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.

<u>Evaluating Rate Structures</u>
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.

<u>Revenue Security</u>

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.

<u>Fund Balance Policies</u>

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	(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

APPENDIX G

IRPAC 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)
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