SOUTHERN NEVADA WATER AUTHORITY

AGENDA

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS

SPECIAL MEETING
4:00 P.M. – SEPTEMBER 26, 2013

BOARD CHAMBERS, SOUTHERN NEVADA WATER AUTHORITY
100 CITY PARKWAY, SEVENTH FLOOR, LAS VEGAS, NEVADA
(702) 258-3100

Board of Directors
Mary Beth Scow, Chair
Sam Bateman, Vice Chair
Susan Brager
Bob Coffin
Duncan McCoy
Steve Sisolak
Anita Wood

Patricia Mulroy, General Manager

The Southern Nevada Water Authority makes reasonable efforts to assist and accommodate persons with physical disabilities who desire to attend the meeting. For assistance, call Katie Horn at (702) 870-2011 at least 24 hours prior to the meeting.

THIS MEETING HAS BEEN PROPERLY NOTICED AND POSTED IN THE FOLLOWING LOCATIONS:

City of Boulder City, City Hall
401 California Street
Boulder City, Nevada

City of Henderson, City Hall
240 Water Street
Henderson, Nevada

City of North Las Vegas, City Hall
2250 Las Vegas Boulevard North
North Las Vegas, Nevada

City of Las Vegas, City Hall
495 South Main Street
Las Vegas, Nevada

Clark County Government Center
500 S. Grand Central Parkway
Las Vegas, Nevada

Clark County Water Reclamation District
5857 E. Flamingo Road
Las Vegas, Nevada

Southern Nevada Water Authority
100 City Parkway, Suite 700
Las Vegas, Nevada

Las Vegas Valley Water District
1001 S. Valley View Boulevard
Las Vegas, Nevada

All items on the agenda are for action by the Board of Directors, unless otherwise indicated. Items may be taken out of order. The board may combine two or more agenda items for consideration, and the board may remove an item from the agenda or delay discussions relating to an agenda item at any time.

CALL TO ORDER

COMMENTS BY THE GENERAL PUBLIC

NO ACTION MAY BE TAKEN: This is a period devoted to comments by the general public pertaining to items on this agenda. If you wish to speak to the Board about items within its jurisdiction, but not appearing on this agenda, you must wait until the "Comments by the General Public" period listed at the end of this agenda. Please limit your comments to three minutes or less and refrain from making comments that are repetitious, offensive, or amounting to personal attacks. No action may be taken upon a matter not listed on the posted agenda.

ITEM NO.

1. *For Possible Action:* Approve agenda with the inclusion of tabled and/or reconsidered items, emergency items and/or deletion of items, and approve the minutes of the regular meeting of July 18, 2013.

CONSENT AGENDA

Items 2-3 are routine and can be taken in one motion unless a Director requests that an item be taken separately.

2. *For Possible Action:* Approve Amendment No. 1 to the existing agreement between the Clark County Water Reclamation District and the Authority to conduct native plant revegetation on Clark County Water Reclamation District property.

3. *For Possible Action:* Approve and authorize the General Manager to sign an Easement Agreement between the Moapa Valley Water District and the Authority for water conveyance facilities on Twin Springs, located within the Authority's Warm Springs Natural Area, and authorize the General Manager or her designee to sign amendments or ministerial documents necessary to grant the easement.

BUSINESS AGENDA

4. *For Possible Action:* Approve a funding contribution agreement between the Nevada Division of Water Resources and the Authority for surface and groundwater data collection services within Nevada to be performed by the U.S. Geological Survey.

5. *For Possible Action:* Approve a joint funding agreement between the U.S. Geological Survey and the Authority for hydrologic data collection in western Utah in support of the Clark, Lincoln and White Pine Counties Groundwater Development Project.

6. *For Possible Action:* Approve a joint funding agreement between the U.S. Geological Survey and the Authority for hydrologic data collection.

7. *For Possible Action:* Approve an agreement between Hazen and Sawyer, P.C., and the Authority for a WateReuse Research Foundation awarded project on alternative treatment technologies for controlling trace organic contaminants in potable water reused indirectly, and accept funds for this research work.

8. *For Possible Action:* Approve an agreement between the Colorado School of Mines and the Authority for a National Science Foundation awarded project on water quality and supply impacts from climate-induced insect tree mortality, and accept funds for this research work.

9. *For Possible Action:* Ratify the approval of the assistance agreement between the Bureau of Reclamation and the Authority to accept a grant to research and evaluate the impacts of climate change on water quality in Lake Mead, and authorize the General Manager to approve future modifications only if the future modifications do not fiscally impact the Authority.

10. *For Possible Action:* Receive an update regarding the September 5, 2013, determination of emergency for modifying Lake Mead Intake No. 1 to contend with projected low lake levels, and ratify Change Order No. 12 to Contract No. 070F 02 C2, Intake No. 3 – Connector Tunnel, and an extension of the contract time by 453 calendar days.

11. *For Possible Action:* Ratify General Counsel's intervention in Federal Energy Regulatory Commission Docket EC-13-128 and Public Utility Commission Docket 13-07021 involving the proposed acquisition of NV Energy by MidAmerican Energy Holdings Company.

12. *For Information Only:* Receive a presentation on the recommendations report from the 2012-2013 Integrated Resource Planning Advisory Committee.

13. *For Possible Action:* Conduct a Public Hearing and subsequently adopt an increase to the Authority's Commodity Charge and Infrastructure Charge, authorize a temporary reduction in the annual rates for calendar years 2014-2016 in accordance with the Integrated Resource Planning Advisory Committee's rate proposal, and adopt the committee's Recommendations Report.

14. *For Information Only:* Receive an update from staff on water resources including, but not limited to, drought conditions in the Colorado River Basin, the results of the implementation of the Authority's Water Resource and Conservation Plans, activities on the Colorado River, the development of in-state water resources, and the status of the third intake project.

COMMENTS BY THE GENERAL PUBLIC

NO ACTION MAY BE TAKEN: At this time, the Board of Directors will hear general comments from the public on matters under the jurisdiction of the Southern Nevada Water Authority. Please limit your comments to three minutes or less and refrain from making comments that are repetitious, offensive, or amounting to personal attacks. No action may be taken upon a matter not listed on the posted agenda.

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
REGULAR MEETING
JULY 18, 2013
MINUTES

CALL TO ORDER	9:00 a.m., SNWA Board Chambers, Southern Nevada Water Authority 100 City Parkway, Seventh Floor, Las Vegas, Nevada
BOARD MEMBERS PRESENT	Mary Beth Scow, Chair Sam Bateman, Vice Chair Susan Brager Bob Coffin Duncan McCoy Steve Sisolak
BOARD MEMBERS ABSENT	None
STAFF PRESENT	Pat Mulroy, Greg Walch, John Entsminger, Ron Zegers, Phil Speight, Julie Wilcox
OTHERS PRESENT	Linda Faiss, Helen Foley, Melissa Warren, Susie Black; Faiss Foley Warren

Unless otherwise indicated, all members present voted in the affirmative.

COMMENTS BY THE GENERAL PUBLIC

There were no persons wishing to speak.

1. Approval of Agenda & Minutes

FINAL ACTION: A motion was made by Director Bateman to approve the agenda for this meeting and the minutes of the special meeting of June 27, 2013. The motion was approved.

2. *For Possible Action:* Appoint a Chairman and Vice Chairman to preside over the Board of Directors for fiscal year 2013/2014, and appoint three directors to serve as commissioners of the Colorado River Commission of Nevada for one-year terms.

FINAL ACTION: A motion was made by Director Brager to nominate Mary Beth Scow as Chairwoman and Sam Bateman as Vice Chair, and Directors McCoy, Coffin and Sisolak to serve as commissioners of the Colorado River Commission. The motion was approved.

CONSENT AGENDA

3. *For Possible Action:* Approve a resolution authorizing the submission of a grant proposal to the Bureau of Reclamation WaterSMART Program.

4. *For Possible Action:* Accept all construction work required to be performed under Contract No. 810G 01 C1R, Duck Creek Confluence, Upper Narrows, and DU Wetlands No. 1 Weir Structures.

FINAL ACTION: A motion was made by Director Sisolak to follow staff's recommendations. The motion was approved.

BUSINESS AGENDA

5. *For Possible Action:* Award Contract No. 810K 01 C1, Three Kids Weir, to Aggregate Industries-SWR, Inc., for the amount of $11,617,000, authorize a change order contingency amount not to exceed $1,100,000, and authorize the execution of the contract or take other action as appropriate.

Director Coffin asked if this was the same weir that was involved with the land dispute. Ron Zegers, Deputy General Manager, reported that the previous dispute has been resolved to allow construction on the parcel.

Director Sisolak asked staff to research existing legislation to determine if there's a way that governing boards can mandate that local labor be used. Greg Walch, General Counsel, replied that he would look into the issue. Ms. Mulroy noted that the contract's lowest bidder will use local labor.

FINAL ACTION: A motion was made by Director Bateman to follow staff's recommendations. The motion was approved.

6. ***For Possible Action:*** **Approve and authorize the General Manager to enter into an assistance agreement between the Bureau of Reclamation and the Authority, to accept a grant for an amount not to exceed $300,000 to support the Authority's Water Smart Landscape Rebate Program, and authorize the General Manager to approve future modifications only if the future modifications do not fiscally impact the Authority.**

Director Brager asked if residents were made aware in the landscape conversion process of the course of action needed in the event they wanted to replant turf. John Entsminger, Senior Deputy General Manager, noted that information is included in the program's terms and requires review before any conversion can take place.

FINAL ACTION: A motion was made by Director McCoy to follow staff's recommendations. The motion was approved.

7. ***For Possible Action:*** **Approve an agreement between Faiss Foley Warren and the Authority to provide integrated communication and support services related to the Water Conservation Coalition, water quality, water resources, and environmental initiatives in an amount not to exceed $900,000, with an option to extend the agreement for five additional one-year periods at the same compensation amount.**

Julie Wilcox, Public Services Director, provided an overview of the contract's terms and uses, including placement of advertising, outreach support, collateral development. She noted that the total amount is not expended each year. She noted the firm's achievements in terms of water quality outreach, which is anticipated to increase in the coming year given declining lake levels. She also discussed the firm's work with conservation programs for commercial customers such as the linen exchange program and administration of the Water Conservation Coalition.

Helen Foley, Linda Faiss and Melissa Warren gave an overview of their firm and shared recent work with the Board including a water quality commercial and video related to SNWA environmental efforts.

Director Sisolak requested to see videos shown more often on television and suggested showing them in schools and the local public access networks.

Director Brager asked if it would be beneficial to include SNWA literature in new homes. Chairwoman Scow asked what the plans are for the upcoming year. Ms. Foley noted that a lot of work will be focused around the efforts and recommendations of the Integrated Resource Planning Advisory Committee.

FINAL ACTION: A motion was made by Director Sisolak to follow staff's recommendations. The motion was approved.

8. ***For Possible Action:*** **Approve a professional services agreement between Flow Science Incorporated and the Authority to evaluate the National Park Service and Bureau of Reclamation's proposed Long-Term Experimental and Management Plan and to research its impact on water quality in Lake Mead resulting from the Bureau of Reclamation's future operational plans and the effects of climate change, for an amount not to exceed $500,000 for the period from date of award through July 1, 2017.**

Pat Mulroy, General Manager, noted that the Authority acquired this water quality model from the Clean Water Coalition and wants to utilize the model to stress the potential impacts of modified Glen Canyon Dam operations. Director Sisolak asked if there was a partnership opportunity with the Desert Research Institute. Ms. Mulroy anticipated that the Desert Research Institute will also be utilizing this model, as it's unique to the region.

Director Coffin noted that he is interested to see the research related to quaggas as this research moves forward.

FINAL ACTION: A motion was made by Director Coffin to follow staff's recommendations. The motion was approved.

9. ***For Information Only:*** **Receive an update from staff on water resources including, but not limited to, drought conditions in the Colorado River Basin, the results of the implementation of the Authority's Water Resource and Conservation Plans, activities on the Colorado River, the development of in-state water resources, and the status of the third intake project.**

Mr. Entsminger gave a presentation to the Board about ongoing hydrology conditions, namely the potential for reduced deliveries to Lake Mead. A copy of the presentation is attached to these minutes. Ms. Mulroy noted that the Basin States are meeting to discuss plans should Lake Mead elevations fall below 1,025 feet. She noted that any solutions will require cooperation with the agricultural community and outlined possible options to reducing agricultural demand.

Director Coffin asked if the SNWA has confidence with lake elevation measurements due to silting. Ms. Mulroy stated that the silting issue affects Lake Powell more than it does Lake Mead, but noted the concern. Mr. Zegers noted that staff will contact the U.S. Geological Survey for more information about the silting issue and update the Board at a later date.

Marc Jensen, SNWA Engineering Director, gave an update on activities on the Lake Mead Intake No. 3 project. A copy of his presentation is attached to these minutes.

NO ACTION NECESSARY.

Public Comment

Peter Dixon, Las Vegas, Nevada, discussed an issue involving Las Vegas Valley Water District meter valves and asked the Board for assistance.

Adjournment

There being no further business to come before the board, the meeting adjourned at 10:04 p.m.

APPROVED:

_____ _____

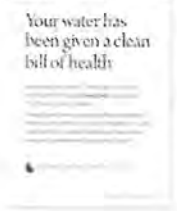
Chair Patricia Mulroy, General Manager

Copies of all original agenda items and minutes, including all attachments, are on file in the General Manager's office at the Las Vegas Valley Water District, 1001 South Valley View Boulevard, Las Vegas, Nevada.

SNWA Community Outreach Initiatives:

Faiss Foley Warren Promotional Support

Water Quality



Since 2003, Faiss Foley Warren has worked with SNWA's outstanding community outreach team to educate residents about the critical and sometimes confusing issue of our Water Quality.

- By promoting water safety and quality, the campaign successfully decreased the negative emphasis on water taste and hardness.
- As a result, the community's level of confidence in drinking water safety has moved from neutral to favorable since 2003.
- Water quality information has been made available in Spanish for the first time.
- Water safety information is now available in doctors' offices throughout the Las Vegas Valley, reaching expectant mothers and those with immune system disorders.

Water Quality

Water quality television spot

Commercial Water Conservation

Faiss Foley Warren provides both promotional and logistical support related to commercially focused conservation programs, including;

- Linen Exchange – With more than 30 participating resorts, thousands of rooms participate in this guest-oriented water efficiency program.
- Water Upon Request – More than 200 local restaurants now serve glasses of water only upon request, saving more than a gallon of water for each glass not served.
- Water Smart Home – Leading builders, including KB Homes and Del Webb/Pulte, participate in this innovative program, which established stringent water efficiency standards for new construction and served as the model for the national Environmental Protection Agency program.

Water Conservation Coalition

Faiss Foley Warren provides administrative, production and promotional support to the community-based Water Conservation Coalition, a panel of leading business people focused on improving water efficiency in that sector.

- Provided media and logistical support for public conservation projects such as Boys and Girls Town, Griffith Elementary School, and the Sherman Gardens landscape conversion (in progress).
- Promote applications and logistics for the SNWA's Water Hero Awards.
- Support efforts to include conservation-related articles in newsletters for WCC member organizations, homebuilder magazines, and homeowners association newsletters.

Community Outreach

- IRPAC Outreach
- Business Community
- Neighborhood organizations
- Professional organizations
- Trade shows
- Schools

Environmental Initiatives

From video production to the development of collateral materials and media support, Faiss Foley Warren supports the SNWA's numerous environmental initiatives:

- Las Vegas Wash – A significant reduction in erosion and improvement in wildlife habitat earned national honors for this initiative, which was overseen by the SNWA in partnership with nearly 30 entities.
- Warm Springs Natural Conservation Area – The SNWA has taken a significant role in this multi-agency effort to maintain and enhance habitat for the endangered Moapa dace.
- Water Resource Planning and Education – To reduce Southern Nevada's 90 percent reliance upon the drought-plagued Colorado River, the SNWA continues to work through the regulatory and legal processes necessary to draw upon a portion of Nevada's available, unused groundwater resources and pursue alternative resources such as desalination.

Environmental Initiatives

Environmental initiatives video

Summary of Qualifications

One of Southern Nevada's longest-established firms, Faiss Foley Warren has a record based upon performance and responsiveness.

- Extensive experience in the Las Vegas media market.
- Full range of services, including video and print production.
- Exceptional knowledge of issues affecting the water sector.
- Understanding of diverse stakeholder groups and their informational needs.

Update on Drought Conditions and Water Use

July 18, 2013

Drought Monitor

Released Wednesday, July 3, 2013
Author: Matthew Rosencrans, NOAA/NWS/NCEP/CPC

Seasonal Drought Outlook

(Valid July – September, 2013)

Source: National Oceanic Atmospheric Administration and the U.S. Department of Commerce

Colorado River Basin Conditions

- **May inflow to Lake Powell:** 48% of average
- **June inflow to Lake Powell:** 35% of average
- **Snow pack:** NA
- **Water Year 2013 Precipitation:** 80% of average
- **Forecasted Water Year 2013 Inflow to Lake Powell:** 41% of average

Precipitation and Inflow Forecast – Lake Powell

	2012 Water Year		2013 Water Year	
Month	Actual Precipitation	Inflows Forecast	Actual Precipitation	Inflows Forecast
Jan	75%	79%	72%	61%
Feb	84%	78%	78%	54%
Mar	86%	80%	76%	49%
Apr	78%	63%	78%	42%
May	74%	51%	80%	45%
Jun	71%	47%	77%	44%
Jul	71%	46%	80%	41%
Aug	74%	48%		
Sept	74%	46%		
Actual	74%	45%		

Sources: Bureau of Reclamation, Lower Colorado Water Supply Reports

Reservoir Operations

- 24-Month Study is used to determine operations for Lake Powell and Lake Mead
- The August 24-month study is used to determine the operating tier for the upcoming calendar year (based on projection of January 1 elevations)
- The April 24-month study is used to make mid-year adjustments to the releases from Lake Powell (releases can only increase)

Release Determination

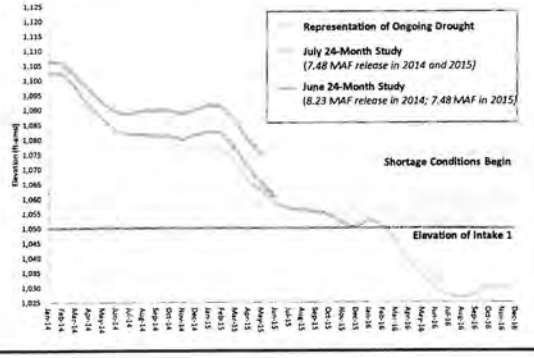
Lake Powell Operational Tiers

Lake Powell Elevation	Lake Powell Operational Tier	Lake Powell Active Storage
3,700 ft.		24.32 MAF
	Equalization Tier *Equalize, avoid spills or release 8.23 MAF*	
3,636-3,666 ft.		15.54 – 19.29 MAF
	Upper Elevation Balancing Tier *Release 8.23 MAF;* *If Lake Mead < 1,075 feet; balance contents with a min/max release of 7 and 9 MAF*	
3,575 ft.		9.52 MAF
	Mid-Elevation Release Tier *Release 7.48 MAF;* *If Lake Mead < 1,025 ft., release 8.23 MAF*	
3,525 ft.		5.93 MAF
	Lower Elevation Balancing Tier *Balance contents with a min/max release of 7.0 and 9.5 MAF*	
3,370 ft.		0 MAF

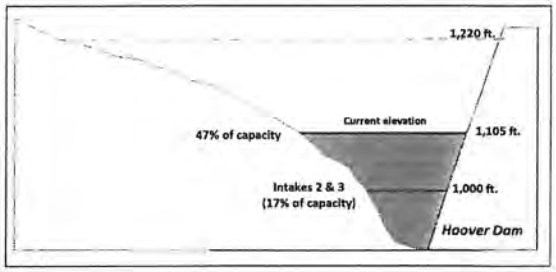
Reservoir Operations – 2014/2015

- The July 24-Month study shows Lake Powell's elevation below 3,575 ft. with an 8.23 million acre-feet release
- Therefore, the release is modified to the Mid-Elevation Release Tier and only 7.48 million acre-feet to be released from Lake Powell
- August 24-Month study makes final determination
- 2015 is projected to be in the Mid-Elevation Release Tier, which would result in back-to-back releases of 7.48 million acre-feet

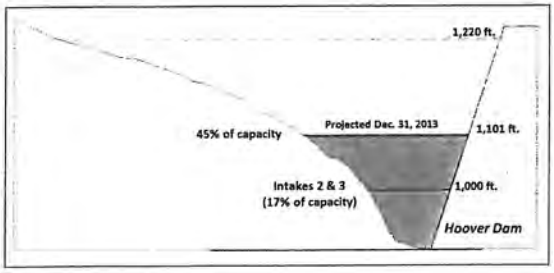
Lake Mead Elevation Projections



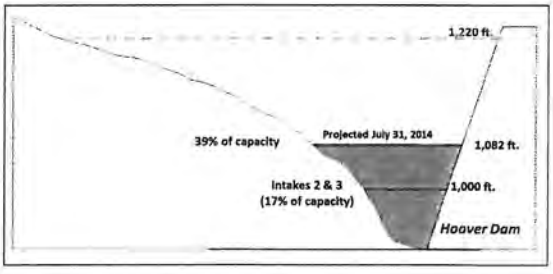
Lake Mead Capacity - Current



Lake Mead Capacity - Projected (12/31/13)

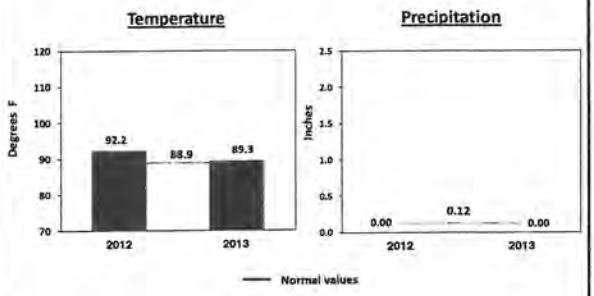


Lake Mead Capacity - Projected (07/31/14)

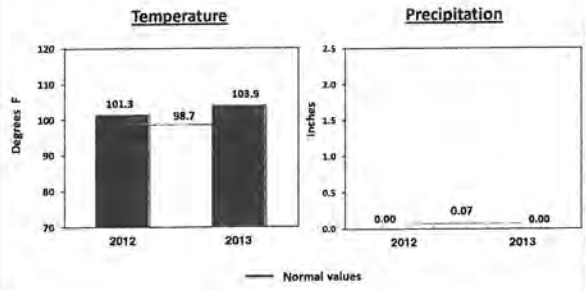


SNWA Water Use

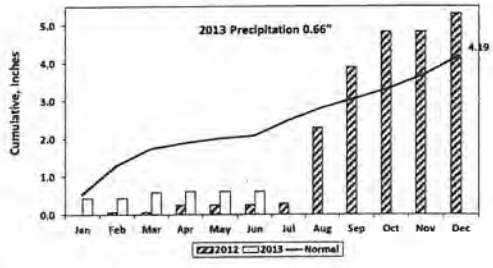
Weather Comparison (May 2013)



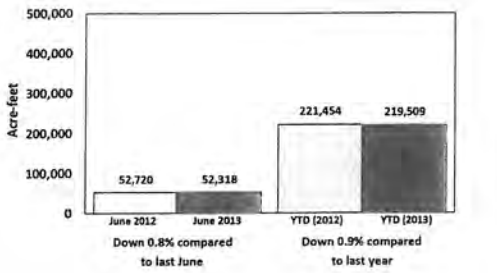
Weather Comparison (June 2013)



Annual Precipitation



SNWA Total Water Use

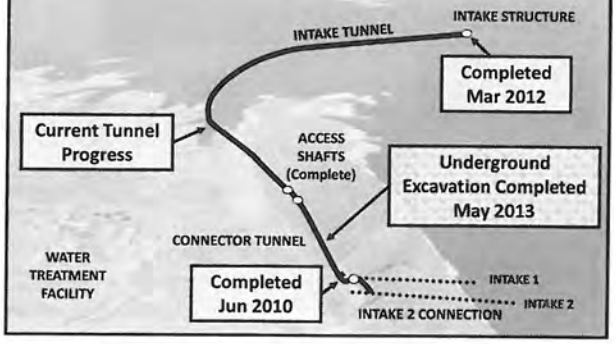


LAKE MEAD INTAKE NO. 3

SNWA Board of Directors
Progress Report

18 July 2013

Lake Mead Intake No. 3 Current Progress



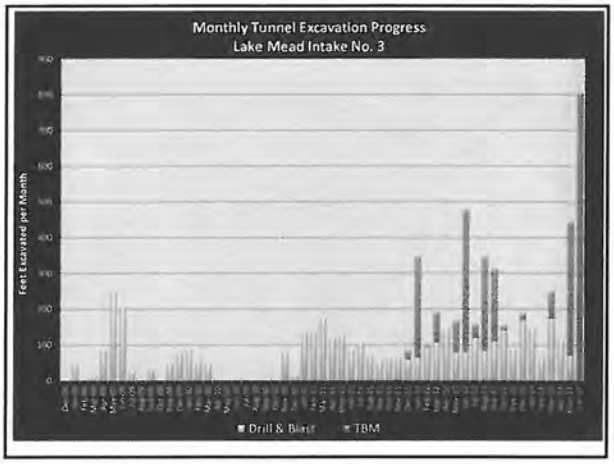
CONNECTOR TUNNEL

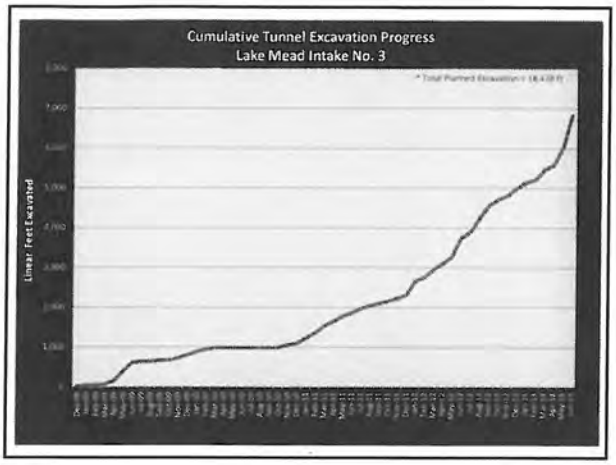
Connector Tunnel Linkup With Existing Intake No. 2

CURRENT TUNNEL BORING STATUS

- The TBM has left the Saddle Island metamorphic rocks, now in sedimentary rocks
- The face ahead of the TBM is depressurized with less than 10 gpm of water inflow
- Cutter disks were inspected at the end of June after 1,200 feet of excavation
- Disks were found worn but not destroyed
- All disks were replaced in less than a week
- The TBM is now operating in the "open" mode under atmospheric conditions

2nd Complete Disk Replacement – End of Jun 2013





LAKE MEAD INTAKE NO. 3

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Amendment	**Director's Backup**
Petitioner: John J. Entsminger, Senior Deputy General Manager	
Recommendations: That the Board of Directors approve Amendment No. 1 to the existing agreement between the Clark County Water Reclamation District and the Authority to conduct native plant revegetation on Clark County Water Reclamation District property.	

Fiscal Impact:
If the above recommendation is approved, costs of an amount not to exceed $100,000 will be reimbursed to the Authority.

Background:
The Authority has received approximately $50,000,000 from Southern Nevada Public Lands Management Act (SNPLMA) grants to help minimize local agency costs for constructing erosion control structures in the Las Vegas Wash (Wash). Receipt of these grants required the Authority to revegetate more than 150 acres of wetlands along the Wash. To help satisfy this requirement, the Board of Directors approved an Interlocal Cooperative Agreement (Agreement) on September 21, 2006, with the Clark County Water Reclamation District (CCWRD) that allowed the Authority to implement a revegetation project on CCWRD property. The Agreement recognized the Authority's expertise with wetland revegetation projects. In exchange for the use of CCWRD property to meet the revegetation requirement, the Authority committed to assist the CCWRD with the implementation of wetland revegetation work associated with CCRWD's Project No. 511-D.

The activities to be conducted that are described in the Agreement have changed slightly as the final design for CCWRD's Project No. 511-D nears completion. The Authority has completed the majority of their activities from the Agreement; therefore, these changes are to address activities that the Authority will complete on behalf of the CCWRD. Amendment No. 1 to the Agreement updates the funding arrangements and the extent of the Authority's assistance. The changes to the Agreement include: (1) the CCWRD will reimburse the Authority up to $100,000 for performing the services described; (2) the Authority will no longer use SNPLMA funds to mitigate for wetland losses on CCWRD property; and (3) the Authority will plan, design, administer, and execute revegetation activities and remove undesirable vegetation as directed by the CCWRD.

This amendment is being entered into pursuant to NRS 277.180 and Section 6(j) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved the amendment.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
FOR PM:JJE:ZLM:KKC:SAS:JE:pe
Attachment

AGENDA ITEM # 2

AMENDMENT NO. 1 TO THE INTERLOCAL COOPERATIVE AGREEMENT BETWEEN THE CLARK COUNTY WATER RECLAMATION DISTRICT AND THE SOUTHERN NEVADA WATER AUTHORITY TO IMPLEMENT A REVEGETATION PROJECT

The September 21, 2006, Interlocal Cooperative Agreement made and entered into by and between CLARK COUNTY WATER RECLAMATION DISTRICT (CCWRD) and the SOUTHERN NEVADA WATER AUTHORITY (Authority) is hereby amended as set forth below this _____ day of _____, 2013.

WITNESSETH:

A. REPLACE Section 4.1 in its entirety with:

4.1 The Authority, with assistance from the CCWRD, will plan, design, administer, and execute revegetation activities on the Project Property as directed by the CCWRD.

B. REMOVE Section 4.2 in its entirety.

C. REMOVE Section 4.4 in its entirety.

D. REMOVE Section 4.7 in its entirety.

E. REPLACE Section 4.11 in its entirety with:

4.11 The Authority will maintain wetland mitigation sites as directed by the CCWRD for so long as CCWRD funds the Authority pursuant to this Agreement.

F. REMOVE Section 6.3 in its entirety.

G. REPLACE Section 6.4 in its entirety with:

6.4 The Authority will provide CCWRD with invoices documenting the amount and type of services performed pursuant to this Agreement. The CCWRD will pay the Authority up to an amount not to exceed $100,000 for the direct costs (excluding in-kind services) of revegetation, wetland maintenance, bird nesting clearance, and other services requested pursuant to this Agreement, except for those activities in which the Authority will use its best efforts to obtain grant funding to complete.

H. REMOVE Sections 6.5 through 6.8 in their entirety.

IN WITNESS WHEREOF, the Parties have executed this AMENDMENT No. 1 as of the date first written above.

SOUTHERN NEVADA WATER AUTHORITY

By: _____
Patricia Mulroy, General Manager

CLARK COUNTY WATER RECLAMATION DISTRICT

By: _____
Thomas Minwegen,
General Manager

Approved As To Form:

Dana Walsh
Dana R. Walsh,
Deputy Counsel

Approved As To Form:

_____
Carolyn Campbell,
Deputy District Attorney

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Easement Agreement	**Director's Backup**
Petitioner: John J. Entsminger, Senior Deputy General Manager	

Recommendations:
That the Board of Directors approve and authorize the General Manager to sign an Easement Agreement between the Moapa Valley Water District and the Authority for water conveyance facilities on Twin Springs, located within the Authority's Warm Springs Natural Area, and authorize the General Manager or her designee to sign amendments or ministerial documents necessary to grant the easement.

Fiscal Impact:
None by approval of the above recommendation.

Background:
On March 16, 2006, the Board of Directors approved an Agreement for Lease of Water Rights among the Moapa Valley Water District (MVWD), the Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter-day Saints (CPB), and the Authority for lease by CPB of Muddy River water rights originating from Twin Springs to MVWD and the Authority. The Board also approved a Cooperative Agreement between MVWD and the Authority for cost sharing and cooperative use of the water rights leased from CPB.

On April 20, 2006, the Authority entered into a Memorandum of Agreement with the U.S. Fish and Wildlife Service, MVWD, the Moapa Band of Paiutes, and Coyote Springs Investment, LLC, which established various conservation measures in connection with development of regional groundwater resources and recovery of the endangered Moapa dace. On July 20, 2006, the Board authorized purchase of the Warm Springs Ranch, which allowed the Authority to manage the property as a natural area for the primary purpose of protecting Moapa dace. The Authority closed on the purchase of the Warm Springs Ranch on September 13, 2007, and renamed it the Warm Springs Natural Area (WSNA).

If approved, the easement agreement establishes the terms by which the Authority would grant an easement to MVWD for water conveyance facilities over and through the WSNA from Twin Springs. This will allow MVWD to use its portion of the water rights leased from CPB. The easement would be provided at no cost to MVWD, but location of the easement in this area benefits the Authority by keeping the WSNA in a more natural state as it does not require installation of overhead power lines.

This easement agreement is being entered into pursuant to NRS 277.053 and Section 6(f) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved the easement agreement.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
FOR PM:JJE:REZ:DRW:td
Attachment

AGENDA ITEM # 3

APN: 030-16-101-001

When Recorded Return to:
Moapa Valley Water District
P.O. Box 257
Logandale, Nevada 89021

Twin Springs Easement Agreement

THIS EASEMENT AGREEMENT is made and entered this _____ day of _____, 2013, by and between the MOAPA VALLEY WATER DISTRICT, a political subdivision of the State of Nevada ("MVWD"), and the SOUTHERN NEVADA WATER AUTHORITY, a political subdivision of the State of Nevada ("SNWA"). MVWD and SNWA may be referred to herein collectively as the "Parties" or individually as a "Party."

Recitals

WHEREAS, SNWA is the owner of certain real property located in Clark County, Nevada commonly known as the Warm Springs Natural Area (the "Property"); and

WHEREAS, pursuant to a 2006 lease agreement with the Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter-day Saints (the "2006 Lease"), MVWD and SNWA are lessees of certain water rights diverted from Twin Springs, a surface water source located on the Property (the "Water Rights"); and

WHEREAS, MVWD desires to construct, operate and maintain certain water conveyance infrastructure to put the Water Rights to beneficial use; and

WHEREAS, the Property is owned and managed by SNWA as a natural area, with the primary purpose being the protection of the Moapa dace (an endangered species), and as such, any construction undertaken on the Property must be completed pursuant to certain protective terms and conditions as outlined herein; and

WHEREAS, MVWD and SNWA are signatories to the 2006 Memorandum of Agreement with the U.S. Fish and Wildlife Service, the Moapa Band of Paiute Indians, and Coyote Springs Investment, LLC, which provides for development of groundwater owned by certain parties thereto and outlines conservation and mitigation measures for the protection of the Moapa dace; and

WHEREAS, the Parties desire that MVWD install water metering and conveyance infrastructure for use of the Water Rights in an adaptable and flexible manner to preserve future opportunities for the Parties to enhance Moapa dace habitat; and

WHEREAS, the Parties desire to avoid installation of electrical power and pumping infrastructure on the Property for use of the Water Rights to increase water delivery efficiencies and maintain a more natural environment on the Property.

NOW, THEREFORE, in consideration of the mutual promises set forth herein, and for other good and valuable consideration the sufficiency and receipt of which is hereby acknowledged, the Parties agree to the following:

Agreement

1. SNWA hereby grants to MVWD, at no cost and subject to the terms and conditions contained herein, an easement (the "Easement") to construct, operate and maintain a water pipeline, meter, and related water diversion infrastructure (collectively, the "Water Facilities") upon, over, under, and across the "Easement Area," as described in Exhibit A and shown in Exhibits B and C, each attached hereto and made a part hereof. The Easement Area shall be a strip of land 20 feet wide and containing approximately 6,040 square feet, as described and shown in Exhibits A, B, and C. MVWD's ingress and egress to the Easement Area shall be as shown in Exhibit B.

2. This Easement in perpetuity is a personal, non-transferrable, and non-assignable right to be held exclusively by MVWD. Any assignment of the Easement or any right held by MVWD pursuant to the Easement to any other person shall be void and not merely voidable.

3. This Easement is to be used exclusively for the construction, operation, and maintenance of the Water Facilities. MVWD shall not install or cause to be installed any electrical power infrastructure on the Property, and agrees that all water conveyed through the Water Facilities shall be exclusively gravity-fed. To the extent that such easements are valid, for so long as this Easement is in effect, MVWD agrees not to use the easements described as easements F and G in the Declaration of Easements from the Corporation of the Presiding Bishop of The Church of Jesus Christ of Latter Day Saints (Recorded October 12, 2001, in Book 20011012 as Instrument No. 00030 of the official records of the Clark County Recorder) for placement of Twin Springs water diversion or conveyance facilities or associated electrical power infrastructure.

4. SNWA retains the right to fence, landscape, maintain, and use the Easement Area for SNWA's own purposes, as long as such improvements or uses do not unreasonably interfere with MVWD's Easement rights described herein.

5. MVWD shall notify SNWA in writing a minimum of 30 days prior to commencing any construction (including relocations, changes or upgrades) within the Easement Area and shall provide to SNWA a set of engineering design drawings of the Water Facilities (the "Plans") concurrently with the written notice. The Parties shall meet and confer within 10 business days of SNWA's receipt of the Plans to ensure the common goal of the management of the SNWA property and Easement as a natural area will be met under the Plans. If no meeting is held within 10 business days of SNWA's receipt of the Plans, MVWD may assume that the common goal of the management of the SNWA property and Easement as a natural area has been satisfied.

6. After MVWD provides the notification and Plans to SNWA pursuant to Paragraph 5 of this Agreement but prior to the start of construction, SNWA will mark the center line of the Easement Area. Before construction begins, MVWD shall install a bright colored safety fence along and within the Easement Area boundary to prevent unauthorized encroachment outside of Easement Area. During construction of the Water Facilities, prompt removal of all downed brush and debris from the Easement Area and the Property is required. MVWD shall maintain the Easement Area in a clean and orderly condition during any construction or maintenance activities.

7. Water Facilities shall be installed solely within the Easement Area. If any unauthorized encroachments occur outside the Easement Area, MVWD shall remove the Water Facilities from the unauthorized area and replace the Water Facilities into the Easement Area within 90 days of the date the encroachment was discovered. At MVWD's sole expense, MVWD will re-vegetate any unauthorized impacted areas outside the Easement Area with the same native plant species as occurred on the impacted area or from the immediately adjacent areas, as identified by the Warm Springs Natural Area Manager. After construction of the Water Facilities is complete, vegetation within the Easement Area and on unauthorized impacted areas, if any, will be maintained by SNWA.

8. MVWD shall install and operate a meter in order to account for diversion of the Water Rights by MVWD. The meter may be installed separately before the other infrastructure contemplated in this Agreement is installed. MVWD shall install appropriate valves and piping to allow water to be diverted in a flexible manner, either to the existing pipe that conveys water to the Cardy Lamb pool area or to MVWD's Baldwin Springs Facilities.

9. When not diverting water for use by MVWD and if it will not interfere with MVWD's Baldwin Springs Facility maintenance or operations, upon agreement of MVWD and SNWA, MVWD shall convey water from Twin Springs to either the Cardy Lamb Pool area or through MVWD's Baldwin Springs Facility to the South fork of the Muddy River at no cost to SNWA. MVWD's agreement to SNWA's request will not be unreasonably withheld.

10. MVWD agrees to abide by and comply with all applicable Federal, State and local laws and ordinances, and building and safety codes in both its exercise of this Easement and in its use of the Water Rights. MVWD is responsible for securing any permits or approvals necessary for construction, operation and/or maintenance of the Water Facilities. MVWD shall not allow or suffer any lien to be placed on the Property as a result of its exercise of Easement rights hereunder, and shall promptly remove any such lien by bond or otherwise upon receiving any notice of lien.

11. MVWD assumes all risk of property damage and injury caused by the construction, operation, maintenance, removal, or use of the Water Facilities, regardless of when the damage or injury occurs or is detected. Notwithstanding any other provision in this Agreement, MVWD shall reimburse SNWA for all injury or damage to the real or personal property of SNWA arising out of the utilization of the rights given under this Easement which is caused by MVWD and/or its agents, invitees, contractors or subcontractors.

12. To the extent allowed under Nevada law, MVWD agrees to indemnify, defend, protect, and hold harmless SNWA, its employees, invitees, and agents from all claims, liens, actions, damages, costs, expenses, and attorneys' fees arising out of, connected with, or in any manner resulting from MVWD's, its agents', invitees', contractors', or subcontractors' use of the Property pursuant to this Easement, including, without limitation, the Easement Area.

IN WITNESS WHEREOF, the Parties hereto execute this Agreement as of the date first written above.

MOAPA VALLEY WATER DISTRICT,

a political subdivision of the State of Nevada

Ken Staton

Ken Staton, Board Chairman

State of Nevada)

) ss

County of Clark)

On 9/17/13, before me, the undersigned, a NOTARY PUBLIC, in and for said County and State, personally appeared **Ken Staton, Board Chairman,** known to me to be the person described in and who executed the foregoing instrument, and who acknowledges to me that he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

WITNESS my hand and official seal.

Notary Public - State of Nevada
County of Clark
S. ROSE
My Appointment Expires
No. 04-91684-1 September 15, 2016

S Rose

Notary Public

Notary Seal/Stamp

SOUTHERN NEVADA WATER AUTHORITY,

a political subdivision of the State of Nevada

_____

Patricia Mulroy, General Manager

State of Nevada)

) ss

County of Clark)

On _____, before me, the undersigned, a NOTARY PUBLIC, in and for said County and State, personally appeared **Patricia Mulroy, General Manager,** known to me to be the person described in and who executed the foregoing instrument, and who acknowledges to me that she executed the same freely and voluntarily and for the uses and purposes therein mentioned.

WITNESS my hand and official seal.

_____ _____

Notary Public Notary Seal/Stamp

Approved as to Form:

Dana Walsh

Dana R. Walsh, Deputy Counsel

"EXHIBIT A"

A description of real property for easement purposes, being a portion of the Northwest Quarter of Section 16, Township 14 South, Range 65 East, Mount Diablo Baseline and Meridian Clark County Nevada, more particularly described as follows:

A 20.00 foot wide strip of land lying 10.00 feet on each side of the following described centerline:

Commencing at the West Quarter corner of said section 16; Thence North 89°42'11" East along the South line of said Northwest Quarter, a distance of 658.56 feet; Thence North 00°17'48" West a distance of 959.40 feet to the center of that certain 100 foot radius spring service area described as a portion of Easement G (7.7) in Book 20011012, Instrument 00030 on file in the office of the Recorder, Clark County, Nevada; Thence North 77°19'20" East, a distance of 100.00 feet to the **Point of Beginning (P.O.B.)**;
Thence along the following courses and distances:
South 57°43'23" East, a distance of 5.96 feet;
South 47°48'56" East, a distance of 71.15 feet;
South 58°56'13" East, a distance of 80.73 feet;
South 80°14'29" East, a distance of 61.08 feet;
South 63°50'05" East, a distance of 82.36 feet to a point on the northerly side of the area described as Baldwin Springs Pump Station, Easement F (7.6) described in Book 20011012, Instrument 00030 on file in the office of the Recorder, Clark County, Nevada.

The sidelines of the above described strip of land shall be lengthened or shortened so as to terminate on the arc of the aforementioned 100 foot radius spring service area and the northerly and westerly lines of the aforementioned Easement F.

The lands described herein contain 6,040 square feet, more or less.

Basis of Bearings:
The Basis of Bearings for this survey is the South line of the Northwest Quarter of Section 16, Township 14 South, Range 65 East, M.D.B.&M., taken as North 89°42'11" East.
Also shown as North 89°42'28" East on Record of Survey on file in the office of the Recorder, Clark County, Nevada in file 109, page 80.

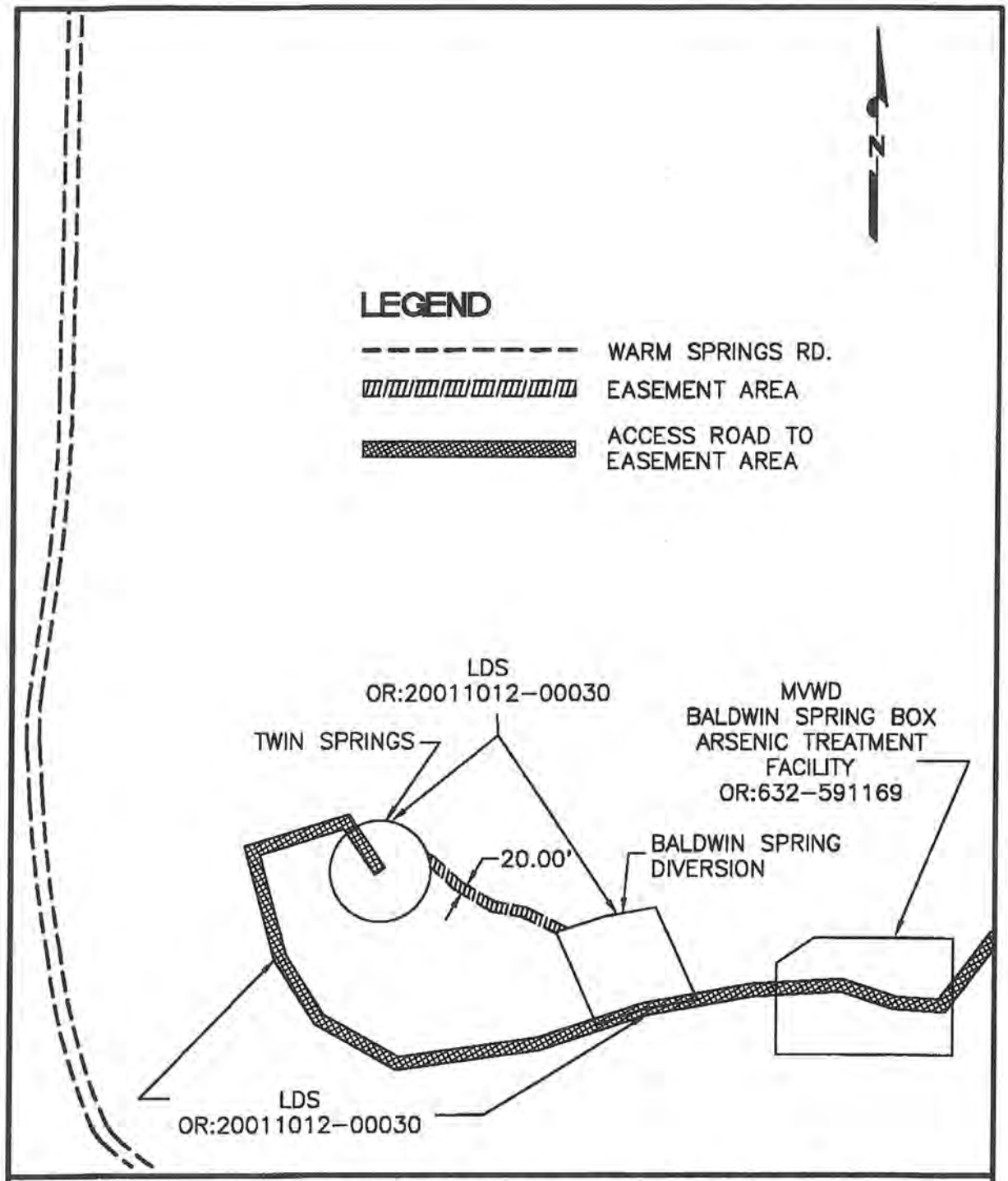
References:

1) Exhibit 'B' MVWD EASMENT AREA DESCRIPTION DIAGRAM attached hereto and made a part hereof
2) Record of Survey File 109, Page 80
3) Book 20011012, Instrument 00030

Darrell T. Harness P.L.S.
Professional Land Surveyor
Nevada EASMENT No. 3197
Principal Land Surveyor, LVVWD

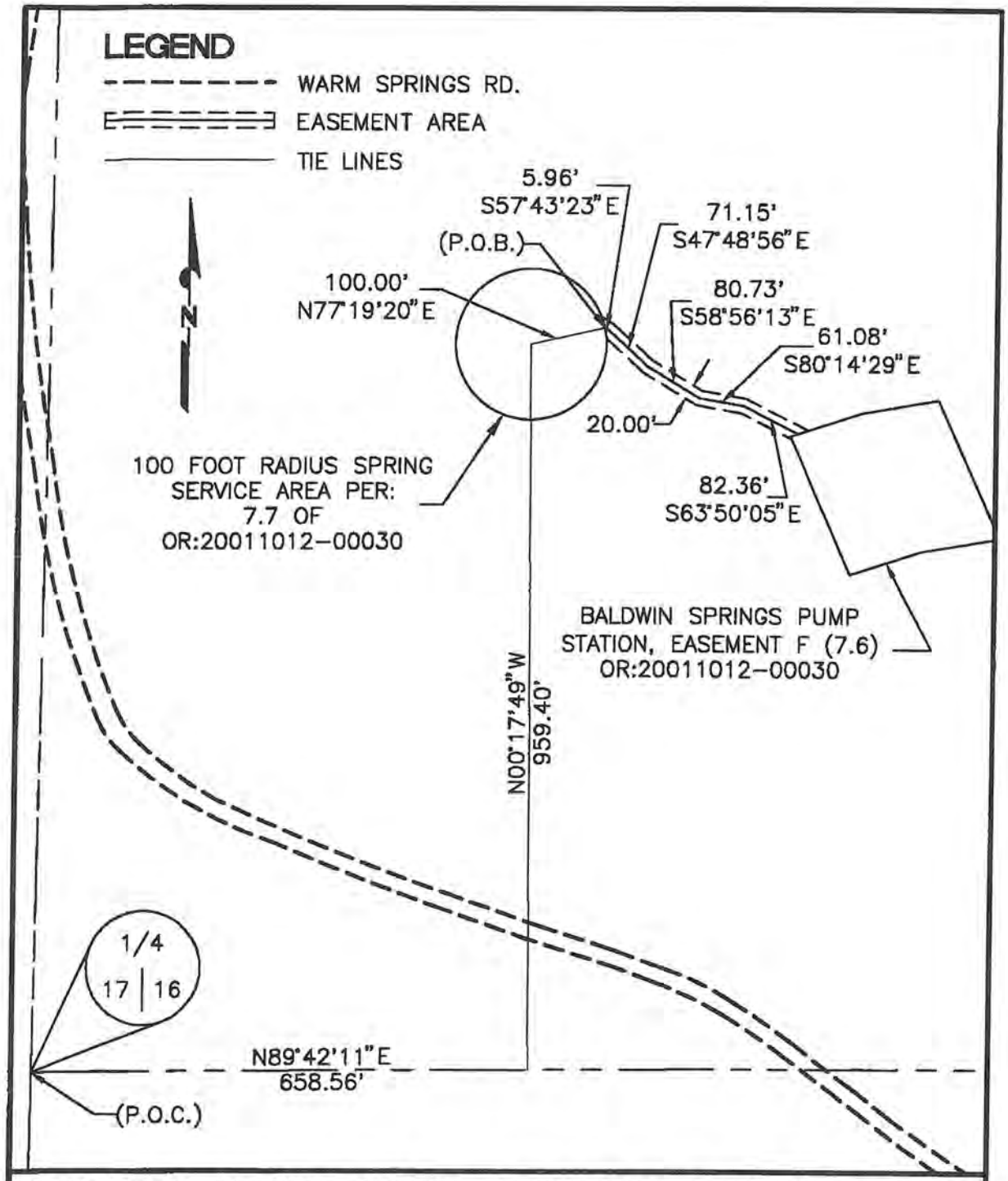
Portion of A.P.N. 030-16-101-001

G:_PROJECTS_CONTRACT JOBS (DESIGN)\09X0355001\WORKING FILES\WORD\ MVWD EASMENT AREA EXHIBIT A UPDATE 2-25-13.docx



SOUTHERN NEVADA WATER AUTHORITY SURVEY DRAWING

SCALE	DRAWN BY: JLW 2/25/2013 EDITED BY: JLW 2/25/2013 PLS: DTH 2/25/2013	EXHIBIT A.P.N. 030-16-601-001	SNWA EX-B PAGE 1 OF 2
1" = 300'			



SOUTHERN NEVADA WATER AUTHORITY SURVEY DRAWING

SCALE	DRAWN BY: JLW 2/25/2013 EDITED BY: JLW 2/25/2013 PLS: DTH 2/25/2013	MVWD EASEMENT AREA DESCRIPTION DIAGRAM	SNWA EX-B PAGE 2 OF 2
1" = 200'			

SOUTHERN NEVADA WATER AUTHORITY SURVEY DRAWING

SCALE	DRAWN BY: JLW 2/25/2013 EDITED BY: JLW 2/25/2013 PLS: DTH 2/25/2013	EXHIBIT A.P.N. 030-16-601-001	SNWA EX – C PAGE 1 OF 1
1" = 300'			

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Agreement	**Director's Backup**
Petitioner: John J. Entsminger, Senior Deputy General Manager	
Recommendations: That the Board of Directors approve a funding contribution agreement between the Nevada Division of Water Resources and the Authority for surface and groundwater data collection services within Nevada to be performed by the U.S. Geological Survey for an amount not to exceed $206,875.	

Fiscal Impact:
The required $206,875 is available in the Authority's Operating Budget.

Background:
Since 2006, the Authority has participated in a cooperative program with the Nevada Division of Water Resources (NDWR) and the U.S. Geological Survey (USGS) to fund a surface water and groundwater monitoring program in southern and eastern Nevada. The total annual cost of the program is $579,291, of which the USGS and NDWR will collectively contribute $372,416. If approved, the Authority will contribute the remaining $206,875.

The program includes two elements:

1. Eastern and southern Nevada Surface Water Data Network ($102,600) for operating and maintaining stream flow gages and monitoring spring discharge in the Las Vegas Valley and eastern Nevada.
2. Eastern and southern Nevada Groundwater Data Network ($104,275) for monitoring groundwater in the Las Vegas Valley and regional carbonate-rock province.

The program partially fulfills the Authority's hydrological monitoring requirements associated with groundwater permits issued by the Nevada State Engineer and requirements set forth in the U.S. Department of the Interior and Authority stipulation agreements.

This agreement is being entered into pursuant to NRS Chapter 277.180 and Section 6(j) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved the agreement.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:ZLM:AB:JPP:GMK:clw:nsh
Attachments

FOR

AGENDA ITEM # 4

BRIAN SANDOVAL
Governor

STATE OF NEVADA

LEO DROZDOFF
Director

JASON KING, P.E
State Engineer

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701-5250
(775) 684-2800 • Fax (775) 684-2811
http://water.nv.gov

FUNDING CONTRIBUTION AGREEMENT FOR HYDROLOGIC STUDIES IN EASTERN AND SOUTHERN NEVADA

The Southern Nevada Water Authority (SNWA) agrees to contribute funding to the Nevada State Engineer (NSE) for Federal Fiscal Year 2014 for continuation of hydrologic studies in eastern and southern Nevada with work to be performed by the U.S. Geological Survey (USGS).

SNWA agrees to contribute a portion of the total actual USGS cost of hydrologic work as described in the letter to the NSE dated August 6, 2013 from John Sciacca, Director of the USGS Nevada Water Science Center. It is understood that the total cost of the project for the period October 1, 2013 through September 30, 2014 is $579,291. SNWA's share is $206,875, or such lesser amount as determined by reducing SNWA's share by the sum contributed by any other participant from the State of Nevada. The specified amount will be paid to the NSE for use in performing, or having performed said studies, with payments to be made promptly after receipt of the NSE's billing.

The hydrologic work is to be performed as a cooperative effort between the USGS, the NSE and SNWA to further understand the hydrology and water resources of eastern and southern Nevada.

NEVADA STATE ENGINEER

By: K. L. Howle

Title: State Engineer

Date: 8/14/13

SOUTHERN NEVADA WATER AUTHORITY

By: Patricia Mulroy

Title: General Manager

Date:

Southern Nevada Water Authority
Approved as to form:
By _____ Date 08/22/13

United States Department of the Interior

U.S. GEOLOGICAL SURVEY

PACIFIC REGION
NEVADA WATER SCIENCE CENTER
2730 N. Deer Run Road
Carson City, Nevada 89701
Phone: 775-887-7600; Fax: 775-887-7629
Website: http://www.usgs.gov/

August 6, 2013

Jason King, State Engineer
Nevada Division of Water Resources
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701

Dear Mr. King:

The Nevada Water Science Center (NVWSC) thanks you for your continued support of the surface-water (SW) and ground-water (GW) monitoring program conducted cooperatively between the U.S. Geological Survey (USGS) and the Nevada Division of Water Resources (NDWR). This program is conducted using pass-through funding from Southern Nevada Water Authority (SNWA) in the eastern and southern part of Nevada. The total cost will be $579,291 for continued operation and maintenance (O&M) of this program for the period of performance October 1, 2013 – September 30, 2014. NDWR's portion of the funds to support this cooperative program is $113,313; and SNWA's portion of the funds for this program is $206,875. Pending availability of Federal Matching Funds (FMF) from the Cooperative Water Program, the USGS contribution will be $259,103.

Beginning in Federal fiscal year 2013 and continuing through this agreement, the USGS, under a new business practice, can no longer include the monies that pay for support benefits and services from headquarters in our annual Joint Funding Agreements. Federal funding levels provided in Item 2a of the Joint Funding Agreement only include monies directly associated with the Cooperative Water Program at the Nevada Water Science Center (NVWSC) level. No additional costs will be incurred by NDWR and SNWA resulting from this change in business practice.

The following table lists the contributions from NDWR, SNWA, and USGS for Federal fiscal year 2014. As indicated on the table, the USGS portion for fiscal year 2014 reflects the difference in dollars resulting from the USGS new business practice described above. A more detailed description of the funding is located in Enclosures 1 and 2.

USGS Project No.	Program Element	Estimated Funding Structure			Total Funds
		NDWR	SNWA	USGS**	
NV-00190	Eastern and Southern Nevada SW (Enclosure 1)	$49,038	$102,600	$132,146	$283,784
NV-00290	Eastern and Southern Nevada GW (Enclosure 2)	$64,275	$104,275	$126,957	$295,507
GRAND TOTAL		**$113,313**	**$206,875**	**$259,103**	**$579,291**

*** USGS funds are subject to availability of FY 2014 Federal matching funds.*

Objectives of this study are to: (1) establish, operate, and maintain hydrologic monitoring networks; (2) maintain a data base of collected hydrologic data; (3) collect long-term hydrologic data within the carbonate-rock province study area; (4) obtain new or refined hydrologic information that would advance the level of knowledge on how the carbonate-rock province study area functions hydrologically; (5) establish a cooperative working relationship with all organizations that manage and/or monitor surface-water in southern Nevada; (6) provide quality assurance and quality control protocols for hydrologic data collection by all involved agencies; (7) disseminate collected data in a timely manner.

If you approve this work and the funding required, please sign the five (5) enclosed Joint Funding Agreements. Return one signed original to our Agreement Contact (Enclosure 3) by September 30, 2013, so that we may provide your agency with uninterrupted, continuous data and research.

Should you have questions regarding this work, agreement, or billing, please refer to the contact list at Enclosure 3. Any updates to contact information can be submitted to the following email drop box at: GS-W-NV Programs@usgs.gov.

Sincerely,

John Sciacca, Director
USGS Nevada Water Science Center

Enclosures

cc: B. Rinne, J. Johnson, G. Kistinger, SNWA, Las Vegas, NV
M. Rogers, S. Berris, USGS, NVWSC
GS-W-NV Finance, GS-W-NV Programs
Chron Cy

Enclosure 1

Summary of Cooperative Surface-Water Program for Federal Fiscal Year 2014

Program Elements

A. Operation of Surface-Water Gaging Stations at:

Site Name	Type	DCP
1. Corn Creek Spring near Las Vegas	Spring	Yes
2. White River near Red Mountain near Preston	Stream	Yes
3. Big Springs Creek North Channel near Baker	Stream	Yes
4. Big Springs Creek South Channel near Baker	Stream	Yes
5. Cleve Creek near Ely	Stream	Yes
6. Steptoe Creek near Ely, NV	Stream	Yes (NSIP)
7. Preston Big Spring near Preston, NV	Spring	Yes
8. Crystal Springs near Hiko, NV	Spring	Yes
9. Crystal Springs Diversion near Hiko, NV	Diversion	Yes
10. Ash Springs Creek below Hwy. 93 at Ash Springs, NV	Spring	Yes
11. Ash Springs Creek Diversion	Diversion	Yes
12. NDW-Hot Creek Spring	Spring	Yes
13. Geyser Spring	Spring	Yes
14. Stump Spring near Pahrump, NV	Spring	Yes
15. Grapevine Spring and precipitation near Pahrump, NV	Spring/Precipitation	Yes

B. Biannual collection of discharge at:

Site Name	Valley
a. Moorman Spring	White River
b. Lund Spring	White River
c. Cold Spring	White River
d. Nicholas Spring	White River
e. Arnoldson Spring	White River
f. Flag Spring 1	White River
g. Flag Spring 2	White River
h. Flag Spring 3	White River
i. Butterfield Spring	White River
j. Baldwin Flume	Moapa
k. Muddy River 10	Moapa
l. Muddy River 11	Moapa
m. Muddy River 12	Moapa
n. Muddy River 13	Moapa
o. Warm Springs East	Moapa
p. Muddy River 15	Moapa
q. Muddy River 16	Moapa
r. Muddy River 19	Moapa
s. Muddy River 20	Moapa
t. Panaca Spring (annual)	Meadow

Description of Program Elements

A. Operation of Surface-Water Gaging Stations

The current work-plan calls for site operation and maintenance of surface-water gaging stations at two diversions, eight springs and five streams; monitored during FY 2014.

The operation & maintenance costs include maintaining the stream-gaging equipment, making scheduled water discharge measurements, reduction and analysis of stage data, verification and development of stage/discharge relationships (ratings), computation of daily stream-flow, and data publication costs. Sites are generally visited on a 6-week basis, but may require more frequent visits if problems occur.

Provisional data from sites with data collection platforms (DCP), will be available on NWISWeb at http://waterdata.usgs.gov/nv/nwis/rt. All data will be compiled, reviewed, quality-assured, finalized and disseminated in the annual publication, "U.S. Geological Survey Water-Resources Data--Nevada."

B. Biannual collection of discharge

Miscellaneous measurements collected on a biannual basis, at twenty springs in Moapa, Railroad, and Meadow Valleys, are planned for May and September, 2014. Panaca Spring will only be measured on an annual frequency because of operational constraints. Included in this activity are data reduction, dissemination and quality assurance of measurements.

Provisional water-level data will be supplied to cooperators quarterly within four weeks of data collection. All data will be compiled, reviewed, quality-assured, finalized and disseminated in the annual publication, "U.S. Geological Survey Water-Resources Data--Nevada."

Cost Structure

** USGS funds are subject to availability of FY 2014 Federal matching funds*

USGS Station	Program Element	NDWR Funds	SNWA Funds	USGS Funds*	Total Funds
Program Element A.					
09419625	Corn Creek Spring near Las Vegas	$0	$10,800	$8,135	$18,935
09415460	White River near Red Mountain near Preston	$0	$10,800	$8,135	$18,935
102432241	Big Springs Creek North Channel near Baker, Nv	$0	$10,800	$8,135	$18,935
10243224	Big Springs Creek South Channel near Baker, Nv	$0	$10,800	$8,135	$18,935
10243700	Cleve Creek nr. Ely, NV	$10,800	$0	$8,135	$18,935
10244950	Steptoe Creek nr. Ely, NV	$9,850	$0	$7,419	$17,269
09415510	Preston Big Spring nr. Preston, NV	$10,800	$0	$8,135	$18,935
09415590	Crystal Springs nr Hiko, NV	$0	$10,800	$8,135	$18,935
09415589	Crystal Springs Diversion nr Hiko, NV	$0	$10,800	$8,135	$18,935
09415645	Ash Springs Crk Below Diversion at Hwy. 93 at Ash Springs, NV	$0	$10,800	$8,135	$18,935
094156395	Ash springs Diversion Ditch blw Hwy 93 at Ash Springs, NV	$0	$10,800	$8,135	$18,935
09415558	Hot Creek nr Sunnyside, NV	$0	$10,800	$8,135	$18,935
10245100	Geyser Creek at Springs Orifice nr Minerva, NV	$5,400	$5,400	$8,135	$18,935
	Stump Spring nr Pahrump, NV	$0	$0	$8,135	$8,135
	Grapevine Spring and precipitation nr Pahrump, NV	$0	$0	$9,792	$9,792
Program Element B.					
	Misc. Spring Measurements	$12,188	$0	$9,180	$21,368
TOTAL		$49,038	$102,600	$132,146	$283,784

Enclosure 2

Summary of Cooperative Ground -Water Program for Federal Fiscal Year 2014

Program Elements

A. Operation of water-level monitoring stations at:

	Station Name	Local Well Number	Aquifer	Depth	DCP?
1.	CNLV Regional Park 1	212 S19 E61 21DDB 1	fill	1300'	No
2.	CNLV Deer Springs	212 S19 E61 19BC1	fill	650'	No
3.	CNLV Allen & Lone Mtn	212 S19 E61 32CC1	fill	650'	No
4.	CNLV Diana Terrace	212 S20 E61 13ABDB1	fill	1230'	No
5.	CNLV Wilshire	212 S20 E62 05CAAA1	fill	1000'	No
6.	Maude Fitzpatrick	212 S22 E61 04BCB 1	fill	355'	No
7.	USBLM SHV-1	217 S16 E63 09DDAB1	carb	920'	Yes
8.	CE-DT-4 (MX-4)	210 S13 E63 23DDDC1	carb	669'	Yes
9.	CSV-2 well	219 S13 E65 28DAC1	carb	478'	Yes
10.	USGS-MX (Delamar Well)	182 S06 E63 12AD 1	fill	1195'	Yes
11.	USGS-MX (S. Dry Lake)	181 S03 E64 12AC 1	fill	1000'	Yes
12.	USGS-MX (N. Dry Lake)	181 N03 E63 27CAA 1	carb	2395'	Yes
13.	USGS MX Coal Valley Well	172 N03E5910BD1	carb	1837'	Yes
14.	USGS-MX Steptoe Valley Well	179 N12 E63 12AB1	carb	640'	Yes
15.	Creech New Field Well	161 16S 56E 03CC	carb	560'	Yes

B. Quarterly collection of water-levels in the Carbonate-Rock Province at:

	Agency Site ID	Local Number	Name	Aquifer	Depth
1.	380652116200901	156 N03 E50 13CA 1	USGS-MX (Revielle Valley)	fill	682'
2.	382901116125201	156 N07 E51 10AD 1	USGS-MX (Hot Creek 1)	fill	480'
3.	380906116050502	173B N03 E52 02DA 2	USGS-MX (S. R&R Valley)	fill	495'
4.	384338115283601	173B N10 E58 17CAAB1	USGS-MX (N. R&R Valley)	fill	581'
5.	384920115343001	173B N11 E57 09CDB 1	USBLM - Ball Creek Well 1	fill	186'
6.	393624115244601	175 N20 E58 14BDAB1		fill	135'
7.	393510115274801	175 N20 E58 20DBDA1	USBLM	fill	233'
8.	393425115215301	175 N20 E59 30DADA1		fill	UNK
9.	394418115250301	175 N22 E58 34AADA1	175 Big Tank Well	fill	UNK
10.	394340115252501	175 N22 E58 34DC 1	USGS-MX	fill	150'

C. Biannual High altitude precipitation measurements at:

	Latitude	Longitude	Elevation	Name
1.	400726	1145247	9700'	Cherry Creek Range
2.	391913	1141431	9300'	Unnamed Peak NW of Mt. Moriah
3.	391436	1153239	10745'	Mt. Hamilton
4.	390946	1143649	10742'	Cave Mountain
5.	385409	1141854	10440'	Mt. Washington
6.	381438	1142333	9200'	Mt. Wilson
7.	363929	1151158	9740'	Hayford Peak
8.	363500	1151443	9600'	Sheep Peak
9.	362240	1154621	8240'	Trough Spring
10.	361822	1154025	8510'	Lee Canyon

11. 361457	1153733	7760'	Kyle Canyon
12. 355641	1152946	8080'	Potosi Peak
13. 372035	1144329	7891'	S. Delamar Mtns
14. 373107	1144333	7867'	S. of Chokecherry Peak
15. 375337	1143438	9375'	Highland Peak
16. 373915	1152328	8640'	Mt. Irish
17. 361738	1154042	10104'	Mt. Charleston
18. 381157	1153731	9,100'	Quinn Canyon Range
19. 380025	1162738	9,100'	Kawich Range

Numbers 18 and 19 were added to the network in FY09 at the request of Southern Nevada Water Authority.

Description of Program Elements

A. Operation of water-level monitoring stations.

The current work-plan calls for site operation and maintenance of continuous water-level monitoring stations in eight wells completed in basin-fill and seven wells completed in carbonate rock; monitored during FY 2014. Of these sites nine wells are in the Carbonate-Rock Province, and six wells are in Las Vegas Valley.

The operation & maintenance costs include maintaining the water-level monitoring equipment, making scheduled water-level measurements with calibrated measuring tapes, reduction and analysis of water-level data, quality assurance (including calibration) of field equipment, computation of daily water-level, and data publication costs. Sites are generally visited on a 6-8 week basis, but may require more frequent visits if problems occur.

Provisional data from sites with data collection platforms (DCP's) will be available on NWISWeb at http://waterdata.usgs.gov/nv/nwis/rt. All data will be compiled, reviewed, quality-assured, finalized and disseminated in the annual publication, "U.S. Geological Survey Water-Resources Data--Nevada."

B. Quarterly collection of water-levels in the Carbonate-Rock Province.

Miscellaneous measurements collected on a quarterly basis, from wells in the Carbonate Rock Province, are planned for FY 2014. Included in this activity are data reduction, dissemination and quality assurance of measurements. Frequency of data collection will be fixed, and will occur in December 2013, March 2014, June 2014, and September 2014.

Provisional water-level data will be supplied to cooperators quarterly within four weeks of data collection. All data will be compiled, reviewed, quality-assured, finalized and disseminated in the annual publication, "U.S. Geological Survey Water-Resources Data--Nevada."

Water levels measured by the Southern Nevada Water Authority will be provided to USGS at the same schedule as when these data are provided to the State of Nevada.

C. Biannual high altitude precipitation measurements.

Collecting biannual, volumetric measurements from nineteen high-altitude precipitation stations is planned for FY 2014. This activity includes data reduction, dissemination, and quality assurance of measurements. Frequency of data collection will be fixed and will occur in October 2013 and June 2014.

Provisional water-level data will be supplied to cooperators quarterly within four weeks of data collection. All data will be compiled, reviewed, quality-assured, finalized and disseminated in the annual publication, "U.S. Geological Survey Water-Resources Data--Nevada."

Should data collection in any of the above noted elements be interrupted or data collection incomplete, USGS will inform the cooperators as soon as possible upon learning of the interruption.

Cost Structure

** USGS funds are subject to availability of FY 2014 Federal matching funds.*

Program Element	NDWR Funds	SNWA Funds	USGS Funds*	Total Funds
Program Element A.				
CNLV Regional Park 1	$7,200	$0	$5,423	$12,623
CNLV Deer Springs	$7,200	$0	$5,423	$12,623
CNLV Allen & Lone Mtn	$7,200	$0	$5,423	$12,623
CNLV Diana Terrace	$7,200	$0	$5,423	$12,623
CNLV Wilshire	$7,200	$0	$5,423	$12,623
Maude Fitzpatrick	$7,200	$0	$5,423	$12,623
USBLM SHV-1	$0	$8,150	$6,139	$14,289
CE-DT-4 (MX-4)	$0	$8,150	$6,139	$14,289
CSV-2 well	$0	$8,150	$6,139	$14,289
USGS-MX (Delamar Well)	$0	$8,150	$6,139	$14,289
USGS-MX (N. Dry Lake)	$0	$8,150	$6,139	$14,289
USGS-MX (S. Dry Lake)	$0	$8,150	$6,139	$14,289
USGS MX Coal Valley Well	$8,150	$0	$6,139	$14,289
USGS-MX Steptoe Valley Well	$8,150	$0	$6,139	$14,289
Creech Near Field Well		$8,150	$6,139	$14,289
Total	$59,500	$57,050	$87,789	$204,339
Program Element B.				
Quarterly Water Levels in Carbonate Rock Prov.	$4,775	$2,825	$5,725	$13,325
Program Element C.				
Biannual High Altitude Precip. Measurements	$0	$44,400	$33,443	$77,843
TOTAL	$64,275	$104,275	$126,957	$295,507

Enclosure 3

POINTS of CONTACT
For
Joint Funding Agreement No. 14WSNV00400_00

USGS Nevada Water Science Center
2730 North Deer Run Road
Carson City, NV 89701
Phone: 775-887-7600; FAX: 775-887-7629
DUNS: 178930541
Technical Contact/Project Manager:
Megan Rogers, Steven Berris
Phone: 702-564-4526, 775-887-7693
mrogers@usgs.gov, snberris@usgs.gov
Agreement Contact:
Linda McCord-Kolsky, Management Assistant
Phone: 775-887-7602
GS-W-NV Programs@usgs.gov
Executive Contact:
John Sciacca, Director
775-887-7650
Billing Contact:
Helen Houston, Budget Analyst
2730 N. Deer Run Road
Carson City, NV 89701
Phone: 775-887-7605
GS-W-NV Finance@usgs.gov

Nevada Division of Water Resources
901 South Stewart Street, Suite 2001
Carson City, NV 89701
Phone: 775-687-4380; FAX: 775-687-6972
TID: 88-6000022 , DUNS: 618881197
Technical Contact/Project Manager:
Matt Dillon, Engineering Technician
Phone: 775-684-2856
mdillon@water.nv.gov

Executive Contact:
Jason King, State Engineer
Phone: 775-684-2861
Billing Contact:
Rosa Mayhall, Fiscal Services
901 South Stewart Street, Suite 2002
Carson City, NV 89701
Phone: 775-684-2880; FAX: 775-684-2811
rmayhall@water.nv.gov

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Agreement	**Director's Backup**
Petitioner: John J. Enstminger, Senior Deputy General Manager	
Recommendations: That the Board of Directors approve a joint funding agreement between the U.S. Geological Survey and the Authority for hydrologic data collection in western Utah in support of the Clark, Lincoln and White Pine Counties Groundwater Development Project for an amount not to exceed $36,360.	

Fiscal Impact:
The required $36,360 is available in the Authority's Operating Budget.

Background:
Since 2006, the Authority has participated in a cooperative program with the U.S. Geological Survey (USGS) Utah Water Science Center to fund surface water and groundwater monitoring programs in Utah's West Desert region to collect baseline data in support of the Clark, Lincoln and White Pine Counties Groundwater Development Project and the Authority's groundwater-permit applications in the Snake Valley hydrographic area.

Approval of this joint funding agreement will continue funding groundwater and surface water monitoring sites for one additional year. The total cost of the program is $55,995, of which the USGS will contribute $19,635, and the Authority will contribute $36,360.

The program includes three components:

1. Operation and maintenance of two stream gaging stations: Trout Creek near Callao, UT (10172860), and Warm Creek near Gandy, UT (10172780).

2. Collection of miscellaneous discharge measurements at Knoll Spring in Snake Valley, UT.

3. Collection of groundwater-level measurements at 72 monitor wells in Utah's West Desert region.

This agreement is being entered into pursuant to NRS 277.180 and Section 6(j) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved the agreement.

Respectfully submitted:

John J. Enstminger

Patricia Mulroy, General Manager
FOR PM:JJE:ZLM:AB:JPP:GMK:lmv:nsh
Attachment

AGENDA ITEM # 5

Form 9-1366

U.S. Department of the Interior
Geological Survey

Joint Funding Agreement

Customer #:	6000000359
Agreement #:	14CMZK003
Project #:	ZK00DNF
TIN #:	880278492
Fixed Cost Agreement	YES

FOR

Water Resources Investigations

THIS AGREEMENT is entered into as of the, 1 day October, 2013 by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the Southern Nevada Water Authority, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for data collection at Trout Creek near Callao, UT (10172870), Warm Creek near Gandy UT (10172860), miscellaneous measurements at Knoll Spring, and ground-water level measurements at 72 wells in Western, Utah herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of .

   (a) by the party of the first part during the period

Amount	Date	to	Date
$19,635.00	10/01/2013		09/30/2014

   (b) by the party of the second part during the period

Amount	Date	to	Date
$36,360.00	10/01/2013		9/30/2014

   USGS DUNS 133505763, SNWA DUNS 135965650, Fixed price agreement - advance billing is permitted

   (c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

   (d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

9-1366 (Continuation) Customer #: 6000000359 Agreement #: 14CMZK003

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.
8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered Quarterly.

U.S. Geological Survey
United States
Department of the Interior

USGS Point of Contact

Name: Cory Angeroth

Address: 2329 W. Orton Circle
Salt Lake City, UT 84119-2047

Telephone: 801 908-5048

Email: angeroth@usgs.gov

Signature and Date

Signature and Date: 8/20/2013

Name: Patrick M. Lambert

Title: Director, USGS Utah Water Science Center

Southern Nevada Water Authority
SNWA Resources

Customer Point of Contact

Name: Gavin Kistinger

Address: 100 City Parkway, Suite 700
Las Vegas, NV 89106

Telephone: 702 822-3375

Email: Gavin.Kistinger@snwa.com

Signature and Date

Signature and Date:

Name: Patricia Mulroy

Title: General Manager, SNWA

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Agreement	**Director's Backup**
Petitioner: John J. Entsminger, Senior Deputy General Manager	
Recommendations: That the Board of Directors approve a joint funding agreement between the U.S. Geological Survey and the Authority for hydrologic data collection for an amount not to exceed $232,600.	

Fiscal Impact:
The required $232,600 is available in the Authority's Operating Budget.

Background:
Since 2002, the Authority has participated in a cooperative program with the U.S. Geological Survey (USGS) to operate and maintain stream gages and perform water quality analyses. If approved, this agreement provides for joint funding from the USGS and the Authority for the ongoing monitoring, operation, and maintenance of 14 stream gages on the Las Vegas Wash and the Virgin and Muddy Rivers. This agreement also provides for Authority funding to install, monitor, operate, and maintain one additional stream gage on either the Virgin or Muddy River to support the Authority's water rights. These gages are critical for quantifying water resources relied upon by the Authority. Water quality sample collection and analyses at three stream gage stations would also be funded under this agreement.

The total cost to operate and maintain the stream gages and perform water quality analyses is $375,414 for the period from October 1, 2013, through September 30, 2014. If approved, the Authority will contribute $232,600 and the USGS will fund the remaining $142,814.

This agreement is being entered into pursuant to NRS 277.180 and Section 6(j) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved the agreement.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:ZLM:AB:JJ:ZLM.lmv:nsh
FOR Attachments

AGENDA ITEM # 6

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
PACIFIC REGION
NEVADA WATER SCIENCE CENTER
2730 N. Deer Run Road
Carson City, Nevada 89701
Phone: 775-887-7600; Fax: 775-887-7629
Website: http://www.usgs.gov/

August 19, 2013

Zane L. Marshall
Director, Water and Environmental Resources
Southern Nevada Water Authority
P.O. Box 99956
Las Vegas, NV 89193-9956

Dear Mr. Marshall:

The Nevada Water Science Center (NVWSC) thanks you for your continued support of the surface-water (SW) and water-quality (QW) monitoring program conducted cooperatively between the U.S. Geological Survey (USGS) and the Southern Nevada Water Authority (SNWA). The total cost will be $375,414 for real-time surface-water monitoring and water-quality data collection under this program, including the potential installation of an additional gage for the period of performance October 1, 2013 – September 30, 2014. SNWA's portion of the funds to support the cooperative program is $232,600. Pending availability of Federal Matching Funds (FMF) from the Cooperative Water Program, the USGS contribution will be $142,814. The funding for the program elements for FY 2014 is outlined in the table below and described in more detail in Enclosures 1 and 2.

Beginning in Federal fiscal year 2013 and continuing through this agreement, the USGS, under a new business practice, can no longer include the monies that pay for support benefits and services from headquarters in our annual Joint Funding Agreements. Federal funding levels provided in Item 2a of the Joint Funding Agreement only include monies directly associated with the Cooperative Water Program at the Nevada Water Science Center (NVWSC) level. No additional costs will be incurred by SNWA resulting from this change in business practice.

The following table lists the contributions from SNWA and USGS for Federal fiscal year 2014. As indicated on the table, the USGS portion for fiscal year 2014 reflects the difference in dollars resulting from the USGS new business practice described above.

USGS Project No.	*Program Element*	*Funding Structure*		*Total Funds*
		SNWA	USGS*	
NV-00190	Lower Colorado SW (Enclosure 1)	$194,200	$113,890	$308,090
NV-00390	Lower Colorado QW (Enclosure 2)	$ 38,400	$ 28,924	$ 67,324
GRAND TOTAL		$232,600	$142,814	$375,414

** USGS funding based on new business practice and subject to availability of FY 2014 Federal matching funds.*

The FY 2014 program costs incorporate the installation and O&M for a potential new recording station on the Virgin or Muddy Rivers. Costs for O&M of the recording station are for nine months as the plan will be to install this gaging station in December 2013. Costs may be prorated dependent on when actual installation occurs. The surface-water and water-quality O&M costs include maintaining the streamgaging equipment, making streamflow measurements, computing streamflow, real-time monitoring, and data publication costs.

If you approve this work and the funding required, please sign the two enclosed Joint Funding Agreements and return one signed original to our Agreement Contact (Enclosure 3) by September 30, 2013, so that we may provide your agency with uninterrupted, continuous data and research. Hydrographs and current information can be accessed from the Nevada Water Science Center (NWSC) homepage at: http://nevada.usgs.gov/.

Should you have questions regarding this work, agreement, or billing, please refer to the contact list at Enclosure 3. Any updates to your contact information can be submitted to the following email drop box at: GS-W-NV Programs@usgs.gov.

Sincerely,

Lari Knochenmus, Acting Director
USGS, Nevada Water Science Center

Enclosures

cc: J. Johnson, SNWA, Las Vegas, NV
M. Rogers, S. Berris, USGS, NVWSC
GS-W-NV Finance, GS-W-NV Programs
Chron Cy

Enclosure 1

Summary of Cooperative Surface-Water Program for Fiscal Year 2014

Program Elements

A. Operation of Surface-Water Gaging Stations at:

	Site Name	Type	DCP
1.	Muddy Spring at L.D.S. Farm near Moapa, NV	Spring	Yes
2.	Pederson Spring near Moapa, NV	Spring	Yes
3.	Warm Springs West near Moapa, NV	Stream	Yes
4.	Pederson East Spring nr Moapa, NV	Spring	Yes
5.	Warm Springs Confluence at Iverson Flume nr Moapa, NV	Stream	Yes
6.	Virgin River at the Narrows, near Littlefield, AZ	River	Yes
7.	Beaver Dam Wash near Beaver Dam, AZ	Stream	Yes
8.	Muddy River at Lewis Avenue near Moapa, NV	River	Yes
9.	Virgin River at Littlefield, AZ	River	Yes
10.	Las Vegas Wasteway near East Las Vegas, NV	Stream	Yes
11.	Las Vegas Wash at Pabco Rd. near Henderson, NV	Stream	Yes
12.	Duck Creek at Broadbent Boulevard at East Las Vegas, NV	Stream	Yes
13.	Las Vegas Wash abv 3-Kids Wash blw Henderson, NV	Stream	Yes
14.	Mesquite Canal blw Mesquite, NV	Irrigation	Yes
15.	Potential new Muddy or Virgin River station	Stream	Yes

B. Supplemental tasks to increase accuracy and timeliness of streamflow records at the following gages:

Site Name

1. Las Vegas Wasteway nr East Las Vegas
2. Las Vegas Wash at Pabco Rd nr Henderson
3. Las Vegas Wash below Lake Las Vegas
4. Muddy River nr Glendale

Description of Program Elements

A. Operation & Maintenance of Streamflow sites

The work-plan calls for site operation and maintenance of surface-water gaging stations at three springs, seven streams, three river sites, and one irrigation site to be monitored during FY 2014.

The operation & maintenance (O&M) costs include maintaining the stream-gaging equipment, making scheduled water discharge measurements, reduction and analysis of stage data, verification and development of stage/discharge relationships (ratings), computation of daily streamflow, and data publication costs. Sites are generally visited on a 6-week basis, but may require more frequent visits if problems occur.

Provisional data from sites will be available on NWISWeb at http://waterdata.usgs.gov/nv/nwis/rt. All data will be compiled, reviewed, quality-assured, finalized and disseminated annually through an online publication.

Costs include supplemental tasks for four gaging stations to increase the timeliness and accuracy of the streamflow records. For four gages, (1) Las Vegas Wasteway nr East Las Vegas, (2) Las Vegas Wash at Pabco Rd. nr Henderson, (3) Las Vegas Wash below Lake Las Vegas and (4) Muddy River near Glendale, at least 12 site visits and streamflow measurements will be made and provisional streamflow records will be computed and reported on a monthly interval and finalized in July and January.

B. Installation, Operation and Maintenance of one new surface-water site

The work-plan includes the installation of one DCP (Data Collection Platform) stream gaging station on the Muddy or Virgin River. Installation will include gage house, outside staff, reference marks, and the equipment will include a data logger, DCP, solar panel, antenna, battery, etc. Data will be transmitted to a satellite and will be available on the Web shortly after transmission. Cost for O&M for the station is based on a December installation.

Cost Structure

Number	*USGS Project No.*	*Program Element*	*SNWA Funds*	*USGS Funds**	*Total Funds*
		Program Element A.			
1	NV00190	Muddy Spring at L.D.S. Farm near Moapa	$10,800	$8,135	$18,935
2	NV00190	Pederson Spring near Moapa	$10,800	$8,135	$18,935
3	NV00190	Warm Springs West near Moapa	$10,800	$8,135	$18,935
4	NV00190	Pederson East Spring near Moapa	$10,800	$8,135	$18,935
5	NV00190	Iverson Flume	$10,800	$8,135	$18,935
6	NV00190	Virgin River at the Narrows	$10,800	$8,135	$18,935
7	NV00190	Beaver Dam Wash near Beaver Dam	$10,800	$8,135	$18,935
8	NV00190	Muddy River near Lewis Avenue	$10,800	$8,135	$18,935
9	NV00190	Virgin River at Littlefield, AZ	$10,800	$8,135	$18,935
10	NV00190	Las Vegas Wasteway near East Las Vegas, NV	$10,800	$8,135	$18,935
11	NV00190	Las Vegas Wash at Pabco Road nr Henderson, NV	$10,800	$8,135	$18,935
12	NV00190	Duck Creek at Broadbent Blvd. at East Las Vegas	$10,800	$8,135	$18,935
13	NV00190	Las Vegas Wash at 3-Kids Wash	$10,800	$8,135	$18,935
14	NV00190	Mesquite Canal nr Mesquite	$10,800	$8,135	$18,935
15	NV00190	Las Vegas Wash at Pabco Road nr Henderson, NV (Supplemental tasks: monthly streamflow measurements and monthly computation and reporting provisional streamflow record, and approval and finalization of streamflow records in July and January.	$ 3,600	$ - 0 -	$ 3,600
16	NV00190	Las Vegas Wasteway nr East Las Vegas, NV (Supplemental tasks: monthly streamflow measurements and monthly computation and reporting provisional streamflow record, and approval and finalization of streamflow records in July and January.	$ 3,600	$ - 0 -	$ 3,600
17	NV00190	Las Vegas Wash blw Lake Las Vegas, NV (Supplemental tasks: monthly streamflow measurements and monthly computation and reporting provisional streamflow record, and approval and finalization of streamflow records in July and January)	$3,600	$ - 0 -	$3,600
18	NV00190	Muddy River nr Glendale, NV (Supplemental tasks: monthly streamflow measurements and monthly computation and reporting provisional streamflow record, and approval and finalization of streamflow records in July and January)	$3,600	$ - 0 -	$3,600
		Sub-Total	**$165,600**	**$113,890**	**$279,490**
		Program Element B.			
1	NV00190	Installation of one gaging station on the Virgin or Muddy Rivers	$12,400	$ - 0 -	$12,400
2	NV00190	O&M for Virgin or Muddy River gaging station for nine months	$16,200	$ - 0 -	$16,200
		Sub-Total	**$28,600**	**$ - 0 -**	**$28,600**
		Total	**$194,200**	**$113,890**	**$308,090**

** USGS funding based on new business practice and subject to availability of FY 2014 Federal Matching Funds.*

Enclosure 2

Summary of Cooperative Water-Quality Program for Fiscal Year 2014

Program Elements

A. Collection of Water-Quality Parameters from Surface-Water Gaging Stations at:

Site Name	Schedule(s)
1. Virgin River at the Narrows, near Littlefield, AZ	Field parameters
2. Virgin River at Littlefield, AZ	997,1201,2003,2060
3. Colorado River below Hoover Dam, AZ	1201,1010,1050,2003

Note: a complete description of each schedule can be found below.

Description of Program Elements

A1. Water-Quality Sampling at Virgin River at the Narrows, near Littlefield, AZ

Water quality field parameters (temperature, conductance, pH, and dissolved oxygen) will be measured at Virgin River at the Narrows on a quarterly basis throughout the water year.

A2. Water-Quality Sampling at Virgin River at Littlefield, AZ

Water-quality data (temperature, specific conductance, sediment-concentration, and chemical analyses) have been collected at the Virgin River at Littlefield from 1948 to 2013 at bi-monthly or more frequent intervals under several different USGS programs. Long-term records of water quality, particularly sediment and chemical constituents contributing to salt-loading problems, are important for this site to establish base-line loadings to Lake Mead over a full range of hydrologic conditions. SNWA funds will be matched with available USGS Nevada Water Science Center cooperative federal matching funds to maintain a water-quality record at this important station for the following constituents and indicators:

- Field values
- Physical properties
- Suspended-sediment concentration
- Nutrients (schedule 997 – attached)
- Common and trace inorganic constituents (schedule 1201 - attached)
- Pesticides (schedules 2003 & 2060 – attached)
- Fecal Bacteria counts
- E-coli Bacteria

Sampling will occur, as close as possible, in the last week of the months: November, February, May, and August. For continuity, the NASQAN II sampling techniques will be followed, including the use of the Parts Per Billion (PPB) sampling protocol.

A3. Water-Quality Sampling at Colorado River below Hoover Dam, AZ

Water-quality data (temperature, specific conductance, sediment-concentration, and chemical analyses) have been collected at the Colorado River below Hoover Dam, Arizona from 1939 to 2013 at bi-monthly or more frequent intervals under several different USGS programs. The objectives of this sampling station are to:

A. Provide ongoing characterization of the concentrations and flux of sediment and selected chemicals of the Colorado River system.

B. Determine the contributions of sub-basin source materials to the Colorado system.

C. Determine changes and trends of selected chemicals in the Colorado River system.

SNWA funds will be matched with USGS Nevada Water Science Center cooperative Federal matching funds to maintain a water-quality record at this important station for the following constituents and indicators:

- Field values
- Physical properties
- Suspended-sediment concentration
- Common and trace inorganic constituents (schedule 1201 – attached)
- Nutrients (schedule 1010 – attached)
- Major Ions and Trace Metals (schedule 1050 – attached)
- Pesticides (schedule 2003 –attached)
- Perchlorate (analyzed by EPA and SNWA)

Sampling will occur, as close as possible, in the last week of the months November, February, May, and August. For continuity, the NASQAN II sampling techniques will be followed, including the use of the Parts Per Billion (PPB) sampling protocol.

Cost Structure

No.	*USGS Project No.*	*Program Element*	*SNWA Funds*	*USGS Funds**	*Total Funds*
		Program Element A.			
1	NV00390	Virgin River at the Narrows – Field parameters only	$ 900	$ 678	$ 1,578
2	NV00390	Virgin River at Littlefield, AZ – Water quality	$18,600	$14,010	$32,610
3	NV00390	Colorado River blw Hoover Dam, AZ – Water quality	$18,900	$14,236	$33,136
		Total	**$38,400**	**$28,924**	**$67,324**

* *USGS funding based on new business practice and subject to availability of FY 2014 Federal Matching Funds.*

Additional Program Elements

Sample Parameters

NWQL Schedule 997 Parameter Name	Unit
Inorganic carbon	mg/L
Total carbon	mg/L
Organic carbon	mg/L
Organic carbon	mg/L
nitrogen, ammonia	mg/L
nitrogen, ammonia + organic nitrogen	mg/L
nitrogen, ammonia + organic nitrogen	mg/L
nitrogen, nitrite	mg/L
nitrogen, nitrite + nitrate	mg/L
Total nitrogen	mg/L
Phosphorus	mg/L
phosphorus, phosphate, ortho	mg/L
Phosphorus	mg/L
Ultraviolet absorbing organic constituents - 254 nm	u/cm
Ultraviolet absorbing organic constituents - 280nm	u/cm

NWQL Schedule 1010 Parameter Name	Unit
Inorganic carbon	mg/L
Total carbon	mg/L
Organic carbon	mg/L
Organic carbon	mg/L
nitrogen, ammonia	mg/L
nitrogen, ammonia + organic nitrogen	mg/L
nitrogen, ammonia + organic nitrogen	mg/L
nitrogen, nitrite	mg/L
nitrogen, nitrite + nitrate	mg/L
Total nitrogen	mg/L
Phosphorus	mg/L
phosphorus, phosphate, ortho	mg/L
Phosphorus	mg/L
Ultraviolet absorbing organic constituents - 254 nm	u/cm
Ultraviolet absorbing organic constituents - 280nm	u/cm

NWQL Schedule 1050 Parameter Name	Unit
Aluminum	µg/L
antimony	µg/L
barium	µg/L
beryllium	µg/L
cadmium	µg/L
chromium	µg/L
cobalt	µg/L
copper	µg/L
ICP Mass Spectrometry (ICPMS) setup	Unspcfd
lead	µg/L
manganese	µg/L
molybdenum	µg/L
nickel	µg/L
pH, laboratory	pH
silver	µg/L
specific conductance, laboratory	µS/cm
Uranium, natural	µg/L
zinc	µg/L

Sample Parameters – Cont'd

NWQL Schedule 1201 Parameter Name	Unit
Alkalinity, laboratory	mg/L
arsenic	µg/L
boron	µg/L
calcium	mg/L
chloride	mg/L
fluoride	mg/L
ICP Mass Spectrometry (ICPMS) setup	Unspcfd
Inductively coupled plasma (ICP) setup	Unspcfd
iron	µg/L
lithium	µg/L
magnesium	mg/L
pH, laboratory	pH
potassium	mg/L
residue, 180 degrees Celsius	mg/L
selenium	µg/L
silica	mg/L
sodium	mg/L
specific conductance, laboratory	µS/cm
strontium	µg/L
sulfate	mg/L
turbidity	NTRU
vanadium	µg/L

NWQL Schedule 2003 Parameter Name	Unit
1-Naphthol	µg/L
2-Chloro-2,6-diethylacetanilide	µg/L
2-Ethyl-6-methylaniline	µg/L
3,4-Dichloroaniline	µg/L
4-Chloro-2-methylphenol	µg/L
Acetochlor	µg/L
Alachlor	µg/L
2,6-Diethylaniline	µg/L
Atrazine	µg/L
Azinphos-methyl	µg/L
Azinphos-methyl-oxon	µg/L
Benfluralin	µg/L
Carbaryl	µg/L
Chlorpyrifos	µg/L
Chlorpyrofos, oxygen analog	µg/L
cis-Permethrin	µg/L
Cyfluthrin	µg/L

NWQL Schedule 2003 Cont. Parameter Name	Unit
Cypermethrin	µg/L
Dacthal	pct
2-Chloro-4-isopropylamino-6-amino-s-triazine {CIAT}	µg/L
Diazinon	µg/L
Diazinon, oxygen analog	µg/L
Diazinon-d10	pct
Dichlorvos	µg/L
Dicrotophos	µg/L
Dieldrin	µg/L
Dimethoate	µg/L
Ethion	µg/L
Ethion monoxon	µg/L
Fenamiphos	µg/L
Fenamiphos sulfone	µg/L
Fenamiphos sulfoxide	µg/L
Desulfinylfipronil amide	µg/L
Fipronil sulfide	µg/L
Fipronil sulfone	µg/L
Desulfinylfipronil	µg/L
Fipronil	µg/L
Fonofos	µg/L
alpha-HCH-d6	pct
Hexazinone	µg/L
Iprodione	µg/L
Isofenphos	µg/L
Malaoxon	µg/L
Malathion	µg/L
Metalaxyl	µg/L
Methidathion	µg/L
Parathion-methyl	µg/L
Metolachlor	µg/L
Metribuzin	µg/L
Myclobutanil	µg/L
Paraoxon-methyl	µg/L
Pendimethalin	µg/L
Phorate	µg/L
Phorate oxygen analog	µg/L
Phosmet	µg/L
Phosmet oxon	µg/L
Prometon	µg/L
Prometryn	µg/L

Sample Parameters – Cont'd

NWQL Schedule 2003	
Parameter Name	Unit
Propyzamide	µg/L
Sample volume	mL
Set number	No.
Simazine	µg/L
Tebuthiuron	µg/L
Terbufos	µg/L
Terbufos oxygen analog sulfone	µg/L
Terbuthylazine	µg/L
Tribufos	µg/L
Trifluralin	µg/L

NWQL Schedule 2060			
Parameter Name	Unit	Parameter Name	Unit
2,4,5-T	pct	Fenuron	ug/L
2,4-D	ug/L	Flumetsulam	ug/L
2,4-D methyl ester	ug/L	Fluometuron	ug/L
2,4-DB	ug/L	Imazaquin	ug/L
2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine {OIET}	ug/L	Imazethapyr	ug/L
3(4-Chlorophenyl)-1-methyl urea	ug/L	Imidacloprid	ug/L
Acifluorfen	ug/L	Linuron	ug/L
Aldicarb	ug/L	MCPA	ug/L
Aldicarb sulfone	ug/L	MCPB	ug/L
Aldicarb sulfoxide	ug/L	Metalaxyl	ug/L
Chloramben, methyl ester	ug/L	Methiocarb	ug/L
Atrazine	ug/L	Methomyl	ug/L
Barban	pct	Metsulfuron methyl	ug/L
Bendiocarb	ug/L	Neburon	ug/L
Benomyl	ug/L	Nicosulfuron	ug/L
Bensulfuron-methyl	ug/L	Norflurazon	ug/L
Bentazon	ug/L	Oryzalin	ug/L
Bromacil	ug/L	Oxamyl	ug/L
Bromoxynil	ug/L	Picloram	ug/L
Caffeine	ug/L	Propham	ug/L
Caffeine-C13	pct	Propiconazole	ug/L
Carbaryl	ug/L	Propoxur	ug/L
Carbofuran	ug/L	Sample volume	mL
3-Hydroxycarbofuran	ug/L	Set number	no.
Chlorimuron-ethyl	ug/L	Siduron	ug/L
Clopyralid	ug/L	Sulfometuron-methyl	ug/L
Cycloate	ug/L	Tebuthiuron	ug/L
Dacthal monoacid	ug/L	Terbacil	ug/L
2-Chloro-4-isopropylamino-6-amino-s-triazine {CIAT}	ug/L	Triclopyr	ug/L

Sample Parameters – Cont'd

NWQL Schedule 2060 Con't	
Parameter Name	Unit
2-Chloro-6-ethylamino-4-amino-s-triazine {CEAT}	ug/L
Dicamba	ug/L
Dichlorprop	ug/L
Dinoseb	ug/L
Diphenamid	ug/L
Diuron	ug/L

Enclosure 3

POINTS of CONTACT
For
Joint Funding Agreement No. 14WSNV00600_00

USGS Nevada Water Science Center

2730 N. Deer Run Road
Carson City, NV 89701
Phone: 775-887-7600; FAX: 775-887-7629
DUNS: 178930541
Technical Contact/Project Manager:
Megan Rogers, Steve Berris
Phone: 702-564-4526, 775-887-7693
mrogers@usgs.gov snberris@usgs.gov
Agreement Contact:
Linda McCord-Kolsky, Management Assistant
Phone: 775-887-7602
GS-W-NV Programs@usgs.gov
Executive Contact:
John Sciacca, Director

Phone: 775-887-7650
Billing Contact:
Helen Houston, Budget Analyst
2730 N. Deer Run Road
Carson City, NV 89701
Phone: 775-887-7605
GS-W-NV Finance@usgs.gov

Southern Nevada Water Authority

PO Box 99956, Las Vegas NV 89193-9956
100 City Pkwy, Ste 700; Las Vegas NV 89106
Phone: 702-862-3400; FAX: 702-862-3751
TID: 88-6000363, DUNS: 135965650
Technical Contact/Project Manager:
Jeff Johnson, Division Manager
Phone: 702-862-3748
jeff.johnson@snwa.com

Executive Contact:
Zane L. Marshall, Director, Water and Environmental Resources
Phone: 702-862-3713
Billing Contact:
Lisa Von Heeder, Secretary
PO Box 99956, Las Vegas NV 89193-9956
100 City Pkwy, Ste 700; Las Vegas NV 89106
Phone: 702-862-3752
lisa.von_heeder@snwa.com

Form 9-1366

U.S. Department of the Interior
Geological Survey

Joint Funding Agreement

Customer #:	6000000359
Agreement #:	14WSNV00600_00
Project #:	
TIN #:	88-6000363
Fixed Cost Agreement	YES

FOR

WATER RESOURCES INVESTIGATIONS

THIS AGREEMENT is entered into as of the, 19th day of August, 2013 by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the SOUTHERN NEVADA WATER AUTHORITY, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for real-time surface-water monitoring and water-quality data collection under this program, including the potential installation of an additional gage herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of

(a) by the party of the first part during the period

Amount	Date	to	Date
$142,814.00	October 1, 2013		September 30, 2014

(b) by the party of the second part during the period

Amount	Date	to	Date
$232,600.00	October 1, 2013		September 30, 2014

DUNS#: 135965650

(c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.

(d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

9-1366 (Continuation) Customer #: 6000000359 Agreement #: 14WSNV00600_00

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.
8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered quarterly. Payments of bills are due within 60 days after the billing date.

U.S. Geological Survey
United States
Department of the Interior

USGS Point of Contact

Name: Megan Rogers
Address: 160 N. Stephanie St.
Henderson, NV 89074
Telephone: 702-564-4526
Email: mrogers@usgs.gov

Signature and Date

Signature and Date: 8/19/13
Name: Lari Knochenmus
Title: Acting Director

Southern Nevada Water Authority

Customer Point of Contact

Name: Jeff Johnson, Division Manager
Address: PO Box 99956
Las Vegas NV 89193-9956
Telephone: 702-862-3748
Email: jeff.johnson@snwa.com

Signature and Date

Signature and Date:
Name: Patricia Mulroy
Title: General Manager

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Agreement	**Director's Backup**
Petitioner: Ronald E. Zegers, Deputy General Manager, Engineering/Operations	

Recommendations:
That the Board of Directors approve an agreement between Hazen and Sawyer, P.C., and the Authority for a WateReuse Research Foundation awarded project on alternative treatment technologies for controlling trace organic contaminants in potable water reused indirectly, and accept funds up to the amount of $99,787 for this research work.

Fiscal Impact:
If the above recommendation is approved, costs of an amount not to exceed $99,797 will be reimbursed to the Authority.

Background:
Rising wastewater effluent discharge standards have led to more advanced wastewater treatment while growing demand has taxed existing water supplies, making potable water reuse a feasible scenario for more utilities in some U.S. regions. The WateReuse Research Foundation has accepted a proposal from Hazen and Sawyer, P.C. (H & S), and the Authority to evaluate the effectiveness of pilot-scale combinations of ion exchange, ozone, and biological filter treatments for the removal of trace organic contaminants. Pilot-scale evaluations will be performed in the city of Hollywood, Florida, and at the Clark County Water Reclamation District's main facility in Las Vegas, Nevada.

If approved, the attached agreement provides for the Authority to accept up to $99,787 from H & S to conduct work under the WateReuse Research Foundation project entitled, "Controlling Trace Organic Contaminants Using Alternative, Non-FAT (Fully Available Technologies) Technology for Indirect Potable Water Reuse."

This agreement is being entered into pursuant to Sections 6(j) and 6(o) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved the agreement.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:REZ:DJR:ED:jf
Attachments

FOR

AGENDA ITEM # 7

DISCLOSURE OF OWNERSHIP/PRINCIPALS

Business Entity Type						
☐ Sole Proprietorship	☐ Partnership	☐ Limited Liability Company	☐ Corporation	☐ Trust	☐ Non-Profit Organization	☒ Other: P.C.

Business Designation Group					
☐ MBE	☐ WBE	☐ SBE	☐ PBE	☐	☐
Minority Business Enterprise	Women-Owned Business Enterprise	Small Business Enterprise	Physically Challenged Business Enterprise		

Corporate/Business Entity Name:	Hazen and Sawyer, P.C. (Professional Corporation)	
(Include d.b.a., if applicable)	N/A	
Street Address:	4011 Westchase Blv, Suite 500	**Website: www.hazenandsawyer.com**
City, State and Zip Code:	Raleigh, NC 27607	**POC Name and Email:**
Telephone No:	(919) 833-7152	**Fax No: (919) 833-1828**
Local Street Address:	N/A	**Website: N/A**
City, State and Zip Code:	N/A	**Local Fax No: N/A**
Local Telephone No:	N/A	**Local POC Name Email: N/A**
Number of Clark County, Nevada Residents Employed: Zero (0)		

All entities, with the exception of publicly-traded and non-profit organizations, must list the names of individuals holding more than five percent (5%) ownership or financial interest in the business entity appearing before the SNWA Board of Directors.

Publicly-traded entities and non-profit organizations shall list all Corporate Officers and Directors in lieu of disclosing the names of individuals with ownership or financial interest. The disclosure requirement, as applied to land-use applications, extends to the applicant and the landowner(s).

Entities include all business associations organized under or governed by Title 7 of the Nevada Revised Statutes, including but not limited to private corporations, close corporations, foreign corporations, limited liability companies, partnerships, limited partnerships, and professional corporations.

Full Name	Title	% Owned (Not required for Publicly Traded Corporations/Non-profit organizations)
None		

This section is not required for publicly-traded corporations.

1. Are any individual members, partners, owners or principals, involved in the business entity, an SNWA full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☒ No (If yes, please note that SNWA employee(s), or appointed/elected official(s) may not perform any work on professional service contracts, or other contracts, which are not subject to competitive bid.)

2. Do any individual members, partners, owners or principals have a spouse, registered domestic partner, child, parent, in-law or brother/sister, half-brother/half-sister, grandchild, grandparent, related to an SNWA full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☒ No (If yes, please complete the Disclosure of Relationship form on Page 2. If no, please print N/A on Page 2.)

I certify under penalty of perjury, that all of the information provided herein is current, complete, and accurate. I also understand that the SNWA will not take action on land-use approvals, contract approvals, land sales, leases or exchanges without the completed disclosure form.

Signature

Vice President
Title

MARK M. BISHOP
Print Name

9/4/13
Date

DISCLOSURE OF RELATIONSHIP

List any disclosures below:
(Mark N/A, if not applicable.)

NAME OF BUSINESS OWNER/PRINCIPAL	NAME OF SNWA EMPLOYEE OR OFFICIAL AND JOB TITLE	RELATIONSHIP TO SNWA EMPLOYEE OR OFFICIAL	SNWA EMPLOYEE'S/OFFICIAL'S DEPARTMENT
N/A			

"Consanguinity" is a relationship by blood. "Affinity" is a relationship by marriage.

"To the second degree of consanguinity" applies to the candidate's first and second degree of blood relatives as follows:

- Spouse – Registered Domestic Partners – Children – Parents – In-laws (first degree)
- Brothers/Sisters – Half-Brothers/Half-Sisters – Grandchildren – Grandparents – In-laws (second degree)

For SNWA Use Only:

If any Disclosure of Relationship is noted above, please complete the following:

☐ Yes ☐ No Is the SNWA employee(s) noted above involved in the contracting/selection process for this particular agenda item?

☐ Yes ☐ No Is the SNWA employee(s) noted above involved in any way with the business in performance of the contract?

Notes/Comments:

David L. Johnson
Signature

DAVID L. Johnson
Print Name
Authorized Department Representative

H&S CLIENT: ***Southern Nevada Water Authority*** ***HAZEN AND SAWYER, P.C.***
PROJECT: ***Controlling Trace Organic Contaminants Using Alternative, Non-FAT Technology for Indirect Potable Water Reuse*** ***Job No. 04321-068***

SUBCONTRACT AGREEMENT FOR SERVICES

This Agreement dated _____, 20___ is made and entered into between:

Hazen and Sawyer, P.C. (hereinafter ***"H&S"***)
4011 WestChase Blvd., Suite 500
Raleigh, NC 27607

and

Southern Nevada Water Authority (hereinafter ***"CONSULTANT"***)
River Mountains Water Treatment Facility
P.O. Box 99954
Las Vegas, NV 89193-9954

WHEREAS, **H&S** *is performing services for its client, WateReuse Research Foundation (hereinafter "***H&S CLIENT***") on the project known as* Controlling Trace Organic Contaminants Using Alternative, Non-FAT Technology for Indirect Potable Water Reuse.

(hereinafter "***PROJECT***"); and

WHEREAS, ***H&S*** requests ***CONSULTANT's*** services in connection with the ***PROJECT***;

NOW THEREFORE, in consideration of the mutual promises herein contained, ***H&S*** and ***CONSULTANT*** agree as follows:

Art. 1. THE SUBCONTRACT DOCUMENTS

1.1 Included Documents. The Subcontract Documents consist of: (1) this Agreement, including Schedule A (Scope of Services) and Schedule B (Compensation) attached hereto; and (2) the agreement entered into between ***H&S*** and ***H&S CLIENT***, including all contract documents enumerated therein, (hereinafter "***H&S CLIENT AGREEMENT***"). These form the Subcontract and are as fully a part of the Subcontract as if attached to this Agreement or repeated herein. To the extent that the provisions of the ***H&S CLIENT AGREEMENT*** are applicable to ***CONSULTANT's*** services and scope of work under this Agreement, ***CONSULTANT*** shall assume toward ***H&S*** all obligations and responsibilities that ***H&S***, under such documents, assumes toward ***H&S CLIENT***. ***H&S*** shall have the benefit of all rights, remedies and redress against ***CONSULTANT*** that ***H&S CLIENT***, under such documents, has against ***H&S***, insofar as applicable to this Agreement. ***CONSULTANT***

acknowledges that it has read and reviewed the ***H&S CLIENT AGREEMENT*** and is aware of the obligations and responsibilities set forth therein.

§1.2 Entire Agreement. The Subcontract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral.

1.3 Modification. Unless otherwise provided for herein, no amendments, changes, alterations, or modifications of this agreement shall be effective unless in writing and executed by ***CONSULTANT*** and ***H&S***.

1.4 Conflicting Terms. In the event of a conflict between the terms of this Agreement and the ***H&S CLIENT AGREEMENT***, this Agreement shall be controlling.

Art. 2. SCOPE OF SERVICES

2.1 Under this Agreement, ***CONSULTANT*** shall furnish the services set forth in attached Schedule A. Such services shall be performed by individuals as employees of ***CONSULTANT***, an independent contractor, and not as employees of ***H&S***.

2.2 QUALITY CONTROL PLAN

2.2.1 As part of its Services, ***CONSULTANT*** shall develop, implement and maintain a Quality Control Plan ("QC Plan") as part of ***CONSULTANT's*** overall quality assurance policy to provide the requisite services in accordance with the applicable standard of care.

2.2.2 Within 30 days of execution of this Agreement, ***CONSULTANT*** shall submit to ***H&S CONSULTANT's*** QC Plan. The QC Plan shall, at a minimum, identify ***CONSULTANT's*** QC reviewers and their specific area of review, identify the QC reviews in advance of project submission milestones and establish the procedures by which the QC review shall be performed, documented, and reported to ***H&S.*** Within five (5) business days of submission, ***H&S*** will advise of needed changes, if any. ***CONSULTANT*** shall submit its revised QC Plan within five (5) business days of receipt of ***H&S'*** comments.

2.2.3 ***CONSULTANT*** shall implement and maintain compliance with the QC Plan throughout ***CONSULTANT's*** performance. Documentation of ***CONSULTANT's*** compliance with the QC Plan shall be available upon request at any time to ***H&S***.

2.2.4 If ***CONSULTANT*** fails to timely submit a QC Plan and/or fails to implement and maintain compliance with the QC Plan, ***H&S*** may declare ***CONSULTANT*** in default and will provide written notice of same. If ***CONSULTANT*** fails to cure such default within five (5) business days of such written notice, ***H&S*** may terminate this Agreement, at its sole discretion and without limiting any and all other remedies available. Alternatively, ***H&S*** may withhold from payments due ***CONSULTANT*** an amount to assure ***CONSULTANT's*** compliance.

Art. 3. DURATION OF AGREEMENT

This Agreement shall commence upon execution and terminate either: (1) upon the satisfactory completion of ***CONSULTANT's*** scope of services set forth in Schedule A; or (2) as set forth in Article 9 below.

Art. 4. PAYMENT AND BILLING

4.1 Payment Amount(s). As compensation for the services to be performed by ***CONSULTANT***, ***H&S*** shall pay ***CONSULTANT*** the amount(s) set forth in Schedule B, attached hereto. The method of compensation, *i.e.*, lump sum or not-to-exceed, shall be set forth in Schedule B. ***H&S*** agrees only to be liable for payment to ***CONSULTANT*** for the ***CONSULTANT's*** proper performance of services, as provided for in Schedule B.

4.2 Invoicing & Documentation. ***CONSULTANT*** shall keep accurate back-up documentation of the time expended in executing its scope of work. Payment for services performed by ***CONSULTANT*** shall be based upon ***CONSULTANT's*** satisfactory completion of services as properly invoiced and documented by ***CONSULTANT***. ***CONSULTANT's*** invoices and documentation shall be subject to verification by ***H&S*** prior to payment. Invoices submitted by ***CONSULTANT***, at a minimum, shall:

(a) accurately describe the services rendered during the invoice period, including employee names, rates, hours and respective dates of performance and any reports submitted or percent of work completed during the invoice period, as determined by ***H&S***;

(b) identify any other authorized expenses incurred hereunder; and

(c) make reference to this Agreement and Job No. 04321-068, and otherwise identify the invoice in such manner as ***H&S*** may reasonably require.

All invoices and billing documentation shall be sent to ***H&S*** at the following address:

Hazen and Sawyer, P.C.
Attention: Ben Stanford, Ph.D.
4011 Westchase Blvd, Suite 500
Raleigh, NC 27607

4.3 Maximum H&S Obligation. ***CONSULTANT*** shall not take any action hereunder which could cause the amount for which ***H&S*** would be obligated to ***CONSULTANT*** to exceed a total amount of $99,787. For not-to-exceed Agreements, as opposed to lump-sum or fixed-price Agreements, ***CONSULTANT*** shall advise ***H&S*** in writing when costs incurred under this Agreement are equal to seventy-five percent (75%) of

the aforementioned sum. Notwithstanding any other provisions of this Agreement, ***H&S*** shall not be obligated to pay to ***CONSULTANT*** any amount in excess of the aforementioned sum; provided however, that this sum may be increased from time-to-time by ***H&S*** in writing.

4.4 Payments will be made to ***CONSULTANT*** within fourteen (14) days after receipt by ***H&S*** of payment from the ***H&S CLIENT*** based upon the monthly invoice submitted for the project. ***H&S's*** receipt of payment from the ***H&S CLIENT*** shall be an express and absolute condition precedent to any duty or obligation of H&S to make payment to ***CONSULTANT*** for any invoice for payment or request for compensation.

4.5 Payment Conditioned on Proof of Insurance. Payment will not be made to the ***CONSULTANT*** unless its current insurance statement has been submitted to ***H&S***. The insurance certificate shall be submitted to ***H&S*** with the executed Agreement.

Art. 5. DATA AND INFORMATION

CONSULTANT agrees that all data and information (including without limitation, computer software, computer databases, computer software documentation, specifications, designs, drawings, reports, blueprints and the like) generated in the performance of this Agreement and data and information which are specified to be delivered or which are, in fact, delivered pursuant to this Agreement shall be and remain the sole property of ***H&S***. ***CONSULTANT*** shall deliver all data and information to ***H&S*** upon request and, in any event, upon the completion of all work hereunder or the termination or expiration hereof, whichever shall first occur, and shall be fully responsible for the care and protection thereof until such delivery. Except as otherwise provided in this Agreement, said documents shall be delivered to ***H&S*** without additional cost to ***H&S***. ***H&S*** may withhold payments then due to ***CONSULTANT*** until ***CONSULTANT*** complies with the provisions of this paragraph.

Art. 6. SUBCONTRACTING

Performance of this Agreement shall not be subcontracted in whole or in part without the prior written consent of ***H&S***. In the event ***H&S*** consents to such subcontract, ***CONSULTANT*** shall remain bound by the terms of this Agreement until the satisfactory completion of all work hereunder or the termination or expiration hereof, whichever shall first occur. A separate Notice to Proceed from ***H&S*** is required prior to initiation of any services subcontracted by ***CONSULTANT*** or as otherwise required by Schedule A.

Art. 7. CONFLICTS OF INTEREST

7.1 Neither ***CONSULTANT*** nor its employees shall have or hold any continuing or frequently recurring employment or contractual relationship that is substantially antagonistic or incompatible with ***CONSULTANT's*** loyal and conscientious exercise of judgment related to its performance under this Agreement.

7.2 ***CONSULTANT*** agrees that none of its officers or employees shall, during the duration of this Agreement, serve as an expert witness against ***H&S*** or against ***H&S CLIENT*** in any legal or administrative proceeding in which he or she is not a party,

unless compelled by court process, nor shall such persons give sworn testimony or issue a report or writing, as an expression of his or her expert opinion, which is adverse or prejudicial to the interests of ***H&S*** or of ***H&S CLIENT*** for the work performed under this Agreement or in connection with any such pending or threatened legal or administrative proceeding. The limitations of this section shall not preclude such persons from representing themselves in any action or in any administrative or legal proceeding.

7.3 In the event ***CONSULTANT*** is permitted to utilize subcontractors to perform any services required by this Agreement, ***CONSULTANT*** agrees to prohibit such subcontractors, by written contract, from having any conflicts within the meaning of this Article 7.

Art. 8. SUSPENSION OF SERVICES

H&S may suspend, delay or interrupt ***CONSULTANT's*** services, or any portion thereof, for a period of 90 days or less at any time and without cause upon written notice to ***CONSULTANT***. ***CONSULTANT*** shall resume such services upon receipt of a written notice of resumption from ***H&S***. ***CONSULTANT*** may be allowed an increase in fee or an extension of time, or both, if ***CONSULTANT*** makes a claim that is approved by ***H&S*** as provided by Article 10.

Art. 9. TERMINATION

9.1 Termination for Cause. ***H&S*** may terminate this Agreement at any time by giving ***CONSULTANT*** three (3) days written notice if ***CONSULTANT*** fails to perform its obligations under this Agreement and fails to cure within such three (3) day period. In the event of such termination for cause, ***H&S*** shall be entitled to pursue, against ***CONSULTANT***, any and all legal remedies available to it under the terms of this Agreement.

9.2 Termination for Convenience. ***H&S*** may terminate this Agreement at any time with or without cause upon at least three (3) days written notice to ***CONSULTANT***. In the event of such a termination for convenience, provided ***CONSULTANT*** is not in default of its obligations pursuant to this Agreement, ***CONSULTANT*** will be paid for that portion of the work satisfactorily completed prior to termination.

9.3 Conversion to Termination for Convenience. In the event any termination for cause is later determined to have been improper, such termination shall be automatically converted to a termination for convenience under this Article and the ***CONSULTANT*** shall be strictly limited to the compensation provided for in Article 9.2 above.

Art. 10. CHANGES IN THE SERVICES

10.1 Written Change Order. ***H&S*** may, at any time, by written order to ***CONSULTANT***, issue additional instructions, require additional services, issue revisions or direct the omission of services within the general scope of this Agreement, including those that are a result of additions, deletions or revisions to the ***H&S CLIENT AGREEMENT***.

10.2 Equitable Adjustment. If such changes cause an increase or decrease in the ***CONSULTANT's*** cost of, or time required for, performance of any services under this Agreement, an equitable adjustment may be made in price and/or time of performance, provided that any claim for an adjustment must be made in strict accordance with the terms of the ***H&S CLIENT AGREEMENT***. If the ***H&S CLIENT AGREEMENT*** requires ***H&S*** to take some act or make some submission with respect to any request for adjustment of compensation and/or time within a specified time frame or limit, ***CONSULTANT*** shall strictly observe those time frames or limits so as to permit ***H&S*** a reasonable opportunity to comply with the ***H&S CLIENT AGREEMENT***. In the event the ***H&S CLIENT AGREEMENT*** fails to address a time frame or limit in which to submit a claim for adjustment, ***CONSULTANT*** shall submit such claim in writing within thirty (30) days of receipt of said written order. ***CONSULTANT's*** failure to strictly comply with the foregoing shall result in a complete waiver and release of any claim it may have for such adjustment.

Art. 11. NOTICES

All notices or orders provided for in this Agreement shall be in writing and shall be deemed to be given to:

H&S if mailed by certified or registered mail, postage prepaid to:
Hazen and Sawyer, P.C.,
Attention: Ben Stanford; or

CONSULTANT if mailed by certified or registered mail, postage prepaid to:
Southern Nevada Water Authority
Attention: Eric Dickenson
PO Box 99954
Las Vegas, Nevada 89193-9954

Art. 12. CLAIMS AND DISPUTES

12.1 Applicable Law. This Agreement shall be interpreted and construed in accordance with the laws of the State of Nevada.

12.2 Attorney's Fees. In any action brought to enforce its rights under this Agreement, the prevailing party shall be entitled to recover its reasonable attorney's fees, costs and disbursements incurred only to the extent same is provided for in the ***H&S CLIENT AGREEMENT***; otherwise, each party shall bear its own fees and costs.

12.3 Dispute Resolution Procedure. Any claims or disputes and any action involving the enforcement or interpretation of any rights hereunder shall be submitted to the jurisdiction of the courts of the State of Nevada.

Art. 13. INSURANCE

13.1 Consultant's Coverage. As part of ***CONSULTANT's*** overall obligation to protect others, and obligation to indemnify under Article 14 herein, ***CONSULTANT*** shall, at its own expense, purchase and maintain, in a company or companies lawfully authorized to do business in the State and in companies satisfactory to ***H&S***, insurance coverage as specified in this Insurance Article herein. Such insurance shall be maintained until four (4) years after substantial completion of construction (or termination of the contract if construction is not involved) and will protect ***H&S*** and ***CONSULTANT*** from claims set forth below which may arise out of or result from ***CONSULTANT's*** operations under this Agreement and for which ***H&S*** may be liable, whether such operations be by ***CONSULTANT*** or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

13.2. Minimum Coverage. ***CONSULTANT*** shall maintain at a minimum the following insurance policies and coverage with carriers authorized to cover risks and licensed to underwrite policies in the State and having a Best's rating of A-VII or higher:

(a) Worker's Compensation as required by all applicable state and federal laws.

(b) Employer's Liability with limits of $500,000 each accident, $500,000 Disease (each employee) and $500,000 Disease (policy limit).

(c) Comprehensive General Liability with minimum limits of $1,000,000 per occurrence $1,000,000 aggregate.

(d) Professional Liability with limits of not less than $5,000,000, per claim and in the aggregate, insuring the professional liability of ***CONSULTANT***.

(e) Business Auto Insurance for all owned, hired, non-owned and Employers' non-ownership vehicles with minimum limits of $1,000,000 combined single limit.

13.3 Subcontractor Coverage. In addition to the requirements set forth in Article 6 above, ***CONSULTANT*** shall not subcontract any part of this Agreement without assuming absolute responsibility for requiring the same insurance as that set forth in this Article from its subcontractors and/or subconsultants.

13.4 Cancellation, Renewal or Modification. Each insurance policy required by this Agreement shall contain a provision that coverage afforded under the policy will not be canceled, non-renewed, materially changed or allowed to expire until at least thirty (30) days prior written notice has been given to ***H&S*** or, in the event of non-payment, ten (10) days prior written notice. The cancellation provision in the policy shall be modified to read as follows:

> Should any of the above policies described herein be canceled, non-renewed or materially changed (materially changed defined as a reduction in the policy limit by endorsement during the policy period)

before the expiration date thereof, the Insurer shall give thirty (30) days written notice to the certificate holder named hereon.

13.5 Failure to Maintain Insurance. In the event ***CONSULTANT*** fails to maintain any of the insurance required under this Agreement, it shall constitute a material breach of this Agreement. ***H&S*** may, at its option, purchase such coverage for the project and charge the cost thereof to ***CONSULTANT***, plus all incidental expenses and damages arising therefrom. The provisions of this paragraph shall not bar ***H&S*** from exercising any other remedies available to it under the terms of this Agreement, including, without limitation, the remedies referenced in Article 9 above.

13.6 No Limitation of Liability. Compliance with the foregoing insurance requirements shall not relieve ***CONSULTANT*** from liability under any portion of this Agreement, or otherwise act as a limitation of ***CONSULTANT's*** liability.

Art. 14. INDEMNIFICATION

14.1 To the extent permitted by Nevada law, ***CONSULTANT*** shall indemnify, defend and hold harmless ***H&S***, and its shareholders, directors, officers, agents and employees from and against claims, damages, losses and expenses of any nature or kind including, but not limited to, attorneys' fees, arising out of, resulting from or relating in any way to acts or omissions of ***CONSULTANT***, its subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Article 14.

14.2 To the extent permitted by Nevada law, H&S shall indemnify, defend and hold harmless CONSULTANT, and its shareholders, directors, officers, agents and employees form and against claims, damages, losses and expenses of any nature or kind including, but not limited to, attorneys' fees, arising out of, resulting from or relating in any way to acts or omissions of H&S, its other subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable.

14.2 Without in any way impairing or restricting ***CONSULTANT's*** duties and obligations as set forth in Section 14.1, ***CONSULTANT*** shall assume all duties and obligations ***H&S*** has to indemnify, defend and hold harmless any person or entity pursuant to the ***H&S CLIENT AGREEMENT*** arising out of, relating in any way to or in connection with the acts or omissions of ***CONSULTANT***.

14.3 If ***H&S*** determines, in its sole discretion, that ***CONSULTANT*** has failed to satisfy any of the terms and conditions set forth in Sections 14.1 or 14.2, ***H&S*** may declare ***CONSULTANT*** in default and will provide written notice of same. If ***CONSULTANT*** fails to cure such default within three (3) business days of such written notice, ***H&S*** may terminate this Agreement, at its sole discretion and without limiting any and all other remedies available.

14.4 This Article 14, Indemnification, shall survive the termination of this Agreement.

14.5 ***CONSULTANT*** acknowledges and agrees that the foregoing obligations are specific consideration for this Agreement and without such duties and obligations ***H&S*** would not enter this Agreement.

Art. 15. PERFORMANCE STANDARDS

15.1 The standard of care for all professional services provided by ***CONSULTANT*** shall be the standard of care set forth in the ***H&S CLIENT AGREEMENT***. If not set forth in the ***H&S CLIENT AGREEMENT***, ***CONSULTANT*** shall perform all professional services with the care and skill ordinarily exercised by members of the same profession currently practicing in the United States, on projects of similar size and complexity at the time the services are performed.

15.2 ***CONSULTANT*** represents that all persons delivering the services required by this Agreement have the knowledge and skills, either by training, experience, education, or a combination thereof, to adequately and competently perform the duties, obligations, and services set forth in the Scope of Services and to provide and perform such services to ***H&S's*** satisfaction for the agreed compensation. ***CONSULTANT*** agrees that it will employ the current state-of-the-art in performing its services and shall provide additional services needed to correct its deficiencies at no additional cost to ***H&S***.

Art. 16. RECORDS

16.1 ***H&S***, ***H&S CLIENT***, and, if the services to be performed hereunder relate to a state or federal government contract, the Comptroller General of the United States and the department or agency of the government having cognizance over said prime Contract, and any of their duly authorized representatives, shall have access to and the right to examine any directly pertinent books, documents, papers and records of ***CONSULTANT*** involving transactions related to this Agreement.

16.2 ***CONSULTANT*** shall grant access to such records for the time period which ***H&S*** is required to grant access to ***H&S CLIENT*** pursuant to the terms of the ***H&S CLIENT AGREEMENT***. If the ***H&S CLIENT AGREEMENT*** is silent as to the matter, ***CONSULTANT*** shall grant access to such records until the expiration of three years after final payment under this Agreement.

16.3 ***CONSULTANT*** warrants that its accounting books and records are kept on a job cost basis in accordance with generally accepted accounting practices and that its overall accounting system is sufficient to sustain an audit by local, state or federal audit agencies. ***CONSULTANT*** agrees that should a local, state or federal audit disallow ***CONSULTANT's*** costs based on inadequate or insufficient records, ***CONSULTANT*** will reimburse ***H&S*** all such costs disallowed.

Art. 17. AUDIT RIGHT AND RETENTION OF RECORDS

17.1 ***H&S*** shall have the right to audit the books and records of ***CONSULTANT***. ***CONSULTANT*** shall keep such records and accounts as may be necessary in order to record complete and correct entries related to the Project.

17.2 ***CONSULTANT*** shall preserve and make available, at reasonable times for examination and audit by ***H&S*** all financial records, supporting documents, statistical records, and any other documents pertinent to this Agreement for the time period which ***H&S*** is required to preserve and make available such records to ***H&S CLIENT*** pursuant to the terms of the ***H&S CLIENT AGREEMENT***. If the ***H&S CLIENT AGREEMENT*** is silent as to the matter, ***CONSULTANT*** shall preserve and make available such records until the expiration of three years after final payment under this Agreement.

17.3 If any audit has been initiated and audit findings have not been resolved at the end of the applicable time period, the books and records shall be retained until resolution of the audit findings. If the any public records request act is determined by ***H&S*** to be applicable to ***CONSULTANT***'s records, ***CONSULTANT*** shall comply with all requirements thereof; however, no confidentiality or nondisclosure requirement of either federal or state law shall be violated by ***CONSULTANT***. Incomplete or incorrect entries in such books and records shall be a basis for ***H&S***'s disallowance of any payment upon entries.

Art. 18. GRATUITIES PROHIBITED

CONSULTANT warrants that neither it nor any of its employees, agents or representatives has offered or given any gratuities to ***H&S's*** employees, agents, or representatives with a view toward securing this Agreement or securing favorable treatment with respect thereto.

Art. 19. SUCCESSORS AND ASSIGNEES

This Agreement is to be binding on the heirs, successors and assignees of the parties hereto but is not to be assigned by either party without first obtaining the written consent of the other.

Art. 20. WAIVER OF BREACH AND MATERIALITY

Failure by ***H&S*** to enforce any provision of this Agreement shall not be deemed a waiver of such provision or modification of this Agreement. A waiver of any breach of a provision of this Agreement shall not be deemed a waiver of any subsequent breach and shall not be construed to be a modification of the terms of this Agreement. ***H&S*** and ***CONSULTANT*** agree that each requirement, duty, and obligation set forth herein is substantial and important to the formation of this Agreement and, therefore, is a material term hereof.

Art. 21. PERMITS, LICENSES, NOTICES AND COMPLIANCE WITH LAWS

22.1 ***CONSULTANT*** shall give notices and comply with applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on performance of the services of this Agreement. The ***CONSULTANT*** shall secure and pay for permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the services of this Agreement.

22.2 ***CONSULTANT*** shall comply with federal, state and local tax laws, social security acts, unemployment compensation acts and worker's compensation acts insofar as applicable to the performance of services under this Agreement.

22.3 ***CONSULTANT*** shall not unlawfully discriminate against any person in its operations and activities in its use or expenditure of the funds or any portion of the funds provided by this Agreement and shall affirmatively comply with all applicable provisions of the American with Disabilities Act (ADA) in the course of providing any services funded in whole or in part by ***H&S***, including Titles I and II of the ADA (regarding nondiscrimination on the basis of disability), and all applicable regulations, guidelines, and standards.

22.4 ***CONSULTANT's*** decisions regarding the delivery of services under this Agreement shall be made without regard to or consideration of race, age, religion, color, gender, sexual orientation, national origin, marital status, physical or mental disability, political affiliation, or any other factor which cannot be lawfully or appropriately used as a basis for service delivery.

22.5 ***CONSULTANT*** shall comply with Title I of the Americans with Disabilities Act regarding nondiscrimination on the basis of disability in employment and further shall not discriminate against any employee or applicant for employment because of race, age, religion, color, gender, sexual orientation, national origin, marital status, political affiliation, or physical or mental disability. In addition, ***CONSULTANT*** shall take affirmative steps to ensure nondiscrimination in employment against disabled persons. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay, other forms of compensation, terms and conditions of employment, training (including apprenticeship), and accessibility.

22.6 ***CONSULTANT*** shall take affirmative action to ensure that applicants are employed and employees are treated without regard to race, age, religion, color, gender, sexual orientation, national origin, marital status, political affiliation, or physical or mental disability during employment. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay, other forms of compensation, terms and conditions of employment, training (including apprenticeship), and accessibility.

Art. 22. SEVERANCE

In the event this Agreement or a portion of this Agreement is found by a court of competent jurisdiction to be invalid, the remaining provisions shall continue to be effective unless ***H&S*** elects to terminate this Agreement. The election to terminate this Agreement based upon this provision shall be made within seven (7) days after the finding by the court becomes final.

Art. 23. JOINT PREPARATION

Preparation of this Agreement has been a joint effort of ***H&S*** and ***CONSULTANT*** and the resulting document shall not, solely as a matter of judicial construction, be construed more severely against one of the parties than any other.

Art. 24. PRIORITY OF PROVISIONS

If there is a conflict or inconsistency between any term, statement, requirement, or provision of any exhibit attached hereto, any document or events referred to herein, or any document incorporated into this Agreement by reference and a term, statement, requirement, or provision of this Agreement, the term, statement, requirement, or provision contained in Articles 1 through 27 of this Agreement shall prevail and be given effect.

Art. 25. COMMUNICATIONS

All communications and correspondence between ***CONSULTANT*** and ***H&S CLIENT*** shall be through ***H&S.***

Art. 26. PROJECT SPECIFIC TERMS

The following additional Project specific terms and conditions are:

___None _____

_____

Art. 27. COUNTERPARTS

This Agreement may be executed in two (2) counterparts, each of which shall be deemed to be an original.***IN WITNESS WHEREOF***, the parties hereto have executed this Agreement as of the date first above written.

Southern Nevada Water Authority	HAZEN AND SAWYER, P.C.
By: _____ Patricia Mulroy	By: _____ Mark Bishop
Title: General Manager	Title: Vice President
By: _____ Laura Browning	By: _____ Alan Stone
Title: Project Attorney	Title: Vice President

Small Disadvantaged Business: No (Yes or No)

Small Business: No (Yes or No)

Employer Identification No. *: xx-xxxxxxx

* *This is the identifying number required to be used in federal income tax and employment tax returns.*

SCHEDULE A

SCOPE OF SERVICES

Southern Nevada Water Authority

Controlling Trace Organic Contaminants Using Alternative, Non-FAT Technology for Indirect Potable Water Reuse

The scope of work to be provided by ***CONSULTANT*** includes professional services for the elements listed below.

Scope of Work Document for SNWA as prepared by Hazen and Sawyer

Task 1: Literature Review

SNWA will be responsible for preparing the literature review/introduction to the project report with input from Hazen and Sawyer. Time will be devoted throughout the project to track and document the latest developments in this field.

Task 2: Pilot-Scale Demonstration (City of Hollywood, Florida)

This task will be conducted by H&S personnel. SNWA will be responsible for review of data and written reports and any additional sample analysis requested (i.e., TONO assay).

Task 3: Pilot-Scale Biofilter Media Investigations (Las Vegas, Nevada)

Existing biofiltration columns will be operated to treat tertiary filtered effluent that has undergone ozone treatment at the CCWRD's Main Facility in Las Vegas, Nevada. Biofiltration columns will contain virgin and exhausted BAC and alternative media (i.e., hollow plastic media). Biologically-active sand/anthracite columns will provide benchmarks that can be compared against. Biofilter performance will be evaluated by measuring the contaminants and parameters presented in the proposal document. The pilot scale investigation will proceed in two phases: Acclimation and Demonstration Phases.

SNWA Staff will be responsible for documenting and writing all results from this Task and related Subtasks for quarterly reports and for the final report.

Task 4: *Cost Comparison of Alternative Non-FAT and FAT-RO/AOP Technologies*: This task will be conducted by H&S personnel. SNWA will be responsible for review of data and written reports.

Task 5: *Final Report*: H&S Staff will be responsible for coordinating report writing efforts; SNWA Staff will be responsible for writing sections of the Final Report relevant to Tasks 1 and 3 plus any additional testing conducted by SNWA and related to the other remaining tasks.

TIME OF COMPLETION

The scope of work will be completed by the ***CONSULTANT*** by April 15, 2015.

SCHEDULE B

COMPENSATION

Southern Nevada Water Authority

Controlling Trace Organic Contaminants Using Alternative, Non-FAT Technology for Indirect Potable Water Reuse

H&S shall pay ***CONSULTANT*** as full compensation for the services identified under Schedule A the amount(s) listed below. Compensation shall be on a not to exceed basis in the amount of $99,787.00. In addition, ***CONSULTANT*** shall be responsible for acquiring and documenting the use of $25,000 cash-in-kind from Clark County Water Reclamation District, $11,200 of analytical costs in-kind, $100,000 of in-kind use of the AOP Pilot Skid, and $100,000 of in-kind use of the Column Pilot Skid.

Personnel	Hours	Rate ($/hour)	Total Cost Direct Labor	Direct Labor with 182.1% Fringe Benefit	Task	WRF Cost	Cash In-Kind	Service In-Kind	Total Cost
Ben Stanford	80	$60.09	$4,807	$13,562	1,2,3, 4,5		$13,562		$13,562
Enrique Vadiveloo	80	$52.53	$4,202	$11,854	1,2		$11,854		$11,854
Erik Rosenfeldt	60	$52.53	$3,152	$8,890	1,4,5		$8,890		$8,890
Phil Cooke	15	$63.27	$949	$2,677	2,4		$2,677		$2,677
Tara Fishbain	176	$38.31	$6,743	$19,021	2,4		$19,021		$19,021
Equipment									
SRWWTP Pilot Skids & Operations					2			$1,000,000	$1,000,000
AOP Pilot Skid					3			$100,000	$100,000
Column Pilot Skid					3			$100,000	$100,000
Supplies									
Expendable supplies and materials					3	$5,000			$5,000
Subcontracts									
SNWA Labor + Overhead (40%)					4	$31,827			$31,827
Analytical Costs					3	$57,960	$65,000	$11,200	$134,160
Travel									
Team Site Visits, Conferences, Project Meetings					1,2,3, 4,5	$5,000			$5,000
Other Costs									
Analytical Costs-CCRWRD					3			$25,000	
				Total Direct Cost		$99,787	$121,004	$1,236,200	$1,456,991
				Total Indirect Cost					

Fee (H&S Labor, 10%)		$3,615		$3,615
TOTAL	$99,787	$124,619	$1,236,200	$1,460,606

Third Party Contributions Not Included Above, i.e., Attachment C Amounts				
TOTAL				

TOTAL PROJECT COST	$99,787	$124,619	$1,236,200	$1,460,606

Labor Details for SNWA Subcontract

Personnel	Hours	Rate ($/hour)	Total Cost Direct Labor	Direct Labor with 40% Fringe Benefit	Task	WRF Cost	Cash In-Kind	Service In-Kind	Total Cost
Eric Dickenson	67	$50.62	$3391.54	$4748.16	1,2,3, 4,5	$4748.16			$4,748.16
Eric Wert	38	$60.90	$2314.20	$3239.88	1,2,3, 5	$3239.88			$3,239.88
Brett Vanderford	30	$63.35	$1900.50	$2660.70	2,3,5	$2660.70			$2,660.70
Riley Flowers	210	$34.62	$7270.20	$10178.28	1,2,3	$10178.28			$10,178.28
Graduate Intern	500	$22.00	$11000.00	N/A	1,3	$11000.00			$11,000.00

SCHEDULE C

Project Schedule

Controlling Trace Organic Contaminants Using Alternative, Non-FAT Technology for Indirect Potable Water Reuse (WateReuse-13-10)

The Start Date for this Project is the Date of Execution (DOE) of the Project Funding Agreement.

Deliverable or Action	Due Dates based on July 15, 2013
Begin Project	7/15/2013
Contractor presents Proof of Insurance(s) or Certificate of Self Insurance (III.17)	8/15/2013
Contractor presents Proof of Worker's Compensation Insurance (III.18)	8/15/2013
Foundation receipt of all Subcontractors Agreement Certifications (III.27)	8/15/2013
Progress Report Number 1(Exhibit A)	10/30/2013
Progress Report Number 2	1/30/2013
Progress Report Number 3	4/30/13
Progress Report Number 4	7/30/2013
Progress Report Number 5	10/30/2013
Progress Report Number 6	1/30/2014
Draft Report (Exhibit A)	**4/15/2014**
Revised Draft Report (Exhibit A)	7/15/2014
Proof of Submission to a Selected Publication (Exhibit A)	7/15/2014
Project Profile(Exhibit A)	7/15/2014
Final Report (Exhibit A) and Execution of Assignment Documents for Foundation Intellectual Property (III.9.d)	10/15/2014
Webinar Presentation (Exhibit A)	11/15/2014

Response to Copyeditor Queries (Exhibit A)	2/15/2015
Completion Date (III.13) and Published Report (Exhibit A)	**4/15/2015**

H&S Client Agreement

Southern Nevada Water Authority

Controlling Trace Organic Contaminants Using Alternative, Non-FAT Technology for Indirect Potable Water Reuse
(WateReuse-13-10) Subcontractor Agreement Certification

The Subcontractor **[Southern Nevada Water Authority]** to **Hazen and Sawyer** on this Project has a signed agreement with the [Contractor] in which it agrees to comply with and be bound by the following Paragraphs of Article III of the Project Funding Agreement between **Hazen and Sawyer** and the WateReuse Research Foundation prior to working on the Project in any manner:

8. Accounting;
9. Intellectual Property;
10. Publicity, Press Releases, and Surveys.
11. Accuracy of Testing;
12. Originality;
16. Indemnification and Liability;
17. Insurance;
18. Workers Compensation;
20. Equal Opportunity; and
26. Governing Law.

The Subcontractor **[Southern Nevada Water Authority]** has signed an agreement in which it confirms that it has been provided with and reviewed copies of all Exhibits to the Agreement as well as the following Paragraphs of Article III of the Project Funding Agreement prior to working on the Project in any manner:

3. Time of Performance;
6. Compensation;
7. Payments;
13. Termination;
19. Breach/Damages;
21. Relationship of the Parties;
22. Modification in Writing;
23. Transferability; and
24. Exhibits.

CONTRACTOR will return copies of this form signed and dated FOR each Subcontract.

Subcontractor Name:
Subcontractor Address:
Contractor's Designated Representatives Signature:

_____

Name [Print]:
Title:
Date:

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Agreement	**Director's Backup**
Petitioner: Ronald E. Zegers, Deputy General Manager, Engineering/Operations	
Recommendations: That the Board of Directors approve an agreement between the Colorado School of Mines and the Authority for a National Science Foundation awarded project on water quality and supply impacts from climate-induced insect tree mortality, and accept funds in the amount of $29,846 for this research work.	

Fiscal Impact:
If the above recommendation is approved, funds in the amount of $29, 846 will be accepted by the Authority.

Background:
The ongoing mountain pine beetle (MPB) epidemic has already dramatically impacted the Rocky Mountains and the Colorado River watershed. The objective of this National Science Foundation (NSF) project, where the Authority is a Co-Principal Investigator, is to determine potential water resource changes resulting from the MPB epidemic by defining and quantifying feedbacks between changes in climate, forested ecosystems altered by MPB impacts, biogeochemical processes, and resource management practices. The outcome of this project is to provide an improved scientific basis for managing watershed ecosystems in the Colorado River basin, thus helping to ensure safe and reliable water resources.

If approved, the attached agreement provides for the Authority to accept $29,846 from the Colorado School of Mines to conduct work under the NSF project entitled, "Water Quality and Supply Impacts from Climate-Induced Insect Tree Mortality and Resource Management in the Rocky Mountain West."

This agreement is entered into pursuant to NRS 277.180 and Sections 6(j) and 6(o) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved this agreement.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:REZ:DJR:ED:jf
Attachment

FOR

AGENDA ITEM # 8

Subcontract Agreement

Institution/Organization ("UNIVERSITY")	Institution/Organization ("COLLABORATOR")
Name: Colorado School of Mines Address: 1500 Illinois St. Golden, CO 80401	Name: Southern Nevada Water Authority Address: 1299 Burkholder Avenue Henderson, NV 89015 EIN No.:
Prime Award No. EAR-1204787	Subcontract No. 400469
Awarding Agency National Science Foundation	Cost Share Amount:
Subcontract Period of Performance 9/1/2012 to 8/31/2017	Amount Funded this Action: $29,846 Est. Total (if incrementally funded): $29,846

Project Title

Water Quality and Supply Impacts from Climate-Induced Insect Tree Mortality and Resource Management in the Rocky Mountain West

Reporting Requirements [Check here if applicable: ☐ See Attachment 4]

Terms and Conditions

1) **This Agreement includes a Cost-Share component.** University hereby awards a cost reimbursable Subcontract, as described above, to Collaborator. The statement of work and budget for this Subcontract are (check one): as specified in Collaborator's proposal dated; or **X** as shown in Attachment 5 . In its performance of Subcontract work, Collaborator shall be an independent entity and not an employee or agent of University.

2) University shall reimburse Collaborator not more often than monthly for allowable costs. All invoices shall be submitted using Collaborator's standard invoice, but at a minimum shall include current and cumulative costs (including cost sharing), Subcontract number, and certification as to truth and accuracy of invoice. *Invoices that do not reference University's Subcontract number shall be returned to Collaborator.* Invoices and questions concerning invoice receipt or payments should be directed to the appropriate party's Financial Contact, as shown in Attachment 3. Collaborator shall provide a cumulative cost-share total of $20,000 in either cash or in-kind contributions, hereinafter referred to as "Cost Share" during the Term as defined herein.

3) A final statement of cumulative costs incurred, including cost sharing, marked "FINAL," must be submitted to University's Financial Contact NOT LATER THAN sixty (60) days after Subcontract end date. The final statement of costs shall constitute Collaborator's final financial report.

4) All payments shall be considered provisional and subject to adjustment within the total estimated cost in the event such adjustment is necessary as a result of an adverse audit finding against the Collaborator. Collaborator shall maintain a separate record of their Cost Share contributions and include this information on each Invoice submitted to University. If Collaborator fails to provide some, or all, of the agreed Cost Share amount, University will make a downward adjustment in the amount of the Subcontract.

5) Matters concerning the technical performance of this Subcontract should be directed to the appropriate party's Project Director, as shown in Attachment 3. Technical reports are required as shown above, "Reporting Requirements."

6) Matters concerning the request or negotiation of any changes in the terms, conditions, or amounts cited in this Subcontract agreement, and any changes requiring prior approval, should be directed to the appropriate party's Administrative Contact, as shown in Attachment 3. Any such changes made to this Subcontract agreement require the written approval of each party's Authorized Official, as shown in Attachment 3.

7) Each party shall be responsible for its negligent acts or omissions and the negligent acts or omissions of its employees, officers, or directors, to the extent allowed by law.

8) Either party may terminate this agreement with thirty days written notice to the appropriate party's Administrative Contact, as shown in Attachment 3.

9) No-cost extensions require the approval of the University. Any requests for a no-cost extension should be addressed to and received by the Administrative Contact, as shown in Attachment 3, not less than thirty days prior to the desired effective date of the requested change.

10) The Subcontract is subject to the terms and conditions of the Prime Award and other special terms and conditions, as identified in Attachment 2.

11) By signing below Collaborator makes the certifications and assurances shown in Attachments 1 and 2.

By an Authorized Official of UNIVERSITY:	By an Authorized Official of COLLABORATOR:
_____ _____ Ralph L. Brown, Director Date Office of Research Administration	_____ _____ Patricia Mulroy, General Manager Date

Approved as to Form
Laura Browning, Project Attorney 7-17-13 Date

Attachment 1
Subcontract Agreement

By signing the Subcontract Agreement, the authorized official of COLLABORATOR certifies, to the best of his/her knowledge and belief, that:

Certification Regarding Lobbying

1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Collaborator, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or intending to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Collaborator shall complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying," to the University.

3) The Collaborator shall require that the language of this certification be included in the award documents for all Subcontracts at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U. S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less that $10,000 and not more that $100,000 for each such failure.

Debarment, Suspension, and Other Responsibility Matters

Collaborator certifies by signing this Subcontract Agreement that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

OMB Circular A-133 Assurance

Collaborator assures University that it complies with A-133 and that it will notify UNIVERSITY of completion of required audits and of any adverse findings, which impact this Subcontract.

Attachment 2
Prime Agreement

Certifications/Assurances

1. By signing this Subaward, the Collaborator's Authorized Official on the face page of this Subaward is providing the Drug-Free Work Place Certification contained in Appendix A of the Grant Proposal Guide, NSF 02-2; the Debarment and Suspension Certification contained in Appendix B of the Grant Proposal Guide, NSF 02-2; Certification Regarding Lobbying contained in Chapter II, Section C of the Grant Proposal Guide, NSF 02-2 (applicable if Subaward exceeds $100,000). In addition, if Collaborator employs more than fifty persons, the authorized Collaborator official certifies by signing this Subaward that Collaborator has implemented a written and enforced conflict of interest policy that is consistent with the provisions of the Grant Policy Manual Section 510. Conflicts which cannot be satisfactorily managed, reduced or eliminated must be disclosed, via University's Authorized Official, to NSF.

General terms and conditions:

1. The restrictions on the expenditure of federal funds in appropriations acts are applicable to this subaward to the extent those restrictions are pertinent.
2. OMB Circular A-110 or 45 CFR Part 602 as applicable.
3. The NSF Grant Policy Manual, including addenda, in effect as of the beginning date of the period of performance.
4. NSF Grant General Conditions (GC-1), including addenda, in effect as of the beginning date of the period of performance and found at http://www.nsf.gov/home/grants/grants_gac.htm , except for the following:
a. The right to initiate an automatic one-time extension of the end date provided by Article 4 is replaced by the need to obtain prior written approval from the University;
b. The payment mechanism described in Article 12 and the final report requirements described in Article 15 are replaced with Reporting Requirements and Terms and Conditions on the front page of this agreement; and
c. Any prior approvals are to be sought from the University and not the Federal Awarding Agency.
5. Title to equipment costing $5,000 or more that is purchased or fabricated with research funds or collaborator cost sharing funds, as direct costs of the project or program, shall unconditionally vest in the collaborator upon acquisition without further obligation to the Federal Awarding Agency subject to the conditions specified in Article 6 of the GC-1.

Special terms and conditions:
1. Copyrights
Collaborator _X__ grants / ___ shall grant (check one) to University an irrevocable, royalty-free, non-transferable, non-exclusive right and license to use, reproduce, make derivative works, display, and perform publicly any copyrights or copyrighted material (including any computer software and its documentation and/or databases) first developed and delivered under this Subaward Agreement solely for the purpose of and only to the extent required to meet University's obligations to the Federal Government under its Prime Award.

2. Data Rights
Collaborator grants to University the right to use data created in the performance of this Subaward Agreement solely for the purpose of and only to the extent required to meet University's obligations to the Federal Government under its Prime Award.
[Do not add a Patent or Inventions Clause. The prime grant governs rights to patents and inventions. Prime grantee cannot obtain rights in the subgrantee's subject inventions as a part of consideration for the subaward. Should it be necessary, the Federal Government can authorize the prime grantee's right to practice a subgrantee's subject invention (as well as subject data or copyrights) on behalf of the Federal Government.]

Attachment 3 Subcontract Agreement	
University Contacts	**Collaborator Contacts**
Administrative Contact Name: Michele Land, Contracts Manager Office of Research Administration Address: Colorado School of Mines 1500 Illinois St. Golden, CO 80401 Telephone: 303-273-3405 Fax: 303-384-2173 Email: mland@mines.edu	Administrative Contact Name: Jennifer Fuel Southern Nevada Water Authority Address: P O Box 99954 M/S 1970 Las Vegas NV 89193-9954 Telephone: 702.856.3665 Fax: 702.856.3647 Email: Jennifer.Fuel@lvvwd.com
Principal Investigator Name: Reed Maxwell Address: Colorado School of Mines 1500 Illinois St. Golden, CO 80401 Telephone: 303-384-2002 Fax: 303-273-3413 Email: rmaxwell@mines.edu	Project Director Name: Eric Dickenson Address: Southern Nevada Water Authority P O Box 99954 M/S 1970 Las Vegas NV 89193-9954 Telephone: 702.856.3668 Fax: 702.856.3647 Email: Eric.Dickenson@SNWA.com
Financial Contact Name: Barbara Schneider, Billing Specialist Office of Research Administration Address: Colorado School of Mines 1500 Illinois St. Golden, CO 80401 Telephone: 303-273-3269 Fax: 303-384-2173 Email: Bschneid@mines.edu	Financial Contact Name: David J. Rexing, Water Quality R&D Manager Southern Nevada Water Authority P O Box 99954 M/S 1970 Las Vegas NV 89193-9954 Telephone: 702-856-3664 Fax: 702-856-3647 Email: Dave.Rexing@lvvwd.com
Authorized Official Name: Ralph L. Brown, Director Office of Research Administration Address: Colorado School of Mines 1500 Illinois St. Golden, CO 80401 Telephone: 303-273-3538 Fax: 303-384-2173 Email: Rabrown@mines.edu	Authorized Official Name: David Johnson Director Address: Southern Nevada Water Authority P O Box 99955 M/S 1800 Las Vegas NV 89193-9955 Telephone: 702.567.2051 Fax: Email: Dave.Johnson@lvvwd.com

Attachment 4
Reporting Requirements

Reporting Requirements

All reports shall include the

Award number: CSM 400469,
Award recipient: Colorado School of Mines.
Title: WSC-Category 2 Collaborative: Water Quality and Supply Impacts from Climate-Induced Insect Tree Mortality and Management in the Rocky Mountain West
Date of Report and Period covered by report,
A comparison of accomplishments to the goals and objectives established and the reason for any discrepancy(ies),
Other items that have influenced the work performed herein.

Definition. "Reporting" includes invoicing, financial reporting, and technical reporting.
Expenditure Reports. Quarterly expenditure reports are due within 30 days of the quarter end date. The reports should include current and cumulative costs, Subaward number, Purchase Order number, cost share as applicable and certification as to truth and accuracy of the report.
Invention Reporting. In accordance with 37 CFR 401.14, Collaborator shall notify University's Administrative Contact, as stated in Attachment 3, within two months after Collaborator's inventor discloses invention(s) in writing to Collaborator personnel responsible for patent matters.
Technical Reporting. In addition to any other technical reporting requirements set forth under this Subaward Agreement, the Subrecipient Principal Investigator shall provide a brief update on cumulative programmatic achievements, including significant deliverables or milestones reached at least quarterly.
Amendment for Updated Reporting Requirements. A unilateral amendment may be issued to update reporting requirements in response to any additional requirements or guidance from the OMB or Sponsor including, but not limited to, the definition of terms and data elements, and specific instructions for reporting and report formats.
Final Technical Report: To be submitted within thirty (30) days of the termination date of this Agreement to the University Principal Investigator as stated in Attachment 3.
Final Invention Report: To be submitted within thirty (30) days of the termination date of this Agreement to the University Administrative Contact as stated in Attachment 3. A negative report is required.
All reporting shall be in English and in U.S. dollars ($US).

Attachment 5
Subcontractor's Proposal and Budget

SUBCONTRACTOR'S PROPOSAL:

The following is scope of work for project activities to be performed by SNWA personnel and at SNWA. Project activities are associated with the following NSF project: "Water Quality and Supply Impacts from Climate-Induced Insect Tree Mortality and Resource Management in the Rocky Mountain West"

Dr. Eric Dickenson is a co-principal investigator on the project and will be engaged in the following activities:

- Review of developed experimental plans of small-scale soil/pine needle column tests
- Water quality characterization for NOM and DBPs
- Bridge communication with local water municipalities for obtaining water municipality data
- Development of the municipality stakeholder workshop(s)
- Participate in project meetings and associated outreach activities via remotely or on site

SUBCONTRACTOR BUDGET JUSTIFICATION

Salaries and Wages: The salary rates of the professional research staff and associates are established by the Southern Nevada Water Authority and their Board of Directors.

PI Eric Dickenson, Ph.D.: $7,033

Fringe Benefits: ($2,813) The rate for fringe benefits is established by the Southern Nevada Water Authority and is currently 40%.

NOM/DBP Analysis: ($20,000) The cost includes labor associated with NOM/DBP analysis and analytical consumables.

Indirect Costs: SNWA will not charge indirect costs for this project.

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Agreement	**Director's Backup**
Petitioner: Philip D. Speight, Deputy General Manager, Administration	

Recommendations:
That the Board of Directors ratify the approval of the assistance agreement between the Bureau of Reclamation and the Authority to accept a grant in an amount not to exceed $149,961 to research and evaluate the impacts of climate change on water quality in Lake Mead, and authorize the General Manager to approve future modifications only if the future modifications do not fiscally impact the Authority.

Fiscal Impact:
The Bureau of Reclamation will reimburse the Authority up to $149,961 in grant funding. The grant requires the Authority to provide a contribution of $170,560. The required $170,560 is available in the Authority's Operating Budget.

Background:
The Bureau of Reclamation (Reclamation) established the WaterSMART Applied Science Grants for Desert Landscape Conservation Cooperative to support research projects that address water resources management in a changing climate.

On July 18, 2013, the Board of Directors approved a resolution authorizing the submission of the subject grant application. The intent of this project is to research and evaluate the impacts of climate change on water quality and internal nutrient recycling in Lake Mead. On August 23, 2013, Reclamation notified the Authority of its approval of the grant request for an amount not to exceed $149,961.

On September 18, 2013, Reclamation advised the Authority that in order to receive funding the assistance agreement needed to be signed by September 19, 2013. To accommodate this deadline, staff executed the assistance agreement, pending ratification by the Board.

At this time, the Board is being asked to ratify the assistance agreement, which includes the provisions necessary for the Authority to obtain federal funding.

This action is authorized pursuant to NRS 277.180 and Section 6(o) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved this item.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:PDS:JAW:DLJ:AMB:SSL:kf
Attachment

FOR

AGENDA ITEM # 9

7-2279 (01-2013)
Bureau of Reclamation

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
ASSISTANCE AGREEMENT

1A. AGREEMENT NUMBER	1B. MOD NUMBER	2. TYPE OF AGREEMENT	3. CLASS OF RECIPIENT
R13AP80034		☒ GRANT ☐ COOPERATIVE AGREEMENT	Local Government

4. ISSUING OFFICE

Bureau of Reclamation
Financial Assistance Services 84-27852
P.O. Box 25007, Denver Federal Center
Denver Colorado 80225

5. RECIPIENT

Southern Nevada Water Authority
1001 S. Valley View Blvd.
Las Vegas, NV 89153

EIN #:	880278492	County:	Clark
DUNS #:	135965650	Congress. Dist:	1

6. GRANTS MANAGEMENT SPECIALIST

Shaun Wilken
303-445-3697
swilken@usbr.gov

7. RECIPIENT PROJECT MANAGER

Todd Tietjen
702-856-5045
todd.tietjen@snwa.org

8. GRANTS OFFICER TECHNICAL REPRESENTATIVE

Genevieve Johnson
623-773-6206
gjohnson@usbr.gov

9A. INITIAL AGREEMENT EFFECTIVE DATE:

See Block 17a

9B. MODIFICATION EFFECTIVE DATE:

10. COMPLETION DATE

September 30, 2015

11A. PROGRAM STATUTORY AUTHORITY

Public Law 111-11, Section 9504(b)

11B. CFDA Number

15.557

12. FUNDING INFORMATION	RECIPIENT/OTHER	RECLAMATION
Total Estimated Amount of Agreement	$170,560	$149,961
This Obligation	$170,560	$149,961
Previous Obligation	$0	$0
Total Obligation	$170,560	$149,961
Cost-Share %	53%	47%

13. REQUISITION NUMBER

138450000058

14A. ACCOUNTING AND APPROPRIATION DATA

A10-1994-0001-002-20-2-4 8451000 411C $149,961

14B. TREASURY ACCOUNT FUNDING SYMBOL

14x0680

15. PROJECT TITLE

A Study of Climate Change Impacts on Water Quality and Internal Nutrient Recycling in Lake Mead, Arizona-Nevada

16a. Acceptance of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the above-named recipient

BY: Philip D. Spartz

DATE: 9/17/13

17a. Award of this Assistance Agreement in accordance with the terms and conditions contained herein is hereby made on behalf of the United States of America, Department of the Interior, Bureau of Reclamation

BY:

DATE:

16b. NAME, TITLE, AND TELEPHONE NUMBER OF SIGNER

☐ Additional signatures are attached

17b. NAME OF GRANTS OFFICER

Michelle Maher

TABLE OF CONTENTS

I. OVERVIEW AND SCHEDULE 3
1. AUTHORITY 3
2. PUBLIC PURPOSE OF SUPPORT OR STIMULATION 3
3. BACKGROUND AND OBJECTIVES 4
4. PERIOD OF PERFORMANCE AND FUNDS AVAILABILITY 5
5. SCOPE OF WORK AND MILESTONES 5
6. RESPONSIBILITY OF THE PARTIES 7
7. BUDGET 8
8. KEY PERSONNEL 12
9. REPORTING REQUIREMENTS AND DISTRIBUTION 14
10. REGULATORY COMPLIANCE 17
11. COPYRIGHTS [43 CFR 12.936(a)] 17
12. RIGHTS TO DATA 17
II. RECLAMATION STANDARD TERMS AND CONDITIONS - STATES, LOCAL GOVERNMENTS, AND FEDERALLY RECOGNIZED INDIAN TRIBAL GOVERNMENTS 18
1. REGULATIONS 18
2. PAYMENT 19
3. PROCUREMENT STANDARDS (43 CFR §12.76) 21
4. EQUIPMENT (43 CFR §12.72) 31
5. SUPPLIES (43 CFR §12.73) 33
6. INSPECTION 33
7. AUDIT (31 U.S.C. 7501-7507) 34
8. ENFORCEMENT (43 CFR §12.83) 34
9. TERMINATION FOR CONVENIENCE (43 CFR §12.84) 35
10. DEBARMENT AND SUSPENSION (2 CFR §1400) 35
11. DRUG-FREE WORKPLACE (2 CFR §182 and §1401) 35
12. ASSURANCES AND CERTIFICATIONS INCORPORATED BY REFERENCE 36
13. COVENANT AGAINST CONTINGENT FEES 36
14. TRAFFICKING VICTIMS PROTECTION ACT OF 2000 (2 CFR §175.15) 36
15. NEW RESTRICTIONS ON LOBBYING (43 CFR §18) 39
16. UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION POLICIES ACT OF 1970 (URA) (42 USC § 4601 *et seq.)* 39
17. CENTRAL CONTRACTOR REGISTRATION AND UNIVERSAL IDENTIFIER REQUIREMENTS (2 CFR 25, APPENDIX A) 40
18. PROHIBITION ON TEXT MESSAGING AND USING ELECTRONIC EQUIPMENT SUPPLIED BY THE GOVERNMENT WHILE DRIVING 42

Grant Agreement
Between
Bureau of Reclamation
And
Southern Nevada Water Authority
For
A Study of Climate Change Impacts on Water Quality and Internal Nutrient Recycling in Lake Mead, Arizona-Nevada

I. OVERVIEW AND SCHEDULE

1. AUTHORITY

This Grant Agreement (Agreement) is entered into between the United States of America, acting through the Department of the Interior, Bureau of Reclamation, hereinafter referred to as "Reclamation," and Southern Nevada Water Authority, hereinafter referred to as the "Recipient" or "Grantee," pursuant to Public Law 111-11, Section 9504(b). The following section, provided in full text, authorizes Reclamation to award this financial assistance agreement:

SEC. 9504. WATER MANAGEMENT IMPROVEMENT.
(b) Research Agreements-
(1) AUTHORITY OF SECRETARY- The Secretary may enter into 1 or more agreements with any university, nonprofit research institution, or organization with water or power delivery authority to fund any research activity that is designed--
(A) to conserve water resources;
(B) to increase the efficiency of the use of water resources; or
(C) to enhance the management of water resources, including increasing the use of renewable energy in the management and delivery of water.
(2) TERMS AND CONDITIONS OF SECRETARY-
(A) IN GENERAL- An agreement entered into between the Secretary and any university, institution, or organization described in paragraph (1) shall be subject to such terms and conditions as the Secretary determines to be appropriate.
(B) AVAILABILITY- The agreements under this subsection shall be available to all Reclamation projects and programs that may benefit from project-specific or programmatic cooperative research and development.

2. PUBLIC PURPOSE OF SUPPORT OR STIMULATION

Resource managers concerned with conservation of natural and cultural resources are faced with increasing management challenges. Such challenges may include water scarcity, land-use conversion, impacts to traditional or historical resources, sensitive species protection and

recovery, invasive species, and a range of other complex issues—all of which are amplified by climate change. In response, the Bureau of Reclamation (Reclamation) is participating in the Desert Landscape Conservation Cooperative (LCC). This effort represents a broader vision of conservation that includes working with partners across landscapes to ensure that science capacity is in place to enable resource managers to successfully address these 21st century conservation challenges.

The objective of this award is to invite States, tribes, irrigation districts, water districts, universities, nonprofit research institutions, nonprofit organizations, and other entities with water or power delivery authority to leverage non-Federal monies and resources by cost sharing with the Bureau of Reclamation on applied science projects, to meet shared priorities with Desert LCC (DLCC) partners, that are designed to enhance the management of natural and cultural resources in a changing climate. This includes analyzing the impacts of climate change and other landscape scale stressors on natural or cultural resources that affect or are affected by water resources management, and developing tools to assess and adapt to those impacts within the boundaries of the Desert LCC. Projects are intended to focus on the shared priorities of Reclamation and LCC partners identified through the formation of the Desert LCC. Projects will also support ongoing efforts under the SECURE Water Act, and the Fish and Wildlife Coordination Act (FWCA).

The goal of this project is to assess the potential for changes in water quality and trophic status of Lake Mead due to increased internal nutrient recycling that may result from warmer water temperatures and lower dissolved oxygen concentrations induced by climate change. The project capitalizes on the three-dimensional hydrodynamic and water quality model previously developed for Lake Mead and builds upon knowledge developed during previous modeling assessments of the effects of climate change on water quality in Lake Mead.

3. BACKGROUND AND OBJECTIVES

Lake Mead, which lies between the states of Nevada and Arizona, is the largest constructed fresh water reservoir in the United States and has multiple uses, including recreation, flood protection, water storage and supply, and power generation, and provides habitat for endangered fish and wildlife. It is part of the Colorado River system, which provides water for 30 million users throughout the Southwestern United States. Southern Nevada Water Authority (SNWA) withdraws water directly from Lake Mead to supply two million customers in the Las Vegas Valley. Lake Mead also receives treated wastewater effluent from the Las Vegas Valley.

Since the reservoir is operated by Reclamation, SNWA's strategy for dealing with changes in source water quality is to investigate potential water quality changes and explore alternative water treatment options. The proposed three-dimensional water quality modeling of Lake Mead will be used by SNWA and others dependent on this system to develop the water treatment strategies necessary to respond to climate-driven water quality changes and to predict the overall quality of the ecosystem.

Over the last decade a three-dimensional hydrodynamic and water quality model of Lake Mead has been created that is capable of providing an accurate, three-dimensional representation of

water quality within the lake. The model has been used to characterize water quality in the lake under various predicted operating scenarios, such as different lake volumes, different drinking water withdrawal planning, and different effluent discharge locations and loadings.

For this project, the Lake Mead model will be improved by adding sediment nutrient fluxes to enable the internal nutrient recycling to be incorporated into simulations. New simulations will be performed to assess the effect of higher sediment nutrient fluxes (resulting from future warmer climates) on the water quality of Lake Mead, and in particular on nutrient and algae concentrations within the lake that may affect downstream water quality (i.e., at the Hoover Dam outlets).

4. PERIOD OF PERFORMANCE AND FUNDS AVAILABILITY

This Agreement becomes effective on the date shown in Block 17a of Form 7-2279, United States of America, Department of the Interior, Bureau of Reclamation, Assistance Agreement. The Agreement shall remain in effect until the date shown in Block 10 of Form 7-2279, United States of America, Department of the Interior, Bureau of Reclamation, Assistance Agreement. The period of performance for this Agreement may only be modified through written modification of the Agreement by a Reclamation Grants Officer (GO).

No legal liability on the part of the Government for any payment may arise until funds are made available, in writing, to the Recipient by the Grants Officer. The total estimated amount of federal funding for this agreement is $149,961, of which the initial amount of federal funds available is limited to $149,961 as indicated by "this obligation" within Block 12 of Form 7-2279, United States of America, Department of the Interior, Bureau of Reclamation, Assistance Agreement. Subject to the availability of Congressional appropriations, subsequent funds will be made available for payment through written modifications to this agreement by a Reclamation Grants Officer.

5. SCOPE OF WORK AND MILESTONES

SNWA proposes the scope of work below to meet project goals:

Task 1: Literature Search on Sediment Nutrient Fluxes

A literature search will be conducted by Flow Science and used to estimate the rates for sediment fluxes of soluble phosphorus, nitrate, and ammonia in Lake Mead. This search will include a brief review of different sediment flux modeling approaches used in the literature, as well as specific quantitative measurements or estimates of sediment flux rates.

While literature specific to sediment fluxes in Lake Mead will be sought, direct information on Lake Mead may be limited. As such, the literature search will also include other lakes on the Colorado River (e.g., Lakes Powell, Mohave, and Havasu), lakes in Southern California that may be filled with Colorado River water (e.g., San Vicente Reservoir, Diamond Valley Reservoir, and Lake Perris), and any other lakes that may be relevant. Ranges of flux rates will be collated for

various lakes, and scientific judgment and experience will be used to identify likely ranges of rates applicable to Lake Mead. Additional reports on Lake Mead bathymetry and sediment surveys will also be obtained to provide insight as to how the sediment deposition rates and the related nutrient flux rates may vary spatially within the lake.

Results of the literature search will be used to form initial estimates of appropriate flux rates for Lake Mead, and these estimates may later be refined through analysis of in-reservoir data (Task 2) and/or preliminary test simulations using the Lake Mead ELCOM/CAEDYM model (Task 3). Results of the search and any analysis used to estimate nutrient flux rates will be summarized in the Project Report (Task 5) and presented at meetings and conferences (Task 6).

Task 2: Collection and Analysis of In-Reservoir Data

In-reservoir data collection, described in Section 1.2.3.2, will be performed by SNWA and SNWA contractors. The nutrient concentrations measured in 2013, including concentrations measured near the sediment-water interface (i.e., near the reservoir bottom), will be plotted and analyzed by Flow Science in order to corroborate and refine the estimates of the sediment nutrient flux rates developed in Task 1. To the extent supported by the data, the impact of water temperature, dissolved oxygen concentrations and pH on nutrient flux rates will be assessed. If necessary, preliminary test simulations using the Lake Mead ELCOM/CAEDYM model will be performed (as part of Task 3) to inform the analysis.

Results of the data collection and analysis (i.e., plots of nutrient concentrations, temperature, dissolved oxygen concentrations, pH, and other relevant parameters) will be provided in the Project Report (Task 5) and presented at meetings and conferences (Task 6).

Task 3: Implement Sediment Nutrient Fluxes

The estimates of sediment nutrient flux rates will be incorporated into the Lake Mead model. ELCOM/CAEDYM source codes will be modified as necessary to enable spatially varying fluxes. This will be performed by Flow Science, who has extensive experience in modifying FORTRAN source codes, and the associated testing and debugging. Specific experience gained through previous implementation of a spatially variable sediment oxygen demand into the Lake Mead model will be leveraged in this effort. Additionally, the testing and debugging process will involve preliminary test simulations that can subsequently be used to inform, corroborate, or refine the flux estimates developed in Tasks 1 and 2 through comparisons of model results to measured in-reservoir nutrient concentrations.

Task 4: Lake Mead Modeling with Internal Nutrient Recycling and Climate Change

The improved Lake Mead ELCOM/CAEDYM model (developed in Tasks 1 - 3) will be used by Flow Science to evaluate the role of increased internal nutrient recycling caused by climate change. Up to four (4) new model simulations will be performed and results of these will be combined with results of two (2) previous simulations, enabling comparative analysis of up to six (6) simulations.

Each of the six (6) ELCOM/CAEDYM model simulations will consist of a continuous two-year simulation of Lake Mead including temperature, salinity, conductivity, dissolved oxygen, TOC, phosphorus, nitrogen, chlorophyll, and two sediment particle sizes. Simulation output will include animations of all model output throughout the lake, times-series plots of key parameters at representative and key locations, statistical metrics (e.g., annual averages) of key parameters tabulated at key locations as well as in the form of plan-view contour plots. Comparative analysis between the simulation results will be performed to identify important trends and changes in water quality parameters arising from increased internal nutrient recycling driven by climate change.

Task 5: Project Report

The final project report will present the information, findings, simulation results, and conclusions from Tasks 1-4. Flow Science will prepare a draft report for SNWA. SNWA will provide comments and Flow Science will prepare a draft final report for review by Reclamation. The SNWA and Flow Science Team will address Reclamation's comments and provide a final project report by the required deadline.

Task 6: Semi-Annual Reports

SNWA will prepare and submit semi-annual reports to Reclamation that include a brief update on the technical progress of the project over the prior six-month period.

Task 7: Project Presentations/Meeting

It is anticipated that two members of the project team (one each from SNWA and Flow Science) will make presentations on the results of the research at two meetings of the Desert LCC stakeholders. In addition, results will be presented in Las Vegas to the Lake Mead Ecosystem Monitoring Workgroup and/or the Lake Mead Water Quality Forum.

Milestone / Task / Activity	Planned Start Date	Planned Completion Date
Task 1	October 1, 2013	December 31, 2013
Task 2	October 1, 2013	July 31, 2014
Task 3	January 1, 2014	July 31, 2014
Task 4	August 1, 2014	January 31, 2015
Task 5	February 1, 2015	September 30, 2015
Task 6	April 1, 2014	March 31, 2015
Task 7	October 1, 2014	September 30, 2015

6. RESPONSIBILITY OF THE PARTIES

6.1 Recipient Responsibilities

6.1.1 The Recipient shall carry out the Scope of Work in accordance with the terms and conditions stated herein. The Recipient shall adhere to Federal, state, and local laws, regulations, and codes, as applicable, and shall obtain all required approvals and permits. If the Scope of

Work contains construction activities, the Recipient is responsible for construction inspection, oversight, and acceptance. If applicable, the Recipient shall also coordinate and obtain approvals from site owners and operators.

6.2 Reclamation Responsibilities

6.2.1 Reclamation will monitor and provide federal oversight of activities performed under this Agreement. Monitoring and oversight includes review and approval of financial status and performance reports, payment requests, and any other deliverables identified as part of the Scope of Work. Additional monitoring activities may include site visits, conference calls, and other on-site and off-site monitoring activities. At the Recipient's request, Reclamation may also provide technical assistance to the Recipient in support of the Scope of Work and objectives of this Agreement.

7. BUDGET

7.1 Budget Estimate. The following is the estimated budget for this Agreement. As federal financial assistance agreements are cost-reimbursable, the budget provided is for estimation purposes only. Final costs incurred under the budget categories listed may be either higher or lower than the estimated costs. All costs incurred by the Recipient under this agreement must be in accordance with any pre-award clarifications conducted between the Recipient and Reclamation, as well as with the terms and conditions of this agreement. Final determination of the allowability, allocability, or reasonableness of costs incurred under this agreement is the responsibility of the Grants Officer. Recipients are encouraged to direct any questions regarding allowability, allocability or reasonableness of costs to the Grants Officer for review prior to incurrence of the costs in question.

BUDGET ITEM DESCRIPTION	COMPUTATION		TOTAL COST
	Price/Unit	Quantity	
SALARIES AND WAGES --Position title x hourly wage/salary x est. hours for assisted activity. Describe this information for each position.			
Todd Tietjen	$63.00/hr.	1000	$63,000
SNWA Water Quality Laboratory Scientist	$50.00/hr.	200	$10,000
SNWA Water Quality Monitoring Field Specialist	$40.00/hr.	840	$33,600
FRINGE BENEFITS – Explain the type of fringe benefits and how applied to various categories of personnel.			
All SNWA Employees	60% of Salary	$106,000	$63,960
TRAVEL—dates; location of travel; method of travel x estimated cost; who will travel			
Transportation (Airfare and Rental Car)	$1,100/LS	1	$1,100
Lodging	$700/LS	1	$700
Per Diem	$200/LS	1	$200
CONTRACTUAL/ CONSTRUCTION—Explain any contracts or sub-Agreements that will be awarded, why needed. Explain contractor qualifications and how the contractor will be selected.			
Flow Science	$147,961/LS	1	$147,961
TOTAL DIRECT COSTS			$320,521
TOTAL ESTIMATED PROJECT COST			$320,521

FUNDING SOURCES	% TOTAL PROJECT COST	TOTAL COST BY SOURCE
RECIPIENT FUNDING	53%	$170,560
RECLAMATION FUNDING	47%	$149,961
TOTALS		**$320,521**

7.2 Cost Sharing Requirement

At least 50% non-federal cost-share is required for costs incurred under this Agreement. If pre-award costs are authorized, reimbursement of these costs is limited to federal cost share percentage identified in this agreement.

7.3 Pre-Award Incurrence of Costs

The Recipient is not authorized to incur costs prior to the award of this Agreement. Costs incurred prior to the award of this agreement are not allowable.

7.4 Allowable Costs (2 CFR Part §225)

Costs incurred for the performance of this Agreement must be allowable, allocable to the project, and reasonable. The following Office of Management and Budget (OMB) Circular, codified within the Code of Federal Regulations (CFR), governs the allowability of costs for Federal financial assistance:

2 CFR Part 225 (OMB Circular A-87), "Cost Principles for State, Local, and Indian Tribal Governments"

Expenditures for the performance of this Agreement must conform to the requirements within this Circular. The Recipient must maintain sufficient documentation to support these expenditures. Questions on the allowability of costs should be directed to the GO responsible for this Agreement.

The Recipient shall not incur costs or obligate funds for any purpose pertaining to operation of the program or activities beyond the expiration date stated in the Agreement. The only costs which are authorized for a period of up to 90 days following the project performance period are those strictly associated with closeout activities for preparation of the final report.

7.5 Changes (43 CFR §12.70).

(a) *General.* Grantees and subgrantees are permitted to rebudget within the approved direct cost budget to meet unanticipated requirements and may make limited program changes to the approved project. However, unless waived by the awarding agency, certain types of post-award changes in budgets and projects shall require the prior written approval of the awarding agency.

(b) *Relation to cost principles.* The applicable cost principles (see 43 §12.62) contain requirements for prior approval of certain types of costs. Except where waived, those requirements apply to all grants and subgrants even if paragraphs (c) through (f) of this section do not.

(c) *Budget changes.*

(1) *Nonconstruction projects.* Except as stated in other regulations or an award document, grantees or subgrantees shall obtain the prior approval of the awarding agency whenever any of the following changes is anticipated under a nonconstruction award:

(i) Any revision which would result in the need for additional funding.

(ii) Unless waived by the awarding agency, cumulative transfers among direct cost categories, or, if applicable, among separately budgeted programs, projects, functions, or activities which exceed or are expected to exceed ten percent of the current total approved budget, whenever the awarding agency's share exceeds $100,000.

(iii) Transfer of funds allotted for training allowances (i.e., from direct payments to trainees to other expense categories).

(2) *Construction projects.* Grantees and subgrantees shall obtain prior written approval for any budget revision which would result in the need for additional funds.

(3) *Combined construction and nonconstruction projects.* When a grant or subgrant provides funding for both construction and nonconstruction activities, the grantee or subgrantee must obtain prior written approval from the awarding agency before making any fund or budget transfer from nonconstruction to construction or vice versa.

(d) *Programmatic changes.* Grantees or subgrantees must obtain the prior approval of the awarding agency whenever any of the following actions is anticipated:

(1) Any revision of the scope or objectives of the project (regardless of whether there is an associated budget revision requiring prior approval).

(2) Need to extend the period of availability of funds.

(3) Changes in key persons in cases where specified in an application or a grant award. In research projects, a change in the project director or principal investigator shall always require approval unless waived by the awarding agency.

(4) Under nonconstruction projects, contracting out, subgranting (if authorized by law) or otherwise obtaining the services of a third party to perform activities which are central to the purposes of the award, *unless included in the initial funding proposal.* This approval requirement is in addition to the approval requirements of 43 §12.76 but does not apply to the procurement of equipment, supplies, and general support services.

(e) *Additional prior approval requirements.* The awarding agency may not require prior approval for any budget revision which is not described in paragraph (c) of this section.

(f) *Requesting prior approval.*

(1) A request for prior approval of any budget revision will be in the same budget format the grantee used in its application and shall be accompanied by a narrative justification for the proposed revision.

(2) A request for a prior approval under the applicable Federal cost principles (see §12.62) may be made by letter.

(3) A request by a subgrantee for prior approval will be addressed in writing to the grantee. The grantee will promptly review such request and shall approve or disapprove the request in writing. A grantee will not approve any budget or project revision which is inconsistent with the purpose or terms and conditions of the Federal grant to the grantee. If the revision, requested by the subgrantee would result in a change to the grantee's approved project which requires Federal prior approval, the grantee will obtain the Federal agency's approval before approving the subgrantee's request.

7.6 Modifications

Any changes to this Agreement shall be made by means of a written modification. Reclamation may make changes to the Agreement by means of a unilateral modification to address administrative matters, such as changes in address, no-cost time extensions, or the addition of previously agreed upon funding. Additionally, a unilateral modification may be utilized by Reclamation if it should become necessary to suspend or terminate the Agreement in accordance with 43 CFR 12.83.

All other changes shall be made by means of a bilateral modification to the Agreement. No oral statement made by any person, or written statement by any person other than the GO, shall be allowed in any manner or degree to modify or otherwise effect the terms of the Agreement.

All requests for modification of the Agreement shall be made in writing, provide a full description of the reason for the request, and be sent to the attention of the GO. Any request for project extension shall be made at least 45 days prior to the expiration date of the Agreement or the expiration date of any extension period that may have been previously granted. Any determination to extend the period of performance or to provide follow-on funding for continuation of a project is solely at the discretion of Reclamation.

8. KEY PERSONNEL

8.1 Recipient's Key Personnel

The Recipient's Project Manager for this Agreement shall be:
Todd Tietjen, Ph.D.
Southern Nevada Water Authority
1001 S. Valley View Blvd.
Las Vegas, NV 89107
702-856-5045
todd.tietjen@snwa.org

Changes to Key Personnel require compliance with 43 CFR 12.70(d)(3).

8.2 Reclamation's Key Personnel

8.2.1 Grants Officer (GO):

Michelle A. Maher
Bureau of Reclamation
Financial Assistance Services 84-27850
P.O. Box 25007, Denver Federal Center
Denver Colorado 80225
303-445-2025
mmaher@usbr.gov

(a) The GO is the only official with legal delegated authority to represent Reclamation. The GO's responsibilities include, but are not limited to, the following:

(1) Formally obligate Reclamation to expend funds or change the funding level of the Agreement;

(2) Approve through formal modification changes in the scope of work and/or budget;

(3) Approve through formal modification any increase or decrease in the period of performance of the Agreement;

(4) Approve through formal modification changes in any of the expressed terms, conditions, or specifications of the Agreement;

(5) Be responsible for the overall administration, management, and other non-programmatic aspects of the Agreement including, but not limited to, interpretation of financial assistance statutes, regulations, circulars, policies, and terms of the Agreement;

(6) Where applicable, ensures that Reclamation complies with the administrative requirements required by statutes, regulations, circulars, policies, and terms of the Agreement.

8.2.2 Grants Officer Technical Representative (GOTR):

Genevieve Johnson
Bureau of Reclamation
6150 W. Thunderbird Rd.
Glendale, AZ 85306-4001
623-773-6206
gjohnson@usbr.gov

(a) The GOTR's authority is limited to technical and programmatic aspects of the Agreement. The GOTR's responsibilities include, but are not limited to, the following:

(1) Assist the Recipient, as necessary, in interpreting and carrying out the scope of work in the Agreement;

(2) Review, and where required, approve Recipient reports and submittals as required by the Agreement;

(3) Where applicable, monitor the Recipient to ensure compliance with the technical requirements of the Agreement;

(4) Where applicable, ensure that Reclamation complies with the technical requirements of the Agreement;

(b) The GOTR does <u>not</u> have the authority to and may <u>not</u> issue any technical assistance which:

(1) Constitutes an assignment of additional work outside the scope of work of the Agreement;

(2) In any manner causes an increase or decrease in the total estimated cost or the time required for performance; or

(3) Changes any of the expressed terms, conditions, or specifications of the Agreement.

8.2.3 Grants Management Specialist. The Grants Management Specialist is the primary administrative point of contact for this agreement and should be contacted regarding issues related to the day-to-day management of the agreement. Requests for approval regarding the terms and conditions of the agreement, including but not limited to modifications and prior approval, may only be granted, in writing, by a Reclamation Grants Officer. Please note that for some agreements, the Grants Officer and the Grants Management Specialist may be the same individual.

Shaun M. Wilken
Bureau of Reclamation
Financial Assistance Services 84-27850
P.O. Box 25007, Denver Federal Center
Denver Colorado 80225
303-445-3697
swilken@usbr.gov

9. REPORTING REQUIREMENTS AND DISTRIBUTION

9.1 Noncompliance. Failure to comply with the reporting requirements contained in this Agreement may be considered a material non-compliance with the terms and conditions of the award. Non compliance may result in withholding of payments pending receipt of required reports, denying both the use of funds and matching credit for all or part of the cost of the activity or action not in compliance, whole or partial suspension or termination of the Agreement, recovery of funds paid under the Agreement, withholding of future awards, or other legal remedies in accordance with 43 CFR §12.83.

9.2 Financial Reports. Financial Status Reports shall be submitted by means of the SF-425 and shall be submitted according to the Report Frequency and Distribution schedule below. All financial reports shall be signed by an Authorized Certifying Official for the Recipient's organization.

9.3 Monitoring and reporting program performance (43 CFR §12.80)

(a) *Monitoring by grantees.* Grantees are responsible for managing the day-to-day operations of grant and subgrant supported activities. Grantees must monitor grant and subgrant supported activities to assure compliance with applicable Federal requirements and that performance goals are being achieved. Grantee monitoring must cover each program, function or activity.

(b) *Nonconstruction performance reports.* The Federal agency may, if it decides that performance information available from subsequent applications contains sufficient information to meet its programmatic needs, require the grantee to submit a performance report only upon expiration or termination of grant support. Unless waived by the Federal agency this report will be due on the same date as the final Financial Status Report.

(1) Grantees shall submit annual performance reports unless the awarding agency requires quarterly or semi-annual reports. However, performance reports will not be required more frequently than quarterly. Annual reports shall be due 90 days after the grant year, quarterly or semi-annual reports shall be due 30 days after the reporting period. The final performance report will be due 90 days after the expiration or termination of grant support. If a justified request is submitted by a grantee, the Federal agency may extend the due date for any performance report. Additionally, requirements for unnecessary performance reports may be waived by the Federal agency.

(2) Performance reports will contain, for each grant, brief information on the following:

(i) A comparison of actual accomplishments to the objectives established for the period. Where the output of the project can be quantified, a computation of the cost per unit of output may be required if that information will be useful.

(ii) The reasons for slippage if established objectives were not met.

(iii) Additional pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.

(3) Grantees will not be required to submit more than the original and two copies of performance reports.

(4) Grantees will adhere to the standards in this section in prescribing performance reporting requirements for subgrantees.

(c) *Construction performance reports.* For the most part, on-site technical inspections and certified percentage-of-completion data are relied on heavily by Federal agencies to monitor progress under construction grants and subgrants. The Federal agency will require additional formal performance reports only when considered necessary, and never more frequently than quarterly.

(d) *Significant developments.* Events may occur between the scheduled performance reporting dates which have significant impact upon the grant or subgrant supported activity. In such cases, the grantee must inform the Federal agency as soon as the following types of conditions become known:

(1) Problems, delays, or adverse conditions which will materially impair the ability to meet the objective of the award. This disclosure must include a statement of the action taken, or contemplated, and any assistance needed to resolve the situation.

(2) Favorable developments which enable meeting time schedules and objectives sooner or at less cost than anticipated or producing more beneficial results than originally planned.

(e) Federal agencies may make site visits as warranted by program needs.

(f) *Waivers, extensions.*

(1) Federal agencies may waive any performance report required by this part if not needed.

(2) The grantee may waive any performance report from a subgrantee when not needed. The grantee may extend the due date for any performance report from a subgrantee if the grantee will still be able to meet its performance reporting obligations to the Federal agency.

9.4 Report Frequency and Distribution. The following table sets forth the reporting requirements for this Agreement. Please note the first report due date listed for each type of report.

REQUIRED REPORTS	Interim Reports	Final Report
Performance Report		
Format	No specific format required. See content requirements within Section 9.3 (43 CFR 12.80) above.	Summary of activities completed during the entire period of performance is required. See content requirements within Section 9.3 (43 CFR 12.80) above.
Reporting Frequency	Semi-Annual	Final Report due upon completion of Agreement's period of performance
Reporting Period	**For Semi-Annual Reporting:** October 1 through March 31 and April 1 through September 30.	Entire period of performance
Due Date*	**For Semi-Annual Reporting:** Within 30 days after the end of the Reporting Period.	Within 90 days after the completion date of the Agreement
First Report Due Date	The first performance report is due for reporting period ending March 31, 2014	N/A
Submit to:	Grants Management Specialist	Grants Management Specialist
Federal Financial Report		
Format	SF-425 (all sections must be completed)	SF-425(all sections must be completed)
Reporting Frequency	Semi-Annual	Final Report due upon completion of Agreement's period of performance
Reporting Period	**For Semi-Annual Reporting:** October 1 through March 31 and April 1 through September 30.	Entire period of performance
Due Date*	**For Semi-Annual Reporting:** Within 30 days after the end of the Reporting Period.	Within 90 days after the completion date of the Agreement
First Report Due Date	The first Federal financial report is due for reporting period ending March 31, 2014	N/A
Submit to:	Grants Management Specialist	Grants Management Specialist

* If the completion date is prior to the end of the next reporting period, then no interim report is due for that period. Instead, the Recipient is required only to submit the final financial and performance reports, which will cover the entire period of performance including the last abbreviated reporting period.

10. REGULATORY COMPLIANCE

The Recipient agrees to comply or assist Reclamation with all regulatory compliance requirements and all applicable State, Federal, and local environmental and cultural and paleontological resource protection laws and regulations as applicable to this project. These may include, but are not limited to, the National Environmental Policy Act (NEPA), including the Council on Environmental Quality and Department of the Interior regulations implementing NEPA, the Clean Water Act, the Endangered Species Act, consultation with potentially affected Tribes, and consultation with the State Historic Preservation Office.

Certain environmental and other associated compliance are Federal responsibilities, and will occur as appropriate. Reclamation will identify the need for and will complete any appropriate environmental compliance requirements, as identified above, pertinent to Reclamation pursuant to activities specific to this assisted activity. Environmental and other associated compliance shall be completed prior to the start of this project. As such, notwithstanding any other provision of this Agreement, Reclamation shall not provide any funds to the Recipient for Agreement purposes, and the Recipient shall not begin implementation of the assisted activity described in this Agreement, until Reclamation provides written notice to the Recipient that all applicable environmental and regulatory compliance analyses and clearances have been completed and that the Recipient may begin implementation of the assisted activity. If the Recipient begins project activities that require environmental and other regulatory compliance approval, such as construction activities, prior to receipt of written notice from Reclamation that all such clearances have been obtained, then Reclamation reserves the right to unilaterally terminate this agreement for cause.

11. COPYRIGHTS [43 CFR 12.936(a)]

The recipient may copyright any work that is subject to copyright and was developed, or for which ownership was purchased, under an award. The Federal awarding agency(ies) reserves a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so.

12. RIGHTS TO DATA

The Federal Government has the right to obtain, reproduce, publish or otherwise use the data first produced under an award; and authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes.

II. RECLAMATION STANDARD TERMS AND CONDITIONS - STATES, LOCAL GOVERNMENTS, AND FEDERALLY RECOGNIZED INDIAN TRIBAL GOVERNMENTS

1. REGULATIONS

The regulations at 43 CFR, Part 12, Subparts A, C, E, and F, are hereby incorporated by reference as though set forth in full text. The following Office of Management and Budget (OMB) Circulars, as applicable, and as implemented by 43 CFR Part 12, are also incorporated by reference and made a part of this Agreement. Failure of a Recipient to comply with any applicable regulation or circular may be the basis for withholding payments for proper charges made by the Recipient and/or for termination of support.

1.1 Colleges and Universities that are Recipients or sub-recipients shall use the following:

2 CFR Parts 215 and 220 (Circular A 21), "Cost Principles for Educational Institutions"

Circular A 110, as amended September 30, 1999, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations" (Codification by Department of Interior, 43 CFR 12, Subpart F)

Circular A-133, revised June 27, 2003, "Audits of States, Local Governments, and Non-Profit Organizations"

1.2 State, Local and Tribal Governments that are Recipients or sub-recipients shall use the following:

2 CFR Part 225 (Circular A 87), "Cost Principles for State, Local, and Indian Tribal Governments"

Circular A 102, as amended August 29, 1997, "Grants and Cooperative Agreements with State and Local Governments" (Grants Management Common Rule, Codification by Department of Interior, 43 CFR 12, Subpart C)

Circular A-133, revised June 27, 2003, Audits of States, Local Governments, and Non-Profit Organizations"

1.3 Nonprofit Organizations that are Recipients or sub-recipients shall use the following:

2 CFR Part 230 (Circular A 122), "Cost Principles for Non-Profit Organizations"

Circular A 110, as amended September 30, 1999, "Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations" (Codification by Department of Interior, 43 CFR 12, Subpart F)

Circular A-133, revised June 27, 2003, "Audits of States, Local Governments, and Non-Profit Organizations"

1.4 Organizations other than those indicated above that are Recipients or sub-recipients shall use the basic principles of OMB Circular A-110 (Codification by Department of Interior, 43 CFR 12, Subpart F), and cost principles shall be in accordance with 48 CFR Subpart 31.2.

1.5 43 CFR 12.77 sets forth further regulations that govern the award and administration of subawards by State governments.

2. PAYMENT

2.1 Payment Standards. (43 CFR §12.61)

(a) *Scope.* This section prescribes the basic standard and the methods under which a Federal agency will make payments to grantees, and grantees will make payments to subgrantees and contractors.

(b) *Basic standard.* Methods and procedures for payment shall minimize the time elapsing between the transfer of funds and disbursement by the grantee or subgrantee, in accordance with Treasury regulations at 31 CFR part 205.

(c) *Advances.* Grantees and subgrantees shall be paid in advance, provided they maintain or demonstrate the willingness and ability to maintain procedures to minimize the time elapsing between the transfer of the funds and their disbursement by the grantee or subgrantee.

(d) *Reimbursement.* Reimbursement shall be the preferred method when the requirements in paragraph (c) of this section are not met. Grantees and subgrantees may also be paid by reimbursement for any construction grant. Except as otherwise specified in regulation, Federal agencies shall not use the percentage of completion method to pay construction grants. The grantee or subgrantee may use that method to pay its construction contractor, and if it does, the awarding agency's payments to the grantee or subgrantee will be based on the grantee's or subgrantee's actual rate of disbursement.

(e) *Working capital advances.* If a grantee cannot meet the criteria for advance payments described in paragraph (c) of this section, and the Federal agency has determined that reimbursement is not feasible because the grantee lacks sufficient working capital, the awarding agency may provide cash or a working capital advance basis. Under this procedure the awarding agency shall advance cash to the grantee to cover its estimated disbursement needs for an initial period generally geared to the grantee's disbursing cycle. Thereafter, the awarding agency shall reimburse the grantee for its actual cash disbursements. The working capital advance method of payment shall not be used by grantees or subgrantees if the reason for using such method is the unwillingness or inability of the grantee to provide timely advances to the subgrantee to meet the subgrantee's actual cash disbursements.

(f) *Effect of program income, refunds, and audit recoveries on payment.*

(1) Grantees and subgrantees shall disburse repayments to and interest earned on a revolving fund before requesting additional cash payments for the same activity.

(2) Except as provided in paragraph (f)(1) of this section, grantees and subgrantees shall disburse program income, rebates, refunds, contract settlements, audit recoveries and interest earned on such funds before requesting additional cash payments.

(g) *Withholding payments.*

(1) Unless otherwise required by Federal statute, awarding agencies shall not withhold payments for proper charges incurred by grantees or subgrantees unless—

(i) The grantee or subgrantee has failed to comply with grant award conditions, or

(ii) The grantee or subgrantee is indebted to the United States.

(2) Cash withheld for failure to comply with grant award condition, but without suspension of the grant, shall be released to the grantee upon subsequent compliance. When a grant is suspended, payment adjustments will be made in accordance with §12.83(c).

(3) A Federal agency shall not make payment to grantees for amounts that are withheld by grantees or subgrantees from payment to contractors to assure satisfactory completion of work. Payments shall be made by the Federal agency when the grantees or subgrantees actually disburse the withheld funds to the contractors or to escrow accounts established to assure satisfactory completion of work.

(h) *Cash depositories.*

(1) Consistent with the national goal of expanding the opportunities for minority business enterprises, grantees and subgrantees are encouraged to use minority banks (a bank which is owned at least 50 percent by minority group members). A list of minority owned banks can be obtained from the Minority Business Development Agency, Department of Commerce, Washington, DC 20230.

(2) A grantee or subgrantee shall maintain a separate bank account only when required by Federal-State Agreement.

(i) *Interest earned on advances.* Except for interest earned on advances of funds exempt under the Intergovernmental Cooperation Act (31 U.S.C. 6501 et seq.) and the Indian Self-Determination Act (23 U.S.C. 450), grantees and subgrantees shall promptly, but at least quarterly, remit interest earned on advances to the Federal agency. The grantee or subgrantee may keep interest amounts up to $100 per year for administrative expenses.

2.2 Payment Method

Requesting Payments -- Requests for advance or reimbursement may be made by the following methods:

(1) SF-270, Request for Advance or Reimbursement - Recipients may submit an original and properly certified SF-270 form to the GO. Requests for reimbursement may be submitted on a monthly basis or more frequently if authorized by the (GO). Recipients may not request advance payments for anticipated expenses that are greater than one month in advance of the request. This method will not be available after September 30, 2013. After this date, the only available method for request and receipt of payment is the Automated Standard Application for Payment method listed below.

(2) SF-271, Outlay Report and Request for Reimbursement for Construction Programs - The SF-271 shall be used for construction Agreements paid by the reimbursement method, letter of credit, electronic funds transfer, or Treasury check advance, except where the advance is based on periodic requests from the Recipient, in which case the SF-270 shall be used. This request may be submitted on a quarterly basis, but no less frequently than on an annual basis. Recipients may submit an original, properly certified SF-271 form to the GO. This method will not be available after September 30, 2013. After this date, the only available method for request and receipt of payment is the Automated Standard Application for Payment method listed below.

(3) Automated Standard Application for Payments (ASAP) - Recipients may utilize the Department of Treasury ASAP payment system to request advances or reimbursements prior to October 1, 2013. ASAP is a Recipient-initiated payment and information system designed to provide a single point of contact for the request and delivery of Federal funds. Further information regarding ASAP may be obtained from the ASAP website at http://www.fms.treas.gov/asap. Recipient procedures must minimize the time elapsing between the drawdown of federal funds and the disbursement for agreement purposes. Please note that prior to October 1, 2013, all recipients must complete enrollment with ASAP under Reclamation's Agency Location Code for all active financial assistance agreements with Reclamation. After October 1, 2013, ASAP will be the only allowable method for request and receipt of payment.

For information regarding ASAP enrollment, please visit www.usbr.gov/mso/aamd/asap.html or contact the Reclamation ASAP Help Desk BOR_ASAP_Enroll@usbr.gov.

Please note that ASAP enrollment is specific to each Agency and Bureau. If the recipient organization have an existing ASAP account with another Federal agency or Department of the Interior bureau, but not with Reclamation, then the Recipient must initiate and complete enrollment through submission of an enrollment form found at http://www.usbr.gov/mso/aamd/asap.html.

3. PROCUREMENT STANDARDS (43 CFR §12.76)

(a) *States.* When procuring property and services under a grant, a State will follow the same policies and procedures it uses for procurements from its non-Federal funds. The State will ensure that every purchase order or other contract includes any clauses required by Federal statutes and executive orders and their implementing regulations. Other grantees and subgrantees will follow paragraphs (b) through (i) in this section.

(b) *Procurement standards.*

(1) Grantees and subgrantees will use their own procurement procedures which reflect applicable State and local laws and regulations, provided that the procurements conform to applicable Federal law and the standards identified in this section.

(2) Grantees and subgrantees will maintain a contract administration system which ensures that contractors perform in accordance with the terms, conditions, and specifications of their contracts or purchase orders.

(3) Grantees and subgrantees will maintain a written code of standards of conduct governing the performance of their employees engaged in the award and administration of contracts. No employee, officer or agent of the grantee or subgrantee shall participate in selection, or in the award or administration of a contract supported by Federal funds if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when:

(i) The employee, officer or agent,

(ii) Any member of his immediate family,

(iii) His or her partner, or

(iv) An organization which employs, or is about to employ, any of the above, has a financial or other interest in the firm selected for award. The grantee's or subgrantee's officers, employees or agents will neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential contractors, or parties to subagreements. Grantee and subgrantees may set minimum rules where the financial interest is not substantial or the gift is an unsolicited item of nominal intrinsic value. To the extent permitted by State or local law or regulations, such standards or conduct will provide for penalties, sanctions, or other disciplinary actions for violations of such standards by the grantee's and subgrantee's officers, employees, or agents, or by contractors or their agents. The awarding agency may in regulation provide additional prohibitions relative to real, apparent, or potential conflicts of interest.

(4) Grantee and subgrantee procedures will provide for a review of proposed procurements to avoid purchase of unnecessary or duplicative items. Consideration should be given to consolidating or breaking out procurements to obtain a more economical purchase. Where appropriate, an analysis will be made of lease versus purchase alternatives, and any other appropriate analysis to determine the most economical approach.

(5) To foster greater economy and efficiency, grantees and subgrantees are encouraged to enter into State and local intergovernmental agreements for procurement or use of common goods and services.

(6) Grantees and subgrantees are encouraged to use Federal excess and surplus property in lieu of purchasing new equipment and property whenever such use is feasible and reduces project costs.

(7) Grantees and subgrantees are encouraged to use value engineering clauses in contracts for construction projects of sufficient size to offer reasonable opportunities for cost reductions. Value engineering is a systematic and creative analysis of each contract item or task to ensure that its essential function is provided at the overall lower cost.

(8) Grantees and subgrantees will make awards only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement. Consideration will be given to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.

(9) Grantees and subgrantees will maintain records sufficient to detail the significant history of a procurement. These records will include, but are not necessarily limited to the following: rationale for the method of procurement, selection of contract type, contractor selection or rejection, and the basis for the contract price.

(10) Grantees and subgrantees will use time and material type contracts only—

(i) After a determination that no other contract is suitable, and

(ii) If the contract includes a ceiling price that the contractor exceeds at its own risk.

(11) Grantees and subgrantees alone will be responsible, in accordance with good administrative practice and sound business judgment, for the settlement of all contractual and administrative issues arising out of procurements. These issues include, but are not limited to source evaluation, protests, disputes, and claims. These standards do not relieve the grantee or subgrantee of any contractual responsibilities under its contracts. Federal agencies will not substitute their judgment for that of the grantee or subgrantee unless the matter is primarily a Federal concern. Violations of law will be referred to the local, State, or Federal authority having proper jurisdiction.

(12) Grantees and subgrantees will have protest procedures to handle and resolve disputes relating to their procurements and shall in all instances disclose information regarding the protest to the awarding agency. A protestor must exhaust all administrative remedies with the grantee and subgrantee before pursuing a protest with the Federal agency. Reviews of protests by the Federal agency will be limited to:

(i) Violations of Federal law or regulations and the standards of this section (violations of State or local law will be under the jurisdiction of State or local authorities) and

(ii) Violations of the grantee's or subgrantee's protest procedures for failure to review a complaint or protest. Protests received by the Federal agency other than those specified above will be referred to the grantee or subgrantee.

(c) *Competition.*

(1) All procurement transactions will be conducted in a manner providing full and open competition consistent with the standards of §12.76. Some of the situations considered to be restrictive of competition include but are not limited to:

(i) Placing unreasonable requirements on firms in order for them to qualify to do business,

(ii) Requiring unnecessary experience and excessive bonding,

(iii) Noncompetitive pricing practices between firms or between affiliated companies,

(iv) Noncompetitive awards to consultants that are on retainer contracts,

(v) Organizational conflicts of interest,

(vi) Specifying only a "brand name" product instead of allowing "an equal" product to be offered and describing the performance of other relevant requirements of the procurement, and

(vii) Any arbitrary action in the procurement process.

(2) Grantees and subgrantees will conduct procurements in a manner that prohibits the use of statutorily or administratively imposed in-State or local geographical preferences in the evaluation of bids or proposals, except in those cases where applicable Federal statutes expressly mandate or encourage geographic preference. Nothing in this section preempts State licensing laws. When contracting for architectural and engineering (A/E) services, geographic location may be a selection criteria provided its application leaves an appropriate number of qualified firms, given the nature and size of the project, to compete for the contract.

(3) Grantees will have written selection procedures for procurement transactions. These procedures will ensure that all solicitations:

(i) Incorporate a clear and accurate description of the technical requirements for the material, product, or service to be procured. Such description shall not, in competitive procurements, contain features which unduly restrict competition. The description may include a statement of the qualitative nature of the material, product or service to be procured, and when necessary, shall set forth those minimum essential characteristics and standards to which it must conform if it is to satisfy its intended use. Detailed product

specifications should be avoided if at all possible. When it is impractical or uneconomical to make a clear and accurate description of the technical requirements, a "brand name or equal" description may be used as a means to define the performance or other salient requirements of a procurement. The specific features of the named brand which must be met by offerors shall be clearly stated; and

(ii) Identify all requirements which the offerors must fulfill and all other factors to be used in evaluating bids or proposals.

(4) Grantees and subgrantees will ensure that all prequalified lists of persons, firms, or products which are used in acquiring goods and services are current and include enough qualified sources to ensure maximum open and free competition. Also, grantees and subgrantees will not preclude potential bidders from qualifying during the solicitation period.

(d) *Methods of procurement to be followed*—(1) *Procurement by small purchase procedures.* Small purchase procedures are those relatively simple and informal procurement methods for securing services, supplies, or other property that do not cost more than the simplified acquisition threshold fixed at 41 U.S.C. 403(11) (currently set at $150,000). If small purchase procedures are used, price or rate quotations shall be obtained from an adequate number of qualified sources.

(2) Procurement by *sealed bids* (formal advertising). Bids are publicly solicited and a firm-fixed-price contract (lump sum or unit price) is awarded to the responsible bidder whose bid, conforming with all the material terms and conditions of the invitation for bids, is the lowest in price. The sealed bid method is the preferred method for procuring construction, if the conditions in §12.76(d)(2)(i) apply.

(i) In order for sealed bidding to be feasible, the following conditions should be present:

(A) A complete, adequate, and realistic specification or purchase description is available;

(B) Two or more responsible bidders are willing and able to compete effectively and for the business; and

(C) The procurement lends itself to a firm fixed price contract and the selection of the successful bidder can be made principally on the basis of price.

(ii) If sealed bids are used, the following requirements apply:

(A) The invitation for bids will be publicly advertised and bids shall be solicited from an adequate number of known suppliers, providing them sufficient time prior to the date set for opening the bids;

(B) The invitation for bids, which will include any specifications and pertinent attachments, shall define the items or services in order for the bidder to properly respond;

(C) All bids will be publicly opened at the time and place prescribed in the invitation for bids;

(D) A firm fixed-price contract award will be made in writing to the lowest responsive and responsible bidder. Where specified in bidding documents, factors such as discounts, transportation cost, and life cycle costs shall be considered in determining which bid is lowest. Payment discounts will only be used to determine the low bid when prior experience indicates that such discounts are usually taken advantage of; and

(E) Any or all bids may be rejected if there is a sound documented reason.

(3) Procurement by *competitive proposals.* The technique of competitive proposals is normally conducted with more than one source submitting an offer, and either a fixed-price or cost-reimbursement type contract is awarded. It is generally used when conditions are not appropriate for the use of sealed bids. If this method is used, the following requirements apply:

(i) Requests for proposals will be publicized and identify all evaluation factors and their relative importance. Any response to publicized requests for proposals shall be honored to the maximum extent practical;

(ii) Proposals will be solicited from an adequate number of qualified sources;

(iii) Grantees and subgrantees will have a method for conducting technical evaluations of the proposals received and for selecting awardees;

(iv) Awards will be made to the responsible firm whose proposal is most advantageous to the program, with price and other factors considered; and

(v) Grantees and subgrantees may use competitive proposal procedures for qualifications-based procurement of architectural/engineering (A/E) professional services whereby competitors' qualifications are evaluated and the most qualified competitor is selected, subject to negotiation of fair and reasonable compensation. The method, where price is not used as a selection factor, can only be used in procurement of A/E professional services. It cannot be used to purchase other types of services though A/E firms are a potential source to perform the proposed effort.

(4) Procurement by *noncompetitive proposals* is procurement through solicitation of a proposal from only one source, or after solicitation of a number of sources, competition is determined inadequate.

(i) Procurement by noncompetitive proposals may be used only when the award of a contract is infeasible under small purchase procedures, sealed bids or competitive proposals and one of the following circumstances applies:

(A) The item is available only from a single source;

(B) The public exigency or emergency for the requirement will not permit a delay resulting from competitive solicitation;

(C) The awarding agency authorizes noncompetitive proposals; or

(D) After solicitation of a number of sources, competition is determined inadequate.

(ii) Cost analysis, i.e., verifying the proposed cost data, the projections of the data, and the evaluation of the specific elements of costs and profits, is required.

(iii) Grantees and subgrantees may be required to submit the proposed procurement to the awarding agency for pre-award review in accordance with paragraph (g) of this section.

(e) *Contracting with small and minority firms, women's business enterprise and labor surplus area firms.* (1) The grantee and subgrantee will take all necessary affirmative steps to assure that minority firms, women's business enterprises, and labor surplus area firms are used when possible.

(2) Affirmative steps shall include:

(i) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(ii) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(iii) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;

(iv) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises;

(v) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce; and

(vi) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (e)(2) (i) through (v) of this section.

(f) *Contract cost and price.*

(1) Grantees and subgrantees must perform a cost or price analysis in connection with every procurement action including contract modifications. The method and degree of analysis is

dependent on the facts surrounding the particular procurement situation, but as a starting point, grantees must make independent estimates before receiving bids or proposals. A cost analysis must be performed when the offeror is required to submit the elements of his estimated cost, e.g., under professional, consulting, and architectural engineering services contracts. A cost analysis will be necessary when adequate price competition is lacking, and for sole source procurements, including contract modifications or change orders, unless price reasonableness can be established on the basis of a catalog or market price of a commercial product sold in substantial quantities to the general public or based on prices set by law or regulation. A price analysis will be used in all other instances to determine the reasonableness of the proposed contract price.

(2) Grantees and subgrantees will negotiate profit as a separate element of the price for each contract in which there is no price competition and in all cases where cost analysis is performed. To establish a fair and reasonable profit, consideration will be given to the complexity of the work to be performed, the risk borne by the contractor, the contractor's investment, the amount of subcontracting, the quality of its record of past performance, and industry profit rates in the surrounding geographical area for similar work.

(3) Costs or prices based on estimated costs for contracts under grants will be allowable only to the extent that costs incurred or cost estimates included in negotiated prices are consistent with Federal cost principles (see §12.62). Grantees may reference their own cost principles that comply with the applicable Federal cost principles.

(4) The cost plus a percentage of cost and percentage of construction cost methods of contracting shall not be used.

(g) *Awarding agency review.*

(1) Grantees and subgrantees must make available, upon request of the awarding agency, technical specifications on proposed procurements where the awarding agency believes such review is needed to ensure that the item and/or service specified is the one being proposed for purchase. This review generally will take place prior to the time the specification is incorporated into a solicitation document. However, if the grantee or subgrantee desires to have the review accomplished after a solicitation has been developed, the awarding agency may still review the specifications, with such review usually limited to the technical aspects of the proposed purchase.

(2) Grantees and subgrantees must on request make available for awarding agency pre-award review procurement documents, such as requests for proposals or invitations for bids, independent cost estimates, etc. when:

(i) A grantee's or subgrantee's procurement procedures or operation fails to comply with the procurement standards in this section; or

(ii) The procurement is expected to exceed the simplified acquisition threshold and is to be awarded without competition or only one bid or offer is received in response to a solicitation; or

(iii) The procurement, which is expected to exceed the simplified acquisition threshold, specifies a "brand name" product; or

(iv) The proposed award is more than the simplified acquisition threshold and is to be awarded to other than the apparent low bidder under a sealed bid procurement; or

(v) A proposed contract modification changes the scope of a contract or increases the contract amount by more than the simplified acquisition threshold.

(3) A grantee or subgrantee will be exempt from the pre-award review in paragraph (g)(2) of this section if the awarding agency determines that its procurement systems comply with the standards of this section.

(i) A grantee or subgrantee may request that its procurement system be reviewed by the awarding agency to determine whether its system meets these standards in order for its system to be certified. Generally, these reviews shall occur where there is a continuous high-dollar funding, and third-party contracts are awarded on a regular basis.

(ii) A grantee or subgrantee may self-certify its procurement system. Such self-certification shall not limit the awarding agency's right to survey the system. Under a self-certification procedure, awarding agencies may wish to rely on written assurances from the grantee or subgrantee that it is complying with these standards. A grantee or subgrantee will cite specific procedures, regulations, standards, etc., as being in compliance with these requirements and have its system available for review.

(h) *Bonding requirements.* For construction or facility improvement contracts or subcontracts exceeding the simplified acquisition threshold, the awarding agency may accept the bonding policy and requirements of the grantee or subgrantee provided the awarding agency has made a determination that the awarding agency's interest is adequately protected. If such a determination has not been made, the minimum requirements shall be as follows:

(1) *A bid guarantee from each bidder equivalent to five percent of the bid price.* The "bid guarantee" shall consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of his bid, execute such contractual documents as may be required within the time specified.

(2) *A performance bond on the part of the contractor for 100 percent of the contract price.* A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.

(3) *A payment bond on the part of the contractor for 100 percent of the contract price.* A "payment bond" is one executed in connection with a contract to assure payment as required

by law of all persons supplying labor and material in the execution of the work provided for in the contract.

(i) *Contract provisions.* A grantee's and subgrantee's contracts must contain provisions in paragraph (i) of this section. Federal agencies are permitted to require changes, remedies, changed conditions, access and records retention, suspension of work, and other clauses approved by the Office of Federal Procurement Policy.

(1) Administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate. (Contracts more than the simplified acquisition threshold)

(2) Termination for cause and for convenience by the grantee or subgrantee including the manner by which it will be effected and the basis for settlement. (All contracts in excess of $10,000)

(3) Compliance with Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR chapter 60). (All construction contracts awarded in excess of $10,000 by grantees and their contractors or subgrantees)

(4) Compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3). (All contracts and subgrants for construction or repair)

(5) Compliance with the Davis-Bacon Act (40 U.S.C. 276a to 276a–7) as supplemented by Department of Labor regulations (29 CFR Part 5). (Construction contracts in excess of $2000 awarded by grantees and subgrantees when required by Federal grant program legislation)

(6) Compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327–330) as supplemented by Department of Labor regulations (29 CFR Part 5). (Construction contracts awarded by grantees and subgrantees in excess of $2000, and in excess of $2500 for other contracts which involve the employment of mechanics or laborers)

(7) Notice of awarding agency requirements and regulations pertaining to reporting.

(8) Notice of awarding agency requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.

(9) Awarding agency requirements and regulations pertaining to copyrights and rights in data.

(10) Access by the grantee, the subgrantee, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books,

documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

(11) Retention of all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed.

(12) Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15). (Contracts, subcontracts, and subgrants of amounts in excess of $100,000)

(13) Mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94–163, 89 Stat. 871).

4. EQUIPMENT (43 CFR §12.72)

(a) *Title.* Subject to the obligations and conditions set forth in this section, title to equipment acquired under a grant or subgrant will vest upon acquisition in the grantee or subgrantee respectively.

(b) *States.* A State will use, manage, and dispose of equipment acquired under a grant by the State in accordance with State laws and procedures. Other grantees and subgrantees will follow paragraphs (c) through (e) of this section.

(c) *Use.*

(1) Equipment shall be used by the grantee or subgrantee in the program or project for which it was acquired as long as needed, whether or not the project or program continues to be supported by Federal funds. When no longer needed for the original program or project, the equipment may be used in other activities currently or previously supported by a Federal agency.

(2) The grantee or subgrantee shall also make equipment available for use on other projects or programs currently or previously supported by the Federal Government, providing such use will not interfere with the work on the projects or program for which it was originally acquired. First preference for other use shall be given to other programs or projects supported by the awarding agency. User fees should be considered if appropriate.

(3) Notwithstanding the encouragement in §12.65(a) to earn program income, the grantee or subgrantee must not use equipment acquired with grant funds to provide services for a fee to compete unfairly with private companies that provide equivalent services, unless specifically permitted or contemplated by Federal statute.

(4) When acquiring replacement equipment, the grantee or subgrantee may use the equipment to be replaced as a trade-in or sell the property and use the proceeds to offset the cost of the replacement property, subject to the approval of the awarding agency.

(d) *Management requirements.* Procedures for managing equipment (including replacement equipment), whether acquired in whole or in part with grant funds, until disposition takes place will, as a minimum, meet the following requirements:

(1) Property records must be maintained that include a description of the property, a serial number or other identification number, the source of property, who holds title, the acquisition date, and cost of the property, percentage of Federal participation in the cost of the property, the location, use and condition of the property, and any ultimate disposition data including the date of disposal and sale price of the property.

(2) A physical inventory of the property must be taken and the results reconciled with the property records at least once every two years.

(3) A control system must be developed to ensure adequate safeguards to prevent loss, damage, or theft of the property. Any loss, damage, or theft shall be investigated.

(4) Adequate maintenance procedures must be developed to keep the property in good condition.

(5) If the grantee or subgrantee is authorized or required to sell the property, proper sales procedures must be established to ensure the highest possible return.

(e) *Disposition.* When original or replacement equipment acquired under a grant or subgrant is no longer needed for the original project or program or for other activities currently or previously supported by a Federal agency, disposition of the equipment will be made as follows:

(1) Items of equipment with a current per-unit fair market value of less than $5,000 may be retained, sold or otherwise disposed of with no further obligation to the awarding agency.

(2) Items of equipment with a current per unit fair market value in excess of $5,000 may be retained or sold and the awarding agency shall have a right to an amount calculated by multiplying the current market value or proceeds from sale by the awarding agency's share of the equipment.

(3) In cases where a grantee or subgrantee fails to take appropriate disposition actions, the awarding agency may direct the grantee or subgrantee to take excess and disposition actions.

(f) *Federal equipment.* In the event a grantee or subgrantee is provided Federally-owned equipment:

(1) Title will remain vested in the Federal Government.

(2) Grantees or subgrantees will manage the equipment in accordance with Federal agency rules and procedures, and submit an annual inventory listing.

(3) When the equipment is no longer needed, the grantee or subgrantee will request disposition instructions from the Federal agency.

(g) *Right to transfer title.* The Federal awarding agency may reserve the right to transfer title to the Federal Government or a third part named by the awarding agency when such a third party is otherwise eligible under existing statutes. Such transfers shall be subject to the following standards:

(1) The property shall be identified in the grant or otherwise made known to the grantee in writing.

(2) The Federal awarding agency shall issue disposition instruction within 120 calendar days after the end of the Federal support of the project for which it was acquired. If the Federal awarding agency fails to issue disposition instructions within the 120 calendar-day period the grantee shall follow 12.72(e).

(3) When title to equipment is transferred, the grantee shall be paid an amount calculated by applying the percentage of participation in the purchase to the current fair market value of the property.

5. SUPPLIES (43 CFR §12.73)

(a) *Title.* Title to supplies acquired under a grant or subgrant will vest, upon acquisition, in the grantee or subgrantee respectively.

(b) *Disposition.* If there is a residual inventory of unused supplies exceeding $5,000 in total aggregate fair market value upon termination or completion of the award, and if the supplies are not needed for any other Federally sponsored programs or projects, the grantee or subgrantee shall compensate the awarding agency for its share.

6. INSPECTION

Reclamation has the right to inspect and evaluate the work performed or being performed under this Agreement, and the premises where the work is being performed, at all reasonable times and in a manner that will not unduly delay the work. If Reclamation performs inspection or evaluation on the premises of the Recipient or a sub-Recipient, the Recipient shall furnish and shall require sub-recipients to furnish all reasonable facilities and assistance for the safe and convenient performance of these duties.

7. AUDIT (31 U.S.C. 7501-7507)

Non-Federal entities that expend $500,000 or more in a year in Federal awards shall have a single or program-specific audit conducted for that year in accordance with the Single Audit Act Amendments of 1996 (31 U.S.C. 7501-7507) and revised OMB Circular A-133. Federal awards are defined as Federal financial assistance and Federal cost-reimbursement contracts that non-Federal entities receive directly from Federal awarding agencies or indirectly from pass-through entities. They do not include procurement contracts, under grants or contracts, used to buy goods or services from vendors. Non-Federal entities that expend less than $500,000 a year in Federal awards are exempt from Federal audit requirements for that year, except as noted in A-133, §___.215(a), but records must be available for review or audit by appropriate officials of the Federal agency, pass-through entity, and General Accounting Office (GAO).

8. ENFORCEMENT (43 CFR §12.83)

(a) *Remedies for noncompliance.* If a grantee or subgrantee materially fails to comply with any term of an award, whether stated in a Federal statute or regulation, an assurance, in a State plan or application, a notice of award, or elsewhere, the awarding agency may take one or more of the following actions, as appropriate in the circumstances:

(1) Temporarily withhold cash payments pending correction of the deficiency by the grantee or subgrantee or more severe enforcement action by the awarding agency,

(2) Disallow (that is, deny both use of funds and matching credit for) all or part of the cost of the activity or action not in compliance,

(3) Wholly or partly suspend or terminate the current award for the grantee's or subgrantee's program,

(4) Withhold further awards for the program, or

(5) Take other remedies that may be legally available.

(b) *Hearings, appeals.* In taking an enforcement action, the awarding agency will provide the grantee or subgrantee an opportunity for such hearing, appeal, or other administrative proceeding to which the grantee or subgrantee is entitled under any statute or regulation applicable to the action involved.

(c) *Effects of suspension and termination.* Costs of grantee or subgrantee resulting from obligations incurred by the grantee or subgrantee during a suspension or after termination of an award are not allowable unless the awarding agency expressly authorizes them in the notice of suspension or termination or subsequently. Other grantee or subgrantee costs during suspension or after termination which are necessary and not reasonably avoidable are allowable if:

(1) The costs result from obligations which were properly incurred by the grantee or subgrantee before the effective date of suspension or termination, are not in anticipation of it, and, in the case of a termination, are noncancellable, and,

(2) The costs would be allowable if the award were not suspended or expired normally at the end of the funding period in which the termination takes effect.

(d) *Relationship to Debarment and Suspension.* The enforcement remedies identified in this section, including suspension and termination, do not preclude grantee or subgrantee from being subject to "Debarment and Suspension" under E.O. 12549 ((2 CFR 29.5.12 and 2 CFR 1400, Subpart C).

9. TERMINATION FOR CONVENIENCE (43 CFR §12.84)

Except as provided in 43 CFR §12.83 awards may be terminated in whole or in part only as follows:

(a) By the awarding agency with the consent of the grantee or subgrantee in which case the two parties shall agree upon the termination conditions, including the effective date and in the case of partial termination, the portion to be terminated, or

(b) By the grantee or subgrantee upon written notification to the awarding agency, setting forth the reasons for such termination, the effective date, and in the case of partial termination, the portion to be terminated. However, if, in the case of a partial termination, the awarding agency determines that the remaining portion of the award will not accomplish the purposes for which the award was made, the awarding agency may terminate the award in its entirety under either §12.83 or paragraph (a) of this section.

10. DEBARMENT AND SUSPENSION (2 CFR §1400)

The Department of the Interior regulations at 2 CFR 1400—Governmentwide Debarment and Suspension (Nonprocurement), which adopt the common rule for the governmentwide system of debarment and suspension for nonprocurement activities, are hereby incorporated by reference and made a part of this Agreement. By entering into this grant or cooperative Agreement with the Bureau of Reclamation, the Recipient agrees to comply with 2 CFR 1400, Subpart C, and agrees to include a similar term or condition in all lower-tier covered transactions. These regulations are available at http://www.gpoaccess.gov/ecfr/.

11. DRUG-FREE WORKPLACE (2 CFR §182 and §1401)

The Department of the Interior regulations at 2 CFR 1401—Governmentwide Requirements for Drug-Free Workplace (Financial Assistance), which adopt the portion of the Drug-Free Workplace Act of 1988 (41 U.S.C. 701 et seq, as amended) applicable to grants and cooperative

agreements, are hereby incorporated by reference and made a part of this agreement. By entering into this grant or cooperative agreement with the Bureau of Reclamation, the Recipient agrees to comply with 2 CFR 182.

12. ASSURANCES AND CERTIFICATIONS INCORPORATED BY REFERENCE

The provisions of the Assurances, SF 424B or SF 424D as applicable, executed by the Recipient in connection with this Agreement shall apply with full force and effect to this Agreement. All anti-discrimination and equal opportunity statutes, regulations, and Executive Orders that apply to the expenditure of funds under Federal contracts, grants, and cooperative Agreements, loans, and other forms of Federal assistance. The Recipient shall comply with Title VI or the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and any program-specific statutes with anti-discrimination requirements. The Recipient shall comply with civil rights laws including, but not limited to, the Fair Housing Act, the Fair Credit Reporting Act, the Americans with Disabilities Act, Title VII of the Civil Rights Act of 1964, the Equal Educational Opportunities Act, the Age Discrimination in Employment Act, and the Uniform Relocation Act.

Such Assurances also include, but are not limited to, the promise to comply with all applicable Federal statutes and orders relating to nondiscrimination in employment, assistance, and housing; the Hatch Act; Federal wage and hour laws and regulations and work place safety standards; Federal environmental laws and regulations and the Endangered Species Act; and Federal protection of rivers and waterways and historic and archeological preservation.

13. COVENANT AGAINST CONTINGENT FEES

The Recipient warrants that no person or agency has been employed or retained to solicit or secure this Agreement upon an Agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide offices established and maintained by the Recipient for the purpose of securing Agreements or business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability or, in its discretion, to deduct from the Agreement amount, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee

14. TRAFFICKING VICTIMS PROTECTION ACT OF 2000 (2 CFR §175.15)

Trafficking in persons.

(a) *Provisions applicable to a recipient that is a private entity.*

(1) You as the recipient, your employees, subrecipients under this award, and subrecipients' employees may not

(i) Engage in severe forms of trafficking in persons during the period of time that the award is in effect;

(ii) Procure a commercial sex act during the period of time that the award is in effect; or

(iii) Use forced labor in the performance of the award or subawards under the award.

(2) We as the Federal awarding agency may unilaterally terminate this award, without penalty, if you or a subrecipient that is a private entity —

(i) Is determined to have violated a prohibition in paragraph a.1 of this award term; or

(ii) Has an employee who is determined by the agency official authorized to terminate the award to have violated a prohibition in paragraph a.1 of this award term through conduct that is either

(A) Associated with performance under this award; or

(B) Imputed to you or the subrecipient using the standards and due process for imputing the conduct of an individual to an organization that are provided in 2 CFR part 180, "OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," as implemented by our agency at *2 CFR part 1400.*

(b) *Provision applicable to a recipient other than a private entity.* We as the Federal awarding agency may unilaterally terminate this award, without penalty, if a subrecipient that is a private entity—

(1) Is determined to have violated an applicable prohibition in paragraph a.1 of this award term; or

(2) Has an employee who is determined by the agency official authorized to terminate the award to have violated an applicable prohibition in paragraph a.1 of this award term through conduct that is either

(i) Associated with performance under this award; or

(ii) Imputed to the subrecipient using the standards and due process for imputing the conduct of an individual to an organization that are provided in 2 CFR part 180, "OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," as implemented by our agency at *2 CFR part 1400.*

(c) *Provisions applicable to any recipient* .

(1) You must inform us immediately of any information you receive from any source alleging a violation of a prohibition in paragraph a.1 of this award term.

(2) Our right to terminate unilaterally that is described in paragraph a.2 or b of this section:

(i) Implements section 106(g) of the Trafficking Victims Protection Act of 2000 (TVPA), as amended (22 U.S.C. 7104(g)), and

(ii) Is in addition to all other remedies for noncompliance that are available to us under this award.

(3) You must include the requirements of paragraph a.1 of this award term in any subaward you make to a private entity.

(d) *Definitions* . For purposes of this award term:

(1) "Employee" means either:

(i) An individual employed by you or a subrecipient who is engaged in the performance of the project or program under this award; or

(ii) Another person engaged in the performance of the project or program under this award and not compensated by you including, but not limited to, a volunteer or individual whose services are contributed by a third party as an in-kind contribution toward cost sharing or matching requirements.

(2) "Forced labor" means labor obtained by any of the following methods: the recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery.

(3) "Private entity":

(i) Means any entity other than a State, local government, Indian tribe, or foreign public entity, as those terms are defined in 2 CFR 175.25.

(ii) Includes:

(A) A nonprofit organization, including any nonprofit institution of higher education, hospital, or tribal organization other than one included in the definition of Indian tribe at 2 CFR 175.25(b).

(B) A for-profit organization.

(4) "Severe forms of trafficking in persons," "commercial sex act," and "coercion" have the meanings given at section 103 of the TVPA, as amended (22 U.S.C. 7102).

15. NEW RESTRICTIONS ON LOBBYING (43 CFR §18)

The Recipient agrees to comply with 43 CFR 18, New Restrictions on Lobbying, including the following certification:

(a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Recipient, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying" in accordance with its instructions.

(c) The Recipient shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

16. UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION POLICIES ACT OF 1970 (URA) (42 USC § 4601 *et seq.)*

(a) The Uniform Relocation Assistance Act (URA), 42 U.S.C. § 4601 *et seq.*, as amended, requires certain assurances for Reclamation funded land acquisition projects conducted by a Recipient that cause the displacement of persons, businesses, or farm operations. Because Reclamation funds only support acquisition of property or interests in property from willing sellers, it is not anticipated that Reclamation funds will result in any "displaced persons," as defined under the URA.

(b) However, if Reclamation funds are used for the acquisition of real property that results in displacement, the URA requires Recipients to ensure that reasonable relocation payments and other remedies will be provided to any displaced person. Further, when acquiring real property, Recipients must be guided, to the greatest extent practicable, by the land acquisition policies in 42 U.S.C. § 4651.

(c) Exemptions to the URA and 49 CFR Part 24

(1) The URA provides for an exemption to the appraisal, review and certification rules for those land acquisitions classified as "voluntary transactions." Such "voluntary transactions" are classified as those that do not involve an exercise of eminent domain authority on behalf of a Recipient, and must meet the conditions specified at 49 CFR § 24.101(b)(1)(i)-(iv).

(2) For any land acquisition undertaken by a Recipient that receives Reclamation funds, but does not have authority to acquire the real property by eminent domain, to be exempt from the requirements of 49 CFR Part 24 the Recipient must:

(i) provide written notification to the owner that it will not acquire the property in the event negotiations fail to result in an amicable agreement, and;

(ii) inform the owner in writing of what it believes to be the market value of the property

(d) Review of Land Acquisition Appraisals. Reclamation reserves the right to review any land appraisal whether or not such review is required under the URA or 49 CFR § 24.104. Such reviews may be conducted by the Department of Interior's Appraisal Services Directorate or a Reclamation authorized designee. When Reclamation determines that a review of the original appraisal is necessary, Reclamation will notify the Recipient and provide an estimated completion date of the initial appraisal review.

17. CENTRAL CONTRACTOR REGISTRATION AND UNIVERSAL IDENTIFIER REQUIREMENTS (2 CFR 25, APPENDIX A)

The Central Contractor Registration (CCR) has been migrated to the System for Award Management (SAM). Recipients must continue to comply with the CCR requirements below by maintaining current registration within www.SAM.gov.

A. Requirement for Central Contractor Registration (CCR)
Unless you are exempted from this requirement under 2 CFR 25.110, you as the recipient must maintain the currency of your information in the CCR until you submit the final financial report required under this award or receive the final payment, whichever is later. This requires that you review and update the information at least annually after the initial registration, and more frequently if required by changes in your information or another award term.

B. Requirement for Data Universal Numbering System (DUNS) Numbers
If you are authorized to make subawards under this award, you:

1. Must notify potential subrecipients that no entity (*see* definition in paragraph C of this award term) may receive a subaward from you unless the entity has provided its DUNS number to you.

2. May not make a subaward to an entity unless the entity has provided its DUNS number to you.

C. Definitions
For purposes of this award term:

1. *Central Contractor Registration (CCR)* means the Federal repository into which an entity must provide information required for the conduct of business as a recipient. Additional information about registration procedures may be found at the CCR Internet site (currently at http://www.ccr.gov).

2. *Data Universal Numbering System (DUNS) number* means the nine-digit number established and assigned by Dun and Bradstreet, Inc. (D&B) to uniquely identify business entities. A DUNS number may be obtained from D&B by telephone (currently 866–705–5711) or the Internet (currently at http://fedgov.dnb.com/webform).

3. *Entity,* as it is used in this award term, means all of the following, as defined at 2 CFR part 25, subpart C:
   a. A Governmental organization, which is a State, local government, or Indian Tribe;
   b. A foreign public entity;
   c. A domestic or foreign nonprofit organization;
   d. A domestic or foreign for-profit organization; and
   e. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

4. *Subaward:*

   a. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.

   b. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, *see* Sec. ll.210 of the attachment to OMB Circular A–133, ''Audits of States, Local Governments, and Non-Profit Organizations'').

   c. A subaward may be provided through any legal agreement, including an agreement that you consider a contract.

5. *Subrecipient* means an entity that:

   a. Receives a subaward from you under this award; and

b. Is accountable to you for the use of the Federal funds provided by the subaward.

18. PROHIBITION ON TEXT MESSAGING AND USING ELECTRONIC EQUIPMENT SUPPLIED BY THE GOVERNMENT WHILE DRIVING

Executive Order 13513, *Federal Leadership On Reducing Text Messaging While Driving*, was signed by President Barack Obama on October 1, 2009 (ref: http://edocket.access.gpo.gov/2009/pdf/E9-24203.pdf). This Executive Order introduces a Federal Government-wide prohibition on the use of text messaging while driving on official business or while using Government-supplied equipment. Additional guidance enforcing the ban will be issued at a later date. In the meantime, please adopt and enforce policies that immediately ban text messaging while driving company-owned or rented vehicles, government-owned or leased vehicles, or while driving privately owned vehicles when on official government business or when performing any work for or on behalf of the government.

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Change Order	**Director's Backup**
Petitioner: Ronald E. Zegers, Deputy General Manager, Engineering/Operations	
Recommendations: That the Board of Directors receive an update regarding the September 5, 2013, determination of emergency for modifying Lake Mead Intake No. 1 to contend with projected low lake levels, and ratify Change Order No. 12 to Contract No. 070F 02 C2, Intake No. 3 – Connector Tunnel, for the amount of $12,200,000 and an extension of the contract time by 453 calendar days.	

Fiscal Impact:
The required $12,200,000 is available in the Authority's MCCP Bond Fund.

Background:
On May 21, 2009, the Board of Directors awarded Contract No. 070F 02 C2 to KW Pipeline, Inc., dba Renda Pacific, in the amount of $42,300,000 for construction of the Intake No. 3 – Connector Tunnel that connects the existing Intake No. 2 with the new Intake No. 3, located as generally shown on Attachment A. The Board further authorized a change order contingency in the amount of $4,000,000 to be utilized by the General Manager in accordance with Resolution No. 96-003. To date, the General Manager has approved seven change orders and one work change directive for an aggregate increase of $2,801,196 and extended the contract time one day. The Board previously approved two change orders in the amount of $7,367,214 and extended the contract time 314 days.

In August 2013, the U.S. Bureau of Reclamation released its 24-month hydrology study that shows ongoing drought conditions in the Colorado River basin will trigger a reduction in annual water deliveries from Lake Powell to Lake Mead. As a result, Lake Mead water elevations could drop low enough to render the Authority's existing Intake No. 1 inoperable by the spring of 2015. To preserve Intake No. 1 operations for the interim and continue deferral of construction of the future Intake Pumping Station No. 3, modifications to Intake No. 1 are required. The modifications will connect the existing Intake Pumping Station No. 1 (IPS-1) to the tunnel recently completed by Renda Pacific, and thus to the existing Intake No. 2 and to the future Intake No. 3. This connection ensures the continued operation of IPS-1 to Lake Mead elevation 1,050 feet, and will provide access to better water quality from Intake No. 3 as soon as Intake No. 3 is completed. Because this connection will require a shutdown of IPS-1 and sole reliance on the remaining Intake Pumping Station No. 2 during construction, it was critical that the work begin immediately so that it could be completed during the winter months when water demand is low. Immediately after the final terms and conditions of the subject change order were accepted by the Contractor, the General Manager determined an emergency under the provisions of NRS 332.112 and 338.011.

AGENDA ITEM # 10

The attached Change Order No. 12 defines the full scope of the required work to be performed, provides compensation to the Contractor in the amount of $12,200,000, and extends the contract time 453 calendar days making the final completion date May 31, 2014.

The ratification of this change order is authorized pursuant to NRS 332.112, NRS 338.011, and Sections 5(d), 5(e), 5(g), 6(e), 6(j), and 6(l) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved this agenda item.

Respectfully submitted:

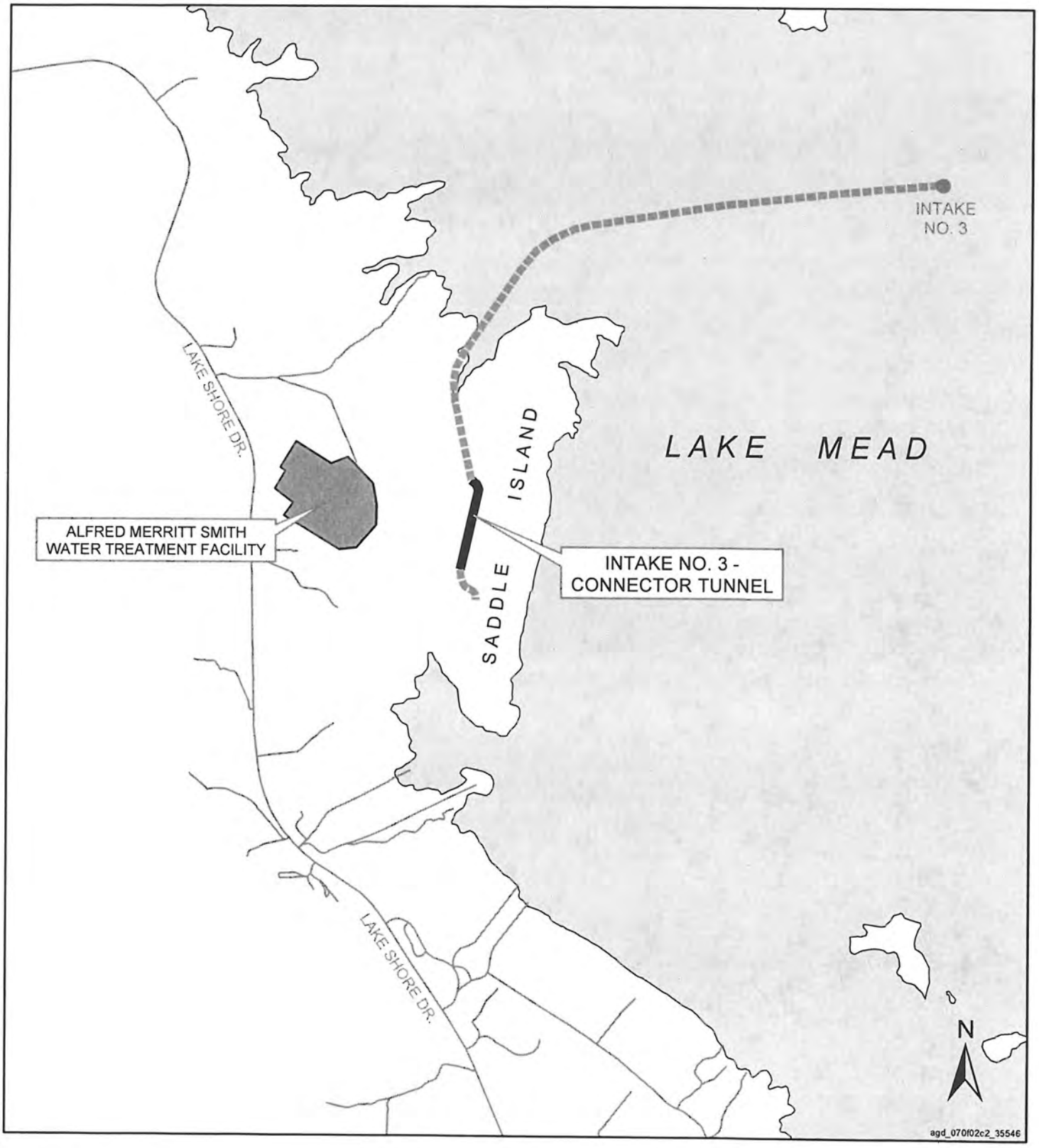
John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:REZ:MRJ:EPM:djt K0033
Attachments

FOR

BOARD OF DIRECTORS
AGENDA ITEM

SNWA CONTRACT NO. 070F 02 C2
INTAKE NO. 3 -
CONNECTOR TUNNEL



SHEET 1 OF 1

ATTACHMENT A

SOUTHERN NEVADA WATER AUTHORITY

Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

Contractor: KW Pipeline, Inc., dba Renda Pacific
680 Professional Avenue, Suite 101
Henderson, NV 89015

ITEM NO.	DESCRIPTION OF CHANGE	ADD/DEDUCT	AMOUNT
CO12.1	Connect IPS-1 Access Shaft to IPS-1 Stub Tunnel	ADD	$12,200,000.00

The CONTRACTOR shall provide additional services as described below:

Marine Work:

1. CONTRACTOR shall provide and weld gussets to the back crotch plate of the TEE as shown on attached drawing. CONTRACTOR shall remove mortar coating and polyurethane required for welding and then repairing any damage to coating and lining of TEE due to welding.

2. CONTRACTOR shall relocate existing grout bags from around the tee and provide and place tremie concrete around the casing and the TEE in accordance with the attached drawing.

3. CONTRACTOR shall remove the existing ellipsoidal head from the top of the TEE and set it on the lake bottom as directed by the Construction Manager.

4. CONTRACTOR shall provide and install a 140" diameter reinforced flat or hemispherical ellipsoidal bulkhead inside the existing 12'x12' TEE as shown on the attached drawing.

5. CONTRACTOR shall provide a Type 316 SST flap gate conforming to the attached drawing.

6. AUTHORITY will provide its lift barge to CONTRACTOR for its use during marine work at CONTRACTOR's option. The CONTRACTOR accepts all risk, liability, and limitations of the AUTHORITY'S lift

barge.

7. CONTRACTOR may stage marine work from existing staging area in Saddle Cove.

8. CONTRACTOR shall assume surfaces that are or were submerged are coated with Quagga mussels that may need to be removed by CONTRACTOR in specific work areas to facilitate the work.

9. At the termination of the project work, CONTRACTOR shall flood the underground work space, remove internal bulkhead from the TEE, install the flap gate inside the TEE, and demobilize its equipment from the lake and the marine area. Prior to transport of marine equipment from the job site all equipment must be decontaminated per the National Park Service (NPS) decontamination requirements and inspected and approved by NPS.

10. Steel fabrications shall conform to Section 02570 Steel Pipe, Section 02572 Steel Pipe Fabricated Specials, and Section 05500 Miscellaneous Metalwork.

11. Marine work shall conform to Section 02300 Offshore Construction – General and Section 02301 Intake No.1 Modifications.

Shaft Sinking Work:

1. CONTRACTOR shall remove selected fill, precast concrete slabs, and other deck supports as necessary east of IPS-1 Pumping Station to create adequate construction access for deepening of IPS-1 Access Shaft. Precast concrete slabs and other deck support items shall be preserved for eventual reinstallation by CONTRACTOR. Any damage to existing structures caused by CONTRACTOR shall be repaired at its cost (Reference attached IPS-1 drawings).

2. CONTRACTOR shall remove and salvage the helicoidal dropshaft assembly from the IPS-1 Access Shaft and place it at a location designated by the CM within the AMSWTF. See attached drawing of

helicoidal dropshaft assembly.

3. CONTRACTOR shall be responsible to dewater the system. SNWS Operations will run its pumps to lower water level to approximately elevation 1050 and CONTRACTOR shall dewater remaining water.

4. CONTRACTOR shall inspect the Intake No. 1 Tunnel between the IPS-1 Access Shaft, Intake No. 1 tunnel, and Inlet Shaft and shall accommodate an inspection of the same by a limited number of SNWA representatives.

5. CONTRACTOR shall retrieve suction inlets from the floor of the IPS-1 Forebay, convey them to the surface, and deliver them to SNWS at the IPS-1 Pumping Station.

6. CONTRACTOR shall remove the Quagga mussels from the invert, walls and roof of the IPS-1 Forebay and shall transport the removed mussels to the drying beds at the AMSWTF.

7. CONTRACTOR shall deepen existing IPS-1 Access Shaft from the floor of the IPS-1 Forebay at approximate elevation 1008 ft. AMSL to connect to the roof of IPS-1 Stub Tunnel at approximate elevation 900 ft. AMSL. The new shaft shall have a finished equivalent flow area of at least 200 square ft for its entire depth.

8. If excavation is by drill and blast methods, the peak particle velocity shall be less than 0.5 inch per second measured at the base concrete slab of the IPS-1 Pumping Station adjacent to the access shaft. To minimize potential damage to any systems, all blasting shall be done by blasts with no more than twenty (20) pounds of explosive per delay period; that is, no more than 20 pounds of explosive charge shall be detonated within any eight millisecond time interval. Blasting shall conform to Section 02210 Blasting Controls. Shaft construction shall conform to Section 02320 Shaft and Tunnel Construction.

9. Permanent ground support shall be 8 ft. FIREP K60-25 or equal fiberglass rock

bolts with plate and nut and resin cartridges on 4 ft. centers horizontally and 4 ft. centers vertically plus 4 inch minimum thickness of steel fiber reinforced shotcrete. The fiber reinforced shotcrete shall be placed so that no more than 10 vertical ft. of shaft is exposed without shotcrete or other face support. Other face support could be rock bolts and welded wire fabric with 4-inch openings. Ground support shall conform to Section 02340 Tunnel and Shaft Support Systems and Section 03330 Shotcrete. CONTRACTOR shall assume an additional 15% quantity over the pattern bolt quantity for spot bolting.

10. CONTRACTOR shall drill and maintain two probe holes at least 20 ft. in advance of the shaft bottom at all times to assess groundwater conditions. Water control grouting, if any, shall be considered as a part of CONTRACTOR's lump sum price for this change order. Probing and grouting shall conform to Section 02250 Probe Drilling and Grouting

11. In addition to the previously required dewatering systems, CONTRACTOR shall design, install and maintain a second dewatering system with a pumping capacity of at least 2,000 GPM from the bottom of the Access Shaft to the CONTRACTOR's discharge point on surface. CONTRACTOR shall have on site pumps, pipes, valves, couplings, and any other material required to install an additional 2,000 GPM emergency pumping capacity (4000 GPM total pumping capacity) from the bottom of the Access Shaft to the CONTRACTOR's discharge point on surface. Dewatering shall conform to Section 02242 Water Control for Shaft and Tunnel Construction.

12. CONTRACTOR shall provide and install temporary weir(s) or bulkhead(s) and pumps at the IPS-1 Access Shaft/IPS-1 Intake Tunnel interface and the IPS-1 Access Shaft/IPS-1 Forebay interface to control the groundwater inflow from the Intake Tunnel and Forebay plus any leakage from Intake No. 1. The requirements for the control of inflows

under this paragraph are included in the total dewatering capacity required in Paragraph 11.

13. CONTRACTOR shall provide and install a barrier west of the Access Shaft at the Forebay elevation to prevent any suction inlets that may fall from well shafts above from reaching the Access Shaft.

14. CONTRACTOR shall provide and install a blasting screen west of the Access Shaft at the Forebay elevation to prevent damage to existing pumps from blasting flyrock.

15. CONTRACTOR shall dispose of excavated material by transporting it to the north slope of the IPS-3 Surge Shaft embankment. Disposal of excavated material shall conform to Section 02200 Earthwork.

16. CONTRACTOR may discharge clean raw water, which shall not have turbidity or impurities, exceeding those naturally found in Lake Mead water from the IPS-1 Access Shaft into the IPS-2 Access Shaft. Any water having constituents exceeding natural Lake Mead water must be treated and discharged to Lake Mead in accordance with discharge permit.

17. Construction water is available to the CONTRACTOR by connecting to an existing 10-inch temporary HDPE pipeline near the IPS-1 Pumping Station.

18. AUTHORITY will provide electrical power for CONTRACTOR use via one spare 15 amp, four spare 20 amp, one spare 60 amp and one spare 100 amp breaker available at the 480vac switchboards in Intake Pumping Station No. 1 or will provide a 4160 volt feeder out of the switchyard whereby CONTRACTOR shall need to provide and install a 1 MVA 4160/480 volt transformer. Electrical distribution shall conform to Section 01510 Temporary Utilities and Facilities.

19. At the termination of the shaft sinking work, CONTRACTOR shall demobilize its equipment and utilities from underground and restore the decking over the IPS-1

Surge Chamber and Access Shaft.

20. CONTRACTOR shall assume surfaces that are or were submerged are coated with Quagga mussels that may need to be removed by CONTRACTOR in specific work areas to facilitate the work. The dead mussels in the dewatered underground works will have an unpleasant odor.

21. CONTRACTOR shall limit loading on existing paved roads on Saddle Island to HS 20 maximum.

Technical Documents

The following technical documents have been furnished to the CONTRACTOR for reference:

1. U.S. Department of the Interior Bureau of Reclamation Final Construction Report Southern Nevada Water Project Bureau of Reclamation drawings of IPS-1 Pumping Station and Intake No. 1
2. Bureau of Reclamation geologic maps and core hole logs
3. Colorado River Commission drawings of helicoidal drop shaft
4. 070F 05 C1 drawings of Intake Plug and Flap Gate for Intake No. 2
5. 070F 05 C1 specifications for marine work and for steel pipe fabricated specials
6. 320 G drawings of Intake No. 1 modifications
7. 320-G construction photos
8. MW/Hill sketches of proposed inlet TEE modifications and tremie placement
9. MW/Hill memorandum dated August 28, 2013 on the subject of Anticipated Conditions and Geotechnical Risks, IPS-1 Intake Riser which indicates conditions meriting additional attention during construction.
10. Capacities of AUTHORITY's lift barge

CONTRACTOR affirms that these technical documents have been thoroughly reviewed and the information provided therein has been incorporated into the price and schedule for the work of this change order. CONTRACTOR will monitor the conditions in

their work area and if any concerns are noted shall notify CONSTRUCTION MANAGER for further evaluation. CONTRACTOR is not responsible for work which arises from Differing Site Conditions associated with the Work of this Change Order 12.

The CONTRACTOR waives any and all current and prospective claims for adjustment in Contract Price and extension of Contract Time for all Work required to be performed under the Contract Documents, excluding Differing Site Conditions, including progressive erosion, associated with the Work of this Change Order 12.

Schedule

Revise Contract Section 00800, SUPPLEMENTARY CONDITIONS, p. 00800-1, paragraph 2.4, "Completion of Work", Milestones as follows:

Milestone No. 2, Substantial Completion from "January 4, 2013" to "March 31, 2014."

Milestone No. 3, Final Completion from "March 4, 2013" to "May 31, 2014."

Revise Contract Section 00800, SUPPLEMENTARY CONDITIONS, p. 00800-5, paragraph 14.8 "Substantial Completion", to read as follows:

To be considered substantially complete, all underground construction work areas shall be complete and flooded to the then current lake elevation and flap gate installed. All other work including but not limited to: completion and demobilization of marine work, restoration of IPS-1 Access Shaft at surface, surface excavation, all surface grading, berm construction, storm drainage systems, all concrete structures, all piping, backfilling of all pre-excavation pits and trenches, cleanup of the CONTRACTOR's staging area, removal of construction trailers and equipment, storage facilities, temporary stockpiles, rubbish, etc. will be required prior to Final Completion.

TOTAL CHANGE IN CONTRACT TIME FOR FINAL COMPLETION	**ADD**	**453 Calendar Days**
TOTAL CHANGE IN CONTRACT PRICE	**ADD**	**$12,200,000.00**

This Change Order, executed by the Authority and the Contractor, shall constitute a full and final settlement of any and all claims by the Contractor for time extensions and/or additional costs arising out of the performance of the Work related to this Change Order. This settlement constitutes an agreement not to use this Change Order in association with any other Claim. All other requirements of Contract No. 070F 02 C2 remain unchanged.

Acceptance by Contractor:

By: _____ 8/30/13
Joseph Savage, Project Manager — Date

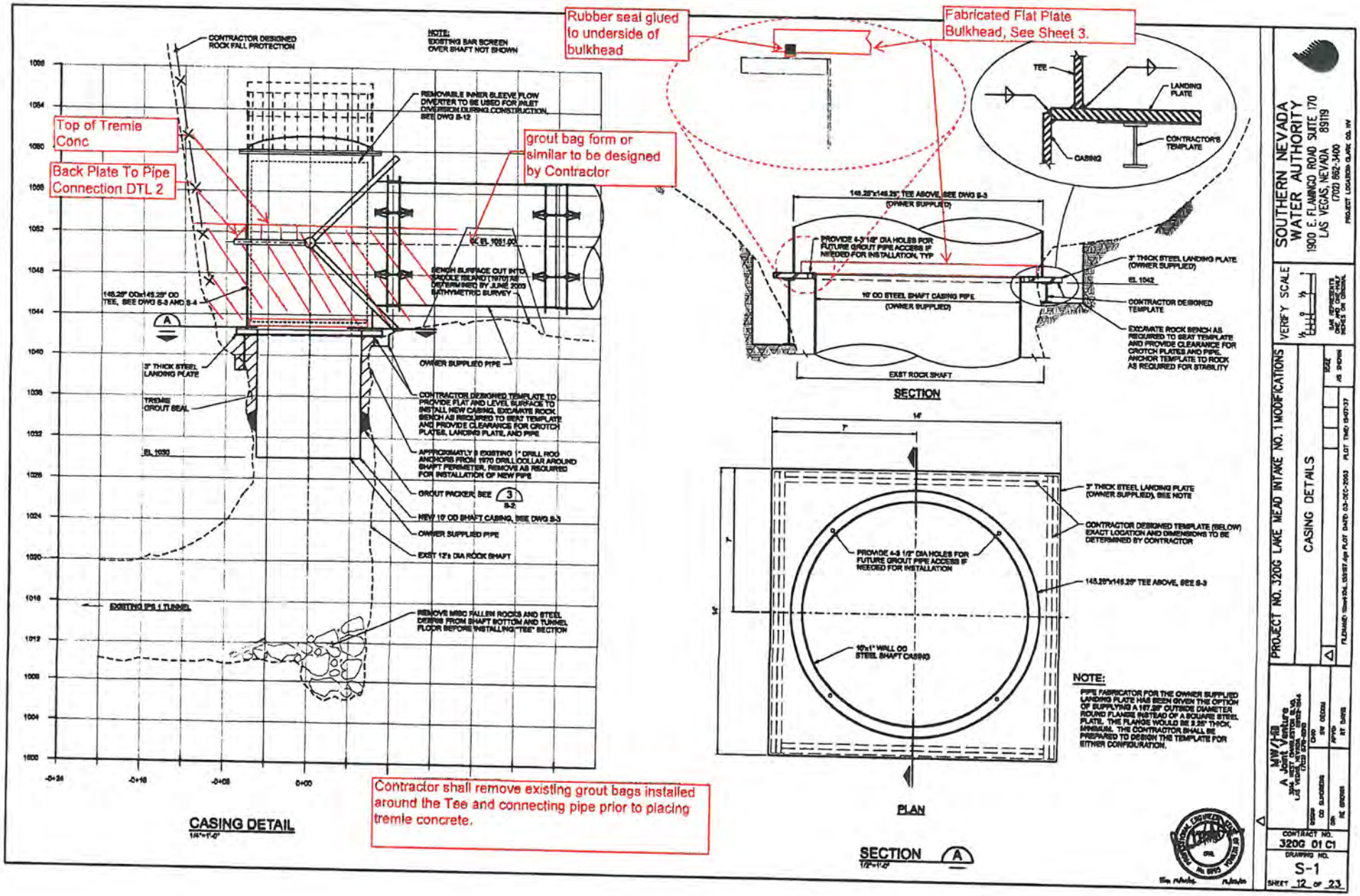
Authorized by SNWA:

By: _____ 9-5-13
Patricia Mulroy, General Manager — Date

Duplicate Originals: (1) Authority (1) Contractor

Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

DRAWINGS FOR MARINE WORK ITEMS 1, 2 AND 4


Rubber seal glued to underside of bulkhead
Fabricated Flat Plate Bulkhead, See Sheet 3.
Top of Tremie Conc
Back Plate To Pipe Connection DTL 2
grout bag form or similar to be designed by Contractor
CONTRACTOR DESIGNED ROCK FALL PROTECTION
NOTE: EXISTING BAR SCREEN OVER SHAFT NOT SHOWN
REMOVABLE INNER SLEEVE FLOW DIVERTER TO BE USED FOR INLET DIVERSION DURING CONSTRUCTION, SEE DWG S-12
EL 1031.00
BENCH SURFACE CUT INTO GRADE ISLAND (1970) AS DETERMINED BY JUNE 2003 BATHYMETRIC SURVEY
148.28" OD x 145.28" ID TEE, SEE DWG S-3 AND S-4
3" THICK STEEL LANDING PLATE
TREMIE GROUT SEAL
EL 1030
OWNER SUPPLIED PIPE
CONTRACTOR DESIGNED TEMPLATE TO PROVIDE FLAT AND LEVEL SURFACE TO INSTALL NEW CASING, EXCAVATE ROCK BENCH AS REQUIRED TO SEAT TEMPLATE AND PROVIDE CLEARANCE FOR CROTCH PLATES, LANDING PLATE, AND PIPE
APPROXIMATELY 8 EXISTING 1" DRILL ROD ANCHORS FROM 1970 DRILL COLLAR AROUND SHAFT PERIMETER, REMOVE AS REQUIRED FOR INSTALLATION OF NEW PIPE
GROUT PACKER, SEE 3 S-2
NEW 10' OD SHAFT CASING, SEE DWG S-3
OWNER SUPPLIED PIPE
EXIST 12'± DIA ROCK SHAFT
EXISTING IPS 1 TUNNEL
REMOVE MISC FALLEN ROCKS AND STEEL DEBRIS FROM SHAFT BOTTOM AND TUNNEL FLOOR BEFORE INSTALLING "TEE" SECTION
1068
1064
1060
1056
1052
1048
1044
1040
1036
1032
1028
1024
1020
1016
1012
1008
1004
1000
-0+24
-0+16
-0+08
0+00
CASING DETAIL
1/4"=1'-0"
TEE
LANDING PLATE
CASING
CONTRACTOR'S TEMPLATE
148.28"x148.28" TEE ABOVE, SEE DWG S-3 (OWNER SUPPLIED)
PROVIDE 4-3 1/2" DIA HOLES FOR FUTURE GROUT PIPE ACCESS IF NEEDED FOR INSTALLATION, TYP
10' OD STEEL SHAFT CASING PIPE (OWNER SUPPLIED)
3" THICK STEEL LANDING PLATE (OWNER SUPPLIED)
EL 1042
CONTRACTOR DESIGNED TEMPLATE
EXCAVATE ROCK BENCH AS REQUIRED TO SEAT TEMPLATE AND PROVIDE CLEARANCE FOR CROTCH PLATES AND PIPE. ANCHOR TEMPLATE TO ROCK AS REQUIRED FOR STABILITY
EXIST ROCK SHAFT
SECTION
14'
3" THICK STEEL LANDING PLATE (OWNER SUPPLIED), SEE NOTE
CONTRACTOR DESIGNED TEMPLATE (BELOW) EXACT LOCATION AND DIMENSIONS TO BE DETERMINED BY CONTRACTOR
PROVIDE 4-3 1/2" DIA HOLES FOR FUTURE GROUT PIPE ACCESS IF NEEDED FOR INSTALLATION
148.28"x148.28" TEE ABOVE, SEE S-3
10'x1" WALL OD STEEL SHAFT CASING
PLAN
NOTE:
PIPE FABRICATOR FOR THE OWNER SUPPLIED LANDING PLATE HAS BEEN GIVEN THE OPTION OF SUPPLYING A 147.28" OUTSIDE DIAMETER ROUND FLANGE INSTEAD OF A SQUARE STEEL PLATE. THE FLANGE WOULD BE 2.25" THICK, MINIMUM. THE CONTRACTOR SHALL BE PREPARED TO DESIGN THE TEMPLATE FOR EITHER CONFIGURATION.
SECTION A
1/2"=1'-0"
Contractor shall remove existing grout bags installed around the Tee and connecting pipe prior to placing tremie concrete.
SOUTHERN NEVADA WATER AUTHORITY
1900 E. FLAMINGO ROAD SUITE 170
LAS VEGAS, NEVADA 89119
(702) 862-3400
PROJECT NO. 320G LAKE MEAD INTAKE NO. 1 MODIFICATIONS
CASING DETAILS
VERIFY SCALE
MW/HB
A Joint Venture
CONTRACT NO. 320G 01 C1
DRAWING NO. S-1
SHEET 12 OF 23

SOUTHERN NEVADA WATER AUTHORITY
1900 E. FLAMINGO ROAD SUITE 170
LAS VEGAS, NEVADA 89119
(702) 862-3400
PROJECT LOCATION: CLARK CO. NV
VERIFY SCALE
SITE PLAN
PROJECT NO. 3206 LAKE MEAD INTAKE NO. 1 MODIFICATIONS
MW/HH
A Joint Venture
3044 WEST CHEYENNE BLVD.
LAS VEGAS, NEVADA 89032-1644
(702) 878-0018
CONTRACT NO. 3206 01 C1
DRAWING NO. C-1
SHEET 7 OF 23
NOTES:
1. THIS DRAWING PRESENTS THE RESULTS OF A MULTIBEAM BATHYMETRIC SURVEY CONDUCTED BY DAVID EVANS AND ASSOCIATES, INC. (DEA)
2. DATE OF SURVEY: JULY 14, 2023
3. HORIZONTAL DATUM: SURVEY WAS CONDUCTED ON NORTH AMERICAN DATUM OF 1983 (NAD83), NEVADA EAST ZONE. DATA WAS TRANSLATED TO THE LOCAL PROJECT GRID BASED ON COORDINATES PROVIDED FOR PP 232.
4. UNITS: US FEET.
5. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
6. CONTOUR INTERVAL: 2 FEET.
7. HORIZONTAL POSITIONS WERE ACQUIRED WITH A REAL-TIME, KINEMATIC GLOBAL POSITIONING SYSTEM WITH ARP LOCATED AT TRAVERSE NAIL TYP1. THE RTK BASE STATION WAS OBSERVED ON THE LOCAL POINT PP 232. A HORIZONTAL POSITION CHECK WITH A TOTAL STATION WAS PERFORMED ON CONTROL POINT PP 232 WITH COORDINATES PROVIDED FOR CONTROL POINT PP 232.
8. WATER SURFACE ELEVATION WAS OBTAINED VISUALLY BY HOLDING AN ELEVATION OF 1,140.5 FEET ON CONTROL POINT PP 232. A VERTICAL CHECK ON CONTROL POINT PP 232 MATCHED THE PROVIDED ELEVATION. WATER SURFACE AT THE TIME OF THE SURVEY WAS APPROXIMATELY 1143 FEET.
9. DEPTHS WERE ACQUIRED WITH A RESON SEABAT 8101 MULTIBEAM BATHYMETRIC SONAR INTEGRATED WITH A APPLANIX POSPAV POSITIONING AND MOTION REFERENCE SYSTEM.
10. CONTOURS INSIDE EXISTING BAR SCREEN HAVE BEEN INFERRED.
11. FOR PIPE FABRICATION PRISMS, SEE DRAWING C-3
CONTROL POINT
POINT | NAD 83 N | NAD 83 E | LOCAL GRID N | LOCAL GRID E
PP232 | 2572645.356 | 885970.026 | 30460.99 | 80084.44
LEGEND
N 25500 LOCAL PROJECT GRID
N 2572500 E 885000 NAD83 NEVADA EAST ZONE GRID
UNDERWATER DISPOSAL AREA
Groutbags or other means for forming
Tremie Conc
SADDLE ISLAND
LAKE MEAD
PLATFORM, SEE 2/C-3
LOWER PIPE SUPPORT, SEE DWG C-9
CAMERON JOINT SECTION, SEE DWG C-9
DIVER PIPE SUPPORT, SEE DWG C-9
APPROX OUTLINE OF EXISTING BAR SCREEN (TO REMOVE)
APPROX OUTLINE OF BAR SCREEN, TYP
APPROX WATER LINE AT TIME OF CONSTRUCTION
PRIOR TO REMOVAL OF EXISTING BAR SCREEN, DEBRIS AND LOOSE ROCK IN AREAS SHOWN BY SWEEPING WITH LAKE BED CHAIN AT EL 1120 FEET. LOOSE ROCK DISLODGED FROM THE SLOPE WILL BE CAPTURED BY WITH CHAIN LINK TO MINIMIZE ROCK FALL INTO INTAKE.
Scale in Feet
0 10 20 30

CH2MHILL.

Job Name SNWA

Subject IPS 1 INTAKE MOD

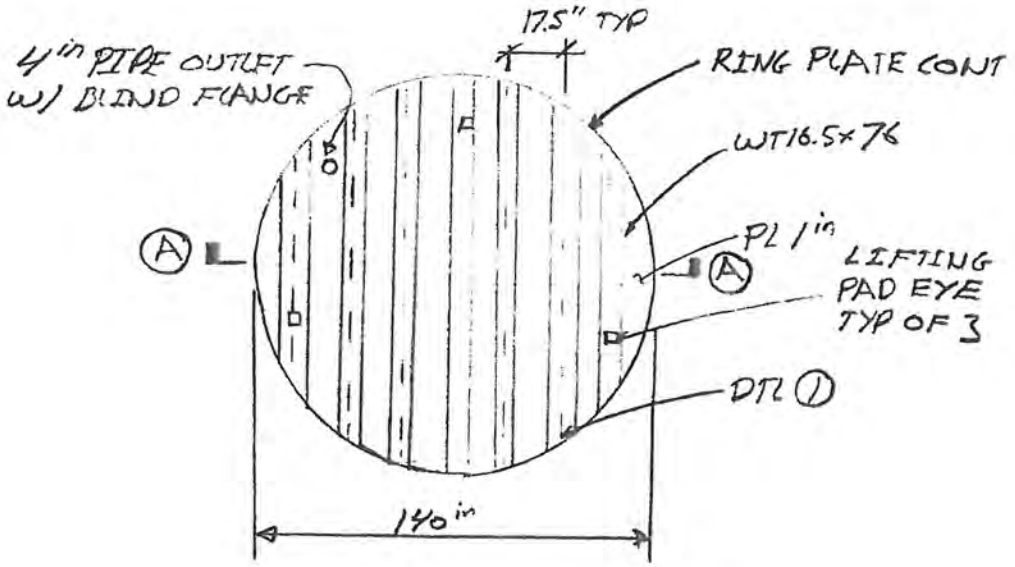
Job No. _____

Sheet No. 3

Date 8/16/13

Computed By N. WALLACE

Checked By _____



BULKHEAD PLAN

SHEET 3

CH2MHILL.

Job Name SNWA

Subject IPS1 INTAKE MOD

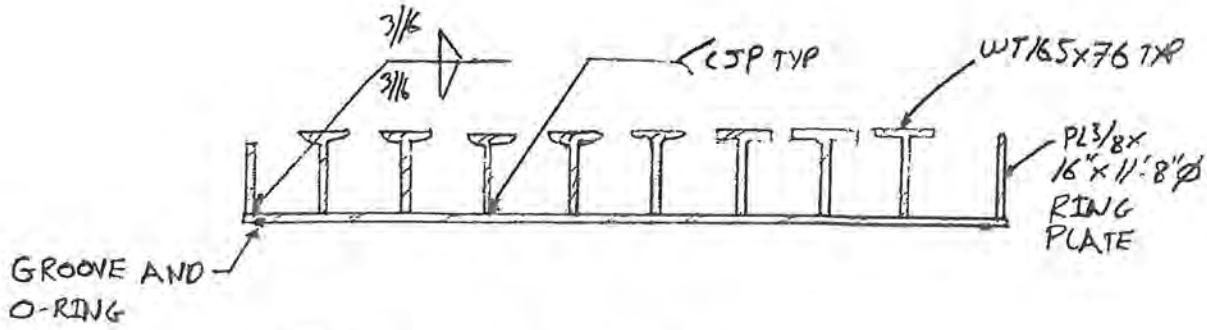
Job No. _____

Sheet No. 4

Date 8/14/12

Computed By N. WALLACE

Checked By _____



(A) BULKHEAD SECTION

3/8" = 1'-0"

CH2MHILL.

Job Name SNWA

Subject IPS1 INTAKE MOD

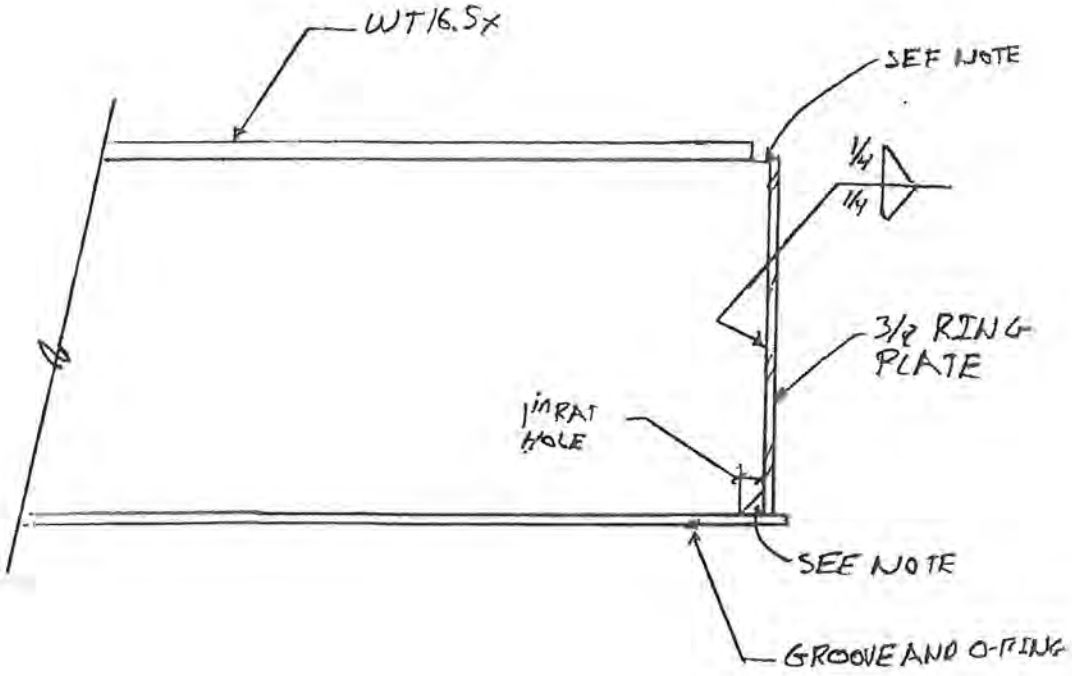
Job No.

Sheet No. 5

Date 8/16/13

Computed By NWALLACE

Checked By



① DTL

NOTE: CONTINUE WELD AROUND END OF WT WEB TO CREATE A COMPLETE SEAL WELD.

CH2MHILL.

Job Name SNWA

Subject IPS 1 INTAKE MOD

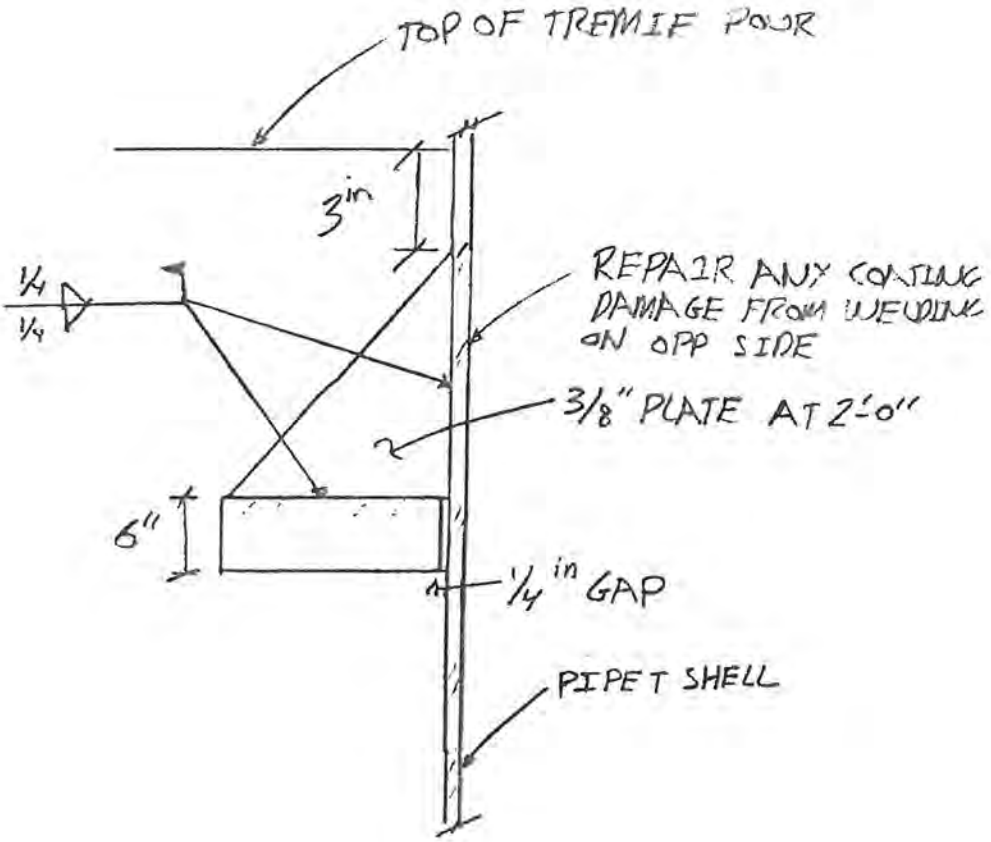
Job No.

Sheet No. 6

Date 8/15/13

Computed By NWALLACE

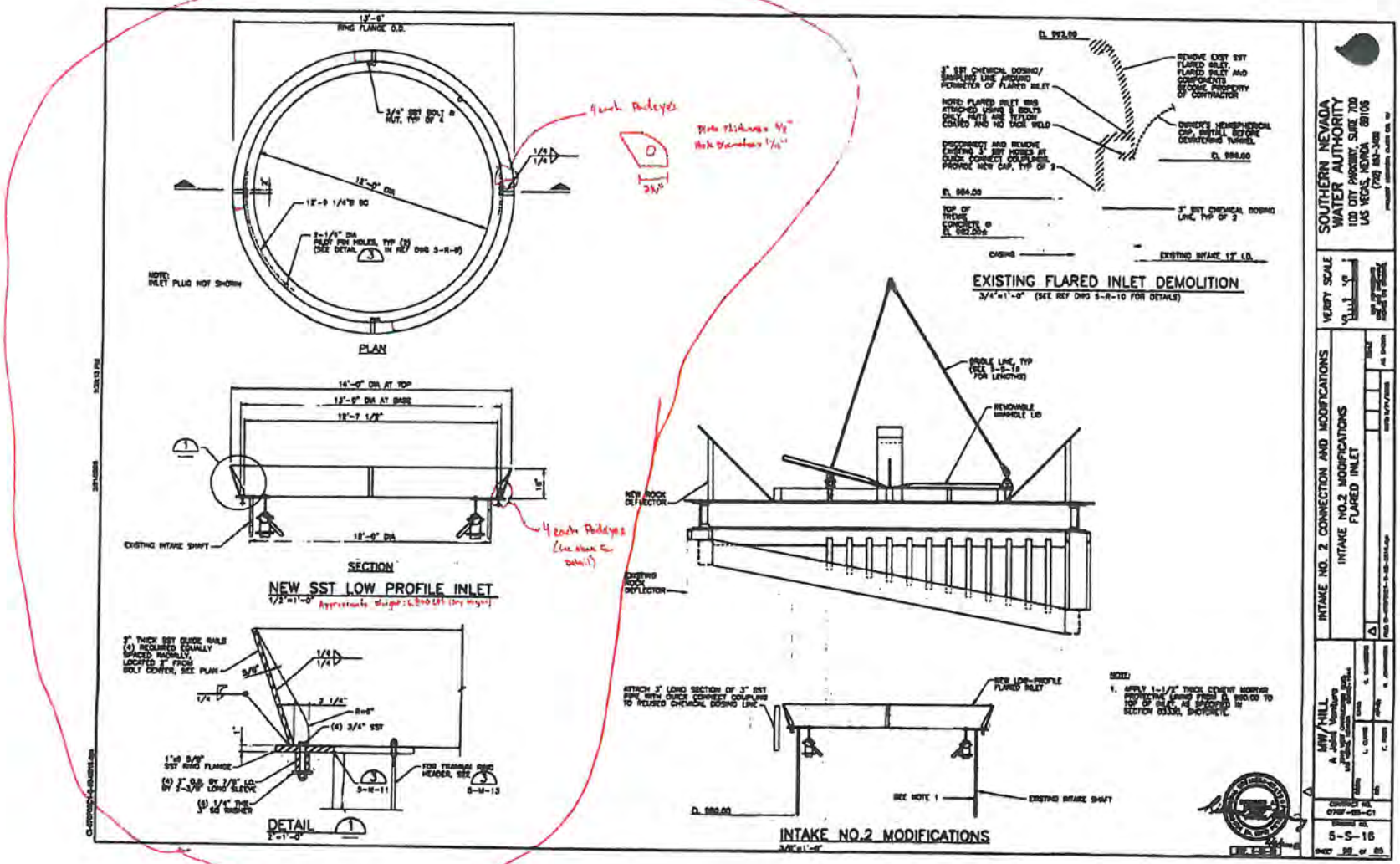
Checked By



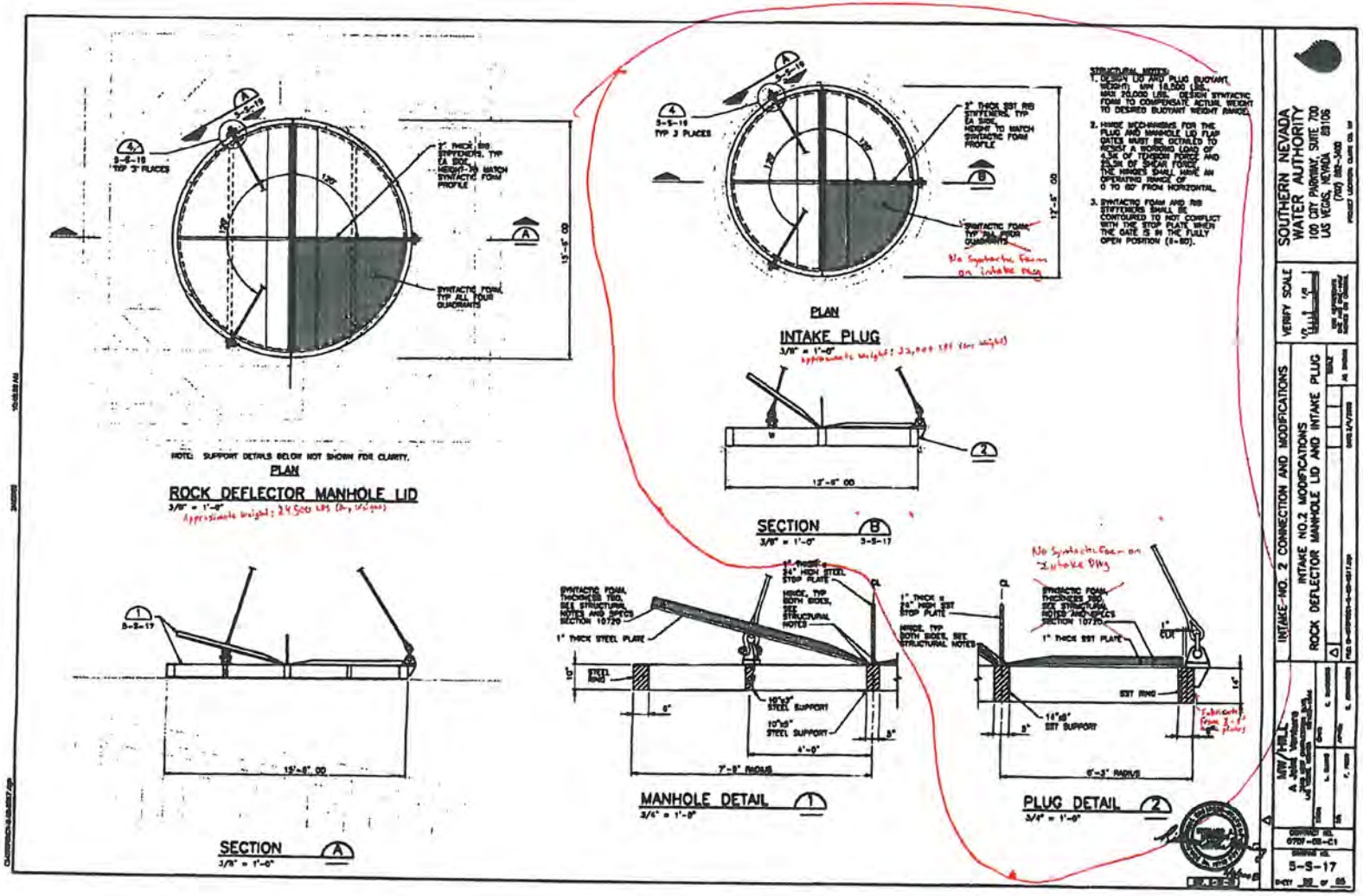
(2) BACK PLATE TO PIPE CONNECTION

Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

DRAWINGS FOR MARINE WORK ITEM 5



13'-6" RING FLANGE O.D.
3/4" SST BOLT & NUT, TYP OF 4
12'-0" DIA
12'-9 1/4"Ø SQ
2-1/4" DIA PILOT PIN HOLES, TYP (2) (SEE DETAIL 3 IN REF DWG 5-R-9)
NOTE: INLET PLUG NOT SHOWN
PLAN
4 each Padeyes
Plate thickness 1/2"
Hole diameters 1 1/4"
14'-0" DIA AT TOP
13'-0" DIA AT BASE
12'-7 1/2"
18'-0" DIA
EXISTING INTAKE SHAFT
SECTION
4 each Padeyes (see above for detail)
NEW SST LOW PROFILE INLET
1/2"=1'-0"
Approximate weight: 6,800 LBS (dry weight)
3" THICK SST GUIDE RAILS (4) REQUIRED EQUALLY SPACED RADIALLY, LOCATED 2" FROM BOLT CENTER, SEE PLAN
(4) 3/4" SST
1"x9 5/8" SST RING FLANGE
(4) 3" O.D. BY 7/8" I.D. BY 2-3/8" LONG SLEEVE
(6) 1/4" THK. 3" SQ WASHER
FOR TRAMMAN RING HEADER, SEE 3 5-M-13
5-M-11
DETAIL 1
2"=1'-0"
EL 992.00
3" SST CHEMICAL DOSING/SAMPLING LINE AROUND PERIMETER OF FLARED INLET
NOTE: FLARED INLET WAS ATTACHED USING 5 BOLTS ONLY, NUTS ARE TEFLON COATED AND NO TACK WELD
DISCONNECT AND REMOVE EXISTING 3" SST HOSES AT QUICK CONNECT COUPLINGS. PROVIDE NEW CAP, TYP OF 2
REMOVE EXIST SST FLARED INLET, FLARED INLET AND COMPONENTS BECOME PROPERTY OF CONTRACTOR
OWNER'S HEMISPHERICAL CAP, INSTALL BEFORE DEWATERING TUNNEL
EL 986.00
EL 984.00
TOP OF TREMIE CONCRETE @ EL 982.00±
3" SST CHEMICAL DOSING LINE, TYP OF 2
CASING
EXISTING INTAKE 12' I.D.
EXISTING FLARED INLET DEMOLITION
3/4"=1'-0" (SEE REF DWG 5-R-10 FOR DETAILS)
BRIDLE LINE, TYP (SEE 5-S-18 FOR LENGTHS)
REMOVABLE MANHOLE LID
NEW ROCK DEFLECTOR
EXISTING ROCK DEFLECTOR
ATTACH 3" LONG SECTION OF 3" SST PIPE WITH QUICK CONNECT COUPLING TO REUSED CHEMICAL DOSING LINE
NEW LOW-PROFILE FLARED INLET
SEE NOTE 1
EXISTING INTAKE SHAFT
EL 980.00
INTAKE NO.2 MODIFICATIONS
3/8"=1'-0"
NOTE:
1. APPLY 1-1/2" THICK CEMENT MORTAR PROTECTIVE LINING FROM EL 980.00 TO TOP OF INLET, AS SPECIFIED IN SECTION 03330, SHOTCRETE.
SOUTHERN NEVADA WATER AUTHORITY
100 CITY PARKWAY, SUITE 700
LAS VEGAS, NEVADA 89106
VERIFY SCALE
INTAKE NO. 2 CONNECTION AND MODIFICATIONS
INTAKE NO.2 MODIFICATIONS FLARED INLET
MW/HILL
A John Ventura
5-S-16



ROCK DEFLECTOR MANHOLE LID
3/8" = 1'-0"
Approximate weight: 24,500 LBS (Dry Weight)
NOTE: SUPPORT DETAILS BELOW NOT SHOWN FOR CLARITY.
PLAN
SYNTACTIC FOAM, TYP ALL FOUR QUADRANTS
2" THICK RIB STIFFENERS, TYP EA SIDE, HEIGHT TO MATCH SYNTACTIC FOAM PROFILE
15'-6" OD
SECTION A
3/8" = 1'-0"
INTAKE PLUG
3/8" = 1'-0"
Approximate weight: 22,000 LBS (Dry Weight)
PLAN
SYNTACTIC FOAM, TYP ALL FOUR QUADRANTS
No Syntactic Foam on Intake Plug
12'-6" OD
SECTION B
3/8" = 1'-0"
STRUCTURAL NOTES:
1. DESIGN LID AND PLUG BUOYANT WEIGHT: MIN 18,500 LBS, MAX 20,000 LBS. DESIGN SYNTACTIC FOAM TO COMPENSATE ACTUAL WEIGHT TO DESIRED BUOYANT WEIGHT RANGE.
2. HINGE MECHANISMS FOR THE PLUG AND MANHOLE LID FLAP GATES MUST BE DETAILED TO RESIST A WORKING LOAD OF 4.5K OF TENSION FORCE AND 25.5K OF SHEAR FORCE. THE HINGES SHALL HAVE AN OPERATING RANGE OF 0 TO 60° FROM HORIZONTAL.
3. SYNTACTIC FOAM AND RIB STIFFENERS SHALL BE CONTOURED TO NOT CONFLICT WITH THE STOP PLATE WHEN THE GATE IS IN THE FULLY OPEN POSITION (8=60).
MANHOLE DETAIL 1
3/4" = 1'-0"
SYNTACTIC FOAM, THICKNESS TBD, SEE STRUCTURAL NOTES AND SPECS SECTION 10720
1" THICK STEEL PLATE
1" THICK x 24" HIGH STEEL STOP PLATE
HINGE, TYP BOTH SIDES, SEE STRUCTURAL NOTES
STEEL RING
10"x3" STEEL SUPPORT
10"x5" STEEL SUPPORT
4'-0"
7'-9" RADIUS
PLUG DETAIL 2
3/4" = 1'-0"
No Syntactic Foam on Intake Plug
1" THICK x 24" HIGH SST STOP PLATE
HINGE, TYP BOTH SIDES, SEE STRUCTURAL NOTES
SYNTACTIC FOAM, THICKNESS TBD, SEE STRUCTURAL NOTES AND SPECS SECTION 10720
1" THICK SST PLATE
SST RING
14"x5" SST SUPPORT
6'-3" RADIUS
SOUTHERN NEVADA WATER AUTHORITY
100 CITY PARKWAY, SUITE 700
LAS VEGAS, NEVADA 89106
(702) 892-3400
VERIFY SCALE
INTAKE-NO. 2 CONNECTION AND MODIFICATIONS
INTAKE NO.2 MODIFICATIONS
ROCK DEFLECTOR MANHOLE LID AND INTAKE PLUG
MW/HILL
A Joint Venture
5-S-17

Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

SPECIFICATIONS FOR MARINE WORK ITEM 11

Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

SECTION 02300- OFFSHORE CONSTRUCTION (GENERAL)

The attached Section 02300 will be modified to reflect Contract SNWA 070F 02 C2 Change Order No. 012 Conditions.

SECTION 02300 – OFFSHORE CONSTRUCTION (GENERAL)

PART 1 – GENERAL

1.1 THE REQUIREMENT

A. The Work in this Section consists of general offshore operations relating to the construction of the Intake Shaft No. 2 Modifications. This includes, but is not necessarily limited to, the following subjects:

1. Use, development, and restoration of approved marine staging areas (see Section 01550 - Site Access and Storage, and Section 02100 - Site Preparation and Restoration, for additional details).

2. General requirements pertaining to offshore construction equipment and diving operations.

3. Placing buoys, lights, and warnings to mariners around offshore work sites.

4. Use of a remotely operated vehicle (ROV) for inspection of Intake Shaft Modification Construction.

1.2 CONTRACTOR SUBMITTALS

A. Staging Areas: Staging areas to be used in support of offshore operations are shown on the Drawings. Include proposed restorations of the staging area sites and an identification of any structures or facilities that will be constructed in support of the CONTRACTOR's operations. This includes temporary berthings and pier facilities.

B. Buoys, Lights, and Other Navigation Aids: Submit plan indicating the location and type of all buoys, lights, and navigation aids to be deployed. Provide appropriate details of each device.

C. Remotely Operated Vehicle (ROV): Provide manufacturer's catalog cuts of ROV equipment to be used. Provide plan indicating the methods of employing the ROVs to accomplish the QA/QC tasks identified. If the ROVs will be used for other duties, identify these.

D. Oil Containment: Submit plan for emergency deployment of oil boom around the work vessels in the event of a major spill. In the event of a 25-gallon oil spill or more in Lake Mead, immediately contact the CONSTRUCTION MANAGER and National Park Service (NPS) Communication Center in Boulder City (702/293-8932 or 1-800/680-5851) and also the following:

1. National Response Center (Coast Guard) 1-800/424-8802.

2. State of Nevada, Division of Environmental Protection (DEP) 702/687-4670, x3043. Reporting line, in-state, 1-888/331-6337, out-of-state,1-775/687-9485.

3. Nevada Office of Emergency Management 775/687-0300. Submit Case Incident Report to: 2478 Fairview Drive., Carson City, NV 89710, Attn: Gary Derks, 775/687-0310 (Work), 775/721-5542 (cell).

4. Clark County Emergency Management (Optional) 702/455-5710.

E. Submittals shall be in conformance with Section 01300 - Contractor Submittals.

PART 2 – PRODUCTS

2.1 NAVIGATION AIDS

A. Provide special-purpose warning buoys at all offshore Work areas. Buoys shall be standard yellow with quick flash (1 per second) amber light on top visible in all directions. Apply reflective tape to all buoys.

B. Place buoys and post signs that are readable from 100 feet, warning boaters of the hazard and to stay back. Buoy spacing will be at the CONTRACTOR's discretion but shall be no more than 200 feet. Provide any additional floating barriers as needed to keep boating public away from construction areas.

C. Place two fixed lighted warning signs on the shoreline at the northern and southern limits of the CONTRACTOR's operational area.

D. Above requirements are minimum. Comply with all other applicable NPS, U.S. Bureau of Reclamation (USBR), U.S. Coast Guard (USCG) regulations and in particular the USCG Rules for Inland Navigation. Notify NPS, USBR, and USCG before setting navigation aids.

2.2 ROV

A. Vehicle Requirements: The ROV shall be capable of internal and external inspection of the Intake Shaft Modifications.

B. The ROV and support system shall be on board the barge, platform, vessel or structure being used to construct the work being observed as agreed upon by the CONTRACTOR and CONSTRUCTION MANAGER.

1. Internal Inspection: The ROV(s) shall be capable of penetrating full depth of Intake Shaft plus 100 feet of tunnel.

2. External Inspection: The ROV shall be capable of operating at a maximum depth of 250 feet for the Intake Shaft, and be capable of operating in a maximum current of 1/2 knot, in any direction.

3. The ROV shall be:

   a. Steady and accurately maneuvered in three axes.

   b. Powerful enough to operate successfully at the project site.

   c. Able to carry necessary cameras, lights, and instrumentation.

   d. Capable of determining its position and orientation underwater.

C. Handling System: The ROV shall have a launch and recovery system with powered winches for deployment and storage of the vehicle umbilical.

D. Displays: The display system shall be capable of displaying and recording the date, time, depth, and heading as well as a clear picture of all underwater events. The system must have an auxiliary video output for event recording.

E. Controls: Enclose or protect all controls required for vehicle operation from the weather.

F. Cameras and Instrumentation:

1. The following fully functional camera, navigational, and inspection systems shall be provided and integrated with the ROV:

a. Color and black and white video cameras with resolution of 340 lines or better. Mounted or remote, rotary drive, tilting platform and with output to a VHS recorder. At least two lights mounted in such a manner to avoid back scatter.

b. Depth sensor with digital readout.

c. Flux gate compass with digital readout.

d. Acoustic tracking system.

2. It is not required that the ROV carry all of the above equipment at the same time. Minimum equipment shall consist of video camera, lights, sonar, depth sensor, and compass, with other equipment being added at the CONSTRUCTION MANAGER 's discretion to meet ROV mission needs.

G. Reliability: Provide sufficient spares and/or redundant equipment to ensure minimum vehicle downtime. Inadequate or defective equipment that adversely affects the CONSTRUCTION MANAGER's ability to make desired inspections shall be cause for rejection of the ROV provided and immediate replacement with suitable equipment. CONSTRUCTION MANAGER shall be responsible for any downtime caused by ROV system malfunction.

H. Operator: Provide qualified ROV operator(s) during all portions of the Work requiring inspection or construction verification by the CONSTRUCTION MANAGER. At a minimum, inspection will be required during all underwater pipeline and shaft construction.

2.3 EQUIPMENT FOR OFFSHORE WORK

A. The offshore equipment employed for the construction of the Modifications to Intake Shaft No. 2 shall be appropriate and suitable for the Work required and the lake and wind conditions involved. It shall comply with all applicable safety and regulatory requirements. Any barges or flotation units shall be of sufficient size and be stable and equipped with adequate mooring equipment for operations under the wind and wave conditions anticipated for the specific site and season. All floating equipment shall be adequate to survive under postulated extreme wind and wave conditions. All fuel, oil, and other containment storage areas shall be in good working order and leak-free. All anchor systems shall be adequate for site conditions.

B. The primary construction vessel for the Intake Shaft Modifications shall have on board and in a condition ready to deploy:

1. A 6-inch minimum diameter sorbent boom with a length at least four times the vessel perimeter.

2. A suitable number of sorbent pads for mop up and plastic bags for sorbent disposal.

2.4 STAGING, LAUNCHING, AND BERTHING FACILITIES

A. Provide all appropriate materials needed for construction, maintenance, and operation of temporary works used to support offshore operations.

2.5 CONSTRUCTION MANAGER'S OFFSHORE OFFICE

A. Provide a covered, enclosed deck space with desk and chair on primary offshore work platform.

B. These spaces will be the offshore offices for the CONSTRUCTION MANAGER. The space may be shared with the CONTRACTOR.

PART 3 – EXECUTION

3.1 GENERAL

A. Contractor's Equipment and Methods: The CONTRACTOR shall be responsible for selecting the equipment and methods for all offshore operations such that project construction specifications are met.

B. Weather Monitoring:

1. Make proper allowances for storms and adverse weather and particularly those weather conditions that are seasonal in nature.

2. Give proper consideration to weather conditions when selecting offshore construction methods and equipment and when scheduling Work.

3. Continuously monitor local weather forecasts and be prepared to shut down offshore operations and secure equipment and the Work site in the event of adverse weather conditions.

4. If the CONTRACTOR elects to retain the services of a private weather forecasting specialist, make the daily or weekly forecasts available to the CONSTRUCTION MANAGER.

C. Positioning Equipment:

1. Provide suitable electronic and other positioning equipment for establishing water surface horizontal and vertical control during all offshore operations.

2. Use control points shown to lay out the Work. Set additional points as necessary for the construction methods chosen.

3. Horizontal positioning control at the water surface shall be Real Time Kinematics (RTK) differential Global Positioning System (GPS) or its equivalent with an accuracy of plus or minus 0.5 foot. Supplement the GPS system, as needed, with non-electronic means that may consist of, for example, range boards, lasers, and transit lines, electronic distance measuring (EDM) units.

4. Provide horizontal control below the water surface by an electronic means that provides a minimum absolute accuracy as required to complete the work as specified, supplemented by non-electric means, such as "story poles" where water depth permits. The final intake shaft location shall be determined by any

means that has sufficient accuracy to permit a proper connection with the Intake Tunnel.

5. Submit the methods for providing horizontal control at and below the water surface to the CONSTRUCTION MANAGER for his approval.

6. The accuracy requirements presented herein shall not relieve the CONTRACTOR of its obligation to construct offshore structures at the locations shown.

D. Acoustic Bathymetric Measuring Equipment: Provide vertical control by acoustic or pressure sensing means that have a relative accuracy of 0.1 foot. All sensing devices shall be calibrated to Lake Mead Water. Supplement this vertical control by physical means that may consist of, for example, lead lines where conditions permit.

E. Grade and Horizontal Direction Measuring Equipment: Make appropriate use of underwater inclinometers and heading indicators to control grade, plumbness, and alignment of the Work. Submit equipment specifications and methods to the CONSTRUCTION MANAGER.

F. Lake Level Monitoring: Provide at least one lake level gauge at the Work site. The gauge shall have a suitable stilling well. The gauge shall be a manual reading type, but may be electronic or self-reading at the CONTRACTOR's option. Read the manual gauge every 8 hours when the reservoir change in a day is less than 0.5 foot, and more often as appropriate when the reservoir rate of change is greater. The gauge shall have an accuracy of 0.1 foot and shall be accurately reset as needed when required by changes in the lake level. Coordinate with the CONSTRUCTION MANAGER to obtain latest USBR lake level projections, and review on a monthly basis. Monitoring may be accomplished by referring to daily USBR gauge data at Hoover Dam provided the appropriate datum correction is made.

3.2 STAGING AREAS

A. Conform to requirements of Section 01550 - Site Access and Storage. In addition, provide a temporary marine access landing at the lake access/staging area as necessary to accommodate fluctuating lake levels indicated in the geotechnical baseline report. This landing shall be CONTRACTOR designed and installed in the area indicated on the Drawings and shall be removed at the completion of the work.

B. Staging area operations will be coordinated with the IPS 3 D/B (Design Builder) Contractor as noted below.

C. The Intake No. 2 modifications contractor shall share its vessel docking area and docking facilities within the offshore staging area shown on the SNWA Drawings with another contractor working on Intake No. 3. The Intake No. 2 modifications contractor will be provided a separate staging and material lay down area outside of the offshore staging area designated for the Intake No. 3 Design Builder, but requires use of the Design Builder's vessel docking area and docking facilities for assembly of a working barge, loading and unloading of personnel, equipment, and materials during the work, and disassembly of the barge after completion of the work. At a minimum, the Design Builder has been instructed to assume that between November 1, 2009 and April 1, 2010, the Intake No. 2 modifications contractor will require use of the vessel docking area and docking facilities for a total of up to 30 working days and up to 12 hours per day. Due to the nature of work, the

30 days will not necessarily be consecutive and there may be extended periods of days or weeks when the Intake No. 2 modifications contractor will not need the docking area or facilities. The Design Builder and the Intake No. 2 modifications contractor are both required to coordinate staging area use and diligently seek agreement on procedures and schedules for both parties to minimize periods of disruption and provide for safety working conditions. SNWA will impose the same coordination obligations on the Intake No. 3 contractor.

3.3 NAVIGATION AIDS

A. Comply with all applicable NPS, USBR, USCG including Inland Navigation Rules, and other pertinent regulatory agency requirements pertaining to work on and under the water.

B. This will include, but not be limited to, placing and maintaining illuminated, signed buoys around Work areas and providing other notices or warnings to mariners.

C. Place navigation aids and lighted warning buoys before Work begins and completely remove them at the completion of the Work.

D. Continuously maintain all navigation aids until construction is complete.

3.4 DIVING OPERATIONS

A. Conduct all diving operations in conformance with the most stringent of the following standards:

1. Nevada - OSHA regulations.

2. Association of Diving Contractors - Consensus Standards for Commercial Diving Operations.

3. U.S. Bureau of Reclamation Safety and Health Standards - Section 29, Marine Diving Operations.

3.5 DEBRIS

A. Do not release or discharge any debris from the construction vessels.

B. Any buoyant materials that are inadvertently released from the construction vessels shall be immediately retrieved.

3.6 COMMUNICATIONS AND TRANSPORTATION FOR CONSTRUCTION MANAGER

A. Provide the CONSTRUCTION MANAGER with four hand-held radios that are compatible with CONTRACTOR's radio system and will be used for CONTRACTOR-CONSTRUCTION MANAGER communications. Supply the radios with at least two battery sets per radio and one battery charger per radio.

B. Within a 30-minute notification, provide boat transportation for the CONSTRUCTION MANAGER from a shore-based point mutually agreed on, to either the Intake Shaft or Bay Crossing Work site or between the two Work sites and back to shore.

3.7 ANCHORING

A. The CONTRACTOR shall be responsible for deploying suitable anchor systems as required to accomplish the Work. Anchors shall be deployed in a manner that does not interfere with the operation of the OWNER's or other existing facilities.

B. Where submerged anchor wires might be a threat to boaters, provide appropriate warning buoys.

C. The installation of drilled-in anchor rods installed on Saddle Island will be permitted.

D. All submerged anchors shall be removed at the completion of construction.

3.8 NOTICE TO MARINERS

A. The CONTRACTOR shall prepare a public notice to boaters warning of the offshore work. The notice shall be submitted to the CONSTRUCTION MANAGER and AUTHORITY for review and approval, and then posted by the CONTRACTOR at all public boat ramps on Lake Mead. One copy shall be sent to the NPS.

B. The notice shall be revised, resubmitted, and reposted monthly or in advance of any special construction activity (for example, a large surface tow) that may affect public boating.

– END OF SECTION –

THIS PAGE INTENTIONALLY LEFT BLANK

Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

SECTION 02301- INTAKE NO. 1 MODIFICATIONS

The attached Section 02301 will be modified to reflect Contract 070F 02 C2 Change Order No. 012 Conditions.

SECTION 02301 – INTAKE NO. 2 MODIFICATIONS

PART 1 – GENERAL

1.1 THE REQUIREMENT

A. The Work in this Section consists of all underwater construction operations necessary to install the Intake No. 2 Modifications, complete. Furnish all personnel, equipment, and materials necessary to construct the modifications.

1.2 GENERAL

A. The existing intake consists of a 12-foot-diameter steel liner grouted into a vertical drilled shaft into the lake bed. This work will include removal of the existing rockfall protection roof structure and flared inlet, setting an OWNER-furnished hemispherical cap or CONTRACTOR's alternate means of closure on the existing intake riser, and reinstalling the rock deflector roof. Intake Tunnel 2 will then be drained to allow work inside the tunnel and for construction of underground interconnection tunnels for future IPS-3. The existing rock deflector roof and flared inlet will become the CONTRACTOR's property. A new rock deflector roof and new low profile flared inlet will be fabricated. At the completion of this fabrication, and the interconnection tunnel work, intake tunnel 2 shall be flooded, the existing rockfall protection roof structure and the hemispherical cap removed, and the new components installed. One of the existing 3-in-diameter SST chemical dosing lines will be converted to a new sampling line. This conversion includes attaching an approximately 3 feet long standpipe to the top of one of the existing dosing lines at the top of the starter casing, and the addition of a new copper sampling well in the IPS-2 access shaft.

B. During the mandatory bid meeting, the CONTRACTOR will have the opportunity to inspect the OWNER-furnished hemispherical cap, which was used as the bulkhead during the IPS-2 construction in 1998 when the lake level was at elevation 1234'. The CONTRACTOR shall review the reference drawings, evaluate the suitability of the OWNER-furnished cap, and determine whether CONTRACTOR will use it or provide its own means of closure.

C. These documents illustrate one sequence of construction activities in order to provide a means to define the intake shaft construction. Make own determination as to the detailed methods that are feasible and are to be utilized to complete the installation of the new work in a manner that provides the AUTHORITY with intake shaft modifications that conform to the requirements of the Contract Documents and are acceptable to the CONSTRUCTION MANAGER.

1.3 QUALIFICATION REQUIREMENTS

A. The CONTRACTOR shall be competent in underwater construction operations in approximately 150 feet of water and shall submit evidence of at least 5 years of experience with similar projects. The Intake No. 2 Modifications construction shall be under the direct supervision of a qualified superintendent who is assisted by experienced foremen. Both superintendent and foremen shall have at least 5 years of experience with similar shaft construction projects.

B. The ROV operators shall have experience furnishing construction support and inspection services on similar projects.

1.4 SUBMITTALS

A. Work Plan: The work plan (shop drawing submittal) shall contain complete descriptive, detailed information, shop drawings and supporting documentation relative to the CONTRACTOR's proposed method of construction of the Intake No. 2 Modifications. The selection of equipment and means and methods of construction that will meet the requirements of the Contract Documents will be the responsibility of the CONTRACTOR. The work plan shall include, but not necessarily be limited to, the following items as specified, as well as related Work specified in other sections of these Contract Documents:

1. Layout of construction/staging areas, land access and landing facilities.

2. Temporary facilities to be constructed.

3. Listing of major construction equipment to be used, with detailed descriptions including catalog cuts, photos and Drawings.

4. Location control, underwater inspection, instrumentation and monitoring methods and equipment for constructing the Intake No. 2 Modifications, including methods for verifying dimensions of rock deflector roof and shaft centerline.

5. Method of providing a floating Work platform over the site.

6. Techniques for fabrication of intake plug assembly and rock guard modifications, transporting, and positioning into position and installing.

7. Method for removing the hemispherical cap, existing flared inlet, and roof of rockfall protection structure.

8. Methods of installing connecting and testing the chemical feed lines.

B. Experience records of CONTRACTOR and resumes of superintendent and foremen, divers, ROV operators and surveyors.

C. Submit work plan (shop drawing submittal) at least 90 days prior to planned start date (from CPM) for the Intake Shaft construction as indicated on the approved CPM Construction Schedule.

D. If CONTRACTOR elects to furnish its own plug design, submit this design with supporting calculations signed by a Structural Engineer in the State of Nevada.

E. Inspection Reports: Make available to the CONSTRUCTION MANAGER all inspection and construction installation information including: reports, surveys, diver inspection, ROV video, photographs, instrumentation data, monitoring and other data. Make information available within 24 hours of accomplishing work.

F. Construction/Inspection Audio and Video Information:

1. The CONSTRUCTION MANAGER may elect not to perform independent underwater inspection by diver or ROV. Furnish sufficient inspection services as necessary to ensure the construction conforms to the Construction Documents and to the satisfaction of the CONSTRUCTION MANAGER. Make available immediately on request to the CONSTRUCTION MANAGER all

audio and video information including all conversations between divers and the Work platform staff and videos of construction.

2. The CONSTRUCTION MANAGER shall have access to all phases of the Work. Provide prompt transportation and safety protection for the CONSTRUCTION MANAGER.

PART 2 – PRODUCTS

2.1 EXCAVATION

A. Excavation is unclassified; remove all incidental rockfall regardless of the nature of the material that may interfere with new work.

B. Disposal of such material will be immediately down slope of IPS-2 in conformance with permit requirements.

2.2 INTAKE SHAFT PLUG ASSEMBLY

A. The fabricated plug assembly shall conform to Section 05500 - Miscellaneous Metals.

2.3 ROCK DEFLECTOR MODIFICATIONS

A. The rock deflector modifications shall conform to the requirements of Section 05500 - Miscellaneous Metals.

2.4 CHEMICAL DOSING LINES

A. Titanium pipe as specified in Section 15035 - Titanium Pipe, Fittings and Appurtenances.

2.5 WATER SAMPLING LINE

A. One of the existing 3-in-diameter stainless steel chemical dosing lines will be converted to a new sampling line. Requirements for piping materials associated with these modifications are specified in Section 15010, Mill Piping – Exposed and Buried.

2.6 BUOY SYSTEMS

A. Conform to requirements of Section 10720 – Buoy and Buoyancy Systems.

2.7 OTHER MATERIALS NECESSARY TO COMPLETE THE LAKE INTAKE SHAFT

A. Furnish all other materials as specified or necessary to complete the construction of the lake Intake Shaft.

PART 3 – EXECUTION

3.1 PROTECTION OF EXISTING INTAKE FACILITIES

A. Locate the existing AUTHORITY Intake No. 1 and mark its location with a buoy. Protect both the AUTHORITY Intake No. 1 and the BWC intake from damage during construction and from inflow of turbid water, oil or other materials.

3.2 CONSTRUCTION SEQUENCING

A. The following general sequence was used for developing the design, and is presented here and in the Drawings. Sequence construction activities as shown and specified herein as follows.

1. Pre-construction activities:

   a. Perform pre-construction underwater survey to locate intake, assess condition, and verify measurements. Note a 10-hour shutdown between the months of November and April shall be coordinated with SNWA for this activity.

2. Construction activities:

   a. Coordinate start of work with shutdown of IPS-2. Coordinate with CONSTRUCTION MANAGER. Coordinate with other Contractors.

   b. Develop shop drawings for fabricated pieces.

   c. A conceptual modification construction sequence is shown on drawings.

3.3 PROTECTION OF THE PUBLIC

A. Mark off the construction area with buoys and warning signs to prevent public access, as specified in Section 02300 - Offshore Construction (General).

B. Conduct all operations in a safe manner that will not endanger the public.

3.4 EARTHWORK

A. Materials to be excavated are unclassified, excavate all materials regardless of type encountered.

B. Dispose of excavated material from the existing intake bench within the underwater disposal area shown. Deposit the material on the lake bottom using a tremie tube, clamshell or skip. Free falling of excavated material through the lake waters for a distance of 10 feet or more will not be allowed. Disposal material shall not extend above elevation 982 feet.

C. Use care to prevent developing a turbidity cloud by the excavating and disposal operation that exceeds water quality standards. Conform to the permits and all requirements to protect the water quality in Lake Mead.

3.5 PRE-OUTAGE ACTIVITIES

A. Conduct underwater surveys as appropriate to verify dimensions and to mark the point where the vertical extension of the shaft centerline intersects the roof and fabricate openings in roof accordingly so that plug can be lowered vertically through opening and into new flared inlet.

B. Verify dimensions of new roof structure will match existing opening. If removal of the rock deflector roof is required to accomplish this, any additional early shut down of IPS-2 need to be coordinated with CONSTRUCTION MANAGER.

3.6 REMOVING ROCK DEFLECTOR ROOF

A. When the outage period commences, after being notified by CONSTRUCTION MANAGER that IPS-2 has been shut down, carefully remove rock deflector roof structure. Removal of deflector roof shall be done without damage to itself, rock deflector, or flared inlet.

3.7 REMOVING STAINLESS STEEL FLARED INLET

A. After removal of rock deflector, unbolt flared inlet from shaft liner and uncouple existing chemical dosing lines. Provide and install caps for existing dosing lines that are capable of resisting pressure of 100 psi.

B. Carefully remove flared inlet without damage to itself or other existing works.

C. Transport flared inlet to staging area. Flared inlet will become CONTRACTOR's property and will be removed from site.

3.8 INSTALLING HEMISPHERICAL CAP OR CONTRACTOR'S ALTERNATE

A. Transport OWNER-furnished hemispherical cap or CONTRACTOR's alternate means of closure to staging area and from there by barge to worksite.

B. Carefully lower cap to mate with flanged surface on existing shaft liner.

C. Bolt cap to liner flange with CONTRACTOR-furnished bolts or CONTRACTOR's alternate.

D. Provide temporary vent pipe from cap to above water surface.

3.9 REINSTALLING EXISTING ROCK DEFLECTOR ROOF

A. After installing the hemispherical cap or CONTRACTOR's alternate means of closure, reinstall the existing rock deflector roof.

B. Couple temporary vent pipe through deflector roof onto hemispherical cap.

3.10 DRAINING THE IPS-2 SHAFT AND TUNNEL

A. Coordinate with OWNER and CONSTRUCTION MANAGER. When cap is in place and vented to the surface, OWNER will begin dewatering the tunnel by pumping slowly from IPS-2 down to an elevation of 1020.

B. When tunnel is dewatered to elevation 1020, SNWA pumping will end.

C. Maintenance dewatering of Tunnel 2 from that point until the completion of interconnecting tunnel and tie-in and installation of IPS-2 new chemical dosing lines will be the CONTRACTOR's responsibility.

D. Refer to Section 02450 - Draining of IPS-2 Underground Openings, for additional requirements.

3.11 CHEMICAL DOSING AND WATER SAMPLING LINES

A. Install the new chemical dosing line in existing intake shaft, tunnel, and access shaft as shown. Protect the piping as the Intake Shaft Modifications are being installed.

Test the system to demonstrate that the piping system has no leaks and is free from obstructions or breaks.

B. One of the existing 3-in-diameter stainless steel chemical dosing lines will be converted to a new sampling line. Install a new sampling well in the IPS-2 Access Shaft, and connect it to the existing dosing line that will become the new sampling line.

C. Conform to requirements of Section 15035 – Titanium Pipe, Fittings and Appurtenances.

3.12 FLOODING THE TUNNEL

A. After completing the work above, flood the tunnel. Open all air relief vents in the well shafts and in the intake shaft. Fill the tunnel and underground workings with water using the flood valve in the top of the OWNER-furnished hemispherical cap. Tunnel flooding shall be by gravity feed. Fill the tunnel slowly, i.e., over a period of day(s). Depending on the groundwater inflow rates, it may be possible to let the tunnel and shaft fill by ceasing the dewatering activities only.

3.13 REMOVING TOP HEMISPHERICAL CAP AND ROCK DEFLECTOR ROOF

A. After the tunnel is flooded and all air is out of the shaft and pressures are equalized, remove the cap and rock deflector roof and transfer to staging area. Rock deflector roof will become CONTRACTOR's property. The cap will be delivered to the AUTHORITY for storage. Inspect the top flange to receive the new low profile flared inlet with an ROV.

3.14 INSTALLING THE NEW FLARED INLET ASSEMBLY AND WATER SAMPLING STANDPIPE

A. After the cap is removed, lower the new low profile flared inlet assembly and set it on the flange

B. Bolt the assembly to the flange as shown. Inspect the completed installation with ROV.

C. At the top of the starter casing, attach a new SST standpipe to the existing chemical dosing line that was converted to the new sampling line.

3.15 INSTALLING THE MODIFIED ROCK DEFLECTOR ROOF

A. Transport the prefabricated new rock deflector roof structure to the worksite and carefully lower it into position. Prior to lowering the deflector roof, check for fit with the existing structure.

B. Handle the unit in such a manner to prevent overstressing or damaging the structure.

C. Provide a positive means of controlling the descent, and landing the deflector on the existing structure.

D. Once the deflector has landed, the installed unit shall be carefully inspected by ROV.

3.16 INSTALLING PLUG

A. Once the rock deflector modifications are in place, the plug will be set on the lake bed landing pad in the location shown.

B. Plug will be landed on the lake bed landing pad in a controlled manner that does not cause damage.

3.17 FINAL INSPECTION SURVEY

A. After flooding the tunnel, inspect the Intake Shaft liner elbow and approximately 200 feet of the tunnel using the ROV. Obtain video tape of the tunnel, elbow, Intake Shaft, flared inlet and rock deflector.

B. After completion of the intake construction, survey the intake site to obtain the exact coordinates of the facility and the elevation of the intake lip and the rock deflector.

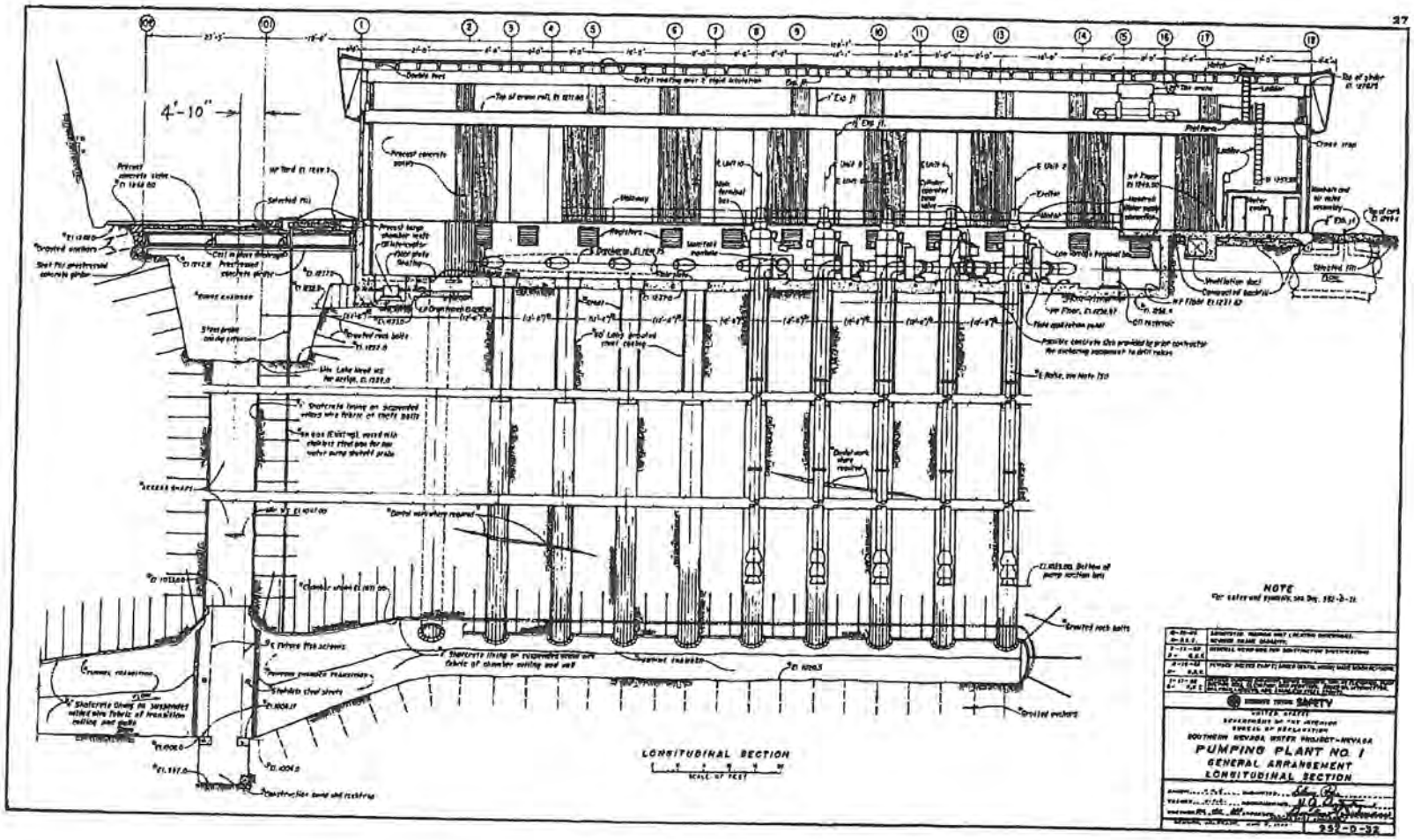
3.18 OTHER WORK

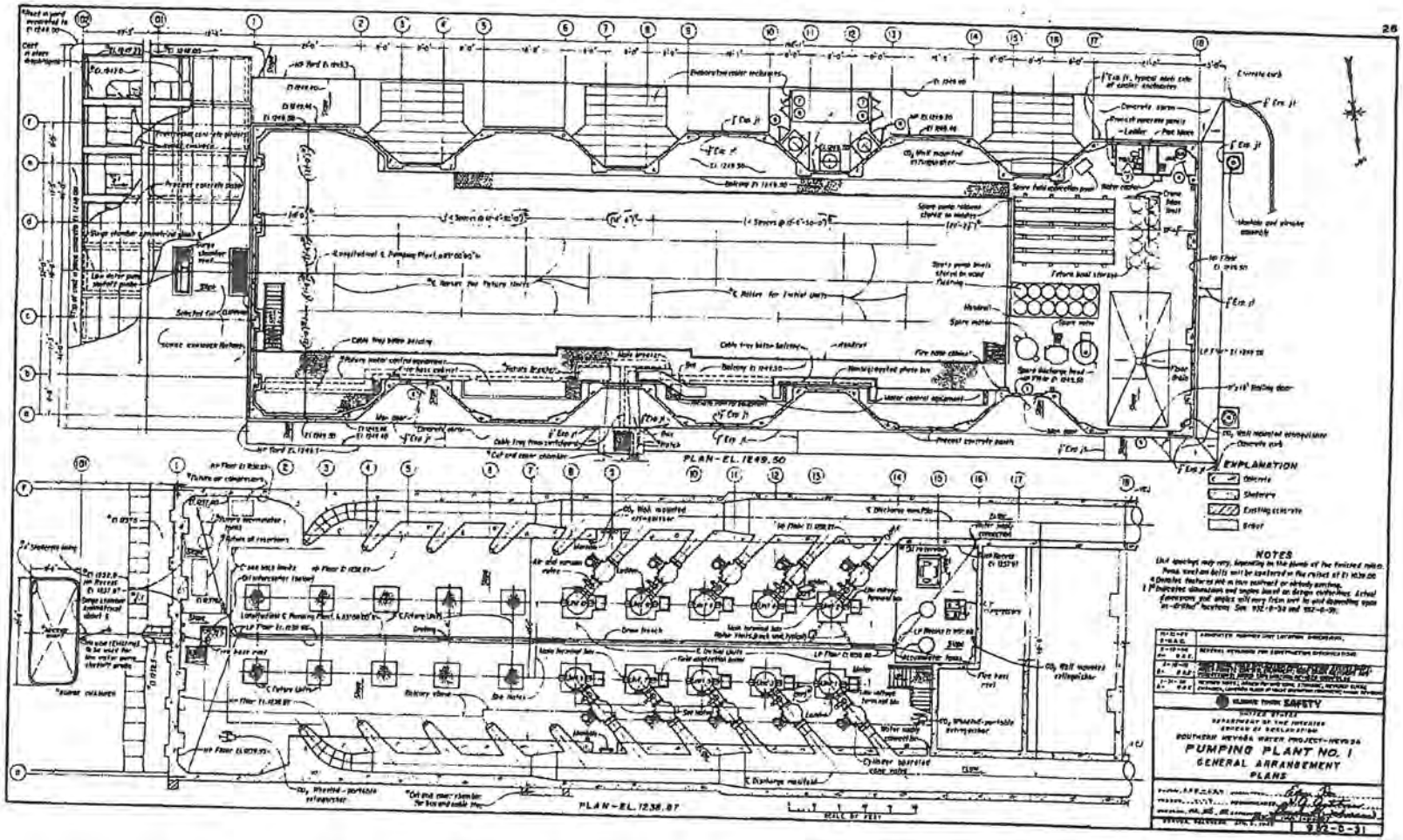
A. CONTRACTOR shall perform all other work necessary to construct the Intake Shaft modifications as shown and specified.

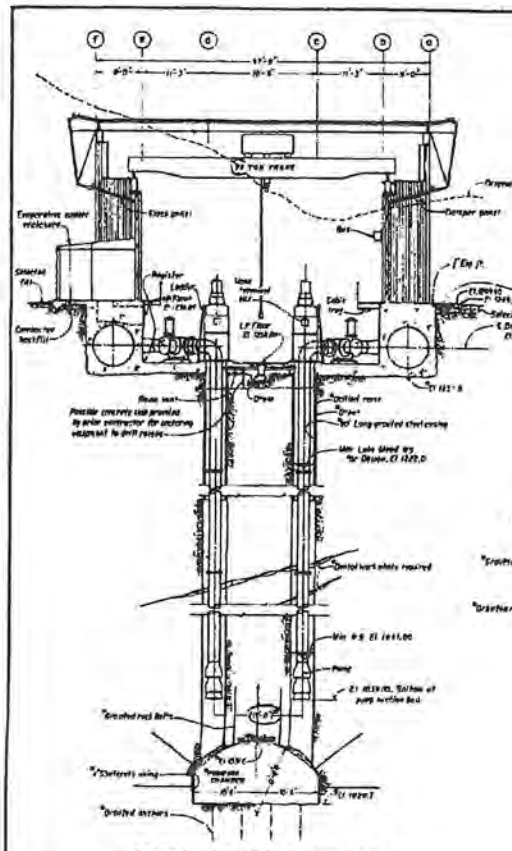
– END OF SECTION –

Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

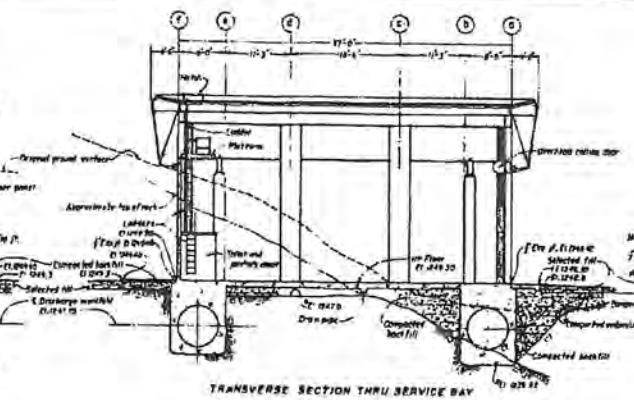
DRAWINGS FOR SHAFT SINKING WORK ITEM 1


4'-10"
LONGITUDINAL SECTION
SCALE OF FEET
NOTE
SAFETY
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SOUTHERN NEVADA WATER PROJECT—NEVADA
PUMPING PLANT NO. 1
GENERAL ARRANGEMENT
LONGITUDINAL SECTION
352-D-32

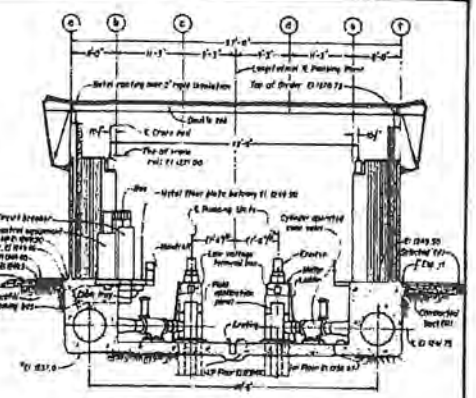

PLAN-EL. 1249.50
PLAN-EL. 1238.87
EXPLANATION
NOTES
PUMPING PLANT NO. 1
GENERAL ARRANGEMENT
PLANS
SOUTHERN NEVADA WATER PROJECT-NEVADA
9-12-5-31



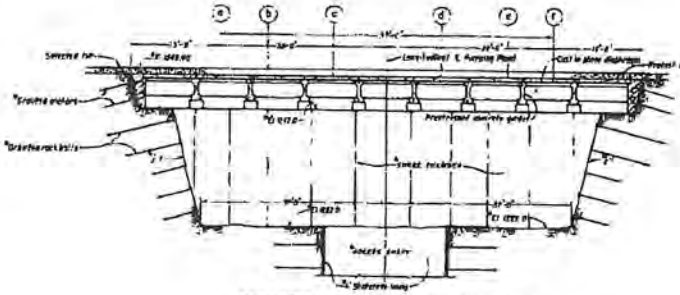
TRANSVERSE SECTION THRU UNIT BAY



TRANSVERSE SECTION THRU SERVICE BAY



TRANSVERSE SECTION THRU ELECTRICAL CONTROLS



TRANSVERSE SECTION THRU SURGE CHAMBER

NOTE
For notes and symbols, see Dwg. 952-D-21

SCALE OF FEET

UNITED STATES SAFETY

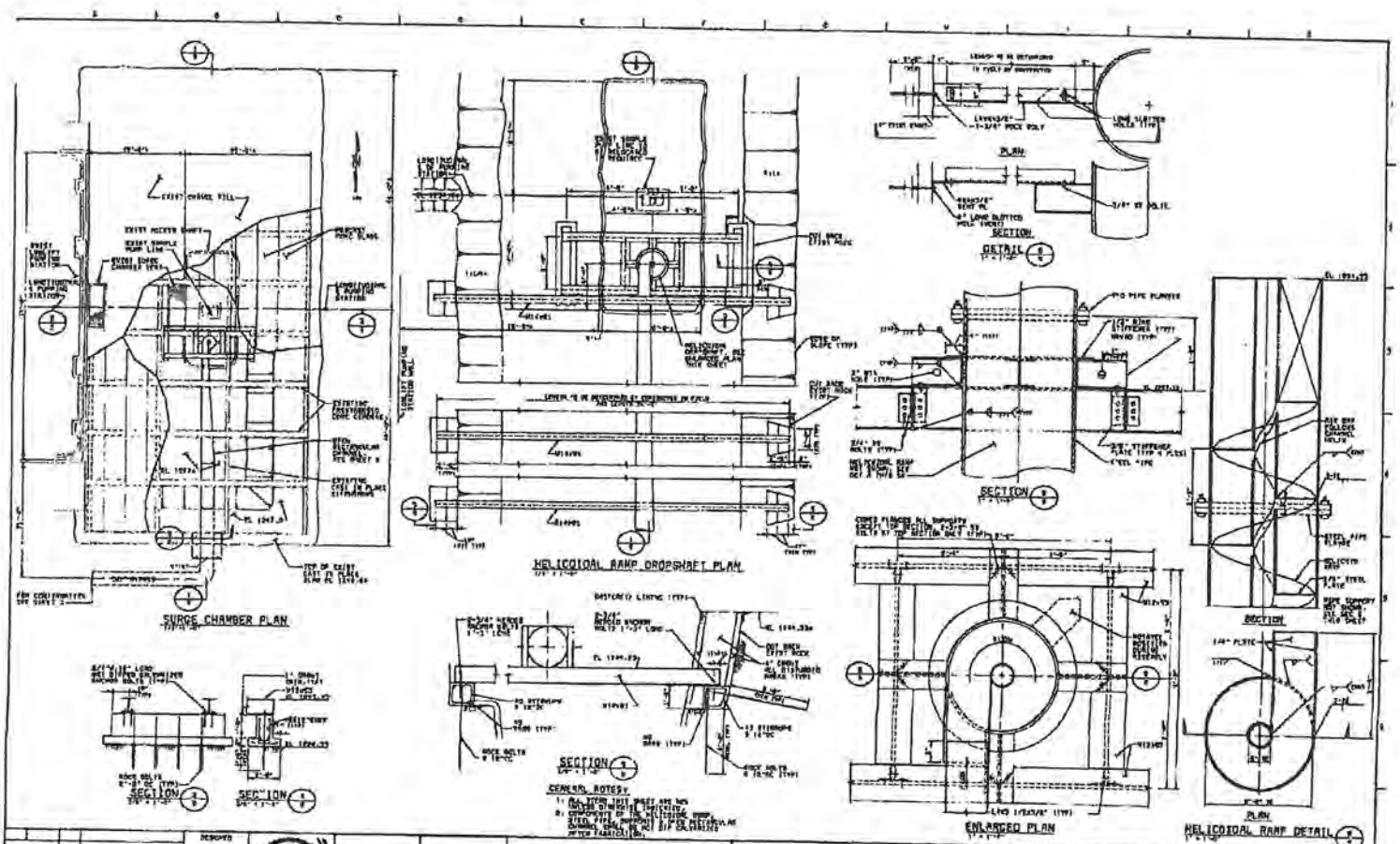
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SOUTHERN NEVADA WATER PROJECT - NEVADA

PUMPING PLANT NO. 1
GENERAL ARRANGEMENT
TRANSVERSE SECTIONS

952-D-35

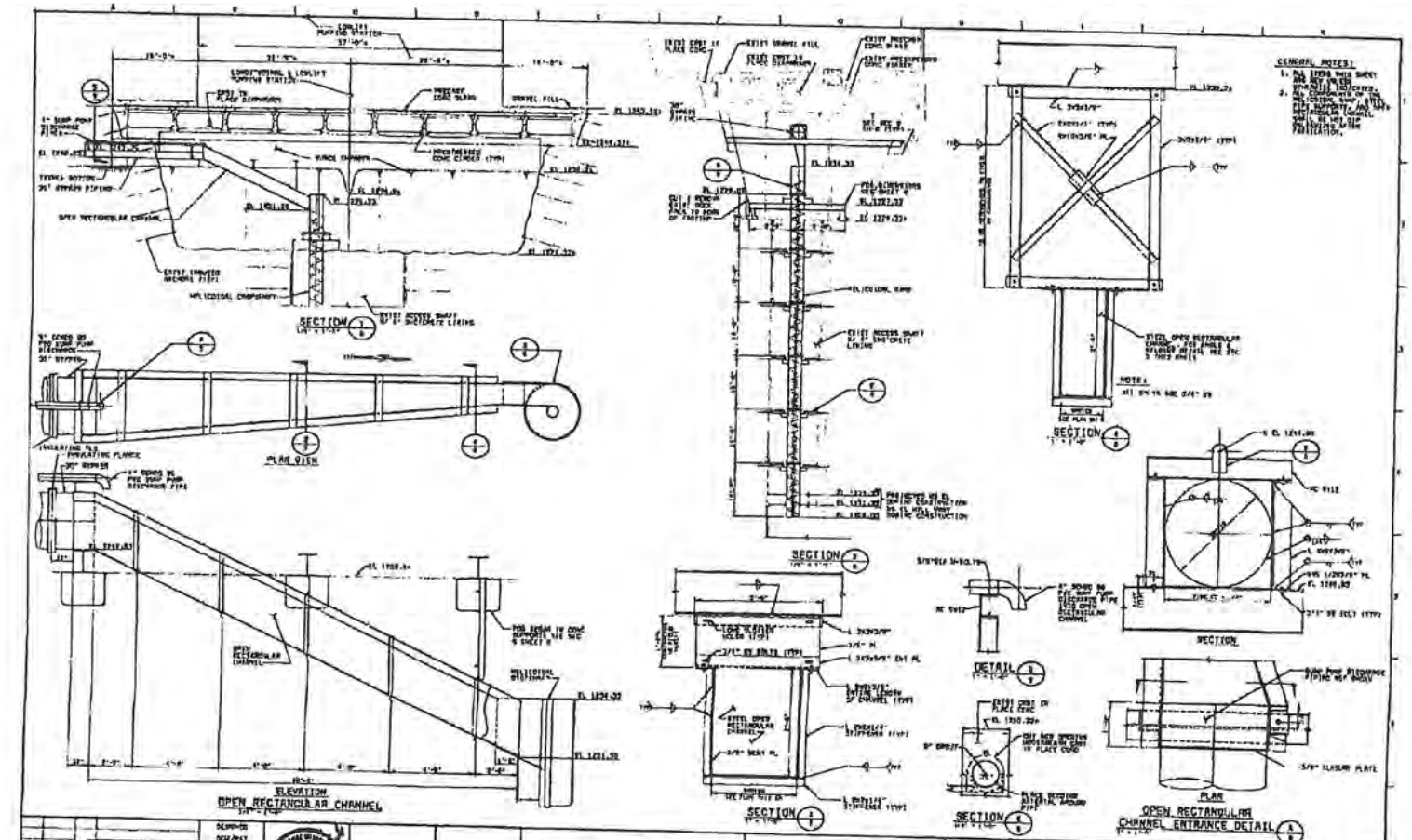
Change Order No. 012
Contract No. SNWA 070F 02 C2
Intake No. 3 Connector Tunnel

DRAWINGS FOR SHAFT SINKING WORK ITEM 2



C B V	CAROLLO, BLACK & VEATCH A JOINT VENTURE OF JOHN CAROLLO ENGINEERS BLACK & VEATCH	COLORADO RIVER COMMISSION OF NEVADA	COLORADO RIVER COMMISSION SNWS FACILITIES IMPROVEMENTS LIMIT PUMPING STATION IMPROVEMENTS EXISTING SURGE CHAMBER & HELICOIDAL RAMP DROPSHAFT PLANS, SECTIONS AND DETAILS CIVIL
CONTRACT	L11	DRAWING NO.	C009
SHEET NO.	8 OF 19		

DESIGNED BDL/PAT
DRAWN PAT
CHECKED MLK
DATE 1-3-95
STAMP DATE 4-5-95



CAROLLO, BLACK & VEATCH
A JOINT VENTURE OF
JOHN CAROLLO ENGINEERS
BLACK & VEATCH

COLORADO RIVER COMMISSION OF NEVADA

COLORADO RIVER COMMISSION
SNWA FACILITIES IMPROVEMENTS

ION LIFT PUMPING STATION IMPROVEMENTS
EXISTING SURGE CHAMBER SECTIONS & HELICOIDAL RAMP DROPSHAFT PLAN & SECTIONS

CIVIL

CONTRACT L11

DRAWING NO. C008

SHEET NO. 9 OF 15

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: FERC and PUC Intervention	**Director's Backup**
Petitioner: Gregory J. Walch, General Counsel	
Recommendations: That the Board of Directors ratify General Counsel's intervention in Federal Energy Regulatory Commission Docket EC-13-128 and Public Utility Commission Docket 13-07021 involving the proposed acquisition of NV Energy by MidAmerican Energy Holdings Company.	

Fiscal Impact:
None by approval of the above recommendation. Legal and professional service fees associated with these interventions are paid under separate agreements.

Background:
In July 2013, Nevada Power Company and Sierra Pacific Power Company d/b/a NV Energy, and MidAmerican Energy Holdings Company (MidAmerican) filed with the Federal Energy Regulatory Commission (FERC) and the Public Utilities Commission of Nevada (PUC) Joint Applications designated as FERC Docket 13-128 and PUC Docket 13-07021, for approval of a merger of NV Energy with MidAmerican. Following the acquisition, MidAmerican proposes to continue to operate NV Energy as a separate operating utility from its PacificCorp and MidAmerican systems. MidAmerican also states that the acquisition can and will be consummated regardless of whether the ON Line/single system merger is completed. An intervention was filed by the Authority at the PUC on August 14, 2013, and in the FERC case on September 10, 2013, the due dates in both cases.

At this point in time, the potential rate impacts of this acquisition or merger are unknown. Therefore, to protect the interests of the Authority, General Counsel authorized the filing of these timely interventions.

This action is authorized pursuant to 18 CFR 385.214, NAC 703.578 through 703.600, and Section 6(n) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved this agenda item.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
FOR PM:JJE:GJW:CKH:llm

AGENDA ITEM # 11

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Integrated Resource Planning Advisory Committee Recommendations	**Director's Backup**
Petitioner: John J. Entsminger, Senior Deputy General Manager	
Recommendations: That the Board of Directors receive a presentation on the recommendations report from the 2012-2013 Integrated Resource Planning Advisory Committee.	

Fiscal Impact:
None by approval of the above recommendation.

Background:
On April 19, 2012, the Board of Directors established the 21-member Integrated Resource Planning Advisory Committee (IRPAC) to consider the interrelated aspects of the water issues affecting Southern Nevada and develop formal recommendations for Board consideration. The IRPAC's efforts were augmented by a Financial Subcommittee appointed by the Las Vegas Valley Water District (LVVWD) Board of Directors and the North Las Vegas (NLV) City Council. These individuals represented ratepayers of their appointed agency; five individuals representing LVVWD and two individuals representing NLV, for the specific task of reviewing the proposed rate increases in their represented jurisdiction.

Since June 2012, the IRPAC has met 14 times in public meetings to review and develop funding recommendations for the Board of Directors. The IRPAC received a series of informational briefings on key issues affecting the Authority. A neutral facilitator was utilized to ensure all perspectives were heard and considered throughout the process.

To provide additional oversight and peer review, the Board also appointed a Technical Review Committee consisting of five technical experts, two of which were IRPAC members. This technical committee participated in three public meetings to review and validate the assumptions used within the IRPAC's rate model.

The IRPAC's deliberations resulted in nine funding recommendations. The recommendations suggest specific actions to fund a significant increase in debt service payments that begin in 2016 and propose policy changes that help provide for long-term funding stability. The IRPAC's Recommendations Report summarizes activities and discussions, and details IRPAC's final recommendations. The IRPAC has completed the first phase of its work, and is expected to begin its second phase to discuss water resources, facilities, conservation and water quality in 2014.

At this time, the Board is being asked to receive a presentation on the IRPAC's Recommendations Report.

The office of the General Counsel has reviewed and approved this agenda item.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:PDS:JAW:AMB:LS:KH
Attachment

FOR

AGENDA ITEM # 12

SOUTHERN NEVADA WATER AUTHORITY®

Integrated Resource Planning Advisory Committee
RECOMMENDATIONS REPORT
Phase I: Funding Sources

September 2013

TABLE OF CONTENTS

I. Executive Summary 3

II. Advisory Committee 6

III. Discussion Topics 8

IV. Recommendations 10

Appendix A – Membership 16
- a. IRPAC Membership 16
- b. IRPAC Financial Subcommittee Membership 17

Appendix B – Technical Review Committee 18

Appendix C – Population Projections 19

Appendix D – Meeting Synopsis 20
- a. Committee Meetings 20
- b. Committee Tour 21

Appendix E – IRPAC Rate Structure Attributes 22

Appendix F – IRPAC Customer Sample Set 23

Appendix G – IRPAC Rate Model 25

Appendix H – Proposed Changes by Year 26

Appendix I – Sample Customer Bills 27

EXECUTIVE SUMMARY

Since its creation, the Southern Nevada Water Authority (SNWA) has established a tradition of public participation in its integrated resource planning efforts, which explores the connections and relationships among water resources, water quality, conservation, engineering, planning, environmental stewardship, funding and community involvement. Previous integrated planning processes, including the Integrated Resource Plan Advisory Committee (1994-1996) and Integrated Water Planning Advisory Committee (2004-2005), were initiated in response to changing conditions, such as unprecedented population growth and record-breaking drought, which required an evaluation of organizational initiatives and priorities.

Over the past five years, depressed economic conditions affected SNWA revenues particularly hard. SNWA connection charge revenues – a funding source that financed 57 percent of new SNWA capital projects – plummeted from a high of $188 million in 2005 to $3 million only three years later. These connection charges were assessed to new development in Southern Nevada with the intention that new growth would bear the burden of funding the water treatment and delivery system improvements needed to provide the growing Southern Nevada population with a reliable water supply. The SNWA had expended significant capital in order to meet water demands, but changing economic conditions jeopardized its ability to meet debt obligations.

In order to stave off rate increases for as long as possible, the SNWA refinanced bonds, cut personnel by 25 percent, deferred $400 million in capital projects and relied upon reserves to meet bond payments. In 2012, a new funding source – the SNWA Infrastructure Charge – was implemented to recover costs associated with the infrastructure in place and fund the ongoing construction of a new intake in drought-stricken Lake Mead. While the Infrastructure Charge provided a solution to SNWA's funding challenges in the near term, another concern remained on the horizon. Beginning in 2016, the SNWA's annual debt service payment increases approximately $80 million.

Meanwhile, severe drought conditions continue to affect flows of the Colorado River, the source of 90 percent of the community's water supply. Lake Mead water elevations are expected to decline, potentially triggering shortage declarations. While economic conditions have temporarily suppressed Southern Nevada's water demands, long-term projections indicate the community will continue to grow.

To address the challenges associated with recent economic conditions in a comprehensive way, the SNWA Board again initiated an integrated resource planning process in 2012. As part of the process, the Board convened a stakeholder committee to provide input on existing organizational initiatives including funding, resources, facilities, conservation, and water quality.

This stakeholder group, known as the Integrated Resource Planning Advisory Committee (IRPAC), divided its work into two phases. The IRPAC has met 14 times between June 2012 and September 2013 to discuss funding-related matters. A second phase will focus on developing

recommendations on water resources, facilities, conservation and water quality. The two-part process provides the SNWA Board the flexibility needed to implement changes to SNWA rates and charges in a timely manner. The next phase of recommendations is anticipated for SNWA Board consideration at a later date.

This report summarizes the activities and results of the IRPAC process as it relates to the SNWA capital funding plan. Section I is an overview of the committee process. Section II reviews committee discussion topics. Section III provides the committee's nine funding-related recommendations.

Recommendations Summary

Below is a summary of the Committee's funding-related recommendations:

1. Develop rates through a transparent and inclusive community process.

2. Retain the existing rates and charges previously adopted by the SNWA Board and its purveyor members, formalizing the fire line meter charge at 17.5 percent of the current Infrastructure Charge.

3. Cap the Infrastructure Charge on fire line meters at the 2013 dollar amounts.

4. Increase the Commodity Charge $.18 per 1,000 gallons (from $.30 to $.48) to meet 50 percent of annual revenue requirements in the target year 2017 and increase the Infrastructure Charge to meet the other half of annual revenue requirements, as outlined in Appendices G and H.

5. Temporarily reduce the maximum rate in 2014, 2015 and 2016 to provide the community time to adjust to the new rates.

6. Separate money added to the New Expansion Debt Service fund and related interest attributed to the 2014 and 2015 phased-in rates from the remainder of the fund balance and use it to only offset forecasted operating deficits in 2016 to 2021 and not for any other purposes.

7. Allocate Connection Charge revenues in excess of the 2014 base year ($16.1 million) exclusively to pay the following, in order of priority:
   a. Early payment or pre-refunding of existing debt or one-time capital expenditures, whichever is most financially efficient, and
   b. Water rate reductions.

8. If funds in excess of the target fund balance remain in the New Expansion Debt Service fund (not including phased-in rate revenue), use the excess fund balance only for any of the following purposes:
   - To redeem outstanding bonds (thereby reducing outstanding debt and future debt

service requirements);

- To acquire capital assets that would otherwise need to be funded with borrowed money (thus avoiding additional debt and debt service);
- To moderate further the impact of future rate increases; or
- To reduce water rates.

9. Encourage the Las Vegas Valley Water District and the cities of Henderson and North Las Vegas to assess the rates and charges approved by the SNWA Board.

ADVISORY COMMITTEE

Membership

The SNWA Board appointed twenty-one (21) individuals, representing diverse stakeholder groups with an interest in the SNWA's long-term planning efforts.

To evaluate the wholesale rates and charges from the retail perspective, the City of North Las Vegas and the Las Vegas Valley Water District appointed two and five individuals, respectively, as representatives of member agency Financial Subcommittees. Henderson did not appoint a separate subcommittee and opted to utilize the members appointed by the SNWA Board member to represent the city. The two Financial Subcommittees worked alongside the IRPAC throughout the water rate education and scenario evaluation process.

A list of IRPAC and financial subcommittee members is provided in Appendix A.

Process

To coordinate and manage committee and subcommittee meetings, the SNWA retained an independent, neutral facilitator from out-of-state (David Ebersold, CDM Smith, Los Angeles). Mr. Ebersold was responsible for soliciting dialogue and interaction among committee members, ensuring all perspectives had an opportunity to be heard and considered, and suggesting appropriate process tools to assist the committee members in problem-solving and other aspects of their deliberations.

Consensus served as the basis for formulation of the IRPAC's recommendations. Members worked together to identify positions that were generally acceptable to the committee as a whole.

To encourage public involvement, IRPAC meetings were publicly posted in accordance with Nevada's Open Meeting Law. Presentations and audio recordings of each meeting are posted on SNWA.com. In addition, the SNWA Board received frequent updates about IRPAC activities at the regularly-scheduled public Board meetings.

Technical Review Committee

As the IRPAC process was underway, the SNWA Board approved creation of a Technical Review Committee (TRC) to assist both the IRPAC and the SNWA Board in ensuring that any rates adopted are based on sound data, assumptions and methods. As such, the SNWA Board subsequently appointed five individuals, based on recommendations from IRPAC, as members of the Technical Review Committee (Appendix B). In order to be appointed to the TRC, individuals had to be from the business or academic community with qualifying credentials or experience in economics, public and/or business finance and include at least one member with rate-making design experience.

This smaller committee met three times in July and August 2013 to review and verify the inputs, assumptions and other key variables involved in rate design and the IRPAC rate model. They reviewed rate model assumptions including population projections, projected sales tax collections, water use projections and other related information.

The Technical Review Committee decided to limit its scope to years 2014 – 2018. The committee was more comfortable validating the assumptions used within a 5-year budget horizon.

Following deliberations, the committee agreed to the following model assumptions:

- **Sales Tax:** Use a tapered projection, as indicated in Table A.
- **Connection Charge Projections**[1]**:** Project Connection Charge revenues to increase 1.07 percent annually (forecasted population growth is used as a proxy).
- **Water Use Projections:** Project water sales to grow at a rate consistent with the growth forecasts prepared by Applied Analysis (Appendix C)
- **Price Elasticity Projections:** Utilize an elasticity factor of -.34 for the Commodity Charge and a discounted factor of -.15 for the Infrastructure Charge.
- **Interest Earnings Projections:** Revise the original assumption to reflect more positive interest returns, as shown in Table B.
- **Operating Expenses:** Tie the projected capitalized labor expenses to the SNWA's approved capital projects within its Major Construction and Capital Plan.

TABLE A: Sales Tax Projections

	2014	2015	2016	2017	2018	2019	2020	2021
Projected Increase (%)	5	5	4.5	4	3.5	3	2.5	2

TABLE B: Interest Earnings Projections

	2014	2015	2016	2017	2018	2019	2020	2021
Projected Increase (%)	1	2	3	3	3	3	3	3

[1] While the Technical Review Committee considered Connection Charge Revenue projections, the larger IRPAC committee later recommended capping Connection Charge revenues at $16.1 million in the rate model for years 2014-2021 and use the remainder of revenues earned from Connection Charges to prepay or pre-refund existing debt, make a one-time capital expenditure or reduce water rates. See IRPAC recommendation number seven.

DISCUSSION TOPICS

To lay the foundation for an in-depth evaluation of the SNWA's current rate structure, the IRPAC received briefings on the history of water in Southern Nevada, regional facility construction, local purveyor water systems, water demands, water resource management, SNWA fund management and SNWA rates and charges. A summary of meeting topics is included in Appendix D. More detailed meeting summaries are available at SNWA.com.

Following an overview of SNWA facilities and operations, the IRPAC began tackling funding-related topics in detail and considered a number of key concepts and issues, including:

- The costs associated with infrastructure needed for emergency and backup supplies, regardless of whether water is used.
- The importance of ensuring adequate facility protection against current and future drought(s).
- The factors associated with building and maintaining a good bond rating.
- The attributes that comprise a fair water rate for Southern Nevada.
- The appropriate mix of fixed and variable fees within water bills.
- The challenge of developing a funding formula that works for Southern Nevada's current economic conditions, but remains a viable formula over the long term.

Evaluating Rate Structures

The bulk of Southern Nevada's existing water system was constructed in the 1990s and 2000s during periods of explosive growth in the community. This infrastructure continues to serve the community and provide Southern Nevada with a reliable water supply. The committee understood that paying the "mortgage" on these facilities benefits the community as a whole; however, members held differing opinions on how these payments should be distributed among customers.

Before the committee considered changes to the SNWA's existing rate structure, the facilitator led the group through an exercise to determine the attributes that should comprise a rate structure. The IRPAC identified ten attributes appropriate for consideration in Southern Nevada's rate structure, which are outlined in Appendix E. Once approved by the committee, the list of rate structure attributes allowed for clear communication of stakeholders' interests and values and facilitated the evaluation of various rate structures and their impacts.

To help understand the impacts of different rate structures on the community, the committee then identified a sample set of representative customers. The sample set included more than 30 sample accounts that represented a broad spectrum of customers in Southern Nevada, including residential customers, casinos, commercial laundries, schools, industrial business, restaurants, storage facilities and golf courses. The sample customers are identified in Appendix F.

Each scenario was designed to achieve an average of $80 million in additional annual revenue for the period 2014-2021. This figure is based on the amount of revenue needed to meet annual debt service payments and maintain reserves at a level of one year of principal and interest on outstanding debt. Review and discussion of the rate structure scenarios led to the committee's final recommendations.

A number of meetings were spent discussing the following key issues related to SNWA's rate structure:

- *The appropriate increase to fixed and variable charges*
  The committee evaluated how the deficit would be funded using the existing revenue streams available to SNWA, which include the Commodity Charge, Reliability Surcharge and Infrastructure Charge. Because the Reliability Surcharge for residential customers is already set at the maximum permitted by law, the committee focused its efforts on the Commodity Charge and Infrastructure Charge.
- *Timing of the rate increase*
  Additional funding is not needed until 2016 when the annual debt service requirement significantly increases. During the rate scenario review process, the idea of implementing new funding prior to 2016 was considered. Early implementation of a rate increase would ultimately lower the total rate increase and reduce rate shock.
- *Impacts to fire line meter customers*
  The Infrastructure Charge was implemented in 2012 to fund outstanding debt associated with the facilities constructed to support Southern Nevada's need to provide reliable water supplies to its service area. A component of the Infrastructure Charge was a charge to fire line meters – a required fire protection component for many commercial businesses. Costs associated with this surcharge are based upon the water treatment and distribution infrastructure necessary to ensure fire protection.

Revenue Security

Recognizing that some of the SNWA's revenue streams are more stable than others, the committee evaluated the long-term viability of SNWA revenue sources. Specifically, SNWA's Sales Tax proceeds, approved by voters in 1998 to fund water and wastewater capital improvements, is subject to sunset in 2025 or when $2.3 billion is collected, whichever is first. The tax represents a critical component to SNWA finances. For fiscal year 2013-2014, the source is projected to earn approximately $50 million, which represents nearly 15 percent of SNWA revenues. Should the tax be allowed to sunset, the SNWA would need to find a new source of funding to replace those revenues. While the committee discussed the sales tax issue, a decision on when or if to pursue and extension was postponed.

Fund Balance Policies

The SNWA Board also directed the IRPAC to evaluate and make recommendations on a sound policy for variances in fund balances. Specifically, the committee identified recommendations to handle money that exceeds the fund balance target of $280 million. The committee considered a number of options including a Rate Stabilization Fund and paying down debt early.

RECOMMENDATIONS

1. **Develop rates through a transparent and inclusive community process.**
   Early in the process, some committee members voiced concerns about the public outreach and education surrounding the Infrastructure Surcharge implementation process done in 2012. To address these issues, the committee agreed that it is important to conduct future rate planning in a transparent and inclusive community process.

   The SNWA can utilize a number of tools to reach the public including a newsletter, website, social media resources, public meetings and workshops, aired and printed media and the formation of similar citizen committees to address future rate planning issues.

2. **Retain the existing rates and charges previously adopted by the SNWA Board and its purveyor members, formalizing the fire line meter charge at 17.5 percent of the current Infrastructure Charge.**
   In February 2012, the Infrastructure Charge was approved by the SNWA Board of Directors to pay for critical water infrastructure. As the new surcharge appeared on water bills, some businesses questioned including the fire line meter charge in the funding formula.

   Costs associated with the fire line meter charge are based upon the water treatment and distribution infrastructure necessary to meet fire flow requirements. While business owners might never use the fire line, the premise of fire protection is that water must be available at full volume at all times in case of emergency. Therefore, the treatment, facilities, laterals, pumping stations and associated facilities must be sized, designed and built to meet their flow requirements.

   The new fee associated with the fire line service meters sparked significant public interest. The SNWA Board listened to the business community concerns and implemented a 50 percent credit on fire line meter charges in August 2012. The Board's action effectively reduced the fire line meter charge, initially billed at 35 percent of the Infrastructure Charge of the same meter size, to 17.5 percent of the Infrastructure Charge.

   The committee discussed the issues surrounding the fire line meter charge, specifically how these costs for required infrastructure should be shared among all customers or whether it should be assessed to property owners to pay for the facilities that protect their investment, employees and customers. The committee agreed that the fire line meter charges should be retained to continue funding the infrastructure and maintenance associated with the fire line systems. The committee did not recommend increasing the rate to its previously-approved charge of 35 percent of the Infrastructure Charge (a more detailed explanation is in the following recommendation). Therefore, the fire line charge should be billed at 17.5 percent of the 2012 Infrastructure Charge (2012 rates), and the previously-approved 35 percent rate and its subsequent 50 percent credit be removed. The 2013 fire line charges (fixed at 17.5 percent) are outlined in Table C.

Table C: SNWA Daily Fire Line Infrastructure Charges

Fire line Size	SNWA Daily Fire Infrastructure Charge
⅝ & ¾	$.1112
1"	$.2105
1½"	$0.4210
2"	$0.6735
3"	$1.3470
4"	$2.1047
6"	$4.2092
8"	$6.7347
10"	$9.6810
12"	$9.6810

3. **Cap the infrastructure charge on fire line meters at the 2013 dollar amounts.**
Committee members considered rate scenarios that had varying impacts to fire line meters. Some scenarios had no impacts to fire line meters – the rate would remain unchanged while other rate components would increase to supplement the revenue. Other rate scenarios considered an increase to fire line meters that would be proportionate to increases to the Infrastructure Charge, meaning if the Infrastructure Charge increased for a given meter, then the fire line rate would also increase correspondingly. The IRPAC also considered an annual inflationary increase, based on a suggestion made by a committee member.

   To aid in discussions, a chart was prepared that demonstrated the amount of revenue provided by fire line meters in a 3 percent inflationary increase scenario. Following their evaluation of the information and discussion about fairness to the commercial businesses that maintain fire lines, the committee achieved consensus and agreed to cap the Infrastructure Charge on fire line meters at 17.5 percent of the current Infrastructure Charge (see Table C). Some committee members noted that this issue would need to be considered by future advisory committees because all infrastructure – fire line meters included – require maintenance and replacement and additional increases may be required to support those activities in the future.

4. **Increase the Commodity Charge $.18 per 1,000 gallons (from $.30 to $.48) to meet 50 percent of annual revenue requirements in the target year 2017 and increase the Infrastructure Charge to meet the other half of annual revenue requirements, as outlined in Appendices G and H.**
The first three rate examples the committee reviewed included examples that funded additional debt service payments exclusively through an increase to the SNWA Commodity charge (variable), exclusively through an increase to the SNWA Infrastructure Charge (fixed rate); and through collecting equal amounts from increases to the SNWA Commodity Charge and the SNWA Infrastructure Charge (50/50 split).

These scenarios led to a number of committee discussions of how these increases would be received by the community, and the types of messages these increases would send. Several committee members noted that a Commodity Charge-only increase would send a very distinct conservation signal to customers. Conversely, if the increase solely affected the Infrastructure Charge, some members argued that many conservation-minded customers could feel frustrated that their bills would increase anyway, despite lower water use.

Other members noted that the bulk of SNWA's expenditures are fixed, including its debt service payments. These members argued a rate structure that relied on the Infrastructure Charge would more accurately represent the fixed-cost nature of the expenditures it was funding. In addition, some committee members noted that a fixed-charge revenue source is more stable and predictable.

In total, the committee considered 16 rate scenarios to evaluate impacts on customers. Following months of discussion, the committee agreed to recommend that Commodity Charge revenues and Infrastructure Charge revenues should equally fund the additional annual revenue requirements. One committee member did not support the 50/50 recommendation and still felt strongly that the funding deficit be funded through Commodity Charge revenues contributing 75 percent and Infrastructure Charge contributing 25 percent of revenue, and asked that the meeting summary reflect the member's position.

See Appendices G, H and I for rate impacts related to the committee's recommendation to fund revenue requirements through an equal mix of Commodity Charge and Infrastructure Charge revenues.

5. **Temporarily reduce the maximum rate in 2014, 2015 and 2016 to provide the community time to adjust to the new rates.**
Many committee members were wary of the idea of implementing a rate increase earlier than needed. These members supported one large increase in 2016, citing the lack of the financial need to collect revenue early. Additionally, some committee members had concerns that additional revenues would be used to fund other projects or SNWA initiatives.

Other committee members supported a phased-in rate increase, noting many customers would prefer gradual rate increases than one large increase. One committee member noted customers on fixed-incomes may find it difficult to absorb a large rate increase in one year.

Following months of lengthy discussion, the committee achieved consensus and ultimately supported establishing the maximum increase in the highest year, but temporarily discounting the charges in the years leading up to 2017, recognizing that many Southern Nevada ratepayers will find incremental increases easier to absorb and account for than a large increase in 2016. This approach leads to a lower maximum rate because a portion of the revenue is collected earlier.

Therefore, the committee recommended a reduced rate in years 2014 – 2016 before reaching the maximum rate in 2017. An example of the proposed increases to the existing rates for a typical 5/8 inch single-family residential customer with typical water use is shown in Table D:

Table D: IRPAC Rate Model for a 5/8-inch Residential Customer, 10,000 gallons use

	2014	2015	2016	2017
Commodity Charge (per 1,000 gallons)	$0.04	$0.08	$.0.14	$0.18
Infrastructure Charge	$0.64	$1.36	$2.18	$3.11

6. **Separate money added to the New Expansion Debt Service fund and related interest attributed to the 2014 and 2015 phased-in rates from the remainder of the fund balance and use it to only offset forecasted operating deficits in 2016 to 2021 and not for any other purposes.**
   Committee members felt strongly that revenues collected as a result of early rate implementation beyond the revenue that was projected without a phased-in rate structure should be separated from the New Expansion Debt Service fund. Committee members suggested separating these revenues to offset forecasted operating deficits in years 2016 through 2021, which ultimately minimizes the rate increase impact in the later years as well.

7. **Allocate Connection Charge revenues in excess of the 2014 base year ($16.1 million) exclusively to pay the following, in order of priority:**
   a. **Early payment or pre-refunding of existing debt or one-time capital expenditures, whichever is most financially efficient; and**
   b. **Water rate reductions.**

   Committee members noted the volatility in Connection Charge revenue, citing its range of revenue collections throughout the 2000s. The committee also felt a funding formula that relied on Connection Charge revenues to fund debt service no longer worked for the community.

   To reduce the volatility of Connection Charge revenues within the SNWA's funding formula, the committee recommended capping the revenue at $16.1 million in the SNWA rate model. Revenues earned in excess of $16.1 million will be used (in order of priority) to prepay or pre-refund existing debt or make a one-time capital expenditure, or reduce water rates.

8. **If funds in excess of the target fund balance remain in the New Expansion Debt Service fund (not including phased-in rate revenue), use the excess fund balance only for any of the following purposes:**
   - **To redeem outstanding bonds (thereby reducing outstanding debt and future debt service requirements);**

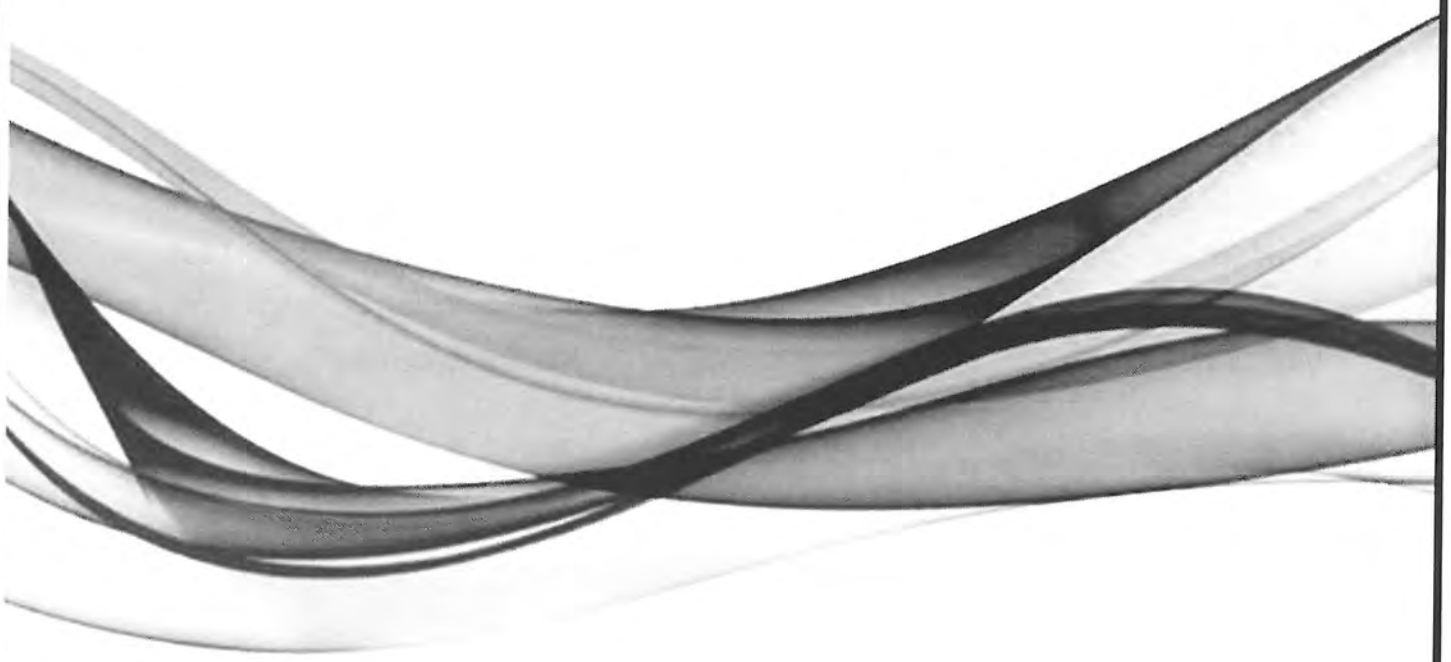
- **To acquire capital assets that would otherwise need to be funded with borrowed money (thus avoiding additional debt and debt service);**
- **To moderate further the impact of future rate increases; or**
- **To reduce water rates.**

The rate model recommended by IRPAC changes only to achieve the target fund balance ($280 million) and meet bond obligations; no additional revenue was realized to fund the Rate Stabilization Fund. The committee wanted to ensure any surplus revenues collected were allocated and spent responsibly.

To ensure the recommendation was flexible and could accommodate changing conditions, the committee included four options should financial performance outpace projections and the New Expansion Debt Service Fund accrue excess funds. Within this framework, it would be at the discretion of the SNWA Board along with SNWA technical staff to determine the optimal method of spending revenue accrued beyond the modeled forecast.

9. **Encourage the Las Vegas Valley Water District and the cities of Henderson and North Las Vegas to assess the rates and charges approved by the SNWA Board.**
Members of the Financial Subcommittees were tasked to evaluate the wholesale rates and charges from the retail perspective. Through the evaluation process, subcommittee members agreed that the recommended wholesale rate proposal should be uniformly assessed to Southern Nevada residents and not changed within purveyor service areas.

APPENDICES



APPENDIX A

IRPAC Membership

Member	Stakeholder Category
Tom Burns	Las Vegas Chamber
Kirk Clausen	Financial Industry
Yvanna Cancela[2]	Labor
Thalia Dondero	Southern Nevada Residents
Bob Ferraro	Senior Citizens
Mike Forman	Homeowners Associations
Garry Goett	Golf Courses
Joyce Haldeman[3]	Education
Warren Hardy	General Contractors
Katherine Jacobi	Restaurants
Carol Jefferies	Southern Nevada Residents
Bob Kasner	Henderson Chamber
Jennifer Lewis	Development
Otto Merida	Latin Chamber of Commerce
Bobbi Miracle	Realtor/Financial Industry
Phil Ralston	Industrial/Commercial Business
John Restrepo	North Las Vegas Chamber
Scot Rutledge	Environmental
David Scherer	Small Industrial/Commercial Bus.
Danny Thompson	Building Trades
Virginia Valentine	Hospitality/Gaming

[2] Yvanna Cancela filled the vacancy left by D. Taylor, as appointed at the February 21, 2013 SNWA Board meeting.
[3] Joyce Haldeman filled the vacancy left by Dwight Jones, as appointed at the September 20, 2012 SNWA Board meeting.

APPENDIX A, *continued*

IRPAC Financial Subcommittee Membership

Member	Stakeholder Category
Brian McAnallen	LVVWD Ratepayers
Jarmilla McMillan-Arnold	LVVWD Ratepayers
Terry Murphy	LVVWD Ratepayers
Tom Warden[4]	LVVWD Ratepayers
Joe Woody	LVVWD Ratepayers
Jay King	NLV Ratepayers
Gay Shoaff	NLV Ratepayers

[4] Tom Warden filled the vacancy left by Launce Rake, as appointed at the February 5, 2013 LVVWD Board meeting.

APPENDIX B

IRPAC Technical Committee Membership

Mike Alastuey	Public finance
Marcus Conklin	Business and public finance
Paula Eylar-Lauzon	Business finance
Bob Kasner	Business and public finance, utility ratemaking
John Restrepo	Business finance

Technical Review Committee Meeting Synopses

The following provides a brief synopsis of meeting dates and discussion topics.

Meeting 1 – July 29, 2013: Purpose and scope of Technical Review Committee and finalized assumptions related to interest earnings, sales tax revenues, Connection Charges, water sales and price elasticity.

Meeting 2 –July 31, 2013: Finalized assumptions related to connection charge revenues and debt service schedule.

Meeting 3 – August 20, 2013: Finalized assumptions related to operating expenses

Complete meeting summaries and audio recordings are available online at SNWA.com.

APPENDIX C

Population Projections

Source: Applied Analysis

Year	Population Forecast	Growth in Population Forecast	Growth in Population (Percent)
2011 [a]	1,966,630		
2012 [a]	2,008,654	42,024	2.14%
2013	2,026,732	18,078	0.90%
2014	2,049,026	22,294	1.10%
2015	2,077,713	28,686	1.40%
2016	2,107,887	30,175	1.45%
2017	2,143,068	35,181	1.67%
2018	2,180,186	37,118	1.73%
2019	2,216,860	36,674	1.68%
2020	2,252,307	35,448	1.60%
2021	2,287,353	35,046	1.56%
2022	2,320,271	32,917	1.44%
2023	2,351,014	30,744	1.33%
2024	2,379,109	28,095	1.20%
2025	2,405,969	26,860	1.13%
2026	2,430,601	24,632	1.02%
2027	2,454,056	23,455	0.97%
2028	2,476,508	22,451	0.91%
2029	2,497,372	20,865	0.84%
2030	2,517,931	20,558	0.82%
2031	2,538,423	20,492	0.81%
2032	2,558,882	20,460	0.81%
2033	2,579,353	20,471	0.80%
2034	2,599,988	20,635	0.80%
2035	2,620,788	20,800	0.80%
2036	2,641,754	20,966	0.80%
2037	2,662,888	21,134	0.80%
2038	2,684,191	21,303	0.80%
2039	2,705,665	21,474	0.80%
2040	2,727,310	21,645	0.80%
2041	2,749,129	21,818	0.80%
2042	2,771,122	21,993	0.80%
2043	2,793,291	22,169	0.80%
2044	2,815,637	22,346	0.80%
2045	2,838,162	22,525	0.80%
2046	2,860,868	22,705	0.80%
2047	2,883,754	22,887	0.80%
2048	2,906,824	23,070	0.80%
2049	2,930,079	23,255	0.80%
2050	2,953,520	23,441	0.80%

APPENDIX D

IRPAC Meeting Synopses

The following provides a brief synopsis of discussion topics related to SNWA funding during the first phase of the IRPAC process. A detailed summary with an audio recording was developed for each meeting and is available on SNWA.com or by contacting the SNWA.

Meeting 1 – June 27, 2012: Introduction to integrated planning processes, overview of Nevada's Open Meeting Law, a review of previous integrated planning processes undertaken by the SNWA and previous recommendation reports.

Meeting 2 –September 12, 2012: History of water in Southern Nevada, water use in Southern Nevada, mission statement development.

Meeting 3 – October 3, 2012: Water facility construction, water facility expansion, SNWA water resource plan, water resource planning and return-flow credits.

Meeting 4 – October 24, 2012: Overview of regional water system, SNWA responsibilities, SNWA revenue sources, SNWA sub-funds, debt service and rate structure attributes.

Meeting 5 – November 14, 2012: Local purveyor rate structures and water systems.

Meeting 6 – December 5, 2012: Rate structure attributes, SNWA debt, finances and bond financing.

Meeting 7 – January 14, 2013: SNWA debt, SNWA revenues, rate model assumptions, Infrastructure Charge overview.

Meeting 8 – February 11, 2013: Rate example reviews, sample billing customers.

Meeting 9 – March 11, 2013: Rate example reviews, sample customer billing limitations.

Meeting 10 – April 1, 2013: Rate example reviews.

Meeting 11 – May 6, 2013: Rate example reviews.

Meeting 12 – June 24, 2013: Technical Review Committee appointments, rate example reviews, fund balance policies.

Meeting 13 – August 7, 2013: Hydrological changes and conditions, rate model updates, fund balance policies and anticipated revenue volatility.

Meeting 14 – September 4, 2013: Public education and outreach, IRPAC Rate Recommendations report.

IRPAC Tour Synopsis

Facility Tour – April 20, 2013: Las Vegas Wash and SNWA/SNWS facilities tour. Discussion topics included Las Vegas Wash flow components, water quality issues, return-flow credits, watershed planning, bank stabilization and enhancements, biological monitoring, drought impacts on lake levels, regional water treatment, Intake No. 3, capital improvement planning and regional facilities.

APPENDIX E

IRPAC Rate Structure Attributes

Attribute	Definition
Legal	A threshold requirement. Any rate structure must be fully compliant with all applicable laws and regulations. Does not preclude committee recommendations for future legislation or changes
Sufficient or adequate	A threshold requirement. Any rate structure must provide adequate revenues to cover costs and appropriate levels of reserves. (A minimum of the average of the highest years of principal and interest on outstanding debt)
Financeable	Relates to credit quality. Generates a reliable revenue stream and maintains adequate reserves for favorable bond ratings.
Equitable and Fair	Horizontal – each customer in the same class being charged on the same basis Vertical – rate differentiation among customer classes based on differences in cost of service and/or service level requirements
Stable	Relates to the degree of volatility. "Stable" implies that lower volatility is more desirable than higher volatility.
Addresses economic environment at any point in time, maintain flexibility	Relates to the ability to maintain adequate revenues (neither too low nor too high) under changing economic conditions.
Encourage conservation	Relates to the rate structure's effectiveness at encouraging the conservation of water, especially outdoor conservation.
Simple to administer	Relates to the ability to administer and enforce in a low-cost manner.
Predictable	Relates to the ability of both the customer and utility to reasonably forecast the costs and revenues, respectively, from individual rate components and the total rate.
Understandable	Relates to the ability of the customer (person or business) to readily calculate the individual charges comprising the total bill.

APPENDIX F

IRPAC Customer Sample Set

CUSTOMER	Monthly Water Use (In 1,000 gallons)
Single Family Residential: 5/8" meter	Median: 10 High: 28
Single Family Residential: 1" meter	Median: 35 High: 116
Single Family Residential: 1 ½" meter	Median: 88 High: 243
Multi-Family Residential: 5/8" meter	Median: 14 High: 72
Mobile Home Park (Boulder Cascades)	1,616
Residential High Rise (Queensridge)	1,241
Downtown Residential High-Rise (Ogden)	1,263
Commercial High Rise (Wells Fargo Tower)	3,899
Commercial Stand-alone (Cragin & Pike)	25
Commercial Office Park (Desert Canyon)	238
Government Building (CC Justice Center)	2,057
Standalone Restaurant (Lawry's)	420
Standalone Fast Food (Cane's)	104
Golf Course (Southern Highlands)	32,799
Municipal Park (All-American)	3,915
Large Strip Property (Bellagio)	36,833
Downtown Hotel and Casino (El Cortez)	2,841
Locals Hotel and Casino (Suncoast)	9,617
High School (Palo Verde HS)	3,080
Retail Complex – Mall (Fashion Show)	6,030

APPENDIX F, *continued*

IRPAC Customer Sample Set

Large Retail (Sahara Pavilion North)	1,405
Car Wash (Terrible Herbst)	393
Religious (Lakes Lutheran Church)	30
Non-profit (Shade Tree)	269
Commercial Laundry (Brady Linen)	18,488
Large Industrial (Sunset Parkway Bus. Cntr)	762
Small Industrial (Baldwin Motor Sports)	7
Self-Storage Facility (StorageOne)	68
HOA Common Area (Summerlin HOA)	1,208
Hospital – Older (Sunrise Hospital)	5,364
Hospital – Newer (St. Rose San Martin)	2,981
Day Care (Kindercare)	113

(in Thousands)

Fiscal Year	2012 Actual	2013 Estimated	2014 Estimated	2015 Projected	2016 Projected	2017 Projected	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Operating Expenses										
Payroll	(4,090)	(4,005)	(5,613)	(5,006)	(5,222)	(5,429)	(5,689)	(5,942)	(6,219)	(6,405)
Operating Capital and Expenses	(7,516)	(10,773)	(10,308)	(10,617)	(10,936)	(11,264)	(11,601)	(11,950)	(12,308)	(12,677)
In-valley Recharge				(3,123)	(3,202)	(3,281)	(3,361)	(3,434)	(3,508)	(3,548)
Operating Expenses	($11,607)	($14,778)	($15,921)	($18,746)	($19,360)	($19,974)	($20,651)	($21,326)	($22,034)	($22,630)
Capitalized Labor previously paid from bonds		(14,055)	(14,974)	(16,464)	(14,831)	(15,074)	(14,605)	(15,412)	(16,261)	(16,749)
Total Operating Expenses	($11,607)	($28,833)	($30,896)	($35,210)	($34,190)	($35,048)	($35,256)	($36,738)	($38,296)	($39,379)
Total Debt Service	(137,397)	(132,234)	(137,003)	(164,684)	(216,733)	(238,512)	(238,406)	(238,322)	(238,229)	(236,502)
Total Funding Requirement	($149,004)	($161,067)	($167,899)	($199,895)	($250,923)	($273,560)	($273,662)	($275,060)	($276,525)	($275,881)
Expected Revenues (Base case)										
Infrastructure Surcharge	$16,193	$77,877	$76,823	$78,677	$78,982	$79,340	$79,698	$80,056	$80,481	$81,009
Regional Connection Charge	13,791	19,032	16,087	16,087	16,087	16,087	16,087	16,087	16,087	16,087
Regional Commodity Charge	40,666	40,796	40,796	40,853	41,087	41,419	42,136	42,845	43,530	44,207
Reliability Surcharge	4,598	4,654	4,783	4,884	4,912	4,951	5,035	5,118	5,198	5,278
Sales Tax	45,131	45,708	47,993	50,393	52,660	54,767	56,684	58,384	59,844	61,041
Other Revenues	(669)	2,539	1,607	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Boulder City share of common cost		547	577	597	615	633	652	672	692	713
Interest Income	478	78	3,223	6,692	9,374	7,705	5,729	3,762	1,775	
Total Expected Revenue	$120,188	$191,230	$191,889	$200,482	$206,017	$207,201	$208,321	$209,223	$209,907	$210,635
Total Funding Gap	**($28,816)**	**$30,164**	**$23,991**	**$588**	**($44,907)**	**($66,359)**	**($65,341)**	**($65,837)**	**($66,618)**	**($65,246)**
Beginning Fund Balance (Without New Revenues)	$308,990	$280,174	$310,338	$334,328	$334,916	$290,010	$223,651	$158,310	$92,473	$25,856
Ending Fund Balance (Without New Revenues)	$280,174	$310,338	$334,328	$334,916	$290,010	$223,651	$158,310	$92,473	$25,856	($39,391)
New Commodity Charge Revenue			$2,698	$8,084	$14,789	$21,525	$24,555	$24,968	$25,367	$25,762
Implicit Add. Reliability Surcharge Revenue			30	90	165	240	274	279	283	287
New Infrastructure Revenue			2,536	7,976	14,227	21,449	25,442	25,665	25,929	26,258
Estimated Price Elasticity			(126)	(386)	(702)	(1,041)	(1,211)	(1,232)	(1,251)	(1,271)
Implicit Add. Interest Earnings			26	264	1,079	2,188	3,644	5,259	6,942	8,491
Ending Fund Balance (With New Revenues)			$339,492	$356,108	$340,760	$318,763	$306,125	$295,227	$285,879	$280,159
Difference between baseline connection fee revenues				$4,388	$5,449	$9,023	$10,405	$10,088	$9,213	$8,926

APPENDIX H

Proposed Rate Changes by Year

Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021
Proposed Commodity Charge per 1,000 Gallons	$0.30	$0.34	$0.38	$0.44	$0.48	$0.48	$0.48	$0.48	$0.48
Proposed Infrastructure Charge per Meter per Month									
Residential - 5/8" & 3/4" meter sizes	$5.00	$5.64	$6.36	$7.18	$8.11	$8.11	$8.11	$8.11	$8.11
Residential - 1" meter size	$19.21	$20.42	$21.79	$23.34	$25.10	$25.10	$25.10	$25.10	$25.10
Residential - 1.5" meter size	$38.41	$40.83	$43.56	$46.67	$50.19	$50.19	$50.19	$50.19	$50.19
Residential - 2" meter size	$61.46	$65.34	$69.70	$74.67	$80.31	$80.31	$80.31	$80.31	$80.31
Residential - 3" meter size	$122.90	$130.66	$139.38	$149.32	$160.60	$160.60	$160.60	$160.60	$160.60
Residential - 4" meter size	$192.03	$204.15	$217.79	$233.32	$250.93	$250.93	$250.93	$250.93	$250.93
Residential - 6" meter size	$384.05	$408.29	$435.57	$466.63	$501.85	$501.85	$501.85	$501.85	$501.85
Residential - 8" meter size and larger	$614.47	$653.26	$696.89	$746.59	$802.95	$802.95	$802.95	$802.95	$802.95
Non-Residential - 5/8" & 3/4" meter sizes	$19.05	$19.69	$20.41	$21.23	$22.16	$22.16	$22.16	$22.16	$22.16
Non-Residential - 1" meter size	$36.08	$37.29	$38.66	$40.21	$41.97	$41.97	$41.97	$41.97	$41.97
Non-Residential - 1.5" meter size	$72.16	$74.58	$77.31	$80.42	$83.94	$83.94	$83.94	$83.94	$83.94
Non-Residential - 2" meter size	$115.45	$119.33	$123.69	$128.66	$134.30	$134.30	$134.30	$134.30	$134 30
Non-Residential - 3" meter size	$230.90	$238.66	$247.38	$257.32	$268.60	$268.60	$268.60	$268.60	$268 60
Non-Residential - 4" meter size	$360.79	$372.91	$386.55	$402.08	$419.69	$419.69	$419.69	$419.69	$419.69
Non-Residential - 6" meter size	$721.57	$745.81	$773.09	$804.15	$839.37	$839.37	$839.37	$839.37	$839.37
Non-Residential - 8" meter size	$1,154.50	$1,193.29	$1,236.92	$1,286.62	$1,342.98	$1,342.98	$1,342.98	$1,342.98	$1,342.98
Non-Residential - 10" and larger meter sizes	$1,659.59	$1,715.35	$1,778.07	$1,849.51	$1,930.54	$1,930.54	$1,930.54	$1,930.54	$1,930.54
Non-Residential - 5/8" & 3/4" Fire Meter	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34
Non-Residential - 1" meter size Fire Meter	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32
Non-Residential - 1.5" meter size Fire Meter	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63
Non-Residential - 2" meter size Fire Meter	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21
Non-Residential - 3" meter size Fire Meter	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41
Non-Residential - 4" meter size Fire Meter	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14
Non-Residential - 6" meter size Fire Meter	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28
Non-Residential - 8" meter size Fire Meter	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04
Non-Residential - 10" and larger Fire Meter	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43

APPENDIX I

Sample Customer Bills

Customer - Water Bills		2013	2014	2015	2016	2017
SINGLE FAMILY RESIDENTIAL	Median of the middle 80% - 5/8"	$34.34	$35.38	$36.51	$37.93	$39.26
SINGLE FAMILY RESIDENTIAL	Median of the top 10% - 5/8"	$107.47	$109.23	$111.07	$113.58	$115.63
SINGLE FAMILY RESIDENTIAL	Median of the middle 80% - 1"	$123.36	$125.97	$128.75	$132.40	$135.57
SINGLE FAMILY RESIDENTIAL	Median of the top 10% - 1"	$486.77	$492.63	$498.65	$507.18	$513.59
SINGLE FAMILY RESIDENTIAL	Median of the middle 80% - 1.5"	$305.93	$311.88	$318.13	$326.54	$333.59
SINGLE FAMILY RESIDENTIAL	Median of the top 10% - 1.5"	$937.05	$949.22	$961.69	$979.42	$992.68
MULTI FAMILY RESIDENTIAL	Median of the middle 80%	$47.94	$49.14	$50.42	$52.08	$53.57
MULTI FAMILY RESIDENTIAL	Median of the top 10%	$322.72	$326.25	$329.86	$335.01	$338.82
GOLF COURSE	Southern Highlands	$114,343.64	$115,739.79	$117,142.36	$119,225.36	$120,644.79
SCHOOL	Palo Verde High School	$11,485.52	$11,636.04	$11,789.60	$12,010.08	$12,171.58
MALL	Fashion Show	$25,364.60	$25,635.11	$25,908.50	$26,309.17	$26,590.24
CAR WASH	Terrible Herbst Buffalo/Sahara	$1,392.69	$1,412.69	$1,433.16	$1,462.30	$1,484.05
RELIGIOUS	Lakes Lutheran Church	$652.83	$657.94	$663.53	$670.35	$677.22
NON PROFIT	Shade Tree	$1,733.20	$1,755.91	$1,780.06	$1,811.57	$1,839.56
COMMERCIAL LAUNDRY	Brady Linen	$66,142.34	$66,967.26	$67,800.54	$69,023.28	$69,878.51
HOA / COMMON AREA	Summerlin Neighborhood HOA	$5,214.27	$5,267.68	$5,321.57	$5,400.83	$5,456.00
DAYCARE	KinderCare	$412.29	$419.34	$426.70	$436.76	$444.91
HOSPITAL (NEWER)	St.Rose - San Martin	$11,969.44	$12,118.82	$12,271.56	$12,489.68	$12,651.38
HOSPITAL (OLDER)	Sunrise	$20,340.25	$20,609.86	$20,885.72	$21,279.27	$21,571.40
STORAGE FACILITY	Storage One	$903.57	$907.60	$911.79	$917.55	$922.16
HIGH-RISE CONDOS	Queens Ridge	$8,618.32	$8,757.30	$8,907.40	$9,096.35	$9,275.75
HIGH-RISE CONDOS	Ogden Lux	$4,206.23	$4,221.75	$4,239.19	$4,259.07	$4,281.63
STANDALONE RESTAURANT - LARGE	Lawrys	$1,946.79	$1,967.89	$1,989.47	$2,020.27	$2,043.13
STANDALONE RESTAURANT - SMALL	Raising Canes	$381.01	$387.70	$394.69	$404.20	$411.98
PUBLIC BUILDING	Clark Co. Regional Justice Center	$8,550.32	$8,675.82	$8,806.49	$8,985.75	$9,129.91
CASINO - LARGE	Bellagio	$158,369.01	$159,927.65	$161,492.36	$163,819.71	$165,400.30
CASINO - DOWNTOWN	El Cortez	$11,748.15	$11,903.44	$12,063.52	$12,287.94	$12,460.82
CASINO - LOCALS	Suncoast	$36,880.28	$37,298.82	$37,720.40	$38,342.90	$38,772.42
MUNICIPAL PARK	All-American Park	$14,215.42	$14,407.12	$14,602.73	$14,883.45	$15,089.28
COMMERCIAL - STANDALONE	Cragin & Pike Insurance	$345.29	$348.74	$352.50	$357.14	$361.68
COMMERCIAL PARK	Sahara Pavillion North	$6,796.28	$6,862.85	$6,930.55	$7,028.44	$7,099.09
MOBILE HOME PARK - (300 Spaces)	Boulder Cascade	$2,982.57	$3,059.47	$3,137.89	$3,250.59	$3,332.99
LARGE WAREHOUSE	Sunset Parkway Business Center	$3,244.11	$3,282.86	$3,322.56	$3,379.05	$3,421.21
OFFICE PARK	Desert Canyon	$1,490.99	$1,503.17	$1,515.66	$1,533.40	$1,546.68
SMALL INDUSTRIAL	Baldwin Motor Sports	$383.74	$385.24	$386.90	$388.88	$390.92
HIGH RISE OFFICE TOWER	Wells Fargo Tower	$15,530.06	$15,722.44	$15,918.88	$16,200.36	$16,407.47

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Conduct Public Hearing	**Director's Backup**
Petitioner: Philip D. Speight, Deputy General Manager, Administration	

Recommendations:
That the Board of Directors conduct a Public Hearing and subsequently adopt an increase to the Authority's Commodity Charge and Infrastructure Charge, authorize a temporary reduction in the annual rates for calendar years 2014-2016 in accordance with the Integrated Resource Planning Advisory Committee's rate proposal, and adopt the committee's Recommendations Report.

Fiscal Impact:
The increase in the Commodity Charge is estimated to generate $21 million in fiscal year 2017. The increase in the Infrastructure Charge is expected to generate $21 million in fiscal year 2017. The Integrated Resource Planning Advisory Committee recommends reducing the rates in calendar years 2014-16 to provide time for the community to adapt to the changing rates.

Background:
On June 16, 2011, the Board of Directors hired Hobbs, Ong & Associates to evaluate the Authority's existing rates and charges. The rate study concluded that the Authority needed a new revenue source to meet existing debt service obligations. On February 29, 2012, the Board approved a new revenue source, the Infrastructure Charge, to meet near-term debt obligations. This fixed charge, amended on July 19, 2012, was implemented to generate adequate revenue to meet the Authority's debt service requirements for completed infrastructure, ongoing construction of Lake Mead Intake No. 3, and maintain reserves at a level of one year of principal and interest due on outstanding debt. Approval of the Infrastructure Charge allowed the Authority to fund debt service through 2015; however, in 2016, the Authority's annual debt service payment is scheduled to increase nearly $80 million over its current amount.

To address these and other challenges, the Board initiated an integrated resource planning process in April 2012 and convened a stakeholder committee to provide input on funding-related issues and other organizational initiatives including water resources, facilities, conservation and water quality. The Las Vegas Valley Water District appointed five individuals and the city of North Las Vegas appointed two individuals to serve on a Financial Subcommittee, which worked alongside the larger committee to evaluate the impacts of recommendations from the retail perspective. The Integrated Resource Planning Advisory Committee (IRPAC) has met 14 times in monthly public meetings since June 2012 and received extensive briefings on the Authority's current rate structure, regional facility construction, bond financing and fund management. The IRPAC evaluated 16 rate scenarios and considered impacts to a broad spectrum of committee-selected sample customers including residents, schools, small businesses, golf courses and resorts. At these meetings, members of the public were able to provide comment on IRPAC discussions and decisions.

Following months of work, the IRPAC reached consensus on its funding recommendations, including:

- Retain the existing rates and charges previously adopted by the Authority's Board.
- Increase the Commodity Charge by $0.18 per thousand gallons to close half of the projected debt service gap in 2017.

AGENDA ITEM # 13

- Increase the Infrastructure Charge as outlined in the IRPAC's proposed rate increases to close the remaining half of the projected debt service gap in 2017.
- Cap the Infrastructure Charge on fire meters at the currently assessed dollar amounts.
- Temporarily reduce the maximum rate in 2014, 2015, and 2016 to provide the community time to adjust to the new rates as outlined within the IRPAC's recommended rate proposal.

On June 27, 2013, the Board appointed members to a previously-established Technical Review Committee to review and validate the assumptions used within the rate model utilized by IRPAC. The Technical Review Committee reviewed model inputs at three public meetings and made recommendations for the IRPAC's consideration. These revisions were then incorporated into the IRPAC's final recommendations.

If approved, the Authority will work closely with its member agencies and the IRPAC members to inform and educate the public about the IRPAC process and its recommendations. Next month, a series of public workshops are scheduled to inform the public of the Board's action. *Water Ways,* the Authority's public access television show, will feature segments about the IRPAC and the rate increase through the end of the year. In addition, the Authority's *Water Smart Living* newsletter also included an article about the process. The Authority's website, SNWA.com, includes information about the IRPAC process and its rate recommendations. The public will be able to visit the website for related information including a water bill estimator, information about upcoming public meeting dates, and Business Impact Statement notifications. The Authority and its member agencies will utilize other outlets, including purveyor websites; customer bill inserts; electronic newsletters; and social media, including Facebook and Twitter to increase awareness about the IRPAC process and discussions.

At this time, the Board is being asked to conduct a Public Hearing and subsequently adopt the increases to the Authority's Commodity Charge and Infrastructure Charge as outlined in the IRPAC's recommended rate proposal. The Board is further being asked to authorize the General Manager to reduce the rate increase in calendar years 2014, 2015, and 2016, in accordance with the IRPAC recommendation.

Because this action only creates an obligation on the Authority's member agencies and not customers directly, it does not require a Business Impact Statement; however, the Authority's member agencies are required to prepare and adopt at a subsequent meeting a Business Impact Statement, pursuant to NRS Chapter 237. If the Board adopts the IRPAC recommendation, the Authority's member agencies will begin the notification process for determining business impacts.

This action is authorized pursuant to Section 6(c) of the SNWA 1995 Amended Cooperative Agreement. The office of the General Counsel has reviewed and approved this agenda item.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
PM:JJE:PDS:JAW:AMB:LS:KH
FOR Attachments

Integrated Resource Planning Advisory Committee: Proposed Rate Model

(in Thousands)

Fiscal Year	2012 Actual	2013 Estimated	2014 Estimated	2015 Projected	2016 Projected	2017 Projected	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Operating Expenses										
Payroll	(4,090)	(4,005)	(5,613)	(5,006)	(5,222)	(5,429)	(5,689)	(5,942)	(6,219)	(6,405)
Operating Capital and Expenses	(7,516)	(10,773)	(10,308)	(10,617)	(10,936)	(11,264)	(11,601)	(11,950)	(12,308)	(12,677)
In-valley Recharge				(3,123)	(3,202)	(3,281)	(3,361)	(3,434)	(3,508)	(3,548)
Operating Expenses	($11,607)	($14,778)	($15,921)	($18,746)	($19,360)	($19,974)	($20,651)	($21,326)	($22,034)	($22,630)
Capitalized Labor previously paid from bonds		(14,055)	(14,974)	(16,464)	(14,831)	(15,074)	(14,605)	(15,412)	(16,261)	(16,749)
Total Operating Expenses	($11,607)	($28,833)	($30,896)	($35,210)	($34,190)	($35,048)	($35,256)	($36,738)	($38,296)	($39,379)
Debt Service										
Existing Debt Service (incl. CP)	(137,397)	(132,234)	(137,003)	(141,074)	(193,126)	(214,906)	(214,798)	(214,716)	(214,623)	(212,893)
Series 2012B Bonds Debt Service				(23,610)	(23,607)	(23,606)	(23,608)	(23,606)	(23,606)	(23,609)
Total Debt Service	(137,397)	(132,234)	(137,003)	(164,684)	(216,733)	(238,512)	(238,406)	(238,322)	(238,229)	(236,502)
Total Funding Requirement	($149,004)	($161,067)	($167,899)	($199,895)	($250,923)	($273,560)	($273,662)	($275,060)	($276,525)	($275,881)
Expected Revenues (Base case)										
Infrastructure Surcharge	$16,193	$77,877	$76,823	$78,677	$78,982	$79,340	$79,698	$80,056	$80,481	$81,009
Regional Connection Charge	13,791	19,032	16,087	16,087	16,087	16,087	16,087	16,087	16,087	16,087
Regional Commodity Charge	40,666	40,796	40,796	40,853	41,087	41,419	42,136	42,845	43,530	44,207
Reliability Surcharge	4,598	4,654	4,783	4,884	4,912	4,951	5,035	5,118	5,198	5,278
Sales Tax	45,131	45,708	47,993	50,393	52,660	54,767	56,684	58,384	59,844	61,041
Other Revenues	(669)	2,539	1,607	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Boulder City share of common cost		547	577	597	615	633	652	672	692	713
Interest Income	478	78	3,223	6,692	9,374	7,705	5,729	3,762	1,775	
Total Expected Revenue	$120,188	$191,230	$191,889	$200,482	$206,017	$207,201	$208,321	$209,223	$209,907	$210,635
Total Funding Gap	($28,816)	$30,164	$23,991	$588	($44,907)	($66,359)	($65,341)	($65,837)	($66,618)	($65,246)
Beginning Fund Balance (Without New Revenues)	$308,990	$280,174	$310,338	$334,328	$334,916	$290,010	$223,651	$158,310	$92,473	$25,856
Ending Fund Balance (Without New Revenues)	$280,174	$310,338	$334,328	$334,916	$290,010	$223,651	$158,310	$92,473	$25,856	($39,391)
New Commodity Charge Revenue			$2,698	$8,084	$14,789	$21,525	$24,555	$24,968	$25,367	$25,762
Implicit Add. Reliability Surcharge Revenue			30	90	165	240	274	279	283	287
New Infrastructure Revenue			2,536	7,976	14,227	21,449	25,442	25,665	25,929	26,258
Estimated Price Elasticity			(126)	(386)	(702)	(1,041)	(1,211)	(1,232)	(1,251)	(1,271)
Implicit Add. Interest Earnings			26	264	1,079	2,188	3,644	5,259	6,942	8,491
Ending Fund Balance (With New Revenues)			$339,492	$356,108	$340,760	$318,763	$306,125	$295,227	$285,879	$280,159
Difference between baseline connection fee revenues				$4,388	$5,449	$9,023	$10,405	$10,088	$9,213	$8,926

Integrated Resource Planning Advisory Committee
Proposed Rate Increases

Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021
Commodity Charge (per 1,000 gallons)	$0.30	$0.34	$0.38	$0.44	$0.48	$0.48	$0.48	$0.48	$0.48
Add. Infrastructure Charge per Meter per Month									
Residential - 5/8" & 3/4" meter sizes	$5.00	$5.64	$6.36	$7.18	$8.11	$8.11	$8.11	$8.11	$8.11
Residential - 1" meter size	$19.21	$20.42	$21.79	$23.34	$25.10	$25.10	$25.10	$25.10	$25.10
Residential - 1.5" meter size	$38.41	$40.83	$43.56	$46.67	$50.19	$50.19	$50.19	$50.19	$50.19
Residential - 2" meter size	$61.46	$65.34	$69.70	$74.67	$80.31	$80.31	$80.31	$80.31	$80.31
Residential - 3" meter size	$122.90	$130.66	$139.38	$149.32	$160.60	$160.60	$160.60	$160.60	$160.60
Residential - 4" meter size	$192.03	$204.15	$217.79	$233.32	$250.93	$250.93	$250.93	$250.93	$250.93
Residential - 6" meter size	$384.05	$408.29	$435.57	$466.63	$501.85	$501.85	$501.85	$501.85	$501.85
Residential - 8" meter size and larger	$614.47	$653.26	$696.89	$746.59	$802.95	$802.95	$802.95	$802.95	$802.95
Non-Residential - 5/8" & 3/4" meter sizes	$19.05	$19.69	$20.41	$21.23	$22.16	$22.16	$22.16	$22.16	$22.16
Non-Residential - 1" meter size	$36.08	$37.29	$38.66	$40.21	$41.97	$41.97	$41.97	$41.97	$41.97
Non-Residential - 1.5" meter size	$72.16	$74.58	$77.31	$80.42	$83.94	$83.94	$83.94	$83.94	$83.94
Non-Residential - 2" meter size	$115.45	$119.33	$123.69	$128.66	$134.30	$134.30	$134.30	$134.30	$134.30
Non-Residential - 3" meter size	$230.90	$238.66	$247.38	$257.32	$268.60	$268.60	$268.60	$268.60	$268.60
Non-Residential - 4" meter size	$360.79	$372.91	$386.55	$402.08	$419.69	$419.69	$419.69	$419.69	$419.69
Non-Residential - 6" meter size	$721.57	$745.81	$773.09	$804.15	$839.37	$839.37	$839.37	$839.37	$839.37
Non-Residential - 8" meter size	$1,154.50	$1,193.29	$1,236.92	$1,286.62	$1,342.98	$1,342.98	$1,342.98	$1,342.98	$1,342.98
Non-Residential - 10" and larger meter sizes	$1,659.59	$1,715.35	$1,778.07	$1,849.51	$1,930.54	$1,930.54	$1,930.54	$1,930.54	$1,930.54
Non-Residential - 5/8" & 3/4" meter sizes Fire Meter	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34
Non-Residential - 1" meter size Fire Meter	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32
Non-Residential - 1.5" meter size Fire Meter	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63
Non-Residential - 2" meter size Fire Meter	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21
Non-Residential - 3" meter size Fire Meter	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41
Non-Residential - 4" meter size Fire Meter	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14
Non-Residential - 6" meter size Fire Meter	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28
Non-Residential - 8" meter size Fire Meter	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04
Non-Residential - 10" and larger meter sizes Fire Meter	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43

SOUTHERN NEVADA WATER AUTHORITY®

Integrated Resource Planning Advisory Committee
RECOMMENDATIONS REPORT
Phase I: Funding Sources

September 2013

TABLE OF CONTENTS

I. Executive Summary 3

II. Advisory Committee 6

III. Discussion Topics 8

IV. Recommendations 10

Appendix A – Membership 16
- a. IRPAC Membership 16
- b. IRPAC Financial Subcommittee Membership 17

Appendix B – Technical Review Committee 18

Appendix C – Population Projections 19

Appendix D – Meeting Synopsis 20
- a. Committee Meetings 20
- b. Committee Tour 21

Appendix E – IRPAC Rate Structure Attributes 22

Appendix F – IRPAC Customer Sample Set 23

Appendix G – IRPAC Rate Model 25

Appendix H – Proposed Changes by Year 26

Appendix I – Sample Customer Bills 27

EXECUTIVE SUMMARY

Since its creation, the Southern Nevada Water Authority (SNWA) has established a tradition of public participation in its integrated resource planning efforts, which explores the connections and relationships among water resources, water quality, conservation, engineering, planning, environmental stewardship, funding and community involvement. Previous integrated planning processes, including the Integrated Resource Plan Advisory Committee (1994-1996) and Integrated Water Planning Advisory Committee (2004-2005), were initiated in response to changing conditions, such as unprecedented population growth and record-breaking drought, which required an evaluation of organizational initiatives and priorities.

Over the past five years, depressed economic conditions affected SNWA revenues particularly hard. SNWA connection charge revenues – a funding source that financed 57 percent of new SNWA capital projects – plummeted from a high of $188 million in 2005 to $3 million only three years later. These connection charges were assessed to new development in Southern Nevada with the intention that new growth would bear the burden of funding the water treatment and delivery system improvements needed to provide the growing Southern Nevada population with a reliable water supply. The SNWA had expended significant capital in order to meet water demands, but changing economic conditions jeopardized its ability to meet debt obligations.

In order to stave off rate increases for as long as possible, the SNWA refinanced bonds, cut personnel by 25 percent, deferred $400 million in capital projects and relied upon reserves to meet bond payments. In 2012, a new funding source – the SNWA Infrastructure Charge – was implemented to recover costs associated with the infrastructure in place and fund the ongoing construction of a new intake in drought-stricken Lake Mead. While the Infrastructure Charge provided a solution to SNWA's funding challenges in the near term, another concern remained on the horizon. Beginning in 2016, the SNWA's annual debt service payment increases approximately $80 million.

Meanwhile, severe drought conditions continue to affect flows of the Colorado River, the source of 90 percent of the community's water supply. Lake Mead water elevations are expected to decline, potentially triggering shortage declarations. While economic conditions have temporarily suppressed Southern Nevada's water demands, long-term projections indicate the community will continue to grow.

To address the challenges associated with recent economic conditions in a comprehensive way, the SNWA Board again initiated an integrated resource planning process in 2012. As part of the process, the Board convened a stakeholder committee to provide input on existing organizational initiatives including funding, resources, facilities, conservation, and water quality.

This stakeholder group, known as the Integrated Resource Planning Advisory Committee (IRPAC), divided its work into two phases. The IRPAC has met 14 times between June 2012 and September 2013 to discuss funding-related matters. A second phase will focus on developing

recommendations on water resources, facilities, conservation and water quality. The two-part process provides the SNWA Board the flexibility needed to implement changes to SNWA rates and charges in a timely manner. The next phase of recommendations is anticipated for SNWA Board consideration at a later date.

This report summarizes the activities and results of the IRPAC process as it relates to the SNWA capital funding plan. Section I is an overview of the committee process. Section II reviews committee discussion topics. Section III provides the committee's nine funding-related recommendations.

Recommendations Summary

Below is a summary of the Committee's funding-related recommendations:

1. Develop rates through a transparent and inclusive community process.

2. Retain the existing rates and charges previously adopted by the SNWA Board and its purveyor members, formalizing the fire line meter charge at 17.5 percent of the current Infrastructure Charge.

3. Cap the Infrastructure Charge on fire line meters at the 2013 dollar amounts.

4. Increase the Commodity Charge $.18 per 1,000 gallons (from $.30 to $.48) to meet 50 percent of annual revenue requirements in the target year 2017 and increase the Infrastructure Charge to meet the other half of annual revenue requirements, as outlined in Appendices G and H.

5. Temporarily reduce the maximum rate in 2014, 2015 and 2016 to provide the community time to adjust to the new rates.

6. Separate money added to the New Expansion Debt Service fund and related interest attributed to the 2014 and 2015 phased-in rates from the remainder of the fund balance and use it to only offset forecasted operating deficits in 2016 to 2021 and not for any other purposes.

7. Allocate Connection Charge revenues in excess of the 2014 base year ($16.1 million) exclusively to pay the following, in order of priority:
   a. Early payment or pre-refunding of existing debt or one-time capital expenditures, whichever is most financially efficient, and
   b. Water rate reductions.

8. If funds in excess of the target fund balance remain in the New Expansion Debt Service fund (not including phased-in rate revenue), use the excess fund balance only for any of the following purposes:
   - To redeem outstanding bonds (thereby reducing outstanding debt and future debt

service requirements);

- To acquire capital assets that would otherwise need to be funded with borrowed money (thus avoiding additional debt and debt service);
- To moderate further the impact of future rate increases; or
- To reduce water rates.

9. Encourage the Las Vegas Valley Water District and the cities of Henderson and North Las Vegas to assess the rates and charges approved by the SNWA Board.

ADVISORY COMMITTEE

Membership

The SNWA Board appointed twenty-one (21) individuals, representing diverse stakeholder groups with an interest in the SNWA's long-term planning efforts.

To evaluate the wholesale rates and charges from the retail perspective, the City of North Las Vegas and the Las Vegas Valley Water District appointed two and five individuals, respectively, as representatives of member agency Financial Subcommittees. Henderson did not appoint a separate subcommittee and opted to utilize the members appointed by the SNWA Board member to represent the city. The two Financial Subcommittees worked alongside the IRPAC throughout the water rate education and scenario evaluation process.

A list of IRPAC and financial subcommittee members is provided in Appendix A.

Process

To coordinate and manage committee and subcommittee meetings, the SNWA retained an independent, neutral facilitator from out-of-state (David Ebersold, CDM Smith, Los Angeles). Mr. Ebersold was responsible for soliciting dialogue and interaction among committee members, ensuring all perspectives had an opportunity to be heard and considered, and suggesting appropriate process tools to assist the committee members in problem-solving and other aspects of their deliberations.

Consensus served as the basis for formulation of the IRPAC's recommendations. Members worked together to identify positions that were generally acceptable to the committee as a whole.

To encourage public involvement, IRPAC meetings were publicly posted in accordance with Nevada's Open Meeting Law. Presentations and audio recordings of each meeting are posted on SNWA.com. In addition, the SNWA Board received frequent updates about IRPAC activities at the regularly-scheduled public Board meetings.

Technical Review Committee

As the IRPAC process was underway, the SNWA Board approved creation of a Technical Review Committee (TRC) to assist both the IRPAC and the SNWA Board in ensuring that any rates adopted are based on sound data, assumptions and methods. As such, the SNWA Board subsequently appointed five individuals, based on recommendations from IRPAC, as members of the Technical Review Committee (Appendix B). In order to be appointed to the TRC, individuals had to be from the business or academic community with qualifying credentials or experience in economics, public and/or business finance and include at least one member with rate-making design experience.

This smaller committee met three times in July and August 2013 to review and verify the inputs, assumptions and other key variables involved in rate design and the IRPAC rate model. They reviewed rate model assumptions including population projections, projected sales tax collections, water use projections and other related information.

The Technical Review Committee decided to limit its scope to years 2014 – 2018. The committee was more comfortable validating the assumptions used within a 5-year budget horizon.

Following deliberations, the committee agreed to the following model assumptions:

- **Sales Tax:** Use a tapered projection, as indicated in Table A.
- **Connection Charge Projections**[1]**:** Project Connection Charge revenues to increase 1.07 percent annually (forecasted population growth is used as a proxy).
- **Water Use Projections:** Project water sales to grow at a rate consistent with the growth forecasts prepared by Applied Analysis (Appendix C)
- **Price Elasticity Projections:** Utilize an elasticity factor of -.34 for the Commodity Charge and a discounted factor of -.15 for the Infrastructure Charge.
- **Interest Earnings Projections:** Revise the original assumption to reflect more positive interest returns, as shown in Table B.
- **Operating Expenses:** Tie the projected capitalized labor expenses to the SNWA's approved capital projects within its Major Construction and Capital Plan.

TABLE A: Sales Tax Projections

	2014	2015	2016	2017	2018	2019	2020	2021
Projected Increase (%)	5	5	4.5	4	3.5	3	2.5	2

TABLE B: Interest Earnings Projections

	2014	2015	2016	2017	2018	2019	2020	2021
Projected Increase (%)	1	2	3	3	3	3	3	3

[1] While the Technical Review Committee considered Connection Charge Revenue projections, the larger IRPAC committee later recommended capping Connection Charge revenues at $16.1 million in the rate model for years 2014-2021 and use the remainder of revenues earned from Connection Charges to prepay or pre-refund existing debt, make a one-time capital expenditure or reduce water rates. See IRPAC recommendation number seven.

DISCUSSION TOPICS

To lay the foundation for an in-depth evaluation of the SNWA's current rate structure, the IRPAC received briefings on the history of water in Southern Nevada, regional facility construction, local purveyor water systems, water demands, water resource management, SNWA fund management and SNWA rates and charges. A summary of meeting topics is included in Appendix D. More detailed meeting summaries are available at SNWA.com.

Following an overview of SNWA facilities and operations, the IRPAC began tackling funding-related topics in detail and considered a number of key concepts and issues, including:

- The costs associated with infrastructure needed for emergency and backup supplies, regardless of whether water is used.
- The importance of ensuring adequate facility protection against current and future drought(s).
- The factors associated with building and maintaining a good bond rating.
- The attributes that comprise a fair water rate for Southern Nevada.
- The appropriate mix of fixed and variable fees within water bills.
- The challenge of developing a funding formula that works for Southern Nevada's current economic conditions, but remains a viable formula over the long term.

Evaluating Rate Structures

The bulk of Southern Nevada's existing water system was constructed in the 1990s and 2000s during periods of explosive growth in the community. This infrastructure continues to serve the community and provide Southern Nevada with a reliable water supply. The committee understood that paying the "mortgage" on these facilities benefits the community as a whole; however, members held differing opinions on how these payments should be distributed among customers.

Before the committee considered changes to the SNWA's existing rate structure, the facilitator led the group through an exercise to determine the attributes that should comprise a rate structure. The IRPAC identified ten attributes appropriate for consideration in Southern Nevada's rate structure, which are outlined in Appendix E. Once approved by the committee, the list of rate structure attributes allowed for clear communication of stakeholders' interests and values and facilitated the evaluation of various rate structures and their impacts.

To help understand the impacts of different rate structures on the community, the committee then identified a sample set of representative customers. The sample set included more than 30 sample accounts that represented a broad spectrum of customers in Southern Nevada, including residential customers, casinos, commercial laundries, schools, industrial business, restaurants, storage facilities and golf courses. The sample customers are identified in Appendix F.

Each scenario was designed to achieve an average of $80 million in additional annual revenue for the period 2014-2021. This figure is based on the amount of revenue needed to meet annual debt service payments and maintain reserves at a level of one year of principal and interest on outstanding debt. Review and discussion of the rate structure scenarios led to the committee's final recommendations.

A number of meetings were spent discussing the following key issues related to SNWA's rate structure:

- *The appropriate increase to fixed and variable charges*
  The committee evaluated how the deficit would be funded using the existing revenue streams available to SNWA, which include the Commodity Charge, Reliability Surcharge and Infrastructure Charge. Because the Reliability Surcharge for residential customers is already set at the maximum permitted by law, the committee focused its efforts on the Commodity Charge and Infrastructure Charge.
- *Timing of the rate increase*
  Additional funding is not needed until 2016 when the annual debt service requirement significantly increases. During the rate scenario review process, the idea of implementing new funding prior to 2016 was considered. Early implementation of a rate increase would ultimately lower the total rate increase and reduce rate shock.
- *Impacts to fire line meter customers*
  The Infrastructure Charge was implemented in 2012 to fund outstanding debt associated with the facilities constructed to support Southern Nevada's need to provide reliable water supplies to its service area. A component of the Infrastructure Charge was a charge to fire line meters – a required fire protection component for many commercial businesses. Costs associated with this surcharge are based upon the water treatment and distribution infrastructure necessary to ensure fire protection.

Revenue Security

Recognizing that some of the SNWA's revenue streams are more stable than others, the committee evaluated the long-term viability of SNWA revenue sources. Specifically, SNWA's Sales Tax proceeds, approved by voters in 1998 to fund water and wastewater capital improvements, is subject to sunset in 2025 or when $2.3 billion is collected, whichever is first. The tax represents a critical component to SNWA finances. For fiscal year 2013-2014, the source is projected to earn approximately $50 million, which represents nearly 15 percent of SNWA revenues. Should the tax be allowed to sunset, the SNWA would need to find a new source of funding to replace those revenues. While the committee discussed the sales tax issue, a decision on when or if to pursue and extension was postponed.

Fund Balance Policies

The SNWA Board also directed the IRPAC to evaluate and make recommendations on a sound policy for variances in fund balances. Specifically, the committee identified recommendations to handle money that exceeds the fund balance target of $280 million. The committee considered a number of options including a Rate Stabilization Fund and paying down debt early.

RECOMMENDATIONS

1. **Develop rates through a transparent and inclusive community process.**
   Early in the process, some committee members voiced concerns about the public outreach and education surrounding the Infrastructure Surcharge implementation process done in 2012. To address these issues, the committee agreed that it is important to conduct future rate planning in a transparent and inclusive community process.

   The SNWA can utilize a number of tools to reach the public including a newsletter, website, social media resources, public meetings and workshops, aired and printed media and the formation of similar citizen committees to address future rate planning issues.

2. **Retain the existing rates and charges previously adopted by the SNWA Board and its purveyor members, formalizing the fire line meter charge at 17.5 percent of the current Infrastructure Charge.**
   In February 2012, the Infrastructure Charge was approved by the SNWA Board of Directors to pay for critical water infrastructure. As the new surcharge appeared on water bills, some businesses questioned including the fire line meter charge in the funding formula.

   Costs associated with the fire line meter charge are based upon the water treatment and distribution infrastructure necessary to meet fire flow requirements. While business owners might never use the fire line, the premise of fire protection is that water must be available at full volume at all times in case of emergency. Therefore, the treatment, facilities, laterals, pumping stations and associated facilities must be sized, designed and built to meet their flow requirements.

   The new fee associated with the fire line service meters sparked significant public interest. The SNWA Board listened to the business community concerns and implemented a 50 percent credit on fire line meter charges in August 2012. The Board's action effectively reduced the fire line meter charge, initially billed at 35 percent of the Infrastructure Charge of the same meter size, to 17.5 percent of the Infrastructure Charge.

   The committee discussed the issues surrounding the fire line meter charge, specifically how these costs for required infrastructure should be shared among all customers or whether it should be assessed to property owners to pay for the facilities that protect their investment, employees and customers. The committee agreed that the fire line meter charges should be retained to continue funding the infrastructure and maintenance associated with the fire line systems. The committee did not recommend increasing the rate to its previously-approved charge of 35 percent of the Infrastructure Charge (a more detailed explanation is in the following recommendation). Therefore, the fire line charge should be billed at 17.5 percent of the 2012 Infrastructure Charge (2012 rates), and the previously-approved 35 percent rate and its subsequent 50 percent credit be removed. The 2013 fire line charges (fixed at 17.5 percent) are outlined in Table C.

Table C: SNWA Daily Fire Line Infrastructure Charges

Fire line Size	SNWA Daily Fire Infrastructure Charge
⅝ & ¾	$.1112
1"	$.2105
1½"	$0.4210
2"	$0.6735
3"	$1.3470
4"	$2.1047
6"	$4.2092
8"	$6.7347
10"	$9.6810
12"	$9.6810

3. **Cap the infrastructure charge on fire line meters at the 2013 dollar amounts.**
Committee members considered rate scenarios that had varying impacts to fire line meters. Some scenarios had no impacts to fire line meters – the rate would remain unchanged while other rate components would increase to supplement the revenue. Other rate scenarios considered an increase to fire line meters that would be proportionate to increases to the Infrastructure Charge, meaning if the Infrastructure Charge increased for a given meter, then the fire line rate would also increase correspondingly. The IRPAC also considered an annual inflationary increase, based on a suggestion made by a committee member.

   To aid in discussions, a chart was prepared that demonstrated the amount of revenue provided by fire line meters in a 3 percent inflationary increase scenario. Following their evaluation of the information and discussion about fairness to the commercial businesses that maintain fire lines, the committee achieved consensus and agreed to cap the Infrastructure Charge on fire line meters at 17.5 percent of the current Infrastructure Charge (see Table C). Some committee members noted that this issue would need to be considered by future advisory committees because all infrastructure – fire line meters included – require maintenance and replacement and additional increases may be required to support those activities in the future.

4. **Increase the Commodity Charge $.18 per 1,000 gallons (from $.30 to $.48) to meet 50 percent of annual revenue requirements in the target year 2017 and increase the Infrastructure Charge to meet the other half of annual revenue requirements, as outlined in Appendices G and H.**
The first three rate examples the committee reviewed included examples that funded additional debt service payments exclusively through an increase to the SNWA Commodity charge (variable), exclusively through an increase to the SNWA Infrastructure Charge (fixed rate); and through collecting equal amounts from increases to the SNWA Commodity Charge and the SNWA Infrastructure Charge (50/50 split).

These scenarios led to a number of committee discussions of how these increases would be received by the community, and the types of messages these increases would send. Several committee members noted that a Commodity Charge-only increase would send a very distinct conservation signal to customers. Conversely, if the increase solely affected the Infrastructure Charge, some members argued that many conservation-minded customers could feel frustrated that their bills would increase anyway, despite lower water use.

Other members noted that the bulk of SNWA's expenditures are fixed, including its debt service payments. These members argued a rate structure that relied on the Infrastructure Charge would more accurately represent the fixed-cost nature of the expenditures it was funding. In addition, some committee members noted that a fixed-charge revenue source is more stable and predictable.

In total, the committee considered 16 rate scenarios to evaluate impacts on customers. Following months of discussion, the committee agreed to recommend that Commodity Charge revenues and Infrastructure Charge revenues should equally fund the additional annual revenue requirements. One committee member did not support the 50/50 recommendation and still felt strongly that the funding deficit be funded through Commodity Charge revenues contributing 75 percent and Infrastructure Charge contributing 25 percent of revenue, and asked that the meeting summary reflect the member's position.

See Appendices G, H and I for rate impacts related to the committee's recommendation to fund revenue requirements through an equal mix of Commodity Charge and Infrastructure Charge revenues.

5. **Temporarily reduce the maximum rate in 2014, 2015 and 2016 to provide the community time to adjust to the new rates.**
Many committee members were wary of the idea of implementing a rate increase earlier than needed. These members supported one large increase in 2016, citing the lack of the financial need to collect revenue early. Additionally, some committee members had concerns that additional revenues would be used to fund other projects or SNWA initiatives.

Other committee members supported a phased-in rate increase, noting many customers would prefer gradual rate increases than one large increase. One committee member noted customers on fixed-incomes may find it difficult to absorb a large rate increase in one year.

Following months of lengthy discussion, the committee achieved consensus and ultimately supported establishing the maximum increase in the highest year, but temporarily discounting the charges in the years leading up to 2017, recognizing that many Southern Nevada ratepayers will find incremental increases easier to absorb and account for than a large increase in 2016. This approach leads to a lower maximum rate because a portion of the revenue is collected earlier.

Therefore, the committee recommended a reduced rate in years 2014 – 2016 before reaching the maximum rate in 2017. An example of the proposed increases to the existing rates for a typical 5/8 inch single-family residential customer with typical water use is shown in Table D:

Table D: IRPAC Rate Model for a 5/8-inch Residential Customer, 10,000 gallons use

	2014	2015	2016	2017
Commodity Charge (per 1,000 gallons)	$0.04	$0.08	$.0.14	$0.18
Infrastructure Charge	$0.64	$1.36	$2.18	$3.11

6. **Separate money added to the New Expansion Debt Service fund and related interest attributed to the 2014 and 2015 phased-in rates from the remainder of the fund balance and use it to only offset forecasted operating deficits in 2016 to 2021 and not for any other purposes.**
   Committee members felt strongly that revenues collected as a result of early rate implementation beyond the revenue that was projected without a phased-in rate structure should be separated from the New Expansion Debt Service fund. Committee members suggested separating these revenues to offset forecasted operating deficits in years 2016 through 2021, which ultimately minimizes the rate increase impact in the later years as well.

7. **Allocate Connection Charge revenues in excess of the 2014 base year ($16.1 million) exclusively to pay the following, in order of priority:**
   a. **Early payment or pre-refunding of existing debt or one-time capital expenditures, whichever is most financially efficient; and**
   b. **Water rate reductions.**

   Committee members noted the volatility in Connection Charge revenue, citing its range of revenue collections throughout the 2000s. The committee also felt a funding formula that relied on Connection Charge revenues to fund debt service no longer worked for the community.

   To reduce the volatility of Connection Charge revenues within the SNWA's funding formula, the committee recommended capping the revenue at $16.1 million in the SNWA rate model. Revenues earned in excess of $16.1 million will be used (in order of priority) to prepay or pre-refund existing debt or make a one-time capital expenditure, or reduce water rates.

8. **If funds in excess of the target fund balance remain in the New Expansion Debt Service fund (not including phased-in rate revenue), use the excess fund balance only for any of the following purposes:**
   - **To redeem outstanding bonds (thereby reducing outstanding debt and future debt service requirements);**

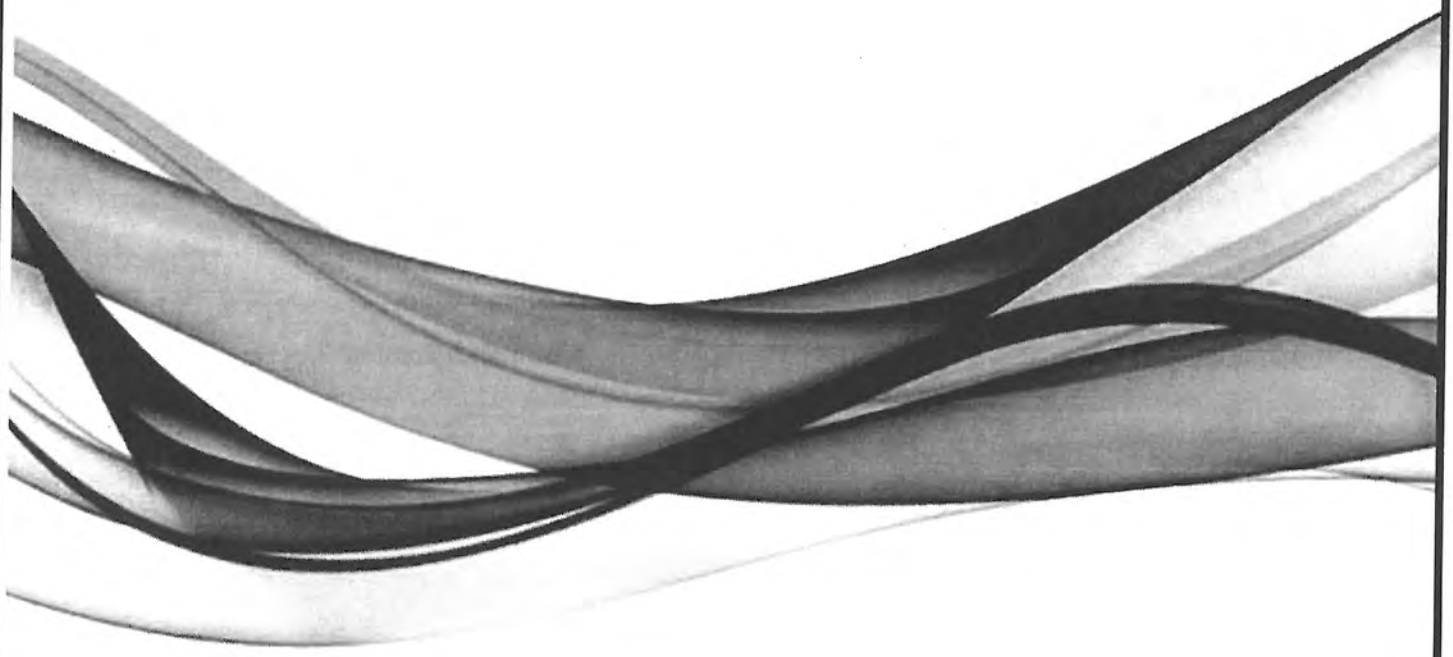
- **To acquire capital assets that would otherwise need to be funded with borrowed money (thus avoiding additional debt and debt service);**
- **To moderate further the impact of future rate increases; or**
- **To reduce water rates.**

The rate model recommended by IRPAC changes only to achieve the target fund balance ($280 million) and meet bond obligations; no additional revenue was realized to fund the Rate Stabilization Fund. The committee wanted to ensure any surplus revenues collected were allocated and spent responsibly.

To ensure the recommendation was flexible and could accommodate changing conditions, the committee included four options should financial performance outpace projections and the New Expansion Debt Service Fund accrue excess funds. Within this framework, it would be at the discretion of the SNWA Board along with SNWA technical staff to determine the optimal method of spending revenue accrued beyond the modeled forecast.

9. **Encourage the Las Vegas Valley Water District and the cities of Henderson and North Las Vegas to assess the rates and charges approved by the SNWA Board.**
Members of the Financial Subcommittees were tasked to evaluate the wholesale rates and charges from the retail perspective. Through the evaluation process, subcommittee members agreed that the recommended wholesale rate proposal should be uniformly assessed to Southern Nevada residents and not changed within purveyor service areas.

APPENDICES



APPENDIX A

IRPAC Membership

Member	Stakeholder Category
Tom Burns	Las Vegas Chamber
Kirk Clausen	Financial Industry
Yvanna Cancela[2]	Labor
Thalia Dondero	Southern Nevada Residents
Bob Ferraro	Senior Citizens
Mike Forman	Homeowners Associations
Garry Goett	Golf Courses
Joyce Haldeman[3]	Education
Warren Hardy	General Contractors
Katherine Jacobi	Restaurants
Carol Jefferies	Southern Nevada Residents
Bob Kasner	Henderson Chamber
Jennifer Lewis	Development
Otto Merida	Latin Chamber of Commerce
Bobbi Miracle	Realtor/Financial Industry
Phil Ralston	Industrial/Commercial Business
John Restrepo	North Las Vegas Chamber
Scot Rutledge	Environmental
David Scherer	Small Industrial/Commercial Bus.
Danny Thompson	Building Trades
Virginia Valentine	Hospitality/Gaming

[2] Yvanna Cancela filled the vacancy left by D. Taylor, as appointed at the February 21, 2013 SNWA Board meeting.
[3] Joyce Haldeman filled the vacancy left by Dwight Jones, as appointed at the September 20, 2012 SNWA Board meeting.

APPENDIX A, *continued*

IRPAC Financial Subcommittee Membership

Member	Stakeholder Category
Brian McAnallen	LVVWD Ratepayers
Jarmilla McMillan-Arnold	LVVWD Ratepayers
Terry Murphy	LVVWD Ratepayers
Tom Warden[4]	LVVWD Ratepayers
Joe Woody	LVVWD Ratepayers
Jay King	NLV Ratepayers
Gay Shoaff	NLV Ratepayers

[4] Tom Warden filled the vacancy left by Launce Rake, as appointed at the February 5, 2013 LVVWD Board meeting.

APPENDIX B

IRPAC Technical Committee Membership

Mike Alastuey	Public finance
Marcus Conklin	Business and public finance
Paula Eylar-Lauzon	Business finance
Bob Kasner	Business and public finance, utility ratemaking
John Restrepo	Business finance

Technical Review Committee Meeting Synopses

The following provides a brief synopsis of meeting dates and discussion topics.

Meeting 1 – July 29, 2013: Purpose and scope of Technical Review Committee and finalized assumptions related to interest earnings, sales tax revenues, Connection Charges, water sales and price elasticity.

Meeting 2 –July 31, 2013: Finalized assumptions related to connection charge revenues and debt service schedule.

Meeting 3 – August 20, 2013: Finalized assumptions related to operating expenses

Complete meeting summaries and audio recordings are available online at SNWA.com.

APPENDIX C

Population Projections

Source: Applied Analysis

Year	Population Forecast	Growth in Population Forecast	Growth in Population (Percent)
2011 [a]	1,966,630		
2012 [a]	2,008,654	42,024	2.14%
2013	2,026,732	18,078	0.90%
2014	2,049,026	22,294	1.10%
2015	2,077,713	28,686	1.40%
2016	2,107,887	30,175	1.45%
2017	2,143,068	35,181	1.67%
2018	2,180,186	37,118	1.73%
2019	2,216,860	36,674	1.68%
2020	2,252,307	35,448	1.60%
2021	2,287,353	35,046	1.56%
2022	2,320,271	32,917	1.44%
2023	2,351,014	30,744	1.33%
2024	2,379,109	28,095	1.20%
2025	2,405,969	26,860	1.13%
2026	2,430,601	24,632	1.02%
2027	2,454,056	23,455	0.97%
2028	2,476,508	22,451	0.91%
2029	2,497,372	20,865	0.84%
2030	2,517,931	20,558	0.82%
2031	2,538,423	20,492	0.81%
2032	2,558,882	20,460	0.81%
2033	2,579,353	20,471	0.80%
2034	2,599,988	20,635	0.80%
2035	2,620,788	20,800	0.80%
2036	2,641,754	20,966	0.80%
2037	2,662,888	21,134	0.80%
2038	2,684,191	21,303	0.80%
2039	2,705,665	21,474	0.80%
2040	2,727,310	21,645	0.80%
2041	2,749,129	21,818	0.80%
2042	2,771,122	21,993	0.80%
2043	2,793,291	22,169	0.80%
2044	2,815,637	22,346	0.80%
2045	2,838,162	22,525	0.80%
2046	2,860,868	22,705	0.80%
2047	2,883,754	22,887	0.80%
2048	2,906,824	23,070	0.80%
2049	2,930,079	23,255	0.80%
2050	2,953,520	23,441	0.80%

APPENDIX D

IRPAC Meeting Synopses

The following provides a brief synopsis of discussion topics related to SNWA funding during the first phase of the IRPAC process. A detailed summary with an audio recording was developed for each meeting and is available on SNWA.com or by contacting the SNWA.

Meeting 1 – June 27, 2012: Introduction to integrated planning processes, overview of Nevada's Open Meeting Law, a review of previous integrated planning processes undertaken by the SNWA and previous recommendation reports.

Meeting 2 –September 12, 2012: History of water in Southern Nevada, water use in Southern Nevada, mission statement development.

Meeting 3 – October 3, 2012: Water facility construction, water facility expansion, SNWA water resource plan, water resource planning and return-flow credits.

Meeting 4 – October 24, 2012: Overview of regional water system, SNWA responsibilities, SNWA revenue sources, SNWA sub-funds, debt service and rate structure attributes.

Meeting 5 – November 14, 2012: Local purveyor rate structures and water systems.

Meeting 6 – December 5, 2012: Rate structure attributes, SNWA debt, finances and bond financing.

Meeting 7 – January 14, 2013: SNWA debt, SNWA revenues, rate model assumptions, Infrastructure Charge overview.

Meeting 8 – February 11, 2013: Rate example reviews, sample billing customers.

Meeting 9 – March 11, 2013: Rate example reviews, sample customer billing limitations.

Meeting 10 – April 1, 2013: Rate example reviews.

Meeting 11 – May 6, 2013: Rate example reviews.

Meeting 12 – June 24, 2013: Technical Review Committee appointments, rate example reviews, fund balance policies.

Meeting 13 – August 7, 2013: Hydrological changes and conditions, rate model updates, fund balance policies and anticipated revenue volatility.

Meeting 14 – September 4, 2013: Public education and outreach, IRPAC Rate Recommendations report.

IRPAC Tour Synopsis

Facility Tour – April 20, 2013: Las Vegas Wash and SNWA/SNWS facilities tour. Discussion topics included Las Vegas Wash flow components, water quality issues, return-flow credits, watershed planning, bank stabilization and enhancements, biological monitoring, drought impacts on lake levels, regional water treatment, Intake No. 3, capital improvement planning and regional facilities.

APPENDIX E

IRPAC Rate Structure Attributes

Attribute	Definition
Legal	A threshold requirement. Any rate structure must be fully compliant with all applicable laws and regulations. Does not preclude committee recommendations for future legislation or changes
Sufficient or adequate	A threshold requirement. Any rate structure must provide adequate revenues to cover costs and appropriate levels of reserves. (A minimum of the average of the highest years of principal and interest on outstanding debt)
Financeable	Relates to credit quality. Generates a reliable revenue stream and maintains adequate reserves for favorable bond ratings.
Equitable and Fair	Horizontal – each customer in the same class being charged on the same basis Vertical – rate differentiation among customer classes based on differences in cost of service and/or service level requirements
Stable	Relates to the degree of volatility. "Stable" implies that lower volatility is more desirable than higher volatility.
Addresses economic environment at any point in time, maintain flexibility	Relates to the ability to maintain adequate revenues (neither too low nor too high) under changing economic conditions.
Encourage conservation	Relates to the rate structure's effectiveness at encouraging the conservation of water, especially outdoor conservation.
Simple to administer	Relates to the ability to administer and enforce in a low-cost manner.
Predictable	Relates to the ability of both the customer and utility to reasonably forecast the costs and revenues, respectively, from individual rate components and the total rate.
Understandable	Relates to the ability of the customer (person or business) to readily calculate the individual charges comprising the total bill.

APPENDIX F

IRPAC Customer Sample Set

CUSTOMER	Monthly Water Use (In 1,000 gallons)
Single Family Residential: 5/8" meter	Median: 10 High: 28
Single Family Residential: 1" meter	Median: 35 High: 116
Single Family Residential: 1 ½" meter	Median: 88 High: 243
Multi-Family Residential: 5/8" meter	Median: 14 High: 72
Mobile Home Park (Boulder Cascades)	1,616
Residential High Rise (Queensridge)	1,241
Downtown Residential High-Rise (Ogden)	1,263
Commercial High Rise (Wells Fargo Tower)	3,899
Commercial Stand-alone (Cragin & Pike)	25
Commercial Office Park (Desert Canyon)	238
Government Building (CC Justice Center)	2,057
Standalone Restaurant (Lawry's)	420
Standalone Fast Food (Cane's)	104
Golf Course (Southern Highlands)	32,799
Municipal Park (All-American)	3,915
Large Strip Property (Bellagio)	36,833
Downtown Hotel and Casino (El Cortez)	2,841
Locals Hotel and Casino (Suncoast)	9,617
High School (Palo Verde HS)	3,080
Retail Complex – Mall (Fashion Show)	6,030

APPENDIX F, *continued*

IRPAC Customer Sample Set

Large Retail (Sahara Pavilion North)	1,405
Car Wash (Terrible Herbst)	393
Religious (Lakes Lutheran Church)	30
Non-profit (Shade Tree)	269
Commercial Laundry (Brady Linen)	18,488
Large Industrial (Sunset Parkway Bus. Cntr)	762
Small Industrial (Baldwin Motor Sports)	7
Self-Storage Facility (StorageOne)	68
HOA Common Area (Summerlin HOA)	1,208
Hospital – Older (Sunrise Hospital)	5,364
Hospital – Newer (St. Rose San Martin)	2,981
Day Care (Kindercare)	113

(in Thousands)

Fiscal Year	2012 Actual	2013 Estimated	2014 Estimated	2015 Projected	2016 Projected	2017 Projected	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Operating Expenses										
Payroll	(4,090)	(4,005)	(5,613)	(5,006)	(5,222)	(5,429)	(5,689)	(5,942)	(6,219)	(6,405)
Operating Capital and Expenses	(7,516)	(10,773)	(10,308)	(10,617)	(10,936)	(11,264)	(11,601)	(11,950)	(12,308)	(12,677)
In-valley Recharge				(3,123)	(3,202)	(3,281)	(3,361)	(3,434)	(3,508)	(3,548)
Operating Expenses	($11,607)	($14,778)	($15,921)	($18,746)	($19,360)	($19,974)	($20,651)	($21,326)	($22,034)	($22,630)
Capitalized Labor previously paid from bonds		(14,055)	(14,974)	(16,464)	(14,831)	(15,074)	(14,605)	(15,412)	(16,261)	(16,749)
Total Operating Expenses	($11,607)	($28,833)	($30,896)	($35,210)	($34,190)	($35,048)	($35,256)	($36,738)	($38,296)	($39,379)
Total Debt Service	(137,397)	(132,234)	(137,003)	(164,684)	(216,733)	(238,512)	(238,406)	(238,322)	(238,229)	(236,502)
Total Funding Requirement	($149,004)	($161,067)	($167,899)	($199,895)	($250,923)	($273,560)	($273,662)	($275,060)	($276,525)	($275,881)
Expected Revenues (Base case)										
Infrastructure Surcharge	$16,193	$77,877	$76,823	$78,677	$78,982	$79,340	$79,698	$80,056	$80,481	$81,009
Regional Connection Charge	13,791	19,032	16,087	16,087	16,087	16,087	16,087	16,087	16,087	16,087
Regional Commodity Charge	40,666	40,796	40,796	40,853	41,087	41,419	42,136	42,845	43,530	44,207
Reliability Surcharge	4,598	4,654	4,783	4,884	4,912	4,951	5,035	5,118	5,198	5,278
Sales Tax	45,131	45,708	47,993	50,393	52,660	54,767	56,684	58,384	59,844	61,041
Other Revenues	(669)	2,539	1,607	2,300	2,300	2,300	2,300	2,300	2,300	2,300
Boulder City share of common cost		547	577	597	615	633	652	672	692	713
Interest Income	478	78	3,223	6,692	9,374	7,705	5,729	3,762	1,775	
Total Expected Revenue	$120,188	$191,230	$191,889	$200,482	$206,017	$207,201	$208,321	$209,223	$209,907	$210,635
Total Funding Gap	($28,816)	$30,164	$23,991	$588	($44,907)	($66,359)	($65,341)	($65,837)	($66,618)	($65,246)
Beginning Fund Balance (Without New Revenues)	$308,990	$280,174	$310,338	$334,328	$334,916	$290,010	$223,651	$158,310	$92,473	$25,856
Ending Fund Balance (Without New Revenues)	$280,174	$310,338	$334,328	$334,916	$290,010	$223,651	$158,310	$92,473	$25,856	($39,391)
New Commodity Charge Revenue			$2,698	$8,084	$14,789	$21,525	$24,555	$24,968	$25,367	$25,762
Implicit Add. Reliability Surcharge Revenue			30	90	165	240	274	279	283	287
New Infrastructure Revenue			2,536	7,976	14,227	21,449	25,442	25,665	25,929	26,258
Estimated Price Elasticity			(126)	(386)	(702)	(1,041)	(1,211)	(1,232)	(1,251)	(1,271)
Implicit Add. Interest Earnings			26	264	1,079	2,188	3,644	5,259	6,942	8,491
Ending Fund Balance (With New Revenues)			$339,492	$356,108	$340,760	$318,763	$306,125	$295,227	$285,879	$280,159
Difference between baseline connection fee revenues				$4,388	$5,449	$9,023	$10,405	$10,088	$9,213	$8,926

APPENDIX H

Proposed Rate Changes by Year

Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021
Proposed Commodity Charge per 1,000 Gallons	$0.30	$0.34	$0.38	$0.44	$0.48	$0.48	$0.48	$0.48	$0.48
Proposed Infrastructure Charge per Meter per Month									
Residential - 5/8" & 3/4" meter sizes	$5.00	$5.64	$6.36	$7.18	$8.11	$8.11	$8.11	$8.11	$8.11
Residential - 1" meter size	$19.21	$20.42	$21.79	$23.34	$25.10	$25.10	$25.10	$25.10	$25.10
Residential - 1.5" meter size	$38.41	$40.83	$43.56	$46.67	$50.19	$50.19	$50.19	$50.19	$50.19
Residential - 2" meter size	$61.46	$65.34	$69.70	$74.67	$80.31	$80.31	$80.31	$80.31	$80.31
Residential - 3" meter size	$122.90	$130.66	$139.38	$149.32	$160.60	$160.60	$160.60	$160.60	$160.60
Residential - 4" meter size	$192.03	$204.15	$217.79	$233.32	$250.93	$250.93	$250.93	$250.93	$250.93
Residential - 6" meter size	$384.05	$408.29	$435.57	$466.63	$501.85	$501.85	$501.85	$501.85	$501.85
Residential - 8" meter size and larger	$614.47	$653.26	$696.89	$746.59	$802.95	$802.95	$802.95	$802.95	$802.95
Non-Residential - 5/8" & 3/4" meter sizes	$19.05	$19.69	$20.41	$21.23	$22.16	$22.16	$22.16	$22.16	$22.16
Non-Residential - 1" meter size	$36.08	$37.29	$38.66	$40.21	$41.97	$41.97	$41.97	$41.97	$41.97
Non-Residential - 1.5" meter size	$72.16	$74.58	$77.31	$80.42	$83.94	$83.94	$83.94	$83.94	$83.94
Non-Residential - 2" meter size	$115.45	$119.33	$123.69	$128.66	$134.30	$134.30	$134.30	$134.30	$134.30
Non-Residential - 3" meter size	$230.90	$238.66	$247.38	$257.32	$268.60	$268.60	$268.60	$268.60	$268.60
Non-Residential - 4" meter size	$360.79	$372.91	$386.55	$402.08	$419.69	$419.69	$419.69	$419.69	$419.69
Non-Residential - 6" meter size	$721.57	$745.81	$773.09	$804.15	$839.37	$839.37	$839.37	$839.37	$839.37
Non-Residential - 8" meter size	$1,154.50	$1,193.29	$1,236.92	$1,286.62	$1,342.98	$1,342.98	$1,342.98	$1,342.98	$1,342.98
Non-Residential - 10" and larger meter sizes	$1,659.59	$1,715.35	$1,778.07	$1,849.51	$1,930.54	$1,930.54	$1,930.54	$1,930.54	$1,930.54
Non-Residential - 5/8" & 3/4" Fire Meter	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34	$3.34
Non-Residential - 1" meter size Fire Meter	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32	$6.32
Non-Residential - 1.5" meter size Fire Meter	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63	$12.63
Non-Residential - 2" meter size Fire Meter	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21	$20.21
Non-Residential - 3" meter size Fire Meter	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41	$40.41
Non-Residential - 4" meter size Fire Meter	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14	$63.14
Non-Residential - 6" meter size Fire Meter	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28	$126.28
Non-Residential - 8" meter size Fire Meter	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04	$202.04
Non-Residential - 10" and larger Fire Meter	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43	$290.43

APPENDIX I

Sample Customer Bills

Customer - Water Bills		2013	2014	2015	2016	2017
SINGLE FAMILY RESIDENTIAL	Median of the middle 80% - 5/8"	$34.34	$35.38	$36.51	$37.93	$39.26
SINGLE FAMILY RESIDENTIAL	Median of the top 10% - 5/8"	$107.47	$109.23	$111.07	$113.58	$115.63
SINGLE FAMILY RESIDENTIAL	Median of the middle 80% - 1"	$123.36	$125.97	$128.75	$132.40	$135.57
SINGLE FAMILY RESIDENTIAL	Median of the top 10% - 1"	$486.77	$492.63	$498.65	$507.18	$513.59
SINGLE FAMILY RESIDENTIAL	Median of the middle 80% - 1.5"	$305.93	$311.88	$318.13	$326.54	$333.59
SINGLE FAMILY RESIDENTIAL	Median of the top 10% - 1.5"	$937.05	$949.22	$961.69	$979.42	$992.68
MULTI FAMILY RESIDENTIAL	Median of the middle 80%	$47.94	$49.14	$50.42	$52.08	$53.57
MULTI FAMILY RESIDENTIAL	Median of the top 10%	$322.72	$326.25	$329.86	$335.01	$338.82
GOLF COURSE	Southern Highlands	$114,343.64	$115,739.79	$117,142.36	$119,225.36	$120,644.79
SCHOOL	Palo Verde High School	$11,485.52	$11,636.04	$11,789.60	$12,010.08	$12,171.58
MALL	Fashion Show	$25,364.60	$25,635.11	$25,908.50	$26,309.17	$26,590.24
CAR WASH	Terrible Herbst Buffalo/Sahara	$1,392.69	$1,412.69	$1,433.16	$1,462.30	$1,484.05
RELIGIOUS	Lakes Lutheran Church	$652.83	$657.94	$663.53	$670.35	$677.22
NON PROFIT	Shade Tree	$1,733.20	$1,755.91	$1,780.06	$1,811.57	$1,839.56
COMMERCIAL LAUNDRY	Brady Linen	$66,142.34	$66,967.26	$67,800.54	$69,023.28	$69,878.51
HOA / COMMON AREA	Summerlin Neighborhood HOA	$5,214.27	$5,267.68	$5,321.57	$5,400.83	$5,456.00
DAYCARE	KinderCare	$412.29	$419.34	$426.70	$436.76	$444.91
HOSPITAL (NEWER)	St.Rose - San Martin	$11,969.44	$12,118.82	$12,271.56	$12,489.68	$12,651.38
HOSPITAL (OLDER)	Sunrise	$20,340.25	$20,609.86	$20,885.72	$21,279.27	$21,571.40
STORAGE FACILITY	Storage One	$903.57	$907.60	$911.79	$917.55	$922.16
HIGH-RISE CONDOS	Queens Ridge	$8,618.32	$8,757.30	$8,907.40	$9,096.35	$9,275.75
HIGH-RISE CONDOS	Ogden Lux	$4,206.23	$4,221.75	$4,239.19	$4,259.07	$4,281.63
STANDALONE RESTAURANT - LARGE	Lawrys	$1,946.79	$1,967.89	$1,989.47	$2,020.27	$2,043.13
STANDALONE RESTAURANT - SMALL	Raising Canes	$381.01	$387.70	$394.69	$404.20	$411.98
PUBLIC BUILDING	Clark Co. Regional Justice Center	$8,550.32	$8,675.82	$8,806.49	$8,985.75	$9,129.91
CASINO - LARGE	Bellagio	$158,369.01	$159,927.65	$161,492.36	$163,819.71	$165,400.30
CASINO - DOWNTOWN	El Cortez	$11,748.15	$11,903.44	$12,063.52	$12,287.94	$12,460.82
CASINO - LOCALS	Suncoast	$36,880.28	$37,298.82	$37,720.40	$38,342.90	$38,772.42
MUNICIPAL PARK	All-American Park	$14,215.42	$14,407.12	$14,602.73	$14,883.45	$15,089.28
COMMERCIAL - STANDALONE	Cragin & Pike Insurance	$345.29	$348.74	$352.50	$357.14	$361.68
COMMERCIAL PARK	Sahara Pavillion North	$6,796.28	$6,862.85	$6,930.55	$7,028.44	$7,099.09
MOBILE HOME PARK - (300 Spaces)	Boulder Cascade	$2,982.57	$3,059.47	$3,137.89	$3,250.59	$3,332.99
LARGE WAREHOUSE	Sunset Parkway Business Center	$3,244.11	$3,282.86	$3,322.56	$3,379.05	$3,421.21
OFFICE PARK	Desert Canyon	$1,490.99	$1,503.17	$1,515.66	$1,533.40	$1,546.68
SMALL INDUSTRIAL	Baldwin Motor Sports	$383.74	$385.24	$386.90	$388.88	$390.92
HIGH RISE OFFICE TOWER	Wells Fargo Tower	$15,530.06	$15,722.44	$15,918.88	$16,200.36	$16,407.47

SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
AGENDA ITEM

September 26, 2013

Subject: Update on Water Resources	**Director's Backup**
Petitioner: Patricia Mulroy, General Manager	
Recommendations: That the Board of Directors receive an update from staff on water resources including, but not limited to, drought conditions in the Colorado River Basin, the results of the implementation of the Authority's Water Resource and Conservation Plans, activities on the Colorado River, the development of in-state water resources, and the status of the third intake project.	

Fiscal Impact:
None by approval of the above recommendation.

Background:
The Colorado River Basin has been experiencing a severe drought that began in 2000. The severity of these conditions has become increasingly evident in lake levels along the lower Colorado River Basin, where major reservoirs such as Lake Powell and Lake Mead are experiencing some of the lowest water levels in recent memory.

The nature of the drought in the Colorado River Basin has direct effects on water resources and future planning. The drought has prompted communities to launch major conservation initiatives to reduce water use among citizens and businesses, and has resulted in the development and implementation of the Authority's Water Resource and Conservation Plans.

In May 2005, the Board of Directors approved a project for design and construction of a third intake in Lake Mead with the primary objective of protecting southern Nevada's water supply from significant loss of system capacity resulting from a continuing decline in lake elevation. The project design and environmental approvals were completed by 2007. Construction began on the project in March of 2008.

This agenda item provides for an update from staff on the drought, the results of the implementation of the Authority's Water Resource and Conservation Plans, activities on the Colorado River, the development of in-state water resources, and the status of the third intake project.

The office of the General Counsel has reviewed and approved this agenda item.

Respectfully submitted:

John J. Entsminger

Patricia Mulroy, General Manager
FOR PM:JJE:td

AGENDA ITEM # 14