

# FINANCIAL MASTER PLAN DECEMBER 2012



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# PART 1: INTRODUCTION

## EXECUTIVE SUMMARY

In Fiscal year 2010, the Mission Springs Water District Board of Directors was faced with the growing challenge of increasing costs, decreasing revenue and demands against reserves for operational expenses. The so-called “great recession” had peaked and the District was sitting on millions of dollars of new but idle infrastructure—plenty of facilities, no users.

Regardless, the cost of maintaining and setting aside funds in the annual budget to address those assets was very real. Water production was in precipitous decline which means revenue was also declining. MSWD also saw an increase in residential vacancies—historically 350, now approaching 1,400 empty homes—and a 20 percent drop in revenue. All the while expenses continued to climb do to state mandates and regulations, increases in workers compensation and insurances, electricity and most other items. It was evident by that time that the recession was more than just a temporary wave. There was a *new normal* emerging and something had to give. The options were: decrease expenses, increase revenue or a combination of the two. The Board’s dictate: “start with the expenses!”

MSWD staff understood that cuts could only go so far and it was clear that a more comprehensive approach was necessary to operate in the new normal. From that perspective the recommendation to launch the *MSWD 2.0* program emerged. MSWD 2.0 represents a rethinking of the way local

government does business. The picture is as follows: MSWD operated by the rules of the game, was well managed and financially sound. Then the game changed. The rules applied to the old game but MSWD was now on a new playing field and the rules were yet to be written! MSWD 2.0 is the rewriting of the rules in order to compete and win in the new game.

A central element to the MSWD 2.0 program was the idea that customers needed to understand exactly what the District was facing and the District needed to understand exactly what the customers knew about those same issues. However, the idea of trying to explain complex financial issues, economics, operations and management principles in mass communications to the general public seemed unreasonable. The answer was to form a Citizens Advisory Committee (CAC) from among the customer base that would commit the time and energy to getting into the nuts and bolts of public agency operations, finances and management. Further, the stated purpose of the committee was to:

- Provide feedback to the MSWD Board on elements of the study as presented by the consulting team;
- Achieve a deeper understanding of the District, its challenges and proposed solutions;
- Suggest outreach methods as well as how best to obtain input from the Desert Hot Springs community related to the District.

A general invitation was sent to the entire customer base seeking applications for a seat on the CAC. MSWD was looking for a cross section of its customer base in order to ensure representation from every sector. Of the 42 applications received, 20—a manageable sized group—were asked to serve. Representatives came from the business community, home owners associations, hotel and spa industry, rental property owners, school district, water professionals, financial industry, property owners, renters and various demographics.

MSWD would like to express its gratitude to those original 20 CAC members for their hard work and commitment to this process:

Manny Aragon	Joanne Gold
Michael Avramidis	Wendy Heard
Shirley Bales	Marilyn Heidrick
Tony Calsolaro	Camille Linde
Richard Clapp	Chuck McDaniel
Richard Cromwell	Courtney Moe
Shelley Daily	Bruce Montgomery
Barbara Eastman	Whitey Morgan
Pamela Edmonson	Gary Piotrowski
Terry Felix	Nancy Wright (Chair)

Following formation of the committee, MSWD held four evening meetings where a management and finance

consulting team, Glenn Reiter Associates, was brought in to both facilitate the process as well as perform the research for this report.

Following were the topics of discussion at each meeting:

Week 1: History and general information about MSWD, the onset of the economic decline and its impact on MSWD, Introduction to public finance, state law regarding special district finances, operating and non-operating revenue, cash flow, reserves and capital replacement.

Week 2: Analyses of operations costs, staffing, labor costs, work flow, CAC breakout session which presented the group with six scenarios: customer service costs, customer service procedures, outsourcing, delinquencies, fees and rates, and public outreach.

Week 3: Managing and operating a utility, current operating funds and projections, sustainability models, impact of various cost recovery models, rate structure, reserve balances, reserve policy and replacement costs of capital. The session also included group questions in survey format regarding cost recovery policies.

Week 4: Review, roadmap to identified goals (rebuild reserves, replaced worn out facilities, reduce overhead, increase system maintenance, increase use of technology, charge full costs of services provided, restructure water rates), delineation of long term and immediate needs, asset

replacement projections (schedule), policy recommendations/requirements, and fiscal balance/cost recovery model.

Each of the meetings was held in the evening and required a commitment of about 3 to 3.5 hours. CAC Feedback was compiled and provided to the consulting team for review and recommendation. A number of surveys and polls were taken on various subjects after the committee was educated on the intricacies of those topics.

Members of the MSWD Board other than Nancy Wright, then MSWD President, attended the meetings as observers. President Wright served as the Chair of the committee. MSWD staff members were also present and participated in answering technical questions for the CAC. Following is the process model for the MSWD 2.0 program (ES #17).

As outlined, the model includes interaction between the consulting team, the CAC, staff and the Board. Once policy recommendations are identified, staff will evaluate fiscal impact, timeline and potential outcomes for the recommended action. MSWD's legal team will be consulted

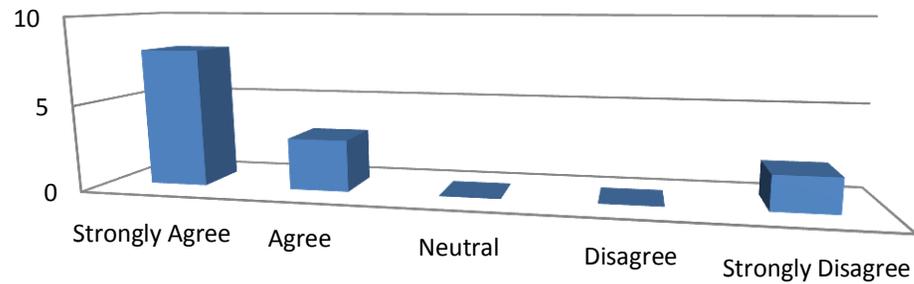
when necessary and public information will accompany implementation.

The intent of this report is to serve as a catalyst to move the District towards long-term fiscal stability. It is step one of a process, not an end in itself. The recommendations herein are understood to be advisory and must be analyzed in light of the current operations and community support. This report should not be considered to be a comprehensive analysis of every aspect of the District nor is it a rate study.

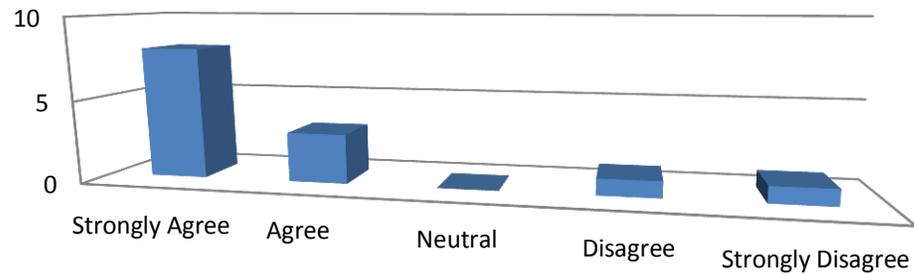
Based on the recommendations, the Board will be asked to consider numerous policy decisions over time. Some will be—and have begun to be—implemented without significant impact on the customer base. Others will require complex legal processes and impact various segments of the customer base. No matter the process, the report provides options to ensure that MSWD is moving toward long term fiscal stability and best management practices on behalf of the community it serves.

## Executive Summary Exhibits

ES #1 MSWD should charge full cost for turn-on/  
turn-off during normal operating hours.

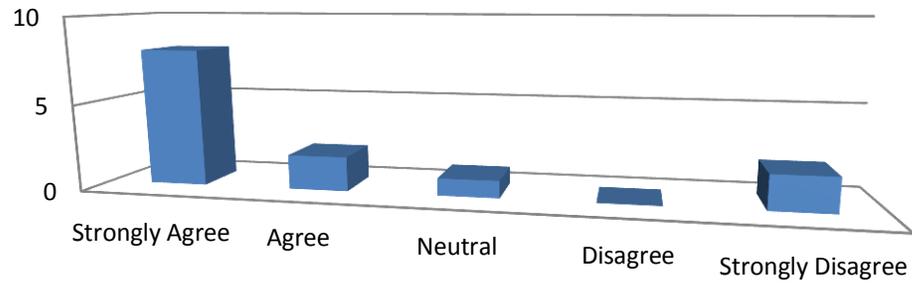


ES #2 MSWD should charge full cost for turn-on/  
turn-off during after hours (overtime).



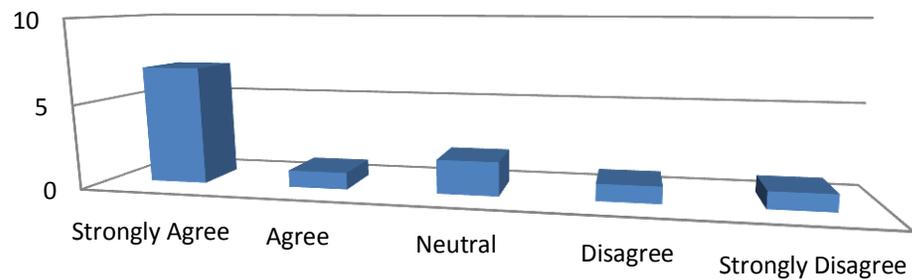
ES #3

MSWD should charge customers the full cost of returned checks.



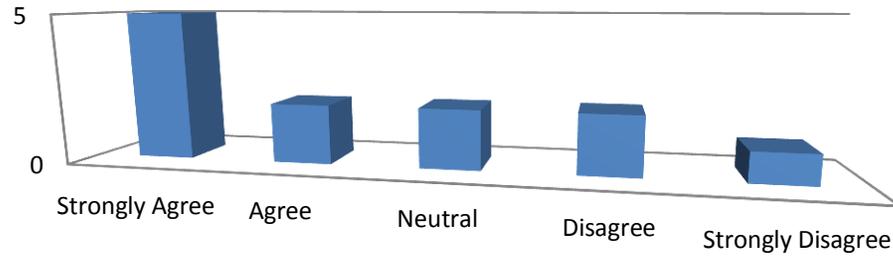
ES #4

MSWD should charge for customer requested meter re-read if initial read was correct.



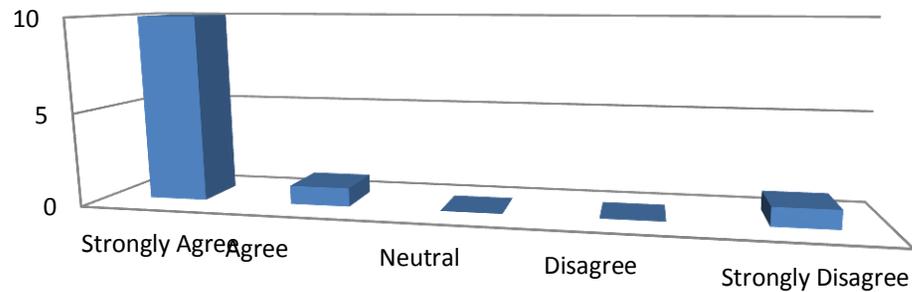
ES #5

Customers should pay cost of annual state-mandated backflow prevention certification.

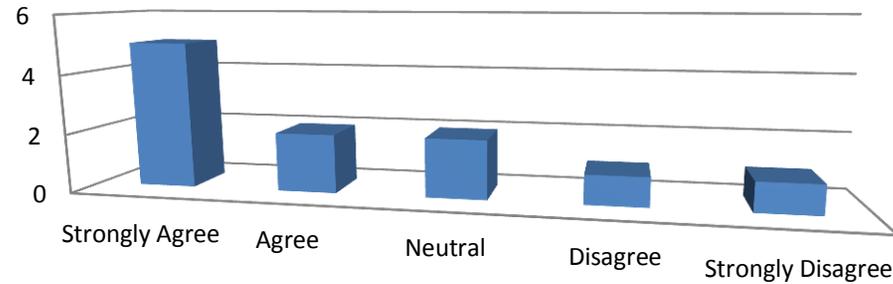


ES #6

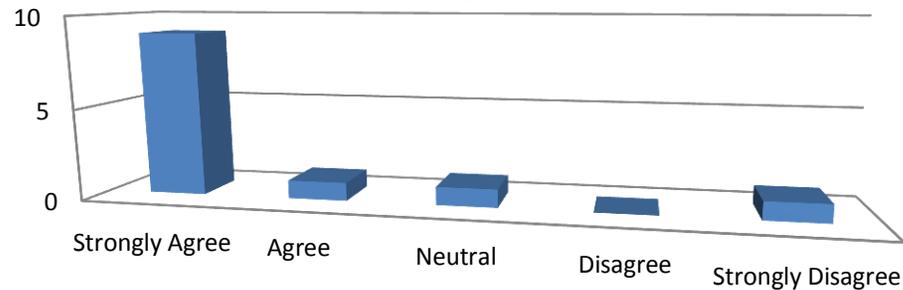
Vacant property owners should cover fixed costs associated with their properties.



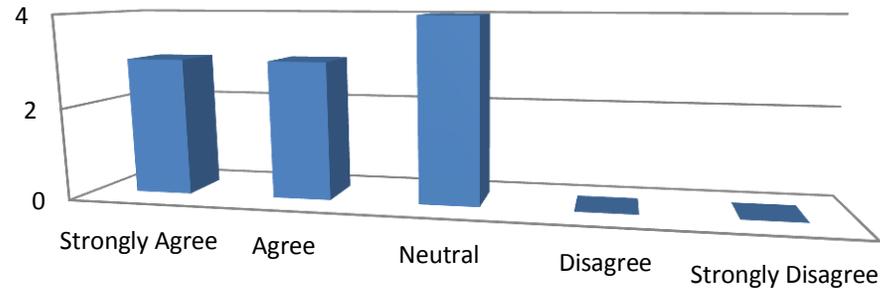
ES #7 Local Voters Would Support Special Tax on Vacant Properties (to cover fixed charges).



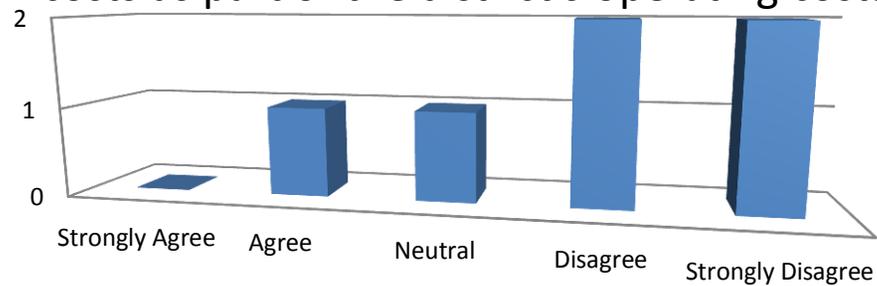
ES #8 Owners of unoccupied, improved properties should cover fixed costs associated with their properties



ES #9 The community can be educated sufficiently to understand rate considerations.

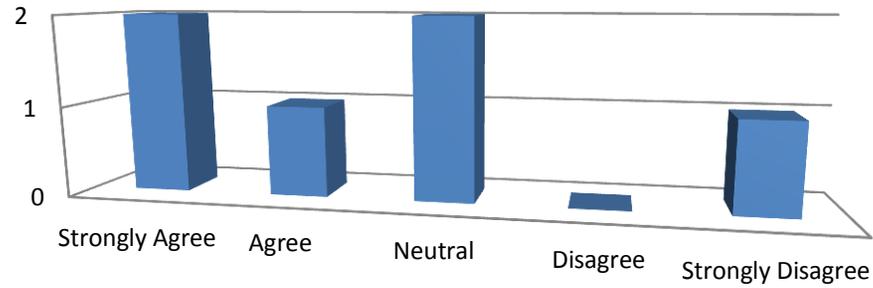


ES #10 Continue to provide the level of services to those who require them and include the costs as part of the district's operating costs.



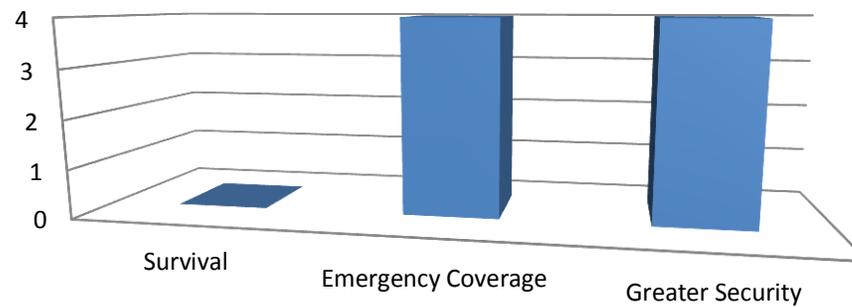
ES #11

MSWD should no longer operate at the current levels of service.



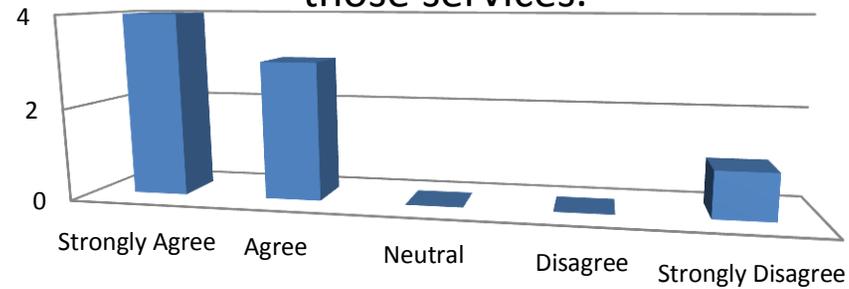
ES #12

District reserve levels should be set at the following level.



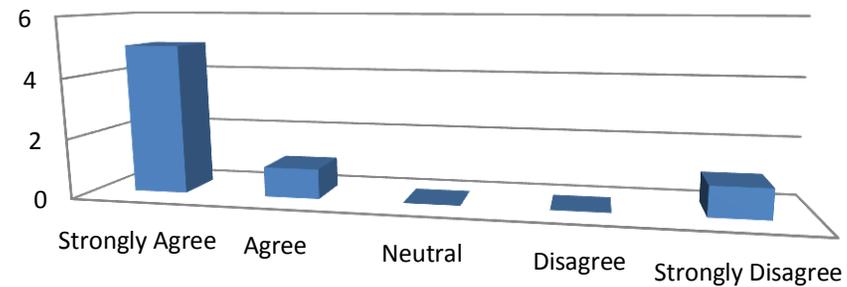
ES #13

MSWD should require customers who initiate services to pay the full cost of those services.



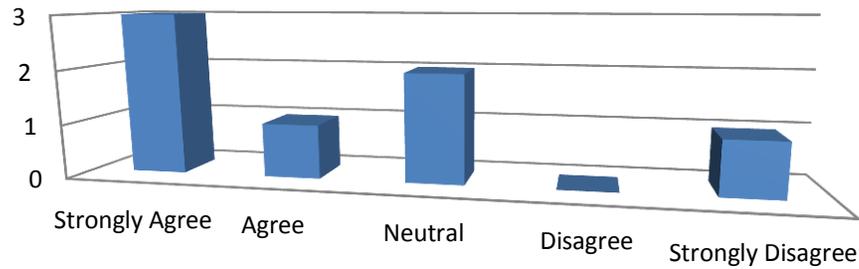
ES #14

Customer accounts should only be in owner's name.



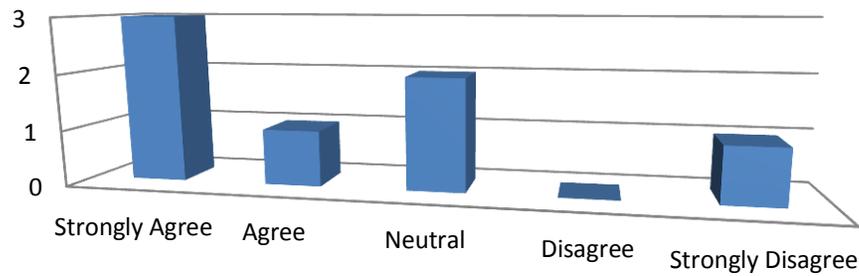
ES #15

The sewer fixed fee should be on the annual tax bill.

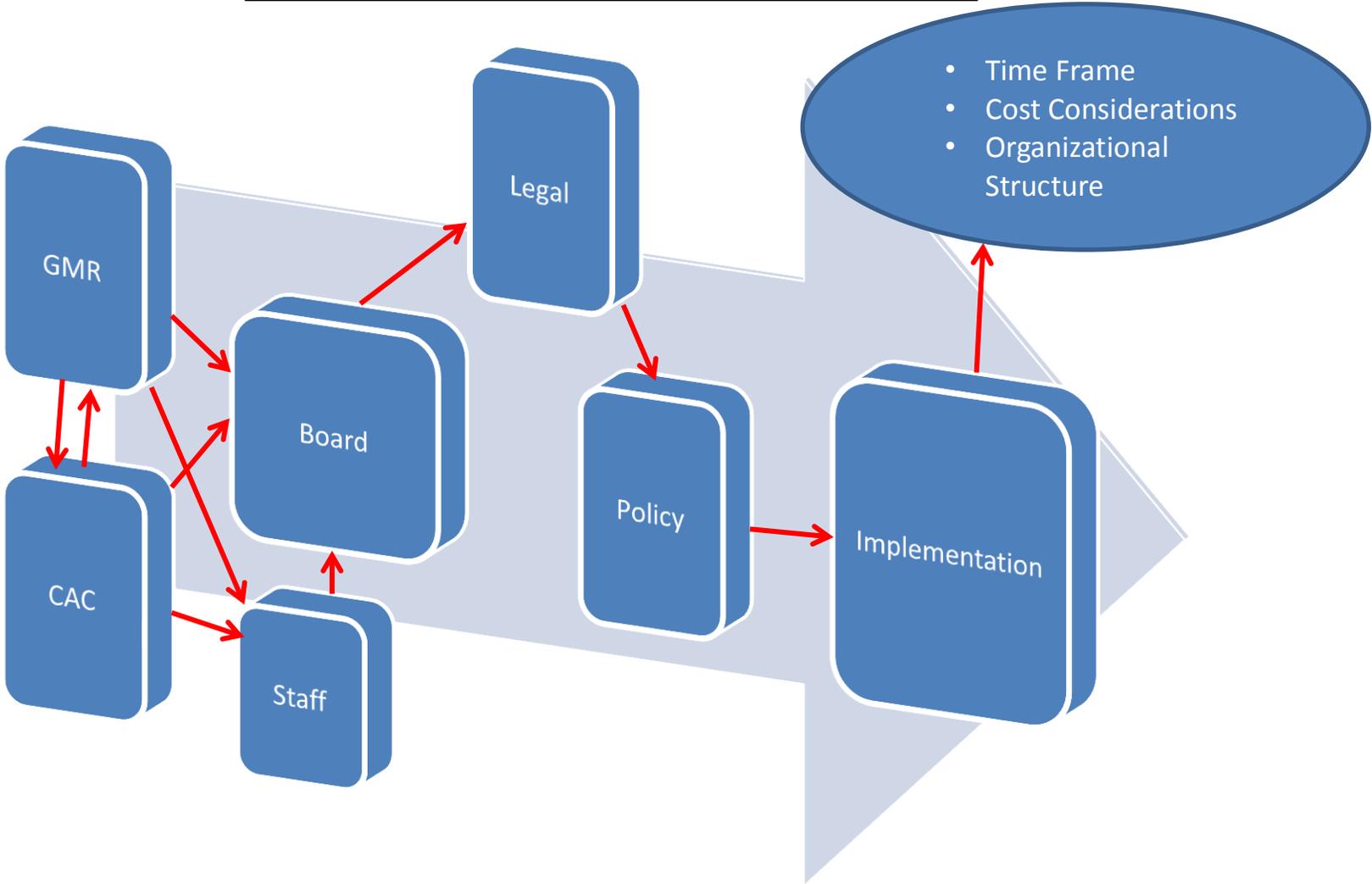


ES #16

The water fixed fee should be on the annual tax bill.



MSWD 2.0  
Process Model  
(ES #17)



## ACKNOWLEDGEMENTS

We acknowledge the assistance of the personnel at Mission Springs Water District in performing this study. Staff went out of their way to provide data on all aspects of the District's operation. Their data was invaluable in preparing the Strategic Financial Plan.

## DISTRICT DESCRIPTION AND RECENT HISTORY

Mission Springs Water District (MSWD) is a County Water District governed by a five member Board of Directors elected by the community. The District serves over 13,000 customer accounts in an area of about 135 square miles and a population of over 35,000. MSWD is located in the north-west Coachella Valley and extends from the Desert Edge Community west to the Morongo Indian Reservation, and from the San Bernardino County line south to about the railroad tracks in Palm Springs at Indian Canyon.

MSWD overlies a groundwater resource of exceptional quality and quantity—the Mission Creek Aquifer. Having received numerous awards in international tasting competitions, the District also received an award from the American Water Works Association for having won more awards for taste than any other municipal utility. It is in the best interest of the District to protect this valuable resource.

The District service area also overlies a hot water resource the Desert Hot Springs Aquifer—which is renowned for its therapeutic properties and is the foundation for the region's flourishing spa industry. The hot water is not potable but essential to the local economy, nonetheless. Even though MSWD serves several communities including Palm Spring, and unincorporated areas of Riverside County, the major customer base is located in the City of Desert Hot Springs.

In addition to water, the District provides sewage collection and treatment services to about 7,000 customers. An assessment district that provides approximately 50 percent of the cost of constructing wastewater facilities throughout the greater Desert Hot Springs community was adopted by stakeholders in 2004. Multiple phases have been completed or are under construction. The remaining project areas require an infusion of outside funding in order to complete expansion of the system. Since 2004, about \$16 million in grant funds to match assessments for system expansion have been secured.

**Early 2000s Economic Boom.** The District experienced a moderate increase in growth into the early 2000s. Beginning in 2003, however, the area was discovered by developers as a region of with affordable property and a demand for moderately priced housing. The figure below depicts the rapid growth resulting from easy credit, low development cost, and an attractive setting.

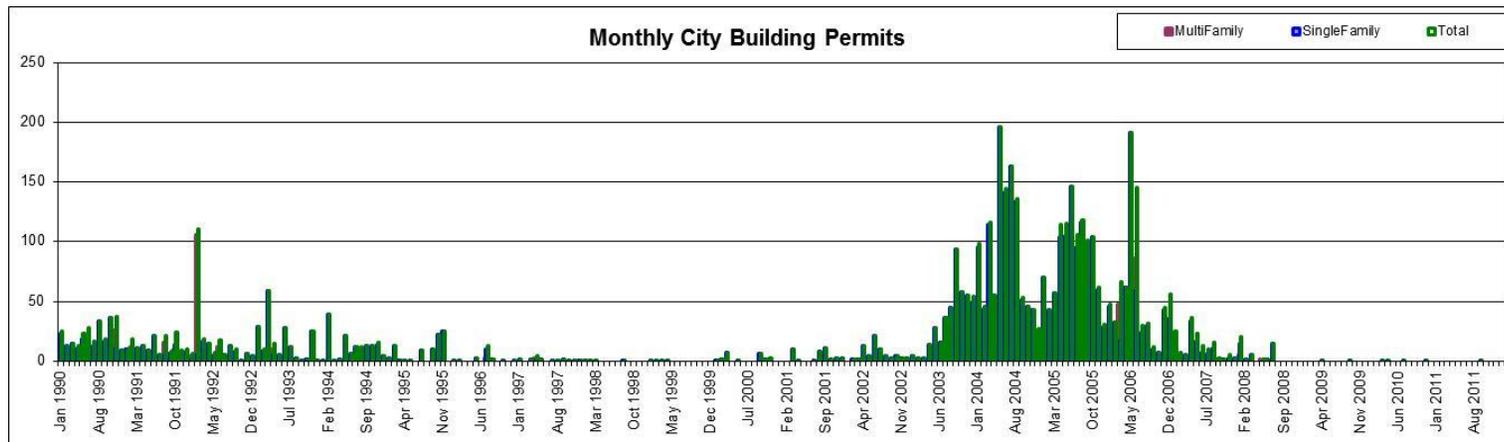


Figure 1 - Monthly City Building Permits 1990-2011

In the early years of the economic expansion, the District had to increase staffing to accommodate the remarkable development activity and accompanying increase in new connections. The water and wastewater systems were also expanded to provide services to the new development.

**Economic Recession.** Around 2007, the real estate bubble burst. As the financial crisis deepened across the state and around the world, developers abandoned work in progress. Houses were left vacant leaving miles of water and sewer line capacity with few customers. MSWD’s capital infrastructure assets increased from \$90,000,000 to over \$150,000,000 in just a few years. Meanwhile, water production decreased by about 20 percent and customer vacancies went from a historical average of about 350 to over 1,400.

The District, like many utilities in rapid-growth areas, was left having to cut costs while continuing to maintain and operate

the system. The significant idle capacity created ongoing maintenance costs and replacement allocations in the budget.

With the trend of devaluing real property during the same time frame the added complication of decreased property tax revenue emerged with negative impact on non-operating revenue. From 2006 through 2011, property tax revenue fell by nearly one-half million dollars per year.

In response, the District began to cut costs through staff reductions, efficiency improvements in operations such as digitizing customer files and outsourcing IT management and engineering. The District also found it necessary to enact two separate rate actions—one affective in 2009 and the other in January of 2011. But these actions were not enough to correct the problem. The additional infrastructure still had to be operated and maintained. In fact, the low flows in large sewer

pipes increased maintenance cost. The rise and fall in construction activity correlates to the number of new meter sets as noted in Figure 2:

which further exacerbates the financial strain on the District.

**Caught Up in a National Problem of Leaking Plastic Service Lines.** Portions of the District’s pipeline system were installed

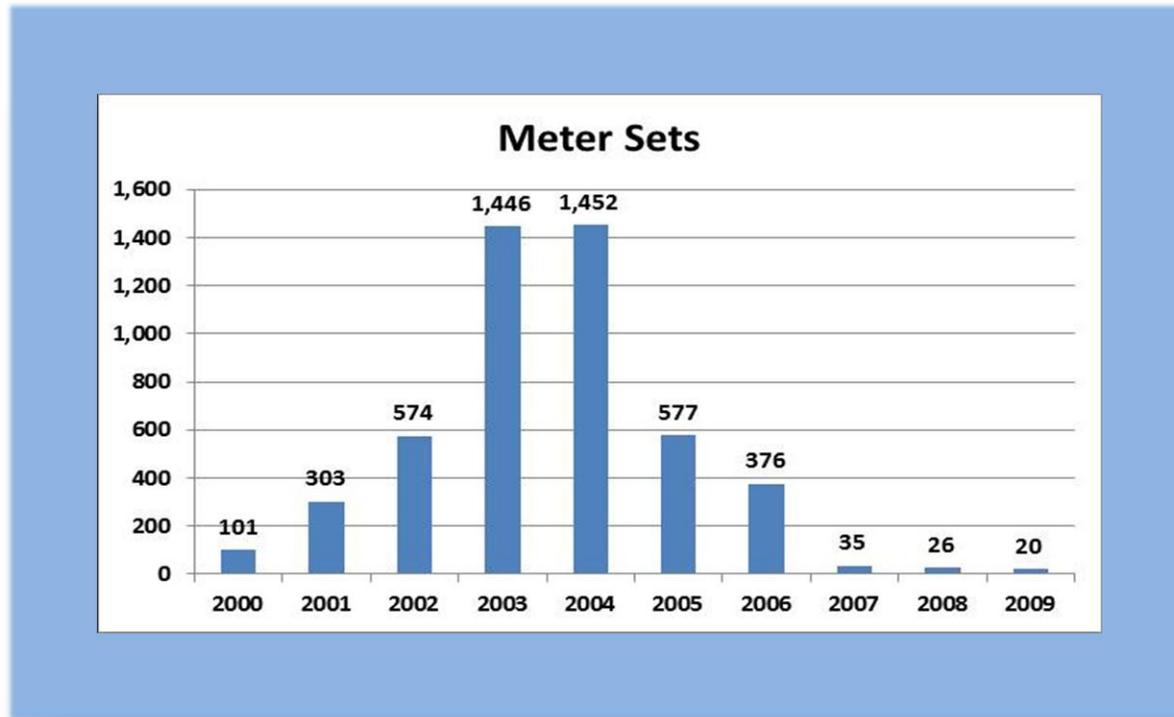


Figure 2 - MSWD Meter Sets 2000-2009

**Rising Costs to Maintain and Need to Replace Aging Portions of the Water System.** The District was also confronted with increasing maintenance costs and the need to replace some of its original, aging infrastructure that was reaching the end of its useful life. Furthermore, much of the older system was constructed with substandard materials and workmanship

using plastic service lines instead of copper, because copper prices were increasing and the pipe manufacturers offered a lower cost plastic service line. Unfortunately, the plastic did not perform as advertised, and agencies throughout the country were faced with repairing leaking service lines. The manufacturers of this pipe have declared bankruptcy since

then and MSWD has experienced over 600 leaks in a single year.

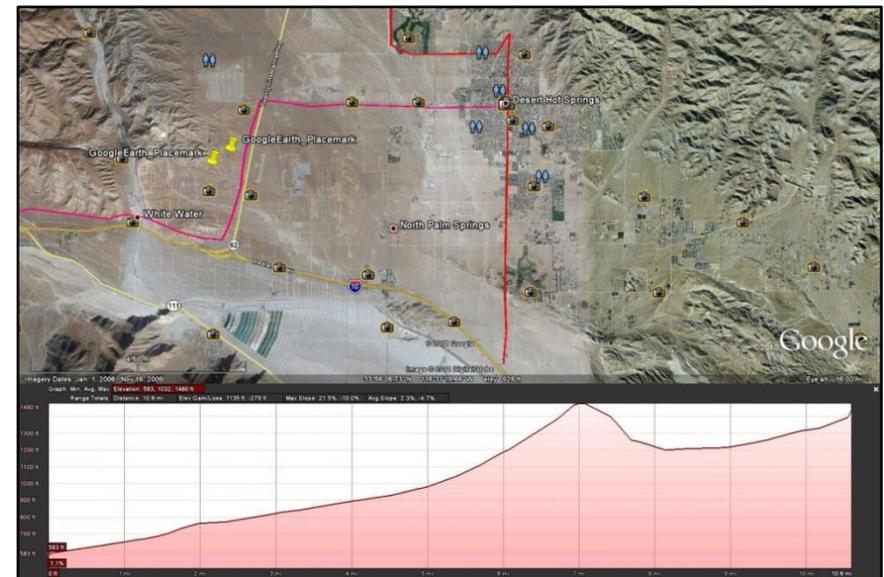
**Difficult and Costly to Repair Pipelines in Easements Behind Homes.** Further, the older area of the District has small mostly substandard galvanized water lines in easements behind the homes. A leak in one of these lines requires special handling as the District cannot use mechanized equipment. The work has to be done by hand to protect the customer's property. This also adds to costs when a leak occurs because this usually results in property damage to the customer for which the District is liable.

### SERVICE AREA OVERVIEW

**Groundwater.** The District obtains its water from a local groundwater aquifer. An adjacent aquifer contains hot water that is used by spas, providing the basis for a major economic base and tourist attraction. The two aquifers provide water of such quality that the District has become internationally recognized and received awards for taste. The protection of these resources is an important long-term goal.

**Demographics.** The City of Desert Hot Springs is considered "disadvantaged" due to low average household income levels (in 2010 median income for a household was \$32,514; while the Riverside County average was \$58,464). Approximately 42% of the residences in the service area are rental units.

**Geography.** MSWD's service area encompasses 135 square miles and includes changes in elevation of almost 1,000 ft. The area is sparsely developed. There is a concentration of customers in the city center, with the remaining customers located as far as 14 miles from the District's service center. The low density, long distances and changes in altitude all increase the costs of providing service.



*Figure 3 - Aerial photo of service area showing elevation change for pumping*

**Geology.** The District's service area lies very close to the San Andreas Fault. The United States Geological Survey predicts a high potential for a significant earthquake in the region in the next 40 years.

## DECISION TO UNDERTAKE STRATEGIC FINANCIAL MASTER PLAN

In light of these challenges, the District Board decided to develop a Financial Master Plan that included a comprehensive examination of all District activities.

**Citizens' Advisory Committee.** The Board of Directors determined that the help of a Citizens' Advisory Committee (CAC) would greatly enhance effectiveness of the process. This committee was comprised of leaders in the communities representing different interests. The CAC would help the plan to reflect the needs of the community. It would also provide the community the opportunity to participate in the development of the plan, providing a better understanding of the District's activities. The plan is expressly designed to be understandable and supported by the community and the CAC reviewed many of its key findings and provided input during the study period. Numerous lengthy conversations resulted in good input and a better understanding of the complicated issues the District is facing.

**Flexible, Adaptable Plan to Meet Future Changing Circumstances.** The District's new business model must address the "new normal" challenges, and provide a path for long term sustainability. The approach will be to explore various scenarios. For example, what happens if there is no increase in growth for the next five years, or what happens if

growth does begin to accelerate in five years? The plan is designed to be flexible and anticipate change.

## GOALS OF THIS STUDY

This study is designed to provide MSWD with an immediate and long-range Financial Master Plan to insure its sustainability.

- Develop policies to ensure sufficient operating revenue to adequately cover the District' operating costs.
- Develop policies to ensure sufficient revenue to replace facilities that have outlived their useful life
- Develop policies to ensure sufficient reserves to accommodate capital needs, future economic downturns and natural disasters
- Repay internal loans from the restricted cash fund
- Reduce operating costs
- Reorganize the District operations and staff to increase efficiency and reduce cost
- Employ technology to reduce cost and improve service
- Continue the groundwater protection plan (more sewer lines)
- Revise District policies and services to recover the full cost of services
- Update master facilities plans
- Update the Integrated Regional Water Management Plan [I wouldn't consider this a goal of this plan]

- Update water and sewer rates and fees such that there is an equitable distribution of cost and benefit
- Continue to develop changes to the District's current excessive level of service
- By taking the recommended financial steps, improve the District's credit rating and educate community on the water and financial issues
- Continue to represent the District's interest in the development of the Mission Creek/Garnett Hills Water Management Plan

### BRIEF SUMMARY OF KEY FINDINGS

MSWD's Financial Master Plan takes into consideration the community's socioeconomic profile, geography, and service area, as well as the resources available to provide the required services.

The most difficult portion of plan development is to accurately project the future. It is not adequate to project forward based on past experience. The 'new normal' resulting from the recent economic meltdown suggests that it is more prudent to develop a number of reasonable scenarios and prepare to flexibly respond to conditions as they unfold. It must also be noted that these changes must be made with cautiousness and sensitivity to avoid any missteps that would result in failure to implement necessary and prudent changes.

### FINDINGS –WHERE DOES THE DISTRICT STAND TODAY: STRENGTHS

**Strengths—High Water Quality.** The District's water supply is famous for its taste and quality and has won numerous international awards.

**Strengths—Award Winning Treatment Plant and Operating Staff.** Its facilities have received nine awards for plant safety, compliance, operation, maintenance, training and economizing, including California Water Environment Association 2010 Plant of the Year for the wastewater treatment plant

**Strengths—Successful Response to Economic Downturn.** In response, the District began to cut costs, reduce staff, raised rates and made efficiency improvements such as digitizing customer files, outsourcing IT management and engineering. But these actions are not enough to correct the problem. Revenue remains inadequate.

**Strengths—Very Little Debt.** The District has less than \$1 million in annual debt service. Many agencies its size have tens of millions of dollars.

**Strengths—Successfully Obtained Substantial Grant Funding.** Since 1999, the District has obtained over \$26.5 million in grant funding from county, state and federal sources. This has allowed the District to make progress on important capital

facility projects without impacting rates during the economic downturn. However, severe financial challenges remain.

Also considering the condition of state and federal budgets, this source of funds may be more limited in the future.

Strengths – The District has made great progress in positioning itself in the regional management of water. The development of the Mission Creek/Garnet Hill Water Management Plan as well as the Integrated Water Management Plan has positioned the District to reduce its future costs and secure a more reliable high quality water supply.

## **FINDINGS –WHERE DOES THE DISTRICT STAND TODAY: CHALLENGES**

**Challenges—Funding Gap.** There are several reasons for the growing gap. First and foremost, the District’s assets are aging. Last year alone, 600 leaks had to be repaired. Wells, reservoirs and other assets require maintenance to ensure maximum lifespan. And new wells need to be constructed. The District is just about at production capacity in some areas and new wells and storage will be needed. Within the next 2-3 years for example, a new well, already designed, will need to be constructed to replace an existing well. Construction of a well is normally in excess of \$1.5 million.

There’s also the issue of depleted cash reserves. For several years, rates did not keep pace with the cost of providing service. The District was dipping into reserves to cover

operational shortfalls hoping growth would utilize idle capacity in the system. But the growth didn’t come and the losses continued.

Conservation is also contributing to our cash flow dilemma. Customers in our district use from a third to half as much water as other agencies and this drop in sales reduces revenues. However the system must be maintained regardless of how much water flows through the system.

**Challenges—Funding Gap: Facilities Abandoned by Developers.** One area of concern is the unoccupied facilities left by developers during the economic collapse. The rapid growth in the period from 2000 to 2008, followed by the recession, left the District with unoccupied residences to serve. Vacancy rates rose from about 350 to 1,400 and new infrastructure, built by developers for those vacant residences and dedicated to the District that was intended to serve and be paid for by thousands, now serves and cannot be fully paid for by the hundreds who use it.

**Challenges—Funding Gap: Fewer Customers to Share Cost of Maintaining Abandoned Facilities.** This infrastructure still has to be maintained by the District, but there are fewer customers available to share the cost through rates.

**Challenges—Funding Gap. Need to Set Aside Adequate Funds for Maintenance, Repair and Replacement.** During the financial crisis and during this period of budget cutbacks and

limited revenue, the District has been unable to set aside funds for maintenance, repair and replacement. As pipelines have aged, the number of leaks has increased, putting a burden on an already over-stretched staff and further driving up operational costs, service line leaks were averaging between 60 and 80 per month. Each leak can cost from \$600 to \$2,000, depending upon location.

**Challenges—Funding Gap. Cost of Providing High Levels of Labor Intensive Customer Service.** Another area of concerns is the cost of providing the very high level of service that the District prides itself on. The District provides many services that are time consuming and costly. Many are considered to be courtesies to customers. Others are mandatory services such as service disconnections for non-payment. It requires substantial staff time to provide these services, which can be costly and the District does not, generally, charge the full cost of providing those services.

**Challenges—Funding Gap. Constrained Financial Position and Rising Costs, Yet Held Rates Steady.** In addition to the cost pressures described above, the District has not raised rates since 2010 with a water and wastewater increase that took effect on January 1, 2011 and another sewer increase that took effect on January 1, 2012. Finances have been held together by: cutting costs in many areas, including cutbacks on needed maintenance and upgrades, and by taking other actions. Nonetheless, with costs rising, currently, the District is

generating just enough revenue to fund those day-to-day operating costs.

**Challenges—Critical Need to Pay Back Restricted Loans.** Another financial tool the District used to maintain quality service throughout the economic downturn was to borrow from restricted funds since no unrestricted reserves are available for water or sewer operations, and no funds remain for system replacement. It is critical that a financial plan be implemented to repay the restricted funds to comply with legal and contractual obligations.

Prior to the last rate increase, the District's operating reserves had been depleted and it was necessary to use Inter-fund loans to pay the day to day operating expenses. Currently, the District is generating just enough revenue to fund those day-to-day operating costs.

Decrease operating expenses and raise reserves to fund facility maintenance and replacement. System reliability and sustainability is paramount. The community cannot survive without an adequate and reliable water supply. The infrastructure that provides the water and treats the sewage is aging and portions of it must be replaced. In order to fund even a portion of the replacement needs, it will be necessary to continue cutting costs and slowly increasing rates to reach a prudent level of reserves and fund replacement. For the District to sustain its operation, it will be necessary to quickly and dramatically decrease its operating expenses. As previously stated, numerous actions have been taken during

the development of the report to reduce costs including staff reductions through layoffs and an early retirement program.

### **SUMMATION OF KEY RECOMMENDATIONS**

As a result of the economic downturn the District has had to address what may be considered a “new normal”—a continuing need to raise revenue, increase efficiency, and reduce operating costs and staff to survive.

This section summarizes some of the key actions that the District can take now and in the future in order to provide safe and reliable water and sewer services. Note that these recommendations will be further analyzed by staff and legal counsel, and a number of the recommended actions will require Board policy changes.

*A list that summarizes every recommendation is found in the final chapter of this report.*

#### **Update its Business Plan and Long-Range Financial Planning.**

We recommend that the District revise its current business

plan and adopt a long-term financial strategy that will insure sustainability now and in the future. This will include implementing additional cost cutting measures, charging for services provided, examining current service policies for cost reduction, and developing water and sewer rates that will not only provide adequate day-to-day operating income, but also provide a source of income to fund system replacement as required by the California Water Code.

**Regularly Monitor and Update the Financial Model.** The community has limited resources. The District must take into consideration the community’s ability to fund the District and the services it provides. Therefore, accompanying this plan is a Long Range Financial Model designed to accommodate future “what if” scenarios. It is strongly recommended that the District periodically monitor its financial performance and check it against the model to see if the assumptions used initially are still appropriate. The model will be of most value if it is periodically monitored and updated.

**Consider Increased Use of Outsourcing.** Currently, the District uses outside contractors for its Information Technology and Engineering services, resulting in modest operating savings each year, with additional benefits of improved efficiencies. Other services such as fleet maintenance, Human Resources, and grounds maintenance may offer savings as well.

**Further Refinement and Implementation of Job Costing.** The ability to know what it costs to perform various tasks is vital in developing the District’s budget, determining life cycle costs of ownership, and assessing whether a particular activity can be done more efficiently and effectively in-house or through outsourcing. Further utilization of the District’s job costing and capital asset systems District-wide will help management and the Board with factual and timely data regarding the costs to operate and maintain the District.

**Consider Staff Reorganization and Possible Decrease in Staff Count.** We believe that staff reorganization could lead to increased efficiencies and could make it possible to conduct business with smaller staff. This could be done through early retirements, attrition and other steps.

**Ensure Long-Term Groundwater Balance.** Local groundwater is of limited supply and the water table is dropping. The District's service area will eventually require more recharge from imported water sources. The Water Master Plan Update should include a plan to insure that the groundwater supply is protected and not over used or over drafted, and that recharge/import water sources are proactively identified. Furthermore, it is hoped that involvement in the Integrated Regional Water Management Plan will lead to a more efficient and reliable management of the future water resources.

**Expand Sewer Service to Areas that Don't Receive it to Protect Groundwater Quality.** All of the District's water customers do not receive sewer service. In order to protect

the District's high quality groundwater, it will be necessary for the District to provide sewer service to more people in its service area, particularly where higher densities of development exist or are planned. This requires grant funding, State low-interest loans, and, possibly the issuance of debt against community assessment districts that would need to be formed. If the District decides to borrow funds, it will be necessary to demonstrate its creditworthiness to potential creditors.

**Increase Alignment with the Community.** Beyond such specific steps, the District must present its plans clearly to the public, obtain input, and seek to align them with the community's desires and interests. The District should continue to invest in a robust community outreach and education program to ensure public participation and avoid "surprises" that often accompany policy actions. The support of the community is essential to addressing the real-world issues of the "new normal."

# PART 2: ASSESSMENT OF DISTRICT OPERATIONS

## HOW WE DEVELOPED THE PLAN

**In Depth Examination of the District.** The first step in developing the Plan was to conduct an in-depth examination of the District's current operations and business practices. This included field inspection of all District facilities which examined the condition of those facilities that were above ground such as tanks, pumps, control systems and sewage treatment facilities. The field inspection was followed up with a review of maintenance records and staff interviews.

## OPERATIONS AND MAINTENANCE

The Operations and Maintenance Department is generally well supported by technology as discussed below. However, we recommend increased and enhanced use of that technology throughout the report to improve efficiencies and quality of service. The following are a few of the observations.

**FINDINGS—Existing In-House Job-Costing System.** The in-house job costing system is sophisticated and provides for excellent record keeping and data collection. Numerous reports can be run to help management understand trends and to provide advanced intelligence about necessary policy and management decisions about the operations of the district. Management should continue to use this tool for analyses and to control costs. The key to the validity of this, or any system, is accurate and disciplined input standards. Job numbers, labor allocation and regular budget tracking are all part of the success of the program. Staff, particularly

supervisors and managers, should receive regular training on the system to ensure full utilization of its benefits.

**FINDINGS—Existing Leak Tracking System.** A leak tracking program is loaded on an I-Pad and taken into the field to record the location of leaks and photos of the area. This data can be transferred to a map and used for the development of a replacement program by identifying areas where replacement costs would be less than ongoing operations costs for repairs.

**FINDINGS—Existing Radio-Read Meters.** The radio-read meters are another valuable source of data, in this case, regarding water demand by users. Beginning in the late 1990s, the radio read program was instituted to reduce labor costs of meter reading and re-reading. Since that time, new technology has enabled staff to run data logs on individual meters to track usage trends and identify leaks that translate into high bills for customers. The meter technology has become an important tool for customer service.

## WATER OPERATIONS

### WELLS AND WATER PRODUCTION

**FINDINGS—Wells and Water Production.** The District has 14 wells producing a combined 15,000 gallons per minute. The photos below depict the current visual appearance selected wells. Note that there is no sign of large scale rust or corrosion; however, there are signs of wear which indicate the need for attention in the near future.



*Figure 4 - Redbud Booster Station; two submersible pumps*



*Figure 6 - Low Desert View Booster Station; pressure relief valve*



*Figure 5 - Low Desert View Booster Station; two submersible pumps with Cla-valve*

**FINDINGS—Wells at Maximum Capacity with Little Margin for Error.** Some of the wells are at or beyond their useful life. On a peak demand day when the weather is very hot, for example, and there is greater demand for water, all wells are needed to operate to meet the demand.

**FINDINGS—Intensive Maintenance and Inspection Protocol Needed to Ensure Reliable Operations of Wells.** Each well site is visited daily to insure proper operation. Motors are checked for heat, vibration and electric current load. Control valves are examined for proper function. All wells have control valves and check valves that require regular maintenance to insure proper performance.

**FINDINGS—Limited Backup Power for Wells.** Not all wells have emergency backup power. However, the District does have a portable generator that is capable of providing power to a well. Should the District experience a major earthquake, there is a high probability that one or more wells could be put out of service and storage tanks damaged.

**RECOMMENDATIONS—Evaluate Reducing Daily Site Visits to Wells by Upgrade to SCADA System.** The District maintains a limited System Control and Data Acquisition system (SCADA). Consider cost/benefit of upgrading the SCADA system to monitor motor performance, valve action and well depth, with the goal of reducing the need for daily site visits, and using the saved labor time for preventive maintenance.

**RECOMMENDATIONS—Build Three New Wells (About \$9 million).** There is no back up or emergency well capacity. The service area is near an active fault, so there is a high probability that the water supply could be disrupted. The District has very limited ability to obtain an emergency water supply from adjacent agencies. Even if sufficient interconnection capability were available, it is likely that the adjacent agencies would need all the water themselves. There

is an immediate need for three new wells (estimated cost for each well is \$2.5 - \$3.0 million).

#### **WATER STORAGE**

**FINDINGS—On Storage.** The District has 22.4 million gallons of above-ground storage in 24 tanks. All tanks are inspected internally every five years for coating integrity by contract divers and inspectors. All but two have the most currently approved interior coatings. Not all tanks are equipped with earthquake valves to prevent loss of water should a tank be subjected to an earthquake. It is estimated that the District needs millions of gallons of additional storage due to deficiencies that require that water be pumped multiple times to service certain areas. This incurs additional operating costs, shortens assets lives and causes other costs.

**RECOMMENDATIONS—Determine Need for Additional Storage and Incorporate into Master Plan.** Identify timing, capacity, location and estimated cost for additional storage and build into the Facilities Master Plan.

**RECOMMENDATIONS—Equip All Storage Tanks with Earthquake Valves.** Identify tanks that need earthquake valves, and build in timing and estimated cost to add valves into the Facilities Master Plan.



**Figure 7 - Quail Reservoir, which serves the 1240 pressure zone on the east end of MSWD**



**Figure 8 - RAS pump at Desert Crest Wastewater Treatment Plant**



**Figure 9 - Desert Crest Treatment Plant**

#### MAIN LINES AND SERVICE LINES

##### **FINDINGS—\$6 Million in Repairs Needed on Service Lines in Easements .**

The District has 276 miles of water lines and 89 miles of sewer lines. Some water lines are undersized and located in easements behind homes. Repairing a line failure behind homes often results in tearing up a back yard. Further, this tight location precludes the use of backhoes and most of the work has to be done by hand. The repair of a leak in an easement can cost as much as \$1,500. There are approximately 10 miles of pipelines in easements that would cost a total of over \$6 million to replace.

##### **FINDINGS—Repairs and Replacements of Plastic Service Lines.**

The system has had more than 600 leaks per year in

recent years, most of which are failed service lines. These failures are the result of plastic lines that were installed but have not performed as specified. This is a nationwide problem and the manufacturer has long since gone out of business, leaving each local water supplier to pay for repairs. Each repair can cost \$600 or more depending upon location and it is estimated that the total number of lines that need replacement is about 10% to 12% of the total amount of pipeline.

**RECOMMENDATIONS—Outsource Pipeline and Service Line Replacement.** The replacement of pipelines and service lines lends itself to outside contractors with potentially lower costs, and it is recommended that the District explore increased use of this option.

**RECOMMENDATIONS—Identify an Optimum Pipeline and Service Line Replacement Program that Can Be Funded with the Next Rate Increase.** There is an ongoing service line replacement program as well as a main line replacement program. Because of the high cost of repairs and the amount of labor it occupies, it is recommended that priority be given to identifying an optimum replacement program that can be funded with the next rate increase implementation.

**FINDINGS—On Valve Maintenance Program.** Every main line valve must be exercised at least once a year, as calcium build up or other materials can accumulate in the valve and freeze movement. Should there be a line break and a valve is frozen, it is necessary to keep looking for valves that work and isolate the break. This creates two problems:

1. Customers are put out of service
2. The valve must be found and replaced, causing service interruptions and additional cost.

This same problem is even more critical for the control valves. These valves are used to control flow and/or pressure. A buildup of either corrosion or calcium will keep the valve from operating properly and cause a system outage or reduced pressure.

**RECOMMENDATIONS—Prioritize Valve Maintenance Program.** The valve maintenance program had been cut back during the height of the recession due to lack of resources. It has been recently reinstated. It is important for the District to prioritize and allocate its resources to maintain this important program.



*Figure 10 - This shows the importance of valve maintenance. This waterfall of water is from a single 10" pipeline that broke in a Southern California community. Because of lack of valve maintenance, it took more than an hour to locate and shut off the valve controlling this torrent of water.*

**RECOMMENDATIONS—Upgrade the District Supervisory Control and Data Acquisition System (SCADA) to Free Up Resources FOR Valve Maintenance.** Evaluate upgrading the District’s SCADA system to decrease the need for well site visits in order to free up labor time to improve the valve maintenance program.



*Figure 11 - Well pump at Low Desert View Booster Station*



*Figure 12 - Two vertical turbine booster pumps at Two Bunch Booster Station*

## METER READING

**FINDINGS—On Meter Reading.** The District has a modern radio-read meter system. The meter reader can drive slowly down a street and read all the meters remotely. The current practice is for the billing department to download the data from the field and produce a report on missed, high, low or no reads, and a list is compiled for follow up. This requires meter readers to revisit the meters to correct the problems; it takes about two weeks to complete reading of about half the district for one of the two cycles read monthly. Prior to implementing the radio read system, only half the meters were read on a monthly basis and billing occurred every two months. Because the billing to the customer is not completed until all the corrections are finished, the delay adds costs to the District operations. Even with the reductions in labor hours for meter reading, the District is not obtaining the full benefit of the investment in the radio read meter system.

**RECOMMENDATIONS—Speed up Meter Reading and Decrease Labor Required.** The entire meter reading activity, including re-reads should average seven working days.

## FLEET MAINTENANCE

**FINDINGS—On Fleet Maintenance.** The District owns 42 pieces of rolling stock which includes passenger vehicles, pickup trucks, dump trucks, backhoes and sewer cleaning trucks. Some of the vehicles have gone beyond their service life and need replacement.

The District has one employee assigned to vehicle maintenance. Major repair is sent out to dealers. Due to the large number and variety of vehicles there is a large diversity of skills and equipment needed to maintain them. This is made more complex by the sewer maintenance equipment that they also maintain. The complexity of maintaining a diversified fleet requires many skills and equipment that might be more efficiently supplied by specialized firms.

**RECOMMENDATIONS—Evaluate Outsourcing to Decrease Fleet Size, Lower Costs and Free Up Labor for Core Maintenance.**

1. Evaluate the costs versus benefits of outsourcing all or part of fleet maintenance. Consider total fleet management, including leasing rather than purchasing vehicles.
2. If the District determines that outsourcing fleet maintenance is appropriate, it could free up one staff member for core services maintenance. If this occurs, determine the best way to utilize the freed up manpower.
3. If the District contracts for pipeline replacement, it could allow the District to utilize only the number of backhoes needed for emergencies, potentially lowering costs. Evaluate potential fleet savings in combination with the potential savings from contract replacement of pipelines and the decreased fleet needs.



*Figure 13 - A small sample of the District fleet of specialty vehicles.*

#### **PURCHASING AND WAREHOUSING**

**FINDINGS—Purchasing and Warehousing.** The District has a purchasing and warehouse system, containing parts that are used on a regular basis. The employee assigned to this activity acts as the purchasing agent as well.

#### **RECOMMENDATIONS—Separate Purchasing From Warehousing or Institute Additional Oversight Controls.**

It is a common business practice to separate purchasing responsibilities from those who use the parts for the purpose of improved oversight. For that reason, we recommend that the District consider transfer purchasing responsibility to the Finance Department or institute other oversight controls.

### **WASTEWATER TREATMENT & COLLECTION FINDINGS & RECOMMENDATIONS**

#### **SEWAGE TREATMENT AND COLLECTION**

**FINDINGS—On the Horton Sewage Treatment Plant.** The District owns and operates two sewage treatment facilities, the main plant (Horton) and the Desert Crest plant. The Horton Sewer Treatment Plant is in relatively good condition and repair (see Figure 14). It is clean and the metal above water is in good condition. The plant processes an average of 1.438 million gallons of sewage per day (MGD). The metal exposed to sewage is deteriorating, as would be expected in a corrosive atmosphere, and will eventually need replacement.

#### **RECOMMENDATIONS—Carry Out Planned Wastewater Treatment Plant Improvements.**

In the event of a failure of a blower or similar situation, the District has recognized that there is limited surplus capacity to route the sewage to another unit. Therefore, redundancy is critical and design work is underway to provide additional capacity to avoid a

spill. In addition, discussions and a feasibility study are underway to develop a regional plant. While the current regulatory requirements mandate zero tolerance for a spill and the Regional Water Quality Control Board can levy heavy fines for spills, reasonable safety measures are being put into place to prevent spills

remote plant rather than build a sewer line to the District's main plant.

Because small sewage treatment plants are not as efficient as larger plants, eventually, this plant will be abandoned and the sewage will be treated at the main plant.



*Figure 14 - Horton Treatment Plant*

**FINDINGS—On the Desert Crest Sewage Treatment Plant.**

The Desert Crest Sewer Treatment Plant is relatively small, with a capacity of .0456 MGD. The plant is currently in relatively good condition (see Figures 9 and 10) with moderate corrosion. This plant was built to serve a mobile home park as it was determined that it was more cost effective to build a

# PART 3: ASSESSMENT OF DISTRICT ADMINISTRATION

There are several major areas to be explored where operating costs could be reduced, including using technology to reduce labor, reductions in staff, outsourcing, reducing certain levels of customer services and charging the full cost for all services.

## FINANCE DEPARTMENT

**FINDINGS—Finance Department.** This department is responsible for all the District's financial accounting and billing activities. It is also responsible for all information technology needs and customer service calls. The District uses a system of internal controls to monitor purchasing, receiving and maintaining stock.

**RECOMMENDATIONS—Finance Department Should Consider Expanding Cost Accounting Capabilities.** There is an opportunity to create greater efficiency by updating its accounting software to provide more information on cost accounting, and financial planning. Improved cost accounting information can be used to evaluate progress in improving efficiencies and in evaluating outsourcing opportunities. It is recommended that the District consider increasing its cost accounting capabilities.

## CUSTOMER SERVICE AND FRONT DESK

**FINDINGS—Customer Service Front Desk.** Many customers visit the District office to pay their bills. The District is proud of the prompt service that is provided in that there is little to no waiting time. In order to provide this level of service, staffing has to be structured to accommodate the continuous flow of customers and to meet peak demand. This is a costly

service.

**RECOMMENDATIONS—Streamline Customer Service Front Desk to Lower Costs.** The issue of level of service at the customer service desk was reviewed in some detail with the Citizens Committee at the second meeting and there was agreement steps to save cost would be acceptable, even if level of service at the front desk decreased from its current heightened level. It is recommended that the District evaluate and adopt a new service policy that limits the number of staff involved in such an activity through the use of improved technology that might limit lobby foot traffic, or make reasonable decreases in service with the goal of lowering costs.

## TURN OFF NOTICES

**FINDINGS—Turn Off Notices.** Under the current procedure, it can take as long as 60 days to resolve a delinquent account. If there is no response to a mailed notice, a shut off list is prepared and notice of turn off is hung on the door of the customer. If the customer continues to contest, it can become a very time-consuming and costly operation that can require input from numerous staff all the way up to the General Manager before moving on to the Board where additional investigation and deliberations are carried out. This situation is reminiscent to the adage of 20% of the people (a minority) taking up 80% of the time.

**RECOMMENDATIONS—Simplify the Turn Off Notices and Delinquency Procedure.** The delinquency process was

reviewed at the second meeting of the Citizens Committee and there was general consensus that the District should simplify and make the process less costly, even if it meant a diminution of the current extremely high level of customer service. It is strongly recommended that the practice of hanging door notices be terminated and the entire delinquency process shortened. This will require a formal policy change to be adopted.

### **GROUNDINGS MAINTENANCE**

**FINDINGS—General Building and Grounds Maintenance.** The local area has companies that can satisfy the District’s General Building and landscaping needs at a considerable savings. The hourly wage for landscape maintenance by the private sector is appreciably lower. The District’s fringe benefits alone average over \$28 per hour.

**RECOMMENDATIONS—Evaluate Contracting Out General Building and Grounds Maintenance.** Evaluate contracting out general building and landscape services.

### **BACKFLOW TESTING**

**FINDINGS—Backflow Testing.** Currently, the District performs its own backflow testing, costing about \$49,000/year in the process.

**RECOMMENDATIONS—Increase Charge for Backflow Testing or Make Customers Responsible for It.** The District could either increase the testing charge to sufficiently recover its

costs or, like some other districts, require that the owner provide for the testing with reporting the results as required. If customers are made responsible for their own testing, it is recommended that there be a charge to cover the District’s costs to review the results.

### **PLAN CHECK AND INSPECTION**

**FINDINGS—On Plan Check and Inspection.** The District conducts in-house plan checking for new developments and subdivisions. The developer submits a deposit for plan check and inspection.

**RECOMMENDATIONS—Evaluate Future Outsourcing if Need for Plan Check and Inspection Increases.** Since there is little current construction or inspection work, this activity could be essentially eliminated or greatly reduced. If the pace picks up, this work should be evaluated for outsourcing. The cost would be paid by the developer, as at present, but would reduce staffing needs and the attendant long-term costs.

### **HUMAN RESOURCES AND PAYROLL**

**RECOMMENDATIONS—Consider Outsourcing Human Resources and Payroll.** The number of District employees has been decreased and may be further reduced. The cost of maintaining a human resources staff may not be cost effective. HR support and payroll preparation is readily available from private companies that specialize in providing these services, and it is recommended that the District evaluate outsourcing these services.

## REASSIGNMENT OF PERSONNEL

### RECOMMENDATIONS—Reorganize Staff to Target Areas with Insufficient Labor Resources and for Savings and Efficiency.

In light of the dramatic reduction in revenue, it is recommended that the District continue to reduce and/or eliminate certain positions or reassign personnel to areas where there are insufficient labor resources. For example, it is recommended that an improved SCADA system could free up personnel from daily well visits to improve the valve maintenance program and that efficiencies could be found in the meter reading program that could free personnel to work on system maintenance.

## FUNDING FIXED ASSETS REPLACEMENT

**Why Even Fully Funding Depreciation is inadequate.** A large portion of the District's infrastructure has been in service a long time. All facilities have a useful life. As facilities age they depreciate. In other words, they lose value. In the world of public agency finance, depreciation is a method of allocating the cost of a tangible asset over its useful life. This involves setting aside an amount of money every year and saving it. Theoretically, once the facility has fully depreciated and needs to be replaced, adequate funds would be set aside to rebuild it. In the public sector, it is common for agencies to "fund" depreciation. However, this does not adequately address the issue. Funding depreciation does not adequately fund replacement costs.

The following example demonstrates why:

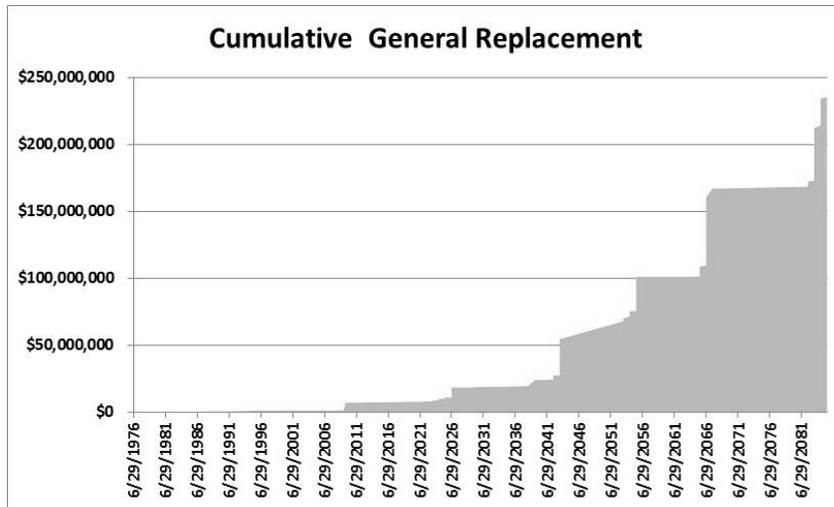
*In 1965, it cost \$1.00 per diameter inch per foot to install water lines. Today, the cost is closer to \$18.00*

*per diameter inch per foot. If we assume a foot of 6" pipe in 1965 cost \$6.00 per foot and assumed a 30 year life, it would be "depreciated" at \$0.20/year. If we deposited that amount every year for 30 years we would accumulate \$14.65. If we replace that pipe with a new 6" pipe the cost will be \$108.00. Since will only have \$14.56 there will be a shortfall of \$93.44.*

Beyond depreciation, the other issue is who pays for the replacement? Capital facilities that have a useful life of 10 years or less are normally funded from current customer revenues. However, funding facilities that have a life of 30 or more years is more complicated. A District could decide to set aside a certain amount each year and build enough funds to pay for these long life items. Another approach is to debt-fund those items as they will provide service for later generations. This funding may be viewed as achieving generational equity.

### FINDINGS—Challenge of Funding Fixed Assets Replacements.

A major financial problem has been the challenge of obtaining sufficient funds for system replacement. Currently the District has no reserves for funding fixed assets replacement. As described above, the common practice of funding depreciation is not sufficient to adequately fund system replacement. In order to determine how much money should be set aside for system replacement, it is necessary to review the District's water and sewer capital facilities.



*Figure 15 - The replacement cost of all district capital facilities is accumulating at an average rate of over \$3 million per year and tens of millions have accumulated already.*

**RECOMMENDATIONS—Incrementally Make System Maintenance and Replacements More Proactive.** The District should take a proactive approach in system maintenance by continually inspecting and replacing facilities that have reached the end of their useful life. This approach provides several benefits; the most important is system reliability which precludes unplanned system outages. It also reduces cost by preventing complete failure requiring full replacement under emergency conditions.

**RECOMMENDATIONS—Follow Modified Approach to Evaluating and Saving for Fixed Asset Replacement Or Must Use Straight-line Depreciation.** Instead of depreciation, we

recommend the “Modified Approach which projects the costs to properly maintain infrastructure assets on an ongoing basis instead of straight line depreciation. This would allow the District to meet the true costs of replacement, including inflation over time. Even if this were not affordable in the near term, the actual costs needed to replace would be evaluated, understood and reported. In this way, they could eventually be accommodated.

The modified approach would require a commitment to undertake the engineering to identify what is in the ground and what it would take to maintain over time. Then the Board would need to determine at what level they want to maintain it. The Board should implement policies that require mandatory set aside of reserve funds for capital replacement.

**FINDINGS—Use of Fixed Assets information.** The District maintains fixed asset inventory data. Based on this data, it is possible to calculate the replacement cost for these assets based on the Engineering News Record (ENR) Construction Cost Index. It is noted that the replacement cost will be much greater than the original cost.

The fixed asset inventory is used to establish replacement cost and timing.

The fixed asset inventory is an integral part of the long-range financial planning model. The model, provided as part of the Strategic Financial Master Plan, is designed to accommodate

“what if” scenarios that demonstrate the cash flow with various annual funding levels.

**RECOMMENDATIONS—Balanced Use of Pay-As-You-Go, and Financing for Funding Fixed Assets Replacements of Varying Life Spans.**

- Assets with a life of less than 10 years should be funded from current operating revenues.
- Assets with a life of more than 10 years, are recommended to be funded using a combination of current operating funds, along with some debt financing.
- Assets that last for several generations may be debt funded as this would provide a pay-as-you-use program and would not burden the current rate payer.

The long-range financial model is designed to demonstrate the financial impacts resulting from various annual replacement funding levels.

**RISK MANAGEMENT**

The financial health of the district and the physical safety of its systems and facilities must be protected. Risk management and containment is critical to the on-going operations of the organization. It is necessary to monitor district expenses, system condition and potential problems in order to avoid playing catch up later. Preparing for them now is essential.

**INTERFUND LOANS**

**FINDINGS—Inter-fund Loans.** The last several years have clearly demonstrated the concept of financial risk to municipalities and special districts, in some cases resulting in bankruptcy. A Grand Jury writes: “What is required are guidelines and analysis to determine: (1) the borrowing and lending funds’ solvency; (2) timeframes for analysis and approval prior to June 30 of each fiscal year to prevent backdating of loans; and (3) financial planning and monitoring of the repayment of the loans. Without such guidelines, approval of inter-fund loans could weaken the financial condition of lending funds, result in permanent contributions from the lending fund to the borrowing funds, and complicate or misrepresent the financial condition of all funds involved.

**RECOMMENDATIONS—Critical Legal and Contractual**

**Priority: Pay Back Interfund Loans.** The District used interfund loans during recent years. It is critical that these be reported on regularly and monitored. Also that financial and rate planning incorporate appropriate timelines for paying the loans back while maintaining debt coverage of 1.25.

**FINDINGS—Physical Risks.** Financial risk is not the only risk that MSWD has to consider. As indicated previously, there is a high likelihood of a severe earthquake in the District’s service area. MSWD is located near a major fault. This could result in wells being destroyed as well as pipelines and tanks experiencing major damage. Any repair work after a disaster

will be very costly, as emergency repairs are far more costly than normal repairs.

There is a belief among some people that FEMA will step in during a natural disaster. Recent experience proves that self-help is what works. After the 1994 Northridge earthquake, water agencies that did not have sufficient reserves could not get their systems back on line for some time. In fact, it took 5 years for FEMA to reimburse some agencies for the damage.

**RECOMMENDATIONS—Build Adequate Reserves for Emergency Repairs.** We recommend that the District have sufficient reserves to accommodate the replacement of three wells and three tanks along with several miles of pipelines.

The District’s treatment facilities could also experience major equipment damage and pipeline damage. At a minimum, funds should be set aside to replace the blowers, tank repair and several miles of sewer line including at least one lift station overhaul. It is recognized that developing such reserves will take time; however, it should be a top priority item. Developing reserves adequate for these needs is built into the financial plan and would be achieved over time.

**RECOMMENDATIONS—Evaluate Additional Risks and Prepare for them.** Once the items shown above are addressed, the District should evaluate the consequences of other lesser problems such as:

1. Unplanned equipment failures

2. Major flood or land disruptions
3. Continuing basin draw down
4. Increase in delinquent accounts

These can be evaluated in more detail over time and prioritized through other planning process, such as Board strategic planning.

### **LONG-RANGE FINANCIAL PROJECTIONS**

#### **Long Range Financial Projections Provide Information Needed to Mitigate Risk and Improve Outcomes.**

Management in all organizations operates under some degree of risk. A prudent response to that risk is forecasting. The objective is to reduce the risk in decision making. In the development of any forecast, assumptions are necessary. Forecasting techniques are based on historical data and the assumption that past causal relationships will prevail in the future. Generally, it is accepted that accuracy decreases as the time horizon increases.

#### **FINDINGS—Unsustainable Debt if No Corrective Action**

**Taken.** The models provided to District staff include long-range financial projections for the District’s water and sewer services. The model is connected to the Capital Improvement Program, and provides drop down options which allow users to select various ‘what if’ scenarios and see the resulting revenue and reserve requirements.

### **FINANCIAL MODELS AND RATE DEVELOPMENT**

**Long Term Operating and Non-Operating Needs.** Water and

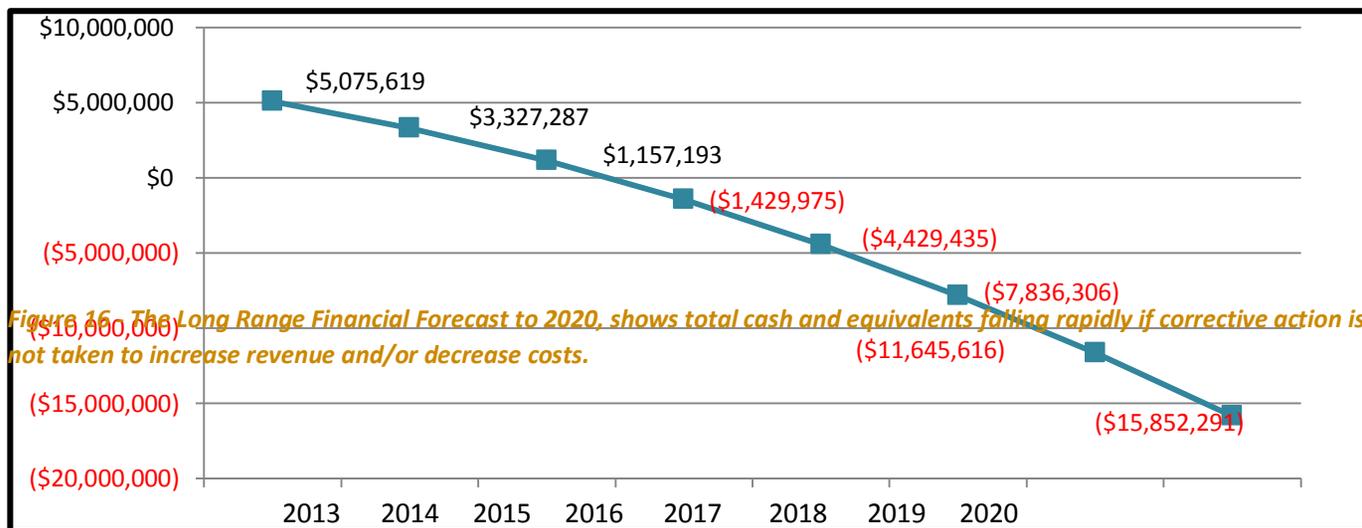
sewer services provided by the District each have their own long-term financial needs. Appendix F shows the projected capital needs for each of the services. Those needs included a buildup of reserves as well as debt service where required. These needs were then included in a long term cash flow for each of the services shown in Appendix G.

Based on the operating and non-operating needs of each service, a revenue requirement was developed. Each of the models has the ability to address 'what if' scenarios.

**Use of the Revenue Model.** In order to develop appropriate water rates to meet the District's revenue requirements, it was necessary to develop a revenue model. This was accomplished by taking sales history and developing a model

10/11 rates and charges were used in testing the model to determine whether it reflected current revenues.

**Water and Sewer Rate Models.** The water rate model was designed to provide a monthly service charge and a commodity charge. It was developed by loading the District's historical customer use by account by month. Using that information, the District's current rate was input and checked to see if the model calculated the same revenue as that billed by the District. Once the calibration was done, it was possible to test the proposed rates to determine if the planned revenue was developed and, more importantly, to consider the impact on individual customers. The District wanted to insure that any increase would not create a dramatic financial



that would be representative of average annual sales. FY

impact on any group of customers.

The District's tiered rates affect customers differently. For that reason, any change in service charge, rate per tier or the amount of water in each tier has to be checked to determine the impact on revenue as well as the customer. For example, changing the first tier from "0 -4 HCF" to "0 - 10 HCF" will reduce revenue and also lower the bill for many customers. Customers with ¾" meters may see a reduction in their bills.

Based on the needs developed in the previous discussion, water and sewer rate models were developed for the District. The models are included in the disk accompanying this report.

**RECOMMENDATIONS—Utilize the Financial Models to Test "What If" Scenarios for Developing Rates, as well as Revenue and Reserve Requirements.**

The District's long-range operating results reflect the water and sewer systems' operation, maintenance and replacement. The Financial Master Plan and the planning models that support it allow the District to project goals and results under varying circumstances.

**RECOMMENDATIONS—Update and Validate the Model Over Time.** As previously discussed, these models are intended to be used as a planning tool. The ability to use 'what if' scenarios will provide the District the opportunity to evaluate what would happen if there were changes to the various

assumptions used in the development of the projections. By continuously updating the model, it will be possible to change assumptions in response to actual events. As the future unfolds, the validity of the assumptions will become more apparent. The success of the plan will depend on the follow-through. The validation of the assumptions is the linchpin of success.

**JOB COSTING**

To evaluate the potential savings of changes in operations or management to improve efficiency or of the potential benefits of outsourcing, it is necessary to know the current cost to perform the various tasks and services provided by the District. The ability to know exactly what it costs to prepare a bill, perform field maintenance or prepare for a committee meeting is invaluable.

The cost elements of any task are comprised of the following components:

- 1 Labor
- 2 Material
- 3 Equipment
- 4 Fringe benefits
- 5 Overhead costs
- 6 Outside services

An equally important element to job costing by work order is timeliness. The more quickly that information is available, the more valuable it is. Reporting a cost overrun two months

after the project is completed loses most of the reporting value. Timely knowledge of what it costs to operate the District will provide the Board and management with valuable data in making its decisions regarding the use of outsourcing versus the cost to do a job or project in-house, as well as in improving efficiencies and lowering costs.

**FINDINGS—Existing In-House Job-Costing System.** The Operations and Maintenance Department has developed its own system for job costing using Excel spreadsheets to track labor, material, equipment and outside service costs. These include service line repair and replacement, main line leaks, meter installations, meter testing and re-reading, etc. By using and expanding these and other job costing capabilities of the District’s accounting system, and incorporating daily time cards including work orders and/or the use of job costing numbers, it will be possible to accurately determine what it costs to manage and operate each job and the District as a whole.

**RECOMMENDATIONS—Further Refinement and Implementation of Job Costing.** Further implementation of the District’s existing job costing and capital asset systems District-wide will help management obtain factual and timely data regarding the costs to operate and maintain the District. One specific recommended update is to begin use of daily time cards to make everyone aware of immediate cost. Every labor hour costs the District money. Knowing where and how

those hours are spent is the basis of comprehensive cost management.

## RESERVES

**FINDINGS—Current Reserves are Not Adequate.** Current District operating revenues are not adequate. There is not sufficient revenue to properly maintain and perform preventive maintenance. What’s more, the District has no unrestricted reserves available for water or sewer operations and no funds set aside for system replacement.

Reserves are necessary to deal with on-going system repair and replacement as well as providing some level of security in dealing with unforeseen system failures, weather events, and regional disasters as described above. They also help demonstrate the fiscal strength of the District to lenders. Establishing the proper level of reserves requires an analysis of the following elements:

1. Services provided: Water and Sewer
2. Age of system
3. Soil conditions: corrosive or non-corrosive
4. Water quality
5. Water source -- Service area geology & geography: desert environment, prone to earthquakes, near San Andreas fault, and topography
6. Seasonality of revenue

In developing a reserve amount for the District, the foregoing

Description	Minimum Reserve
<b>Sewage Treatment Facility</b>	
Aeration equipment	\$ 2,000,000
<b>Water System</b>	
Wells - 2	\$ 3,500,000
Tanks - 2 MG capacity - 2	\$ 6,000,000
Line break repair	\$ 1,000,000
<b>Buildings</b>	
Main office	\$ 750,000
<b>Revenue</b>	
Seasonal revenue variations	\$ 3,000,000
<b>Debt Reserve</b>	
Debt coverage	\$ 500,000
<b>Total reserves needed:</b>	<b>\$ 16,750,000</b>

Figure 17 - Minimum Reserve Levels

factors were considered and reviewed with staff to evaluate ‘what would happen if?’ From those interviews and assessments of District facilities and operations, a list of critical items was identified along with an estimated cost to replace those items under emergency conditions. The minimum reserve requirement table (Figure 17) is a result of the effort.

This reserve total is a large sum and will take some time to accumulate. It is recommended that the list be updated and changed yearly. An aggressive replacement program will eventually address the facilities on the current list. For example, one facility or another may be upgraded and

deemed secure enough to be removed from the list. As a result, over time, facilities on this original list will be replaced with other capital assets in need of repair or replacement and thus the reserve designations should be reviewed each year and updated.

Adequate reserves will also demonstrate the District’s conservative financial strength, enhancing its creditworthiness.

**RECOMMENDATIONS—Develop a Reserve Policy that is Approved by the Board and Follow it.** The policy to provide adequate funding to meet both short and long-term needs. It should include a component for rate stabilization.

#### DEBT FINANCING

**Best Financial Management Practices.** The current national financial crisis demonstrated the need for conservative financial management and planning. Agencies that provided bond insurance were impacted along with the collapse of many large banks. It was general practice for small bond issuers that did not have an “AAA” credit rating to purchase bond insurance and be upgraded to an “AAA” rating. As a practical matter, bond insurance is not readily available should the District desire to debt-finance major capital projects. We believe that it will eventually become necessary, or at least desirable, for the District to finance some of its capital improvements. The lack of insurance to boost credit ratings increases the importance of working to raise the District’s

credit rating through good business practices and financial management.

**RECOMMENDATIONS—Undertake Best Financial Practices.**

Should the District wish to finance or refinance current debt, it will be necessary to demonstrate creditworthiness. This requirement applies to loans as well as the bond market. The District already has loans outstanding with the State as well as private banks.

Listed below are some of the best financial management practices as reviewed by rating agencies. We recommend that the District use this as a checklist, seeking to undertake as many of these as practical both for the benefits they provide to the District and to help improve creditworthiness.

1. Long-term financial plan that considers growth, rate increases, regulation and infrastructure replacement
2. Debt issuance policies that take into consideration debt capacity
3. Financial policies including debt coverage ratios, use of debt
4. Regular financial reporting and monitoring systems which provide policy makers with timely information on fiscal performance. (Note – information, not data)
5. Prioritized Capital Improvement Program at a minimum at least three years ahead of need
6. Use of professional engineers to review system performance

7. Limiting operating exposure to growth-sensitive revenues, such as connection fees
8. Collection policies that track the rate of timely payment of receipts and enforce penalties against late payers.
9. Regular consultation with regional planning and development agencies
10. Rate affordability considering income levels
11. Limit exposure to financial operation of general government , no transfers to general purpose funds
12. Anticipate future regulatory mandates
13. Compliance with industry accounting and establishment of appropriate internal controls
14. Budget and financial reporting awards from the GFOA or similar organizations
15. Liquidity over 120 days of unrestricted cash
16. Treat fixed operating costs as debt when calculating coverage
17. Debt coverage a minimum of 1.25 to 1.50 for strong coverage
18. Debt as a percentage of expenditures
  - a. Low: Below 8%
  - b. Moderate: 8%-15%
  - c. Elevated: 15%-20%

## **FINANCING OPTIONS**

Currently, interest rates are very low and it may be economically feasible to refinance current debt and possibly fund some system replacement. Standard financing options include Certificates of Participation (COPs), Assessment District Bonds and grants.

**Certificates of Participation.** Certificates of Participation (COPs) are a common form of public borrowing to finance water and sewer projects. They do not require a public vote as the debt is serviced by revenue from the utility in the form of service charges. The District's revenue pledge can be based on any 1% property tax it receives as well as service charges. Since the District receives some tax funds, that may be included in revenue pledge. A major element in demonstrating creditworthiness is maintaining debt coverage. Debt coverage of 1.2 to 1.25 is considered desirable.

The use of debt financing for the construction or replacement of major capital facilities can lessen the immediate burden on District cash flow as well as provide generational equity. Some agencies adopt a policy that uses 20% current revenue and 80% debt to fund long-term capital facilities.

**Assessment District Bonds.** Water and sewer facilities can also be funded with land assessment bonds. This financing requires a vote of the land owners. The debt from this type of financing is covered strictly by the landowner; the District does not normally make any revenue pledge. If the land owner fails to

make the payment, the bond holder's recourse is the land and improvements. Depending upon the project and property values, the ratio of value to debt can be relatively high. The current economic downturn and resulting foreclosures have made this form of financing very difficult. Since bond insurance is not readily available, the underlying credit of the issuer is extremely critical in determining what interest rate will be required.

**Grants.** The State and Federal governments have programs that provide funds for building infrastructure. The District has recently been a recipient of such a grant. Since the City of Desert Hot Springs has been classified as disadvantaged, it is more likely that grants would be made available to the District.

## **PRIVATIZATION/OUTSOURCING/PUBLIC-PRIVATE PARTNERSHIP**

Private sector involvement with public utilities can be divided into three categories: privatization, outsourcing and public-private partnerships. Each involves a different type of relationship with the community and the utility. Private sector involvement, however, is quite appropriate and should be evaluated in whatever form provides an advantage.

**Privatization.** Privatization is the complete transfer of ownership and subsequent operation to a private entity. This may be appropriate in some cases and would provide a onetime generation of revenue that could be enjoyed by the

governing agency. On the other hand, this will result in the need to generate a profit that will increase the cost of service. Nearly ninety percent of the water and wastewater providers today are special districts and many (a very large percentage) of the districts today were actually private companies at one time that were converted to districts to improve service, reduce costs and provide customers control of their service. Furthermore, Districts have the ability to procure alternate sources of funding such as grants and low interest loans that are not available to the private sector.

**Outsourcing.** Outsourcing is the concept of using the private sector to perform work through force accounts, contracting and bidding. It is preferable in many cases as it allows for control to stay with the community while accomplishing some savings and in some cases the use of expertise that is not affordably available in-house. MSWD utilizes this type of private sector use in a number of different ways. The District has always used private contractors to perform most of the construction of its infrastructure. Recently, improvements in technology have allowed us to have our entire computer service work to be done by the private sector. This along with the fact that the GM also functions as the district's engineer has allowed us to contract with the private sector to perform a large part of our special engineering services.

**Private Public Partnerships.** The third relationship would be the development of a partnership with the private sector. The

National Council for Public-Private Partnerships defines this third relationship as "Public-Private Partnership (PPP) which is a contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility." For example, the district may enter into an agreement with private sector parties to collectively purchase water or contact for the delivery of water with a third party. This is done where it would be less feasible for the district to perform independently. There are times when there is an opportunity to work together to accomplish what cannot be done independently.

**Importance of Public Oversight.** Someone in key oversight positions must be sure that the private sector is doing what is necessary to function in the District's best interest. Too much drift to the private side may result in great and sometimes irreversible damage. You can't have "the fox watching the chicken house" and too much private sector involvement can promote this outcome.

#### **RECOMMENDATIONS—Evaluate**

**Privatization/Outsourcing/Public-Private Partnerships on a Case-By-Case Basis and Use Enhanced Job Costing**

**Information to Compare Costs.** Private sector use is successful in many cases. It needs to be evaluated on a case-by-case basis. It also needs oversight and careful management to be effective and beneficial. Finally, in order to assure cost effectiveness, the District needs to further develop its cost-accounting to know what its current costs are so they can be compared to proposed costs of privatization, outsourcing or public-private partnerships.

# PART 4: SETTING RATES AND CHARGES

## COST OF SERVICE ANALYSIS

The cost of service analysis is designed to equitably apportion the cost of District operations to the appropriate beneficiary. The District's operating costs have been allocated between those costs that vary directly with water use and those that are independent of quantity of water sold.

**Principles of Rate Setting.** There are generally accepted rate setting principles which are followed by the industry:

1. Rates should recover the cost of operating the utility and be adequate to operate and maintain the system indefinitely
2. Rates should be relatively stable from year to year
3. The cost of operating the utility should be equitably recovered from the benefiting user
4. Rates must comply with state statutes, case law, District policy and industry standards as modified to the service area
5. Rates should be easily administered by the District
6. Rates should be understandable from the customer's point-of-view
7. Rates should take into consideration affordability by the community and avoid rate shocks.
8. Rates should discourage waste
9. Development of rates also has to take into consideration the District's history and its past practices.

## Identification of Cost of Service

The next step is to review the District's costs for the various major centers such as:

- Source of Supply
- Treatment
- Storage
- Transmission and Distribution
- Customer service
- Administration
- Capital
- Debt service

These costs are then divided into those that are fixed regardless of the amount of water delivered, and those that vary by the amount of water delivered. Examples of fixed costs are:

- Labor
- Insurance
- Debt
- Outside services
- Maintenance

Variable costs examples are:

- Water purchase or development
- Energy
- Chemicals

## Two Approaches to Projecting Total Revenue Requirements

There are two generally accepted and practiced approaches to projecting total revenue requirements of a water utility, “cash needs” approach and the “utility” approach.

The utility approach is used by PUC-regulated utilities and is not appropriate for consideration, as a public agency cannot make a profit.

The cash needs approach is used to insure that revenues are sufficient to recover the total cash needs for a given period. This is generally used by government-owned utilities. Revenue requirements of the cash needs approach include operations and maintenance (O&M), debt service payments, contributions to specified reserves and cost of capital expenditures.

### TEST YEAR

Water sales are very dependent upon weather patterns. Dry spells result in higher water sales; likewise, wet seasons reduce sales. It was necessary to examine several years’ of water sales history to develop a normalized database. Once this database was organized, a revenue model was developed. The model was then used to determine a commodity rate (\$/HCF) to recover those remaining costs not recovered by the Service Charge.

## KEY FACTORS IN SETTING WATER RATES

The basis for developing the District’s water rates is the combination of projected operating costs and all other expenditures. Operating costs are those that a district experiences in order to conduct day-to-day operations. They include items such as labor, insurance, utilities and outside services that are necessary to basically “keep the lights on.” Other expenditures include such items as debt service and replacing fixed assets. The following pages provide an analysis and explanation of some key ratemaking factors at Mission Springs Water District.

**FINDINGS—On Water Use by Class.** The figure below depicts the use of water by major class. Residential use represents virtually all consumption, followed by irrigation and commercial.

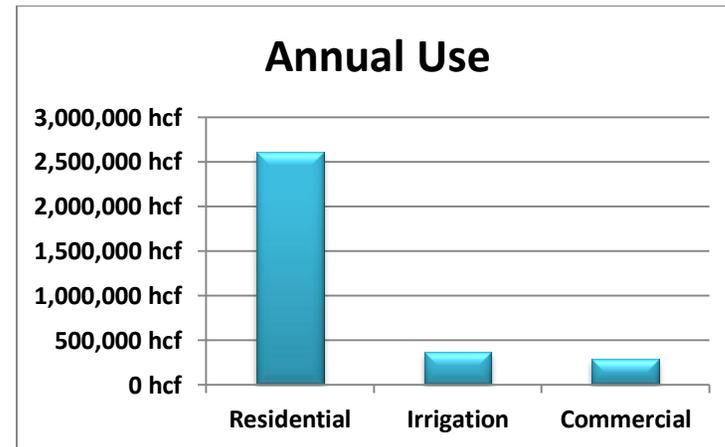


Figure 18 - Annual water use by class

In a service area with a wide distribution of users and consumption, the development of rates by class is the common approach. The rationale is that customers with high peak usage place a greater burden on the system. In this service area, there is so little use other than residential that peaking ratios of commercial or others are not a driving factor since they use such a small amount of water regardless of the peak. The District’s automated meter reading capability provides reports that can measure hour use by any meter.

**Peak Usage by Non-Residential Users Varies Widely, But the Total Demand Is Not Significant.**

As shown in Figure 18, the demand on the District’s facilities is driven primarily by the residential user. A review of the various District classes indicates that there are users that have higher peaking demands than residential, but the total demand is relatively insignificant.

There are times when the flow from non-residential customers can be over 100 gallons per minute (gpm), much higher than residential. However, the water system is designed to accommodate 1,500 gpm to provide flow for firefighting so the peak flow from normal customer use does not negatively impact the system.

Examples of Use Patterns for Varying Non-Residential Customers

Examples of Customers’ Water Use Patterns	Use Pattern in Gallons Per Minute (GPM)	
	Low	High
Apartment House on Ironwood Drive	0-1	47
School on Pierson Some schools peak at 165 gpm at peak hour. Meter records indicate that the schools’ peaks for the most part are not coincidental with commercial users. As a result, it can be argued that school peaks do not result in a need to establish a special rate for schools.	0	140
Travel Center Truck Stop	1	8
Supermarket store	1	10

*Figure 19 - These examples of water use patterns for several sample non-residential customers indicate that peak flow from commercial customers does not stress the water system, especially in light of the small numbers of non-residential customers.*

**RECOMMENDATIONS—NO CHANGE IN CHARGES BASE ON CLASS OF CUSTOMER.** Since the amount of water sold to ‘other than residential’ users is so low, the District has chosen to stay with the three existing rate classes: residential, irrigation and commercial. This appears reasonable.

**CONSERVATION CONSIDERATIONS IMPACT BOTH TIERED RATES AND COMMODITY CHARGES**

**Conservation Impacts.** The District adopted a tiered water rate structure in response to recent California legislation requiring a state-wide reduction in per capita consumption of

20% by 2020. Assembly Bill (AB) 2882 allows for allocation-based conservation water pricing so long as it does not exceed the reasonable cost of water services.

In another effort to encourage conservation, the Urban Water Management Plan includes Best Management Practice 11. This practice establishes a maximum of 30% of revenues from the fixed charge. The emphasis is to place at least 70% of revenue on the commodity charge. The problem with this practice is that as more water is conserved, it becomes more difficult to adequately fund operations and maintenance as well as debt service, but it remains a legal requirement.

**Monthly Service Charge and Water Conservation.** The District's largest revenue source is water sales. The emphasis on conservation, while laudable, is creating financial issues for many water utilities. The financial result of conservation is less revenue. The utility has to raise rates to make up for that revenue loss. It is difficult for the public to understand why this is happening. The following may help explain the quandary:

**Example of financial impact of water conservation.** In order to demonstrate the impact of lower sales on a District's rates and charges, the District's fixed revenues (less property tax) were totaled. Fixed expenses were likewise added up and matched with the fixed revenues. The fixed revenues were not adequate to cover all the fixed costs and thus the remainder had to be funded in the commodity rate. The table below demonstrates the impact of loss of sales on the rate per

HCF. The data below is based on the FY 12/13 example Budget.

	Normal	Conservation
<b>Fixed Portion - not covered by Service Charge</b>		
Total HCF Sales	\$5,100,505	\$5,100,505
Cost per HCF	4,198,313 HCF	3,526,583 HCF
	\$1.21	\$1.45
<b>Variable Portion</b>		
HCF Sales	\$3,567,120	\$3,071,981
Cost per HCF	4,198,313 HCF	3,526,583 HCF
	\$0.87	\$0.87
<b>Total</b>	\$2.09	\$2.32
<b>Difference</b>		\$0.23
<b>% Difference</b>		11.09%

*Figure 20 - Impact of conservation on sales and rates FY 12/13*

With a continuing drop in sales volume, there will be increased costs transferred to the volume rate. The problem with this type of pricing incentive is that it reduces a stable revenue source and exposes the District to the potential of failing to produce a stable revenue stream for any debt service.

**MONTHLY FIXED SERVICE CHARGE**

**Meter and Service Size.** The meter size has a direct bearing on the capital and operating cost of a utility. The larger the size,

the greater the demand will be on the water system. In order to distribute the fixed costs equitably to all customers, the industry uses meter size to develop a ratio to distribute the cost equitably over the customer base.

The American Water Works Association (AWWA) standard for assigning Equivalent Capacity Units (ECU) by meter size is noted in Figure 21.

<b>ECU by Meter</b>		
<b>Meter Size</b>	<b>Flow (gpm)</b>	<b>Standard ECUs</b>
¾"	15	1.0
1"	40	2.67
1-½"	50	3.33
2"	70	4.67
3"	350	23.33
4"	650	40
6"	1,250	83.33

*Figure 21 - ECU by Meter Size*

The allocation of a portion of fixed cost by meter size is shown in Figure 22:

**Fire sprinklers.** Note that in 2011, building codes were amended to require fire sprinklers for new single family homes. Generally speaking, most single-family dwellings require a 1" meter to be in compliance with the new sprinkler requirement.

**Equivalent Meter Capacity Ratios.** The safe operating flow or capacity of a particular size of meter is essentially the limiting factor in terms of demand that can be exerted on the water system through the meter. In establishing a schedule of service charges, the potential demand or capacity requirements placed on the water system by a customer are a generally accepted basis for determining the level of charge applicable to the customer. As noted above, a 1" meter places a demand on the system of 2.67 times that of a ¾" meter. The calculation of the service charge is based on recovering a portion of cost based on the number of equivalent meter capacity units served.

Meter Size	Capacity GPM	Capacity Meter Equivalent	No. Meters	Capacity Meter Equivalents	Annual Fixed Cost Meter Equivalent	Monthly Cost Per Meter Size	Base Annual Revenue
3/4	15 gpm	1.00	11,780	11,780	\$1,272,198	\$9.00	\$1,272,198
1	40 gpm	2.67	486	1,296	\$139,963	\$24.00	\$139,963
1 1/2	50 gpm	3.33	155	517	\$55,798	\$30.00	\$55,798
2	70 gpm	4.67	144	672	\$72,574	\$42.00	\$72,574
3	350 gpm	23.33	11	257	\$27,719	\$209.99	\$27,719
4	600 gpm	40.00	1	40	\$4,320	\$359.99	\$4,320
6	1,250 gpm	83.33	2	167	\$17,999	\$749.98	\$17,999
<b>Total</b>			<b>12,579</b>	<b>14,728</b>	<b>\$1,590,572</b>		<b>\$1,590,572</b>

Figure 22 - Service charge by meter size

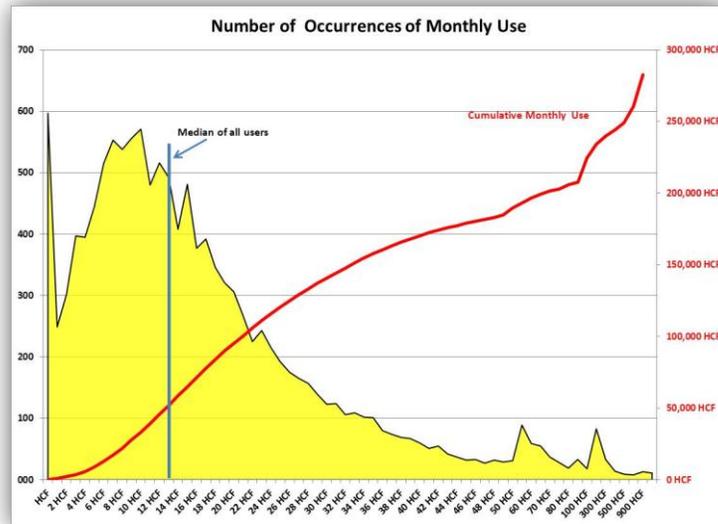
**Monthly Service Charge.** A portion of those costs that are fixed are recovered in the monthly service charge. It is recommended that the District recover 30% of the fixed portion if it is to comply with the requirements of Best Management Practices (BMP) which have been incorporated into the Urban Water Management Plan. For purposes of this study, the portion of the fixed charge to be recovered is 22% initially, then increased incrementally up to 30% in order to avoid rate shock during these difficult economic times. This

annual increase in meters is relatively modest .The service charge is applied to the class and number of meters as shown in Figure 23:

		Budget					
	Description	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18
1	Residential	12,302	12,364	12,425	12,487	12,550	12,613
2	Commercial	423	425	427	429	432	434
3	Irrigation	160	161	162	162	163	164
4	Total	12,885	12,949	13,014	13,079	13,145	13,210
	Annual Change		64	65	65	65	66

Figure 23 - Projected change in number of District meters

## SETTING TIERED RATES



**Figure 24 - Residential Customer's Median Use FY 10/11.** This figure depicts the average monthly water use of MSWD customers for a one year period.

The residential customer's average use is 15 HCF per month; the median is lower. The profile shown above is representative of predominantly residential service areas.

While water conservation should be practiced by everyone, the existing level of use within the MSWD service area is already well below that of most residential users. Note that, typically, a residential customer's water use in southern California is 20-22 HCF per month. Few homes have lawns or

pools. It is doubtful that further reduction in water use is a reasonable goal.

**FINDINGS—Average Residential Water Use.** For consumption, we use our current billing data and 2010 US Census data – 3 people per household, 141 gallons per capita per day, 423 gallons per household per day, 12,690 gallons per household per month, or approximately 17 HCF.

**RECOMMENDATIONS—Adjust Tiers to Provide Indoor Use with No Penalty and Continue Promoting Conservation.** Currently, the District's first Tier is 0-4 HCF which provides about half of the indoor use. In light of the low water use level, it is recommended that the tiers be adjusted to provide adequate indoor water use with no penalty.

Water use over 10 HCF is generally used for outdoor irrigation and does offer more opportunity to conserve. With this in mind, it is recommended that the tiers be adjusted from the current Tier 1 of 0-4 HCF and Tier 2 of 5-15 HCF to a new Tier 1 of 0-10 HCF and new Tier 2 of 10-15 HCF. Since the District relies on limited groundwater, it is important to practice conservation in order to operate within the available supply.

	Current Tiers	Proposed Tiers
Tier 1	0-4 HCF	0-10 HCF
Tier 2	5-15 HCF	10-15 HCF

**Figure 25 - Proposed new rate tiers for residential use.**

**Conservation Rate Blocks.** Based on the cost of service noted in the previous tables, the rates were adjusted to take into consideration the District’s conservation rate block system. Figure 26 below is the result of applying the conservation rate block system:

Class	Code	Tier 1 Rate	Tier 2 Rate	Tier 3 Rate
Retail	201	\$2.11	\$2.11	\$2.11
Retail	201	\$2.11	\$2.11	\$2.11
Service Shops	206	\$2.11	\$2.11	\$2.11
Retail	201	\$1.95	\$1.95	\$1.95
Service Shops	206	\$1.95	\$1.95	\$1.95
Residential	201	\$1.27	\$2.23	\$2.35
RR	201	\$1.27	\$2.23	\$2.35
RW	206	\$1.27	\$2.23	\$2.35
Tract	201	\$2.11	\$2.11	\$2.11
TW	206	\$2.11	\$2.11	\$2.11

*Figure 26 - Rate adjustment by conservation block system.*

**RECOMMENDATION 2—Charge Multi-Family Residential**

**Units at the Average Residential Tiered Rate.** Some multi-

family units are on separate meters and pay tiered rates.

Other multi-family units are not separately metered and there is no accurate way to assign tiers to them.

Increasing the Service Charge reduces the amount to be recovered from the commodity charge. A major portion of the total fixed cost (\$3,709,800) is added to the variable cost of \$1,377,154 for a total of \$5,086,954 to be recovered from the HCF charge.

**RATE STRUCTURE BASED ON WATER USE BY CLASS**

The current and projected sales volume is noted in Figure 27:

The operating costs were distributed to various classes based on system usage. The detailed analysis is found in Appendix E.

The findings of that analysis resulted in the cost distribution in Figure 28:

Description	FY 12 - 13	FY 13 - 14	FY 14 - 15	FY 15 - 16	FY 16 - 17	FY 17 - 18
Residential	2,607,298 hcf	2,620,334 hcf	2,633,436 hcf	2,646,603 hcf	2,659,836 hcf	2,673,136 hcf
Commercial	264,964 hcf	266,289 hcf	267,620 hcf	268,958 hcf	270,303 hcf	271,655 hcf
Irrigation	378,818 hcf	380,712 hcf	382,616 hcf	384,529 hcf	386,451 hcf	388,384 hcf
Total	3,251,080 hcf	3,267,335 hcf	3,283,672 hcf	3,300,090 hcf	3,316,591 hcf	3,333,174 hcf
	7,463 af	7,501 af	7,538 af	7,576 af	7,614 af	7,652 af

*Figure 27 - Projected water sales volume by class.*

Description	Total	Base	Max Day	Max Hour	Meter Services	Billing Collection	Equivalent Meter Charge	Total on Commodity
<b>Unit Cost of service</b>		\$1.73	\$105.01	\$96.87	\$0.00	\$3.22	\$108.00	
Measure		ccf	ccf/day	ccf/day	equiv meters	bills		
<b>Residential</b>								
Units		2,607,298 CCF	5,357 CCF	12,501 CCF	12,686	147,624	\$1,370,034	
Cost	\$6,764,840	\$4,515,694	\$562,600	\$1,210,928	\$0	\$475,617		<b>2.069</b>
<b>Commercial</b>								
Units		264,964 CCF	617 CCF	1,379 CCF	1,056	5,076	\$114,093	
Cost	\$673,661	\$458,903	\$64,797	\$133,607	\$0	\$16,354		<b>2.112</b>
<b>Landscape</b>								
Units		378,818 CCF	934 CCF	882 CCF	986	1,920	\$106,445	
Cost	\$845,822	\$656,092	\$98,089	\$85,455	\$0	\$6,186		<b>1.952</b>

Figure 28 - Cost distribution by class

### COMMODITY CHARGE

**Commodity Charge.** The commodity charge covers variable costs as well as any costs not recovered from the service charge. The District's three basic customer classes are: Residential, Commercial and Irrigation.

Inflation	2.50%	5.00%	7.50%	10.00%	12.50%	15.00%
Size	FY 12-13 Current	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18 Target
3/4	\$9.32	\$9.00	\$9.68	\$9.90	\$10.13	\$10.35
1	\$10.38	\$13.76	\$17.02	\$20.41	\$23.94	\$27.60
1 1/2	\$12.28	\$16.62	\$20.82	\$25.20	\$29.76	\$34.50
2	\$14.23	\$20.77	\$27.24	\$33.98	\$41.00	\$48.30
3	\$22.69	\$63.16	\$104.93	\$148.58	\$194.10	\$241.49
4	\$35.16	\$105.13	\$177.47	\$253.06	\$331.90	\$413.99
6	\$56.48	\$204.94	\$358.92	\$519.84	\$687.69	\$862.47

Figure 29 - Phased in change to monthly service charge

**RECOMMENDATIONS—Set the Commodity Charge Equal to The Total Required Revenue Amount** The remainder of the fixed, and all of the variable, costs are used to develop the commodity rate. Since the residential rates are tiered, it is

necessary to identify the portions of water that are used in each tier and assign a charge per HCF to that tier. The total of the annual monthly service charges and commodity charges must equal the total required revenue amount.

**RECOMMENDATIONS—Increase Commodity Charge and Set an Inflation Adjustment.** In order to avoid customer rate shock, it is recommended that the change in monthly service charge be phased in over several years as shown below:

As shown above, that adjustment amounts to a total of 15% from today.

It is recommended that the commodity rates be inflated at the same rate as the service charge in order to stay abreast of the escalation of operating expenses.

Based on the rates above, Figure 30 depicts the projected revenue from the commodity charge as noted:

	Tier 1	Tier 2	Tier 3	Total
Residential	\$665,580	\$2,057,826	\$2,671,303	\$5,394,709
Commercial	\$30,532	\$64,551	\$463,991	\$559,074
Irrigation	\$12,438	\$30,330	\$697,251	\$740,018
<b>Total</b>	<b>\$708,550</b>	<b>\$2,152,707</b>	<b>\$3,832,545</b>	<b>\$6,693,802</b>

*Figure 30 - Projected revenue from commodity charge*

## SETTING SEWER RATES

**FINDINGS—Background and Current Sewer Rates.** The district operates two treatment plants and maintains 89 miles of sewer lines. Since there are no industrial waste dischargers, there is no need to establish industrial discharge rates.

Domestic rate development. The District currently charges \$31.23 for a single-family unit and \$23.92 per unit for multi-family use. As primarily a residential community, use of a flat rate is appropriate.

Commercial rate development. Commercial users can vary widely in their discharge such as a restaurant versus a small barber shop. Commercial charges are currently \$1.98 to \$12.94 per HCF based on business type. The charge based on flow appropriately addresses the nexus between cost and benefit.

**RECOMMENDATIONS—Adjust Sewer Rates as Outlined in Figure 31.** Based on the sewer budget as reflected in the model, the sewer rates for FY 12/13 will be as noted in Figure 31.

USER			
CODE	RESIDENTIAL	Flat Rate/EDU	Charge
101	Single family residential	\$12.00 EDU	\$31.23
102	Duplex or triplex	\$12.00 EDU	\$23.92
102	Multifamily residential	\$12.00 EDU	\$23.92
103	Mobile home park	\$12.00 EDU	\$23.92
<b>COMMERCIAL - Charge per HCF</b>			<b>Per HCF</b>
201	Dept./retail store	EDU BASIS	\$3.47
202	Professional office	ALL	\$3.07
203	Bar w/o dining	COMMERCIAL	\$3.89
204	Car wash	ACCOUNTS	\$2.93
205	Gyms & Spas	\$12.00 EDU	\$3.92
206	Mixed use		\$3.92
207	Laundromat		\$3.27
208	Hospital and convalescent		\$3.63
209	Other (3)		\$3.46
210	Auto steam cleaning		\$12.94
211	Other commercial (1)		\$3.65
301	Repair shop/service		\$4.18
302	Hotel/motel w/o dining		\$3.96
303	Manufacturing		\$6.14
307	Industrial laundry		\$7.99
308	Commercial laundry		\$5.58
309	Soft water service		\$1.98
401	Hotel/motel with dining		\$6.90
402	Grocery		\$9.00
403	Mortuary		\$9.03
404	Restaurant		\$8.91
407	Bakery, wholesale		\$8.90
503	Public agency		\$3.68
506	Religious organization		\$3.68
701	Septage (4)		
801	School & college		\$3.15

Figure 31 - Sewer Rates - FY 12/13

## **ADDITIONAL SOURCES OF REVENUE ENHANCEMENT**

As explained earlier, District revenues fall far short of needs, especially the amounts needed for capital upgrades and replacements. As a result, this study explored numerous potential new sources of revenue to more equitably distribute the cost of the benefits to benefitting users.

### **PASS THROUGH CHARGES**

Additionally, AB 3030 authorizes automatic adjustments to these fees and charges as pass-through increases in wholesale charges established by another agency or adjustments for inflation. The District has a replenishment assessment (pass through to Desert Water Agency) and a Utility Tax (pass through to City of Desert Hot Springs) that should be evaluated for inclusion in future rate changes for pass through status. The fees and charges schedule as adopted may not exceed 5 years.

### **PUMPING CHARGE**

**FINDINGS—Related to possible pumping charge.** Differences in elevation in the District's service area are such that a considerable amount of pumping is required. The District does not currently account for all of its energy costs in its charges.

**RECOMMENDATIONS—Consider Instituting a Pumping Charge of \$0.05/HCF/100 Feet of Elevation.** We recommend that the District evaluate assigning an energy charge or pumping zone charge to users at locations higher than the

base elevation is recognition of cost of service to those users and is recommended. The amount is recommended to be \$0.05/HCF/100 feet of elevation.

### **MONTHLY SERVICE CHARGE FOR UNOCCUPIED PROPERTIES**

**Citizens Committee Recommended that the District evaluate and consider cost recovery options from unoccupied properties.** Fixed costs represent about 80% of annual expenses. These include insurance, labor, facilities maintenance, upgrade and replacement, etc. Undeveloped and unoccupied properties currently pay nothing, even though they cause just as much fixed costs as occupied properties.

**FINDINGS—Regarding a Monthly Service Charge for Unoccupied Properties.** The District has maintained service for as many as 1,400 unoccupied properties. The number has gone down since this. A \$40 per month charge for 850 unoccupied properties for example could produce \$400,000 annually. The District has a policy that water and sewer service fees remain in effect during periods of non-use. The policy is included in the Customer Service; Vacation/Absence notice section of the District website. This is an appropriate policy since water and sewer facilities still have to be maintained, regardless of use.

**RECOMMENDATIONS—Consider Instituting a Monthly Service Charge for Unoccupied Properties.** We recommend that the District consider this. It may be accomplished by Policy action only

## **SPECIAL MAINTENANCE TAX ON UNDEVELOPED PROPERTIES**

**FINDINGS—Regarding Potential Special Tax on Undeveloped Properties.** The economic downturn resulted in the District owning water and sewer lines with few customers. Again, facilities have to be maintained regardless of use. In fact, a low flow in a sewer line creates more problems in many cases than one with high volume. The beneficiaries of this unused capacity are the undeveloped properties. It is recommended that a special maintenance tax be imposed on undeveloped property for the purpose of maintaining the under-used portions of the delivery system.

During the economic boom, developers built \$85 million worth of pipelines, wells, and other facilities to accommodate expected growth. Many of those facilities are not being used or paid for, yet the District must maintain them.

## **RECOMMENDATIONS—Consider Special Maintenance Tax on Undeveloped Properties.**

We have identified over 29,000 unoccupied properties. A tax of \$20 per acre or less than an acre, with the vast majority (23,443 properties) paying \$20 per year could produce about \$1 million each year. To implement such a tax would require a 2/3 vote of the electors. The Citizens committee reviewed this proposal at the third meeting and recommended that the District consider pursuing it.

## **CHARGE ACTUAL COST OF SERVICES**

**RECOMMENDATIONS—Charge Actual Costs of Numerous Services.** Recommended changes in miscellaneous charges for services are included in Figure 32. It is estimated that adoption of these changes could result in revenue enhancement.

**Figure 32 – Summary of Cost Savings/Revenue Enhancements**

Service Provided	Charges		Revenue Increase	Annual Cost Reduction
	Current	Proposed		
Turn-on Turn Off- Normal	\$10	\$36	\$50,000	
Turn-on Turn Off- Overtime	\$10	\$142	\$50,000	
Disconnect/Reconnect - Normal	\$5	\$38		
Disconnect/Reconnect - Overtime	\$50	\$145		
Backflow testing	(\$49,204)		Break Even	\$49,204
Fire Flow test - 25 per year	\$55	\$80	\$625	
Bad Check Cost Recovery	\$10	\$25		
Delinquency Process	\$15	\$50		
Major Customer disputes \$3,000- 25 times				\$75,000
Shorten Meter Read Cycle				
Meter re-reads	\$0	\$50	\$50,000	
Reduce site visits	Daily	Bi-Weekly		
Improved SCADA				
Outsource Building/Grounds Maintenance				\$40,000
Fleet maintenance				
Retirements				\$900,000
Energy Charge			\$50,000	
Special Tax on undeveloped land			\$1,000,000	
			\$1,200,625	\$1,064,204
			Potential net gain to District:	<u>\$2,264,829</u>

# PART 5: RECOMMENDATIONS

## LIST OF RECOMMENDATIONS

Below are listed all of the recommendations in this report by Topic Area

### WELLS AND WATER PRODUCTION

Evaluate Reducing Daily Site Visits to Wells by Upgrade to SCADA System.

Build Three New Wells (About \$9 million).

### WATER STORAGE

Determine Need for Additional Storage and Incorporate into Master Plan.

Equip All Storage Tanks with Earthquake Valves.

### MAIN LINES AND SERVICE LINES

Outsource Pipeline and Service Line Replacement.

Identify an Optimum Pipeline and Service Line Replacement Program that Can Be Funded with the Next Rate Increase.

Prioritize Valve Maintenance Program.

Upgrade the District Supervisory Control and Data Acquisition System (SCADA) to Free Up Resources FOR Valve Maintenance.

Speed up Meter Reading and Decrease Labor Required.

### FLEET MAINTENANCE

Evaluate Outsourcing to Decrease Fleet Size, Lower Costs and Free Up Labor for Core Maintenance.

### PURCHASING AND WAREHOUSING

Separate Purchasing From Warehousing or Institute Additional Oversight Controls.

### SEWAGE TREATMENT AND COLLECTION

Carry Out Planned Wastewater Treatment Plant Improvements.

### FINANCE DEPARTMENT

Finance Department Should Consider Expanding Cost Accounting Capabilities.

Streamline Customer Service Front Desk to Lower Costs.

### TURN OFF NOTICES

Simplify the Turn Off Notices and Delinquency Procedure.

### GROUNDS MAINTENANCE

Evaluate Contracting Out General Building & Grounds Maintenance.

### BACKFLOW TESTING

Increase Charge for Backflow Testing or Make Customers Responsible for It.

### PLAN CHECK AND INSPECTION

Evaluate Future Outsourcing if Need for Plan Check and Inspection Increases.

### HUMAN RESOURCES AND PAYROLL

Consider Outsourcing Human Resources and Payroll.

### **REASSIGNMENT OF PERSONNEL**

Reorganize Staff to Target Areas With Insufficient Labor Resources and for Savings and Efficiency.

### **FUNDING FIXED ASSETS REPLACEMENT**

Incrementally Make System Maintenance and Replacements More Proactive.

Follow Modified Approach to Evaluating and Saving for Fixed Asset Replacement Or Must Use Straight-line Depreciation.

Balanced Use of Pay-Go, and Financing For Funding Fixed Assets Replacements of Varying Life Spans.

### **INTERFUND LOANS**

Critical Legal and Contractual Priority: Pay Back Inter-fund Loans.

Build Adequate Reserves for Emergency Repairs.

Evaluate Additional Risks and Prepare for them.

### **FINANCIAL MODELS**

Utilize the Financial Models to Test “What If” Scenarios for Developing Rates, as well as Revenue and Reserve Requirements.

Update and Validate the Model Over Time.

### **JOB COSTING**

Further Refinement and Implementation of Job Costing.

### **RESERVES**

Develop a Reserve Policy that is Approved by the Board and Follow it.

### **DEBT FINANCING**

Undertake Best Financial Practices.

### **PRIVATIZATION/OUTSOURCING/PUBLIC-PRIVATE PARTNERSHIP**

Evaluate Privatization /Outsourcing/ Public-Private Partnerships on a Case-By-Case Basis and Use Enhanced Job Costing Information to Compare Costs.

### **SETTING TIERED RATES**

Adjust Tiers to Provide Indoor Use with No Penalty and Continue Promoting Conservation.

### **COMMODITY CHARGE**

Set the Commodity Charge Equal to The Total Required Revenue

Increase Commodity Charge and Set an Inflation Adjustment.

### **SETTING SEWER RATES**

Adjust Sewer Rates as Outlined in Figure 31.

### **PUMPING CHARGE**

Consider Instituting a Pumping Charge of \$0.05/HCF/100 Feet of Elevation.

**MONTHLY SERVICE CHARGE FOR UNOCCUPIED PROPERTIES**

Consider Instituting a Monthly Service Charge for Unoccupied Properties.

**SPECIAL MAINTENANCE TAX ON UNDEVELOPED PROPERTIES**

Consider Special Maintenance Tax on Undeveloped Properties.

**CHARGE ACTUAL COST OF SERVICES**

Charge Actual Costs of Numerous Service



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