WP 919 Farm AZ	55-220598	18N 22W 25	1800
WP Hulet Farm	55-915803	18N 22W 23	2800
WP Hulet Farm	55-801701	18N 22W 23	2500
WP Hancock Farm	55-626968	17N 21W 7	3500
Lao Lagos	55-533096	18N 22W 1	1890

Bella Vista	55-528553	18N 22W 1	1260
Huukan	55-519241	19N 22W 35	581
Huukan	55-519617	19N 22W 35	390
Evans	55-507325	9N 23W 18	1500
Hurns	55-209611	18N 22W 25	100
Pompa	55-506687	18N 22W 35	15
Pompa	55-218561	18N 22W 35	
Bacot	55-514230	17N 21W 17	360
Bacot	55-909506	9N 23E 18	360
Bay		18N 22W 15	25
El Rio Golf	55-903680	18N 22W 11	2000
Willow Valley Golf	55-581451	18N 22W 27	
McKellips	55-604158	18N 22W 11	2500
Kelley	55-916516	9N 22E 18	***
Kelley	55-223050	9N 22E 18	***
Park	55-916738	18N 22W 35	25
Hancock	55-594324	18N 22W 25	35

*Source of information from six utility companies and individual well owners.
**Data was not available at time of report.
***Wells rehabilitated information not available yet.

J. Water Uses

The District is somewhat unique in that it allows for uses of water not only for agricultural irrigation, but also for M & I purposes. M & I uses include amenity (golf courses and water amenities), commercial entities, residential subdivisions, and individual domestic users. The table below details the water usage by category and shows the largest crops produced in the District.

Water Uses 2013*
Table 1.5

	Type of Use	Acres	Percent of Water Used
Agricultural			74%
	Alfalfa	2,067	
	Wheat	601	
	Cotton	228	
	Other	60	
	Fallow	2,449	
Sub-Total		5,405	74%
M & I Amenity			
	Amenity		11%
	Other M & I		15%
Sub-Total			26%
Total			100%

* Source of information from District records.
It should be noted that there was a higher than normal number of agricultural acres fallow during 2013 due to the sale and transfer of a number of farms in the area.

The District climate includes high temperatures, windy conditions, and high TDS in the water supply. Due to the high winds and high temperatures, sprinklers are not practical for irrigating crops. The high TDS in the water tends to plug the drip irrigation lines and as such is also impractical for irrigation purposes. Thus, agricultural irrigation methods have been narrowed to include flood irrigation only. Farmers in the area have found this to be the only practical way to irrigate crops.

Water Uses 2000 to 2013*
Table 1.6

Water Uses	1990 Acre-Feet	2000 Acre-Feet	2005 Acre-Feet	2013 Acre-Feet	Forecasted 2014 Acre-Feet
Agricultural	29,758	32,815	25,808	18,877	30,000
Amenity	967	1,526	1,733	2,937	3,400
Other M & I	4,434	3,121	4,716	3,753	3,900
Recharge	0	0	0	0	0
Total	35,159	37,462	32,257	25,567	37,300

*Source of information from District records.

2013 was an abnormally low year for water use due to a number of farms being up for sale. This acreage was brought back into production in 2014. Also one amenity user was not using their full water entitlement in 2013. The Amenity user is using it in 2014.

K. Storage

The District does not own, operate, or maintain any storage facilities itself. There are no tail-water recovery systems, recharge areas, or regulating reservoirs within the District. All storage facilities within the District's boundaries are owned and operated by non-District entities. The operations and maintenance of these facilities as well as the costs associated with the operation, maintenance, and capital improvements to these facilities are the responsibility of their respective owners.

A summary of the storage facilities located within the District and owned by utility companies and amenity users are included in the table below.

Storage Facilities*
Table 1.7

Name	Type	(T, R, & S)	Capacity
Camp Mohave (EPCOR)	Reservoir	19N 22W 22	250,000
Lake Cimarron (Global)	Reservoir	18N 22W 23	196,000
King Street (Global)	Reservoir	18N 22W 27	163,000
King Street (Global)	Reservoir	18N 22W 27	47,000
King Street (Global)	Reservoir	18N 22W 21	96,000
El Rodeo 1 (Utilities, Inc.)	Reservoir	19N 21W 30	500,000
El Rodeo 2 (Utilities, Inc.)	Reservoir	19N 21W 30	500,000
El Rodeo 3 (Utilities, Inc.)	Reservoir	19N 21W 30	500,000
El Rodeo 4 (Utilities, Inc.)	Reservoir	19N 21W 30	500,000
Arroyo Vista 1 (Utilities, Inc.)	Reservoir	19N 21W 7	372,000
Arroyo Vista 2 (Utilities, Inc.)	Reservoir	19N 21W 7	372,000
FMTUA	Curcio	17N 22W 23	50,000
Bella Vista	Lake System	18N 22W 1	92,324,000
Marina Coves	Lake System	17N 22W 23	40,000,000

* Information provided by the six utility companies, Bella Vista and Marina Coves.

L. Distribution Facilities

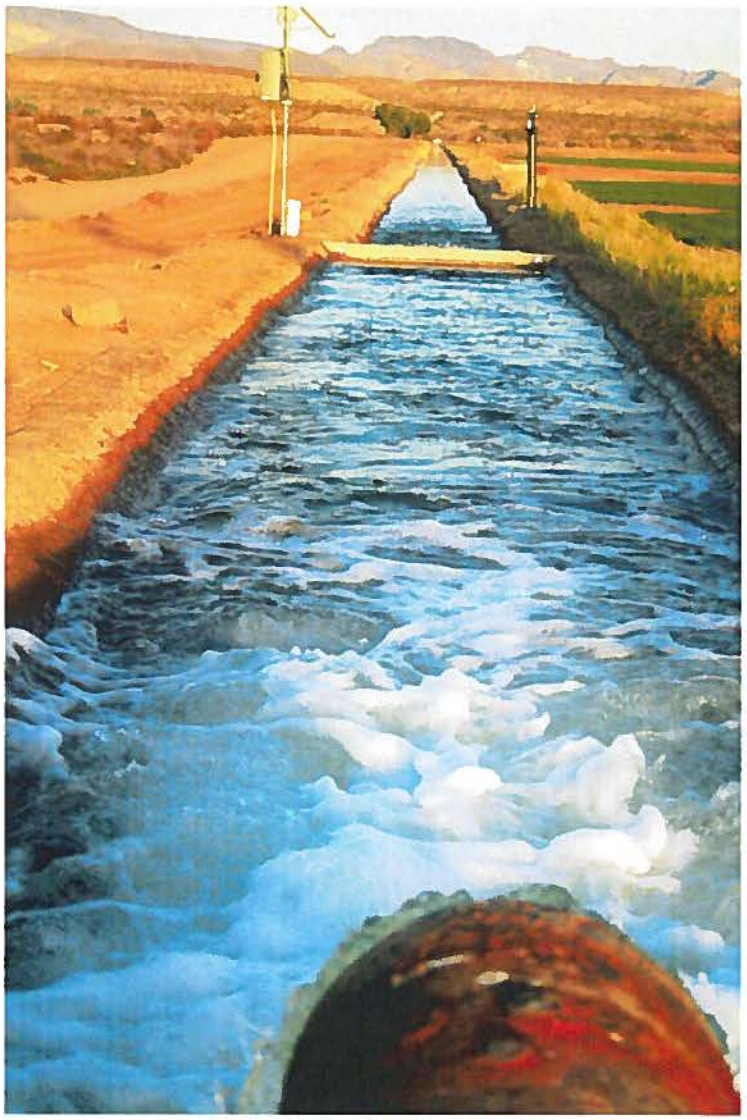
The District itself does not own, operate, or maintain any distribution facilities. All distribution facilities within the District's boundaries are owned and operated by non-District entities. The operations and maintenance of these facilities as well as the costs associated with the operation, maintenance, and capital improvements to these facilities are the responsibility of their respective owners. These owners have developed their own maintenance schedules to ensure that their facilities are operating appropriately and not causing undo waste of a limited resource. Distribution facilities within the district include pipes, valves, and accessory facilities owned and operated by utility companies located within the District. They also include ditches, gates, and accessory facilities owned and operated by agricultural entities within the District.

M. Drainage Facilities

The District does not own, operate, or maintain any drainage facilities. There are no drainage facilities (surface or sub-surface) that are located within the District's boundaries. Therefore, the District does not measure or sample water draining from the District. The District recognizes that there are return flows from the District to the Colorado River, but does not receive any credit for those flows. As such the District has determined that it is not in the best interest of the District to expend the resources to determine the return flow amounts or quality.

N. Water Measurement and Accounting Procedures

The District is responsible for the overall water measurement and accounting procedures associated with the service area. However, the 6 utility companies located within the District's boundaries are also under the jurisdiction of the Arizona Corporation Commission. The accounting procedures of each utility company are the responsibility of the individual utility company. The utility companies meter and bill their customers in accordance with their own policies and procedures. The District, in accordance with the Bureau of Reclamation (BOR) master contract, monitors water usage on a monthly basis, including usage by the utility companies. This information is provided to the BOR on a monthly basis.



The water users including, agricultural, amenity, and utility providers submit reports specifying the amount of water pumped from their respective wells during the previous month to the District on a monthly basis. The District also calculates the amount of water used by non-metered, exempt wells within the District. All this data is then compiled into a single report that is transmitted to the BOR on a monthly basis.

The District also monitors the amount of water allocated within its service area. A thorough review of the existing entitlements was just completed. This water inventory showed the following allocations by classification.

Water Allocations*
Table 1.8

Type	Percent
Agricultural	**75%**
Amenity	**6%**
Commercial	**2%**
Individual	**1%**
Municipal	**0%**
Subdivisions	**17%**

*Source of information from District water inventory.

The amenity classification above includes 4 golf courses and 2 amenity lakes. The District Policy 2009-02 passed on May 5, 2009, stipulates the above amenity uses are not permitted uses within the District. Thus, all amenity entitlement contracts expire on midnight December 31, 2017, and are not renewable.

The District currently has 1,597 direct customers. This total includes 32 agricultural customers, 6 amenity customers, 6 utility companies (the 6 utility companies provide service to 11,447 customers), 6 customers classified as other, and 1,547 exempt-well customers. The 32 agricultural and 6 amenity customers are metered. The 6 utility customers meter their wells and customers themselves. The 6 other customers and the 1,547 exempt-well customers are not metered. The 6 other customers estimate their usage by the amount of time the well operates. The 1,547 exempt-well customers' water usage is calculated by staff. The staff prepared a number of potential alternatives to calculating the exempt-well usage. The final analysis

approved by the board was 375 gallons per day per household. This number coincides with ADWR guidelines for single-family residences water allocation.

Customers*
Table 1.9

Entity	Type	Number	Accuracy (percent)	Reading	Calibration	Maintenance
EPCOR	5/8 x 3/4	67	100	Monthly	Upon request	Replace every 15 yrs.
EPCOR	1	9	100	Monthly	Upon request	Replace every 15 yrs.
EPCOR	2	13	100	Monthly	Upon request	Replace every 15 yrs.
Global	5/8 x 3/4	1572	100	Monthly	Upon request	Upon request/ Every 10 yrs.
Global	3/4	17	100	Monthly	Upon request	Upon request/ Every 10 yrs.
Global	1	17	100	Monthly	Upon request	Upon request/ Every 10 yrs.
Global	1 ½	3	100	Monthly	Upon request	Upon request/ Every 5 yrs.
Global	2	4	100	Monthly	Upon request	Upon request/ Every 5 yrs.
Global	4	2	100	Monthly	Upon request	Upon request/ Every 5 yrs.
Global	6	2	100	Monthly	Upon request	Upon request/ Every 5 yrs.
Sunrise Vista	5/8 x 3/4	599	100	Monthly	Upon request	Upon request/ Every 10 yrs.
Sunrise Vista	3/4	59	100	Monthly	Upon request	Upon request/ Every 10 yrs.
Utilities, Inc.	5/8 x 3/4	6,386	100	Monthly	Upon request	Upon request/ Every 20 yrs.
Utilities, Inc.	1	139	100	Monthly	Upon request	Upon request/ Every 20 yrs.
Utilities, Inc.	2	14	100	Monthly	Upon request	Upon request/ Every 10 yrs.
Utilities, Inc.	4 compound	1	100	Monthly	Upon request	Upon request/ Every 7 yrs.
Utilities, Inc.	6 compound	4	100	Monthly	Upon request	Upon request/ Every 5 yrs.
Lagoon Estates	5/8 x 3/4	355	100	Monthly	Upon request	Upon request/ Every 1.0 million gal.
Lagoon Estates	1	2	100	Monthly	Upon request	Upon request/ Every 1.0 million gal.
Lagoon	2	1	100	Monthly	Upon request	Upon request/ Every

Estates						1.0 million gal.
FMTUA	5/8 x 3/4	2,018	100	Monthly	Upon request	Upon request
FMTUA	¾ x ¾	33	100	Monthly	Upon request	Upon request
FMTUA	1	96	100	Monthly	Upon request	Upon request
FMTUA	1 ½	7	100	Monthly	Upon request	Upon request
FMTUA	2	13	100	Monthly	Upon request	Upon request
FMTUA	3	6	100	Monthly	Upon request	Upon request
FMTUA	4	6	100	Monthly	Upon request	Upon request
FMTUA	6	2	100	Monthly	Upon request	Upon request
MVIDD	Weirs	32	varies	Monthly	Upon request	Upon request

*Customer data provided by the six utility companies and District.

O. Water Pricing and Billing Practices

The District reviews and may adjust their fees on an annual basis. This is completed as part of the budget process in the second quarter of the calendar year. The District may adjust fees other than annually, if necessary.

The District's fees **do not** include costs associated with the operation and maintenance of water production, storage, distribution, drainage, or recharge facilities. These facilities are owned, operated, and maintained by the users within the District. Costs such as electrical, chemicals, well and ditch maintenance, storage facility maintenance, distribution system maintenance, and capital improvement costs are born directly by the users within the District. The District pays none of these costs and as such they are **not** included in the rates and fees charged by the District.

Mohave Valley Irrigation and Drainage District Comprehensive Fee Schedule

Application Fees

Application Fee Non- Agricultural	$200.00
New Agricultural Contract Application (Plus per acre foot fee (1))	$1,000.00
Contract Transfer (Plus per acre foot fee (2))	$750.00
Interim Water (Plus per acre foot fee (3))	$1,000.00

Allocation Fees

Residential Lot		
Preliminary Allocation	$600.00	per lot
Final Allocation	$300.00	per lot
Apartment / Town Home		
Preliminary Allocation	$600.00	per unit
Final Allocation	$300.00	per unit
RV Park Space		
Preliminary Allocation	$300.00	per space
Final Allocation	$150.00	per space
RV Park Commercial		

Preliminary Allocation	$1,200.00	per acre foot
Final Allocation	$900.00	per acre foot
Commercial		
Preliminary Allocation	$1,200.00	per acre foot
Final Allocation	$900.00	per acre foot
Six (6) Month Temporary Allocation	$50.00	per acre foot
(1) Agricultural New Contract Fee	$20.00	per acre foot
(2) Contract Transfer Fee	$15.00	per acre foot
(3) Interim Water Agricultural Entitlement Fee	$8.00	per acre foot per year
(3) Interim Water Amenity Entitlement Fee	$150.00	per acre foot per year
(3) Interim Water Other Entitlement Fee	$150.00	per acre foot per year

Tax District Levy

$1.50 per acre per year

Allocation Administration Fees

Agricultural Water Entitlement Fee	$4.00	per acre foot per year
PPR Administration Fee	$1.00	per acre foot per year
Out Of District Agricultural Water Entitlement Fee	$8.00	per acre foot per year
Agricultural Water Supplement Fee	$8.00	per acre foot per year
Interim Water Supplemental Fee	$50.00	per acre foot per year
Amenity Water Entitlement Fee	$30.00	per acre foot per year
Water Utility administration Fee	$1.25	per acre foot per year
NSF Check Fee	$35.00	
Late Payment Fee	10%	of amount unpaid
Late Reporting Fee	$50.00	For each month reported late
Water Order Deviation Penalty Fee	10%	of the amount above or below 10% of the amount ordered

Effective June 3, 2014

Mohave Valley Irrigation and Drainage District
Payment Rules

1) All application fees are due and payable with the application.
2) All fees are non-refundable.
3) Final allocations for residential and commercial subdivisions, will be approved upon final plat approval by the Mohave County Board of Supervisors.
4) Final Allocations for commercial and industrial developments, will be approved upon final site plan approval by the Mohave County Board of Supervisors.
5) All water entitlement contract holders shall be assessed the Water Entitlement Fee.
6) PPR holders must pay an administrative fee for the administration of the PPR water.
7) The PPR Administration Fee is charged on the proportionate share of the PPR Water.
8) PPR Administration Fees are payable in arrears.
9) PPR Administration Fees will be billed on or before January 31 for the preceding calendar year.
10) PPR Administration Fees are due by March 1.
11) Agricultural Water Entitlement Fees shall be paid on the entire amount of water allocation under contract.
12) Agricultural Water Entitlement fees are payable in arrears.
13) Agricultural Water Entitlement fees will be billed on or before January 31 for the preceding calendar year.
14) Agricultural Water Entitlement fees are due by March 1.
15) A 10% late fee will be assessed on all late payments. This fee will be assessed monthly until the bill is paid in full.
16) No application will be accepted from parties who have an outstanding balance owed to the district.
17) If a check is returned to the District as NSF, the party will be required to provide the District with a cashiers check as a replacement.
18) Allocation fees for a phased development may at the sole discretion of the District be transferred from one phase of a project to another within the same project.
19) The District may make "Interim Water" available for use. This Interim Water may be contracted for a maximum of 5 years. These contracts are not renewable. A contract holder who wishes to extend their water use will be required to sign a new contract at the expiration of the expiring contract.
20) Interim Water orders must be submitted on or before July 1 of the year preceding the anticipated use. For example: water needed for the calendar year 2015 should be ordered by July 1, 2014. Orders placed after the due

date will be placed at the bottom of the priority list and may not receive water as ordered.

21) Interim Water is the lowest priority water within the District. Therefore it will be the first water reduced should the District be required to reduce the amount of water it has available.
22) The Interim Water users are billed in advance.
23) Interim Water Fees are charged and payable on the entire amount of water ordered. No credit is given for unused amounts. The user is charged for the amount of water reserved for their use.
24) Interim Water used in excess of the amount ordered will be billed the Interim water Entitlement Rate plus the Interim Water Supplemental Fee.
25) Interim Water is a temporary alternative source of water and is not intended to replace or become a permanent source of supply.
26) All Amenity water users are billed in advance.
27) All amenity users will be billed for the amount of water ordered.
28) If an Amenity user does not use their entire amount ordered. They will receive a credit towards the following years water order in the amount of water not used.
29) Utility companies providing service within the District will be charged an administration fee for administration of the entitlements they deliver.
30) Contract holders shall provide the District with a water order on or before July 1 of the year preceding the anticipated use. For example: water needed for the calendar year 2015 should be ordered by July 1, 2014
31) If a water order is not received from a water contract holder by July 31, the contract holder will be deemed to have ordered their full contract amount.
32) A water deviation fee shall be assessed on all orders that are more than 10% different than the amount ordered. For example: if 1,000 AF of water is ordered. There would be a penalty charged on amounts above 1,100 AF or below 900 AF of water actually used.
33) All water users are required to provide monthly water use reports in a form acceptable to the District.
34) All water users are required to provide the monthly water use information by the 10th of the month following its use. If the 10th falls on a holiday or weekend the information is due the day before the holiday or weekend. This information is required to be in the District office by the 10th or it is considered late.
35) A Late Reporting Fee will be charged to users that do not provide their monthly water usage information by the 10th (information is required to be in the District office by the 10th or it is considered late) of the month following its use.

Effective July 1, 2014

The District reviews and updates its fee schedule on an annual basis as part of its budget process.

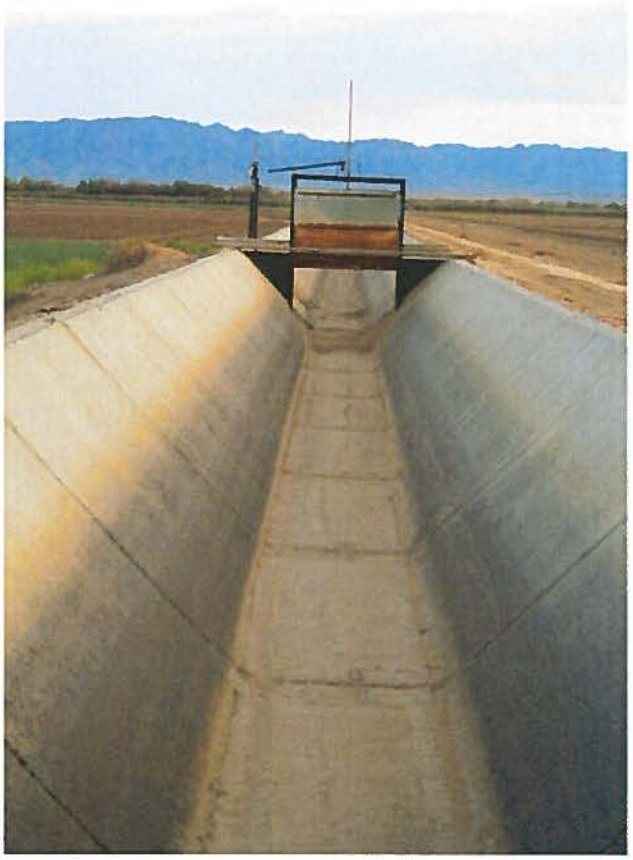
P. Water Shortage Allocation Policies

Since the District was formed in 1963, it has never had an instance where it was unable to provide the amount of water requested from a contract holder. Thus, there was a high probability that the District would be able to continue to deliver water as ordered. However, with the shrinking supplies of Colorado River water in storage this may become a problem in the future, if a shortage is declared on the river. As the elevation of water stored in Lake Mead comes closer to the first trigger of 1,075, it becomes necessary to establish a policy for water shortage sharing within the District.

The District is currently working on a Water Shortage Resolution. The Resolution is anticipated to include in part that if water for the District is curtailed the first water to be eliminated is the Interim Water Contracts. If the District still needs to reduce its water use, the next groups to be reduced are the agricultural and amenity users. The agricultural and amenity users will share proportionately in any reduction required thru December 31, 2017. After December 31, 2017 the amenity user contracts expire. The amenity users will then fall within the Interim Water category or begin using effluent. In either case their water allocation will be reduced to zero before any agricultural user reduction post 2017. We are still working on final details of the resolution.

Q. Operations and Maintenance Program

The District does not own, operate, or maintain any wells, storage facilities, distribution facilities, drainage facilities, tail-water recovery systems, recharge areas, or regulating reservoirs. All the aforementioned facilities that are present within the boundaries of the District are owned and operated by others. These include utility companies, farmers, golf courses, and individuals. The operations and maintenance of these facilities as well as the costs associated with the operation, maintenance, and capital improvements to these facilities are the responsibility of their respective owners. These owners have developed their own maintenance schedules to ensure that their facilities are operating appropriately and not causing undo waste of a limited resource.



The District does inspect meter installations and irrigation ditches on a regular basis to confirm compliance with District Policies.

District Policies

a. Water Allocation Policy – The District has water allocation policies for residential and commercial subdivisions, commercial projects, agricultural and individual parcels. The policies include the water allocation guidelines for timelines and amounts. See Appendix C for Resolution Numbers 90-3, 06-1, May 2008, 2008-01, 2008-02, and 2008-03.

b. Water Order – The agricultural, amenity, and other users in the District are required to provide their water orders for the succeeding year to the District by July 1 of the current year. District staff calculates the water needs for the utility customers as well as the exempt-well users. The water orders are then consolidated to create a water order. The water order is then sent to the BOR on August 1.

The District does not own or operate any wells, storage, or distribution facilities. The individual users own, operate, and maintain their own facilities. Since these facilities are owned and operated by the users, they determine the timing of the operation of the facilities and do not request water as needed from the District (except for the annual water order).

c. Water Shut-Off Requests – The District does not own or operate any wells, storage, or distribution facilities. The individual users own, operate, and maintain their own facilities. Since these facilities are owned and operated by the users, and they determine the timing of the operation of the facilities, there are no water shut-offs by the District.

d. Return Flow Policy – The District does not have a policy regarding return flows. The District does not receive credit for return flows; as such, the District has determined that it is not in the best interest of the District to expend the resources to determine return flow amounts or quality.

e. Water Transfers – The District has a Water Transfer Policy in place, which allows for the transfer of water from one user to another within the District. This transfer could be used in the case of a new owner acquiring a parcel of land with an existing entitlement. It could also allow for a user that is not fully utilizing their allocation to transfer a portion of the allocation to another user within the District. The District policy states in part that no water can be transferred out of the District. See Appendix D for Resolution Number 07-05.

Step 2 – Inventory Water Resources
A. Water Budget Tables

a. District Water Supplies - The water resources for the District include surface water, reclaimed water, and a small amount of precipitation as detailed in the table below.

Monthly District Water Supply Data for 2013
Table 2.0

Month	Surface Water (Colorado River)(acre-feet)*	Ground Water	Reclaimed Water ** (acre-feet)	Precipitation ***	Total (acre-feet) **
January	1,800	0	19	0.63	1,819
February	2,100	0	20	0.55	2,120
March	2,600	0	16	0.48	2,616
April	3,200	0	20	0.23	3,220
May	3,600	0	21	0.08	3,621
June	4,200	0	18	0.03	4,218
July	4,900	0	15	0.32	4,915
August	5,100	0	7	0.61	5,107
September	4,400	0	14	0.42	4,414
October	3,600	0	19	0.29	3,619
November	3,000	0	17	0.35	3,017
December	3,000	0	20	0.44	3,020
Total	41,500	0	206	4.44	41,706

*This is the amount of water ordered from the BOR for the calendar year 2013
** Reclaimed water used from EPCOR reported by Bella Vista.
***Precipitation is not included in the total water supplies for the District.

The table above shows that over 99% of the water supply for the District comes from its Colorado River water contracts. A minimal amount of water comes from reclaimed water. The District continues to work with the City of Bullhead City, EPCOR, Sunrise Vista Utilities, ADWR and their water users to increase the reclaimed water use within the District. The economics of increasing the use of reclaimed water has been a stumbling block to its increased use within the District. The District is hopeful that a delivery method can be found that will allow for the economical delivery of reclaimed water within the District leading to its increased usage.

b. District Water Uses – The District does not own, operate, or maintain any wells, distribution or storage facilities. The users own and operate their own facilities. The District has no water uses for canal seepage, evaporation, spills, or riparian uses in canals since the District does not own or operate any of these facilities. There are agricultural and M & I water uses within the District. There are a number of developments and commercial projects within the District's boundaries. Many of these developments are only partially occupied; however, in accordance with ADWR Water Adequacy Policy once a development has a final plat, the water allocated to the development has to remain within the development and cannot be re-allocated for another use unless the final plat is abandoned. The District does have the ability to use the unused water on an interim basis until it is needed by the development.

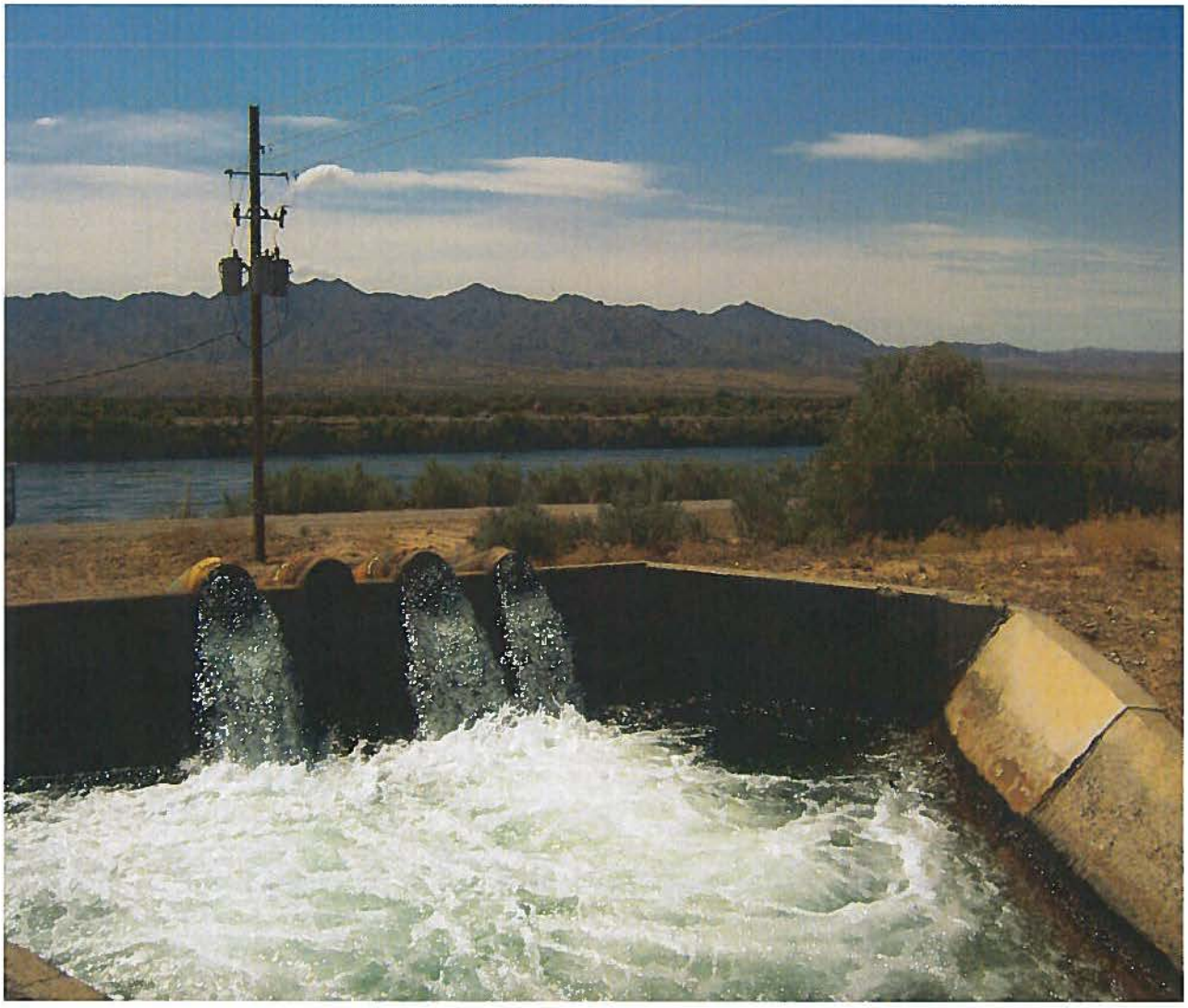
Monthly District Water Usage Data for 2013
Table 2.1

Month	Agricultural (acre-feet) *	M & I (acre-feet) *	Ground Water Recharge	Water Exchange or Transfer	Reclaimed Water (acre-feet) **	Total (acre-feet)
January	435	372	0	0	19	826
February	245	340	0	0	20	605
March	2,070	393	0	0	16	2,479
April	1,663	497	0	0	20	2,180
May	2,424	740	0	0	21	3,185
June	2,689	727	0	0	18	3,434
July	2,536	1,021	0	0	15	3,572
August	2,010	732	0	0	7	2,749
September	865	546	0	0	14	1,425
October	1,950	515	0	0	19	2,484
November	1,195	432	0	0	17	1,644
December	821	349	0	0	20	1,190
Total	18,903	6,664	0	0	206	25,773

*Actual water pumped and reported to the BOR in 2013.
**Reclaimed water used from EPCOR reported by Bella Vista.

2013 was an abnormally low year for water use due to a number of farms being up for sale. This acreage was brought back into production in 2014. Also one amenity user was not using their full water entitlement in 2013. The Amenity user is using it in 2014. The forecasted water use for 2014 is 37,000 acre-feet.

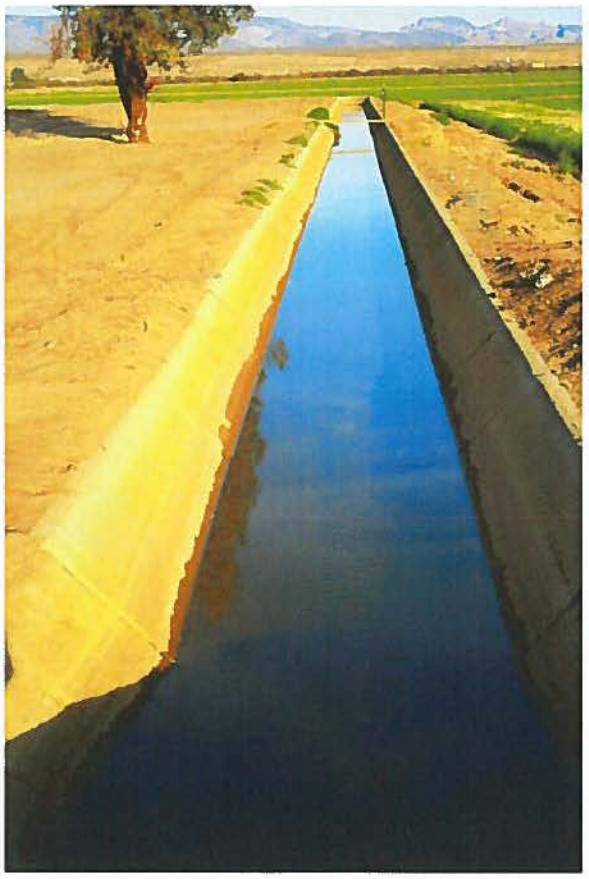
The table above shows that over 99% of the water used within the district comes from the District's Colorado River water contracts. A minimal amount of water comes from reclaimed water. The District continues to work with the City of Bullhead City, EPCOR, Sunrise Vista Utilities, ADWR and their water users to increase the reclaimed water use within the District. The economics of increasing the use of reclaimed water has been a stumbling block to its increased use within the District. The District is hopeful that a delivery method can be found that will allow for the economical delivery of reclaimed water within the District leading to its increased usage.



B. Quality Of Water Sources

There is no water quality testing covering the entire District completed on a regular basis, except for those areas that the 6 utility companies serve within the District. The six utility companies are required by the Arizona Department of Environmental Quality (ADEQ) to sample their water systems on a regular basis and to report the results of the sampling to their customers annually.

There was a water quality study for the area, which was completed by ADEQ in 1989. This study encompassed the northern part of the District and the City of Bullhead City. A follow up study completed by ADEQ in June of 1995 expanded on the 1989 study area. The 1995 study included the City of Bullhead City and all of the land within the external boundaries of the District. Only domestic and production wells were sampled in the 1995 study. No irrigation wells were included in the water sampling. While these studies did not include irrigation wells, the fact that the 6 utility companies as well as the ADEQ studies cover areas spread throughout the District provides a sense of the water quality within the District.



Copies of the ADEQ studies and the 2010, 2011, and 2012 Consumer Confidence Reports (C.C.R.) from the 6 utility companies (Utilities, Inc., EPCOR, Sunrise Vista, Global Water, Lagoon Estates, and FMTUA) are attached for reference in Appendix E.

The water quality reports from the various utility companies along with the 1995 study conducted by ADEQ indicate that water quality issues are primarily point-source pollution caused by seepage from septic systems and naturally occurring arsenic.

C. Water Uses within the District

The District is rather unique for an irrigation district in that it allows M & I development within the District's external boundaries. Most irrigation districts restrict water uses within their district boundaries to agricultural uses only.

Water Uses, Major Crops And Acreage For 2013
Table 2.2

Customer Type	Number of Customers	Crop	Acres	Water Used (acre-feet)
Agricultural	32	Alfalfa / Hay	2,096	18,877
		Cotton	228	
		Vegetables	31	
		Wheat	601	
M & I (Utilities, Inc.)	6,544			2,228
M & I (Sunrise Vista)	658			175
M & I (EPCOR)	89			62
M & I (Global)	1,617			246
M & I (Lagoon Estates)	358			101
M & I (FMTUA)	2,181			274
Other M & I	1,547			641
Amenity	6			2,937
Other	6			26
Ground Water Recharge	0			0
Total	13,038			25,567

*Source for M & I use provided by the six utility companies. Other M & I includes exempt wells within District. All data is for 2013 except Lagoon Estates, which is 2012 data. Other information provided from District records.

2013 was an abnormally low year for water use due to a number of farms being up for sale. This acreage was brought back into production in 2014. Also one amenity user was not using their full water entitlement in 2013. The Amenity user is using it in 2014. The forecasted water use for 2014 is 37,300 acre-feet.

D. Quantity and Quality of Drainage from the District

The District does not own or operate any drainage facilities. There are no drainage facilities (surface or sub-surface) that are located within the District's boundaries. Therefore, the District does not measure or sample water draining from the District. The District recognizes that there are return flows from the District to the Colorado River, but does not receive any credit for those flows. As such, the District has determined that it is not in the best interest of the District to expend the resources to determine the return flow amounts or quality.

Step 3 – Water Management Problems, Opportunities, and Conservation Goals

A. Describe the District's Water Management Problems and Challenges

1) While the District manages the water entitlements within its boundaries, it has had some difficulty with the coordination of that process with Mohave County. The county does not include the District in their planning process. This has caused some problems with commercial projects being approved by the county without a water allocation being reserved. The District has been placed in an awkward position of having to either grant an allocation or go through the expense of stopping their water use until they come to the District to obtain an allocation, if available.

2) The District does not own, operate, or maintain any water production, storage, or distribution facilities. The District has no control of any of the aforementioned facilities. Since the District has no control over any of the facilities, the District has to resort to more expensive means to control the unauthorized use of District's water entitlements.

3) The District has no control over the drilling of wells within its boundaries. It is estimated that there are over 1,547 exempt wells located within the District. As time goes on, this number could increase. If the District has no knowledge of these facilities, the District cannot account for them in their reporting to the BOR.

   The District has passed resolution 93-02, which requires prior approval of wells drilled within the District, but this resolution has not been recognized by ADWR. The District also passed resolution 2009-10 which requires the registration of wells with the District. This has also not been recognized by ADWR.

4) The District's water entitlement is fully allocated. The District is in need of additional sources of water for future development. Without additional water resources, much of the land within the District will not be able to be developed.

5) The District's current reliance on the Colorado River water entitlement for over 99% of the water used within the District.

6) Maintaining an accurate and timely accounting for water usage within the District's boundaries.

7) Evaluation of water metering devices with an expectation of increasing accuracy and reducing maintenance.

Step 4 – Existing Water Conservation Measures
A. List of the Practices and Expected Results That Were Identified and Implemented Previously

Practice	Expected Results
Complete a water inventory	This would result in more effective use of the District's water.
Establish a good working relationship with Mohave County P & Z and ADWR	This would allow the District more control over its water entitlement.
Use of effluent for non-agricultural irrigation	Completion of this project would return almost 2,000 acre-feet of fresh water to the District's inventory.
Develop a more accurate means of water measurement	Through good water measurement, the accounting of water diversions and deliveries can be tracked and better water management will prevail.
Develop a water conservation pricing structure	The economic incentive will drive water conservation.
Develop a water shortage plan	This would create a smoother implementation in times of shortage.

B. Description of the Actual Program Design and Results of Practices That Were Implemented

Program Design	Results
The water inventory analyzed all parcels of land in each township, range, and section within the District's boundaries.	The water inventory categorized each parcel of land within the District. Then it assigned a water allocation to parcels based on their category in compliance with ADWR guidelines. Some parcels were not given an allocation based on the fact that they had no approved allocation from the District.
This program will more accurately measure water use through the installation of water metering devices on the wells of the agricultural users within the District.	The agricultural users within the District use approximately 74% of the water within the District. The District has completed the installation of metering devices on the agricultural wells, which has increased the accuracy of the agricultural water usage data. The 6 utility companies and amenity users also meter their water used.

Step 5 – Fundamental Water Conservation Measures

A. Water Measurement and Accounting System Design To Measure and Account for the Water Conveyed through the District Distribution System to Water Users

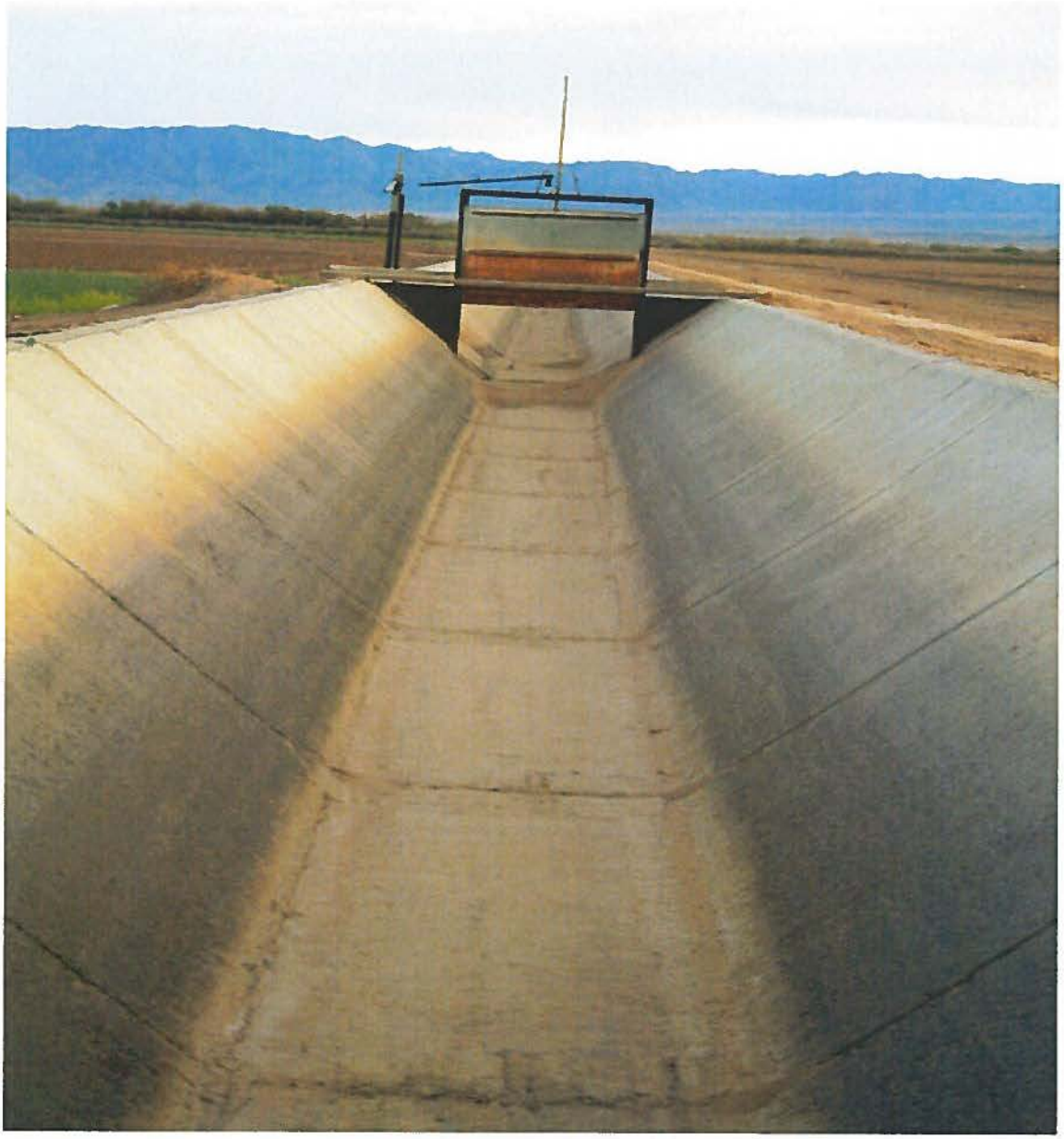
Describe The District's Current Measurement and Accounting System– The District itself does not own, operate, or maintain any wells. All wells within the District's boundaries are owned and operated by non-District entities. These entities provide their own personnel to operate and maintain their facilities.

The District itself does not own, operate, or maintain any distribution facilities. All distribution facilities within the District's boundaries are owned and operated by non-District entities. These entities provide their own personnel to operate and maintain their facilities. These owners have developed their own maintenance schedules to ensure that their facilities are operating appropriately and not causing undo waste of a limited resource. Distribution facilities within the district include pipes, valves, and accessory facilities owned and operated by utility companies located within the District. They also include ditches, gates, and accessory facilities owned and operated by agricultural entities within the District.

The District is responsible for the overall water measurement and accounting procedures associated with the service area. However, the 6 utility companies located within the District's boundaries are also under the jurisdiction of the Arizona Corporation Commission. The accounting procedures of each utility company are the responsibility of the individual utility company. The utility companies meter and bill their customers in accordance with their own policies and procedures. The District in accordance with the Bureau of Reclamation (BOR) Master Contract monitors water usage on a monthly basis, including usage by the utility companies. This information is provided to the BOR on a monthly basis.

The water users including, agricultural, amenity, and utility providers submit reports specifying the amount of water pumped from their respective wells during the previous month to the District on a monthly basis. The District also calculates the amount of water used by non-metered, exempt wells within the District. All this data is then compiled into a single report that is transmitted to the BOR on a monthly basis.

The District undertook a water meter installation program in 2010 for the agricultural users within the District. This program required that all agricultural users install metering devices on their wells to report monthly water use. This program was intended to increase the accuracy of the water accounting within the District.



B. A Water Pricing Structure That Encourages Efficiency Improvements by Water Users

Describe the District's Current Pricing Structure and How it Promotes Efficiency – The District is rather unique for an irrigation district in that they allow municipal development within the District's external boundaries. Most irrigation districts restrict water uses within their district boundaries to agricultural uses.

The District is responsible for the overall water measurement and accounting procedures associated with the service area. However, the 6 utility companies located within the District's boundaries are also under the jurisdiction of the ACC. The accounting procedures of each utility company are the responsibility of the individual utility company. The rates charged by the utility companies are set by the ACC. One of the criteria used by the ACC in setting rates is water conservation. Utility companies meter and bill their customers in accordance with their own policies and procedures. Thus, the District has no control over the rates and fees charged by the utility companies.

The District does have control over the fees charged by it to users within the District. The District has taxing authority. The District taxes lands within the District at a rate of $1.50 per acre in 2013. Each amenity user has a contract that specifies the rate they are charged on a per acre-foot of water basis. This price is currently $30.00 per acre-foot of water per year. The amenity users are only charged for the amount of water they use in a given year. The more efficient they are, the less they pay. Agricultural users pay a fixed amount per acre-foot of water based on the number of acre-feet of water included in their contracts. This Allocation Administration Fee charged to agricultural customers is designed to cover costs associated with operating the District.

C. An Information and Education Program for Users Designed To Promote Increased Efficiency of Water Use

Describe the District's Current Information and Education Program - The District does not currently have an education program in place. However, the various utility companies do education outreach to their respective customers from time to time. They have gone into the elementary schools to explain water conservation to students and teachers.

The agricultural customers are professionals in their field and have been improving their conservation efforts. These efforts include lining ditches, placing metering devices on their wells, and laser-leveling fields. These users keep in contact with National Resources Conservation Service (NRCS) as well as others for their needs.

D. Water Conservation Coordinator

The District Manager for MVIDD will serve as the Water Conservation Coordinator.

Name:	Mark R. Clark, C.C.M.
Title:	District Manager
Phone:	(928) 768-3325
Fax:	(928) 768-5239
Email:	mclark@mvidd.net

Step 6 – Additional Water Conservation Measures
A. Agricultural Water Conservation Measures

1 – On-Farm Program Incentives – The District currently has no on-farm incentive programs in place.

2 – Drought / Water Shortage Contingency Plan – The District is currently working on a Water Shortage Resolution. The resolution is anticipated to include in part that if water for the District is curtailed the first water to be eliminated is the Interim Water Contracts. If the District still needs to reduce its water use, the next groups to be reduced are the agricultural and amenity users. The agricultural and amenity users will share proportionately in any reduction required thru December 31, 2017. After December 31, 2017 the amenity user contracts expire. The amenity users will then fall within the Interim Water category or begin using effluent. In either case their water allocation will be reduced to zero before any agricultural user reduction post 2017. We are still working on final details of the resolution.

3 – Water Transfers – The District has a Water Transfer Policy in place, which allows for the transfer of water from one user to another within the District. This transfer could be used in the case of a new owner acquiring a parcel of land with an existing entitlement. It could also allow for a user that is not fully utilizing their allocation to transfer a portion of the allocation to another user within the District. The District policy states in part that no water can be transferred out of the District. See Resolution Number 07-05.

4 – Conjunctive Use - There are no ground water basins, ground water recharge areas, or conjunctive use programs currently in place within the District's boundaries. All water within the District is considered Colorado River water with the exception of a limited amount of reclaimed water.

5 – Land Management – There are some parcels of land lying within the District whose soil and topography make them unsuitable for farming. These parcels have been excluded from receiving an agricultural entitlement from the District.

6 – Operational Practices And Procedures – The District does not own, operate, or maintain any production (wells), storage, distribution, drainage, or recharge facilities. All the aforementioned facilities located within the District are owned, operated, and maintained by non-district entities. These owners have developed their own maintenance

schedules to ensure that their facilities are operating appropriately and not causing undo waste of a limited resource. The District does inspect meter installations and irrigation ditches on a regular basis to confirm compliance with District Policies.

7 – Distribution System Scheduling - The District itself does not own, operate, or maintain any distribution facilities. All distribution facilities within the District's boundaries are owed, operated, and maintained by non-District entities. These entities provide their own personnel to operate and maintain their facilities. Distribution facilities within the district include pipes, valves, and accessory facilities owned and operated by utility companies located within the District. They also include ditches, gates, and accessory facilities owned and operated by agricultural entities within the District. The owners of the facilities schedule their own operation of their facilities. The District does not do any distribution system scheduling.

8 – On-farm Irrigation Scheduling - The District does not own, operate, or maintain any wells itself. All wells within the District's boundaries are owed, operated, and maintained by non-District entities. These entities provide their own personnel to operate and maintain their facilities. The owners of the facilities schedule their own operation of their facilities. Thus, the District does not do any irrigation scheduling.

9 – Pump Efficiency Evaluations – The District itself does not own, operate, or maintain any wells. All wells within the District's boundaries are owed, operated, and maintained by non-District entities. These entities provide their own personnel to operate and maintain their facilities. The District does not currently have a program to evaluate private wells within the District to determine their energy and water efficiency.

10 – Distribution Control – The District itself does not own, operate, or maintain any distribution facilities. All distribution facilities within the District's boundaries are owned, operated, and maintained by non-District entities. These entities provide their own personnel to operate and maintain their facilities. Distribution facilities within the district include pipes, valves, and accessory facilities owned and operated by utility companies located within the District. They also include ditches, gates, and accessory facilities owned and operated by agricultural entities within the District. The District does not have the ability to modify any of the distribution facilities owned by others.

11 – Re-use Systems – The District itself does not own, operate, or maintain any re-use facilities. All re-use facilities within the District's boundaries are owned and operated by non-District entities. These

entities provide their own personnel to operate and maintain their facilities. Re-use facilities within the district include pipes, valves, and accessory facilities owned and operated by utility companies located within the District. There is currently only 1 re-use user within the District. The District is currently working with multiple entities to try to increase the beneficial use of re-use water within the District. The District is working with ADWR, BOR, Mohave County, the City of Bullhead City, utility companies, and end-users to try to create a program, in which it is economically feasible for end-users to participate.

12 – Reduction of Conveyance Losses – The District does not own, operate, or maintain any conveyance facilities, but recognizes the need to reduce losses through these facilities. The District passed Board Resolution 2008-09 on November 5, 2008. This resolution required the lining of all irrigation ditches within the District. It reads in part, "All irrigation ditches located within the boundaries of the District must be lined and maintained to the minimum standards established by the District at the expense of the Water User." All the current agricultural ditches are lined with the exception of a small canal on Bureau of Land Management property that is currently being farmed. The total acreage being farmed on this land is 93 acres with 6,000 lineal feet of canal being used.

13 – Construction, Lining or Covering of Regulatory Reservoirs – The District itself does not own, operate, or maintain any storage facilities. There are no regulating reservoirs within the District. All storage facilities within the District's boundaries are owed and operated by non-District entities. These entities provide their own personnel to operate and maintain their facilities.

14 – Laser Land Leveling – All the agricultural land within the District has been laser-leveled. Much of the land is leveled annually.

Step 7 – Selected Measures and Projected Results

1 – Develop a crop efficiency program. This program will track the water needs of the various crops planted within the District. This information can then be placed in a tabular form to assist the farmers in their anticipated future water needs. Thus, the amounts of water ordered can be tracked more closely.

2 - Develop a new water metering program to more accurately record the usage of water within the District.

3 – Complete a well inventory within the District. This will allow the District to track and more accurately account for the water used within the District.

4 – Prepare a water needs assessment for the District. This will allow the District to examine how much additional water the District needs, to be able to provide water to the remaining developable lands (M & I or Agricultural) within the District that do not currently have a water allocation.

5 – Create a water conservation policy that requires developers (commercial and residential) or individual land owners requesting a water allocation to accept and implement the District's water conservation measures as detailed in the policy.

6 - To work with ADWR and the Arizona State Legislature to require that water irrigation districts become part of the approval process for the drilling of water wells within the state. This would help ensure that wells drilled in the state have a legal right to the water they are pumping.

7 - To work with ADWR, BOR and others to increase the availability of re-use water available within the District. This would then free up fresh water for further development within the District.

8 – Develop a policy regarding the unauthorized use of water without an allocation from the District. This would help to eliminate the water being used and not accounted for by the District increasing the accuracy of our water reporting.

Step 8 – Environmental Review

The District does not own, operate, or maintain any wells, distribution, or storage facilities. The users own and operate their own facilities. The District has no water uses for canal seepage, evaporation, spills, or riparian uses in canals since the District does not own or operate any of these facilities. There are agricultural and M & I water uses within the District. There are a number of developments and commercial projects within the District's boundaries. The facilities owned and operated by the users have not created any new habitat or created any environmental compliance issues that the District is aware of.

The water quality reports from the various utility companies along with the study conducted by ADEQ indicate that water quality issues are primarily point source pollution caused by seepage from septic systems and naturally occurring arsenic.

Step 9 – Implementation Schedule and Budget for Each Selected Measure

1 – Develop a crop efficiency program. It is anticipated that this program will be completed in the fiscal year ending June 30, 2016. The budgeted cost of this program should be minimal.

2 - Develop a new water-metering program. This program will take approximately seven years to complete. The total cost of the program is estimated at $375,000.00.

3 – Complete a well inventory within the District. This project is being completed in coordination with the BOR, USGS and MVIDD. It is anticipated District staff will complete the well inventory in the fiscal year ending June 30, 2016. The budgeted cost of this program should be minimal.

4 – Prepare a water needs assessment for the District. It is anticipated that this program will be completed in the fiscal year ending June 30, 2015. The budgeted cost of this program should be minimal.

5 – Create a water conservation policy. It is anticipated that this policy will be completed in the fiscal year ending June 30, 2015. The budgeted cost of this program should be minimal.

6 - To work with ADWR and the Arizona State Legislature to require that water irrigation districts become part of the approval process for the drilling of water wells within the state. This process may take some time to complete, but we believe is of vital importance to the many constituencies within the state. The budgeted cost of this program cannot be estimated at this time.

7 - To work with ADWR, BOR and others to increase the availability of re-use water within the District. The budgeted cost of this program cannot be estimated at this time.

8 – To develop a policy requiring developers of residential and commercial projects to adopt a specific set of water conservation initiatives for any development projects within the District. It is anticipated that this policy will be completed in the fiscal year ending June 30, 2016. The budgeted cost of this program should be minimal.

References

Bureau of Reclamation (BOR)

Mohave Valley Irrigation and Drainage District (MVIDD or District), Corporate Records

Interstate Compact Defining The Boundary Between The States Of Arizona and California

Minutes of The Mohave County Board of Supervisors December 23, 1963

U.S. Supreme Court Reports, Bryant v. Yellen

Mohave County Board of Supervisors Resolution No. 248

Arizona Department of Water Resources

www.Maptechnica.com

Mohave County Assessor's Office

United States Geological Survey (USGS)

USDA Natural Resource Conservation Service, Soil Maps

www.Koordinates.com

www.Desertmuseum.org

Arizona Game and Fish Department

Western Regional Climate Center wrc@dri.edu

www.Ag.Arizona.edu

www.USA.Com

www.Water-ed.Org

Bella Vista Homeowners Association

Utilities, Inc. (Bermuda Water Company, Inc.)

EPCOR Water

Global Water (Willow Valley Water Company)

Lagoon Estates Water Company

Fort Mohave Tribal Utility Authority

Sunrise Vistas Utilities

Technical Consultants, Inc.

Arizona Department Of Environmental Quality (ADFEQ)

www.quickfacts.census.gov

Kelley Moss, PLLC

www.Wateruseitwisely.com

Western Resource Advocates

Arizona Municipal Water Users Association

Central Arizona Project

City of Bullhead City

Wellton-Mohawk Irrigation and Drainage District

Appendices –

Appendix A – Soil Maps
Appendix B - ADWR Exempt Well Listing
Appendix C - Board Resolutions Water Allocations
Appendix D - Board Resolution Water Transfer
Appendix E - Water Quality Data - ADEQ Water Quality Study and 6 utility companies' annual Consumer Confidence Reports for 2010, 2011, and 2012

MOHAVE VALLEY IRRIGATION AND DRAINAGE DISTRICT
COUNTY OF MOHAVE, STATE OF ARIZONA

RESOLUTION NUMBER 2018-05

A RESOLUTION AUTHORIZING MANAGER TO ACT RELATIVE TO UNITED STATES DEPARTMENT OF INTERIOR, BUREAU OF RECLAMATION ASSISTANCE AGREEMENT FOR WaterSMART GRANT: SMALL-SCALE WATER EFFICIENCY PROJECTS

WHEREAS, Mohave Valley Irrigation and Drainage District, Mohave County, Arizona (District) is a special taxing district created under Title 48, Chap. 19 of the Arizona Revised Statutes (A.R.S.); and

WHEREAS, the District is authorized and directed its manager, Mark Clark, to apply for a grant from the United States Department of Interior, Bureau of Reclamation ("BOR") to obtain grant funds to establish phase 2 (two) of a water measurement program; and

WHEREAS, BOR has approved the grant to the District for funds to implement a phase 2 (two) water measurement program and is prepared to issue funds once the Assistance Agreement is executed by all parties.

NOW, THEREFORE, BE IT RESOLVED that the District, Manager, Mark Clark, is hereby designated as the project manager for phase 2 (two) water measurement program, and authorized and directed to execute the United States Bureau of Reclamation Assistance Agreement and to take such actions as may be necessary or convenient for District's performance thereunder.

Passed, approved and adopted this 7th day of August, 2018, by the following vote:

Directors Voting IN FAVOR thereof	Directors Voting AGAINST thereof:
Charles B. Sherrill, Jr., Chairman	Charles B. Sherrill, Jr., Chairman
Perry Muscelli, Director	Perry Muscelli, Director
John Kai, Jr., Director	John Kai, Jr., Director

John "Clay" Vanderslice, Director	John "Clay" Vanderslice, Director
Vince Vasquez, Director	Vince Vasquez, Director

Absent Directors:

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Attest:

_____ Date: _____