City of San Diego

Independent Rates Oversight Committee

Annual Report

Fiscal Year 2009

Issued: March 22, 2010

Independent Rates Oversight Committee

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March 15, 2010

Honorable Mayor Sanders and
Members of the City Council

In accordance with Section 26.2003(i) of the San Diego Municipal Code, I am pleased to transmit the second annual report of the Independent Rates Oversight Committee (IROC).

The report summarizes our work for the fiscal year ended June 30, 2009, and includes our observations and recommendations with respect to the operations, investments, and planning activities of the city's Public Utilities Department.

On behalf of all of my colleagues on IROC, I want to express our appreciation for the opportunity to serve the ratepayers. We hope that this report will contribute to a respectful dialogue on the continuing challenges we face as a region in ensuring a safe and reliable water supply, sound environmental management, and efficient operations.

Finally, I would like to acknowledge with gratitude the fine service of our former colleague, Barry Newman. We will miss his expertise, broad knowledge, and kindness.

Respectfully submitted,

Donald F. Billings, CFA
Chair
IROC

858-292-6324 • fax: 858-292-6310 • iroc@sandiego.gov • www.sandiego.gov/mwwd/general/commissions.shtml

IROC Members and Officers

IROC members

Don Billings, Chair	Finance/Municipal Finance Professional
Barry Newman, Vice Chair	Law Professional (resigned October 2009)
Tony Collins	Multi-Family Residential Ratepayer
Christopher Dull	Construction Management Professional
Andrew Hollingworth[1]	Audit/Accounting Professional
Jack Kubota	Engineering Professional
Jim Peugh[2]	Environmental Professional
Irene Stallard-Rodriguez	Single-Family Residential Ratepayer
Todd Webster	Science Professional
Gail Welch[3]	Commercial and Industrial Ratepayer

Ex-Officio Members

Ken Williams	SDCWA City 10 Representative
Yen Tu	SDCWA City 10 Representative, Alternate
Scott Tulloch	Metropolitan Wastewater JPA
August Caires	Metropolitan Wastewater JPA Alternate

[1] Finance Subcommittee Chair
[2] Environmental and Technical Subcommittee Chair
[3] Education and Public Outreach Subcommittee Chair

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I. Introduction

Who We Are

IROC[4] is an independent, non-compensated, advisory body composed of eleven members, nominated by the Mayor and confirmed by the City Council, representing all ratepayer classes[5] and a set of defined professional disciplines. [6] It is led by a chair, a vice chair, and the chairs of three subcommittees (Finance, Environmental and Technical, and Education and Public Outreach).

What We Do

IROC serves as an official advisory body to the Mayor and City Council on policy issues relating to the oversight of the City of San Diego's public utilities Department operations including, but not limited to, resource management, planned expenditures, service delivery methods, public awareness and outreach efforts, water and wastewater related environmental issues, and high quality and affordable utility service. In addition, IROC assists the City in tracking and reviewing the use of rate proceeds to advance the capital improvements related to rate packages and work programs adopted by the City Council. It is the vision of IROC that a high level of public confidence in the City of San Diego's utility services be maintained with services provided in the most cost effective way.

As indicated in the chartering ordinance for IROC (included as an appendix to this report) IROC's role is not that of an auditor or list checker, but more broadly as the independent overseer of the City's public utilities, on behalf of the ratepayers. To accomplish this, IROC believes that it must review and assess not only the current operations of the Departments, but also the medium and long-term investment plans, and the planning process itself. IROC believes that ratepayers are best served by an oversight body having an independent perspective, which views operations and investment not only in terms of their narrow "accounting" costs and benefits, but also, and critically, in terms of their broader "economic" opportunity costs and avoided costs.

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[4] Chapter 2, Article 6, Division 20, sections 26.2001 through 26.2003 of the City of San Diego's Municipal Code (the Chartering Enactment for IROC) established the purpose. intent, duties and functions of the City of San Diego's Independent Rates Oversight Committee.

[5] These are: single family residential, multifamily residential, commercial and industrial, and temporary irrigation and construction.

[6] These are: accounting, auditing, engineering, biology or environmental science, finance/municipal finance, law, and construction management.

This vision requires IROC to take a broad and long-range view. In so doing, IROC is mindful that, while it is charged with offering advice on Department policy, it does not set policy for the Department or in any way direct Department activities. However, we believe the value of IROC, from a ratepayer perspective, depends on IROC's ability to evaluate and comment on all matters that currently or may in the future affect the economic interests of water and wastewater ratepayers, including those that might have policy implications.

Structure and Content of this Report

The primary mission of the Department is to ensure the quality, reliability and sustainability of water resources and wastewater services for the benefit of the ratepayers and citizens served. The mission also includes ensuring that the Department accomplish its mission efficiently and that costs are allocated in an equitable manner among their ratepayers.

This Report is structured to address the key aspects of that mission, as set forth in the Table of Contents. While we represent the ratepayers, our report's observations and recommendations are directed to those having policymaking authority over the Public Utilities Department.

This is not an audit report. In establishing our mandate, the City Council made clear that our scope of work was not intended (or funded) to be at the level of an Independent Auditor. Audit work is performed by audit professionals, under the direction of the City of San Diego's Audit Committee.

Accordingly, IROC has focused its attention on the material activities of the Department including its operations, current issues and future challenges, and identification of any material matters or inefficiencies that currently, or potentially could, significantly impact San Diego water and wastewater system ratepayers.

II. Executive Summary

Key Recommendations[7]

1. Securing Safe and Reliable Supplies

It is well known that we San Diegans live in a desert, at "the end of the pipeline", dependent for our survival on a complex, vast, and expensive system of canals, pipes, pumps, and reservoirs by which we import water from the Colorado River, the Sierra Nevadas, and elsewhere. In the long run, this dependency[8] is unsustainable, so San Diego must continue to find ways to use existing water supplies more efficiently, explore opportunities for significantly greater beneficial reuse of highly treated waste streams, and invest in emerging technologies in an environmentally sound way. For as long as San Diego relies so heavily on imported water, San Diego ratepayers will be exposed to continuing increases in water rates due to the need for more and more spending on "upstream" infrastructure to transport and store source waters, increased competition as population pressures weigh on scarce supplies, and other factors. In addition to the risk of ever-higher costs, by placing such heavy dependence on one of the world's most complex systems of canals, pipelines, and reservoirs, San Diego faces risks to reliable supply due to natural disaster, drought, inter-regional competition, legal interventions, and other factors.

For these reasons, IROC believes that the highest priority task for the Public Utilities Department (the "Department") is to focus its efforts on planning for securing safe, reliable, cost-effective, and environmentally sound alternatives to imported water. In doing so, IROC encourages the Department to continue to reach out to local stakeholders to develop consensus for this goal, and to invest today based on a long-term vision of optimal resource independence.

- *Conservation*

Conservation is potentially the least costly way to meet the water needs of a growing population, in the context of scarce supplies.[9] For ratepayers,

[7] See Section III of this Report for further discussion.

[8] The City currently relies on imported water for nearly 90 percent of supply.

[9] IROC believes that scarcity is not a temporary condition, and notes that our region may in fact be returning to a drier period, following a century or so of historically wet years. That is why IROC does not view current conditions as a "drought", but instead as potentially the "new normal".

the major benefit of conservation is the avoided cost of new/expanded infrastructure to convey/store water, and to treat wastewater, and a shift in the demand curve that, all else equal, holds the promise of moderating future price increases.

Conservation can be achieved through a variety of means, including education, rate structure, penalties, subsidies (e.g., water saving devices), etc. Some of these (e.g., subsidy programs) have a current "cost" in the form of cash expenditures, but are designed to be more than fully offset by the benefit, or expected benefit, of conservation-related savings. This means that they may appear, from a narrow accounting perspective, and in the short run, to be "expensive." We encourage the Department to continue to develop programs, and support upstream programs, that reduce per capita consumption of imported and recycled water, and therefore long term ratepayer costs, even if such programs are "costly" in the short run.

The Department currently faces penalties from SDCWA if consumption is not reduced at least 8 percent year over year. To date, this has been achieved, but it cannot be determined to what extent this reduction is due to education (e.g., the Be Water Wise campaign), to demand response to higher rates, to a cooler summer, to the economic environment, and to other factors. That means that ratepayers are exposed to penalties in the event that recent consumption patterns do not persist. For this reason, IROC recommends that the Department consider conducting research into the factors that influence demand response, in order to better understand the drivers, and better allocate funds in the future to target the most effective demand drivers.

- *Indirect Potable Reuse (IPR)*

IROC believes that the principal obstacle to making optimal use of proven Indirect Potable Reuse technology is not technical, but educational. The IPR process treats wastewater[10] to a level that is consistently and reliably more pure than the "fresh" raw water that we import. The Department is in the process of executing a Council-approved demonstration project in the North City that IROC believes will prove this technology, and notes that it is essentially the same treatment train currently applied successfully by other water districts. IROC believes that this demonstration project will succeed or fail based on the extent to which the public understands and becomes comfortable with the process, which in turn requires that the

[10] The sound and fury sound bytes of IPR opponents completely misrepresent the composition of wastewater, which is overwhelmingly from sources such as kitchen sinks, dishwashers, washing machines, and showers.

Department invest in public education to ensure that the investment in the demonstration project is not wasted. For this reason, IROC recommends that the Department devote the full and necessary resources to public education and outreach, to (i) ensure that the public understand that any decision to move to full scale IPR will be based on sound science, (ii) take the lead in framing the discussion, (iii) protect the ratepayers' investment in the demonstration project, and (iv) pre-empt the possible rehash of old scare campaigns that have harmed San Diegans in the past.

At the same time, we urge the Department to take steps, now, to prepare for eventual build out of large scale IPR, including identification of funding needs as part of upcoming rate cases and early investment in engineering and technical issues that could potentially delay large scale implementation.[11]

- *Desalination*

San Diego County is taking the first step in looking to the Pacific Ocean as a source of potable water,[12] in the form of the recently-approved desalination project sited adjacent to the Encina Power Station in Carlsbad. The project, led by Poseidon Resources, has been designed to produce 50 million gallons per day of potable water, and is scheduled to be on line before the end of 2012. In addition to this plant, SDCWA is in the early stages of exploring the viability of a larger facility, to be located on Camp Pendleton. The Carlsbad plant holds the promise to provide enough water for approximately 300,000 people, while the early discussions about an eventual Pendleton plant suggest capacity sufficient to meet the needs of perhaps another 600,000 people.

While the verdict is in on the effectiveness of the technology, the debate about desalination continues. First, for desalination to be competitive with imported water, subsidies will be paid by ratepayers to operators, based on the concept that (a) this "new" supply supplants demand for imported water from existing sources (thereby, all else equal, relieving price pressure), and (b) it benefits ratepayers by avoiding the cost of imported water infrastructure expansion.

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[11] In making this recommendation, IROC is not taking a position with respect to the existing non potable (a.k.a., "purple pipe") system. IROC intends to take up a review of the economics of that system during FY2010.

[12] We note that there are also opportunities to apply this process to brackish groundwater.

IROC believes that desalination holds promise for ratepayers by mitigating the risk of ever-higher costs of imported water, but at the same time will continue to press the Department to support desalination only to the extent that its all-in costs (including, specifically, all reasonably-measurable external costs) compare favorably with alternatives, including IPR. These external costs include, for example, avoided costs, high energy requirements and greenhouse gas emissions, and impacts on the marine environment. In making these comparisons, IROC is mindful that desalination's other benefits include its reliability (it is an effectively inexhaustible source, and supply is independent of drought conditions), should have a predictable cost (unlike scarce imported water), is under local control (provided that contracts with private owners or operators are written and monitored with extreme diligence, which IROC does not assume to be true), and substitutes for existing imported sources and in so doing permits that supply to be used elsewhere, or "releases" that same notional amount of water for other purposes (e.g., for groundwater replenishment, habitat restoration, and other purposes).

- *Sub-metering*

San Diego is a city with a high cost of housing, and a relatively transient population. Home ownership rates are below national averages. Also, San Diego's growth is geographically constrained by the Pacific Ocean to the west, the Mexican border to the south, Camp Pendleton to the north, and mountains and deserts to the east. These factors, combined, contribute to a growing concentration of multifamily housing in the total housing mix.

At present, for multifamily properties, the Department meters water only at the building level, not at the individual residential unit. This makes it impossible for tenants to know the cost of the water and wastewater services they consume, and to respond to price signals, moral suasion, or other tools to encourage water wise behavior. Indeed, it encourages water waste, and fails to reward conservation, because in most multifamily buildings residents pay either the exact same dollar amount per month regardless of use, or pay an amount that is only indirectly related to potential use (e.g., size of unit).

IROC applauds the Department, the Council, and the Mayor for their work to draft an ordinance to begin to address this problem, but notes that it mainly concerns new construction. IROC encourages the Department to consider adding to the draft ordinance a requirement to retrofit existing buildings, perhaps upon change of ownership, conversion from rental to owned units, or major property renovation.

- *Automated Meter Reading (AMR)*

IROC acknowledges the progress made by the Department in defining the scope of the AMR program, and in moving to initial program roll-out. IROC understands that the benefits of AMR include not only (and indeed not mainly) the expected cost savings in reading meters, but also the potential it holds to encourage more water wise behavior. With respect to the latter, IROC notes that the experience of other utility services with smart meters already in place suggests that users who have access to real time use patterns (which AMR has the potential to offer on line) use less of the service/commodity, so the real payoff from AMR likely will be its contribution to conservation, including avoided infrastructure expansion costs. IROC encourages the Department to move forward with the AMR program in a way that reduces meter reading costs, but that also maximizes its potential conservation benefits.

2. Controlling Internal Costs

- *O&M*

We believe that inefficiencies are likely to exist in some form within all organizations, public and private. Others, if provided with sufficient ratepayer or taxpayer funded resources and the time to focus specifically on searching for inefficiencies in the Department probably could find some issues or matters not addressed in this report. However, IROC strongly believes that any such findings, individually or in the aggregate, would likely be insignificant relative to the larger issues and matters of interest disclosed, discussed and addressed in this report.

Because IROC was not established to operate as an auditor, and in light of recent reforms that IROC believes have greatly strengthened the City's internal audit function, IROC believes that its role in evaluating O&M is properly limited to referring to the City Auditor any concerns identified in the course of its regular business, and evaluating the results of any reviews conducted by the City Auditor, including high level review of the Department's implementation of any material recommendations contained in those reviews.

- *CIP*

The Department conducts and manages a major Capital Improvement Program (CIP). This program totaled $2.092 billion and 116 projects as of

the June 2006 rate case and encompasses numerous water and wastewater projects.

In the course of reviewing Department-level reporting on the Program, IROC identified a number of opportunities for improvement that, together, would permit both Department management and IROC to better monitor progress against Program goals and budgets.

IROC believes that adequate CIP program management and reporting needs to be in place in both the Department and the E&CP Department to ensure the program is completed on schedule and on budget.

IROC therefore recommends the Department and E&CP staff work to procure comprehensive and quarterly schedule and budget reports from the E&CP Enterprise P6 and Expedition software, and that these reports be shared with IROC to ensure adequate oversight and management of the CIP program.

3. Influencing Uncontrollable Costs

- *Cost of imported water and related upstream charges*

San Diego is heavily dependent on imported water to meet its needs. It is therefore directly affected by rate increases assessed by the San Diego County Water Authority (SDCWA) and indirectly by the Metropolitan Water District (MWD), which supplies water to the SDCWA from the State Water Project.

IROC acknowledges that the Department has only limited capacity to absorb such rate increases, and that the sound management of Department finances requires that it recover such costs by passing through increases to its customers. However, IROC identified opportunities for the Department to develop analytical tools that would enable it, through the City's representation on the boards of SDCWA and MWD, to push back when warranted.

IROC recommends that additional oversight and due diligence be initiated over both MWD and SDCWA budgets, internal cost structures and their related pass-through rate increases. It also recommends the Department utilize the services of the City's intergovernmental relations staff to represent the interests of San Diego ratepayers before both the Boards and staff of the SDCWA and MWD.

4. Allocating Costs Equitably and In Support of Program Goals

IROC has received briefings from the Department and its consultants on new tools being implemented that will improve the Department's ability to model alternative rates and rate structures. We fully support this effort and understand that the new tools will provide policy makers with the ability to model the impact, on Department finances and on ratepayers, of alternative policy approaches to allocate costs in a way that is both fair and reasonable, and that optimizes conservation and other goals. We expect that the new tools will benefit the Department both in its internal analyses and in its communications with stakeholders as it moves toward new rate cases.

IROC has also received briefings on the Department's current efforts to recalibrate single-family rates to encourage further conservation, to update its cost of service study to support new rates for recycled water (which have not been updated in some years), and on the Department's perspective on implementing universal tiered rates. Finally, IROC has requested and received a briefing from the Irvine Ranch Water District on its approach to rate setting, and believes that there are useful lessons to be learned from their experience.

IROC expects to increase its focus on rate setting as the new rate cases are developed. As part of that process, IROC recommends that the Department consider the lessons to be learned from the Irvine Ranch model, and also consider the advisability and practicality of moving to property specific tiered rates for residential and possibly other users.

5. Partnering with ratepayers

- *Transparency*

The Department communicates with the public by means of content posted to its website, by bill inserts, by PSAs, and other means. The website is particularly useful because it is accessible at no cost to ratepayers and contains information that is both current and comprehensive. IROC commends the Department on the amount and quality of content made available to ratepayers on its website. At the same time, IROC recommends that the website contain, or more transparently link to, current and historical Department financial statements and financing plans, to enable ratepayers to see how their funds are deployed.

6. Other Matters

- *Pension costs*

While the questions of pension plan design and management are outside of the mandate of IROC, it is at the same time evident that, under the current program, ratepayers are fully exposed to risks inherent in a defined benefit plan. For that reason, IROC is interested in understanding and estimating those risks, and ensuring that the ratepayers' are to the extent possible protected from them.

Recent market turmoil, questionable actuarial assumptions, and other factors combine to put the ratepayers at risk of higher rates to fund higher pension contributions. For this reason, IROC supports efforts by the City's political leaders to press forward on pension reform, in particular to move more aggressively to deal with unfunded pension and medical expense obligations.

- *Whistleblower/Fraud Hotline*

IROC notes that the City, through an independent contractor, operates a hotline for purposes of receiving, and forwarding to the City Auditor, complaints about suspected fraud, waste or abuse, or violations of law. The hotline is confidential, all complaints are logged and disposition of each complaint is documented by the City Auditor. In his quarterly summary report, the City Auditor identified only 4 of 15 complaints as relating to fraud, waste or abuse. Most of the complaints that were substantiated remain "open". IROC believes that a confidential whistleblower process, including a fraud hotline, are essential elements of the Department's risk management program, and will request regular reporting from the City Auditor (to the extent consistent with best practice) on disposition of any items related to the Department's activities.

Status of FY08 Annual Report Key Recommendations

In a report dated October 7, 2009, the Public Utilities Department provided a summary status report on its response to the recommendations offered in IROC's Annual Report for Fiscal Year 2008. That report is incorporated as an appendix to this report.

III. Discussion and recommendations: detailed and supplemental comment

1. Securing Safe and Reliable Supplies

- *Conservation*

Factoring Water Supply Scarcity into City Planning

The City often acknowledges that we are likely to have to get by on reduced water supply from external sources, especially during dry years. It has adopted conservation practices for existing users, has required aggressive structural water conservation measures for some recent developments, and is moving forward with other significant measures such as Indirect Potable Reuse, Automated Meter Reading, and Sub-metering. IROC also notes that trends in building permits indicate that new residential construction in the City will continue to skew heavily toward multi-family projects, which means that the City will enjoy a "built-in" tendency toward lower per capital water use in future years.

However, even with these conservation measures, there is a risk that our region could face shortages severe enough to cause economic and public safety disruptions. It would seem appropriate to conduct a formal analysis of whether there is a significant risk of damaging water availability inadequacies, what the likely economic, public safety, and quality of life impacts would be, and whether significant reductions in our planned growth rates would or would not reduce the likely impacts.

IROC believes that this can best be accomplished by means of general plan and community plan updates, by subjecting such plans to the constraints of limited water supply as a factor in planning. At the same time, IROC fully understands that general plans have limited impact on people's behavior: such plans are not routinely consulted by citizens when making their individual decisions about where to live, or in family planning. That is, IROC asserts that the most effective way to address resource scarcity is to focus not only on supply, but also on demand, and that continuing efforts to educate the public about the social costs of private decisions have the potential of being a very cost effective means of moving our community toward a more sustainable model of behavior.

It also appears that the City would benefit from adopting measures that would discourage businesses that require large quantities of water per unit of economic benefit.

Water Rates, Fixed/Variable Costs, and Conservation

There is a disconnect between the water rate increases (both fixed and variable costs), conservation efforts, and effects on the water bills for the majority of consumers in San Diego. For the most part, the pass through rate increases by MWD through SDCWA are really unavoidable by the City of San Diego because, in the short run, the City has no alternative source of supply, and the ratepayers are best served by ensuring that the Department has sufficient revenues to meet its contractual obligations and maintains debt coverage ratios consistent with the highest credit ratings. But, as the citizens of San Diego attempt to conserve, their water bills do not reflect this effort in conservation. In many cases, their water use is significantly less than the prior year but their overall bill is higher, because the reduction in water use (say, 10 percent) is overwhelmed by the increased cost of delivering that water, and of the commodity itself.

It is understood that "pass through" rate increases reflect costs of water and upstream infrastructure, but such rates give rise to the paradox of conservation: because the fixed costs to maintain and expand the infrastructure (pipes, pumps, reservoirs, etc.) must be paid, when there is a reduction in revenues from water sales due to conservation, water rates have to be increased on a per unit basis to pay the fixed infrastructure and base operating costs.

Still, it appears that there exists a bias against certain single family dwelling units in paying for these fixed costs. The City sets a fixed water based fee (and a sewer fee as well) for each dwelling unit (based on meter size) that may inherently penalize the lowest water users because this portion of the bill makes up a larger fraction of their overall bill. The variable cost fee is set in a three tier fashion for the amount/volume of water used, yet arguably does not provide adequate incentive for users to conserve water. Those who dramatically conserve still pay the large fixed fee and some increased rate variable cost. It is not enough incentive to "do the right thing and conserve." There need to be stricter financial penalties for those who do not conserve, and more reward for those who conserve every possible drop of water. This may only be possible by adopting a strict, multiple-tiered site specific rate structure like that of Irvine Ranch, with the caveat that Irvine Ranch's rate structure can not be adopted as-is due to fundamental differences in the nature of that agency's costs, service area characteristics, etc.

- *Indirect Potable Reuse*

The ongoing IPR demonstration project, including the limnology study and public education program, are very important for our City to provide an additional, reliable, and environmentally benign source of water. The Recycled Water Study is fundamental to identifying alternatives that will provide an efficient, reliable, and potentially integrated wastewater/water system in the long run.

Unfortunately there appears to be a serious gap between the two programs. The City has expressed that it will not invest any funds for planning for, or implementation of, full-scale IPR until after the demonstration system has been fully approved by the regulatory agencies. That means that no actual planning, design, engineering, identification of space and facility needs, identification of needed funds and how to obtain them, and application for grants for implementation are being done. These will not start until after the permits are issued. This will delay the availability of IPR water for several years. We have asked to see a milestone chart showing the steps needed and how long it will take for the implementation of the initial IPR system after the permits are issued. We were told that this information has not been assembled.

Many of the tasks mentioned above could be begun in parallel with the demonstration project. Doing so could allow this source of water to be available many years sooner. It is very likely that this additional, reliable 10 million or so gallons a day[13] could be a great benefit to our region. We urge that a milestone chart be prepared so that decision makers will know all of the steps needed to implement IPR, how they can be sequenced, which ones could reasonably be started before the permits for IPR are awarded, and how much delay will be caused by waiting for the permits to move ahead. We also urge that the City seriously assess the benefits and liabilities of moving ahead with additional tasks vs. waiting for all the permits. The funding for appropriate tasks could be included in one of the future rate cases.

- *Sub-metering*

The Department currently has over 250,000 residential customers (about 220,000 single family residential connections and 30,000 plus multi-family connections). The thirty thousand multifamily connections serve almost half

[13] It is understood that the Recycled Water Study might identify opportunities to significantly scale up IPR well beyond the unused capacity of the City's water reclamation plants as currently configured.

of the City's actual dwelling units; in San Diego only 19 percent of residents live in single family residences. Thus the residents of almost half of the units in the City are not aware of their own use and do not receive much of a cost reduction if they reduce their water use. By some estimates, sub-metering may reduce water consumption by 15 – 18 percent.

These numbers present a striking picture of what can be accomplished when every household is made responsible for the amount of water it consumes. Historically, electricity, natural gas, and even telephone/cable TV are all individually metered, but not water. Sub-metering is absolutely essential to get individual customers to become responsible for their water bills and use the supply accordingly. From a water conservation perspective, sub-metering will bring substantial control over waste and promote savings.

The initiative of the Natural Resources Committee of the City Council to pursue this issue is very timely. The draft ordinance, prepared in cooperation with the Mayor's office and the city attorney, will require sub-metering on almost all new multifamily development and retrofitting of existing buildings when all of the plumbing is replaced.[14] We urge returning that criteria to requiring sub-metering when at least 65% of the plumbing is replaced. The ordinance has very broad appeal: water conservation advocates, apartment operators, HOAs, and tenants all stand to benefit from each residential unit being responsible for its individual consumption.

IROC applauds this effort, and urges that the Council move forward with the adoption and implementation of the sub-metering ordinance.

- *AMR*

This very high priority project has experienced delays so that the multitude of benefits has not yet been realized. Originally, the Department was considering AMR for meters greater than 3" plus meters that are costly to read. The selection was to be made on the basis of reducing costs of meter reading. The current plan is to do much larger scale conversion, in order to realize a much more broad range of benefits, including operating cost, water conservation, enforcement of regulations, detection of customer leaks, better understanding by water users of their own consumption, detection of system leaks, etc.

[14] The apartment managers or HOAs or a separate company will bill the individual units and the Water Department will continue to bill the HOAs or apartment managers for the combined water use. The County Department of Weights and Measures will resolve conflicts between individual units and the HOAs or rental managers.

This plan would include a range of implementations such as adding an AMR device to an existing register, adding a register with an AMR device to an existing meter, or replacing a new meter/register/AMR device, depending on the situation. A contract for the new approach was being finalized at the time this report was in production. Staff stated that it is aware that SDG&E is also working on an AMR project and that sharing a backbone for communication might be appropriate.

By utilizing the appropriate private-public partnership, the City is now moving the project into high gear and with much broader goals. In addition to the complete modernization of the meter replacement, maintenance, and reading system, the technology will result in the real-time data collection to complement other control systems for operation of the water system. An important feature that will come about with full implementation is the monitoring of individual accounts to track real time water consumption and the appropriate analysis to implement water conservation measures where necessary. It will also allow customers to monitor their own use and resolve leaks or practices early to conserve water and reduce their own costs.

2. Controlling Internal Costs

- *Program Efficiency*

CIP Program Oversight

The Department conducts and manages a major Capital Improvement Program (CIP). This program totaled $2.092 billion and 116 projects as of the June 2006 rate case and encompasses numerous water and wastewater projects.

All CIPs have major risks for cost overruns and delays due to: (1) conditions which were unknown when the program was originally scoped and its costs estimated, (2) construction cost inflation, (3) schedule delays, and (4) scope changes and their resulting cost increases, many of which occur due to legitimate unanticipated causes. Cost overruns of 50 percent or more with long delays of several years are not unheard of for public works projects, as recently occurred in the San Diego Community College CIP program where a second multi-billion Prop N bond issue had to be floated to fund existing project cost overruns as well as new project scope. For these reasons adequate CIP program and project level schedule and budget control is critical.

IROC therefore made a special effort to investigate the adequacy of schedule, cost, budget and change order controls in place for the Department's CIP program with both Department and Engineering and Capital Projects Department (E&CP) staff to ensure adequate schedule, cost and budgetary controls, as well as adequate program controls, were in place.

Discussions with a representative from the E&CP Department suggested that adequate program, cost, schedule, and budgetary controls are being exercised by the E&CP Department over the Department CIP program, but IROC could not verify this from review of recent program documentation submitted as part of the program's quarterly review. The representative indicated that they currently use and maintain enterprise level P6 and Expedition schedule and program management software to manage the CIP program. Each project also has an assigned project manager and there are monthly and quarterly reviews of each project to ensure projects are on schedule and budget, with remedial action taken where needed. Proper change order management also appears to be exercised.

Review of Department CIP schedules and budgets, however, indicate that program and project level reports and data appear to be somewhat fragmentary and not comprehensive enough to ensure the CIP program is on

schedule and budget since project level total project cost estimates. and actual progress against baseline budgets and schedules, are difficult to monitor using these reports. Furthermore, the Department could not provide written evidence that some of the controls (total project cost, schedule, and change order management) were actually in place in spite of requests by IROC to provide quarterly reports with these elements.

Specifically, the following problems in CIP program management appear to be in evidence at the Department (and possibly the E&CP Department).

First, budget reports provided did not include the per project total estimated cost against which project budget, expenditure, and encumbrances could be monitored. This is where most public works programs run into trouble – unbudgeted cost overruns. IROC's finance subcommittee chair has personal experience involving both the multibillion dollar L.A. School and San Diego Community College programs where total program cost exceeded program budget by several billion dollars; thereby requiring the sale of new multi-billion dollar bond issues to fund the resulting deficit at substantial additional cost to the taxpayers. While the E&CP department indicates this control is in place, IROC has not seen written evidence confirming this in the information it has been provided – despite information requests to review whether project cost level data is maintained and monitored against budget, expenditures, and encumbrances. Such monitoring reports would indicate whether program cost overruns are occurring and ensure that budgets are adequate to complete the programs without additional bond issues.

Second, adequate program and project level Gantt charts and schedules did not appear to be in place against which program and project level progress could be monitored against a baseline schedule. The Department was able to provide actual vs baseline Gantt charts and schedules for their two pipeline programs (water, and wastewater miles per rate case), but these account for only 46 percent of their budgeted CIP program. Gantt charts and schedules were not provided for treatment plant, pump station, groundwater, storage facility and security projects – which represents almost 54 percent of the budgeted CIP program. This includes some multimillion dollar projects. Schedules are typically not required for minor capital outlay projects (those typically under $100,000) but should be maintained for major capital outlay projects as is customary for most public works projects. The E&CP department indicates these are maintained, but IROC has not seen written evidence of this despite requests for this information. Schedule control is important to manage schedule slippage which is a major contributor to program cost overruns, but IROC cannot verify that such controls are currently in place based upon the information provided the committee.

Third, contingency budgets did not appear to be allocated out at the project level as is typically done for public works projects to ensure adequate fiscal control. Rather, they appeared to be budgeted at an aggregate program level. Most public works projects budget both project and program level contingencies to ensure proper fiscal control by project.

Fourth, program and project level expenditures/encumbrances appeared to be monitored by rate case rather than on a total project cost basis. Specifically, Department staff indicates program and project costs and budgets which span multiple rate cases are not consolidated and therefore costs are not controlled on a total project cost basis.

Fifth, IROC cannot determine if adequate change order control is in place. E&CP representatives state that they monitor change orders in excess of 5% of project cost, and IROC has requested review of change orders exceeding this floor amount. Change orders are used to change the contracted scope or cost of a project where unforeseen conditions necessitate such a change in order to complete the project. Change orders, however, are also routinely used by outside contractors to increase their reimbursement where they have purposely underbid or under-scoped a Request for Proposal to secure the contract. Then the contractor realizes his desired profit by requesting change orders to cure the underbidding or scoping. This can substantially increase the cost of a program. For this reason, IROC likes to monitor large change orders and has requested review of all change orders exceeding 5% of project cost, but this has not been provided. IROC cannot therefore, verify that adequate change order control is in place.

IROC believes that adequate CIP program management and reporting needs to be in place in both the Department and E&CP Departments (not just the E&CP Department) to ensure the program is completed on schedule and on budget.

IROC therefore recommends the Department and E&CP staff work to implement or procure comprehensive and quarterly cost, schedule and change order reports from the E&CP Enterprise P6 and Expedition software, and that these reports be shared with IROC to ensure adequate CIP program oversight to guard against possible future cost overruns.

- *O&M*

We believe that inefficiencies are likely to exist in some form within all organizations, public and private. Others, if provided with sufficient ratepayer or taxpayer funded resources and the time to focus specifically on searching for inefficiencies within either SDWD or MWWD probably could find some

issues or matters not addressed in this report. However, IROC strongly believes that any such findings, individually or in the aggregate, would likely be insignificant relative to the larger issues and matters of interest disclosed, discussed and addressed in this report.

Because IROC was not established to operate as an auditor, and in light of recent reforms that IROC believes have greatly strengthened the City's internal audit function, IROC believes that its role in evaluating O&M is properly limited to referring to the City Auditor any concerns identified in the course of its regular business, and evaluating the results of any reviews conducted by the City Auditor, including high level review of the Department's implementation of any material recommendations contained in those reviews.

- *CIP*

Possible Inadequate Investment in the Water Distribution System

It appears that the treatment elements of the water and wastewater functions and the wastewater collection system are reasonably well maintained and upgraded, partially because that has been required by legal actions from regulators and citizen groups. But, there appears to be a lack of assessment, maintenance, and replacement in the water distribution system especially distribution pipes and valves.

We have been told by staff that only about 0.1% of the valves in the distribution system are considered to be defective. But personal observation and news media reports suggest that in some parts of the City, high volumes of water flow for hours after pipe and fire hydrant breaks because workers can not find a valve that will turn off the flow. These extended flows often result in damage to infrastructure, property, the environment, and the public's opinion of the quality of City services. Unfortunately no records are taken about how long it takes to shut down the flow from a break and how many and which valves have been tried before one is found that will stop the discharge. Having such data would allow better decisions to be made on identifying an optimal level of investment for maintenance and replacement for the water distribution system.

We have been told that replacing valves is very risky as it puts potentially destructive stresses on the old connecting pipes. So valves are normally replaced only when pipes are replaced, normally a whole neighborhood at a time, in major replacement projects that are planned long ahead of implementation. These large replacements are very efficient and resolve problems for decades once they are completed.

System Condition Assessment for Water Distribution System

Knowing which valves and how many valves are fully functional (able to turn off water flow quickly and reliably) should be an important parameter for deciding on how to shut off a particular break, establishing levels of maintenance, establishing priorities for replacement, and assessing the need for funding for maintenance and replacement. But the Department and the City must make these decision without this knowledge, which means that the decisions are much less likely to be optimal in terms of providing better service or minimizing long term costs.

Many water districts systematically test all distribution valves each year, running them down to their fully closed position and opening them as far as they will go, and recording the results for each valve. This level of maintenance and assessment is recommended by the American Waterworks Association and the EPA. In contrast, the San Diego Water Department tests each valve once every five years to see if the valves will turn or if they are frozen. They find that only about 0.1% fail this test. The Department considers the other 99.9% of valves functional, in spite of the fact that a large and unknown portion of them can not be shut off when needed.

Based on the discussion on the previous paragraph, IROC urges that a system assessment study be initiated that would provide a much better understanding of the condition of the water distribution system in a representative section of the City. It would identify the ages and condition of the components of the distribution system in that area, including the pipes, hydrants, valves, and pumps. The study would include recording which valves are capable of shutting off water flow when needed, what workarounds are used when they do not work, how much labor cost, infrastructure cost, damage cost, etc. result from the performance of the valves, pipes, and pumps. The goal would be to help identify the level of replacement and maintenance for the system that would be optimum for long term cost effectiveness and for high quality of service.

In January, 2009, the City proceeded with a $1,250,000 contract to develop a "Water Facilities Master Plan" that will produce critical information to identify infrastructure needs to be followed by prioritization of projects and ultimately lead to a Capital Improvement Program for the period of 2012 to 2032. This thirty-year program should highlight the total financial burden the water system will face. There are seven major tasks outlined in the contract and the first one is "Condition Assessment" Accordingly, this task should be broad and all-encompassing. As an example, in addition to digging up samples of the older water mains for testing, newer pipe such as Asbestos-

Cement and even plastic pipe, should be checked so that 30-years out, we aren't surprised that we have serious maintenance issues. Report completion is scheduled for early, FY2011.

We urge that this system condition data be designed, collected, analyzed, and presented in a way that will provide the information needed to identify the optimum level of investment in maintenance and replacement to provide the most cost effective performance in the long run.

Identifying an Optimal Level of Investment for Water Distribution System

A Water distribution system can be managed in a variety of fashions. On one extreme a policy could be established in which pipes, valves, and pumps could be replaced on a hard schedule long before their anticipated useful life has expired. Such a system would experience very few failures, would require very little repair, could be maintained well with low costs, and could be restored from exterior damage, (like trucks knocking over fire plugs, construction companies digging into buried pipes, or earthquakes) very easily as every valve would work when needed and pipes would not be brittle and vulnerable to breakage when work was done on adjacent portions of the system. The Capital Improvement costs would be very high to provide the frequent replacement and the maintenance and repair costs would be relatively low. The customers would see a very high level of service. The system's ability to recover from disasters would be very high. Rates would probably be very high because of the higher than necessary rate of replacement.

On the other extreme the water distribution system could provide no routine maintenance and replace components only when they break and can not be fixed. Such a system would have very low replacement costs (for a while) but repair costs would eventually be very high, system performance would be low, customer satisfaction would be low because of failures, water losses would be relatively high, and there could be health problems due to intrusions during frequent repairs. Eventually such a system would also have very high cost because of the need for frequent emergency repairs and emergency unplanned piecemeal replacement projects.

An optimum water distribution system would be strategically in between. It would schedule replacement projects based on full knowledge of the condition of system components and whether degradation, maintenance, or replacement is most cost effective throughout the service area. The Department's budget would be set so that it would cover this optimum level of maintenance and replacement. Such a system would probably have lower and very stable rates.

San Diego's water distribution system is somewhere in between the two extremes. But, based on information that we have obtained from Department staff, it appears that the level of investment in maintenance and replacement of the water collection system is not based on achieving a clear performance goal or a clear method to minimize the costs of operating the system in the long run.

We understand that the decisions for funding the Department must be made by elected officials when they set the water rates. But we do not think that the elected officials or the public are given enough information and analysis to make the tradeoffs needed for decisions that will provide the most cost effective investment for the middle and long term and what the impacts of providing less or more funding would be.

This lack of well guided investment strategy could cause serious future problems such as very high water rates to make deferred repairs and replacements, inability to cope with emergencies such as fire and earthquakes, and an increased risk to health due to intrusion from frequent repairs.

System Vulnerability: Water

Portions of our region are more likely than most to experience earthquakes. The Department has addressed the need to provide temporary water lines to replace mains that cross known faults when needed. This preparation could be very important to allow people to remain in their homes after an earthquake.

Previous sections have discussed the vulnerability of old water distribution pipes and the inoperability of many valves in the distribution system. In the case of a strong earthquake, it is likely that the distribution system pipes will fail in parts of the City. The probability of urban fires increases after earthquakes. Fire-after-earthquake is recognized as a significant hazard for urban areas. Notable examples are the Northridge earthquake of 1994 and the Kobe earthquake of 1995. Our City is near to and is crossed by a number of known earthquake fault lines. If distribution pipes are broken within a neighborhood, there might be little or no water pressure for fighting fires, increasing property loss and safety risk. That problem may be expanded and exacerbated because the distribution system valves going to the broken pipes do not operate well enough to shut off the flow.

From our inquiries it appears that the need to minimize the risk that likely breakages in the water distribution system will exacerbate a fire-after-earthquake disaster has not been specifically considered in identifying needs

when setting water rates. We urge that a formal risk management analysis be considered to assess whether the condition of the water distribution system provides unacceptable risks to areas of the City and, if so, what level of investment would be needed to minimize those risks to an acceptable level.

System Vulnerability: Wastewater

The wastewater system has a few troubling vulnerabilities such as Pump Station 2 and the Point Loma Wastewater Treatment Plant.

Pump Station 2 must be running to get wastewater to the Treatment Plant. It does have several pumps that can back each other up, two independent pipes through Point Loma, and back up power capability. But if a fire, seismic event, aircraft accident, or intentional attack were to take it off line there would be no way to get the region's wastewater to the treatment plant for an extended period of time. After inquiries it is not clear that there are any plans about how to cope with such a failure.

The Point Loma Treatment Plant appears to be more vulnerable. Scientists at Scripps Research Institute point out that along with Sea Level Rise, extreme weather events are becoming more destructive, and high tides are becoming higher. The Treatment Plant will become more and more vulnerable to damage from major storm events at high tide. Damage could occur from direct wave damage to facilities, large rocks propelled by waves into facilities, or cliff faces being eroded by waves undercutting portions of the Plant. The Plant is built to high engineering standards, but those standards were based on the sea level, storm frequency and intensity, and tidal ranges of 50 years ago with some later reinforcement . Serious consideration should be given to how our wastewater system would be operated after serious wave damage to the Plant. As such it appears that the Plant is not a dependable location for investments in upgrades that we expect to use over the next 50 years.

The Recycled Water Study may suggest a more distributed wastewater treatment system to make the collection, treatment, and distribution of reclaimed water more efficient. We understand that the current shoreline facility will have to provide headworks functions and possibly backup treatment functions for the ocean outfall pipe. But, we urge that the Recycled Water Study and future concept studies consider alternatives that will depend much less on the Point Loma shoreline location for wastewater treatment because of the vulnerability of facilities at that location. We also urge that future studies consider system alternatives that will provide the redundancy and flexibility that would cope better with component failures or regional disasters than the current system.

PLWTP Modified Permit ("Waiver"): What Comes Next?

Some view the position of the City of San Diego on the Point Loma Modified Permit as one of complacency. It is not a question of "if" we will have to upgrade the Point Loma Plant, but of how soon. The City of San Diego dodged the proverbial bullet this past year when the EPA granted the recent Modified Permit. Still, the Coastal Commission made a political/regulatory statement about the future viability of the Modified Permit by initially denying the City of San Diego application (eventually later accepted). To date, there appears to be no 5, 10, or 15 year detailed plan for how the City of San Diego will meet this future challenge.

Now is not the time to be complacent. It is true that if the next Modified Permit is denied in approximately 2015, we as a city will likely have another 5-15 yrs to implement a strategy-solution to upgrade the Pt. Loma plant. However, this will be the best case scenario. A concern still exists whether the implementation of future indirect potable water reuse, thus shifting some volume of wastewater treatment away from Pt. Loma, will have the needed beneficial effect on meeting the 30/30 rule for BOD/TSS at the Pt. Loma Treatment Plant. This is yet to be determined. A specific committee should be developed immediately to look at this one permit issue that could ultimately cause the single largest water rate increase ever for the citizens of San Diego.

Too much is at stake not to be engaged in 2010, instead waiting until 2015. We are encouraged that the Recycled Water Study, the IPR feasibility Study, and the System Condition Studies will be of great value for providing a range of possibilities for the post 2015 planning. But it is important that some entity focus on the planning now so that these and other information sources will not miss critical information that will be needed for the planning for the future.

Pharmaceuticals in Wastewater

The Department has briefed IROC on their onsite messaging and an older outreach campaign regarding the disposition of pharmaceuticals. This issue was identified as an item of concern from NR&C staff. IROC recommends a follow up plan for the Department to create a more engaging awareness and outreach plan initially targeted towards hospitals, clinics and doctor's offices, as well.

3. Influencing Uncontrollable Costs

- *Cost of imported water and related upstream charges*

MWD/CWA Pass-Through Rate Due Diligence and Advocacy.

San Diego is heavily dependent upon imported water to meet its needs. It is therefore substantially affected by pass-through rates assessed by the San Diego County Water Authority (SDCWA) and indirectly by the Metropolitan Water District (MWD) which supplies water to the SDCWA from the State Water Project.

San Diego currently has substantial voting representation on both the SDCWA and the MWD Board of Directors. Specifically 10 of the 35 voting members (29%) on the SDCWA's Board represent the City of San Diego. Four of the 21 voting directors of the MWD Board (19%) represent the San Diego County Water Authority. Mr. Barrett, Director of the San Diego Public Works Department, sits on both Boards, with Fern Steiner (a SDCWA representative) serving as Vice Chair of the MWD Board.

While these are unpaid volunteer director positions, the City of San Diego and the SDCWA should have substantial influence over both the policy and fiscal direction of both the MWD and the SDCWA, and should therefore have substantial influence over pass-through water rates assessed by these entities which are ultimately passed-through and paid by San Diego retail rate payers.

In November 2009, the San Diego City Council was asked to approve a 10.6% water commodity pass-through rate increase which translated into approximately a 7.5% rate increase for a typical residential customer. This is the latest in several past and pending water rate increases to be charged to San Diego rate payers. The main justification for the rate increase is that it ultimately reflects increased water rates charged by the MWD.

Essentially, if the Department does not pass through the higher prices it pays to its main supplier, its financial position will deteriorate and its credit rating may be at risk, which has the potential of increasing financing costs. IROC recognizes that the Department has only limited capacity to absorb increased costs without putting its own financial standing at risk.

The November rate increase raised a firestorm of protest in the local media and among some San Diego area public officials (including the Mayor of San Diego) after it was revealed the MWD Board was about to vote on a new proposed union contract whose increased costs would ultimately be passed-

through in the form of higher wholesale water rates to the SDCWA, and ultimately to San Diego City rate payers should the incorporated cost saving measures fail to offset increased vested pension benefits. The MWD Board ultimately rescinded the contract offer due to strong public opposition and returned to the bargaining table to negotiate a better and more cost effective labor agreement.

Although not the main driver of the rate increase, central to the public protest were the following issues:

1. The proposal locked in a substantial contractually vested pension benefit increase; but the cost savings offsets were not locked in and could be renegotiated at the end of the five year labor agreement.
2. Depending upon what happens in those future negotiations, the proposed contract could increase MWD operating costs by $15M per year, or result in a $30M savings. The cost savings were heavily dependent upon the level of future salary increases and the number of employees retiring in the future.
3. The MWD could have negotiated a tougher deal with their unions since there was a 12.2% unemployment rate in California which would probably not have resulted in any meaningful additional employee turnover.
4. The MWD was still going to provide a Cadillac benefits package under the proposed contract - better than that provided in the private sector. For example, they would still have provided two pensions (i.e. a regular pension and an employer contribution to employee 401K plans) under the proposed agreement. There were also guaranteed annual COLAs in the proposed agreement. Rate payers would have paid for this benefit structure in the form of higher rates (as evidenced by the proposed 10.6% water commodity rate increase) in the midst of a deep regional recession when other private and public sector employees were either being laid-off or furloughed, with their benefits packages being cut back or terminated altogether.

IROC fully recognizes that there are several justifiable reasons for the past and pending increase in retail water rates (such as supply restrictions due to court orders enforcing environmental laws, and the potential for materially higher costs for debt service on future water bonds, including those contemplated in the coming November 2010 State ballot). Nevertheless, in view of this recent experience, and in view of the continuing pass-through rate increases being assessed by these water wholesalers on San Diego County retail rate payers, IROC is concerned about the level of fiscal oversight being exercised by San Diego County representatives on both the CWA and MWD Boards. It is also concerned about the level of due diligence being exercised by Department staff over proposed pass-through rate increases.

For example, at the last pass-through rate increase, IROC asked for written evidence that a financial analysis and due diligence was performed by Department staff to ensure that the proposed pass-through rate increase was justified and necessary. Staff was not able to provide the requested written evidence that due diligence had been performed on the proposed rate increase. Staff instead indicated that informal oversight was performed via discussions between Department and MWD/CWA staff at professional group meetings such as those of the California Society of Municipal Finance Officers, and through attendance at budget presentations prepared by MWD/CWA staff.

IROC also inquired whether Department staff utilized the services of the City's intergovernmental relations Department to lobby San Diego County Board representatives on both SDCWA/MWD boards in support or opposition to proposed pass-through rates and organizational budgets. Staff indicated that the services of the intergovernmental relations staff had not been utilized in this manner.

IROC therefore concludes that additional oversight and due diligence is warranted over both MWD/SDCWA budgets, cost structures and their related pass-through rate increases. It also recommends the Department utilize the services of the City's intergovernmental relations staff to represent the interests of San Diego ratepayers before both the Boards and staff of the SDCWA/MWD.

IROC therefore makes the following recommendations:

1. That a formal written due diligence/financial analysis be performed by Department finance staff with respect to all proposed MWD/SDCWA pass-through rate increases, including a recommendation to the Department director, for his use as a board member of the upstream agencies, as to whether or not the rate increase is justified and supportable. Such analysis should incorporate the benchmarking analysis in recommendation #2. We also recommend the due diligence report accompany the proposed rate increase when it comes before the IROC and the City Council.

2. IROC recommends Department staff identify relevant cost and operating metrics applicable to MWD/SDCWA/Department costs and operations, at a reasonably granular level, and benchmark these against comparable public and privately owned water and wastewater utilities across the nation to ensure operations are conducted in as efficient and cost effective a manner as possible.

3. IROC recommends Department staff perform a written due diligence/financial analysis of MWD/SDCWA budgets and labor agreements which incorporates

the benchmarking in recommendation #2. This should include a formal recommendation to the Department director as to whether the budget/labor agreement should be supported or opposed. This due diligence/financial analysis and recommendation should be presented to both Department management and IROC.

4. IROC recommends Department management open a formal working relationship with the city's intergovernmental relations staff and engage them to lobby either in support of, or opposition to SDCWA/MWD, pass-through rate increases based upon the findings and recommendations of the due diligence/financial analysis report specified in recommendation #1.

Pension Costs and Impact on Operating Costs and Rates

There has recently been public concern over the level of public sector pension benefits being granted and their resulting impact on future water rates. For example, the recent MWD proposed labor agreement (which was subsequently rescinded by the MWD Board after public protest) would have spiked the pensions of its 2,000 employees by 25 percent by changing the multiplier for determining an employee's pension benefit from 2 percent times years of service to 2.5 percent times years of service at age 55. This would have added a $35.8 million expense to the MWD cost structure over the next five years alone. Water rates, meanwhile, continue to increase for 18 million Southern Californians, which both retards economic recovery and increases hardship on rate payers.

Review of most water agency public employee pension plans in San Diego County shows that a 30 year employee could retire at age 55 with between 75 and 81% of his last or highest salary. Specifically, a 30 year San Diego County Water Authority employee only contributes1% of his salary toward their pension, but gets a pension benefit equal to 75% of his last or highest salary at age 55. Under the current MWD labor contract a 30 year employee would receive 60% of his highest or last salary at age 55, which would have increased to 75% under the proposed labor agreement. They contribute only 1% of their salary toward this benefit. In contrast, newly hired DEPARTMENT employees, after 30 years of service, will receive 30% of their last or highest salary at age 55 (employees hired before July 2009 have more generous benefits) and contribute 7.5% of their salary toward this and related benefits.

Overly generous MWD and SDCWA pension and benefits costs are ultimately passed through to retail rate payers through higher water rates; or else encroach on Department budgets in the form of reduced resources available for deferred maintenance and capital improvements. Ultimately, overly

generous pension and benefits costs are fiscally unsustainable as the City of San Diego has recently found and begun to rectify.

IROC therefore recommends that the San Diego City Council, and San Diego representatives on both SDCWA and MWD Boards pay closer attention to the level of pension and employee benefits paid to water agency employees; and that San Diego representatives on SDCWA and MWD Boards begin to rein in these costs to preserve an affordable rate structure for retail customers.

4. Allocating Costs Equitably and In Support of Program Goals

Rate Structure

There is a disconnect between the water rate increases (both fixed and variable costs), conservation efforts, and effects on the water bills for the majority of consumers in San Diego. For the most part, the pass through rate increases by MWD through SDCWA are really unavoidable by the City of San Diego. These are accepted "as is" and will have some effect on the increase in the bills of the consumers.

The next issue is that as the citizens of San Diego attempt to conserve, their bills do not reflect this effort in conservation by a monetary reduction. Their water use is significantly less than last year but their overall bill is higher. It is understood that part of this reason is due to the "pass through" rate increase. It is also understood part of the increase is due to the paradox with conservation. Fixed costs to maintain the infrastructure, piping, pumps etc. must be paid, and with the lack of funding from water sales due to conservation, water rates have to be increased on a $/gallon or $/HCF basis.

Still, it appears that there exists a bias against single family dwelling units in paying for these fixed costs. The City of San Diego sets a fixed water based fee (and a sewer fee as well) for each dwelling unit (based on meter size) that inherently penalizes the lowest water users because this portion of the bill makes up a larger fraction of their overall bill. The variable cost fee is imposed in a three tier fashion for the amount/volume of water used, yet really does not provide adequate incentive for individuals to conserve water. Those who dramatically conserve still pay the large fixed fee and some increased rate variable cost. It is not enough incentive to "do the right thing and conserve." There needs to be stricter financial penalties for those that do not conserve, and more reward for those that attempt to conserve every possible drop of water. This may only be possible by adopting a strict, property-

specific multiple-tiered rate structure like that of Irvine Ranch.

5. Partnering with ratepayers

Public Outreach to Promote Program Results

The Public Utilities Department will continue to face challenges associated with quality, sustainability and cost of services to ratepayers. These issues must be adequately communicated to ratepayers by the Utilities and by the policy makers overseeing the Water and Wastewater Department.

Indirect Potable Reuse (IPR)

In particular, IROC believes that the (IPR) demonstration project is key to developing regional water sustainability in San Diego. IPR is critical for San Diego's citizens and water system ratepayers and will reduce our significant dependence on imported water and the associated pass-through costs which we cannot control. It is imperative that the Department implement a highly effective public outreach campaign to ensure stakeholders become fully engaged in understanding the issues and opportunities to best ensure the quality and sustainability of San Diego's essential water resources at a reasonable and affordable cost to all water system ratepayers. The City expects to select a contractor to perform these services in early 2010. Accordingly, IROC will actively review the comprehensive community education and outreach efforts that will be conducted by the contractor and the associated costs to ensure funds are adequately and appropriately utilized.

Non-Potable Use (Purple Pipe System)

The City recently entered a cooperative agreement with San Diego Coastkeeper to conduct a Recycled Water Study with the objective of evaluating alternatives for the City to maximize recycled water use, both potable and non-potable, thereby off-loading the Point Loma Wastewater Treatment Plant (PLWTP). As part of that study, non-potable use (purple pipe) will be evaluated. The Department had indicated that a recycled water rate study is currently underway. Also noted by the Department was Council's adoption of a Legislative Program proposed by the City's Intergovernmental Relations Department in February 2009 that included an initiative to "Seek state legislation to establish a tax credit or rebate program for reclaimed water retrofit costs. This would be a similar program to what is offered to utility customers who install systems that generate solar powered electricity." IROC recognizes that commercial, industrial and other business stakeholders have made significant investments in capital infrastructure in planning to utilize the City's reclaimed water. IROC encourages the Department to review its current cost of installing purple pipe (particularly in comparison to the cost of IPR), and in

conjunction with stakeholder outreach, consider the various opportunities for significant potable water savings by expanding purple pipe in a cost effective way, utilizing grants, stimulus funds, or joint partnerships/cost sharing with commercial/ industrial and other stakeholders.

Proactive Public Messaging Campaign

Regarding the activities surrounding the Pt Loma Modified Permit, IROC recognizes the need for public information and education from the City's point of view versus the local newspaper's public messaging. Recent Union Tribune articles seemed to imply that the City was getting away with something by having a "waiver", when in fact the Environmental Protection Agency and the Regional Water Quality Control Board agreed that the PLWTP fully protects the ocean, by incorporating: industrial source control, advanced primary treatment of wastewater, a deep ocean outfall and comprehensive environmental monitoring of the ocean. It is essential that San Diego water users be timely educated and engaged in more comprehensive discussions of the various challenges our community faces in terms of water quality, higher future imported water costs and of risks to supply. IROC suggests a priority focus on a proactive public messaging campaign controlled and driven by a central point of contact at the Department.

Point Loma Modified Permit

IROC's previous discussions with Los Angeles officials having responsibility for the Hyperion wastewater treatment plant emphasized the importance of a comprehensive educational campaign, to ensure the public understands the difference between "advanced primary" versus "full secondary" treatment, and what an investment in approximately $1.5 billion to move from advanced primary to full secondary really buys in terms of water quality. According to the plant's staff, the public outrage at the time was the result of urban runoff that caused beach closures, and was a distinctly separate issue from wastewater treatment, but the public's perception was that the wastewater treatment process was inadequate; hence the recommendation for the Public Utilities Department to be proactive in fully educating the public on the issue of the Point Loma modified permit and other activities.

Water Conservation

The City has been very successful in creating a public outreach campaign for water conservation through the "No Time to Waste, No Water to Waste" campaign, as well as informative web pages and other public outreach efforts with the Mayor and Council offices, such as town hall meetings. Early results indicate that customers have saved more than the reduction targets. IROC will

continue to monitor the water usage results and work with the Department to address the continued challenges of informing and engaging the public.

Rate Structure

The Department is in the process of developing new Water and Wastewater rate models, with the goal of further incentivizing water conservation. IROC recognizes that while a full cost of service study was completed in December 2006, just prior to the presentation of new proposed water rates for fiscal years 2008 through 2011, a recalibration of the existing rate structure (to achieve the goals of providing adequate incentives to those who practice significant water conservation and disincentives to those ratepayers who utilize water or produce wastewater at levels significantly above that of their ratepayer peers) may be necessary. IROC will continue to monitor the Department's activities in this area to ensure there are timely and appropriate outreach efforts to the affected stakeholder groups.

IV. IROC Activities

In the ordinary course of our activities, we actively review and in some instances challenge and request changes to the specific costs, timelines and purposes of a number of actions, projects and goals of the Department. The nature and level of our review is evidenced in the agendas and minutes of IROC's monthly meetings and of those of its three subcommittees. These are available at www.sandiego.gov/mwwd. IROC meetings are open to the public, and meeting times, place and agendas, along with all materials reviewed, are posted in advance at the same website.

During FY 09, IROC's agenda included the following:

Finance

- Proposed pass-through rate increase (July)
- Otay Mesa trunk sewer fees (July)
- Noticing of rate increases for pass-through and for IPR Demonstration Project (August)
- Water Department DRES update (August)
- Grant: Dulzura Conduit (September)
- Sale of surplus wastewater treatment capacity (September)
- Department consolidation (October)
- Bid to Goal program overview (October)
- Performance audit ("report card") (October)
- Transnet grant: Proctor Valley (November)
- Revenue impact of water conservation (November)
- Budget update (December)
- Debt financing update (December)
- Fluoride funding contract (December)
- FY08 performance report (January)
- Integrated Regional Water Management Planning: grant opportunities (January)
- Fluoridation funding request (February)
- Public Utilities debt financing plans (March)
- Bid to Goal verification audit and gain sharing (March)
- Wastewater debt financing/preliminary official statement (April)
- Water preliminary official statement (May)
- Quarterly budget review (May)
- CIP prioritization methodology (June)
- Upcoming rate cases (June)

CIP

- Pilot Production Wells Project (September)
- South Mission Valley trunk sewer (September)
- Point Loma Wastewater Treatment Plant: update on modified permit (December)
- CIP program update (February)
- Fluoridation project design/build (April)
- Flume reconstruction (April)
- Lake Murray trunk sewer (May)
- Carmel Valley Recycled Water pipeline (June)

Conservation

- Water emergency declaration (August)
- Water conservation in multifamily projects (December)
- Water allocation plan (January, February and April)

Planning

- Water Facilities Master Plan (September)
- Water supply assessment process (October)
- Sewer system management plan (January)
- Urban water management plan consultant agreement (January)
- Water Facilities Master Plan (March)

IPR

- IPR Demonstration Project status (July)
- IPR demonstration project: limnology and reservoir detention study (January)
- IPR update (June)

Other

- History of Metropolitan Wastewater Commission/JPA (July)
- Water bill inserts (October)
- AMR implementation (November)
- "Process" water discussion (February)
- American Recovery and Reinvestment Act (May)

Plant Tours

During FY 09, as part of its program to better understand the challenges and opportunities of full scale IPR, and of full secondary wastewater treatment, IROC also traveled to Los Angeles and Orange County to inspect and review major plant operations. In July, IROC visited the Los Angeles Hyperion Treatment Plant, where we toured the facility and met with current and former senior management to understand the conditions that led to the decision to move to full secondary treatment. In December, IROC traveled to Orange County to tour the Orange County Ground Water Replenishment Facility, which treats wastewater to a level of purity that exceeds that of imported water, and injects it into the local aquifer for eventual reintroduction into the local drinking water supply.

In addition to the activities of "full IROC", the following activities were conducted by IROC's three standing subcommittees:

Finance Subcommittee

The Finance Subcommittee did the following activities and actions during 2008-09, the initial year of its operation.

Capital Improvement Program

The subcommittee performed ongoing oversight of the Department's capital improvement programs. Representatives of Department provided the subcommittee with updates on year-to-date expenditures, committed encumbrances, related rate case estimates and current forecasted costs for the top 15 CIP projects scheduled for fiscal year 2009.

Representatives of Department provided year-to-date expenditure information on CIP projects scheduled for fiscal year 2009, which covered numerous projects including water and sewer main replacements projects, ground water projects, pipeline replacement projects, pump station projects, reclaimed water pipeline projects, water storage facility projects, water and wastewater treatment plant projects and other miscellaneous water and wastewater Department projects throughout their respective systems.

Water and Sewer Rates

The Subcommittee reviewed current water and sewer rates with Department representatives. The Department provided the subcommittee with a copy of the current MWWD rate schedule for each class of ratepayer, showing fixed and variable components, a summary of the current aggregate number of

MWWD ratepayers in each ratepayer class, and an estimate of the average monthly sewer/wastewater bill for each class of MWWD ratepayer. They also provided a copy of the remaining annual scheduled increases in wastewater/sewer rates that was approved by the San Diego City Council in November 2007.

Department representatives provided the subcommittee with a summary of the current aggregate number of water system ratepayers by ratepayer class; and the Department's current estimate of the average monthly water bill for each class of water ratepayer.

Based on this review the Subcommittee discussed alternative rate structures with a view toward encouraging water conservation thru the rate setting process. The Subcommittee reviewed where each Department stands on the potential use of Universal Tiered Rates that vary within each ratepayer class based on volume of metered water delivered to each customer or the volume of metered wastewater produced by each customer. The Subcommittee also reviewed where each Department stands on the potential use of "peak use" pricing of customer water use / wastewater production

Rate Modeling Software

The subcommittee reviewed the current financial modeling software used in the establishment, maintenance and alternative analyses of rates to be allocated among the categories of users/customers with Department representatives. The Subcommittee concluded that a replacement, updating and expansion of the rate determination and analysis software would be in the best interest of the ratepayers and supported contracting with Raftelis to produce a new financial model since it had the appropriate level of experience necessary to facilitate an economical and timely development of this software.

Recycled Water Production and Capacity Utilization

The Subcommittee investigated recycled water production and capacity utilization at the North City and South Bay recycled wastewater plants with Department representatives.

The North City Plant's maximum capacity was designed for approximately 30 MGD (million gallons of production each day). Currently, the North City Plant is operating at a maximum of 22.5 MGD. The Subcommittee found that an average of between 1.5 MGD and 7.3 MGD are being delivered to the plant's recycled water customers, with the highest one-day recycled water customer demand level so far in 2008 being 12 MGD. Wastewater produced

by the plant that is not either internally used or delivery to the plant's recycled water customers is transferred back into the wastewater system for processing at the Point Loma Plant before being transferred into the Pacific Ocean.

The South Bay Plant's maximum capacity was designed for approximately 15 MGD (million gallons of production each day). Currently, the South Bay Plant is operating at a maximum of 8.6 MGD with average usage of between 0.8 MGD and 6.2 MGD. The highest one-day recycled water customer demand level so far in 2008 had been approximately 6.9 MGD.

Members of the Finance Subcommittee questioned the fact that a meaningful portion of both plants' recycled water capacity was being processed into the ocean every day. This inefficiency arose from the limited build out of the purple pipe system at the time these plants were designed and put into service (North City in 1997 and South Bay in 2002). This in turn has resulted in an inability to attract sufficient commercial recycled water customers to effectively utilize both plants MGD capacity - despite the very attractive pricing of the recycled water - at $.80 per hundred cubic feet (HCF) of water delivered, as compared to the standard charge of $2.606 per HCF currently being paid by similar commercial and industrial customers for potable water.

The Subcommittee found that a much greater effort needed to be made to increase the utilization of the processed recycled water and to significantly reduce, if not eliminate, the portion presently being returned into the wastewater system.

Service Level Agreements (SLAs)

The Subcommittee reviewed Department's service level agreements entered into as either a receiver or provider of services, with other Departments or agencies of the City of San Diego, for the Fiscal Year Ended June 30, 2008.

SLAs involving the Water Department as a client with Dept. #102 (Purchasing & Contracting/Contracts; with Dept. #102 (Purchasing & Contracting/Procurement); with Dept. #539 (Office of the CIO); with Dept. #538 (General Services/Station 38); with Dept. #820 (General Services/Equipment Division); with Dept. #850 (E & CP Water & Sewer Design); with Dept. #777 (MWWD (IROC) Independent Rates Oversight Committee). It also reviewed for reasonableness and cost effectiveness SLAs with the Water Department as a service provider to Dept. #773 (MWWD – General) and with Dept. #70232 (P&R – Open Space (MAD) Miramar Ranch North.

SLAs involving the MWWD as a client with Dept. #102 (Purchasing &

Contracting/Contracting/EOC; with Dept. #890 (Community Service Centers); with Dept. #758 (ESD – Household Hazardous Waste; and SLAs with the MWW Department as a service provider to Dept. #760 (IROC support for the Water Dept.) were also reviewed for reasonableness and cost effectiveness.

Infrastructure Finance

The Subcommittee reviewed the status of the pending MWWD May and June 2009 public financing initiatives with representatives of MWWD. All members of IROC had been provided with a digital copy of the Preliminary Official Statements and Engineering Feasibility Study supporting the two pending Wastewater System Sewer Bonds (2009A) & Sewer Refunding Bonds (2009B) financings.

Environmental and Technical Subcommittee

The IROC E&T Subcommittee addressed the following issues during the reporting period:

Metrics for an effective performance audit (July and August, 2008)

Update on the progress of IPR (July, 2008)

Update on the Modified Permit for the discharge from the Point Loma Wastewater Treatment Plan (July, 2008)

Optimal rate of investment for the Water and Wastewater Utility systems (July, 2008)

Progress of the Modified Permit and the future steps (September, 2008)

Performance element of the IROC Report Card (September, 2008)

More on the IPR Demonstration Project (September, 2008)

Plan to tour the Orange County wastewater reclamation plant (October, 2008)

Risk analysis, vulnerability, and security issues with respect to the Water and Wastewater systems (October, 2008)

Progress of the current Capital Improvement Projects in light of the shifting of more work from the utilities to the ECP Department (October, 2008)

Transfer of information from operation and field staffs to the ECP Department in view shifting of more work from the utilities to the ECP Department (October, 2008)

Update on the structure of the planned IPR demonstration program and the Independent Advisory Panel (November, 2008)

Technological advances that may contribute to water conservation including sub-metering and remote meter reading (November, 2008)

More discussion on risk analysis, vulnerability, and security issues (November, 2008)

What E & T Subcommittee issues should be emphasized in the IROC annual report (November, 2008)

Observations from the IROC tour of the Orange County Water Reclamation Plant, especially their pre-project public education effort (January, 2009)

Cost of water main breaks to the Department and outside the Department (January, 2009)

Status of the application to the EPA for the Modified Permit, the Tentative Agreement, and the possible agreement between environmental organizations and the Department (January, 2009)

Steps needed to implement an operational IPR system (January, 2009)

More on Asset Management: What is the optimal level of pipeline and facility replacement for the Water and Wastewater Divisions (February, 2009)

Cost of water main breaks (February, 2009)

Update on the IPR Demonstration Project (April, 2009)

Previous report on possible different configurations for the Wastewater System (Consumers alternative) (April, 2009)

Sub metering for multifamily water users (April, 2009)

Endocrine disrupters, impacts on health and water quality and source control (April, 2009)

Water Facilities Master Plan – CIP prioritization methodology (May, 2009)

Carmel Valley water pipe break (May, 2009)

History of San Diego wastewater Modified Permit and current permit application (May, 2009)

Pharmaceuticals in the wastewater, the impacts on IPR, and potential source control (May, 2009)

Wastewater Treatment Division's ISO audit and the ongoing recertification process (June, 2009)

Impact of construction equipment on the spreading of Giant Reed (Arundo Donax) (June, 2009)

Gray water systems (June, 2009)

IROC annual report

Education and Public Outreach Subcommittee

The subcommittee reviewed, discussed and commented on the Department's messaging in the following areas:

1. City's Water Emergency Campaign to heighten public awareness and influence customer use behavior
2. Water conservation messaging to residents of multi-family buildings
3. Creation of an outreach plan and calendar to raise IROC's public visibility through the media and community organizations
4. Water Department website information on water emergency, the Drought Watch, water conservation, product rebates, water saving tips for residential and commercial customers and assorted other information. The challenge is how to ensure people are seeing these important messages and how to explore other avenues to reach customers to promote water conservation.
5. IROC Outreach to Council members and invitation to IROC meetings
6. Department's Water Allocation Plan/Methodology, Stakeholder Meetings and Public Forums, Stakeholder involvement to define "process water" and consideration of allocation exemptions
7. Rate Increases
8. CWA program on water allocations
9. Public outreach associated with gaining public support for the Modified Permit to Secondary Treatment Planning for "beyond the current permit".
10. Update from staff on what is envisioned as the next steps and potential outreach efforts planned (events, steps, list of contacts/corporate boards to

target to support project, timing, etc).
11. UCAN Insert review
12. Cost of Service Studies (CSS) for water and wastewater
13. Public outreach "suggestions" made by Los Angeles Hyperion staff during IROC's visit and educating the public on what secondary treatment means.
14. IPR Demonstration Project, RFP and Outreach Efforts
15. Planned disposition of pharmaceuticals from hospitals/hospice/medical offices into the ocean

Finally, IROC's chair sits as an ex officio member on the Metropolitan Wastewater Commission JPA, and Metro TAC, both of which meet monthly.

Appendices

- Ordinance
- Bylaws
- Management Response to IROC FY08 Annual Report