WILLKIE FARR & GALLAGHER LLP **MEMORANDUM**

TO: Files

CC: Audit Committee

FROM: Willkie Farr & Gallagher LLP

RE: Interview of Richard Mendes, September 28, 2005

DATED: October 28, 2005

On September 28, 2005, Michael Schachter and Sharon Blaskey interviewed Richard Mendes on the third floor of the City Administration Building. Mr. Mendes was not represented by counsel. Nobody else was present at the interview.

The following memorandum reflects my thoughts, impressions and opinions regarding our meeting with Richard Mendes, and constitutes protected work product. It is not nor is it intended to be a transcript of the interview.

Warnings

Mr. Schachter began the interview by explaining that we are attorneys from Willkie Farr & Gallagher LLP, that we represent the Audit Committee of the City of San Diego (not Mr. Mendes), and that the Audit Committee is the holder of any privilege and can waive it if it chooses, which it may do. He described that the Audit Committee will write a report, which could be shared with KPMG and the governmental agencies that are conducting investigations. He said that the information we are gathering could be used in the report, and he therefore emphasized the importance of giving accurate and truthful testimony.

Background/Education

Mr. Mendes began to work for the City of San Diego ("the City") at the end of October 2001 as the Utilities General Manager, with responsibility for oversight of the City's water and wastewater functions.

Prior to coming to the City, he was the Deputy City Manager of the City of Cincinnati for 10 years. Prior to that he worked in Environmental Services for the City of New York as the Deputy Commissioner in charge of various groups, including those dealing with environment and sewer/water quality issues, customer service, and business-related water issues. Before that he was a professor at Cal State. The position that he filled in the City was a new one, and the primary purpose for its creation was to "get at some of the issues on the water side." Prior to his joining the City, there had been issues in the management of the water department. Black & Veatch had done a study of water issues and the City wanted to bring someone in to address them. On the wastewater side, the City wanted to bring someone in to address spills in the collection system. Regarding the structure of the department, at one time water and

wastewater had been one department. They were later separated into two departments during a period of construction on the wastewater side. The creation of his position marked an attempt to bring the two departments back together.

Wastewater Issues

During the hiring process, Mr. Mendes met with George Loveland (Senior Deputy City Manager at that time) and Mike Uberuaga, at which time they spoke with him about certain issues with the water department. He believes the issues pertained to unbilled accounts that had caused some concern a few years earlier. Council had commissioned a study before his time, and was unwilling to approve water rate increases until the situation was addressed. Practically speaking, this meant that for some years the water department had no capital financing. One of his first tasks was to address the study and to work with the Public Utility Advisory Commission and work on new rates. These rates were approved in the Spring of 2002. He does not think the issue of sewer user rates was addressed with him during the hiring process.

As the Utilities General Manager, Mr. Mendes's job was to direct the activities of the water and wastewater departments, including operations, management, billing and collections, day to day operations, and capital construction and budget. As of the time Mr. Mendes began his position in late 2001, Larry Gardner was the head of the water department and Scott Tulloch was the head of the wastewater ("MWWD") department. Bill Hanley reported to Tulloch and worked on contracts, Alan Langworthy worked on technical items, and there were another couple of people in charge of management and planning. Tulloch had five deputies reporting to him.

At least as of late 2001 when Mr. Mendes joined the City, Dennis Kahlie worked in financing services (not the wastewater department), and he was under a different chain of command than Mr. Mendes. Kahlie's responsibilities included bond, debt service, and cost of service work for wastewater and water. Kahlie reported to the Treasurer, Mary Vattimo. There was "some" interaction between the financing and operations sides, but mainly at the Deputy Director level or lower, as data was funneled to financing for them to be able to do their work. Now Mr. Mendes is Deputy City Manager with his original functions and some additional ones. In total, there are three Deputy City Managers left now. There were five at one point. When Uberuaga left and Lamont Ewell became City Manager, Loveland became assistant behind Ewell, and Mr. Mendes picked up some of Loveland's duties. Then when Loveland retired (about 18 months ago), Mr. Mendes picked up the rest of Loveland's duties.

Tulloch was the head of wastewater since Mr. Mendes first started at the City. Hanley was in a deputy position for that whole time, until he retired about one year ago. Hanley was responsible for contracts and financial issues – in other words, he was the business person. He had oversight of the budget (which function was not in financing services), and was in charge of contract management and revenues.

Exhibit 1 (Vattimo 683 - COS 007244), an email reply from Mr. Kahlie to Vattimo and Frazier, dated 10/24/01, was not shown to Mr. Mendes at the interview since he is merely referenced in the email but is not shown to have received it. The document refers to an issue regarding reclaimed water. The issue had to do with the proper allocation of cost between sewage and water funds and the distribution of water. Reclaimed water is the reuse of

wastewater that receives tertiary treatment and can therefore be reused. The City has two plants that are capable of treating wastewater at the tertiary level. Sewage is treated and then the water department gets that treated water. These plants with tertiary capabilities are North City and South Bay. They only treat the amount of wastewater that the City has a use for (which is not up to their full capacity), and the rest gets primary treatment. The treatment and reuse of wastewater creates cost allocation issues, including whether the treatment cost should be borne out of water or wastewater funds. Specifically, the issue in this email was to what extent the use of reclaimed water was a benefit to sewer users and to what extent it was a benefit to water users, an issue which affects how to set the rates for reclaimed water.

Mr. Mendes was then shown the following documents: (1) Exhibit 2 (COS 0000026) (Irvine 453), an email from Kahlie to Loveland, dated 1/702, re: "Sewer 218 Closed Session Issue;" (2) Exhibit 3 (SWRCB 1222), the Sewer Cost of Service Stakeholders Group final report (September 14, 2000-May 3, 2001); and (3) Exhibit 4 (no bates), the Black & Veatch ("B&V") draft Cost of Service Study ("COSS") dated 11/30/01. He said he was familiar with each document but does not know when he saw them for the first time.

Regarding Exhibit 4, the B&V draft study, he thinks he saw it somewhat later than the date it bears (November 30, 2001). When he began in his position, the COSS work was not done within the departments under Mr. Mendes's control, but within financial services. Such work included rate modeling and debt issuance. Financial services would consult with Mr. Mendes's department on certain substantive aspects pertaining to the study, for example, to ascertain where the plants are located, and to ascertain revenue on a working level, but the studies themselves were not under the control of the wastewater department.

When Mr. Mendes began as the Utilities General Manager for the City, he was already generally familiar with State Revolving Fund ("SRF") loans. He knew the water department had received grants, but thinks that by the time he got here the program had switched from grants to the SRF loans. The SRF loans he had been familiar with prior to working for the City were from a different state, and so were different than the City's. He understood that the government used to give grants for wastewater treatment, and then to leverage that position the State converted to the loan program and subsidized the loan interest. In the loan program, treatment of wastewater is emphasized over wastewater collection. Mr. Mendes always knew that the loans carried certain compliance requirements in the form of guidelines, though he was not familiar with California's specific provisions until he began working for the City. At some point he came to understand that there were guidelines that specifically governed municipalities' setting of sewer user rates. He understood the underlying principle of the requirement to be to charge people for the actual cost of the service provided to them. However, it took him a long time to understand the requirement that in allocating costs there needed to be a measurement of costs related to removing organics from the water. There are arguments for and against including organics in the rate structure, and California's treatment was much different than elsewhere. He knew that Anchorage, Alaska was the second largest city behind San Diego that had a waiver to only perform primary treatment, and he understood that they were not charging for organics removal. It was an issue to him whether organics removal was even required given the nature of San Diego's treatment process.

Mr. Mendes is not sure when he was first presented with the issue of whether the City was correctly setting sewer user rates. He thinks it may have been brought to his attention in the barrage of materials he received when he first arrived, because he is guessing that, among other materials he received, he would have received the stakeholder study. Mr. Mendes emphasized that wastewater was not his area of focus when he first began working for the City since he was focused on water issues. The January 2002 closed session occurred a few months after he began with the City, and he recalls that the issue addressed at that session was whether sewer rates needed to be noticed under Proposition 218 ("Prop 218"). His understanding of the Prop 218 issue was that there was an issue as to whether notice was required in order to comply with Prop 218, but that "out of an abundance of caution," the City was following noticing provisions. He also recalls that at that closed session there were discussions about whether: (1) the State had a legitimate argument on Prop 218, and (2) whether the State had a valid position in requiring organics to be included in the sewer rate cost structure. He recalls that the latter issue of whether the State had a valid position in requiring the inclusion of organics was referred to the City Attorney's Office (the "CAO") for the CAO to issue a report. He said that the closed session was the last he heard of that issue until the Fall.

In looking more closely at Exhibit 3, the Stakeholders Report, Mr. Mendes confirmed that in his first few months on the job, he probably saw the Report but that he would not have "focused on it," nor would it have struck him as one of the "more pressing issues." Mr. Schachter referred Mr. Mendes to the conclusions and recommendations section of the Stakeholders Report (at SWRCB 1232) and Mr. Mendes stated that he does not specifically recall reviewing it prior to the January closed session. Prior to the closed session he only would have given thought to the issue to the extent the issue was identified as a State requirement to impose that charge, and in that context, whether or not that was a valid requirement or whether Council had policy reasons for allocating cost in another way. He thinks he talked to Tulloch and Hanley about this issue before the closed session and that they told him that there had been a stakeholders group, it had been contentious, and that part of the group splintered off and had a dissenting opinion. Those with the dissenting opinion were industrial users who felt the City was not fairly treating the industrial users' position. By the time he would have learned of this, the stakeholders' process was finished. As explained to Mr. Mendes, while the conclusions were listed in the Report, a substantial group did not agree with them, and the members were told that they had no discretion as to whether to include an organics component. His impression was that staff-to-staff discussions between financing services and the State were that the organics parameter needed to be included and the methodology arrived at in the Report would work. Mr. Mendes did not have a clear understanding as to whether the requirement was black and white because he was unclear as to whether this requirement was a requirement of the SWRCB, whether it had been challenged or asked about, and whether there were other methodologies that would also have been acceptable to the State.

In reviewing Exhibit 4, the draft B&V study, Mr. Mendes could not recall when he first saw it. He again reiterated that this compliance issue was not prominent on the list of issues he dealt with in his first few months with the City. He does not know whether he was given this draft or not. Since he was given many COSS's, he believes it was likely he would have been given this one, but he does not recall. He is familiar generally with the conclusions in it, and understands that the COSS recommended there be an organics parameter in sewer user rates. It was his understanding that the State had asserted that an organics parameter must be

included. At some point he saw the study and understood that an outside consultant concurred. He does not recall speaking about this issue with people within the City other than Hanley and Tulloch, though he thinks it is possible that he may have met with Kahlie about it. Mr. Mendes again reiterated that this issue of compliance with the sewer rates was not his focus.

Exhibit 2 (COS 0000026) is an email from Kahlie to Loveland, dated 1/7/02, re: "Sewer 218 Closed Session Issue." For context, Mr. Schachter described to Mr. Mendes that the closed session took place on January 29, 2002, based on a closed session report that lists Mr. Mendes and others as attendees. Regarding the second paragraph discussing the issue of a "lifeline rate," and Prop 218's prohibition of having one, Exhibit 2 states that "This is a policy question for mayor/council that we wouldn't be bringing up at this time except that it bears on how we finalize and present the results of the sewer cost of service study." Mr. Mendes does not recall specifically how that issue was tied into the COSS, nor does he recall what he thought of the issue at the time. His guess is that they are talking about whether changing the rate structure and how people pay would impact the noticing provisions under Prop 218. He explained that if the City intended to change rates, it would have to publish notice under Prop 218. He guesses that the reference to the impact on "how they finalize" the COSS meant that they were aware of the issue of the significant user group disagreeing with the methodology and the issue was "how you end that issue." Mr. Mendes believed that the sentence in the third paragraph regarding "we'll give bond/disclosure counsel some heartburn" if the City were to "reverse course on dealing with Prop 218" related to the issue of the lifeline rate in the case that the City took the position that it would not need to comply with Prop 218. He understood regarding the reference to "Jarvis Taxpayers" that Jarvis was the "protector" of Prop 218 and therefore was the group most likely to challenge any assertion by the City that Prop 218 did not apply to sewer rates.

Mr. Mendes described closed sessions generally as "when Council meets privately without public participation," which he elaborated is permitted in different states for different reasons. According to Mr. Mendes, the CAO decides whether an item is appropriate for closed session. Before the January 29, 2002 closed session he understood that whether or not the City needed to comply with Prop 218 would be discussed. He does not recall whether he talked to anyone to prepare for the meeting. His best recollection of what happened at the meeting is very vague. He describes that this is probably the first closed session he ever sat in on. At that time, deputy City managers (himself included) all sat on the side as "the peanut gallery" for most of the closed session in case any questions came up. He remembers in general that at that session some councilmembers questioned whether the City needed to comply with Prop 218, and whether the requirements were legally mandated. He recalls Council asking the CAO for an opinion and their decision not to move forward until they received it. He does recall a conversation about the City's rate structure and the organics requirement, but cannot recall how the discussion moved there from Prop 218. He does not remember who told the City about the requirement. He thinks it might have been someone on the legal side. Nor, of the closed session, does he recall a heated exchange between Kahlie and Madaffer. Of the discussion regarding the organics requirement, he does not recall the exact nature of it and only recalls general discussions that City staff had dealt with State staff and the State had put forward the position that an organics component needed to be included in the rate structure in order for the City to be in compliance with the SRF's. He recalls councilmembers asking if there was a legal opinion stating the requirements. He does not know whether it was Madaffer who asked this question.

In general Mr. Mendes has heard Kahlie review "a number of times" the potential consequences for not complying with the State's requirements, but he cannot recall whether that occurred at this closed session. Kahlie has reviewed those consequences in meetings with the public and also with City staff. In those meetings, Kahlie described the consequences that SRF loans could be called, the City could be forced to repay them, and other grants were also at risk. Mr. Mendes remembers different numbers characterizing the size of the risk, all of which were around $300 million (depending on how people were counting). He does not have any specific recollection about discussing numbers at the closed session. Nor does he recall anything specific that Kahlie said or even whether Salt was at the session. He recalls that Frazier was there but does not recall her saying anything, nor does he recall saying anything himself. In response to the question of who did most of the talking on the issue, Mr. Mendes said that "it could have been" Les Girard or Leslie Devaney. Mr. Mendes explained that generally at that time, the presentation was in the hands of the CAO, but sometimes City staff were there to assist. He surmised that the presenters could have been a combination of Girard and Kahlie, as a subject matter expert.

Mr. Mendes looked at Exhibit 5 (MWWD–BH 0287), a B&V report dated 1/15/02. While he does not recall this document specifically, he is familiar with its substance. At MWWD-BH 0289, in the Executive Summary of the Report, the Report states that "As a recipient of various federal grants and State loans, the City is obligated to comply with the SWRCB's Revenue Program Guidelines…" Mr. Mendes was asked whether that statement was consistent with Mr. Mendes's understanding prior to closed session, and Mr. Mendes responded that it was consistent with his understanding of the State's position. At MWWD-BH 0292, under the section entitled "Cost Allocation," the Report states that "We recommend the continued use of the functional-design method in allocating costs to the wastewater parameters of flows, TSS and COS and the allocation of costs to the user classes proportionate to their use of the wastewater system." The Report goes on to describe that decreases in residential revenues would be offset by increases in industrial classes (attributable to BOD/COD parameter). These statements in the B&V Report were consistent with his understanding of what the consultants were recommending and what effect the rate change would have. At the time of closed session he does not recall knowing whether there was a "finalized" B&V study. He knew there was a draft at that time but does not recall what shape it was in. Nor does he recall whether the study was discussed at the closed session.

In responding to the question of what he took away from the closed session, Mr. Mendes responded that he had a sense that Council wanted something definitive from the CAO that would confirm that the position expressed by City staff was mandatory and that Council did not have any other policy or other options. At closed session he does not recall discussions about any political ramifications of changing sewer rates nor any discussions about Kelco. Again, Mr. Mendes stated that "this" (apparently meaning compliance with State requirements to include an organics component) "was not an issue he was focused on at the time." Generally he does recall that Kahlie was "frustrated" with Council's approach. Mr. Mendes had that sense from meetings with Kahlie around the time, and learned that this change in rates was something Kahlie had recommended for a long time. Kahlie said he had been "holding off the State" on this issue for some time. Kahlie felt that the stakeholders group was "usurped" by a clique of industrial users who tried to prevent the changes. Kahlie felt that he was the scapegoat of the stakeholders group. Mr. Mendes learned that there was an amount of "enmity" that had arisen between Kahlie

and the industrial users which extended beyond professional disagreement and moved to whether or not the tactics were fair (on both sides). But as of the time of the closed session meeting, when Mr. Mendes left that meeting, he did not share these frustrations because he was "too new." The only thing that sticks out from the session was that Council asked the CAO for an opinion. He recalls that the Mayor led the discussion about the sewer rate change and that "Madaffer had a bunch of questions." Specifically he recalls Council wanting to get to the issue of whether they were legally bound to do it. He does not recall any discussion about whether the ramifications (recalling loans) would have to be disclosed to the market, nor does he recall discussions about advising bond disclosure counsel of the issue.

Mr. Mendes described his contact with Ron Blair of the SWRCB as limited. Specifically, he stated that the only time Mr. Mendes ever spoke or was with Blair was at a meeting with a sub-committee of the Public Utilities Advisory Commission ("PUAC"), which was much later than the closed session. Outside of that situation Mr. Mendes has no recollection of ever speaking with Blair. He does not recall a conversation with a project engineer regarding an SRF wet-weather loan, in which the engineer said Blair and "Richard" discussed some issues. (See Exhibit 6 (COS 00007247), email from Mick Gammon to Hanley, dated 1/31/02, re: "Fwd: Requirements for draft revenue program.")

Exhibit 7 (no bates), a document dated 9/23/02 from Zeleny's files, is entitled "Request for Council Action." Richard Enriquez is listed as a contact for information. Mr. Mendes described that Enriquez is in charge of keeping track of grants and loans, among other things. Attached is an ordinance "authorizing and accepting State revolving fund loan program contracts." Mr. Mendes recalls that a new loan was being requested in September 2002. He said there was no concern about requesting a new loan from the State at a time when the City may not be in compliance with the State's requirements. The issues on these loans were whether to do zero or low interest. There were some issues later on about subordination of them against other debt (particularly on the water side), but whether or not to accept loans when the City was not in compliance was never an issue that he was aware of. He thinks he assumed that because the City continued to apply for and get the loans, the issue of non-compliance with the requirements was not an issue for participation in the program.

Exhibit 8 (Eric Adachi, 7 CAB MS7B, COS Box 1, Folder "D" 0001) is an email from Kahlie to Ryan, Loveland, Salt, Vattimo, Frazier and Mr. Mendes, dated 11/13/02, re: "Revision #2 to Sewer COS Briefing Document." Mr. Mendes believes he saw the attachment to this email ("Salient Points, Sewer Cost of Service Compliance Issue, November 13, 2002") at a later date, but does not recall this email. He offers as a possible explanation that in early to mid-November, 2002, Mr. Mendes was in the hospital for a few months until early 2003, and during that time he had no work contact. He explained that this email would have been around that time. He does not recall attending a closed session meeting in November 2002. but thinks he would have been in the hospital then. However, he does think he saw the "Salient Points" attachment at a later time. "Months and months" after he returned to work he recalls there was a briefing for the Mayor, and as background material he recalls seeing this memo. He does not recall discussing the preparation of this document with Kahlie.

Exhibit 9 (no bates) is a memo from Vattimo and Salt to the Mayor and City Council dated 11/14/02. He characterized this as a "legal opinion on what the City needed to do"

and he believes he saw it for the first time after he got back from the hospital. Subsequent to the January 2002 closed session until the time he went to the hospital, Mr. Mendes stated that he would have conversations with Loveland (to whom Mr. Mendes reported) from time to time on the compliance issue. At times Mr. Mendes suggested to Loveland that they should go talk to the SWRCB Director to see where he stood on the compliance issue, in order to "put to rest that this was just a staff person saying it needed to be done," and therefore the instruction did not carry the weight of the Board. Other than those occasional conversations that was "pretty much it" since his focus was on adjusting the water rates at that time. His opinion of the compliance issue was that he thought it was an issue that needed to be resolved, which is why he suggested talking to decisionmakers at the SWRCB. Loveland told Mr. Mendes of the issue that he would consider talking to the SWRCB and to Kahlie. Other than that, Mr. Mendes does not recall the issue being "the subject of any discussions." Regarding Exhibit 9, he did not have discussions with Salt or Vattimo about the preparation of the memo. If the memo was circulated in draft to a variety of people that worked for him at the time, he does not recall seeing it at that time. In fact, Mr. Mendes said of the documents he produced in response to the Cost of Service subpoenas that, for the most part, he collected those materials in 2003 when he "got more involved in the issue." Mr. Mendes does not recall any discussions with Hanley about the CAO's opinion on the issue.

Mr. Mendes returned to work after being in the hospital at some time in January 2003. At some point after that he saw Salt's memo and Kahlie's Salient Points memo. When he had a general conversation with Loveland upon his return, "just catching up," was when he learned that the COSS's were underway and would be redone. The water COSS was also being redone which he learned was in connection with Frye's request to make sure that the City was fully recovering cost from developers. The decision was made to redo the sewer COSS because the data was from the old one was "stale." This was at the point that Mr. Mendes says he really became involved, and they launched both studies. He does not recall anyone telling him what happened in the November closed session, though he had understood that the issue would be put before Council and that Council was prepared to deal with it. As for the sewer and water COSS, he would have thought the turnaround time would be 6 to 12 months, which for this seemed reasonable since there were two studies being done. Included in the types of information that would need to be revised for the sewer COSS since the completion of the former one was the fact that the capital improvement program had changed (i.e., the capital work that was scheduled to be done, how much it would cost to get done, etc.). Although the last COSS was finalized in 2002, the data was from "well before that." Mr. Mendes explained that a change in the City's capital program affects user rates because the COSS is driven by allocation of those costs. In addition, the water COSS needed to be done "from the ground up" and the two studies would be tracked together.

As for the State's knowledge of the City's non-compliance, it never occurred to Mr. Mendes that the State did not know what the City's current user rate system was, so it never occurred to him to tell the State that they were currently out of compliance but working toward it. Referring back to Exhibit 8 ("Salient Points") at the bottom of page 2 to the top of page 3, Kahlie wrote that "SWRCB did not take issue with this situation because it was under the mistaken impression that the PA billing structure it had approved was applicable to the City's municipal users as well." This does not help him remember what his impression was as to the State's knowledge of the City's non-compliance. He stated that it was not his understanding that

the State was unaware. He did not see this memo until later in 2003 when he was going into a briefing with the Mayor, right before the PUAC "met on this stuff." He does not think that when he saw that statement that "it struck him at the time." They had gone public with the study so he could not believe at least at that time that the State did not know that they were out of compliance. He never talked to anyone about the State not knowing, nor did he ever have discussions with anyone about delaying the COSS and keeping it on a slow pace. Again, with reference to those documents that he received while he was out of the office in the hospital, he thinks he would have gone through his email, but he was out for two months so he does not know how carefully he would have looked at them.

Regarding disclosure discussions, the first time he recalls there being disclosure issues about the lack of compliance with the SRF requirements was when the City was preparing the pension-related disclosure in March 2004. In general he does not recall discussing disclosure of the non-compliance, and his area would not be the one to have dealt with it or with financing generally.

Mr. Mendes was then shown Exhibit 10 (COS 005562), an email from Kahlie to Hanley, Kerri Katz, Mr. Mendes and Tulloch, dated 3/6/03, re: "Re: Cost of service study-questions." He explained that Katz is from the CAO and that she sat on the Natural Resources and Culture Committee ("NRC"), and was the CAO representative to the PUAC. The email references Leslie Devaney who Mr. Mendes described as another member of CAO staff who was the Executive Attorney under Casey Gwinn. Mr. Mendes recalled that when the City did the water increase in 2002, Frye asked for a COSS concentrating on capacity fees for the next year's budget. This email is now one year later going into that budget meeting, and he guesses that Frye probably asked where the study was. In the underlying email Katz asked about the status of the study. Katz also wrote in that email that "pursuant to Richard's suggestion, I plan on talking to Leslie Devaney about this." Mr. Mendes thinks he is the Richard mentioned, and that he thought the study was under way but that he had not seen Salt's legal opinion at this time so he suggested that Katz talk to Devaney about it. Katz would have spoken to Mr. Mendes about the issue since he was the Utilities General Manager. The memo attached to the email appears to be Kahlie's response to Katz's request for an update and is entitled "Information requested relative to utility cost of service studies." The memo summarizes that status and states, among other things, that the sewer COSS is scheduled for completion "during the week of July 21st, 2003." The memo also lists earlier wastewater studies. Mr. Mendes was asked of this memo whether, at the time he received it, he had been aware of the 1998 Pinnacle study. He responded that he recalled at some point in a meeting that Frye asked whether there were any studies that had been done, and at that time he did not know of any, but he then found out about the Pinnacle study and gave it to Frye. While he thinks he looked through the studies briefly at the time he gave them to Frye, he is not sure he really would have looked at the wastewater one rather than the water one, since that is what Frye was more interested in. But he does recall he gave her each of them.

Mr. Mendes was then shown Exhibit 11 (MWWD-BH 0950), the Pinnacle Study dated May 14, 1998. He does not specifically recall familiarizing himself with the conclusions in the report at any time. When he obtained these studies for Frye, her focus was on water so he would not have looked at this study "until well into the issue." He does recall that at the point the COSS was restarted in 2003, he went back and looked at previous materials. He thinks it would have been at that point that he became familiar with the 1998 COSS (Exhibit 11). He was

involved in discussing how they would do the 2003 water and sewer COSS, and then in the Fall when the studies were released he went out to the public to explain why the rates would change. Learning of the 1998 COSS, he thinks his reaction at that time was that he believed that study would have been the genesis of the stakeholders group, leading to disparate opinions by stakeholders, which led to the CAO's report, which led to the next B&V study. He viewed Exhibit 11 (at the time he became familiar with it) as part of a chain of events. Since he was not with the City in 1997 or 1998 when the Pinnacle COSS was done, he does not know how people reacted to it contemporaneously. Exhibit 12 (COS 007055), a March 17, 2003 Agenda for the Regular Council Meeting, as Mr. Mendes recalls, was a Council meeting regarding SWRCB low-interest loans. He does not think he had read the Salient Points memo at this time. Exhibit 13 (no bates), next shown to Mr. Mendes, is a memo from Frazier and Mr. Mendes to the Mayor and Councilmembers, dated 9/5/03, re: Cost of Service Timetable. He recalls that he sent this memo because it was at this time that they knew when the study would be finalized and when it would be available to the public. Regarding the July 2003 timeframe specified in Exhibit 9, he does not recall any specific reason for a delay, but offered generally that there is always some amount of slippage in two studies of that size, and this delay was not extraordinary.

During this time in 2003 he was aware of the City's plan to issue new bonds. He had no role in statements or disclosures in connection with the offering of those bonds. As of this time, he had discussions with his own staff and others (Tulloch, Hanley, Loveland, Frazier) about such topics as who would be angry with the results of the study. The "major discussion" was how the COSS should be given a public vetting. At this time (unlike before) there was now the PUAC, and the idea was that the PUAC should be put in charge of the vetting of this process and that they should come forward with a recommendation, so that process was implemented. The PUAC was created at about the same time Mr. Mendes came to work in the City, and his hiring and the creation of the commission were related activities. He thinks it was created because Council (and specifically Councilmember Wear) wanted better public oversight to review budget, operations, and other functions of the water and wastewater departments. In anticipation of releasing the COSS, there was an "appreciation" that there would be a lot of objections raised by ISP, Kelco, restaurant associations, and others generally representing the business community. These groups would object to including the organics parameter as well as the particular way the organics were to be allocated. Mr. Mendes clarified that the City's proposed approach to allocate costs was not the only way to do it. Mr. Mendes understood the issue to be that the costs should be apportioned equally among the removal of solids and BOD, whereas industrial users argued that given the nature of the organics and other such factors, users should only be charged the incremental amount incurred for removing organics above that required by permit, rather than treating the requirements as co-equal requirements. The fear (informing the decision to go forward with public input) was that the City would be charged with only putting forth one alternative, and so they felt that the City should go to the State with the other alternative as well. The issue of cost allocation methodology was given to the PUAC to give everyone the opportunity to put their position forward. Again, the decision to do this was rooted in the belief that if they did not give everyone an opportunity to put forward their positions, it would be a problem when they went before Council.

As to whether he ever heard anything about ISP/Kelco giving campaign contributions, he said he never heard anything but that he never pays any attention to campaign contributions. His impression was that this was the "classic instance of industry" (not just

ISP/Kelco) users lining up against this proposal because of the economic consequences of it. He got calls from unions and others offering the classic arguments about driving jobs out of the City. He viewed the issue as the classic argument of a City weighing the economic development, jobs, tax benefits against other requirements. In essence, the City was responding to the pressure to be business friendly. He never heard anything about any direct payoff or contribution.

Mr. Mendes was then shown Exhibit 14 (COS 003031), a memo from Eric Adachi to Mr. Mendes and others, dated 10/3/03, re: "Draft wastewater cost of service study." The memo attaches a draft of the COSS and asks for comments because "the final reports are scheduled to be delivered to the Mayor and Council by October 17, and to the Public Utilities Advisory Commission at their October 20 meeting." Mr. Mendes identified Eric Adachi as Kahlie's assistant. Exhibit 15 (no bates), a fax from the Secretary to the Utilities General Manager to Salt, Kahlie, and Hanley, dated 10/16/03, states: "Please mark your calendar for a meeting with Richard Mr. Mendes in his office regarding the attached letter from Richard Opper." The fax sheet details that the meeting was set for Tuesday, November 4, 2003 at 8:00 a.m. The attached memo is dated 10/16/03 to Associate Counsel of ISP from Richard Opper of Opper & Varco. Mr. Mendes said that Opper was engaged by Kelco/ISP to look at whether the City was required to use BOD and also whether the method proposed was the only way it could be done or whether there would be other methods to satisfy the requirement. Mr. Mendes said it was the "same theme again and again" – Doug Sain (lobbyist for ISP/Kelco) pushed for delay and new studies. Response to this memo was that they could not use an alternative allocation methodology since the State had approved the City's method and not the other (proposed by ISP), and that there would be no more delay.

Mr. Mendes was then shown Exhibit 16 (COS 004701), an email from Mr. Mendes to Kahlie, dated 10/29/03, "Re: COSS presentations." Regarding item number 4 in the email, Mr. Mendes writes that "We are not going to set parameters for the PUAC-they work for the Council and Mayor. They have been reasonable and practical in dealing with other important issues, but suggesting what is 'out of bounds' to them would not be appropriate (or work)." Of this, Mr. Mendes recalls that he had discussions with Kahlie and his own staff at the time that Kelco kept raising the issue of wanting to take another year. His own mindset at this time was that the City needed to get the COSS done for the next fiscal year, and that was the limit. He had indirect conversations with Kahlie and the State that that was the deadline. The State understood that there would be a 90-day implementation period after Council's approval. He never took the position that it should be delayed another year and studied again. During early 2004 he went himself to many entities to explain that this had to be done, that this was a disclosure item in bond statements, that there was a risk of losing their loans, etc. He went to the full Chamber of Commerce board and gave a formal debate on the issue (and in the end managed to get some votes there). In every case Kelco and ISP were there, and they kept raising the issue of losing jobs, of San Diego not being a business friendly environment, that the State would accept other methodologies, etc.

Mr. Mendes responded to these ISP allegations by explaining that the City had a fiduciary obligation to rate payers, that the State had approved the City's method and not the other that Kelco was proposing. Mr. Mendes also said that the risk of having to return funds because the City was out of compliance was important enough that it had to be disclosed in the ongoing disclosure requirements. The disclosure issue was brought to his attention by Pat

Frazier and Les Girard, who showed Mr. Mendes the voluntary disclosure when it was being prepared. Though they showed him the disclosure and had him look at it, he did not ask why the non-compliance had to be disclosed. He did not specifically think that there could have been a disclosure issue from years past, but saw this disclosure in the larger context as "just part of the package" of the other disclosure issues, including pension and everything else. He had not been there for any of the other bond issuances so it wasn't an issue for him at the time, but it seemed to him that there were a number of things that should have been disclosed earlier. He believes the 2003 bond issuance got pulled because of the pension issues – one board member was concerned with whether the pension issues therein were adequately disclosed.

Regarding Kelco's position, he thought they had a plausible argument but did not think they were right. It was a given that charging industry less would cost residents more since sewer rates are revenue neutral. There was no question in Mr. Mendes's mind (as of this later time) that the City needed to comply with State requirements. The question was whether the industrial sector had an argument that there were other methods for allocating that may have worked, in which case it would be a policy question for Council. His goal was to present accurately this issue to Council (specifically, to not tell Council they had no choice, if in fact they did). If there was an alternative allocation that would have less impact on industry he would have had to present that too, but the State did not agree to any other methods. Mr. Mendes saw his role as presenting to Council what was discretionary and what was not.

Regarding Kelco's proposed cost causative approach, Blair and Mr. Mendes attended a meeting of the PUAC. After that meeting Kelco/ISP people produced documents that indicated that Blair's comments during the meeting meant to them (and should to the PUAC) that the alternative methodology was a viable one that had not been presented fairly to the State. They accused Kahlie of "skewing or misinterpreting the presentation to the State on the issue." Kelco asked Mr. Mendes to present the issue to the State. Mr. Mendes said that they should present it themselves. Kelco said they had no standing and the State would not hear it, and Mr. Mendes said he would transmit their position to the State (with no endorsement of Kelco's position, but simply a transmittal). Mr. Mendes's final transmittal stated that the proposal was presented at the behest of industrial clients for Blair's input as to whether this could be a viable alternative to the City's proposal. The State responded that the proposal was not a viable alternative. Mr. Mendes was trying to lay to rest Kelco's position that they never got "a fair shake at the State." Mr. Mendes thought that Kelco was pressing him and others to go to the State. Of Kahlie's treatment of the issue, Mr. Mendes would not say Kahlie was being unfair. He did say that by the time Mr. Mendes arrived at the scene, it had already become personalized between the two sides. Kelco perceived that Kahlie was against them and personally out to get them. Mr. Mendes does not personally believe that Kahlie was unfair or that he presented issues unfairly. Kelco attempted to move their argument forward by characterizing Kahlie as "an obstinate bureaucrat who was sticking to the rules and not being fair to their side."

Regarding the March 2004 disclosure, it did not occur to Mr. Mendes to include in the disclosure the City's history of non-compliance. He thought the purpose of the disclosure was to disclose the current situation. He does not recall discussions about this with others either. This was prior to his disclosure training (conducted by outside counsel and the CAO). After the fact, having had the training, he now thinks that the City's history of non-compliance should have been disclosed since it could have had a "significant potential economic impact on the

system." He does not know whether compliance with Prop 218 was disclosed. Upon Mr. Schachter telling him that it was, his guess as to why the Prop 218 issue would have been disclosed but not the non-compliance issue was that people may have thought that the issue was not at a level that, realistically, there would be a recall of the funds. This impression may have existed, Mr. Mendes surmised, because there had been no formal notice that they were out of compliance, and that they could always cure it if put on notice.

Mr. Mendes was then shown Exhibit 17 (COS 6959 at 6989), the 2003 draft POS. Mr. Mendes said that Kahlie typically does the actual drafting of the bond documents. From the wastewater side, it would be Hanley's role. Regarding the language that "[t]he City's rate structure has been reviewed by the State Board and no grant funds or costs under grant funded programs have been disallowed based on the nature of the rate structures," Mr. Mendes has "no idea" where the language came from. He does not recall ever discussing this language with anyone, and thinks that Vattimo and Frazier also could have been involved in drafting the language. Mr. Mendes has no idea whether Hanley was involved in drafting it, and clarified that generally financing services would just request information from the department and the department would give it to them.

Exhibit 18 (COS 003354) is an email from Kahlie to Mr. Mendes, dated 4/9/04, attaching "the bullet point summaries of the compliance chronology and study findings [Mr. Mendes] requested." Mr. Mendes guesses that Kahlie is sending this in preparation for going to Council. Shortly before the issue was taken forward, Mr. Mendes was looking for summary documents to use. Alternatively, he supposes it could have been used for one of the final visits with the Chamber of Commerce (as described above), as briefing points. Exhibit 19 (SP_SEC_SC004540) appears to be a meeting reminder, dated 4/21/04, from Scott Peters, listing as attendees Mr. Mendes, Kahlie and Girard. Mr. Mendes recalls that he went around to Councilmembers before the Council meeting to ensure that the members did not have any questions about the proposed rate change. Exhibit 20 (no bates) is a document entitled "SWRCB Grant/Loan Obligation Disclosure Issue," dated April 26, 2004. Mr. Mendes does not recall ever seeing it. Exhibit 21 (COS 003491), is an email from Kahlie to Hanley, Salt, and Mr. Mendes, dated 5/4/04, regarding the "original 1991 agreement." Mr. Mendes recalls that he was seeking the document from Kahlie in response to an email from Sain. When he received Sain's email, Mr. Mendes did not know what Sain was talking about and emailed to try to figure it out.

Exhibit 22 (no bates) is an email from Hank Cunningham to Jeff Kawar and Russ Gibbon, cc: Hanley and Mr. Mendes, dated 6/30/04, re: "Kelco/ISP Algentes." The email discusses that Mr. Mendes wanted to work on a financing package to help retain ISP in the City. Mr. Mendes recalls that he was raising the issue of whether economic development tools could help ISP/Kelco, and that Mr. Mendes had asked the City to look at the issue to see whether there were programs that could help ISP/Kelco using sewage pre-treatment mechanisms (by pre-treating, the businesses could avoid burdening the system.) Mr. Mendes recalls that they ultimately were not able to come up with any solutions to meet their needs, but he thought it was worth a shot. Regarding ISP/Kelco generally, Mr. Mendes never heard anything to the effect that ISP/Kelco had any improper influence on the COSS issue. Mr. Mendes thought there was always the classic big business argument that implementing the charge would make it hard for certain businesses to operate in San Diego.

When asked whether there was anything else we did not cover, Mr. Mendes stated that there was a difficult technical argument about whether organics could be allocated differently (not whether they should be allocated). He thinks the City did the right thing by implementing the change but did not think that there was no basis to the allocation approaches ISP put forth. In going through the process, Mr. Mendes's concern was to go through a thorough process to make sure the change was approved by Council. Mr. Mendes described his role as his having one piece in the process. He got involved when "it was already a done deal" and he was the person to "carry it forward."

In general, Mr. Mendes could not think of anyone in City government doing anything they knew was wrong. The interview concluded with the instruction to Mr. Mendes not to speak with anyone about what was discussed during the course of the interview, either inside or outside of City government, including what documents were shown and what documents were covered. Mr. Mendes agreed to keep it confidential, though said he had already told Lamont Ewell that we were meeting (but agreed not to tell him anything further.)

Follow-up Call on September 30, 2005

On September 30, 2005, Mr. Schachter and I had a follow-up discussion with Mr. Mendes. He confirmed that the period he was ill and out of work was from November 14, 2002, to January 2, 2003, with a couple of intermittent days leading up to his absence in November. He said he did have a closed session listed on his calendar for November 14, 2002.

Mr. Schachter asked Mr. Mendes about restrictions on the use of "special" (or enterprise) funds. He said that, most commonly, money is paid from an enterprise fund to the general fund for services, essential overhead. This arrangement of the transfer of funds is memorialized in a service level agreement, or "SLA." Another way money formerly would have been transferred from an enterprise to a general fund was for right-of-way fees, but they have since been abolished. The third mechanism is that larger amounts may be transferred for capital projects.

Mr. Schachter asked whether Mr. Mendes was aware of any improper or questionable transfers out of the enterprise to the general fund, and Mr. Mendes responded that the old practices were questioned from a policy matter, but they were not improper. As to whether sufficient services were provided for the amounts charged, he said the nexus was there, but there was a question of whether they were paying the appropriate amounts. There has been a study to analyze that precise issue, and based on the results, charges will be adjusted retrospectively and prospectively. He never heard that certain transfers were put into progress for improper purposes, but he did hear from the water department that they were not getting their money's worth. Mr. Mendes said he thought the County Grand Jury was looking at SLA's. The SLA's pre-date Mr. Mendes's time at the City and he does not know how they arose. He said they are sloppy, but that Loveland would have a better perspective.

WF&G

3033446

EXHIBIT 1

From: Dennis Kahlie
To: Mary Vattimo; Patricia Frazier
Date: Wednesday, October 24, 2001 9:21:34 AM
Subject: Re: Water Rate Case

Darlene & I spoke this morning. A surety would cost +/- 3% of the debt service reserve in today's market, and would also cost lost interest over the term of the bonds. In and of itself, the surety would not be a credit issue, but Darlene advises doing so only if they reaaaaaalllyy need the money since it could only be used for pay-go capital. On the other hand, she views liquidation of the operating, capital and other reserves as a major credit negative which would potentially lead to a ratings downgrade, as would failure to maintain debt service coverage at 1.6x.

-D

>>> Mary Vattimo 10/24 8:05 AM >>>
probably because noone was at the meeting to articulate that point :)

>>> Dennis Kahlie 10/23/2001 4:10:32 PM >>>
They know MWWD used a surety to solve a cash flow problem in the past. The mayor wants to put off the rate increase discussion for political reasons and the dept. is grasping at straws. Mendes asked if water could borrow from sewer to pay for reclaimed pipelines and get repaid later. I'm looking into that, but I'm not confident that the repayment would occur any time soon, particularly if water only gets 6% in calendar 2002. I've also told them that failure to maintain debt coverage at 1.6x will imperil their AA rating, but no one's told the mayor that, either.

>>> Mary Vattimo 10/23 3:41 PM >>>
I'm not suggesting liquidating reserves; I don't see how they can do that. I wouldn't ask Darlene to call the rating agencies; saying you discussed their request with the FA and that the liquidation of reserves would cause a credit problem should suffice....I would just tell water that they can't liquidate reserves (bond covenants, credit issues, etc) and that a surety substitution will give them $___ to work with. Also, how did they know to ask about a surety?

>>> Dennis Kahlie 10/23/2001 3:28:13 PM >>>
I've already got a call in to Darlene. A surety in and of itself probably isn't a credit concern, but if I were a credit analyst and I saw an agency going to a surety and liquidating its operating and emergency capital reserves, I'd be thinking they're in trouble. If Darlene can explore this with some rating agency types without their knowing who's contemplating such an action, I think she should do so.

>>> Mary Vattimo 10/23 3:13 PM >>>
Please ask your FA's their thoughts on surety; I don't see a credit issue if we adhere to bond covenants re: surety substitution. I understand this won't solve all of their problems.

I agree with you; ed/pat or you need to be present at these meetings. Pat - what do you think?

Mary

>>> Dennis Kahlie 10/23/2001 2:10:30 PM >>>
Mary,

Christine and I spent an hour and a half with Mr. Mendes, Larry Gardner, Marsi, Sam, Charles Yackly, Nick Kanetis, on water rate case issues. Larry and Mike met with the mayor on Monday, during the course of which they were advised that the mayor doesn't want to discuss water until next March, with the idea being not to increase water rates until the following July, and then only by 6%. This hastily-called meeting was to discuss and prepare for a second meeting with the mayor scheduled for next Monday.

As far as I can see, water can't do without a rate increase until next July without demobilizing projects currently under way, let alone undertake any new ones. Moreover, loss of an immediate 6% increase ripples through the entire 10-year planning period. I was asked whether we could solve the problem by liquidating reserves (45-day operating, emergency capital, secondary purchase, rate stabilization) and debt service via surety. I told the group that such actions would probably not be looked at favorably by the rating agencies, that the funds derived wouldn't help meet coverage requirements, and 45-day, emergency cap and secondary purchase would have to be re-funded by the beginning of FY03 anyway, but committed to raise the issue with Pat & Ed.

Is there a problem with my approaching Pat & Ed on this? I'm also worried that no one from our shop is attending these meetings with the mayor to address the financial implications. I could discuss with John Kern if you want.

-D

CC: Christine Ruess

EXHIBIT 2

From: Dennis Kahlie
To: George Loveland
Date: 1/7/02 11:14AM
Subject: Sewer 218 Closed Session Issue

George,

In checking with Kelly to determine when the deferred sewer Prop 218 compliance issue would make it back on the closed session agenda, I concluded that you might be unclear as to why we need this issue resolved.

While there has been appellate litigation holding that Prop 218 does not apply to the setting of usage-based water rates, our attorneys have advised that until such time as a similar decision is reached with respect to the setting of usage-based sewer rates, we should continue to comply with its provisions in dealing with sewer rate issues to avoid any possibility of litigation adversely impacting current and prospective debt issuances for the sewer capital program. This is a policy question for mayor/council that we wouldn't be bringing up at this time except that it bears on how we finalize and present the results of the sewer cost of service study.

First, the mayor has expressed an interest in having a "lifeline" rate. If we continue to adhere to Prop 218, its proportional cost of service provision prohibits discounted rates subsidized by others. Second, adhering to the 45-day noticing provisions of Prop 218 means that it's unlikely that the study results can be voted on until after March 1st, when the first of the council-adopted 7.5% rate increases goes into effect. We'll be in a position to discuss the results sooner (probably mid-February), but we'd have to go back a second time to accomodate noticing, etc.

Upside, if we reverse course on dealing with Prop 218, the mayor can have his "lifeline" rate and we avoid going to council twice on cost of service. Downside, we'll give bond /disclosure counsel some heartburn, we'll have to disclose the change in policy in continuing disclosure on existing sewer debt and in our offering statements for the upcoming issuance this spring, thereby providing a litigation roadmap for Jarvis Taxpayers' or whoever else might be interested. Bottom line given the litigation risk, we thought this issue significant and complex enough to warrant closed session discussion. At the same time, we'll eliminate a potential impediment to getting the cost of service study recommendations adopted by resolving the "lifeline" issue before the report is finalized.

- D

CC: Kelly Salt; Mary Vattimo; Patricia Frazier; Richard Mendes

EXHIBIT 3

SEWER COST OF SERVICE STAKEHOLDERS' GROUP

FINAL REPORT

SEPTEMBER 14, 2000 — MAY 3, 2001

THE CITY OF SAN DIEGO
DENNIS H. KAHLE
Utilities Finance Administrator
Financing Services

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Tullock-481
Bringham-492

SWRCB1222

6-30-05 COS SEC Subpoena

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INTRODUCTION

Background

One of the services the City of San Diego (City) provides to residents and businesses within the City is collection, treatment and disposal of wastewater. In order to provide this service, the City has constructed, operates and maintains a regional system of pipelines and pump stations, as well as treatment plants and associated outfall and biosolids facilities. Currently the regional wastewater system, owned by the City under the auspices of the Metropolitan Wastewater Department (MWWD) and cost-shared by the participating agencies (cities and sewerage districts in the region), serves more than two million people and processes approximately 190 million gallons per day (mgd) of sewage.

The major components of the system are the Point Loma Wastewater Treatment Plant (PLWTP), the North City Water Reclamation Plant (NCWRP), the Metro Biosolids Center (MBC), a deep ocean outfall and an extensive system of pipelines and pump stations. The system was initially designed to provide only primary treatment, but since 1985 has been providing advanced primary treatment, which utilizes chemical coagulants to increase the removal of both suspended solids (SS) and biochemical oxygen demand (BOD) from the wastewater stream. The federal government enacted the Clean Water Act which, among other requirements, required all sewage to be treated to secondary levels to achieve even higher levels of contaminant removal before being discharged to any body of water.

Prior to 1987, the City of San Diego had sought a waiver from this requirement because it contended that discharging advanced primary effluent into the ocean would not harm the environment. Due to a variety of circumstances, the City Council voted to drop the efforts to obtain the waiver under section 301(h) of the Act and initiate plans to take its Metropolitan Wastewater Treatment System to secondary treatment. Compliance with the secondary treatment requirements was projected to cost the City and participating agencies over $3.2 billion in capital costs. Faced with this knowledge, the City Council concluded it must contest the requirement. The U.S. Environmental Protection Agency (EPA) sued the City and the matter was taken to federal court in San Diego.

The outcome of the court case between the EPA and the City relieved the City of converting the PLWTP into a secondary treatment facility and constructing the network of additional facilities that would have been required throughout the system. Legislation (the Ocean Pollution Reduction Act of 1994 or OPRA) was enacted to allow the City to apply for a waiver from the secondary treatment requirement provided that:

- The City would construct 45 mgd of water reclamation capacity, which is to be provided via a combination of the NCWRP and a new plant currently under construction for the South Bay.
- The City would achieve no less than 80 percent removal of SS and 58 percent removal of BOD, in order to protect the ocean environment from harm.
- The quantity of SS discharged into the ocean would be reduced during the first five years after the waiver was granted.

The City has a federally issued permit to discharge treated effluent through its outfall at the PLWTP. This permit identified the removal standards for both SS and BOD. The requirements can be met by the entire wastewater treatment system, thus relieving any one facility – for example, the PLWTP – from having to be at the secondary treatment level. The facilities constructed to allow the system to meet the waiver-imposed discharge standards were costly, but they saved the $3.2 billion capital cost of converting the City's system to secondary treatment.

In order to minimize the impact of the capital costs on the City's users and the participating agencies, the City has pursued and accepted various grants and loans from the federal government. The grants and loans are administered by the State Water Resources Control Board (SWRCB). The City has limited discretion in rate-setting given its acceptance of grants and loans. For example, the SWRCB requires the City to address the issue of BOD and apportion the cost of its removal, as required by the discharge permit, to users of the system in a fair and equitable manner. At the City's discretion, the SWRCB allows the use of chemical oxygen demand (COD) as an alternative, essentially an equivalent measure of oxygen-depleting contaminants in the wastewater stream because of its comparative ease of measurement. This being the case, the City elected to monitor COD, rather than BOD, for purposes of allocating costs to system users.

Periodically, the City of San Diego conducts a cost of service study to ensure that the cost of collecting and treating wastewater for its residents and businesses is properly apportioned among system users. The last cost of service study was conducted in 1997/98, which was prior to the completion of the NCWRP.

Cost of Service Study

The City contracted with Black & Veatch, a consulting firm, to perform an updated cost of service study that considers all of the wastewater treatment costs and revenue needs, and develops rate structure alternatives that would generate the necessary revenue from City residents on a fair and equitable basis. (The participating agencies have an agreement with the City that specifies the way costs will be allocated between the City and the agencies.) City staff wanted to ensure public understanding of the challenges and complexities inherent in the rate-setting process, and ensure that community values were reflected in the cost of service study and associated rate structure recommendations. The Mayor and City Council also desired this type of participation. Consequently, the contract included a provision to establish a Stakeholders' Group (Group) and Black & Veatch contracted with Katz & Associates as a third party that would provide facilitation and logistical support for the Group. The task of the facilitator was to facilitate meetings of the Group to ensure open communication with the staff and consultants, so that the Group could make its own recommendations with regard to rate structure issues.

The cost of service study includes a number of steps and extensive analysis of system related costs, including the determination of flow and strength of the sewage to be treated, the requirements for removal of SS and COD, the classification of users of the wastewater treatment system and the number of users in each class, and the determination of unit cost of treating flow, SS and COD. The end product is a recommended rate structure that recovers the entire cost of the system from those who use it.

SEWER COST OF SERVICE STAKEHOLDERS' GROUP

One of the ways the City staff could accomplish its goal of public understanding of the challenges and complexities associated with establishing a sewer rate structure was to convene a group of stakeholders to participate in the study. At the request of former City Council Member Christine Kehoe, former Mayor Susan Golding appointed a group of individuals representing a range of interests, both residential and business, to serve on a committee that would make recommendations to City staff about the rate structure and associated elements (the list of Group members is on page 4).

Group members were asked to attend ten meetings, including tours of facilities, between September 14, 2000 and May 3, 2001. The Group's task was to become familiar with and knowledgeable about MWWD, its current system of rates and charges for sewer service, and the provision of wastewater transportation and treatment capacity. In addition, the Group was asked to become familiar with the reasons for undertaking a cost of service and rate design study, including the study objectives and process by which such a study is developed. Finally, the Group was asked to make recommendations regarding user classification and alternative rate structure development to the extent that discretion exists in those areas.

It is important to state that the Group was not asked to make recommendations regarding the amount of gross revenue to be collected from the City's sewer customers or to validate the system expenses or anticipated costs of capital projects.

Members of the Group heard presentations and entered into a dialogue about various issues related to cost allocation methodology, rate structures and permit requirements, as well as the impact of alternative rate structures on various user classifications. The meeting agendas and summaries, which provide a record of the Group discussion, are included in Appendix A of this report.

LIST OF GROUP MEMBERS

NAME	ORGANIZATION
Carol Blomstrom	San Diego Restaurant Association
Robert Dodds	Sony Electronics, Inc.
Dona Donato	San Diego Convention and Visitors Bureau
Keith Flitner	Mira Mesa Town Council
Judd Halenza	Judd Partners, LLC/BIA
Karyn Keese	The Keese Company
Annie McDaniel	Pacific Beach Town Council
David McKinley	ISP Alginates
Mike Miller	San Diego County Apartment Association
Bruce Minteer	La Jolla Community Planning Association
Dick Mitchell	Mission Beach Town Council
David Potter	San Diego Community Planners Committee
Clarissa Reyes	San Diego Regional Economic Development Corporation
Gary Stephany	San Diego Healthcare Coalition
Debra Stephens	The Catfish Club
Fred Zuckerman	Tierrasanta Community Council
Connie Zuniga	Inner City Business Association

SWRCB1227

6-30-05 COS SEC Subpoena

MISSION STATEMENT AND PRINCIPLES OF PARTICIPATION

Mission Statement

The Sewer Cost of Service Stakeholders' Group's mission is to become familiar with and knowledgeable about the City of San Diego's Metropolitan Wastewater Department, and its current system of rates and charges for sewer service and the provision of wastewater transportation and treatment capacity; understand the reasons for undertaking a cost of service and rate design study, its objectives, and the process by which such studies are developed; and make recommendations regarding the study and alternative rate structure development to the extent that discretion exists in those areas.

Principles of Participation

Role of Committee Members

To achieve this mission, the City is asking participants to:

- Become familiar with the existing sewer rates and capacity charges;
- Gain familiarity with the nature and development of a cost of service and rate design study and the effect the study's results can have on existing sewer rates and charges;
- Identify issues and concerns likely to be raised by affected community interests or ratepayers regarding the allocation of costs and/or the application of alternative rate structures; and
- Ensure that community values and concerns are reflected in rate structures and capacity charges recommended for adoption by the City Council.

Representation

Participants are being sought based upon several qualities:

- Willingness to work cooperatively with other Group members
- Demonstrated ability to present the perspective of an organization or constituency concerned with issues related to the economy, environment and quality of life in San Diego
- Commitment to attend a concentrated series of meetings

Every Group member is asked to periodically update his or her respective constituency to keep them aware of the Group's discussions and the issues that have been identified. City staff and consultants will be available to help in this internal communication, if desired.

Observers

Observers are welcome at meetings of the Sewer Cost of Service Stakeholders' Group. However, meetings are intended for the benefit of Group members to promote their constructive interaction. Observers will be asked to refrain from commenting during the proceedings. Observers will be asked to introduce themselves and the organization they represent at the beginning of the meeting. There will be an opportunity for public comment at each meeting.

Discussion Process

Group members agree to abide by the following discussion process:

- All perspectives are valued
- One person speaks at a time
- The preferred deliberation process is collaborative problem solving
- In cases of non-consensus, alternative perspectives will be documented
- Members treat each other with respect

Support

A third-party facilitator will conduct all meetings of the Sewer Cost of Service Stakeholders' Group. The role of the facilitator is to ensure all perspectives are heard through a collaborative discussion process. City staff and consultants will provide technical and logistical support, including making presentations, answering questions, coordinating meetings and documenting meeting content. Meeting discussions will be audio taped to aid in the preparation of meeting summaries.

Meeting Agendas

In order for the process to work effectively, regular participation of members will be essential. Committee members are asked to commit to attend meetings consistently. If a member becomes unavailable to attend a meeting, he or she may send an observer for that meeting.

Group participation in establishment of agendas and matters of discussion will be encouraged. The facilitator will be responsible for preparing the agendas in collaboration with Group members. At the conclusion of each meeting, staff will recommend items for inclusion in the next agenda.

Media

The media will not be invited to or excluded from the Sewer Cost of Service Stakeholders' Group's meetings. Media present, if any, will be identified for the benefit of Group members.

While the Group is studying or weighing issues, members will be asked not to make public statements to the media. Such statements can hamper creative discussions and the Group's ability to modify their findings or conclusions. City staff will also refrain from any statements associated with the Group's deliberations until a final report is adopted.

Work Product

The Sewer Cost of Service Stakeholders' Group will be asked to review, assess and provide input on the technical data presented by City and consultant staff and summarize its discussions regarding its concerns and preferred alternatives. This summary will be in the form of a written report. It is suggested that the report document the following:

- The scope and content of the Sewer Cost of Service Stakeholders' Group's discussion
- Findings and conclusions on the issues considered
- Recommendations for further study and analysis
- Individual opinions and observations that may not be reflected in the main body of the report

A draft summary report will be presented to the Group for review and comment. The final report will bear the signatures of participating Group members.

MEETING SCHEDULE

MEETING #	DATE	LOCATION	TIME
1	Thursday, September 14, 2000	North City Water Reclamation Plant 4949 Eastgate Mall, San Diego, CA 92121	8:30 to 11:00 a.m.
2	Thursday, September 28, 2000	North City Water Reclamation Plant 4949 Eastgate Mall, San Diego, CA 92121	8:30 to 11:00 a.m.
3 Facilities Tour	Friday, October 13, 2000	Meet at North City Water Reclamation Plant Travel by bus to: Metro Biosolids Center Point Loma Wastewater Treatment Plant	1:00 to 5:00 p.m.
4	Thursday, October 26, 2000	North City Water Reclamation Plant 4949 Eastgate Mall, San Diego, CA 92121 Plant Tour	8:30 to 11:00 a.m. 11:00 a.m. to 12:00 p.m.
5	Thursday, November 16, 2000	Metro Biosolids Center 5420 Convoy Street, San Diego, CA 92111 Plant Tour	8:30 to 11:00 a.m. 11:00 a.m. to 12:00 p.m.
6	Thursday, January 18, 2001	Point Loma Wastewater Treatment Plant 1902 Gatchall Road, San Diego, CA 92106 Plant Tour	8:30 to 11:00 a.m. 11:00AM to 12:00 p.m.
7	Thursday, February 1, 2001	North City Water Reclamation Plant 4949 Eastgate Mall, San Diego, CA 92121	8:30 to 11:00 a.m.
8	Thursday, February 22, 2001	North City Water Reclamation Plant 4949 Eastgate Mall, San Diego, CA 92121	8:30 to 11:00 a.m.
9	Thursday, March 15, 2001	North City Water Reclamation Plant 4949 Eastgate Mall, San Diego, CA 92121	8:30 to 11:00 a.m.
10	Thursday, May 3, 2001	North City Water Reclamation Plant 4949 Eastgate Mall, San Diego, CA 92121	8:30 to 1:00 p.m.

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CONCLUSIONS AND RECOMMENDATIONS

Cost Allocation Methodology

A key component in computing the unit costs upon which the rates are based is the cost allocation methodology chosen. The City currently uses the functional–design method of allocating costs. City staff and the cost of service study consultant have concluded that the functional-design method is the appropriate cost allocation methodology since it reasonably apportions costs to the three treatment parameters of flow, SS and COD. Both because of the permit requirements and the City's obligations to SWRCB, City staff does not have the discretion to base rates on only SS and flow. All users of the system – no matter where their sewage is treated – have benefited by the waiver from secondary treatment at the PLWTP. In addition, the participating agencies reviewed cost allocation methods extensively and ultimately agreed upon the functional-design method. However, some Group members did not agree. There was considerable discussion and the majority of the presentation time at the second, fourth and fifth meetings were devoted to the topic of cost allocation methodology.

At the fifth meeting, a straw poll was taken to determine the Group position about the cost allocation methodology. The majority of the Group voted to move beyond this topic and begin discussion on alternative rate structures and user classifications, although the Group did choose to discuss the issue further at a later date. The straw poll was divided between the following optional positions:

- "I am willing to validate the City's recommended use of the functional-design method."
- "This is an issue on which the Group does not want to provide a recommendation."

Although it was stated as a third alternative position with regard to cost allocation methodology, no member of the Group chose the statement: "I would like to see the consultants move forward with one of the other two methods as well." As a result, the Group ceased discussions on cost allocation methodology and moved on to discuss user classifications, mass balance issues, revenue neutrality, the base fee or monthly minimum fee issue, single family residential rate structure including usage cap and commercial/industrial rate structures.

Subsequently, the Group held another discussion about cost allocation methodology. An alternative methodology, the Straight Total Suspended Solids (TSS) Method, was presented and discussed, and has been included in Appendix B. Although there was a close vote regarding whether the alternative methodology should be recommended (6 voted to recommend it and 6 voted against recommending it), the Group agreed it is important to recognize the impact of a new cost allocation methodology on residents and businesses within the city. Consequently, the Group recommended that a rate impact analysis be presented in an appendix, comparing the City's existing monthly charges to the charges under the City's proposed rate structure and the alternative Straight TSS Method. This analysis is presented in Appendix C of this report.

Base Fee

The Group reviewed the presentations and a series of tables prepared by the consultant to determine their preferred option between a monthly base fee, which is a flat monthly charge which offsets a portion of the cost of wastewater treatment service but includes no allowance for actual usage, or a monthly minimum fee, which does. After discussion, the Group concluded that there should be a base fee charged to each user of the system to recover a significant portion of the fixed costs of the system. The base fee should be uniform across each user classification to reflect the fact that there are costs that must be recovered regardless of whether the sewerage system is used or not. The Group also noted that bond-rating agencies prefer a fixed revenue stream and ratepayers will benefit from good bond ratings and the associated reduced interest costs.

Amount of the Base Fee

The consultant had presented a recommended base fee of $8.53 per month, which included what have been characterized as "administrative costs." The Group recommended that the City staff use another term for these costs, since they include a variety of fixed costs that are not administrative in nature.

The Group also asked that the consultants provide alternative calculations to reflect the inclusion of additional fixed costs in the base fee. The consultants presented a variety of alternatives to include either a portion or the entire cost of the Clean Water Program in the base fee, as well as an alternative that would include debt service costs in the base fee.

The Group recommendation is that the base fee should be $9.93 per user account per month, which reflects the recovery of fixed administrative costs and approximately 50 percent of the cost of the Clean Water Program and the desire to keep the monthly base fee under $10.00 to temper the impact of this change on low volume users.

Water Usage Cap

Several years ago it was determined that single family residential rates would be capped at a specific monthly water usage as measured during the winter months in an effort to more accurately represent the amount of water actually returned to the sewer for treatment and disposal. It was assumed that water used during winter most closely represented household domestic or internal use year round, because outdoor irrigation is lowest in winter. The cap was established at 10 hundred cubic feet (hcf) based on capturing 90 percent of the customers in the single-family residential class. At that time, the City was in the final years of a lengthy drought and residents had restricted their water use dramatically. The current single family residential flow, as determined by the consultants' mass balance analysis, indicates a higher average water use returned to the sewer than can be supported by the 10 hcf figure. There are several possible reasons for higher household water use, including possible under-estimation of infiltration and inflow into the sewer system, higher occupancy per single-family dwelling unit (possibly due to the cost of housing encouraging more family members to live in one dwelling), larger homes in some

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areas of the City and behavior that does not reflect water conservation practices other than plumbing fixture changes mandated as a result of the drought. The Group suggested the same principle should be applied now as was used to determine the initial cap. On that basis, the cap would be set at 16 hcf.

After a lengthy discussion of the impacts of capping water usage at 16 hcf on both high water users as well as large low-income families, the Group recommended that a cap of 14 hcf be established in 2002. However, the Group felt it was important to capture 90 percent of winter water usage, and thus recommended that the cap be increased to 16 hcf over a period of two years.

Rate Structure for Multi-Family Residential Users (MFR)

The MFR users are to be billed based on a 90 percent return to sewer factor applied to the actual monthly water usage, unless otherwise classified pursuant to review. The MFR rate structure does not include a water usage cap since most large MFR complexes that have substantial irrigation needs usually install a separate irrigation meter to account for water used outdoors. After discussion, the Group agreed that the existing rate structure for the MFR classification was appropriate except that the base fee for the MFR classification should be the same as for all other classes of customers. In accordance with the proposed principle of charging all user classes a uniform monthly base fee, the MFR users would also be assessed $9.93 per meter per month.

Rate Structure for Commercial/Industrial Users (Under 25,000 gallons of wastewater discharge per day)

Currently the City uses a 220-block matrix to calculate the rates charged to users in the commercial and industrial classification. This matrix reflects SS and return to sewer factor. With the need to address removal requirements for COD, this matrix would now have 2200 blocks or "pigeonholes" based on the three variables of return to sewer factor, SS and COD, under which users would be billed. The Group was presented with several alternate structures, including one that would classify commercial and industrial users into seven broad groups for which rates would be calculated. The Group requested that one additional alternative of calculating each user's rate on an individual basis, be explored.

After discussion, the Group recommended that the City continue to use the block matrix method. After discussing the issue of using weighted average versus the midpoint of the strength range, the Group decided to retain the current midpoint method of computing rates in the matrix.

Rate Structure for Commercial/Industrial Users (Over 25,000 gallons of wastewater discharge per day)

According to SWRCB guidelines, costs need to be allocated individually for commercial/industrial users with greater than 25,000 gallons per day (gpd) of discharge. The City will calculate sewer rates individually for these customers based on their monthly water usage and assigned return factor and strength characteristics.

Additional Observations

The Group noticed an inconsistency in the way some of the direct CIP costs and indirect costs were allocated. Some of the direct costs that are not directly attributed to strength and flow parameters were allocated one-third each to flow, TSS and COD versus some other indirect costs that were allocated on the basis of weighted direct costs distribution.

To the extent it can be accomplished under applicable existing law, an attempt should be made to mitigate the rate impact over a period of time.

Meeting Agendas and Summaries

APPENDIX A

SWRCB1236

Meeting Agenda
January 18, 2001
8:30 a.m. - 11:00 a.m.
Administration and Visitor Center
POINT LOMA WASTEWATER TREATMENT PLANT
1902 Gatchall Road
San Diego, CA 92106

1.	**Administrative Issues, Meeting Summary Approval**	Patsy Tennyson, Facilitator
2.	**Rate Impacts of User Classification Options**	Sudhir Pardiwala & Prabha Kumar, Black & Veatch
	Discussion of Rate Impacts and User Classifications/ Recommendations	Group members
3.	**Break**	
4.	**Rate Structure Alternatives for Residential and Commercial/ Industrial Users**	Sudhir Pardiwala & Prabha Kumar, Black & Veatch
	Discussion and Recommendations Regarding Rate Structure	Group members
5.	**Closing Comments/ Preview of Next Meeting**	Patsy Tennyson
6.	**Public Comment**	

* PLEASE NOTE THAT THE LOCATION FOR THIS MEETING HAS BEEN CHANGED TO THE POINT LOMA WASTEWATER TREATMENT PLANT

- *There will be a detailed tour of PLWTP after the meeting from 11:00 a.m. - 12:00 p.m. Those interested in staying for the tour should try to wear comfortable walking shoes.*

Directions and Parking

PLWTP (1902 Gatchall Road, San Diego, CA 92106)

Direction - Take I-8 West to the Rosecrans Street exit. Follow Rosecrans, make a right onto Canon Street (Rt. 209). Canon turns into Catalina Blvd. Take Catalina (south) all the way down the peninsula. Once on Navy property Catalina turns into Cabrillo Memorial Dr. Past the cemetery, on the right is a sign that reads "Wastewater Treatment Plant." Turn right on this road. At the bottom of the hill the road turns right and becomes Gatchall Road (heading north). This takes you directly to the PLWTP.

Parking – You can park in any of the three parking lots located by the Administration and Visitor Center at the northern end of the site.

Meeting Summary
January 18, 2001
8:30 a.m. - 11:00 a.m.

Group members present:

Carol Blomstrom	David McKinley	Gary Stephany
Robert Dodds	Mike Miller	Debra Stephens
Dona Donato	Bruce Minteer	Fred Zuckerman
Judd Halenza	Dick Mitchell	Connie Zuniga
Annie McDaniel	David Potter	

Staff:
Dennis Kahlie, City of San Diego, (619) 235-5832, dkk@fm.sannet.gov
Eric Adachi, City of San Diego, (619) 533-4531, eza@fm.sannet.gov
Sudhir Pardiwala, (949) 788-4234, pardiwalasd@bv.com
Prabha Kumar, (949) 788-4236, KumarPN@bv.com
Patricia Tennyson, Katz & Associates, (858) 452-0031 x366, ptennyson@katzandassociates.com
Rashee Rohatgi, Katz & Associates, (858) 452-0031 x350, rrohatgi@katzandassociates.com

ADMINISTRATIVE ISSUES

- The following corrections were suggested for the last meeting summary:
  - The group has not discussed goals with sufficient specificity. The direction that they've received with regard to the group's goals is inadequate in guiding the decision on the cost allocation methodology.
  - The summary needs to reflect the fact that the group was informed that they would be given further opportunities to comment on the cost-allocation methodology. It was noted that while the group had decided to move onto user classifications and rate structures, they might want to go back and discuss the issue of allocation methodology further.
  - The last paragraph on page three needs to clarify that Sudhir's comment about recommending a change in method refers to the cost allocation methodology chosen by the participating agencies.
  - The question on page 2 about public complaints was with reference to the current sewer pricing structure.
- It was noted that the November 16th summary will be revised to reflect the above changes.

PRESENTATION

Sudhir and Prabha gave an overview of the issues to be covered during today's presentation. Members were given handouts of the presentation and were requested to refer back to the tables that had been mailed to them previously. There was greater detail

presented for three different classification options for commercial and industrial users and the pros and cons of each option.

- In response to a question about revenue neutrality, members were informed that the intent is that revenues are to remain revenue neutral for the City as a whole, but not necessarily between customer classes.
- A member pointed out that the group might decide to recommend that since 85% of the loadings come from residential customers, 85% of the revenues should also come from that group. In that context, it was pointed out to the group that nearly 75% of the flow comes from the residential class of users.
- Base fee - Members were informed that the base fee reflected administrative costs, comprising administrative and billing expenses and other fixed costs that need to be incurred by the system whether or not there is flow. The figure of $8.53 was reached by dividing the total administrative cost by the projected number of users.

  A group member expressed concern about the adequacy of the base fee, based on his belief that insufficient fixed income can make an organization vulnerable and unable to sell bonds. The group was informed that in the current case, the base fee accounts for approximately 15% of the income from service charges, since the State requires that a major percentage of costs have to be allocated toward (and revenue derived from) loadings. Dennis also informed the group that since the base fee applies to all customers, large or small, a higher base fee might be perceived to be unfair to users at the lower end of the usage spectrum because they would feel they had lost the ability to control the magnitude of their bill. Conversely, it was pointed out by a member that the present system might be unfair in that it charges too low a base fee for multifamily complexes since the base fee is charged per multifamily account and not per apartment unit. Dennis pointed out that while the option of charging multi-family complexes a base fee per apartment unit could be pursued, it would be a substantial administrative undertaking because accurate data on the number of apartment units served by each meter is not presently available in the customer database.

  There were suggestions made by group members that to make the system more equitable, the base fee could vary for different user groups and that criteria could be developed for determining base fees. An example cited was water base fees which are determined by the size of the meter. While it was agreed that this might not be a viable option for sewer base fees (since those with high irrigation needs would have large water meters but do not contribute to the sewer system proportionately), it was felt that other alternatives could be explored. Staff agreed that while this was true, applying a different base fee to different user groups could still be perceived as inequitable toward high and low volume users in the same group.

  It was pointed out by a member that the term "administrative costs" does not adequately reflect the range of costs that had been earmarked for recovery via the base fee, and that a more suitable and inclusive term should be applied.

The group was informed by staff that neither the present or suggested base fee includes debt service payments.

- A member expressed his preference for using the mid-point of TSS/COD ranges for computing the rate for each of the different TSS/COD ranges in the proposed three-dimensional rate matrix. He noted that if using the mid-point does not provide the assurance of full cost recovery, then the ranges should be smaller (for example, a range of from 50 to 100, rather than 0 to 100). He asserted that the process of determining rates and charges was riddled with assumptions, and that utilizing the mid-point rather than historical data would be more consistent.

- A question was raised by a member relative to the classification and billing of different types of shopping malls. The group was informed that, while all shopping centers initially fall under the general category of "mixed-use", the actual rate which they pay is based on a review of the tenant/usage mix and can therefore vary from mall to mall. It was also pointed out that in the event mall management disagrees with their strength assignment, they have the option of requesting a review, which could result in a more favorable strength assignment. In the case of shell buildings, the City's sewer classification group will determine or revise the category to which the building is assigned as a part of the building permit issuance process. However, in the case of an occupancy change, the sewer classification group would initiate reclassification only if the change came to their notice for some reason such as the issuance of a construction permit.

- The lack of users in the A/AA TSS/COD strength category was questioned. It was suggested by a member that water used in cooling towers that goes back into the sewer system would have little or no TSS. Sudhir pointed out that while this was true, the factory or manufacturing unit would in all likelihood have only one sewer outlet and hence the water from the cooling towers would be mixed with wastewater from other plant processes, hence contributing to the TSS loading.

- With reference to Page 4 of the table's handout, it was pointed out by a member that while limiting TSS loadings to 1000 made sense due to the limited number of users in that category, terminating COD loadings at 2200 seemed unfair since there seem to be a fair number of users with higher COD loadings. Sudhir explained that this was because class KK incorporated restaurants, which are the users with the highest COD strength. It was also pointed out to the group that the commercial/industrial user database does not have any commercial/industrial users with COD strength greater than the 2200 mg/l level.

- With regard to representative COD loadings for different categories of users, the group was informed that the numbers distributed at the 4th meeting would need to be

reduced by approximately 10% as a result of a revision to the BOD-COD conversion factor initially used in the mass balance analysis.

- One group member suggested that the group needed to focus on opportunities to reduce the strength of sewage, hence reducing the associated treatment costs and conversely sewer fees. She indicated that since 85% of the users of the sewer system are residential, outlawing garbage disposal systems would go a long way in reducing the strength of wastewater entering the system, as was the case in cities such as New York.

  Sudhir pointed out that New York City was presently having problems meeting their permit requirements, since federal regulations require reduction of influent strength by a percentage amount, rather than to a fixed level. It was pointed out by other members that eliminating garbage disposals would escalate trash rates and could also pose a health hazard. It was also pointed out by a member that the group had been charged with reviewing and making recommendations on the system of rates and charges and that the discussion on garbage disposals is beyond the scope of the group's responsibilities.

- It was reiterated by staff that individualized billing of customers with a flow of more than 25,000 gpd per meter was required under State guidelines.

- One group member expressed concern with the practice of reliance on SIC codes for classification purposes since some businesses could be engaged in numerous activities covered by several such codes, and the evolving nature of businesses could render the assigned codes inaccurate. Staff responded that in such instances sewer classification staff would use SIC codes as a starting point, but would assign a billing rate based on an evaluation of aggregate discharge strength.

- Individualized rates option - In reviewing the third option, members were informed that while individualized billing might enhance the level of precision in billing, numerous claims for adjustments based on small increments of change could add to the City's (and ratepayers') administrative costs quite significantly. It was pointed out that while a degree of precision sufficient to provide reasonable equity is desirable, increased precision can also lead to increased costs, and hence the two had to be balanced in order to ensure that the costs are not overshadowing the benefits.

  Several group members, however, felt that the onus of proving and financing a variance adjustment claim should be put on the customer, thus ensuring legitimate claims and reducing the financial burden on the City. Furthermore, they suggested that policies and procedures could be developed for implementing the system that would deter marginal claims and ensure efficiency. It was further suggested that a threshold for change could be established before a variance claim would be considered. A member also expressed preference for option three on the grounds that

since it is an equation, it is much simpler to work with than a matrix. Information on the number of employees that presently handle variance claims was requested.

The resource team agreed that while this was a possibility, in actuality these things didn't always work themselves out so smoothly. They felt it would also be wise to consider the material impacts in moving between the different precision levels. While moving from the simple 7 category option two to the 200 category rate matrix of option one might significantly impact the rates paid by some users, that the same might not be the case in moving from option one to the individualized calculation methodology of option three.

It was also stated by a member that the adoption of option three would give businesses the ability to calculate exactly how much they would gain in economic terms by upgrading their technology to reduce their sewage bills. Dennis pointed out that this is also possible under any of the other options.

A question was raised about the recourse available to customers who have shouldered the economic burden of proving that the City unfairly billed them. Sudhir informed the group that if the inaccurate charge is the result of negligence on the part of the City then arguably the user has a right to be reimbursed for the costs incurred in reviewing the issue.

It was pointed out by a member that since the rates for option three do not reflect the increased administrative costs that would accrue it is difficult for the group to choose between the three methods.

It was also questioned whether the minimal difference in rates applicable to numerous customers under options one and three justified the additional administrative expenditures anticipated under option three.

Another member was of the opinion that the classification structure needs to be as simple as possible, without unduly compromising on the fairness of the system. He stated that too much flexibility leads to discretionary issues that are hard to resolve at the initial customer contact level and monumentally add to administrative costs that are difficult to estimate and compute at the outset.

PRESENTATION RECOMMENDATIONS

It was requested that the presentation slides use stark two-color combinations that are easy to read for all.

ACTION POINTS FOR SUBSEQUENT MEETINGS

Material to be distributed:

- Composition of the elements comprising the administrative costs used in developing the base fee.
- Data on number of employees handling variance claims

NEXT MEETING

The next meeting will be held on Thursday, February 1, 2001, at the North City Water Reclamation Plant from 8:30 to 11:00 am.

Meeting Agenda
Thursday, February 1, 2001
8:30 a.m. - 11:00 a.m.
North City Water Reclamation Plant
4949 Eastgate Mall
San Diego, CA 92121

1.	**Administrative Issues, Meeting Summary Approval**	Patsy Tennyson, Facilitator
2.	**Rate Impacts of Residential User Classifications** **Discussion**	Sudhir Pardiwala & Prabha Kumar, Black & Veatch Group members
3.	**Break**	
4.	**Rate Structure Alternatives for Residential and Commercial/ Industrial Users**	Sudhir Pardiwala & Prabha Kumar, Black & Veatch
5.	**Discussion and Recommendations Regarding Rate Structure**	Group members
6.	**Closing Comments/ Preview of Next Meeting**	Patsy Tennyson
7.	**Public Comment**	

Meeting Summary
February 1, 2001
8:30 a.m. - 11:00 a.m.

Group members present:

Carol Blomstrom	Karyn Keese	David Potter
Robert Dodds	David McKinley	Gary Stephany
Dona Donato	Mike Miller	Debra Stephens
Judd Halenza	Bruce Minteer	Fred Zuckerman
Annie McDaniel	Dick Mitchell	Connie Zuniga

Staff:
Dennis Kahlie, City of San Diego, (619) 235-5832, dkk@fm.sannet.gov
Eric Adachi, City of San Diego, (619) 533-4531, eza@fm.sannet.gov
Sudhir Pardiwala, (949) 788-4234, pardiwalasd@bv.com
Prabha Kumar, (949) 788-4236, KumarPN@bv.com
Patricia Tennyson, Katz & Associates, (858) 452-0031 x366, ptennyson@katzandassociates.com
Melissa Vilaplana, Katz & Associates, (858) 452-0031 x398, mvilaplana@katzandassociates.com

OPENING REMARKS

Patsy Tennyson opened the meeting by summarizing the areas in which the City is seeking recommendations from the group:

1. Should sewer rates have a base fee or minimum monthly fee or not?
2. If you recommend a base/monthly minimum fee, which one do you recommend? (Note - The application of a base or monthly minimum fee would be uniform across all classes. For example, the City would not have monthly minimum fee for the commercial/ industrial classification of customers and a base fee for single family residential customers.)
   - The size of the base fee will also need to be discussed by the group and a recommendation made. The consultant has computed a base fee of $8.53 and the group needs to review this and determine if they agree with that amount.
3. What is the most efficient and effective number of user groupings to have for the commercial/ industrial classification?
4. For the single-family residential classification, should we have a uniform flat monthly charge or a winter water usage based sewer rate structure?
5. If the recommendation is to stay with the winter water usage based rate, what should be the size of the usage cap (currently at 10 HCF per month)?

There were no additions or corrections to the summary of the last meeting.

PRESENTATION

Sudhir and Prabha asked the group members to refer to the tables and handouts that were distributed at the last meeting. An overview of the single family residential rate structures to be discussed during today's meeting was presented.

Option 1: Flat Monthly Sewer Charge

- Sudhir commented that the flat monthly sewer charge of $29.48 was derived by taking the full revenue that needs to be recovered from single family residential users and dividing that number by the total number of single family residential accounts. With a flat monthly charge, the customers know exactly how much their bill will be regardless of the amount of water they use.
- It was suggested that this should be a desirable rate structure from the City's point of view because it provides a predictable source of revenue. Sudhir pointed out that it is very popular with many agencies in California, but it has a downside, in that it benefits high volume users. In other parts of the country a flat monthly charge is not as common.
- Sudhir stated that the flat rate does take COD, as well as average flow volume and suspended solids into consideration.
- To add clarification, he went on to say that the revenue necessary to operate and maintain the sewer system would have to be recovered, regardless of the rate structure employed, since recovering system costs is the primary requirement for any rate structure.
- One group member asked if the flat charge shifts the financial burden from residential users to other customer classes, or whether it remains revenue neutral.
- Sudhir began by stating that the total revenue requirements "pie" is projected to be 8% larger in 2002 than it is today and that 44% of the revenues today come from single family residential customers.
- In response to the member's question, Dennis Kahlie pointed out that while system-wide revenue neutrality would be maintained, one of the primary reasons why the current study was undertaken was to equitably apportion system costs to each customer class based on the amount of flow, solids, and COD that each contributed to the total, and that the outcome could be a reapportionment of costs between customer classes, but only if the study results showed it to be necessary.
- A member stated his view that if 75-80% of the flow and loading comes from multifamily and single family residential, then recovering only 44% of the revenue from these classes does not seem equitable. Sudhir agreed, pointing out that the 44% figure included only the single family residential customer class, and that the inclusion of the multifamily residential class yields the 75-80% figure referenced earlier.

Option 2: Winter Water Usage Rates without Base Fee

- The group was reminded that basing rates on winter water usage is done because that is the time of the year when, on average, most of the water passing through the meter

is used inside the house and ultimately enters the sewer and not outside for landscape irrigation.

- Dennis explained that in the City, winter water use is determined each year during the months of December through March. He further explained that, since most single family customers receive a billing every two months, the computer selects the lowest of the two winter month billings which occurs during the December-March monitoring period and, using the consumption data provided, generates a usage figure for a 30 day month. This number becomes the proxy for monthly water use on an annual basis beginning the following July.
- Sudhir noted that this is one method of approximating a user's wastewater generation and that there are other methods that this group could use to estimate wastewater generation.
- One group member asked how the $4.08 per HCF of winter month's usage figure was derived. It was explained that this was determined by dividing the customer class revenue requirement by the number of billable HCFs of winter month's consumption expected to occur.
- It was stated that there is a certain cost just to have the sewer system available and functioning, whether it is used by an individual customer or not. A member asserted that the $4.08 per HCF figure does not reflect that reality, and that use of a base fee would be the solution for this.
- It was observed that this rate system penalizes those customers that use more water during the winter months, because the rate is higher than would be the case if a base fee was utilized.
- A member of the group asked if there was a percentage of usage deducted for landscape irrigation. In response, it was stated that some cities do deduct 15%, but this is not done in the City of San Diego.
- It was reiterated that all of the winter water usage options discussed at today's meeting are based on a 10 HCF cap on 1998-99 usage.

<u>Option 3: Winter Water Usage Rate with Base Fee:</u>

- A group member asked how easy it was to adjust the rates to reflect water conservation (example: in a drought situation) so that the City can still cover the fixed costs of the system.
- Dennis replied that what occurs is that a report is generated in April or early May that provides information regarding winter month water usage within the single family residential customer class. Then, given the 10 HCF cap, the number of billable units of winter months' consumption is determined. The total dollars that must be derived from the usage component of the rate are then divided by the billable units of consumption and the current unit rate adjusted to maintain revenue neutrality.
- Patsy asked if the financial impact would be less on the sewer side than for water in terms of revenue during a drought, since 10 HCF is lower than the average water use. Dennis stated that if a drought situation occurs, irrigation tends to decrease more than sewage flows. This decreases the revenue to the water department, but not as much to the sewer department, because it is possible to adjust the single family residential sewer unit rate to compensate for changes in the billable units of consumption, as

described above. These adjustments, which are required to maintain revenue neutrality based on changes in winter month water consumption, do not need approval from the City Council, as opposed to rate adjustments intended to produce a change in the level of revenue being generated, which do require the Council's approval.

- It was asked if this means that the single-family unit rates fluctuate from year to year. It was stated that the fluctuation has been as high as 12%. However, the end result is usually a minimal change in the individual customer's bill, because his or her winter month's average usage will have changed as well.
- One member asked why debt costs are not included in the suggested base fee (which presently includes only administrative, lab fees, and customer service costs). Sudhir responded that other costs (particularly debt service) are incurred to address flow, suspended solids and COD related needs, and for that reason should be apportioned to users based on loadings.
- It was asked if the commercial base fee is connected to the residential base fee of $8.53 according to the Table on page thirteen. Sudhir stated that the same base fee is being charged to all customers and the same fixed cost is applied to all customers.
- A group member asked if an irrigation meter would be a possible solution for those customers who do use a large amount of outdoor water all year and have a small amount of indoor use or return to sewer. Dennis responded that while this is an option, irrigation services could be costly to install because of the need for a separate irrigation piping system on the individual's property. This being the case, irrigation meters are not used often in residential settings.

Option 4: Winter Water Usage Rate with Minimum Fee

- Prabha clarified that with the minimum fee option, an individual would be charged the minimum fee of $12.12 per month whether there was any water used or not.
- The minimum fee would be applied across the board to all customer classes/users.
- It was asked how the minimum fee is any different from the base fee. Dennis explained that with a base fee, users pay a fixed fee per month plus a separate charge for usage. With the minimum fee approach, users are allowed a certain number of units of consumption that are included in that minimum charge. However, users pay the minimum charge whether the included units are used or not.
- It was stated that only 5% of single family residential sewer accounts use three or less HCF during the winter. The typical average is between 8 and 9 HCF. (Editorial note- an average usage of 80 gpd per person times 2.75 persons per household results in a wastewater generation of 8.8 HCF per month.)
- Although the minimum charge of $12.12 would be applied to all users, there is no table in the handout that illustrates the monthly minimum fee with commercial/ industrial users.

Winter Water Usage Cap

- A member expressed confusion with how the flow, suspended solids, and COD loadings derived from the system mass balance calculations relate to the caps used in the handout tables. Sudhir explained that there is an expectation that if the cap is correctly set, there should be relatively little difference between the mass balance-based system loadings and those produced by using the billable units to determine loadings. Using the current capping point of 10 HCF, the difference between the mass balance and billable units-derived volumes is significant.
- Prabha was asked what cap would balance the single-family classification. She responded that the only way it fully balanced was without a cap and charging for actual water usage. Another member asked what the cap would need to be to balance at the 90th percentile, and Prabha responded that the cap would need to be at 16hcf. Since the handout did not include rates with a cap of 16 HCF, the question is why that cap was not run. Sudhir responded that increasing the cap to 16 HCF would result in a very high sewer bill for some users.
- Many members were not convinced that the single-family classification was actually responsible for the discrepancy in the mass balance.
- It was stated that we currently have a base fee of $8.53 at a cap of 10 HCF, which reflected the 90th percentile of winter months water usage in the single family residential customer class when the cap was established in July of 1993.
- A group member asked how it was possible that water usage is on the rise when most homes are now equipped with low flow toilets and showers. Some speculation ensued, with in-migration, higher occupancy factors and a diminished conservation ethic offered by members as a possible explanation. (Editorial note- the cap was set when we were just coming out of the drought and also the miracle-March wet month, as a result irrigation water consumption would be expected to be small in that month.)
- It was stated that it is possible to lower the unit billing rate as the capping point increases, which would reduce the bills of low and midrange users within the class.

Sewer Only Customers

- Sewer only customers get their water from another water agency, private provider or service, but use the City's sewer service. The City has access to their winter water usage amount also.

Multi Family Residential Rate Structure

- There is no cap for the multi-family residential classification. Users are billed based upon an assumed 90% return to sewer of their actual water usage on a month-to-month basis.
- Since they generally use most of their water indoors, a cap is not appropriate or necessary for customers in this classification. Large multi-family complexes having substantial irrigation needs will usually have irrigation meters installed so they are not charged for water that is not returned to the sewer.

Option 1: Flow Based Rates without Base Fee

- $2.89 per HCF of wastewater.
- This option benefits the low volume user more.

Option 2: Flow Based Rate with Base Fee

- $8.53 would be charged per account plus $2.48 per HCF of water used.

COMMITTEE INPUT & DECISIONS:

- One member commented that he preferred the idea of the base fee to the monthly minimum fee because it provides a fixed revenue source. However, he also stated that the base fee has to have some regulation as well. Other members suggested that the base fee charges are equitable on the low end and that the fixed costs need to be recovered regardless of whether the sewerage system is used or not.
- It was also stated that the base fee would provide continuity and simplicity.
- After discussion, the group reached consensus on a recommendation for a base fee rather than the minimum monthly fee.
- The group concluded that further discussion is needed regarding the appropriate size of the base fee. For the next meeting, group members asked to discuss what is currently included in the base fee as well as whether there are other costs that could appropriately be included.

INFORMATION NEEDED & ISSUES FOR NEXT MEETING

1. What is the percentage of current revenue derived from each customer class (Commercial/ Industrial, Single Family, and Multi-Family), and what is the percentage of burden on the treatment system by class?

2. Where would the Single Family classification fall on the chart for Commercial/ Industrial (if they were on the chart)?

3. What is the frequency distribution of Single Family users?

4. What costs are included in the base fee? What fraction of expenses is debt service and are there any other fixed costs that should be included in the base fee?

5. What is the frequency distribution for Commercial/ Industrial?

6. Additional information regarding why mass balance shows higher wastewater generation.

NEXT MEETING

The next meeting will be held on Thursday, February 22, 2001, at the North City Water Reclamation Plant from 8:30 to 11:00 am.

Meeting Agenda
Thursday, February 22, 2001
8:30 a.m. - 11:00 a.m.
North City Water Reclamation Plant
4949 Eastgate Mall
San Diego, CA 92121

1.	**Administrative Issues, Meeting Summary Approval**	Patsy Tennyson, Facilitator
2.	**Components and Level of Base Fee**	Sudhir Pardiwala & Prabha Kumar, Black & Veatch
3.	**Distribution by Customer Class:** ■ **Accounts** ■ **Loadings** ■ **Revenues**	
4.	**SFR Issues:** **SFR Winter Usage Frequency** **SFR Return Factor for Annual Usage** **SFR Usage Cap**	
	Discussion	Group members
	Break	
5.	**Base Fee Level** **Residential Rate Structure** **Commercial/ Industrial Rate Structure**	
	Recommendations	All Participants (Stakeholders, Consultants & City)
6.	**Closing Comments/ Preview of Next Meeting**	Patsy Tennyson

Meeting Summary
February 22, 2001
8:30 a.m. - 11:00 a.m.

Group members present:

Robert Dodds	Karyn Keese	Debra Stephens
Dona Donato	David McKinley	Fred Zuckerman
Hal Goldberg (Substituting for Keith Flitner)	Bruce Minteer	Connie Zuniga
	David Potter	
	Gary Stephany	

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Rashee Rohatgi, Katz & Associates, (858) 452-0031 x350, rrohatgi@katzandassociates.com

ADMINISTRATIVE ISSUES

- Karyn Keese's attendance at the last meeting was not reflected in the summary. It was noted that the necessary change would be made.
- The 1st February meeting summary was approved.

PRESENTATION

Sudhir and Prabha started the presentation by addressing questions that had carried over from the previous meeting.

- Explaining the concept of mass balance, the consultants informed members that single family flow is determined by subtracting recorded commercial/industrial flow, multi-family flow and estimated infiltration and inflow from the city's total flow. Wastewater flow for multifamily and commercial users is computed by multiplying their actual recorded water usage by the assigned return factors.
  A group member requested to see the water usage numbers for the different classes of users.
- The group was shown pie charts that identified the various user groups and their respective flow and loadings percentages. It was noted that there was a high degree of correlation between flow and loadings for any user group.
- Clarifying the previously discussed concept of revenue neutrality, Sudhir informed the group that neutrality is maintained at a class level, which is to say that irrespective of the rate structure option chosen, the amount to be collected from a class of users does not change. Once the cost incurred by the city in servicing any class of customers is determined, changes in rate structure affect those within the class, but have no impact on other classes.

DECISION POINTS

Base fee

The group was informed of additional administrative costs, such as those related to the Clean Water Program, that could logically be recovered via the base fee. It was noted that the Clean Water Program is operated by the administrative and planning group in the Metropolitan Wastewater Department that is charged with improving the quality of wastewater discharged at the city level. Adding the costs of the Clean Water Program to the previously identified "administrative costs" would increase the monthly base fee from $8.53 to $11.89.

The impact of including debt service costs in the base fee calculation was also reviewed. This would increase the base fee from $8.53 to $29.12 per month.

One group member suggested that instead of having a uniform base fee for all groups of users, the base fee be calculated individually for each group in the following manner: For Single Family Residents, 41% of the total amount to be recovered through base fee should be equally divided between SFR users, since 41% reflects the proportion of overall system costs assigned to this group. The member also suggested that Admin Costs could be considered as a fourth allocation parameter along with Flow, TSS and COD.

It was argued that the concept of a uniform base fee is based on the assumption that since this fee reflects administrative costs that are not loadings related, it should be the same for every type of account.

After discussion, the group decided to recommend a base fee of $9.93, which includes 50% of the cost of the Clean Water Program. The following arguments were made by group members in favor of and against the chosen amount:

Favor

- While $8.53 does not reflect the full range of fixed costs, a base fee of over $10 would not be a politically viable recommendation because it would result in a greater percentage increase in the bill for residents who use very little water. Furthermore, given the high probability of an annual 5% increase in rates, the base fee would gradually increase to be more reflective of fixed costs.
- A base fee of $9.93 will generate approximately 17% of the department's annual service charge related revenue requirement. Fixed revenue sources are attractive to bond rating agencies. In contrast, a very low base fee would hurt the bond rating of the department.

Against

- It was argued that the base fee ought to cover all costs that are not loading dependant and hence it should at least include the entire cost of the Clean Water Program and technical services costs. While this might result in a significantly higher base fee that might not be politically acceptable, the group should conduct its work free of political considerations in order that its recommendations are based on logic.
- Furthermore, since the base fee includes costs that are not merely administrative in nature, it should be called something other than "administrative costs". Excessively high administrative costs could raise a red flag in a government department.
- A higher base fee would also have the beneficial impact of lowering the unit cost for usage.

Usage cap

It was agreed that the present cap of 10 hcf, covering 76% of the annualized winter water usage, was too low to reflect present day usage patterns. While a cap of 16 hcf would incorporate 90% of the annualized winter water usage, and is considered desirable, it is too high to be politically viable. Also, a high cap could adversely affect large size families that have a low income. Furthermore, while high-end users would pay closer to their fair share, a high cap would unfairly penalize customers with a low return-to-sewer but high landscape irrigation use. Nonetheless, a higher cap was favored since it protects low volume users from having to subsidize high volume users. It also drives water conservation, since high volume users know that they will have to pay more without being subsidized. Members were also informed that the impact of a base fee increase on low volume users could, to some extent, be offset by a higher cap because as the usage cap increases, the unit rate of usage decreases.

In spite of the arguments in favor of a cap of 16 hcf, the group acknowledged they had the task of providing the city council with recommendations that were feasible. With this in mind, the consensus of the group was to recommend a cap of 14 hcf now with a shift to 16 hcf over a 2-year period.

Rate structure for commercial/industrial users

It was clarified by staff that the option of individually calculated rates is misleading in the sense that while rates are calculated individually, the calculation is based on assumed TSS and COD loadings calculated for specific SIC codes and not each individual user.

While some members expressed a preference for the 2000 "pigeonhole " rate structure on the grounds that it provides enough discreteness to assure reasonable equity without encouraging excessive variance claims, the group decided to defer the final decision on the rate structure for commercial and industrial users until the next meeting. The decision will be made between this rate structure and individually calculated rates, since group members did not support the seven-group rate structure option. It was also argued that with computers and instantaneous calculations, the rate matrix was a tool being carried over from days when calculations were cumbersome.

PRIOR SWRCB APPROVAL MANDATED BY 40% OR SURVEY of SRF ACCTS

SUMMARY TABLE

ISSUE	DECISION
Base fee	$ 9.93
Usage cap	14 hcf (move towards 16hcf in 2 years)
Commercial/Industrial User Classification and Rate Structure	Pending

MISCELLANEOUS

- A group member reiterated his preference for using mid-point values for TSS and COD strength ranges in computing unit rates for the different commercial/industrial user classes in the matrix. In the rate matrix option presented to the group, actual TSS and COD loadings are used for those TSS and COD ranges for which data is available and midpoint is used for those ranges for which there is currently no data. It was explained to the group that it is preferable to use actual data to determine the weighted average for any rate class to which customers are currently assigned, so as to ensure consistency with system mass balance computations and that necessary revenues are recovered.
- Responding to a question on the impact of future growth trends on sewer rate structures, Dennis informed the group that Sewer Rate studies, when estimating revenue requirements, take into account growth data collected by SANDAG and other planning agencies.
- Members were informed by a group member that an individual business could have a composite sample of its sewer discharge tested for a fee of up to $150.00

ACTION POINTS FOR SUBSEQUENT MEETINGS

Material to be distributed:

- Table reflecting the variable portion of revenue collected from commercial/industrial users and multi-family residents.
- Water usage numbers for MFR and commercial/industrial users.
- Chart giving the mid-point rate of each category of users under the 2000 "pigeonhole" matrix option.

NEXT MEETING

The next meeting will be held on Thursday, March 15, 2001, at the North City Water Reclamation Plant from 8:30 to 11:00 am.

Meeting Agenda
Thursday, March 15, 2001
8:30 a.m. - 11:00 a.m.
North City Water Reclamation Plant
4949 Eastgate Mall
San Diego, CA 92121

1.	Administrative Issues, Meeting Summary Approval	Patsy Tennyson, Facilitator
2.	**Decision on Commercial/Industrial User Classification and Rate Structure**	Group members
3.	**Discussion on Final Recommendations and Stakeholder Group Report**	All Participants
3.	**Break**	
4.	**Discussion on Final Recommendations and Stakeholder Group Report**	All Participants
6.	**Closing Comments**	Patsy Tennyson
7.	**Group Comment**	Group members

Meeting Summary
March 15, 2001
8:30 a.m. - 11:00 a.m.

Group members present:

Robert Dodds	Karyn Keese	David Potter
Hal Goldberg (Substituting for Keith Flitner)	Annie McDaniel	Debra Stephens
	David McKinley	Fred Zuckerman
	Bruce Minteer	Connie Zuniga
Judd Halenza	Dick Mitchell	

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ADMINISTRATIVE ISSUES

- The February 15 meeting summary was approved.

COMMERCIAL/INDUSTRIAL USER CLASSIFICATION AND RATE STRUCTURE

- It was agreed that the group would recommend the use of a rate matrix, adding chemical oxygen demand (COD) to the current suspended solids /return factor matrix for the classification of commercial/industrial users.

- In discussing the development of the rate matrix, the group decided to use strength class range midpoints rather than the weighted average discharge strengths of users assigned to the class to develop the unit cost for each class range.

FINAL REPORT

The group reviewed the draft final report and made revisions. The revised version of the report would be distributed to the members for further review.

A question was raised about how the group's final report would be used. Dennis informed members that once Black & Veatch completes its cost of service study, a City Manager's report will be written. The Stakeholder Group's report and its recommendations will constitute a part of the City Manager's report, which will describe each issue, indicate the City Manager's and Stakeholder Group's position(s) with respect to that issue, and make a recommendation for Council adoption.

One member requested that all reports that come out as a result of the cost of service study be distributed to the group. The group was informed that the City Manager's report will be a public document available for public review and the Black and Veatch report will be mailed to them. Katz & Associates will also keep members informed of the progress on the issue, so that they can review documents when appropriate and know how things are proceeding.

It was noted that the draft final report does not as yet make mention of the group's discussions on multi-family and large volume users, but that it will be amended to do so at such time as those issues are resolved by the group.

REVISITATION OF THE COST ALLOCATION METHODOLOGY ISSUE

Some members requested that the previously discussed cost allocation methodology issue be given further consideration. Members were informed that some of the membership now advocate an alternative, incremental approach to using the functional design cost allocation method to apportion system operating and capital costs among the parameters of flow, suspended solids (SS) and chemical oxygen demand (COD) for purposes of recovering those costs from system users on a basis proportional to use, consistent with the requirements of the grant and loan programs administered by the State Water Resources Control Board (SWRCB). A description of the two approaches follows.

- **Incremental method** - Under this approach, being advocated by David McKinley, it was argued that since the PLWTP has historically been treating wastewater for removal of SS, and not COD, the only COD removal costs are those associated with the incremental increase in treatment necessary to meet the higher COD removal standards imposed by the Ocean Pollution Reduction Act of 1994 (OPRA)
- **Proportional method** – Under this method, presently being utilized by the City in billing the Metro Participating Agencies, treatment costs are allocated between TSS and COD on a basis proportional to their total removal requirements of 80% and 58% respectively. This is done in recognition of the fact that COD is removed at the same time as SS, and that both must be removed in quantities sufficient to satisfy the requirements of Pt. Loma's ocean discharge permit.

It was noted that the unit cost is influenced depending upon the method chosen. Most of the group members expressed a desire to meet again to bring closure to the cost allocation issue. The following requests/questions were raised with respect to the issue of cost allocation methodology. These issues need to be addressed during the next meeting (date and time to be announced):

- A flow diagram for removal at each step of the wastewater treatment process as it applies to San Diego (not Orange County)

- An explanation of the interrelationship between different processes and facilities, including the South Bay sub-system.
- A cost breakdown for the metropolitan regional system by:
  - Facilities
  - Process
  - Function (Flow, TSS and COD)
- A breakdown of the $27.5 million in costs characterized as "administrative costs" under the Base Fee-Option 1.
- An explanation of how the $1 million cost of complying with OPRA was arrived at.
- An explanation of how the application of the cost allocation methodology relates to what we are doing and who gets benefited/impacted.
- A clarification of how much additional TSS must be removed to meet permit requirements at PLWTP for removal of COD and the cost of this TSS removal.
- A breakdown of costs at MBC for the two plants it serves (PLWTP and NCWRP).
- An explanation of how the South Bay facility costs are handled.
- Inclusion of the list of issues or questions provided by David McKinley.

A group member also requested that both City staff and David McKinley draft brief write-ups of their respective viewpoints for the rest of the group to get a concise idea of the issue at hand.

NEXT MEETING

The next meeting date was not finalized. All members will be notified once the date is confirmed.

Meeting Agenda
Thursday, May 3, 2001
8:30 a.m. - 1:00 p.m.
North City Water Reclamation Plant
4949 Eastgate Mall
San Diego, CA 92121

1.	**Administrative Issues, Meeting Summary Approval**	Patsy Tennyson, Facilitator
2.	**Present Position Statements**	Dennis Kahlie David McKinley
3.	**Discussion**	All Participants
4.	**Discussion on Stakeholder Questions (submitted during the March meeting) and Answers**	All Participants
5.	**Break**	
6.	**Review and Complete Revised Draft Report**	All Participants
7.	**Closing Comments**	Patsy Tennyson

Meeting Summary
May 03, 2001
8:30 a.m. - 1:00 p.m.

Group members present:

Carol Blomstrom	Mike Miller	Debra Stephens
Robert Dodds	Bruce Minteer	Fred Zuckerman
Dona Donato	Dick Mitchell	Connie Zuniga
Karyn Keese	David Potter	
David McKinley	Clarissa Reyes	

Staff:

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ADMINISTRATIVE ISSUES

- The March 15 meeting summary was approved.

A group member expressed concern over the rate changes that might result from group recommendations. She felt that these changes would have a severe adverse impact on several restaurants. She asserted that restaurants have already borne the brunt of minimum wage and electric/gas increases, and that they might not be able to handle a sewer rate increase of more than 10%. She inquired if the sewer rate adjustments were being implemented as a result of public dissatisfaction with the current system of rates and charges.

Dennis informed members that the rate adjustments were being considered because of the need to comply with "proportionate to use" billing requirements imposed by the California State Water Resources Control Board as a condition of approval of loans and grants accepted by the City. The purpose of this particular rate study is to revise the existing system of rates and charges to include the component of BOD/COD as required by the State Board.

POSITION STATEMENTS

- City - Dennis Kahlie drew the group's attention to the statement that had been sent to them via mail. He indicated that the second paragraph typed in bold lettering was the crux of the City's position.

- David McKinley - David made a presentation on what he called the "Straight TSS" method. Presentation handouts were distributed to those present.
- In response to a question by a group member, it was noted that those with a high COD discharge, primarily businesses in the food industry, would be most acutely impacted by the City's cost allocation approach.
- David indicated that he considered the "Straight TSS" method more equitable because it offered a less severe change from the present system of rates and charges. It was suggested that to mitigate the impact of rate increases the City investigate the possibility of adopting a system of best management practices whereby users have the option to take the initiative to reduce the strength of their discharge.
- Soluble BOD – A group member argued that those discharging soluble BOD are unfairly charged since PLWTP does not treat for removal of solubles. In response to this, members were informed by staff that the State and other regulatory agencies do not differentiate between solubles and insolubles in terms of required removal rates. In fact, those discharging soluble BOD put an extra burden on the system since additional insoluble BOD and solids must be removed from the waste stream to achieve the mandated combined removal rate.
- With regard to the allocation methodology recommendation, Patsy clarified that the City will recommend the functional-design method being proposed by the consultants. However, the stakeholders' group is free to propose a different cost allocation methodology which would be presented to the City Council as the groups' recommendation. A straw poll was taken on members' preferences with regard to the cost allocation methodology:

  Straight TSS method – 6 in favor

  City's recommendation – 6 in favor
- It was decided by the group that David's proposal would be included in an appendix titled "Other Opinions." The main body of the report would refer readers to the Straight TSS method's description in the appendix.
- It was suggested that an appendix be added to the report that shows rates under each of the cost allocation methods, on the assumption that doing so would assist the City Council in evaluating the political and economic ramifications of the alternatives. Sudhir indicated that the Black & Veatch report would document, in detail, the impacts to different groups of users, and that it would be possible to present the impact of David's approach as a separate document to allow for comparison. Members suggested that to increase the usefulness of these comparisons, hard dollar costs for a representative sample of users should also be provided.
- David suggested that to mitigate the impact of the rate changes on users in the food industry, the group recommend that the rate increase accompanying the City's methodology be phased-in for the severely impacted user. It was pointed out that Prop 218 has very strong wording about subsidies and a situation in which one group subsidizes another might lead to potential litigation issues. It was agreed that the report would state that the City should try to incorporate a phase-in, to the extent that it could do so while complying with the law.

STAKEHOLDER QUESTIONS

Group members had been mailed the responses to questions that had arisen at the March 15th meeting. They were given an opportunity to discuss and clarify any issues related to the responses.

- With reference to question 12, it was suggested that charges that cannot be directly attributed to flow should also be apportioned according to the combined allocation of direct costs. Sudhir stated that changing the allocation from the present method, whereby the indirect cost is equally divided between all three variables, to direct cost allocation percentages does not make a significant difference and hence is not necessary.

  It was suggested, once again, that expenses such as the $19 million associated with the Dairy Mart Road and Bridge Improvements project should be distributed according to direct cost allocations. In response to this, Dennis informed the group that several of these costs are Metro costs and are not exclusively Municipal costs. Staff indicated that the City and the participating agencies review these costs regularly and have agreed that the proportional allocation methodology supported by the City is fair and equitable.. A group member suggested that a change in the City's allocation methodology for indirect costs might not impact the participating agencies, since the City would still be contributing its designated amount. Bill Hanley stated that given the group's inclination towards a weighted allocation of indirect costs, the City would investigate its pros and cons.

MISCELLANEOUS

- In response to a question about the timeline of the report, members were informed that the Mayor and City Council will first consider the wastewater utility budget and the associated recommendation for an increase in annual revenues derived from rates. The group was further informed that the City Manager is planning to propose an 8% increase in sewer revenues effective March 2002, and that it is anticipated that the Council would address the cost of service study recommendations in the fall, after the revenue issue has been addressed. Attendees were assured that the Sewer Cost of Service Group will be notified when the report is scheduled for review and members will also receive copies of the Manager's Report.

FINAL REPORT

Revisions were made to the draft report. It was decided that Patsy would include an expanded description of the multi-family residential user classification and then distribute the report to all members for final review.

APPENDIX B

OTHER OPINIONS

SWRCB1287

Dissenting Opinions From Fred Zuckerman

Although I agree with the majority of the final document produced by the Stakeholders, there were certain group decisions made during the process with which I disagreed. The final recommendations of the document represent the summation of decisions made by the majority of the group, even when that majority was only 51%. I appreciate being able to document those areas where I disagreed with the majority.

1. Some Areas Not Reviewed Nor Evaluated By Stakeholders

The Stakeholders was given certain parameters that were treated as factual. It was beyond our scope to verify or analyze these parameters. The Stakeholders was told that for FY2002 $194 million needed to be collected from San Diego City sewer customers. We did not evaluate the validity of this amount. We did not evaluate that this amount was, in fact, adequate to support the actual, required, or anticipated operating expenses nor did we evaluate that this amount also covered the actual, required, or anticipated capital projects.

Additionally, the Stakeholders did not evaluate whether the amount charged to the City was appropriate when compared to the amounts charged to the other participating agencies of the Metro System.

2. Extend The COD Portion Of The Commercial Rate Matrix.

The proposed matrix contains 11 discrete categories for COD content (rates AA-KK). I purport that they do not measure high enough. From the mass balance calculations, 32% of COD and 25% of TSS is generated from the maximum category (2000-2200 ppm, rate KK). Normal distribution logic would suggest that there are some users that generate 2200-2400 ppm, users that generate 2400-2600 ppm, and possibly even users that generate 2600-2800 ppm. The matrix categories should extend to a level such that less than 5% of the total COD comes from that max category. Holding the maximum category at rate KK, in effect, establishes a commercial strength cap similar to the residential flow cap.

For comparison, the minimum categories for COD (0-200 ppm, rate AA) and the min & max categories for TSS (rates A & J) contain negligible percentages. The "middle" categories make up the bulk of the users, as you would expect.

3. Stakeholders Should Not Favor Specific Users Nor Customers

The adoption of flow capacity charges and strength capacity charges are attempts to correct inaccuracies in the measurement system. However, they create new inaccuracies affecting other users and, thus, should not be used.

One example is the residential avocado grower. The winter-water-usage method assumes that 100% of the water used during those months goes to the sewer. This amount then becomes the standard used for the entire year. This method is inaccurate for the residential avocado grower who must water his trees year round. By instituting a cap, the grower is protected.

Yet, another customer gains an unfair advantage. A family that has 10 people living in their home contributing many gallons into the sewer receives an unintended benefit from the cap. Similarly, a residential customer that "wastes" water also unfairly benefits from the cap. Furthermore, any customer who reaches the cap no longer has any incentive to conserve their sewer use.

These unintended benefits cause the remaining ratepayers to cover the lost revenue. If an attempt to fairly protect some customers results in others being unfairly penalized, then I submit the protection method is invalid. I would prefer that caps be eliminated, and that the grower (and others claiming to be unfairly measured) be allowed to appeal their rate matrix classification. However, the Stakeholders did NOT discuss the appeal process or its associated costs.

4. Base Fee Should Be Partially Based Upon Loadings

The base fee concept provides for charges to be assessed to a customer that may utilize the sewer system only minimally or only periodically. It is generally agreed that this is fair and equitable because the entire sewer system needs to be able to accommodate all users whether or not they utilize it.

Some of the system wide costs to be recovered from base fees should not be split equally among all customers. Many of the fixed and administrative costs being recovered through base fees are related to loading. The proposed method of simply dividing those costs equally among all sewer customers is not appropriate. A residential home is not equivalent to an industrial factory in this respect.

We know that the three classes of customers (residential, multi-family, & commercial) result in cost allocations to the system of 41%, 30%, and 29%, respectively. Therefore, I submit that the fixed costs being recovered from base fees be split proportionately across those three classes, then, it should be split equally among the number of users in that class.

5. The Amount Of The Base Fee Should Be Sufficiently Large To Cover Fixed Costs In Years With Fluctuating Use

In periods of drought, water consumption is drastically reduced by conservation limits. This, in turn, reduces the sewer revenues accordingly. While sewer costs also decrease, they do not necessarily reduce to the same degree. Therefore, it is imperative that sufficient revenue be generated from base fee to prevent revenue shortfalls.

Also, when evaluating the financial strength of a utility, credible weight is given to having appropriate revenue coming from fixed sources. Strong financial strength results in higher credit ratings and lower bond interest rates.

When discussing this concept, Stakeholder members stated that other utilities, and other companies in general, collected 15-20% of their revenue from fixed sources (base fees). Some of the group felt this was an appropriate level for the City. However, politically, the group preferred to keep the base fee under $10.
This type of political consideration is unwarranted for the Stakeholders. Political considerations are best left to the elected politicians. The Stakeholders should base its recommendations solely upon sound and logical facts.

However, a large discharger of BOD would increase TSS removal costs without incurring any cost for same.

Developed and Submitted by David McKinley

Sewer Cost-of-Service Stakeholders Group's "Alternative" to City Staff's Sewer Cost Allocation Method
Based on Straight TSS Allocation Method at Point Loma Treatment Plant, May 2001

The Sewer Cost-of-Service Stakeholders' Group was unanimous that a "functional-design" method should be used for allocating sewer costs to flow and to the strength factors of total suspended solids (TSS) and biochemical/chemical oxygen demand (BOD or COD). However, many Group members were critical of the particular allocation method presented by City Staff, and the Group was divided about whether Staff's method should be recommended.

In the end, a majority of Group members (7 out of the 13 who cast votes – one cast "absentee"), voted to recommend an alternative method, based on a "Straight TSS" cost allocation approach at Point Loma Treatment Plant (PLTP). All Group members agreed that the alternative needed to be included in the Group report for the City Manager and City Council to consider.

The Alternative method accepts the basic concept City Staff proposed, but recommends three significant adjustments: 1. PLTP allocation by "Straight TSS Method", 2. Metro Biosolids Center allocation by mass of solids, and 3. Indirect and distributed costs by net allocation %.

I. PLTP Strength-Based Allocation by Straight TSS Method.

Point Loma Treatment Plant (PLTP) sewage strength O&M (Operation and Maintenance) cost allocations should use the Straight TSS (Total Suspended Solids) Method, which allocates strength costs primarily to TSS. Costs associated with extra TSS removal to meet OPRA's BOD requirement are allocated to COD. The Straight TSS Method differs from City staff's proposed allocation, which is referred to here as the "COD-Enhanced" Removal Efficiency Method. Here are six reasons for using the Straight TSS Method. An expanded discussion of these reasons is found in Attachment #1 following.

1. The Straight TSS Method corresponds best to Corsmitt's published definitive functional design method.
2. PLTP's historic mission is to remove TSS, reflected in the current allocation structure. Straight TSS Method minimizes unnecessary, disruptive revision.
3. PLTP's only functional capability is suspended solids removal; BOD removal is only through suspended solids removal. Straight TSS Method is based on this fact.
4. City Staff's proposed "COD-Enhanced Relative Removal Efficiency" method erroneously assigns all chemical costs to COD, and falsely assumes that percent removal of pollutant is directly proportional to operating costs
5. Direct COD measurements do not correspond to PLTP's cost causative processes. Insoluble organics (COD) are double-counted; soluble organics (COD) pass through PLTP without incurring treatment costs. Straight TSS minimizes this COD inequity.
6. Straight TSS Method best relates costs to the actual environmental benefit of PLTP.

For comparison, here are the split of PLTP strength costs allocated by three methods:

City's existing method	100.0% TSS	0.0% COD
Group's Alternative Straight TSS Method	**84.4% TSS**	**15.6% COD**
Staff's "COD-Enhanced" Removal Efficiency Method	48.3% TSS	51.7% COD

II. MBC allocation by Derivation of Solids Using Straight TSS Method at PLTP.

This adjustment uses City staff's concept of allocating costs at Metro Biosolids Center (MBC) based on derivation of solids, and quantifies the amount of solids associated with TSS versus COD from PLTP by following the Straight TSS Method described above in Section I. The result is an MBC allocation split of **77% TSS and 23% COD**, as compared to City staff's proposed 55% TSS and 45% COD.

III. Indirect and Distributed Costs by Net Allocation Percentages

Indirect and distributed costs are costs not attributable to the sewer systems function or design, such as labs, roads, and administration. Indirect and distributed costs should be allocated using the combined average allocation of the direct costs. This adjustment would merely apply staff's recommendation more consistently. Also, the allocation of capital costs has been corrected to correspond with the results of the Straight TSS method for PLTP and MBC. The Alternative result is the following allocation for indirect and distributed costs:

For O&M costs:	42.46% Flow	45.03% TSS	12.51% COD
For Capital costs:	59.61% Flow	30.10% TSS	10.30% COD

COS GROUP'S ALTERNATIVE RECOMMENDATION:

By using the three adjustments described above, the net result is a system-wide allocation split that better reflects actual costs, better reflects the industry-recognized Corsmitt Functional Design Method, reduces unnecessary disruption from severe changes to the existing rate structure, and still meets State requirements to include COD in the allocation method.

Comparison of Allocation Percentages

Existing City Adopted:	74.0% Flow	26.0% TSS	0.0% COD
Recommended Alternative:	**66.9% Flow**	**25.5% TSS**	**7.6% COD**
Staff's Proposal:	65.2% Flow	18.4% TSS	16.4% COD

Comparison of Unit Costs (2002 Basis)

Existing City Adopted:	$2.21/hcf Flow	$.46/lb TSS	$0.00/lb COD
Recommended Alternative	**$2.15/hcf Flow**	**$.48/lb TSS**	**$0.06/lb COD**
Staff's Proposal:	$2.02/hcf Flow	$.34/lb TSS	$0.13/lb COD

Attachment #2 contains spreadsheets that detail the application of the Group's Alternative Method to the allocation of costs system-wide.

Attachment #1
Reasons for Preferring the Straight TSS Allocations at Point Loma Treatment Plant

1. The Straight TSS Method corresponds best to Corsmitt's published definitive functional design method.

The definitive paper to date on the functional design sewer cost allocation method was written by Dr. Kees Corsmitt and presented at the 1986 Water Pollution Control Federation conference in Los Angeles. Staff's consultants provided the Corsmitt paper to the Stakeholders' Group following a Group request for a published definition of the functional design allocation method. A recent conversation with Dr. Corsmitt verified that his paper is still the primary published definition of the functional design allocation method.

The Straight TSS Method follows the functional design principles and examples expounded in the Corsmitt paper as closely as possible. Corsmitt allocates primary treatment plant costs strictly to total suspended solids (TSS) and flow, unless the primary plant is also treating solids derived specifically from BOD removal. This method makes excellent sense because primary treatment plants are specifically designed and operated to remove suspended solids. This is exactly how the Straight TSS Method allocates costs at Point Loma Treatment Plant (PLTP).

By contrast, the method recommended by Staff, referred to here as the "COD-enhanced removal efficiency" allocation method, differs greatly from Corsmitt's functional design method. Staff's method is still a functional design method, because it divides Point Loma Treatment Plant costs into flow costs and strength costs. However, Staff chose to allocate the strength portion of operating costs by attributing all chemical costs to BOD removal, then allocating the remainder of strength costs based on plant removal efficiencies of BOD and SS. Not only is this contrary to Corsmitt's method, but also as discussed below, it is not a good representation of how costs are actually incurred at PLTP. The net effect is to greatly magnify the costs attributed to BOD/COD.

2. PLTP's historic mission is to remove TSS, reflected in the current allocation structure. The Straight TSS Method minimizes unnecessary, disruptive revision.

Historically, all costs for operating and maintaining Point Loma Treatment Plant have been allocated to flow and total suspended solids. The sewage rate structure used to charge San Diego residents and businesses has always been based on flow and suspended solids only, with no charge for organic strength (COD or BOD). This was not some sort of oversight. It was based on the fact that PLTP is a primary treatment plant, and as such, was conceptualized, designed. and operated with the explicit mission of removing 80% of suspended solids from sewage.

The current sewage rate structure, based on flow and total suspended solids only, has no known enemies among San Diego customers. Everyone is satisfied with its fairness. The impetus to introduce organic strength (COD) into the rate structure is coming from the State grant oversight office in Sacramento. Introducing COD into San Diego customers' rate structure has the potential to cause significant disruption and hardship for some. From a policy point of view, a sound allocation method that minimized the disruption would be preferable. By recognizing the historic mission of Point Loma Treatment Plant as the baseline, the Straight TSS method minimizes the disruption, while still meeting the State's requirement that COD be included.

3. **PLTP's only functional capability is suspended solids removal; BOD removal is only through suspended solids removal. Straight TSS Method is based on this fact.**

In 1994, PLTP received an additional mission to meet OPRA's requirement of removing 58% of BOD. Since PLTP is a primary treatment plant, it is designed and functions to remove suspended solids (TSS). Hence, the only way PLTP can meet OPRA's BOD standard is by removing additional suspended solids. So now 80% of incoming TSS is removed to meet the historic mission, and an additional 5% of suspended solids is removed to meet the new BOD mission.

Hence, The Straight TSS method allocates to TSS the O&M cost of removing the historic 80% of suspended solids to TSS ($5.4 million/year, based on City staff's FY 1999 study), and allocates to COD the cost of removing the recent 5% of suspended solids ($1 million/year stated in a deposition from the Deputy Director responsible for PLTP).

Its easy to see how the Straight TSS approach focuses directly on the process that actually incurs costs at a primary treatment plant: suspended solids removal.

4. **City Staff's proposed "COD-Enhanced Relative Removal Efficiency" method erroneously assigns all chemical costs to COD, and wrongly assumes that percent removal of pollutant is directly proportional to operating costs.**

The Straight TSS Method alternative is needed to correct erroneous concepts in City Staff's proposed method of the cost allocation of PLTP.

PLTP is an advanced primary treatment plant, which means that solids settling is enhanced by addition of chemicals. Chemicals are used to meet PLTP's historic 80% TSS removal, and more chemicals are added to remove the extra 5% for BOD removal. Staff's proposed method allocates all chemical usage to COD removal. This is odd and unjustified, since at least one-half of the current chemical usage would be needed even with no BOD removal requirement, in order to meet the 80% TSS standard.

For the remainder of O&M costs, Staff's method allocates costs proportional to "removal efficiencies" of BOD and TSS. This method assumes that TSS and BOD removal are separate processes whose costs are neatly additive, and that the costs of removing each percent of TSS and each percent of BOD are constant and equal. In fact, all BOD removal at PLTP is achieved by TSS removal, so the processes are not separate or neatly additive. Further there is absolutely no reason to believe the costs of removing each percent of TSS and each percent of BOD are constant or equal. Hence, PLTP O&M costs are simply not proportional to removal efficiencies.

The Straight TSS method completely avoids these errors by focusing on known costs for performing suspended solids removal distinctly caused by TSS vs. BOD requirements.

5. **Direct COD measurements do not correspond to PLTP's cost causative processes. Insoluble organics (COD) are double-counted; soluble organics (COD) pass through PLTP without incurring treatment costs. Straight TSS minimizes this COD inequity.**

There is an inherent incongruity in using the organic strength measurement of COD (or BOD) to evaluate the costs of treating a customers waste at a primary treatment plant. Insoluble COD measured in a customer's discharge is double-charged, and soluble COD is falsely charged.

The COD test measures the presence of biodegradable matter, both insoluble and soluble. But all insoluble matter is also measured by the TSS test. Hence, to the extent that COD is introduced into the rate structure, a PLTP customer is charged twice for discharging insoluble biodegradable matter, even though PLTP incurs the same cost per pound for any insoluble matter, whether or not its biodegradable.

Regarding soluble biodegradable matter, PLTP has no processes for removing soluble matter, only suspended, insoluble matter. Any soluble matter measured by the COD test passes right through PLTP with no treatment. Hence, soluble COD incurs no direct costs at PLTP, so there is no basis for charging a customer for soluble COD.

The Straight TSS Method minimizes this incongruity by not over-emphasizing COD allocation at PLTP. Only the suspended solids removal directly caused by the recent BOD standard is allocated to COD.

6. **Straight TSS Method best relates costs to the actual environmental benefit of PLTP.**

It's the stated opinion of Scripps Institution of Oceanography, and well recognized by the City, that when it comes to sewage, suspended solids are the primary environmental issue for our ocean. The biodegradable matter measured by COD is only of concern in constrained water bodies where there is limited oxygen. In the ocean, oxygen is essentially unlimited, so COD is not related to environmental impact. By focusing on suspended solids at PLTP, the Straight TSS Method focuses on the primary environmental issue, and the primary driver for costs.

CITY OF SAN DIEGO - COST OF SERVICE STUDY

Derivation of Metro O&M Cost Allocation Percentages (FY 1999)

STAKEHOLDER GROUP'S ALTERNATIVE FUNCTIONAL - DESIGN METHOD

Using Straight TSS Method at Point Loma

Point Loma Removal Efficiencies: TSS: 85.00% BOD: 58.00%

Description	Amount	Functional - Design Method Wastewater Parameters			Functional - Design Method Costs (FY 1999)		
	$	Flow	TSS	BOD/COD	Flow	TSS	BOD/COD
		%	%	%	$	$	$
TOTAL TRANSMISSION & SYSTEM MAINT.							
Metro Pump Station #1 - O&M	2,453,240	100.00%	0.00%	0.00%	2,453,240	0	0
Metro Pump Station #2 - O&M	5,409,180	100.00%	0.00%	0.00%	5,409,180	0	0
Total Transmission	7,862,420	100.00%	0.00%	0.00%	7,862,420	0	0
TREATMENT O&M							
Total O&M at Point Loma 9,504,754							
Point Loma Plant - O&M (1)	8,504,754	37.25%	62.75%	0.00%	3,168,021	5,336,733	0
Point Loma Plant - (2)	1,000,000	0.00%	0.00%	100.00%	0	0	1,000,000
Fiesta Island - O&M (3)	1,549,410	0.00%	94.00%	6.00%	0	1,456,445	92,965
North City Water Reclamation Plant	6,059,985	75.00%	10.00%	15.00%	4,544,989	605,999	908,998
Metro Biosolids Center	11,111,339	0.00%	77.00%	23.00%	0	8,555,885	2,555,634
South Bay Water Reclamation Facility	190,672	75.00%	10.00%	15.00%	143,004	19,067	28,601
Total Treatment O&M	28,416,360	27.65%	56.21%	16.14%	7,856,014	15,974,129	4,586,217
TECHNICAL SERVICES							
Wastewater Chemistry (5)	3,038,157	42.46%	45.03%	12.51%	1,313,231	1,390,597	386,328
Biology/Ocean Operations (5)	2,726,235	42.46%	45.03%	12.51%	1,157,559	1,227,624	341,052
Total Technical Services	5,814,392	42.46%	45.03%	12.51%	2,468,791	2,618,221	727,380
COGENERATION							
Point Loma Cogeneration - O&M	738,515	0.00%	94.00%	6.00%	0	694,204	44,311
Hydro Electric Generation - O&M	0	100.00%	0.00%	0.00%	0	0	0
Total Cogeneration	738,515	0.00%	94.00%	6.00%	0	694,204	44,311
TOTAL METRO DIRECT O&M COSTS	42,831,687	42.46%	45.03%	12.51%	18,187,224	19,286,554	5,357,908
ADMIN & GENERAL/CLEAN WATER EXPENSE							
Total Metro General & Admin (5)	30,143,844	42.46%	45.03%	12.51%	12,799,703	13,573,383	3,770,759
GRAND TOTAL - OPERATIONS	72,975,531	42.46%	45.03%	12.51%	30,986,927	32,859,937	9,128,667

NOTES

1. Split of 33% flow and 67% strength follows City's proposed method.
2. The cost of meeting OPRA's BOD requirement is $1 million according to deposition by Deputy Director responsible for PLTP.
3. The first 80% of TSS removal incidently removes 55% of BOD. An additional 5% of TSS is removed to meet the 58% BOD requirement. Hence, when normalized to 100%, 94% of PLTP solids derives from TSS removal, and 6% derived from COD removal.
4. Based on MBC costs attributed 62% to PLTP and 38% to NCWRP, per MBC operations personnel.
5. Indirect and distributed costs are allocated per "grand total" split percentages.

8/21/01

Modified Version David's attachment: Functional-Design Method

SWRCB1296

METRO CAPITAL IMPROVEMENT PROGRAM

Derivation of Capital Cost Allocation Percentage (FY 1997)

FUNCTIONAL - DESIGN METHOD

Description	Amount	Functional - Design Method Wastewater Parameters			Functional - Design Method Costs		
	$	Flow	TSS	BOD/COD	Flow	TSS	BOD/COD
		%	%	%	$	$	$
41508 - Direct Costs							
Chemical Feed Systems Upgrade	4,492,706	33.33%	56.15%	10.52%	1,497,460	2,522,566	472,680
Force Main 1& 2 Corrosion Study	2,732,984	100.00%	0.00%	0.00%	2,732,984	0	0
North Metro Interceptor	71,587,582	100.00%	0.00%	0.00%	71,587,582	0	0
Point Loma Digesters 1&2 Roofs & Heating	14,702,227	0.00%	94.00%	6.00%	0	13,820,093	882,134
Point Loma Headworks, Odor Control & Grit	53,373,029	95.00%	5.00%	0.00%	50,704,378	2,668,651	0
Pt. Loma Power Gen. & Dist. Upgrade	19,105,763	59.61%	30.10%	10.30%	11,388,945	5,750,835	1,967,894
Pt. Loma Scum Removal System	15,602,976	100.00%	0.00%	0.00%	15,602,976	0	0
Pt. Loma Sedimentation Basins 11 & 12	8,745,218	33.33%	56.15%	10.52%	2,914,861	4,910,269	920,089
Pt. Loma Water Tank & Pipeline	3,386,608	59.61%	30.10%	10.30%	2,018,757	1,019,369	348,821
South Effluent Outfall Channel	24,385,073	100.00%	0.00%	0.00%	24,385,073	0	0
South Metro Interceptor Rehab	25,143,869	100.00%	0.00%	0.00%	25,143,869	0	0
Rehabilitation of On-shore Outfall	2,232,755	100.00%	0.00%	0.00%	2,232,755	0	0
Pt. Loma Outfall Reballasting	7,737,836	100.00%	0.00%	0.00%	7,737,836	0	0
Trucked Liquid Waste Disposal Site	1,786,530	100.00%	0.00%	0.00%	1,786,530	0	0
41508 - Distributed Costs							
Annual Allocation Pt. Loma	13,947,464	59.61%	30.10%	10.30%	8,314,013	4,198,187	1,436,589
Pt. Loma North Operations Building	9,284,519	59.61%	30.10%	10.30%	5,534,502	2,794,640	956,305
Pt. Loma Plant Access Road	925,738	59.61%	30.10%	10.30%	551,832	278,647	95,351
MOC Central Repair Facility	4,593,406	59.61%	30.10%	10.30%	2,738,129	1,382,615	473,121
Pt. Loma Parking Facility	287,135	59.61%	30.10%	10.30%	171,161	86,428	29,575
Pt. Loma Shoreline Protection	2,257,794	59.61%	30.10%	10.30%	1,345,871	679,596	232,553
41509 - Direct Costs							
FIRP Pump Station	42,550,695	0.00%	94.00%	6.00%	0	39,997,653	2,553,042
SOP Compliance Facilities, Phase I	2,755,308	100.00%	0.00%	0.00%	2,755,308	0	0
SOP Compliance Facilities, Phase II (Extra.)	68,221,098	100.00%	0.00%	0.00%	68,221,098	0	0
Modified WW Treatment SOP	1,315,868	0.00%	0.00%	100.00%	0	0	1,315,868
FIRP Phase II Digested Sludge & Centrate	32,675,478	0.00%	94.00%	6.00%	0	30,714,949	1,960,529
NSPF-Phase II	241,031,074	0.00%	77.00%	23.00%	0	185,593,927	55,437,147
San Diego River Outfall	5,156,781	100.00%	0.00%	0.00%	5,156,781	0	0
Point Loma Tunnel Outfall	14,290,851	100.00%	0.00%	0.00%	14,290,851	0	0
East Bay Mission Bay Effluent Pipeline	1,902,816	100.00%	0.00%	0.00%	1,902,816	0	0
North City Effluent Pipeline	1,652,159	100.00%	0.00%	0.00%	1,652,159	0	0
North City Raw Sludge & Water Pipelines	18,308,848	0.00%	50.00%	50.00%	0	9,154,424	9,154,424
North City Sludge Processing Facility	2,826,778	0.00%	50.00%	50.00%	0	1,413,389	1,413,389
North City Tunnel Connector	12,357,836	100.00%	0.00%	0.00%	12,357,836	0	0
North City Water Reclamation Plant	189,561,944	75.00%	10.00%	15.00%	142,171,458	18,956,194	28,434,292
Otay Valley Effluent Pipeline	65,093	100.00%	0.00%	0.00%	65,093	0	0
Pt. Loma Digester Facility Upgrade & Expn.	74,878,882	0.00%	94.00%	6.00%	0	70,386,149	4,492,733
CIP Portion **	12,168,826	100.00%	0.00%	0.00%	12,168,826	0	0
Sludge and Biosolids Management Facility	1,176,019	0.00%	94.00%	6.00%	0	1,105,458	70,561
South Bay Land Outfall	20,642,133	100.00%	0.00%	0.00%	20,642,133	0	0
Southbay Outfall Extension	161,219,506	100.00%	0.00%	0.00%	161,219,506	0	0
South Bay Water Reclamation Sewers	27,624,095	100.00%	0.00%	0.00%	27,624,095	0	0
Southbay Sludge Processing Facilities	26,072,628	0.00%	50.00%	50.00%	0	13,036,314	13,036,314
Pt. Loma Secondary Conversion	14,000	35.00%	15.00%	50.00%	4,900	2,100	7,000
Southbay Secondary Sewers - Phase I **	34,137,788	100.00%	0.00%	0.00%	34,137,788	0	0
Southbay Secondary Sewers - Phase II **	50,078	100.00%	0.00%	0.00%	50,078	0	0

8/21/01

Modified Version David's attachment: Functional-Design Method

SWRCB1297

6-30-05 COS SEC Subpoena

Description	Amount	Functional - Design Method			Functional - Design Method		
		Wastewater Parameters			Costs		
	$	Flow	TSS	BOD/COD	Flow	TSS	BOD/COD
		%	%	%	$	$	$
Otay Valley Sludge Pipeline	60,628	0.00%	50.00%	50.00%	0	30,314	30,314
South Bay Water Reclamation/Sea Plants	109,464,536	75.00%	10.00%	15.00%	82,098,402	10,946,454	16,419,680
South East Otay Mesa Sludge Pipelines	30,902	0.00%	50.00%	50.00%	0	15,451	15,451
Santee Water Reclamation Plant - Phase II	203	75.00%	10.00%	15.00%	152	20	30
Dairy mart Road and Bridge Improvements	19,629,620	59.61%	30.10%	10.30%	11,701,216	5,908,516	2,021,851
Mission Gorge Water Reclamation Plant	56,881	75.00%	10.00%	15.00%	42,661	5,688	8,532
Mission Valley Effluent Pipeline	66,216	100.00%	0.00%	0.00%	66,216	0	0
Mission Valley sludge pipeline	66,493	0.00%	50.00%	50.00%	0	33,247	33,247
Mission Valley Water Reclamation Plant	670,778	75.00%	10.00%	15.00%	503,084	67,078	100,617
M.Valley Water Reclamation Plant - Phase II	14,956,857	75.00%	10.00%	15.00%	11,217,643	1,495,686	2,243,529
Otay Valley Reclamation Plant	311,734	75.00%	10.00%	15.00%	233,801	31,173	46,760
Pt. Loma S Bay Sludge Pipeline	4,474	0.00%	50.00%	50.00%	0	2,237	2,237
North City Co-Generation Facility **	1,830,388	75.00%	10.00%	15.00%	1,372,791	183,039	274,558
San Pasqual Sludge Land Applic. Facility	2,288	0.00%	50.00%	50.00%	0	1,144	1,144
TOTAL METRO 41508 & 41509 DIRECT CIP COSTS	1,426,119,792	59.61%	30.10%	10.30%	850,046,275	429,192,500	146,888,358

NOTE:
** Allocation percentages determined by B&V. Different from those used by MWWD - Agency Contracts Division.
Except where indicated, all-other O&M and capital allocation percentages are based on past cost allocation study.
Note: Items in red are changes to staff's method based on applying Straight TSS Method and consistent allocation of indirect charges per combined direct charges split.

SUMMARY OF METRO COST ALLOCATION PERCENTAGE DERIVATION

FUNCTIONAL - DESIGN METHOD

Description	Functional - Design Method		
	Wastewater Parameters		
	Flow	TSS	BOD
	%	%	%
TOTAL METRO DIRECT O&M COSTS	42.46%	45.03%	12.51%
TOTAL METRO 41508 & 41509 DIRECT CIP COSTS**	59.61%	30.10%	10.30%

** Derived CIP cost allocation percentages differ from that of MWWD - Agency Contracts Division.

CITY OF SAN DIEGO - COST OF SERVICE STUDY

Stakeholder Group's Alternative Derivation of City O&M Cost Allocation Percentages (FY 1999)

FUNCTIONAL - DESIGN METHOD using Straight TSS Allocation Method at Point Loma

Description	Amount $	Functional - Design Method Wastewater Parameters				Functional - Design Method Costs		
		Flow %	TSS %	BOD/COD %		Flow $	TSS $	BOD/COD $
City Collection System	50,000,000	100.00%	0.00%	0.00%		50,000,000	0	0
City Treatment - San Pasqual (1)	3,000,000	27.65%	56.21%	16.14%		829,383	1,686,437	484,181
Metro Treatment - City's Share (2)	60,000,000	42.46%	45.03%	12.51%		25,477,247	27,017,223	7,505,530
City Laboratory (3)	5,000,000	42.46%	45.03%	12.51%		2,123,000	2,251,500	625,500
City Total - Direct O&M Costs	118,000,000	66.47%	26.23%	7.30%		78,429,630	30,955,160	8,615,211
City Administration	11,000,000	66.47%	26.23%	7.30%		7,311,237	2,885,650	803,113
Total City O&M Cost	129,000,000	66.47%	26.23%	7.30%		85,740,866	33,840,810	9,418,323

NOTE

(1) Used Metro Treatment O&M allocation percentages.
(2) Used Total Metro Direct O&M allocation percentages.
(3) Used Metro Technical Services O&M allocation percentages.

6-30-05 COS SEC Subpoena
SWRCB1299

CITY OF SAN DIEGO - COST OF SERVICE STUDY

Derivation of City CIP Allocation Percentages

FUNCTIONAL - DESIGN METHOD using Straight TSS Allocation Method at Point Loma

Description	Amount $	Functional - Design Method Wastewater Parameters Flow %	TSS %	BOD/COD %	Functional - Design Method Costs Flow $	TSS $	BOD/COD $
Fund 41506 - City CIP	33,000,000	100.00%	0.00%	0.00%	33,000,000	0	0
Fund 41508 & 41509 - Metro CIP	130,000,000	59.61%	30.10%	10.30%	77,486,521	39,123,659	13,389,819
Total City CIP	163,000,000	67.78%	24.00%	8.21%	110,486,521	39,123,659	13,389,819

SUMMARY OF CITY COST ALLOCATION PERCENTAGE DERIVATIONS

FUNCTIONAL - DESIGN METHOD

Description	Functional - Design Method Wastewater Parameters Flow %	TSS %	BOD/COD %
Total City O&M Cost	66.47%	26.23%	7.30%
Total City CIP	67.78%	24.00%	8.21%

6-30-05 COS SEC Subpoena
SWRCB1300

COST OF SERVICE ANALYSIS

ALLOCATION OF REVENUES REQUIRED FROM RATES TO FLOW, TSS, COD

TEST YEAR 2002

Functional - Design Method, Using Straight TSS Allocation at Point Loma

Description	Amount $	Wastewater Parameters Flow $	TSS $	BOD/COD $
City's Net O&M Costs	125,000,000	83,087,500	32,787,500	9,125,000
City's Net Capital Costs	66,000,000	44,734,800	15,840,000	5,418,600
Total City Revenues Required from Rates	191,000,000	127,822,300	48,627,500	14,543,600
		66.9%	25.5%	7.6%

CITY OF SAN DIEGO

ESTIMATED ANNUAL USER LOADINGS

TEST YEAR 2002

Description	Wastewater Parameters Flow (HCF)	TSS (LBS)	COD (LBS)
Total City's Annual User Loadings net of I&I	59,497,790	101,543,564	229,091,193

ESTIMATED UNIT COSTS OF FLOW, TSS AND COD

FUNCTIONAL-DESIGN METHOD

TEST YEAR 2002

Description	Wastewater Parameters Flow $/HCF	TSS $/LB	COD $/LB
Unit Costs of Service	2.1484	0.4789	0.0635

NOTE: The loadings and unit costs projected for FY 2002 above are based on Mass Balance performed on total annual wastewater flows generated by all classes of users in FY 1999.

STAKEHOLDER GROUP'S ALTERNATIVE METHOD BASED ON STRAIGHT TSS AT PLTP

SUMMARY OF CITY O&M AND CIP COST ALLOCATION PERCENTAGE DERIVATIONS

Description	City's Total O&M Cost Allocation percentages			City's Total Capital Cost Allocation percentages		
	Flow	TSS	COD	Flow	TSS	COD
	%	%	%	%	%	%
Functional - Design Method	66.47%	26.23%	7.30%	67.78%	24.00%	8.21%

SUMMARY OF UNIT COSTS OF SERVICE FOR FLOW, TSS AND COD

Description	Unit Costs of Service (FY 2002)		
	Flow	TSS	COD
	$/HCF	$/LB	$/LB
Functional - Design Method	$2.1484	$0.4789	$0.0635

APPENDIX C

RATE IMPACT

SWRCB1303

CITY OF SAN DIEGO

WASTEWATER COST OF SERVICE STUDY

Rate/Revenue Impact Analysis

Annual Base Fee Revenues

User Type (2)	Class TSS Range MG/L	Class COD Range MG/L	Existing Base Fee $	Proposed Base Fee (1) $	Annual Base Fee Revenues Existing $	Annual Base Fee Revenues Proposed $	Difference Proposed vs. Existing $	Difference Proposed vs. Existing %	Accounts Proposed TSS/COD
< 25,000 gpd Commercial / Residential									
Hospitals	101-200	401-600	$0.51	$9.93	$3,250	$63,274	$60,024	1846.89%	531
Printing/Graphics Services	201-300	201-400	$0.51	$9.93	$18,366	$357,599	$339,233	1847.07%	3,001
Auto Service Stations	201-300	401-600	$0.51	$9.93	$50,160	$976,635	$926,475	1847.04%	8,196
Retail Commercial Establishments	201-300	1001-1200	$0.51	$9.93	$3,482	$67,802	$64,320	1847.21%	569
Hotels	301-400	601-800	$0.51	$9.93	$1,542	$30,028	$28,486	1847.34%	252
Mini-Shopping Centers	601-700	1001-1200	$0.51	$9.93	$196	$3,813	$3,617	1845.41%	32
Industrial Laundry	601-700	1201-1400	$0.51	$9.93	$6	$119	$113	1883.33%	1
Food Service Establishments	601-700	1801-2000	$0.51	$9.93	$7,858	$153,001	$145,143	1847.07%	1,284
Supermarkets	801-900	1601-1800	$0.51	$9.93	$1,126	$21,925	$20,799	1847.16%	184
Residential									
Multi Family Residential Class	201-300	401-600	$0.51	$9.93	$175,736	$3,421,679	$3,245,943	1847.06%	28,715
Single Family Residential Class	201-300	401-600	$8.77	$9.93	$22,278,466	$25,225,219	$2,946,753	13.23%	211,692

Note:

(1) The proposed base fee computed includes an overall revenue requirement increase of 7.5%.

(2) The Commercial/Industrial user type listed for each TSS/COD range represents just the major type of commercial/industrial users present in that range. It does not preclude other user types from being part of that particular TSS/COD Range.

Total Annual Revenues (Base Fee Revenues and Usage Fee Revenues) (2)

User Type	Class TSS Range MG/L	Class COD Range MG/L	Annual Revenues (1) Proposed Method $	Annual Revenues (1) Straight TSS Method $	Annual Revenues (1) Existing Method $	Difference Proposed vs Straight TSS $	Difference Proposed vs Straight TSS %	Difference Proposed vs Existing $	Difference Proposed vs Existing %	Difference Straight TSS vs. Existing $	Difference Straight TSS vs. Existing %
< 25,000 gpd Commercial / Residential											
Hospitals	101-200	401-600	$1,702,227	$1,673,141	$1,594,175	$29,086	1.74%	$108,052	6.78%	$78,966	4.95%
Printing/Graphics Services	201-300	201-400	$3,933,492	$4,067,167	$3,760,877	-$133,675	-3.29%	$172,615	4.59%	$306,290	8.14%
Auto Service Stations	201-300	401-600	$11,602,919	$11,674,688	$10,568,380	-$71,769	-0.61%	$1,034,539	9.79%	$1,106,308	10.47%
Retail Commercial Establishments	201-300	1001-1200	$1,676,821	$1,576,225	$1,381,293	$100,596	6.38%	$295,528	21.40%	$194,932	14.11%
Hotels	301-400	601-800	$2,658,214	$2,677,210	$2,526,507	-$18,996	-0.71%	$131,707	5.21%	$150,703	5.96%
Mini-Shopping Centers	601-700	1001-1200	$209,037	$213,880	$193,831	-$4,843	-2.26%	$15,206	7.84%	$20,049	10.34%
Industrial Laundry	601-700	1201-1400	$42,439	$42,581	$38,478	-$142	-0.33%	$3,961	10.29%	$4,103	10.66%
Food Service Establishments	601-700	1801-2000	$5,645,382	$5,400,428	$4,530,332	$244,954	4.54%	$1,115,050	24.61%	$870,096	19.21%
Supermarkets	801-900	1601-1800	$1,038,175	$1,040,927	$900,725	-$2,752	-0.26%	$137,450	15.26%	$140,202	15.57%
Residential											
Multi Family Residential Class	201-300	401-600	$54,080,205	$55,121,133	$47,191,012	-$1,040,928	-1.89%	$6,889,193	14.60%	$7,930,121	16.80%
Single Family Residential Class	201-300	401-600	$71,260,579	$72,805,060	$77,226,322	-$1,544,481	-2.12%	-$5,965,743	-7.73%	-$4,421,262	-5.73%

Note:

(1) The annual revenues computed under the Proposed and Straight TSS Methods include an overall revenue requirement increase of 7.5%.

(2) The annual revenues computed represents only a subsection of the City's users and also does not include commercial/industrial users that discharge >25,000 gpd of wastewater.

CONCLUSIONS AND RECOMMENDATIONS

Cost Allocation Methodology

A key component in computing the unit costs upon which the rates are based is the cost allocation methodology chosen. The City currently uses the functional-design method of allocating costs. City staff and the cost of service study consultant have concluded that the functional-design method is the appropriate cost allocation methodology since it reasonably apportions costs to the three treatment parameters of flow, SS and COD. Both because of the permit requirements and the City's obligations to SWRCB, City staff does not have the discretion to base rates on only SS and flow. All users of the system – no matter where their sewage is treated – have benefited by the waiver from secondary treatment at the PLWTP. In addition, the participating agencies reviewed cost allocation methods extensively and ultimately agreed upon the functional-design method. However, some Group members did not agree. There was considerable discussion and the majority of the presentation time at the second, fourth and fifth meetings were devoted to the topic of cost allocation methodology.

At the fifth meeting, a straw poll was taken to determine the Group position about the cost allocation methodology. The majority of the Group voted to move beyond this topic and begin discussion on alternative rate structures and user classifications, although the Group did choose to discuss the issue further at a later date. The straw poll was divided between the following optional positions:

- "I am willing to validate the City's recommended use of the functional-design method."
- "This is an issue on which the Group does not want to provide a recommendation."

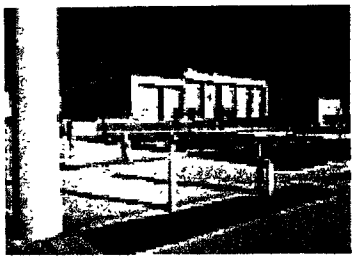
Although it was stated as a third alternative position with regard to cost allocation methodology, no member of the Group chose the statement: "I would like to see the consultants move forward with one of the other two methods as well." As a result, the Group ceased discussions on cost allocation methodology and moved on to discuss user classifications, mass balance issues, revenue neutrality, the base fee or monthly minimum fee issue, single family residential rate structure including usage cap and commercial/industrial rate structures.

Subsequently, the Group held another discussion about cost allocation methodology. An alternative methodology, the Straight Total Suspended Solids (TSS) Method, was presented and discussed, and has been included in Appendix B. Although there was a close vote regarding whether the alternative methodology should be recommended (6 voted to recommend it and 6 voted against recommending it), the Group agreed it is important to recognize the impact of a new cost allocation methodology on residents and businesses within the city. Consequently, the Group recommended that a rate impact analysis be presented in an appendix, comparing the City's existing monthly charges to the charges under the City's proposed rate structure and the alternative Straight TSS Method. This analysis is presented in Appendix C of this report.

EXHIBIT 4

R E P O R T

Sewer Cost of Service and Rate Design Study



METROPOLITAN WASTEWATER DEPARTMENT

DRAFT

November 30, 2001

BLACK & VEATCH
Corporation

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Section 1
Executive Summary

The City of San Diego (City) wanted to conduct a comprehensive cost of service and rate design study (Study) that includes a review of revenue requirements, user classifications, costs of service, and the design of a system of user charges for the City's wastewater service. In addition, the City also desired a review of its existing capacity fees. This report documents the results of the Study, recommends changes to user classification and cost allocation, and proposes wastewater rates that the City should charge its user classes in fiscal year (FY) 2002.

The City provides both wholesale wastewater services to the Participating Agencies (PAs) and retail service to the City's users. The City is financing its capital projects through a combination of federal loans and grants, which are administered by the State Water Resources Control Board (SWRCB). As a recipient of various federal grants and state loans, the City needs to comply with SWRCB's Revenue Program Guidelines. In order to be consistent with the Revenue Program requirements, SWRCB is mandating that the City modify its existing cost allocation basis and include the Chemical Oxygen Demand (COD) parameter in its rate structure.

The focus of this Study is primarily on the City's retail wastewater service. The specific objectives of this Study include:

- Review of the costs of providing regional wastewater collection, conveyance, treatment and disposal services to the City's users and to the PAs outside the City's retail service area.
- Determination of costs of service for the City's retail service area.
- Allocation of costs of service to the wastewater parameters of Flow, Total Suspended Solids (TSS) and COD.
- Allocation of parameter costs to the City's retail service user classes.
- Design of a system of user charges including wastewater user charges and capacity fees.

The following sections present a documentation of the cost of service review and analysis findings and the recommendations of the study.

REVIEW FINDINGS

This section of the Executive Summary provides a brief background of the wastewater system, a review of the revenue requirements and user classification, an evaluation of issues, an analysis of cost of service, and the design of wastewater rates and capacity fees.

Wastewater System

System Infrastructure: The City owns and operates a regional wastewater system that includes both the Municipal (Muni) System and the Metro System. Muni System is primarily a sewage collection system that serves the City's service area. The Metro system includes advanced primary treatment, tertiary reclamation, sludge processing facilities and an ocean outfall. For the regional system, the City holds a NPDES permit that stipulates discharge limitations. The City provides wastewater service to 14 PAs

pursuant to the terms of the Regional Wastewater Disposal Agreement.

Existing Rate Structure: The City's existing wastewater rate structures for the Single Family Residential (SFR), Multi-Family Residential (MFR) and Commercial/Industrial user classes include a fixed Base Fee and a Usage Rate. The Base Fee varies by user class. The MFR and commercial/industrial users have the same monthly base fee of $0.51 per meter. SFR users have a much higher monthly base fee of $8.77. These fees are effective as of March 1, 2001.

The current SFR usage rate effective as of July 1, 2001 is $2.856 per hundred cubic feet (hcf) of water usage. The bi-monthly SFR usage charges are determined by applying the SFR usage rate to a user's 60-day average winter water usage with a usage cap of 10 hcf. The MFR users are charged based on monthly water usage but with flows estimated at a 95 percent return to sewer.

The existing rate schedule for the commercial/industrial users is in the form of a 10x20 TSS/Return to Sewer matrix with 200 user rates. The rate applied to a user's monthly water usage depends on the user's TSS strength and percent return to sewer. Rates for Commercial/Industrial users that have TSS strengths greater than 1,000 mg/l, are computed individually at 100 percent return to sewer.

Review of Revenue Requirements

The City's principal source of operating revenues is the sewer service charges from the City's users and the PAs. The primary sources of capital revenues include sewer connection fees, capital fund balance, bond proceeds, capacity fees from the City and the PAs, pay-as-you-go revenues from the PAs, and interest earnings.

The City estimates overall annual wastewater Operation and Maintenance (O&M) expenditures in the range of $173 - $198 million during FY 2001 through FY 2005. The City's retail service area O&M expenditures, which are the focus of this Study, are estimated to be in the range of $148.6 to $168.3 million. Existing debt service requirements during the study period include annual payments in the range of $77.0 to $99.3 million. During the study period FY 2001 to FY 2005, the total wastewater Capital Improvement Program (CIP) is estimated at nearly $618 million.

In order to meet projected revenue requirements and to maintain desired operating and debt reserve balances fund, the City proposed the following revenue adjustments, which was approved by the City Council. The proposed increases are as follows:

Effective Date	Increases
March 1, 2002	7.5 percent
March 1, 2003	7.5 percent
March 1, 2004	7.5 percent
March 1, 2005	5.0 percent

Issues Examined

This Study involved extensive participation of a Stakeholder Group (Group). The four major issues that

were examined and for which stakeholder input was obtained include: SWRCB regulatory requirements, classification of commercial/industrial users, allocation method used to allocate costs to the wastewater parameters of flow, TSS and COD and rate structure alternatives.

Cost of Service

The total FY 2002 cost of service to be recovered from the City's retail users, is estimated at nearly $194 million, of which $130 million is operating costs and the remaining $64 million are capital costs.

The cost of service allocations conducted in this study are based on the functional-design method, that was approved by the PAs and SWRCB. The revenue requirements are allocated to the different user classes proportionate to their use of the wastewater system. As mandated by SWRCB, allocations are based on flows, TSS and COD parameters. The cost of service allocation performed for the City's retail service area users is consistent with the system-wide proportionate use approach used in allocating revenue requirements between the City and the PAs.

Rate Design

The rate structures designed in this Study incorporate the COD parameter as mandated by the SWRCB and provide for a system of user charges that enable fair and equitable recovery of costs from the various user classes.

STUDY RECOMMENDATIONS

This section of the Executive Summary outlines our recommendations of the study. The proposed changes include various aspects of the study including user classification, cost allocation, wastewater rate structures and capacity fees.

Proposed User Classification

We recommend that the City continue its existing classification of SFR and MFR users. However, to ensure compliance with SWRCB user classification requirements and to facilitate the incorporation of COD into the rate structure, we recommend that changes be made to the existing commercial/industrial user classifications.

The SWRCB user classification guidelines stipulate that costs must be allocated individually to large commercial users discharging more than 25,000 gpd. Therefore, we recommend that commercial/industrial users with greater than 25,000 gpd of wastewater discharge be categorized as large users and rates be individually calculated for these users. The City currently has nearly 150 large users.

We recommend that the City's commercial/industrial users that discharge less than or equal to 25,000 gpd of wastewater flows be classified using a user class matrix that is based on TSS and COD wastewater parameters instead of the current TSS/Return Factor variables. We recommend that the return to sewer percentage be directly applied to each user's metered water consumption (to estimate

wastewater flows) during sewer bill computations.

Cost Allocation

We recommend the continued use of the functional-design method in allocating costs to the wastewater parameters of flows, TSS and COD and the allocation of costs to the user classes proportionate to their use of the wastewater system.

Under the proposed cost of service, there is no significant change in MFR annual revenues. However, estimated FY 2002 SFR user revenues as a percentage of total user revenues is likely to be about two percent lower than FY 2000 actual revenue distribution. This two percent decrease in SFR revenue distribution is offset by the percent increase in FY 2002 commercial/industrial user class revenue distribution. The two percent shift in user class revenue distribution between the SFR and commercial/industrial user classes can be attributed to the introduction of COD parameter in the cost of service allocations. Many commercial/industrial businesses including supermarkets, food processing and organic chemical industries, and restaurants have much higher COD strengths than residential users, resulting in the shift in user class cost of service distribution.

Rate Design

Black & Veatch recommends the continued use of a rate structure that includes both a fixed monthly base fee and a variable water usage charge.

Base Fee: With respect to Base Fee, we recommend that the City establish uniform monthly base fee for all users instead of the existing method of varying base fees. Of the three Base Fee options examined, as selected by the stakeholder group, we recommend maintaining the base fee under $10.00 since a higher base fee would adversely impact users that have low water usage. Therefore, we recommend a monthly base fee of $9.93 for FY 2002 for all users.

Residential Usage Rate: We recommend that the City continue its existing method of computing bi-monthly SFR wastewater charges, but with a usage cap of 14 hcf instead of the existing 10 hcf cap. Three different usage cap alternatives were examined and based on stakeholder group input, we recommend a usage cap of 14 hcf. The mass balance analysis also indicates a need for a higher usage cap. We recommend that the City continue its existing method of determining bi-monthly user charges based on 60-day average winter water usage and continue to estimate MFR wastewater usage charge based on monthly water usage. Table ES-1 presents a summary of the Residential Rate Schedule.

Commercial/Industrial Usage Rate: For commercial/industrial users that discharge less than 25,000 gpd of flows, we recommend that the City establish a two-dimensional rate matrix based on TSS and COD strength ranges. The wastewater rates are computed for each TSS/COD strength range based on the mid-point strength of the range. Table ES-2 presents the commercial/industrial rate matrix.

TABLE ES-1 SUMMARY OF RESIDENTIAL RATE SCHEDULE (FY 2002)

Description	Usage Rate $/hcf
SFR Usage Rate ($/hcf of Water) (1)	$2.22
MFR Usage Rate ($/hcf/Wastewater) (2)	$2.92

NOTE
(1) Rate based on a usage cap of 14 hcf
(2) Rate applied to wastewater estimated based on 95% return to sewer

TABLE ES-2 COMMERCIAL/INDUSTRIAL USER CLASS (< 25,000 GPD Discharge) (FY 2002)

(mg/l)		TSS 0-100	TSS 101-200	TSS 201-300	TSS 301-400	TSS 401-500	TSS 501-600	TSS 601-700	TSS 701-800	TSS 801-900	TSS 901-1000
COD	COD	A	B	C	D	E	F	G	H	I	J
0-200	AA	$2.21	$2.43	$2.64	$2.85	$3.06	$3.28	$3.49	$3.70	$3.91	$4.13
201-400	BB	$2.37	$2.58	$2.79	$3.00	$3.22	$3.43	$3.64	$3.85	$4.07	$4.28
401-600	CC	$2.52	$2.73	$2.95	$3.16	$3.37	$3.58	$3.79	$4.01	$4.22	$4.43
601-800	DD	$2.67	$2.89	$3.10	$3.31	$3.52	$3.74	$3.95	$4.16	$4.37	$4.59
801-1000	EE	$2.83	$3.04	$3.25	$3.46	$3.68	$3.89	$4.10	$4.31	$4.53	$4.74
1001-1200	FF	$2.98	$3.19	$3.41	$3.62	$3.83	$4.04	$4.25	$4.47	$4.68	$4.89
1201-1400	GG	$3.13	$3.35	$3.56	$3.77	$3.98	$4.20	$4.41	$4.62	$4.83	$5.05
1401-1600	HH	$3.29	$3.50	$3.71	$3.92	$4.14	$4.35	$4.56	$4.77	$4.99	$5.20
1601-1800	II	$3.44	$3.65	$3.87	$4.08	$4.29	$4.50	$4.71	$4.93	$5.14	$5.35
1801-2000	JJ	$3.59	$3.81	$4.02	$4.23	$4.44	$4.66	$4.87	$5.08	$5.29	$5.51
2001-2200	KK	$3.75	$3.96	$4.17	$4.38	$4.60	$4.81	$5.02	$5.23	$5.45	$5.66

NOTE: (1) The rates for each TSS/COD range is calculated based on mid-point loading of the range.

Wastewater charges for Commercial/Industrial users discharging greater than 25,000 gpd of flows are calculated individually based on cost of service unit rates. The cost of service unit rates are as follows: Flow - $2.1403 per hcf, TSS - $0.3652 per lb and COD - $0.1303 per lb. The total monthly charge computed using these unit rates includes the monthly base fee of $9.93.

Rate Impact

The main objective of this Study is to ensure fair and equitable allocation of costs to all the user classes in proportion to their demand for wastewater services. The combination of changes proposed, including user reclassification, introduction of COD and the establishment of uniform base fee provide for a fair and equitable allocation of costs among the City's user classes.

The cost of service analysis indicates that in the existing method where the allocations and rate structures are based only on Flow and TSS parameters, some users may have been paying less than their fair share while others may have been contributing more than their fair share. This study, which incorporates the COD parameter in both the allocation of costs and in the design of rate structures, reassigns revenue requirements among the various user classes so as to facilitate fair and equitable cost recovery. Overall, FY 2002 SFR user class revenue requirements are estimated to decrease by about 7.7 percent under the proposed rate schedule and MFR and most other commercial/industrial user class revenue requirements are estimated to increase in the range of four to twenty-five percent.
While the proposed changes lead to increase in wastewater charges for some users and decrease for some others, yet it ensures fair and equitable allocation that is proportionate to use. In addition, all aspects of the Study including identification and aggregation of O&M and capital costs, classification of users, allocation of costs and the development of rate structures conform to the revenue program guidelines set forth by the SWRCB.

Section 2
Introduction

BACKGROUND

The City retained Black & Veatch to conduct a comprehensive cost of service and rate design study to establish a fair and equitable system of user charges for the City's retail wastewater service. This report documents the findings, analyses. results and recommendations of the Study.

The City owns and operates a regional wastewater system that provides wastewater collection, conveyance and treatment services to the City and a number of Participating Agencies (PAs) outside the City. The City operates the regional wastewater system under the federal National Pollutant Discharge Elimination System (NPDES) permit that stipulates standards of discharge. To comply with the discharge standards and to meet other requirements of the Environmental Protection Agency's (EPA) Clean Water Act. the City had to undertake various capital project initiatives including the enhancement of existing wastewater treatment facilities and the construction of new tertiary wastewater reclamation facilities. The City operates the wastewater system as a self-supporting enterprise and costs are accounted for separately under the wastewater enterprise fund.

To minimize the impact of the capital project initiatives on the users of the City and its PAs, the City is financing its capital projects through a combination of federal loans and grants, which are administered by the State Water Resources Control Board (SWRCB). As a recipient of various federal grants and state loans, the City needs to comply with SWRCB's Revenue Program Guidelines. The guidelines indicate that recipients of state-administered grants and/or loans establish a system of user charges that recover operating and capital costs from users on a basis proportionate to use. The revenue program requires a fair and equitable apportioning of costs, based on a user class' contributions of flow and strength of wastewater pollutants.

To comply with the revenue program guidelines, the City conducted a review of cost of service and developed a strength-based billing method to allocate costs among the various PAs and the City. The strength-based billing, which is based on flow and the strength parameters of Total Suspended Solids (TSS) and Chemical Oxygen Demand (COD), was approved by the SWRCB in 1998. The PAs are currently billed based on their contribution of flow, TSS and COD as per the terms outlined in the service contract between the City and its PAs that receive wastewater services.

However, the City's user charges that are assessed within the City's service area are based only on Flow and TSS and do not include the COD parameter. In order to be consistent with the Revenue Program requirements, SWRCB is mandating that the City modify its existing cost allocation basis and include the COD parameter in its rate structure. Therefore, the City requested a comprehensive cost of service study that includes a review of City's projected revenue requirements, allocation of costs to strength and flow parameters, development of unit costs and design of rate schedules for the various user classes.

OBJECTIVES

Several factors need to be considered in the development of a financial plan and in the design of rates. While at times there may be conflict among the different factors, often judgement and/or policy issues play a role in the final design of rate structures and rates. The major objectives of the study are:

- Ensure *Revenue Sufficiency* to meet the operation and maintenance (O&M) and capital costs of the City's wastewater enterprise
- Plan for *Revenue Stability* to provide for adequate operating and capital reserves and the overall financial health of the wastewater enterprise
- Maintain good *Financial Ratings* by providing for a stable and reliable financial position so that debt issuance can be achieved at the lowest cost
- Ensure *Fairness and Equitability* in the development of a system of user charges
- Minimize *Rate Shock* to reduce financial hardship on the different user classes
- Enhance *Public Understanding of the Rate-Setting Process and Acceptance* through stakeholder participation
- Ensure *Compliance* with regulatory requirements of the SWRCB

SCOPE OF THE STUDY

The scope of this study involves the determination of *Wastewater User Rates* through a comprehensive cost of service and rate design study, determination of *Capacity Fees* and obtaining the approval of the SWRCB. While User Rates facilitate the generation of adequate revenues to meet routine annual O&M and capital expenditures including debt service, Capacity Fees ensure that new users pay their fair share of costs so that existing users are not burdened with providing capacity for new users.

The comprehensive cost of service and rate design component includes three major processes. Figure 2-1 provides a graphical representation of the various steps involved in the comprehensive cost of service and rate design process. The three major processes are as follows:

- **Financial Planning:** Revenue requirements are projected for a five-year period from FY 2002 through FY 2006. Financial planning involves estimation of annual O&M and capital expenditures, annual debt service and reserve requirements, operating and capital revenue sources and the determination of required annual user revenues from rates and charges. User classification, annual user loadings estimation for the selected wastewater parameters, and mass balance are also performed concurrently.

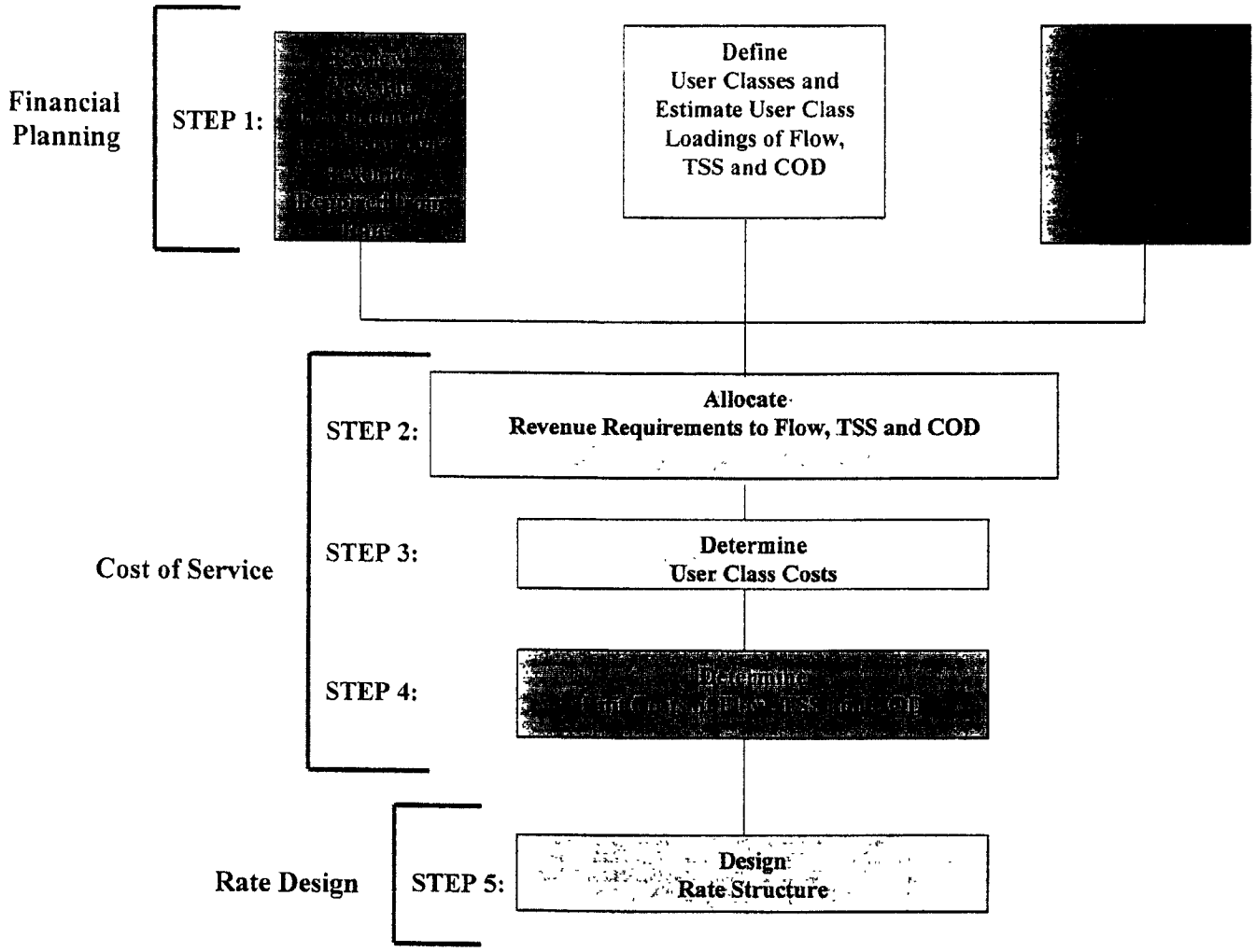
- **Cost of Service:** Cost of Service involves the apportioning of annual revenues required to the different user classes proportionate to their contributions of flow, TSS and COD to the wastewater system.

- **Rate Design:** Rate Design involves the development of a fixed and variable schedule of rates for each of the different user classes to equitably recover the costs apportioned to them.

The Capacity Fee development includes the determination of wastewater infrastructure capacity and the associated costs required to accommodate new growth, and the design of one-time capacity fees for the

different classes of new users.

FIGURE 1 – COST OF SERVICE / RATE DESIGN PROCESS



ASSUMPTIONS USED IN THE STUDY

Following are the assumptions used in the study:

1. Annual O&M and capital expenditures, annual revenues from the PAs, other revenue sources and reserve requirements, O&M inflation factors and user account growth projections are all based on the City's *Rate Case*.

2. Annual average wastewater system Flow and TSS/COD concentrations used in the Mass Balance

Analysis are based on Metropolitan Wastewater Department (MWWD)'s annual report on projected flows and strength. The data used in the Study is from the *Projected Flow and Strength Report (FY 2000)*.

3. TSS strength assignment for the different user classes is based on MWWD Sewer Classification Program's *Standard Industrial Classification (SIC) Guidelines List*.

4. COD strength assignment for the different commercial/industrial SIC classes is based on Black & Veatch judgement, and past sampling study results data from *Los Angeles County Sanitation District (LACSD)*, *City of Los Angeles (LA)* and *SWRCB Guidelines*.

This Study report includes six sections besides the Executive Summary and the Introduction. Sections 3, 4 and 5 cover the ***financial planning*** phase, section 7 explains the ***cost of service*** and section 8 describes the ***rate design*** phase. A brief description of each section follows.

- ***Section 3*** describes the regional wastewater system operated by the City under the auspices of Metropolitan Wastewater Department (MWWD) and the relationship between the City and the PAs.

- ***Section 4*** describes the existing and proposed user classifications. In addition, this section presents a discussion on wastewater flow estimation and strength assignment for the different residential and commercial/industrial classes, and on the mass balance analysis.

- ***Section 5*** includes a discussion on wastewater system revenues and expenditures, capital program financing including debt service, required annual revenue adjustments and the determination of annual revenues required from user rates.

- ***Section 6*** identifies the major issues that are addressed in this Study and presents a discussion on each of the different issues. This section also provides a brief description of the stakeholder group involvement and their contributions to the Study.

- ***Section 7*** includes a detailed discussion on the allocation of costs to wastewater parameters, determination of projected user class loadings and the determination of unit costs.

- ***Section 8*** presents a discussion on the proposed rate structure. This section also includes a detailed discussion on the merits of the proposed rate structure and the expected impact on the different user classes.

- ***Section 9*** describes the methodology used in determining capacity fees for the different user classes.

Section 3
Wastewater System

This section of the report presents a brief overview of the regional system. the relationship between the City and its PAs that discharge to the regional system and the City's existing retail rate structures.

REGIONAL WASTEWATER SYSTEM

A brief description of the City's regional wastewater system and the relationship between the City and the PAs that discharge to the regional system is presented in this sub section.

Regional System Infrastructure

The City-owned regional wastewater system includes both the Muni System and the Metro System. Muni System is primarily a sewage collection system that serves the City's service area and includes trunk lines, collector mains, pump stations and stormwater interceptor pump stations. The Muni system also includes the San Pasqual Water Reclamation Plant, which has a production capacity of 1 mgd of reclaimed water.

The Metro system infrastructure currently includes two wastewater treatment plants that are operational, one wastewater treatment plant that is under construction, two ocean outfalls, a biosolids center, two pump stations and force mains and gravity flow interceptors. A brief description of some of the major Metro System facilities is provided below.

***Point Loma Wastewater Treatment Plant (PLWTP)*:** The PLWTP is the principal treatment facility in the Metro system, with a permitted treatment capacity of 240 mgd of average daily flow. The PLWTP provides advanced primary treatment. The plant currently achieves a TSS removal rate of nearly 85-87 percent through the use of enhanced chemical treatment and Bio-Chemical Oxygen Demand (BOD) removal of 58 percent. In the future, PLWTP is to receive raw solids from the South Bay Water Reclamation Facility (SBWRF) when it becomes operational.

***North City Water Reclamation Plant (NCWRP)*:** The NCWRP provides tertiary treatment and has a permitted capacity of 30 mgd of average daily flow and produces about 3.3.mgd of reclaimed water. The non-usable effluent from this plant is conveyed to the PLWTP and the solids from NCWRP are processed at the Metropolitan Biosolids Center (MBC). The City was required to construct the NCWRP and the SBWRF as a condition of EPA's waiver from secondary treatment at PLWTP.

Point Loma Plant Ocean Outfall (PLOO) : The Point Loma Plant Ocean Outfall is a 4.5 mile long outfall that discharges treated sewage effluent at a depth of 320 feet of water. Currently, all of the treated effluents from the regional system is discharged through this outfall.

***Metropolitan Biosolids Center* (MBC):** The MBC provides state of the art sludge processing. The facility receives raw sludge from NCWRP and digested sludge from PLWTP and after processing returns the centrate to PLWTP.

The PLWTP, NCWRP, SBWRF (that is under construction), the South Bay Ocean Outfall, and MBC

are all parts of an integrated regional system. Due to this complex exchange of effluents, solids and centrates, sharing of one common outfall and receipt of flows from the participating agencies, the Metro System is viewed and operated as "a regional system" from a permitting, regulatory compliance and operational efficiency standpoint. The City as the owner and operator of a regional system holds a NPDES permit that stipulates discharge limitations. Currently, as per the NPDES permit requirements, a Mean Monthly TSS Removal percentage greater or equal to 80% and a Mean Annual BODRemoval percentage greater or equal to 58% apply to the undiluted effluent discharged through the PLOO. The percentage removal rates are calculated on as system-wide basis.

Relationship between the City and Participating Agencies

The Metro system provides "wholesale" treatement services including some conveyance, treatment and sludge disposal operations to the City and 14 PAs that are outside the City's jurisdiction. Services to the PAs are provided pursuant to the terms of the Regional Wastewater Disposal Agreement, which expires on December 31, 2050. The PAs and the City are responsible for sewage collection operations within their own respective jurisdiction, and for the conveyance of the collected sewage through trunk lines to the Metro system. Some of the key provisions of the Regional Wastewater Disposal Agreement are as follows:

- The City has full ownership and rights of operation of the Metro system.
- The PAs pay for the services through a system of Sewer System Charges, Capacity Fees and New Contract Capacity Charge. The Sewer System Charge is an annual calculation based on the flow and strength of the wastewater conveyed to the Metro system.
- PAs' share of facilities expansion costs would be determined based on the *proportion* of flows received and strength of the flows.
- PAs' share of Metro O&M costs would be based on their *proportionate* flow into the Metro system and the strength of their wastewater.
- The City shall determine the Sewer System Charge unit rates by allocating net O&M and capital costs among parameters of Flow, COD and TSS based on the approved Functional-Design Methodology of allocation.

EXISTING RATE STRUCTURE

The City's existing wastewater rate structures for the SFR., MFR and Commercial/Industrial user classes include a fixed Base Fee and a Usage Rate. While the Base Fee is assessed on each water meter, the usage rate is applied to a user's water usage. The City's wastewater rate resolution with the existing rates for the various user classes is included in [redacted]

Base Fee

In the existing rate structure the base fee varies by user class. The MFR and commercial/industrial users have the same monthly base fee of $0.51 per meter. SFR users have a much higher monthly base fee of $8.77. These fees are effective as of March 1, 2001.

Usage Rate

The usage rate for all user classes is based on the volume of wastewater flow and the strength of TSS.

The existing rate structure does not bill for the organic content (COD) of wastewater. The usage rate varies by user class. The usage rates for SFR, MFR and Commercial/Industrial user classes are discussed.

SFR Usage Rate: The current SFR usage rate effective as of July 1, 2001 is $3.05 per hcf of water usage. This usage rate is established based on a 100 percent return of annualized winter water usage and a TSS strength of 275 mg/l. A SFR user's bi-monthly sewer charges are established at the beginning of the FY, by applying the usage rate to the user's 60-day average winter water usage. The user is then assessed that bi-monthly charge until the next FY.

Winter water usage is the metered water usage recorded during the months of December through March. In the existing rate structure, the 60-day average winter water usage that is used to establish bi-monthly sewer charges is capped at 10 hcf. This implies that if a user's 60-day average winter water usage exceeds 10 hcf, then the usage rate is applied only to 10 hcf and the usage in excess of 10 hcf is not billed. New users who do not have a winter water usage history are assessed a flat bi-monthly charge until the winter water usage is established.

Under the existing rate structure the maximum bi-monthly sewer charge including base fee that a SFR user can be assessed is $78.54.

MFR Usage Rate: The current MFR usage rate effective as of March 1, 2001 is $2.71 per hcf of water usage. This usage rate is applied to MFR user's actual monthly water usage. The usage rate is established based on a 95 percent return to sewer and a TSS strength of 275 mg/l. Return to sewer is the percentage of water usage that is returned to sewer as wastewater.

Commercial/Industrial Usage Rate: The Commercial/Industrial usage rates are based on percent of water returned to sewer and the strength of TSS. Commercial/industrial users are classified based on Standard Industrial Classification (SIC) code and are assigned TSS strengths and percent return to sewer that are characteristic of the types of business. The existing rate schedule is in the form of a 10x20 TSS/Return to Sewer matrix with 200 user rates. The rate applied to a user's monthly water usage depends on the user's TSS strength and percent return to sewer. The commercial /industrial user matrix is included in [redacted]

Rates for Commercial/Industrial users that have TSS strengths greater than 1,000 mg/l, are computed individually at 100 percent return to sewer. Rates are computed on the basis of $2.100 per hcf of flow, and $0.272 per 100 mg/l of TSS.

Except for a few large commercial/industrial users, most of the City's users are billed bi-monthly through a combined water and sewer bill.

Section 4
Sewer User Classification and Loadings

One of the major tasks in a cost of service and rate design process is the classification of the users of the wastewater system and the determination of annual flows and wastewater loadings (TSS, COD and other wastewater constituents) associated with each class. The existing and proposed classification of the City's users, the estimation of wastewater flows and loadings for each of the proposed user classes and the mass balance analysis are discussed in this section of the report.

SEWER USER CLASSIFICATION

In addition to the 14 PAs, who are the City's "wholesale" users, the City's wastewater enterprise has a mix of "retail" users within the City's service area. The City's retail users primarily comprise regular water/sewer, sewer only and the Department of Navy users. Since the focus of this Study is the City's retail users, discussions on sewer user classification relates exclusively to the users within the City's service area and henceforth these users are referred in this report as "City's Users". A review of the City's existing user classifications, and the proposed changes to the classifications are discussed in the following subsections.

Existing City User Classifications

The City currently serves a population of nearly 1.28 million within the City's service area.. As per FY 2000 estimate the City has a total of 259,340 sewer accounts. The breakdown of the City's sewer user classes and the number of accounts associated with each class as of FY 2000, are as follows:

User Class Description	Number of Accounts
Single Family Residential (SFR)	214,860
Multiple Family Residential (MFR)	29,140
Commercial/Industrial	15,340

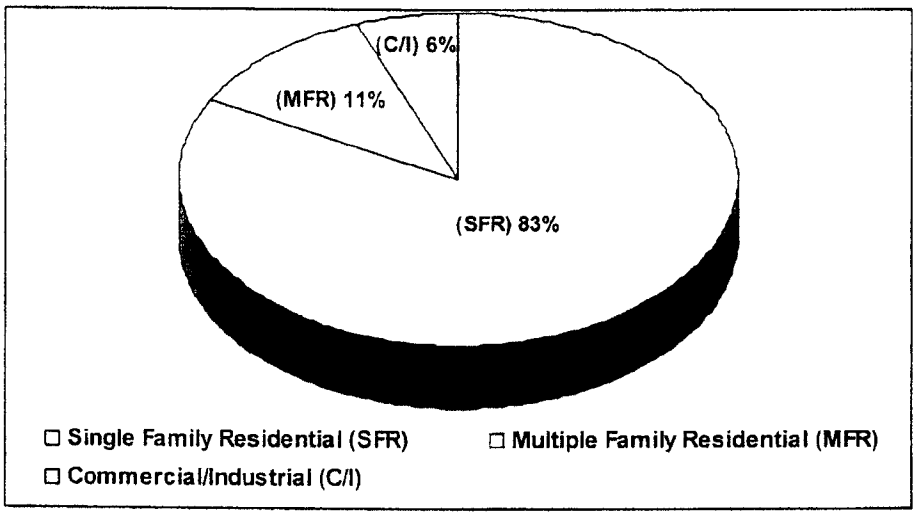
The percentage distribution of the accounts is shown in Figure 4-1. Residential accounts comprise 94% of the total sewer user accounts serviced.

Residential Classification: The City's residential users are classified into SFR and MFR classes. The residential classes are homogenous in that all the users have the same TSS and COD strengths. However, the volume of flows can vary among the users depending on the water usage. The residential users are classified into SFR and MFR since they differ in their water usage characteristics. SFR water usage includes significant irrigation usage whereas MFR water usage includes very low irrigation usage.

Commercial/Industrial Classification: Typically, there is significant variability in both the volume of wastewater flows and wastewater strengths, among the different types of commercial/industrial users such as food service establishments, retail stores, and supermarkets. Therefore, to ensure fair and equitable assessment of wastewater service charges, the City has developed a commercial/industrial user class matrix based on the two variables of TSS concentration and percent return to sewer.

Commercial/Industrial users with a TSS concentration of greater than 1,000 milligrams per liter (mg/l) are considered as large users and as mentioned in Section 3, their rates are computed individually. The commercial/industrial user classification is discussed further in Section 6.

FIGURE 4-1 – DISTRIBUTION OF SEWER USER ACCOUNTS
(FISCAL YEAR 1999-2000)



Proposed User Classifications

Black & Veatch recommends that the City's users be grouped into four broad user classes: SFR, MFR, Commercial/Industrial with < 25,000 gpd discharge, and Commercial/Industrial with > 25,000 gpd discharge. No changes are proposed for the City's SFR and MFR classes. However, we propose changes to the City's Commercial/Industrial user classification in order to be consistent with the SWRCB user classification guidelines and to accommodate the required incorporation of COD parameter in the proposed rate structure.

Commercial/Industrial Classification: In the proposed user classification, the City's commercial/industrial users are classified into two groups:

- Commercial/Industrial users that discharge greater than 25,000 gpd of wastewater flows
- Commercial/Industrial users that discharge less than or equal to 25,000 gpd of flows.

The classification of commercial/industrial users with greater than 25,000 gpd of wastewater discharge is consistent with the SWRCB user classification guidelines. The guidelines stipulate that costs must be allocated individually to large commercial users discharging more than 25,000 gpd.

In the proposed user classification, the City's commercial/industrial users that discharge less than or equal to 25,000 gpd of wastewater flows are further classified using a *user class matrix* that is based on TSS and COD wastewater parameters instead of the current TSS/Return to Sewer variables. The return to sewer percentage in the proposed classification would be directly applied to each user's metered water consumption (to estimate wastewater flows) during sewer bill computations.

WASTEWATER FLOW ESTIMATION

In order to perform a cost of service analysis, wastewater flow needs to be estimated and projected for each user class. Wastewater flow is not measured for a vast majority of users because of cost concerns. Typically, flows are estimated based on winter water usage for SFR users and as a percentage return of water usage for MFR and most Commercial/Industrial users. Actual wastewater flow is measured for only a few commercial/industrial users.

Residential Class

Black & Veatch reviewed the methods that the City currently uses to estimate annual wastewater flows for the residential class. The City currently uses annualized winter water usage with a usage cap of 10 hcf to estimate wastewater flows for the SFR users and actual monthly water usage to estimate wastewater flows for the MFR users. The methods used in estimating wastewater flows differ between SFR and MFR users due to the differences in their water consumption patterns.

SFR Wastewater Flow Estimation: SFR water consumption includes two types of water usage: domestic use (water used inside the home) and irrigation use (water used in the yard). While the level of domestic water usage is expected to remain fairly stable throughout the year, fluctuation in irrigation usage could occur due to seasonal changes, which in turn causes significant variations in water usage during the year. Irrigation usage is at its minimum levels during winter period and therefore the water used during the winter period can be associated with domestic usage. Typically, domestic water returns to the sewer system and irrigation water does not. Therefore, for SFR users it is appropriate to use annualized *winter water usage* as a direct approximation of annual wastewater flows returned to the sewer. The four-month period from December through March is deemed as the SFR winter water usage period.

In San Diego, weather conditions are moderately dry even during winter months, which would result in some level of irrigation water use even during the winter period. To account for winter irrigation usage that does not return to the sewer, the City currently has set a usage cap of 10hcf per month in estimating and billing annual SFR wastewater flows. Usage Cap is the level of water consumption that is included in sewer billing. Any water usage beyond the usage cap level is deemed as not being returned to the sewer and hence is not included in sewer billing. Black & Veatch performed a Mass Balance analysis that indicates a need for a higher usage cap than the current 10 hcf level. Based on the mass balance analysis and feedback obtained from the stakeholder group, we propose a SFR usage cap of 14 hcf instead of the current 10 hcf. The issue of SFR usage cap is discussed in greater detail in Section 6.

MFR Wastewater Flow Estimation: MFR water consumption relates predominantly to domestic use with very little or no irrigation use since most MFR complexes have small green areas. MFR

complexes with very large green belts are likely to have separate irrigation water meters. . Therefore, MFR water usage levels remain relatively stable throughout the year and it is appropriate to use actual monthly water usage in estimating wastewater flows. However. MFR complexes do have some minimum irrigation usage, which does not return to the sewer, and therefore generally the City estimates MFR annual wastewater flows to be 95 percent of their annual water usage.

Commercial Class

Wastewater flows for the commercial/industrial users are estimated based on actual monthly water consumption. Water usage patterns vary significantly among the different types of commercial/industrial businesses and therefore the City typically assigns to each user a percent return to sewer. Users whose return to sewer varies significantly from what has been assigned can go through an appeals process to get the return to sewer modified.

TSS/COD STRENGTH ASSIGNMENT

The City's existing sewer user classification and rate structures are based on wastewater flows and TSS concentrations. The City currently assigns TSS strengths to the different classes of commercial/industrial users based on SIC codes. The City's Sewer Classification Program, Industrial Classification Guidelines List is included as Appendix 4-1. No changes were made to the existing TSS assignments.

Since the proposed rate structure needs to include the COD parameter, Black & Veatch assigned COD strengths based on SIC codes to the different types of commercial/industrial users. A list of SIC codes with the corresponding proposed TSS and COD strengths is included in Appendix 4-2. The COD assigned to the different SIC codes is based on past sampling studies data from the Los Angeles County Sanitation District (LACSD), City of Los Angeles (LA) and SWRCB guidelines. BOD data was obtained from these sources and was then converted to COD strengths by applying a conversion factor of 2.

MASS BALANCE ANALYSIS

Black & Veatch used the historical FY 1999 water consumption as the base data to estimate annual wastewater flows and TSS/COD loadings for all user classes. The use of reliable data is critical since these historical flows and loadings are used to project future user class annual flows and strength loadings. Projected flows and loadings are later used in the cost of service analysis (to derive the unit costs of service and user class costs). Mass Balance analysis is usually performed to verify the appropriateness of the estimated flows and loadings.

Mass Balance is the process of matching and reconciling calculated total annual flows and strength loadings in pounds with the quantities actually received at the treatment facilities. The mass balance analysis takes into consideration other non-user flows such as the infiltration & inflow (I&I) flows that get into the sewer system. I&I flows refers to water other than wastewater that enters a sewer system from other sources including cracked sewer mains, manholes and sewer vents. Variances

between the actual flows and loadings received at the treatment facilities and the calculated historical flows and loadings are usually reconciled against the SFR flows and loadings since the flows and loadings from that user class can be compared against industry standards.

The City's share of total annual average flows including I&I flows for FY 1999 is estimated at 121 mgd of which 2 mgd is the estimated I&I flow. When the calculated annual City's flows and loadings were compared with the actual City's share (net of I&I) received at the treatment facilities, the analysis indicated a 3.7 percent variance. The calculated flows were higher than the actual City's share of flows received.

The City's measured annual average TSS and COD strengths are 269 mg/l and 610 mg/l respectively. The mass balance analysis on loadings indicated that calculated TSS was 1.2% higher than measured TSS. The calculated COD was 7.3% higher than measured COD.

Black & Veatch adjusted the City's average annual SFR flow estimate from 55 mgd to 50.5 mgd. Similarly, the City's SFR TSS strength estimate was reduced from 275mg/l to 265 mg/l and the SFR COD estimate was reduced from 550 mg/l to 450 mg/l. With these adjustments to the historical SFR estimates of flows and loadings, Black & Veatch was able to reconcile the variances and achieve a reliable mass balance as presented in the mass balance summary in Table 4-1.

TABLE 4-1 MASS BALANCE ANALYSIS SUMMARY

DESCRIPTION	WASTEWATER FLOW (HCF/YR)	TSS LOADINGS (LBS/YR)	COD LOADINGS (LBS/YR)
Total Calculated City User Flows (HCF/Year)	58,947,931	98,975,653	226,185,436
Estimated City User Flows not discharged to City Facilities	1,854,278	3,104,061	6,208,123
Net Calculated City Flows (HCF/Year) (1)	57,093,653	95,871,592	219,977,313
City's Actual 1999 Flows into the plant (HCF/Year)	58,068,182	96,846,114	219,613,864
City's Estimated 1999 I&I (HCF/YR)	975,936	544,572	726,096
City's Actual 1999 Loadings net of I&I Flows (HCF/YR)	57,092,246	96,301,541	218,887,767
VARIANCE ANALYSIS OF ANNUALFLOWS AND LOADINGS			
Variance between actual and calculated (HCF/YR or LBS/YR)	1,407	-429,950	1,089,545
Variance between actual and calculated (%)	0.0025%	-0.45%	0.50%

(1) Mass Balance perfomed based on calculated annual wastewater flow generation of all user classes.

ANNUAL WASTEWATER FLOWS AND LOADINGS PROJECTION

Annual wastewater flows and TSS/COD loadings need to be projected for each user class to determine each user class' cost of service and sewer rates. A brief discussion on the method used in estimating user class flows and loadings for FY 2002 follows. User class flows and loadings are projected for the fiscal year, for which cost of service allocations are made and rates are calculated. In this Study, cost of

service analysis and rate design is performed for FY 2002.

Table 4-2, summarizes the historical and projected average number of customer accounts and annual wastewater flows for FY 2001 to FY 2005. The projection of customer accounts shown in Table 4-2, is based upon the assumption that annual growth for most of the City's user classes will continue at the rate of one and one-half percent and there will be no increases in the government users.

The wastewater flows and loadings for FY 2002 for each user class is estimated based on the projected increase in the number of accounts and the current annual wastewater flow and loadings. Wastewater flows are projected to increase proportionately with growth. A summary of projected estimates of user class wastewater flows and loadings is shown in Table 4-3.

TABLE 4-2 HISTORICAL AND PROJECTED NUMBER OF ACCOUNTS

User Class Description	Growth Rate	# Accounts FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Water/Sewer - SFR	1.50%	203,611	206,665	209,765	212,912	216,106	219,348	222,639
Water/Sewer - MFR	1.50%	28,038	28,459	28,885	29,319	29,759	30,205	30,658
Water/Sewer - Commercial/Industrial	1.50%	13,711	13,917	14,125	14,337	14,552	14,770	14,992
Sewer Only - SFR	1.50%	7,623	7,737	7,853	7,971	8,091	8,212	8,335
Sewer Only - MFR	1.50%	305	310	314	319	324	329	334
Sewer Only - Commercial/Industrial	1.50%	284	288	293	297	301	306	311
Gov/Mil - SFR	0.00%	458	458	458	458	458	458	458
Gov/Mil - MFR	0.00%	372	372	372	372	372	372	372
Gov/Mil - Commercial/Industrial	0.00%	988	988	988	988	988	988	988
Water/Sewer Very Large Users (ComInd)	1.50%	110	112	113	115	117	119	121
Govt./Mil. Very Large Users	0.00%	35	35	35	35	35	35	35
Total		255,535	259,340	263,202	267,123	271,103	275,142	279,243

Section 6
Study Issues/Stakeholder Input

As the graphical representation of the cost of service and rate design process indicates in the introductory section of this report. once the revenue and service requirements are determined, the next critical step in the process is the allocation of revenue requirements to the wastewater parameters. The allocation of costs and the design of rate structures are of particular significance in this Study due to the introduction of COD as an additional parameter in the allocation of costs and in the rate structure. Since stakeholder participation and input is an important element of this study, several issues pertaining to cost allocation methods and rate structure alternatives were discussed with the stakeholder group. It is essential to highlight the important issues that were examined and the stakeholder contributions to those issues since they provide the framework for the cost of service and rate design discussions presented in Sections 7 and 8.

ISSUES

The issues examined in this study can be classified into the following four major areas:

- SWRCB Regulatory Requirements
- Sewer User Classification
- Cost Allocation
- Rate Structure Design

The issues mentioned above are highly interdependent and hence both the analysis and the results of each of the issues have to be examined in terms of the potential impact on each other.

SWRCB Regulatory Requirements

The City has received federal and state Clean Water Grant (CWG) funds and State Revolving Fund (SRF) loans for the construction of wastewater treatment facilities. As a recipient of the federal grants and state loans, the City is obligated to establish a revenue program that complies with the revenue program requirements set forth by the SWRCB. One of the specific conditions that the City agreed to meet when it accepted the federal grant funds was to include strength-based billing in addition to flow-based billing. In compliance, the City established a flow and strength based billing for the PAs in 1998. Since 1998, the City has been billing all the PAs on the basis of flow, TSS and COD parameters.

However, the City continues to bill its own retail service area users only on the basis of flow and TSS and has not included COD into its billing structure. The SWRCB has now mandated that the City include BOD in its sewer billing. Since COD is easier to measure, the City has agreed to incorporate COD into the rate structure instead of BOD. Incorporation of COD into the sewer rate structure is not an issue of choice, but a mandatory regulatory requirement that the City needs to comply with.

The SWRCB provides guidelines that would enable grantees and loan recipients to develop a revenue program that would comply with the requirements. The guidelines include various aspects of a revenue

program including revenue requirements determination. user classification. cost allocation and implementing ordinances. The SWRCB's guidelines on user classification and cost allocation have direct implications on this study.

User Classification

The SWRCB's guidelines on the identification of users state that.

> ".....the users of the treatment works and their associated wastewater flows and loadings (BOD_5, SS or other appropriate constituents) must be identified. Flows and loadings must be documented ..... in order that proportional costs can be calculated."

The City's residential users are classified into SFR and MFR user classes. The commercial/industrial users are classified into a user matrix of 200 discrete classes based on the users' percentage of water returned to sewer and the strength of TSS parameter. The users are assigned a characteristic TSS and return to sewer depending on the type of business activity. The existing user matrix has 10 TSS classes with TSS range from 0 to 1.000 mg/l, increasing in 100 mg/l increments. The matrix has 20 return to sewer classes with the first 19 classes having a range from 5 to 99 percent with return to sewer increasing in four percentage increments. The twentieth class's return to sewer is equal to the metered water use. The resulting 10X20 matrix, shown in Figure 6-1, provides for 200 commercial/industrial classes.

In addition, the City has established a separate class "K" for commercial/industrial users with greater than 1,000 mg/l of TSS and computes rates individually for those users. The City's existing user classification for the most part complies with the revenue program requirements.

FIGURE 6-1 EXISTING COMMERCIAL/INDUSTRIAL USER CLASS MATRIX

User Class TSS (mg/l)		A TSS 000-100	B TSS 101-200	C TSS 201-300	D TSS 301-400	E TSS 401-500	F TSS 501-600	G TSS 601-700	H TSS 701-800	I TSS 801-900	J TSS 901-1000
	Ratio of Sewer Flow to Water Use										
01	100%										
02	95-99%										
03	90-94%										
04	85-89%										
05	80-84%										
06	75-79%										
07	70-74%										
08	65-69%										
09	60-64%										
10	55-59%										
11	50-54%										
12	45-49%										
13	40-44%										
14	35-39%										
15	30-34%										
16	25-29%										
17	20-24%										
18	15-19%										
19	10-14%										
20	05-09%										

With respect to large users the revenue program guidelines, Section 1-3, state that,

> "Large commercial users discharging more than 25,000 gallons per day must have their costs allocated individually."

While the City currently assigns costs individually for commercial/industrial users with greater than 1,000 mg/l of TSS, it does not assign costs individually for users that discharge greater than 25,000 gpd of flows. In addition, the incorporation of COD necessitates changes to the existing user matrix. Therefore, Black & Veatch performed a review of the user classifications and proposed alternatives to classify commercial/industrial users.

User Classification Options: No changes were required for the residential classifications. To comply with the requirements, commercial/industrial users with greater than 25,000 gpd of discharge were first identified as large users. Different options were then examined for redefining commercial/industrial users discharging less than 25,000 gpd of wastewater flows.

The existing user class matrix method with 200 discrete classes enables the City to efficiently accommodate high levels of flow and strength variability that usually exists among the different types of business users. Therefore, most of the options examined are centered on the matrix method. The four options considered for commercial/industrial user classification (< 25,000 gpd of discharge) are:

- ***Option 1:*** Retain the existing commercial/industrial 20X10 user class matrix but convert the 10 TSS classes to 10 classes of cost weighted TSS/COD index.
- ***Option 2:*** Modify the existing commercial/industrial matrix to a 10X5 matrix of 50 discrete classes.
- ***Option 3:*** Eliminate the Matrix method and instead define 7-9 TSS/COD strength based commercial/industrial user groups.
- ***Option 4:*** Define a 10X11 matrix of 110 classes based on TSS and COD increments.

Option 1: This option retains the 20X10 user class matrix with 200 discrete classes. The matrix includes the existing 20 return to sewer classes but instead of the 10 TSS strength based class, the matrix includes 10 TSS/COD based classes in the form of a cost-weighted TSS/COD index. This option while retaining the familiar 20X10 matrix also accommodates the inclusion of the COD parameter in classifying users.

Option 2: This option involves developing a modified user class matrix with fewer discrete classes. Instead of the 200 discrete classes, the modified matrix would be a 10X5 matrix with only 50 classes. The matrix would be based on 10 return to sewer classes and five TSS/COD based classes. As in Option 1, the TSS/COD classes will be in the form of a cost-weighted index. This option has fewer classes than Option 1 since the TSS/COD index increases in larger increments and the return to sewer percentage decreases in larger decrements than that proposed in Option 1.

Option 3: This option eliminates the use of the matrix method and instead defines seven to nine broad TSS/COD strength based commercial user groups. In this option, the return to sewer variable would be applied to each user's water usage, directly at the time of billing.

Option 4: This option defines user classes based on the existing matrix method. However, instead of the return to sewer/TSS matrix, this option involves a strength-based 10X11 TSS/COD matrix with 110 discrete classes. The 10 TSS strength classes would increase in 100 mg/l increments and the 11 COD strength classes would increase in 200 mg/l increments. As in option 3, the user's return to sewer would be directly applied to the user's water usage during billing.

It was decided to implement Option 4 since the City' users are familiar with the matrix format and this option provides greater equity than the other options examined.

Cost Allocation

The approach used in allocating costs to the wastewater parameters is fundamental to a fair and equitable apportioning of costs among the City's various user classes. The two specific cost allocation issues that were examined during this Study include:

1. The selection of a cost allocation method to allocate City's cost of service to the wastewater parameters.
2. The application of the selected cost-allocation method in actually allocating costs.

Selection of Cost Allocation Method

Utilities use different cost allocation methods taking into consideration several factors including local policy, characteristics of the wastewater flows received, type of wastewater system (regional system versus single municipal system), type of treatment facilities, geographic and engineering operational considerations and regulatory requirements.

The City operates a regional system that provides retail service to the City's users and wholesale service to the PAs. In addition, as a recipient of federal grants and state loans the City is obligated to comply with CWG and SRF program requirements.

With respect to establishing a system of user charges, the SWRCB guidelines state that:

> "User charges must recover the cost of operation and maintenance (including replacement) from all users based on their proportionate contribution to the total wastewater loadings from all users. The State recommends that user rates designed to recover all other costs be proportional to the cost of the service rendered."

Further, the Clean Water Act of 1972, P.L. 92-500 as amended, (Act) states, in part:

> "The Administrator shall not approve any grant for any treatment works under section 201(g)(1) after March 1, 1973, unless he shall first have determined that the applicant (A) has adopted or will adopt a system of charges to assure that each recipient of waste treatment services within the applicant's jurisdiction, as determined by the Administrator, will pay its proportionate share (except as otherwise provided in this paragraph) of the costs of operation and

maintenance..."

To ensure compliance with SWRCB revenue program requirements, the allocation of costs to the different parameters has to be based on the following three underlying principles:

- The wastewater parameters used in the allocating cost responsibility to the different user classes needs to include flow, TSS and COD.

- Cost allocations to the flow, TSS and COD parameters need to be done using a "system-wide" approach. In order to recognize the shared configuration of the City's wastewater system that includes a complex exchange of solids, centrates and effluents and the sharing of a common outfall, the facilities need to be considered not in isolation but as components of an integrated "regional system".

- A proportional cost allocation method needs to be used to allocate costs between the different parameters and the different user classes.

In addition to the above, other factors that were considered in the selection of a cost allocation method include:

- The revenue program developed for the City's wholesale service to the PAs. The City developed a revenue program, which is based on a system-wide approach with a functional-design based allocation of costs to the wastewater parameters of flow, TSS and COD. This method, which was approved by the SWRCB, is outlined in the Regional Wastewater Disposal Agreement between the City and the PAs. Changes to the cost allocation method for the City's own retail users have to be reviewed in the context of its potential impact on the City's existing contractual requirements toward its PAs.

- Fair and equitable allocation of costs among user classes.

- Minimization of rate swings in response to operational, process or regulatory changes.

Cost Allocation Options: Black & Veatch outlined three allocation methods taking into consideration the factors discussed above. The three methods reviewed include:

- ***Option 1: Functional Method.*** In this method costs are allocated to wastewater parameters based on the functions of the various steps in the treatment process. This allocation is based on the premise that operational function drives costs. This method usually results in higher cost allocations to strength parameters.

- ***Option 2: Design Method.*** In this method costs are allocated to wastewater parameters based on design criteria used to size individual facilities or processes. This allocation is based on the premise that design considerations drive costs. This method results in higher cost allocation to flow.

- ***Option 3: Functional-Design Method.*** In this method costs are allocated to wastewater

parameters based on the functional, design and operational performance criteria of the different processes. This is the method that is currently used by the City and generally provides a balance between the other two methods.

It was decided to retain the functional-design method as the appropriate method for allocating the City's cost of service. This method has already been approved by the City and the PAs and provides a balanced and proportionate approach to allocating costs.

Application of the Selected Cost Allocation Method

Black & Veatch reviewed MWWD's application of the functional-design method in allocating costs to the wastewater parameters. In addition, Black & Veatch also reviewed the allocation methodology described in a paper presented in the Water Pollution Control Federation in 1986 by Dr. C.W. Corssmit. While the methodology prescribed in the paper titled, "Wastewater Utility Unit Process Cost Parameter Allocations: Advancing Towards A Scientific Method", is not necessarily considered a definitive industry standard, Black & Veatch reviewed Corsmitt's allocation methodology at the request of the stakeholder subgroup.

Review Findings: MWWD had conducted an extensive cost allocation study in 1998 to determine the Metro O&M and capital allocation percentages for the parameters of flow, TSS and COD. MWWD conducted the allocation study using the three alternative allocation methods: Functional, Design and Functional-Design. MWWD ultimately adopted the cost allocation percentages derived using the *Functional-Design* method after the SWRCB and the PAs approved it. The allocations are currently used in determining City and PAs share of Metro O&M and capital costs.

Black & Veatch concurred with the functional-design allocation method adopted by MWWD for the following reasons:

- The method is based on the *proportional* cost allocation method, as stated in the Clean Water Act.

- Consistent with the definition of functional-design method, the allocation takes into consideration the operational performance characteristics of the facilities and the regulatory requirements. For example, PLWTP, which is an advanced primary treatment plant, removes nearly 85 to 87 percent of the influent TSS and nearly 60 percent of the influent BOD. PLWTP needs to comply with the NPDES requirements established by the EPA. The permit requires PLWTP to achieve 80 percent removal of TSS and 58 percent removal of BOD. While PLWTP's primary function is to mainly remove TSS, it also incidentally removes BOD during the process. To meet the NPDES 58 percent BOD removal requirement, PLWTP has to actually achieve 85 to 87 percent TSS removal since BOD removal in an advanced primary facility is essentially accomplished through TSS removal.

  Taking into consideration PLWTP's BOD removal requirement and the operational performance required to meet the NPDES requirements, the MWWD functional-design method allocates PLWTP strength costs between TSS and BOD/COD in proportion to the relative removal of these two strength constituents of the wastewater.

- The method of allocating strength costs between TSS and BOD/COD proportionate to relative removal is consistently applied to all other facilities in the system, considering the fact that the City's various facilities operate as an integrated regional system.

- The allocation process appropriately classifies wastewater system costs into various component costs including direct and indirect costs and allocates the indirect costs to the parameters in proportion to the allocation of direct costs.

Black & Veatch reviewed the methodology proposed in Corsmitt's paper and concluded that the methodology is not applicable to the City's regional system for the following reasons:

- The functional-design based allocation method proposed for advanced primary treatment facilities in Corssmit's paper does not allocate any costs to BOD and allocates all the costs between flow and TSS. This approach is not suitable to PLWTP, which has a unique operational constraint of enhanced TSS removal in order to meet regulatory requirements of BOD removal.

- Further, Corssmit's method does not take into account the incidental removal of BOD in advance primary plants. The use of Corsmitt's cost allocation approach to PLWTP would result in excessive allocation of PLWTP costs to the TSS parameter and consequently adversely impact users that contribute high amounts of TSS and benefit users that contribute high amounts of BOD/COD. The method would lead to a disproportionate allocation of PLWTP costs between TSS and COD.

MWWD's cost allocation approach develops defensible unit costs of flow, TSS and COD and meets regulatory requirements. However, a few minor changes were made to fine-tune MWWD's method and the revised allocation percentages were used for the City's retail service area cost allocations. The revisions relate to the allocation of MBC annual O&M costs and the allocations of a few sewer trunk lines CIP costs. The revisions are discussed in Section 7 of this report.

Rate Structure Design

The classification of the users, the allocation of costs and the design of the rate structure, all have an impact on user rates. The factors considered in the design of rate structure options include:

- Inter-class revenue neutrality: The rate structure for each user class would result in each user class paying its allocated share of costs. In other words, no user class would pay more or less than its fair share.

- The rate structure would include a fixed charge and a variable charge component.

- The fixed charge assessed in the form of a base fee would include only those administrative costs that are common to all and would be the same for each account.

The following issues were examined as part of the evaluation of the rate structure alternatives:

- Level of Base Fee
- Level of SFR Usage Cap
- TSS/COD loadings computation for the different classes in the commercial/industrial matrix

Level of Base Fee: Three different levels of Base Fee were evaluated: monthly base fees of $8.53, $11.89 and $9.93. Figure 6-1 shows the costs included in the computation of the different Base Fee levels. A monthly Base Fee of $9.93 was agreed upon by the Group.

FIGURE 6-1 COMPUTATION OF DIFFERENT LEVELS OF BASE FEES

$$\frac{\text{City's Monthly O\&M Admin} + \text{City's Share of Metro Monthly O\&M Admin}}{\text{City's Total Retail Service Accounts}} = \text{Monthly Base Fee 1: \$8.53}$$

$$\frac{\text{City's Monthly O\&M Admin} + \text{City's Share of Metro Monthly O\&M Admin} + [redacted]}{[redacted]} = \text{Monthly Base Fee 2: \$11.89}$$

$$\frac{\text{City's Monthly O\&M Admin} + \text{City's Share of Metro Monthly O\&M Admin} + [redacted]}{[redacted]} = \text{Monthly Base Fee 3: \$9.93}$$

Level of SFR Usage Cap: The City currently has a usage cap of 10 hcf for the SFR class and therefore water usage greater than 10 hcf is not considered for sewer billing. However, the mass balance analysis indicates a need for a higher usage cap level. While the increase or decrease of usage cap levels does not impact any other user class, it does impact individual users within the SFR user class. Typically, lower usage caps benefit high water users and higher usage caps benefit low volume water users.

Since it was essential to increase the level of SFR usage cap to achieve a reliable mass balance, three different alternative SFR usage cap levels were proposed: Usage Cap levels at 12, 14 and 16 hcf of water usage. An incremetnal increase to 12 hcf would be appropriate, however, the Group consensus was to increase the usage cap to 14 hcf.
At the 10 hcf cap, 76 percent of winter water usage is captured and at 12, 14 and 16 hcf levels, the

capture rate is 82, 87 and 90 percent respectively.

TSS/COD Loadings Computation: In the proposed commercial/industrial rate matrix, each TSS and COD class is defined by a range of strength, for example, 101 – 200 mg/l of TSS or 201 – 400 mg/l of COD. To compute the actual rate per hcf of wastewater for each class in the matrix, the following two methods could be used:

- Mid-point of the strength range
- The actual strength computed based on the available user data for all the users that belong to a particular class in the matrix

There are both pros and cons to both of the methods mentioned above. The benefit of using the mid-point of the strength range is that it can be consistently applied to all the strength ranges in the matrix. However, the mid-point strength for any given range also has the potential of being either higher or lower than the actual average strength of all the users in a given class, which could lead to higher or lower user revenues than projected.

The benefit of using actual strength computed based on available user data is that it is likely to be a more accurate representation of user class strength characteristics and revenue collection. However, the disadvantage is that in reality user data may not be available for some strength ranges if currently no users belong to those strength ranges. In such a situation, mid-point of the strength range would have to be used to compute the wastewater rate. In addition, rates would have to be recomputed when users and/or flows or strengths for any given range changes.

The Group decided to use the mid-point of the strength range in computing the rates since it provides for a more consistent approach, which could be used to derive the rates for all the classes in the matrix, irrespective of user data availability.

STAKEHOLDER INPUT

This Study includes the participation of a stakeholder group (group) with members representing a broad range of interests, both residential and businesses. The goal of stakeholder participation is to ensure public understanding of the complexities of the cost of service and rate design process and to create an opportunity for the group to examine rate structure alternatives, to voice concerns and to provide recommendations. While detailed discussions on stakeholder participation are presented in an independent report titled, "Sewer Cost of Service: Stakeholders' Group Final Report", the group's recommendations are outlined here.

User Classification: Black & Veatch presented the four different options available for classifying commercial/industrial users with discharge less than 25,000 gpd of flows. The group reviewed the alternatives presented and preferred the strength based matrix classification. Therefore, the group recommended Option 4, which involves establishing a 10X11 TSS/COD user class matrix.

Cost Allocation: The group reviewed the three alternative cost allocation methods and accepted the use of the functional-design method to allocate costs to flow, TSS and COD. However, a subgroup of members, disagreed with the way the functional-design method was applied in allocating costs, even

though in concept, they accepted the functional-design method. Instead of the City's method of proportionate allocation of costs to the parameters, the subgroup preferred an alternative incremental allocation based method. The subgroup's alternative method, which is referred as the "Straight TSS Method", is included in Appendix B of the Stakeholders' Group Final Report.

Black & Veatch reviewed the "Straight TSS Method" method proposed by the stakeholder subgroup and found the method unacceptable due to the following reasons:

- The method uses incremental approach rather than proportional cost sharing in allocating PLWTP and MBC costs leading to disproportionate allocation of costs between TSS and COD parameters.

- The method advocates incremental cost allocation approach to PLWTP primary costs, but proposes proportional cost allocation for primary and secondary costs at NCWRP. This approach leads to internal inconsistencies in the methods used across the different processes and facilities of an integrated system.

In an effort to obtain the SWRCB's opinion on the cost allocation issue, Black & Veatch derived allocation percentages for flow, TSS and COD using three different methods and sent the analysis to the SWRCB. The three alternative cost allocation methods sent were:

- City's functional-design allocation based on MWWD's proportionate removal of TSS and COD.
- Stakeholder subgroup's allocation based on the "Straight TSS Method".
- City's allocation based on the "Modified Straight TSS Method", which allocated costs consistently at PLWTP and NCWRP.

The cost allocation package sent to the SWRCB is included in [redacted] The SWRCB's response essentially states that the "Straight TSS Method" and the "Modified Straight TSS Method" do not comply with the CWG program regulations and SRF program guidelines since these methods do not allocate costs proportionately between TSS and COD. The SWRCB's response is included in [redacted]

Rate Structure Design: The group provided input on all three issues examined as part of rate structure design.

- ***Base Fee:*** With respect to the Base Fee alternatives presented, the group recommended setting the monthly base fee under $10 to ensure that low income/low volume users are not burdened with a high fixed monthly charge. Therefore the group selected the $9.93 monthly base fee option.

- ***SFR Usage Cap:*** As regards the SFR usage cap level, the group preferred that usage cap be set at 16 hcf of water usage. However, taking into consideration the impact of the 16 hcf usage cap level on both the City's high water users as well as the large low-income families, the group recommended that SFR usage cap be set at the 14 hcf level in FY 2002 and be increased to the ultimate 16 hcf over a period of two years.
- ***TSS/COD Loadings Computation:*** While most of the individual members did not have any

specific preference with respect to the method used in the computation of rates for each class in the matrix, the group as a whole recommended that loadings be computed using the mid-point strength of the range.

The stakeholders' input in conjunction with input from City staff provided the direction for the subsequent phases of the Study, which include the allocation of costs and the design of rate structures. The allocation of costs is discussed in Section 7 and the proposed rate structures are discussed in Section 8.

Section 7
Cost of Service

The determination of City's user class flows and loadings discussed in Section 4 of this report, and the revenue requirements reviewed and finalized through the operating and capital cash flow analysis discussed in Section 5 of the report, provide the basis for performing the cost of service analysis. This section of the report discusses the allocation of operating and capital costs to the Flow, TSS and COD parameters, the determination of unit rates, and the estimation of user class cost responsibility.

COST OF SERVICE ANALYSIS

The total revenue requirements net of revenue credits from miscellaneous sources, is by definition, the net cost of providing service. This cost of service is then used as the basis to develop unit rates for the wastewater parameters and to allocate costs to the various user classes in proportion to the wastewater services rendered. The concept of proportionate allocation to user classes implies that allocations should take into consideration the quantity of wastewater a user contributes and the strength of wastewater.

In this Study, wastewater rates need to be calculated for FY 2002, and accordingly FY 2002 revenue requirements are used in the cost allocation process.

Cost of Service to be Allocated

The annual revenue requirements or costs of service to be recovered from wastewater charges include operation and maintenance expenses, costs associated with annual renewal and replacements, and other capital related costs. O&M expenses include costs directly related to the collection, treatment, and disposal of wastewater, and maintenance of system facilities. Renewals and replacements represent the annual recurring capital outlay for minor system improvements and purchase of equipment.

The total FY 2002 cost of service to be recovered from the City's retail users, as shown on line 15 in Table 7-1, is estimated at nearly $194 million, of which $130 million is operating costs and the remaining $64 million is capital costs. The cost of service analysis is based upon the criteria of generating annual revenues adequate to meet the estimated annual revenue requirements. As part of the cost of service analysis, revenues from other non-City user sources such as revenues from shipboard waste and PAs are deducted from the appropriate cost elements. Additional deductions are made to reflect the use of rate stabilization fund and operating interest income during FY 2002. Adjustments are deducted to account for cash balances and annualization of rate increases.

To allocate the cost of service among the different user classes in proportion to their flows and strength contribution costs first need to be allocated to selected wastewater parameters. The following subsection describes the allocation of the operating and capital cost of service amounts to the selected parameters of the wastewater system.

TABLE 7-1 COST OF SERVICE TO BE RECOVERED FROM USER RATES

Line Line No	Description	Operating Expense (FY 2002) $	Capital and Other Costs (FY 2002) $	Total (FY 2002) $
	Total Revenue Requirements			
1	Operation & Maintenance Expense	180,093,300		180,093,300
2	Total Debt Service		83,366,000	83,366,000
3	**Subtotal**	180,093,300	83,366,000	263,459,300
	Less Other Operating Revenues			
4	Total Operating Revenues from PA's	26,004,000		26,004,000
5	Total Other Muni Operating Revenues	1,811,000		1,811,000
6	Total Other Revenues from Shipboard Waste	678,300		678,300
7	Total Non-Operating Revenues	2,545,000		2,545,000
8	Debt Service Revenues from PA's		19,650,000	19,650,000
9	Transfer from Rate Stabilization Fund	9,000,000		9,000,000
10	Interest Income	15,532,100		15,532,100
11	**Subtotal**	55,570,400	19,650,000	75,220,400
	Less Adjustments			
12	Adjustment for Annual Cash Balance	3,494,900	0	3,494,900
13	Adjustment to Annualize Rate Increase	(9,012,000)		(9,012,000)
14	**Subtotal**	(5,517,100)	0	(5,517,100)
15	**Cost of Service to be Recovered from Rates**	130,040,000	63,716,000	193,756,000

Cost Allocation to Wastewater Parameters

The three major parameters selected in this Study for allocation are Wastewater Flows (Flows), TSS and COD. TSS and COD constitute the strength components of the wastewater system. In this study, the percentages used to allocate the FY 2002 cost of service to the wastewater parameters are derived based on the functional-design method of allocation. The allocation of costs to the three parameters involves:

- Identification of functional areas and costs of the wastewater system.
- Determination of O&M and CIP allocation percentages to the three parameters.
- Apportioning of FY 2002 O&M and Capital costs of service (presented in Table 7-1).

Identification of Functional Areas and Costs

As described in Section 5, O&M costs can be categorized broadly into the functional areas of collection, treatment, laboratory and administrative and general services. The allocation basis used to allocate each of these functional costs to the Flow, TSS and COD parameters differs.

In the functional-design method of allocation, both the function and the design of the facilities need to

TABLE 8-10 SAMPLE MONTHLY CHARGE CALCULATION FOR A LARGE USER

Monthly Flow (hcf)	TSS (mg/l)	TSS (lbs)	COD (mg/l)	COD (lbs)	Total Monthly Charge (1) $	Monthly Base Fee $	Monthly Usage Charge (2) $
1,064	640	4,222	2,000	13,194	$5,538	**$9.93**	**$5,528.07**

Note:

(1) Total Monthly Charge computed based on the proposed cost of service unit costs: Flow - $2.1403/hcf, TSS - $0.3652 lb. and COD - $0.1303/lb.

(2) Monthly Usage Charge is Total Monthly Charge less Monthly Base Fee.

ADEQUACY OF PROPOSED RATES AND CHARGES

The rates as proposed in this report should generate adequate wastewater user revenues to meet projected requirements through FY 2003. We recommend that the City conduct a financial review during FY 2003 to review program changes and adjustments, and the adequacy of expected revenues for FY 2004 and subsequent years.

IMPACT ANALYSIS

Black & Veatch performed an impact an impact analysis to evaluate the impact of the proposed changes to user classification, the changes to the SFR usage cap level, the introduction of the COD parameter and the changes in rate design. The impacts of each of these changes among user classes and within user classes are discussed.

User Classification

The proposed changes to user classification relate primarily to commercial/industrial user classes and hence there is no impact on the SFR and MFR residential user classes due to user classification changes. In the proposed classification, commercial/industrial users with greater than 25,000 gpd of discharge have been categorized as large users into a separate class as required by the SWRCB revenue program. These users may see an increase or decrease in their bi-monthly wastewater charges depending on whether they are at the low or high end of the TSS/COD range. The change is due to the fact that charges are to be computed on their actual TSS/COD strengths instead of the existing method where charges are assessed based on user class rate matrix.

Commercial/industrial users with less than 25,000 gpd may see an increase or decrease in bi-monthly charges due to the fact that users in the proposed classification are categorized based on TSS/COD instead of TSS/Return to Sewer. This leads to reconfiguration of users within a range in the matrix. For instance two users, who belong to the same TSS/Return to Sewer class in the existing user class matrix, may in the proposed classification belong to two different classes due to the differences in

their COD strengths.

Usage Cap

The usage cap applies only to SFR user class and hence the proposed change to the usage cap level would not impact the other user classes. However, it would impact the users within the SFR class. The increase in the level of the cap from 10 to 14 hcf results in the lowering of unit costs, which would benefit all SFR users with water usage less than 10 hcf per month. Since usage up to 14 hcf is to be billed under the proposed method instead of the existing 10 hcf, bills will be higher for users with high water usage.

COD Parameter

The introduction of the COD parameter would result in revenue redistribution between residential and commercial/industrial user classes and also impact certain user classes within the commercial/industrial category. Many commercial/industrial user classes have high concentrations of COD. Residential TSS (265 mg/l) is comparable to average system TSS (269 mg/l). However, Residential COD (450 mg/l) is lower than system COD (610 mg/l). Therefore, introduction of the COD parameter would lead to a shift in cost responsibility from residential to commercial/industrial user classes. As indicated in Table 7-8, it is estimated that there will be a three percent shift in annual revenues from residential user classes to commercial/industrial user classes.

Within the commercial/industrial category, there is wide variability in TSS and COD strengths and the introduction of COD may result in sewer charge increases for user classes with high COD and sewer charge decreases for user classes with low COD.

Rate Design

The proposed fee structure with uniform base fee for all users may result in sewer charge increases for many user classes. The existing monthly base fee for MFR and commercial/industrial users is just $0.51 and hence the proposed uniform monthly base fee of $9.93 would impact all non-SFR user classes. However, the recovery of a portion of user class cost of service through Base Fee, would lead to lowering of user class unit costs.

The overall impact on any given user or user class depends on one or more of the factors discussed above. The combination of changes proposed, including user reclassification, introduction of COD and the establishment of uniform base fee however enables fair and equitable cost allocation among the various user classes.

Overall, SFR user class is estimated to have nearly a 7.7 percent decrease and MFR and most other commercial/industrial user classes are estimated to have an increase in the range of four to twenty-five percent. Table 8-11 shows the estimated monthly wastewater charges at different levels of water usage and Table 8-12 shows the impact on a sample of commercial/industrial user types and on SFR and MFR user classes.

TABLE 8-11 IMPACT ON SFR USER CLASS

Monthly Usage (HCF)	Proposed Monthly Charge $	Existing Monthly Charge $	Monthly Charge Difference $	Percent Charge Difference %
1	12.15	11.63	0.52	4.47%
2	14.37	14.49	-0.12	-0.83%
3	16.59	17.35	-0.76	-4.38%
4	18.81	20.21	-1.40	-6.93%
5	21.03	23.07	-2.04	-8.84%
6	23.25	25.93	-2.68	-10.34%
7	25.47	28.79	-3.32	-11.53%
8	27.69	31.65	-3.96	-12.51%
9	29.91	34.51	-4.60	-13.33%
10	32.13	**37.37**	-5.24	-14.02%
11	34.35	37.37	-3.02	-8.08%
12	36.57	37.37	-0.80	-2.14%
13	38.79	37.37	1.42	3.80%
14	**41.01**	37.37	3.64	9.74%
15	41.01	37.37	3.64	9.74%
16	41.01	37.37	3.64	9.74%

Note:
Proposed and Existing Monthly Charges include monthly base fee and usage fee. The proposed charges are based on a usage cap of 14 hcf and a 7.5% revenue requirement adjustment. The existing monthly charge is based on 10 hcf usage cap.

TABLE 8-12 IMPACT ON A SAMPLE OF USER CLASSES (1)

User Class	Class TSS Range MG/L	Class COD Range MG/L	Annual Revenues (2) Proposed Method $	Annual Revenues (2) Existing Method $	Difference Proposed vs Existing $	Difference Proposed vs Existing %
< 25,000 gpd Commercial / Residential						
Hospitals	101-200	401-600	$1,702,227	$1,594,175	$108,052	6.78%
Printing/Graphics Services	201-300	201-400	$3,933,492	$3,760,877	$172,615	4.59%
Auto Service Stations	201-300	401-600	$11,602,919	$10,568,380	$1,034,539	9.79%
Retail Commercial Establishments	201-300	1001-1200	$1,676,821	$1,381,293	$295,528	21.40%
Hotels	301-400	601-800	$2,658,214	$2,526,507	$131,707	5.21%
Mini-Shopping Centers	601-700	1001-1200	$209,037	$193,831	$15,206	7.84%
Industrial Laundry	601-700	1201-1400	$42,439	$38,478	$3,961	10.29%
Food Service Establishments	601-700	1801-2000	$5,645,382	$4,530,332	$1,115,050	24.61%
Supermarkets	801-900	1601-1800	$1,038,175	$900,725	$137,450	15.26%
Residential						
Multi Family Residential Class	201-300	401-600	$54,080,205	$47,191,012	$6,889,193	14.60%
Single Family Residential Class	201-300	401-600	$71,260,579	$77,226,322	-$5,965,743	-7.73%

Note:

(1) The annual revenues computed represents only a subsection of the City's users and also does not include commercial/industrial users that discharge >25,000 gpd of wastewater.

(2) The annual revenues computed under the Proposed Method include an overall revenue requirement increase of 7.5%.

REVENUE PROGRAM

The revenue program developed as part of this Study is designed to meet all aspects of SWRCB guidelines including identification of costs, user classification, allocation of costs, and design of rate structures.

Black & Veatch compiled and reviewed the City's financial information to ensure that annual O&M costs including replacement costs are identified and aggregated by wastewater functions. Other costs including capital costs related to expansion of system facilities, debt service costs and operating and capital requirements were also reviewed to ensure that they are aggregated and maintained in accordance with SWRCB guidelines.

The City's user classification was reviewed. Users and their associated flows and loadings were identified and where necessary, users were reclassified to ensure compliance with SWRCB revenue program requirements. In this Study, users with similar characteristics have been identified and grouped so that the costs of the system could be allocated to the classes in proportion to the user classes'

demand on the wastewater system.

In accordance with the revenue program requirements, the City's annual costs were identified and allocated to the parameters of flow, TSS and COD in proportion to the percentage of costs that these three parameters represent. The functional-design method has been used to allocate the City's retail service area costs to the parameters. The allocation of costs is consistent with the proportional and system-wide allocation approach, which has been approved by the SWRCB and that is currently outlined in the contractual agreements between the City and its PAs.

The rate structures designed in this Study incorporate the COD parameter as mandated by the SWRCB and provide for a system of user charges that enable fair and equitable recovery of costs from the various user classes.

Overall, this Study conforms to the revenue program guidelines in that it complies with the requirements mandated by the SWRCB and is designed to ensure recovery of costs in proportion to services received.

The preceding sections of this report discussed all aspects of the Study from financial planning through development of wastewater rates. The user charge system that is designed to recover the costs of the system includes not only wastewater user rates but also one time capacity fees that are assessed from users that join the system. Black & Veatch reviewed the City's existing expansion related financial requirements, the existing capacity fee design and the adequacy of the City's existing capacity fees. The capacity fee review is discussed in the final section of this report.

EXHIBIT 5

BLACK & VEATCH

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Black & Veatch Corporation

January 15, 2002

Mr. Dennis Kahlie
Utilities Financing Administrator
City of San Diego
202 C Street, MS 7B
San Diego, CA 92101

Subject: Sewer Cost of Service and Rate Design Report

Dear Mr. Kahlie:

Black & Veatch is pleased to present this report on the sewer cost of service, rate design and Capacity Fee study (Study) to the City of San Diego (City). We are confident that the results developed based on a cost of service analysis and stakeholder input, when implemented, will result in fair and equitable sewer rates to the City's users and the revenue program will be acceptable to the State Water Resources Control Board (SWRCB).

The Study involved a comprehensive review of the City's financial plan, user classifications and rate structures. In addition, the Study also included a review of the City's existing capacity fees. An important feature of this Study was the participation of a City selected Stakeholder Group (Group), representing various business and residential interests. The user classifications and rate structures resulting from this Study reflect the Group's input. The recommended changes to the City's existing user classifications, rate structures and capacity fee are discussed below.

User Classification: Based on our review of the City's existing residential and commercial/industrial user classifications and the Group's suggestions, we propose the following:

- We recommend that the City continue its existing classification of single family residential (SFR) and multi-family residential (MFR) users.
- We recommend that the following changes be made to the existing commercial/industrial user classifications to ensure compliance with SWRCB user classification requirements and to facilitate the incorporation of chemical oxygen demand (COD) into the rate structure, as mandated by the SWRCB:
  - Commercial/industrial users with greater than 25,000 gallons per day (gpd) of wastewater discharge be categorized as large users.
  - Commercial/industrial users that discharge less than or equal to 25,000 gpd of wastewater flows be classified and billed for service using a user class matrix that is based on total suspended solids (TSS) and COD wastewater parameters instead of the current TSS/Return Factor parameters. Return factors will continue to be used to determine monthly charges.

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Rate Structure: Based on our review of the City's existing residential and commercial/industrial rate structures and the Group's suggestions, we propose the following:

- Continue the use of a rate structure that includes both a fixed monthly base fee and a variable water usage charge.
- Establish a uniform monthly base fee for all users instead of the existing practice of a class specific base fee. The recommended uniform base fee for all users is $9.93, effective March 2003.
- Continue bi-monthly SFR user charges based on a 30-day average winter water usage but with a usage cap of 14 hundred cubic feet (hcf) of water instead of the existing 10 hcf. The MFR charges will continue to be based on monthly water usage.
- Develop a two-dimensional rate matrix based on TSS and COD strength ranges for commercial/industrial users with a discharge less than or equal to 25,000 gpd. The rate for each TSS/COD strength range in the matrix, is to be computed based on the mid-point strength of the range.
- Calculate wastewater charges individually based on cost of service unit rates for commercial/industrial users discharging greater than 25,000 gpd of flows.

Capacity Fee: Based on our review of the City's existing capacity fee, we estimate a near-full-cost-recovery capacity fee of $5,349 per EDU. Implementation of this higher capacity fee will result in an additional capacity fee revenue of $11.3 million in fiscal year 2003.

The recommended user classifications, rate structure, and rates are presented in the Executive Summary and the rationale is discussed in detail in Sections 2 through 9 of the report. The implementation of the recommended wastewater rates and capacity fee should result in a revenue program that is fair and equitable and acceptable to the SWRCB.

It was a pleasure working with you and we wish to express our thanks to Mr. Eric Adachi, Mr. Bill Hanley, Ms. Hedy Griffiths, Mr Guann Hwang and other staff members of the Metropolitan Wastewater Department for the support and cooperation extended throughout the study. We would also like to acknowledge the participation of and input provided by the City's cost of service stakeholder group. If you have any questions, please call me at (626) 583-1881.

Very truly yours,
BLACK & VEATCH CORPORATION

Sudhir Pardiwala
Project Manager

Prabha Kumar
Management Analyst

Section 1
Executive Summary

The City of San Diego (City) wanted to conduct a comprehensive cost of service and rate design study (Study) that includes a review of revenue requirements, user classifications, costs of service, and the design of a system of user charges for the City's wastewater service. In addition, the City also desired a review of its existing capacity fees. This report documents the results of the Study, recommends changes to user classification and cost allocation, and proposes wastewater rates that the City should charge its retail customers beginning March 1st, 2002, or as soon as feasible thereafter.

The City provides both wholesale wastewater services to the Participating Agencies (PAs) and retail service to the City's users. The City is partially financing its capital projects through a combination of federal loans and grants, which are administered by the State Water Resources Control Board (SWRCB). As a recipient of various federal grants and state loans, the City is obligated to comply with SWRCB's Revenue Program Guidelines. In order to be consistent with the Revenue Program requirements, SWRCB is mandating that the City modify its existing cost allocation basis and include the Chemical Oxygen Demand (COD) parameter in its rate structure.

The focus of this Study is primarily on the City's retail wastewater service. The specific objectives of this Study include:

- Review of the costs of providing regional wastewater collection, conveyance, treatment and disposal services to the City's users and to the PAs outside the City's retail service area.
- Determination of costs of service for the City's retail service area.
- Allocation of costs of service to the wastewater parameters of Flow, Total Suspended Solids (TSS) and COD.
- Allocation of parameter costs to the City's retail service user classes.
- Design of a system of user charges including wastewater user charges and capacity fees.

The following sections present a documentation of the cost of service review and analysis findings and the recommendations of the study.

REVIEW FINDINGS

This section of the Executive Summary provides a brief background of the wastewater system, a review of the revenue requirements and user classifications, an evaluation of issues, an analysis of cost of service, and the design of wastewater rates and capacity fees.

Wastewater System

System Infrastructure: The City owns and operates a regional wastewater system that includes both the Municipal (Muni) System and the Metro System. The Muni System is primarily a sewage collection system that serves the City's service area. The Metro system includes advanced primary treatment, tertiary reclamation, sludge processing facilities and an ocean outfall. For the regional system, the City holds a NPDES permit that stipulates discharge limitations. The City provides wastewater service to

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15 PAs pursuant to the terms of the Regional Wastewater Disposal Agreement.

Existing Rate Structure: The City's existing wastewater rate structures for the Single Family Residential (SFR), Multi-Family Residential (MFR) and Commercial/Industrial user classes include a fixed Base Fee and a Usage Rate. The Base Fee varies by user class. The MFR and commercial/industrial users have the same monthly base fee of $0.51 per meter. SFR users have a much higher monthly base fee of $8.77. These fees are effective as of March 1, 2001.

The current SFR usage rate effective as of July 1, 2001 is $3.0481 per hundred cubic feet (hcf) of water usage. The bi-monthly SFR usage charges are determined by applying the SFR usage rate to a user's 30-day average winter water usage with a usage cap of 10 hcf. The MFR users are charged based on monthly water usage but with flows estimated at a 95 percent return to sewer.

The existing rate schedule for the commercial/industrial users is in the form of a 10x20 TSS/Return to Sewer matrix with 200 user rates. The rate applied to a user's monthly water usage depends on the user's TSS strength and percent return to sewer. Rates for Commercial/Industrial users that have TSS strengths greater than 1,000 mg/l, are computed individually and adjusted for percent return to sewer.

Review of Revenue Requirements

The City's principal sources of operating revenues are the sewer service charges from the City's users and the full cost recovery revenues from the PAs per their cost sharing agreements with the City. The primary sources of capital revenues include sewer connection fees, capital fund balance, bond proceeds, state and federal grants & loans, capacity fees from the City and the PAs, pay-as-you-go revenues from the PAs, and interest earnings.

The City estimates overall annual wastewater Operation and Maintenance (O&M) expenditures in the range of $173 - $198 million during FY 2001 through FY 2005. The City's retail service area O&M expenditures, which are the focus of this Study, are estimated to be in the range of $148 to $168 million. Existing debt service requirements during the study period include annual payments in the range of $77 to $99 million. During the study period FY 2001 to FY 2005, the total wastewater Capital Improvement Program (CIP) is estimated at nearly $618 million.

In order to meet projected revenue requirements and to maintain desired operating and debt service reserve funds, the City proposed the following revenue adjustments, which were approved by the City Council on October 16th, 2001:

Effective Date	Increases
March 1, 2002	7.5 percent
March 1, 2003	7.5 percent
March 1, 2004	7.5 percent
March 1, 2005	7.5 percent

Issues Examined

This Study involved extensive participation of a Stakeholder Group (Group). The four major issues that were examined and for which stakeholder input was obtained include: Compliance with SWRCB regulatory requirements, classification of commercial/industrial users, allocation method used to allocate costs to the wastewater parameters of flow, TSS and COD and rate structure alternatives.

Cost of Service

The total FY 2002 cost of service to be recovered from the City's retail users is estimated at nearly $194 million, of which $130 million is operating costs and the remaining $64 million are capital costs.

The cost of service allocations conducted in this study are based on the functional-design method that was approved by the PAs and SWRCB. The revenue requirements are allocated to the different user classes proportionate to their use of the wastewater system. As mandated by SWRCB, allocations are based on flows, TSS and COD parameters. The cost of service allocation performed for the City's retail service area users is consistent with the system-wide proportionate use approach used in allocating revenue requirements between the City and the PAs.

Rate Design

The rate structures designed in this Study incorporate the COD parameter as mandated by the SWRCB and provide for a system of user charges that result in fair and equitable recovery of costs from the various user classes.

STUDY RECOMMENDATIONS

This section of the Executive Summary outlines our recommendations. The proposed changes include various aspects of the study including user classification, cost allocation, wastewater rate structures and capacity fees.

Proposed User Classification

We recommend that the City continue its existing classification of SFR and MFR users. However, to ensure compliance with SWRCB user classification requirements and to facilitate the incorporation of COD into the rate structure, we recommend that changes be made to the existing commercial/industrial user classifications.

The SWRCB user classification guidelines stipulate that costs must be allocated individually to large commercial users discharging more than 25,000 gpd. Therefore, we recommend that commercial/industrial users with greater than 25,000 gpd of wastewater discharge be categorized as large users and rates be individually calculated for these users. The City currently has nearly 150 large users.

We recommend that the City's commercial/industrial users that discharge less than or equal to 25,000 gpd of wastewater flows be classified and billed for service using a user class matrix that is based on TSS and COD wastewater parameters instead of the current TSS/Return Factor parameters. We recommend that the return to sewer percentage be directly applied to each user's metered water consumption (to estimate wastewater flows) during sewer bill computations.

Cost Allocation

We recommend the continued use of the functional-design method in allocating costs to the wastewater parameters of flows, TSS and COD and the allocation of costs to the user classes proportionate to their use of the wastewater system.

Comparing revenues under the proposed rate structure and the current rate structure after the 7.5 percent revenue adjustment in March 2002, there is a small decline in MFR annual revenues under the proposed rate structure. Similarly, estimated FY 2002 SFR user revenues, as a percentage of total user revenues, are about two percent lower under the proposed rate structure than under the current rate structure. These decreases in residential revenues are offset by an increase in the commercial/industrial user class revenues. This shift in user class revenue distribution between the residential and commercial/industrial user classes is directly attributable to the introduction of the COD parameter in the cost of service allocation process, and the fact that many commercial/industrial businesses such as supermarkets, food processing and organic chemical industries and restaurants have much higher COD strengths than residential users.

Rate Design

Black & Veatch recommends the continued use of a rate structure that includes both a fixed monthly base fee and a variable water usage charge.

Base Fee: With respect to base fees, we recommend that the City establish a uniform monthly base fee for all users instead of the existing method of varying base fees. Of the three base fee options examined, as selected by the stakeholder group, we recommend maintaining the base fee under $10.00 since a higher base fee would adversely impact users that have low water/sewer usage. Therefore, we recommend a monthly base fee of $9.93 for FY 2002 for all users.

Residential Usage Rate: We recommend that the City continue its existing method of computing bi-monthly SFR wastewater charges, but with a usage cap of 14 hcf instead of the existing 10 hcf cap. Three different usage cap alternatives were examined and based on stakeholder group input, we recommend a usage cap of 14 hcf. The mass balance analysis also indicates a need for a higher usage cap. We recommend that the City continue its existing method of determining bi-monthly user charges based on a 30-day average winter water usage and continue to estimate MFR wastewater usage charges based on monthly water usage. Table ES-1 presents a summary of the Residential Rate Schedule.

Commercial/Industrial Usage Rate: For commercial/industrial users that discharge less than 25,000 gpd of flows, we recommend that the City establish a two-dimensional rate matrix based on TSS and COD strength ranges. The wastewater rates are computed for each TSS/COD strength range based on the mid-point strength of the range. Table ES-2 presents the commercial/industrial rate matrix.

TABLE ES-1 SUMMARY OF RESIDENTIAL RATE SCHEDULE (FY 2002)

Description	Usage Rate $/hcf
SFR Usage Rate ($/hcf of Water) (1)	$2.22
MFR Usage Rate ($/hcf/Water)	$2.77

NOTE
(1) Rate based on a usage cap of 14 hcf.

TABLE ES-2 COMMERCIAL/INDUSTRIALUSER CLASS (≤ 25,000 GPD Discharge) FY 2002

(mg/l)		TSS 0-100	TSS 101-200	TSS 201-300	TSS 301-400	TSS 401-500	TSS 501-600	TSS 601-700	TSS 701-800	TSS 801-900	TSS 901-1000
COD	COD	A	B	C	D	E	F	G	H	I	J
0-200	AA	$2.21	$2.43	$2.64	$2.85	$3.06	$3.28	$3.49	$3.70	$3.91	$4.13
201-400	BB	$2.37	$2.58	$2.79	$3.00	$3.22	$3.43	$3.64	$3.85	$4.07	$4.28
401-600	CC	$2.52	$2.73	$2.95	$3.16	$3.37	$3.58	$3.79	$4.01	$4.22	$4.43
601-800	DD	$2.67	$2.89	$3.10	$3.31	$3.52	$3.74	$3.95	$4.16	$4.37	$4.59
801-1000	EE	$2.83	$3.04	$3.25	$3.46	$3.68	$3.89	$4.10	$4.31	$4.53	$4.74
1001-1200	FF	$2.98	$3.19	$3.41	$3.62	$3.83	$4.04	$4.25	$4.47	$4.68	$4.89
1201-1400	GG	$3.13	$3.35	$3.56	$3.77	$3.98	$4.20	$4.41	$4.62	$4.83	$5.05
1401-1600	HH	$3.29	$3.50	$3.71	$3.92	$4.14	$4.35	$4.56	$4.77	$4.99	$5.20
1601-1800	II	$3.44	$3.65	$3.87	$4.08	$4.29	$4.50	$4.71	$4.93	$5.14	$5.35
1801-2000	JJ	$3.59	$3.81	$4.02	$4.23	$4.44	$4.66	$4.87	$5.08	$5.29	$5.51
2001-2200	KK	$3.75	$3.96	$4.17	$4.38	$4.60	$4.81	$5.02	$5.23	$5.45	$5.66

NOTE: (1) The rate for each TSS/COD range is calculated based on mid-point loading of the range.

Wastewater charges for Commercial/Industrial users discharging greater than 25,000 gpd of flows are calculated individually based on cost of service unit rates. The cost of service unit rates are as follows: Flow - $2.1403 per hcf, TSS - $0.3652 per lb and COD - $0.1303 per lb. The total monthly charges are computed using these unit rates and include a monthly base fee of $9.93.

Rate Impact

The main objective of this Study is to ensure a fair and equitable allocation of costs to all the user classes in proportion to their demand for wastewater services. The combination of changes proposed, including user reclassification, introduction of COD and the establishment of uniform base fee provide for a fair and equitable allocation of costs among the City's user classes.

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The cost of service analysis indicates that under the existing method where the allocations and rate structures are based only on Flow and TSS parameters, some users have been paying less than their fair share while others have been contributing more than their fair share. This study, which incorporates the COD parameter in both the allocation of costs and in the design of rate structures, reassigns revenue requirements among the various user classes so as to facilitate fair and equitable cost recovery.

The impacts discussed in this paragraph compare the March 2002 rates under the existing and proposed rate structure. All SFR users will benefit under the new rate structure. The degree of benefit varies depending on the winter water usage from 3 percent to 24 percent. MFR accounts with usage lower than 67 hcf per month will experience increases in their sewer service charges due to the impact of a substantially higher base fee. Commercial/industrial user class revenue may increase or decrease depending on discharge strength and volume. While the proposed changes lead to increases in wastewater charges for some users and decreases for others, they ensure a fair and equitable allocation that is proportionate to use. In addition, all aspects of the Study including identification and aggregation of O&M and capital costs, classification of users, allocation of costs and the development of rate structures conform to the revenue program guidelines set forth by the SWRCB.

Capacity Fees

Capacity (developer) fees are one-time fees used to recover some or all of the cost of providing the system capacity required when a new user connects to the wastewater system. Examples of such costs include those related to increasing transmission and treatment capacity in treatment plants, ocean outfalls, interceptors, pumping stations, and sewer mains.

The City currently charges $2,500 per equivalent dwelling unit (EDU) or SFR. The minimum capacity assigned to any sewer connection is one EDU. MFR units having individual, City-read water meters are assigned one EDU per unit, while MFR units that share a common water meter are charged based on a density-adjusted formula. Non residential customers are charged based upon the number of fixture units by using a conversion factor that equates 20 fixture units to one EDU.

The City has incurred major costs over the last ten years to upgrade facilities and will continue to incur additional costs to comply with EPA mandates to meet discharge requirements. The growth-related portion of these past and future costs of improvements and upgrades to the City's facilities form the basis of the calculated capacity fee. The capital costs the City has incurred prior to 1997 (some of these costs dated back to 1992 and before) and the future costs to be incurred over the next ten years were reviewed. The projects associated with these capital costs were examined and the net capacity available from these projects was determined in order to derive the capacity fee. These projects include sewer mains, pumping stations, treatment plant upgrades, outfall costs etc. The resultant near-full-cost-recovery capacity fee is $5,349 per EDU.

The City may also wish to consider adding an incremental amount to recover the growth-related portion of system infrastructure costs for facilities constructed prior to 1992. A very conservative engineering estimate for these primary treatment, collection and disposal facilities would be $2 per gallon per day (gpd). This adds another $560 to the calculated capacity fee, yielding a full-cost-recovery capacity fee of $5,909 per EDU.

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Implementation of the higher capacity fees discussed above results in additional capacity fee revenue of $11.3 million to $13.5 million in FY 2003, depending on the option implemented. Since these additional dollars would replace funds that would otherwise be supplied by current system users, a one-time reduction in user fee revenue requirement of between 5.7 to 6.8 percent for all customer classes could be provided in FY 2003. In summary, the Council-adopted FY 2003 rate increase of 7.5 percent would be offset by the rate reduction made possible by the higher capacity fees, resulting in a smaller net rate increase of only 1.8 to 0.7 percent.

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Section 2
Introduction

BACKGROUND

The City retained Black & Veatch to conduct a comprehensive cost of service and rate design study to establish a fair and equitable system of user charges for the City's retail wastewater service. This report documents the findings, analyses, results and recommendations of the Study.

The City owns and operates a regional wastewater system that provides wastewater collection, conveyance and treatment services to the City and a number of Participating Agencies (PAs) outside the City. The City operates the regional wastewater system under the federal National Pollutant Discharge Elimination System (NPDES) permit that stipulates standards of discharge. To comply with the discharge standards and to meet other requirements of the Environmental Protection Agency's (EPA) Clean Water Act, the City had to undertake various capital project initiatives including the enhancement of existing wastewater treatment facilities and the construction of new tertiary wastewater reclamation facilities. The City operates the wastewater system as a self-supporting enterprise and costs are accounted for separately under the wastewater enterprise fund.

To minimize the impact of the capital project initiatives on the users of the City and its PAs, the City has been, and is financing its capital projects in part via a combination of federal loans and grants which are administered by the State Water Resources Control Board (SWRCB). As a recipient of various federal grants and state loans, the City is obligated to comply with SWRCB's Revenue Program Guidelines. *The guidelines require that recipients of state-administeredgrants and/or loans establish a system of user charges that recovers operating and capital costs from users on a basis proportionate to use.* The guidelines specifically require a fair and equitable apportioning of costs based on each user class's contributions of flow and strength of wastewater pollutants discharged.

To comply with the revenue program guidelines, the City conducted a review of cost of service and developed a strength-based billing method to allocate costs among the various PAs and the City. The strength-based billing procedure, which is based on flow and the strength parameters of Total Suspended Solids (TSS) and Chemical Oxygen Demand (COD), was approved by the SWRCB in 1998. The PAs are currently billed based on their contribution of flow, TSS and COD as per the terms outlined in the service contracts between the City and the PAs.

However, the user charge system that is applied within the City's municipal service area is presently based only on Flow and TSS and does not include the COD parameter. Consistent with revenue program requirements, SWRCB is mandating that the City modify its existing cost allocation basis and include the COD parameter in its rate structure. Therefore, the City requested a comprehensive cost of service study that includes a review of City's projected revenue requirements, allocation of costs to strength and flow parameters, development of unit costs and design of rate schedules for the various user classes.

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OBJECTIVES

Several interrelated objectives need to be considered in the development of a financial plan and in the design of rates. This being the case, judgement plays a role in the final design of rate structures and rates. The major objectives of the study are:

- Ensure *Revenue Sufficiency* to meet the operation and maintenance (O&M) and capital costs of the City's wastewater enterprise
- Plan for *Revenue Stability* to provide for adequate operating and capital reserves and the overall financial health of the wastewater enterprise
- Maintain good *Financial Ratings* by providing for a stable and reliable financial position so that debt issuance can be achieved at the lowest cost
- Ensure *Fairness and Equitability* in the development of a system of user charges
- Minimize *Rate Shock* to reduce financial hardship on the different user classes
- Enhance *Public Understanding of the Rate-Setting Process* through stakeholder participation
- Ensure *Compliance* with regulatory requirements of the SWRCB

SCOPE OF THE STUDY

The scope of this study involves the determination of *Wastewater User Rates* through a comprehensive cost of service and rate design study, determination of *Capacity Fees* and obtaining the approval of the SWRCB. While User Rates facilitate the generation of adequate revenues to meet routine annual O&M and capital expenditures including debt service, Capacity Fees ensure that new users pay their fair share of costs so that existing users are not burdened with providing capacity for new users.

The comprehensive cost of service and rate design component includes three major processes. Figure 2-1 provides a graphical representation of the various steps involved in the comprehensive cost of service and rate design process. The three major processes are as follows:

- **Financial Planning:** Revenue requirements are projected for a five-year period from FY 2002 through FY 2006. Financial planning involves estimation of annual O&M and capital expenditures, annual debt service and reserve requirements, operating and capital revenue sources and the determination of required annual user revenues from rates and charges. User classification, annual user loadings estimation for the selected wastewater parameters, and mass balance are also performed concurrently.

- **Cost of Service:** Cost of Service involves the apportioning of annual revenues required to the different user classes proportionate to their contributions of flow, TSS and COD to the wastewater system.

- **Rate Design:** Rate Design involves the development of a fixed and variable schedule of rates for each of the different user classes to equitably recover the costs attributable to them.

The Capacity Fee development component includes the determination of wastewater infrastructure capacity and the associated costs required to accommodate new growth, and the design of one-time capacity fees for the different classes of new users.

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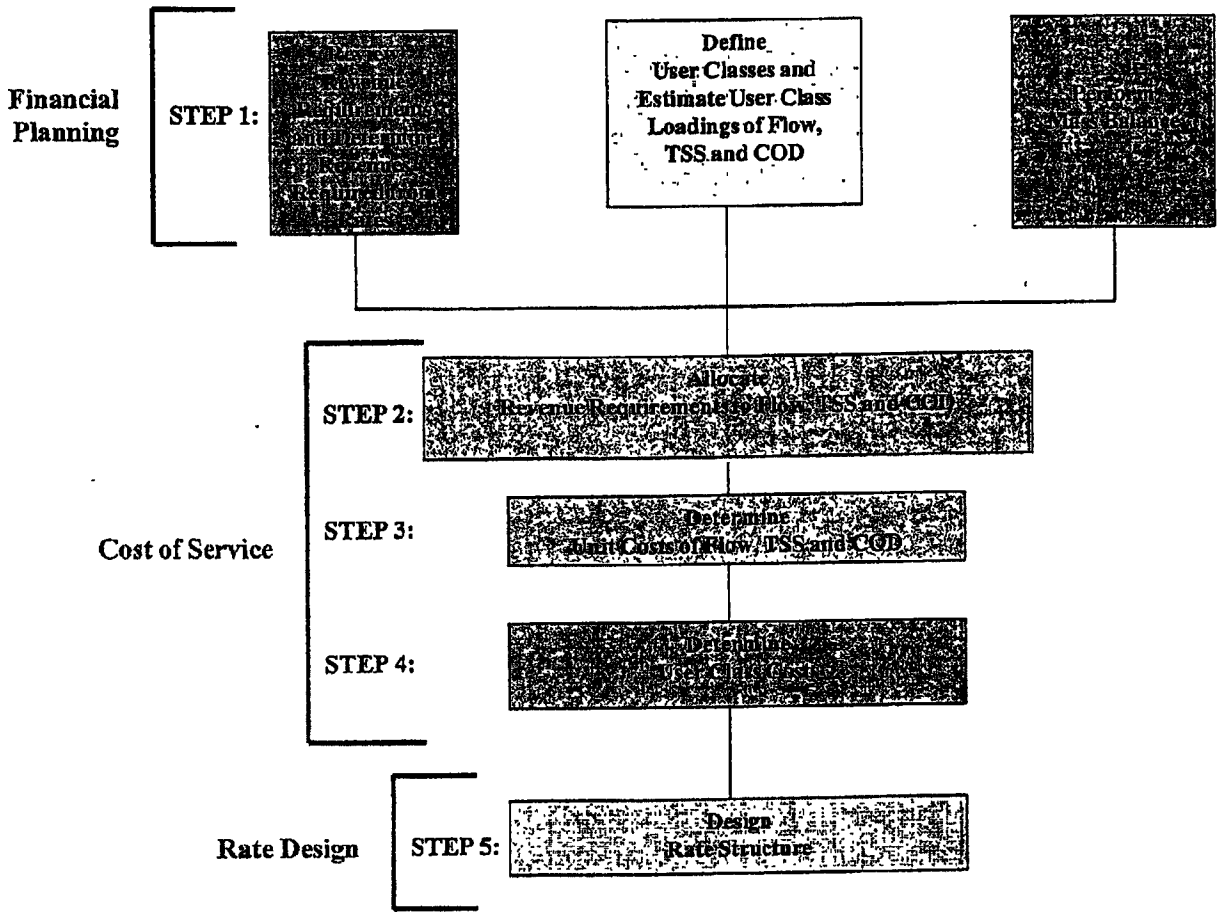
FIGURE 2-1 COST OF SERVICE / RATE DESIGN PROCESS



ASSUMPTIONS USED IN THE STUDY

Following are the assumptions used in the study:

1. Annual O&M and capital expenditures, annual revenues from the PAs, other revenue sources and reserve requirements, O&M inflation factors and user account growth projections are all based on the City's Fiscal Year 2000 *Rate Case*.

2. Annual average wastewater system Flow and TSS/COD concentrations used in the Mass Balance

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Analysis are based on the Metropolitan Wastewater Department (MWWD)'s annual report on projected flows and strength. The data used in the Study is from the *Projected Flow and Strength Report (FY 2000)*.

3. TSS strength assignment for the different user classes is based on the MWWD Sewer Classification Program's *Standard Industrial Classification (SIC) Guidelines List*.

4. COD strength assignment for the different commercial/industrial SIC classes is based on Black & Veatch judgement, and past sampling study results data from *Los Angeles County Sanitation District (LACSD)*, *City of Los Angeles (LA)* and *SWRCB Guidelines*.

This Study report includes six sections besides the Executive Summary and the Introduction. Sections 3, 4 and 5 cover the ***financial planning*** phase, section 7 explains the ***cost of service*** and section 8 describes the ***rate design*** phase. A brief description of each section follows.

- ***Section 3*** describes the regional wastewater system operated by the City under the auspices of Metropolitan Wastewater Department (MWWD) and the relationship between the City and the PAs. Current rates are included here.

- ***Section 4*** describes the existing and proposed user classifications. In addition, this section presents a discussion on wastewater flow estimation and strength assignment for the different residential and commercial/industrialclasses, and on the mass balance analysis.

- ***Section 5*** includes a discussion on wastewater system revenues and expenditures, capital program financing including debt service, required annual revenue adjustments and the determination of annual revenues required from user rates.

- ***Section 6*** identifies the major issues that are addressed in this Study and presents a discussion on each of the different issues. This section also provides a brief description of the stakeholder group involvement and their contributions to the Study.

- ***Section 7*** includes a detailed discussion on the allocation of costs to wastewater parameters, determination of projected user class loadings and the determination of unit costs.

- ***Section 8*** presents a discussion on the proposed rate structure. This section also includes a detailed discussion on the merits of the proposed rate structure and the expected impact on the different user classes.

- ***Section 9*** describes the methodology used in determining capacity fees for a single family residence.

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Section 3
Wastewater System

This section of the report presents a brief overview of the regional system, the relationship between the City and its PAs that discharge to the regional system and the City's existing retail rate structures.

REGIONAL WASTEWATER SYSTEM

A brief description of the City's regional wastewater system and the relationship between the City and the PAs that discharge to the regional system is presented in this sub section.

Regional System Infrastructure

The City-owned regional wastewater system includes both the Muni System and the Metro System. The Muni system is primarily a sewage collection system that serves the City's service area and includes trunk lines, collector mains, pump stations and stormwater interceptor pump stations. The Muni system also includes the San Pasqual Water Reclamation Plant, which has a production capacity of 1 mgd of reclaimed water.

The Metro system infrastructure currently includes two wastewater treatment plants that are operational, one wastewater treatment plant that is under construction, two ocean outfalls, a biosolids processing center, two major pump stations and several miles of force mains and gravity flow interceptors. A brief description of some of the major Metro System facilities is provided below.

Point Loma Wastewater Treatment Plant (PLWTP): The PLWTP is the principal treatment facility in the Metro system, with a permitted treatment capacity of 240 mgd of average daily flow. The PLWTP provides advanced primary treatment. The plant currently achieves a TSS removal rate of nearly 85-87 percent through the use of enhanced chemical treatment and Bio-Chemical Oxygen Demand (BOD) removal of 58 percent. In the future, PLWTP is to receive raw solids from the South Bay Water Reclamation Facility (SBWRF) when it becomes operational.

North City Water Reclamation Plant (NCWRP): The NCWRP provides tertiary treatment and has a permitted capacity of 30 mgd of average daily flow and produces about 3.3 mgd of reclaimed water. The non-usable effluent from this plant is conveyed to the PLWTP and the solids from NCWRP are processed at the Metropolitan Biosolids Center (MBC). The City was required to construct the NCWRP and the SBWRF as a condition of EPA's waiver from secondary treatment at PLWTP.

Point Loma Plant Ocean Outfall (PLOO): The Point Loma Plant Ocean Outfall is a 4.5 mile long outfall that discharges treated sewage effluent at a depth of 320 feet of water. Currently, all of the treated effluent from the regional system is discharged through this outfall.

Metropolitan Biosolids Center **(MBC)**: The MBC provides state of the art sludge processing. The facility receives raw sludge from NCWRP and digested sludge from PLWTP and after processing returns the centrate to PLWTP.

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The PLWTP, NCWRP, SBWRF (that is under construction), the South Bay Ocean Outfall, and MBC are all parts of an integrated regional system. Due to the complex exchange of effluents, solids and centrates, sharing of one common outfall and receipt of flows from the participating agencies, the Metro System is viewed and operated as "a regional system" from a permitting, regulatory compliance and operational efficiency standpoint. The City as the owner and operator of a regional system holds a NPDES permit that stipulates discharge limitations. Currently, as per the NPDES permit requirements, a Mean Monthly TSS Removal percentage greater than or equal to 80%, and a Mean Annual BOD Removal percentage greater than or equal to 58% apply to the undiluted effluent discharged through the PLOO. The percentage removal rates are calculated on a system-wide basis.

Relationship between the City and Participating Agencies

The Metro system provides "wholesale" treatment services including some conveyance, treatment and sludge disposal operations to the City and 15 PAs that are outside the City's jurisdiction. Services to the PAs are provided pursuant to the terms of the Regional Wastewater Disposal Agreement, which expires on December 31, 2050. The PAs and the City are responsible for sewage collection operations within their own respective jurisdiction, and for the conveyance of the collected sewage through trunk lines to the Metro system. Some of the key provisions of the Regional Wastewater Disposal Agreement are as follows:

- The City has full ownership and rights of operation of the Metro system.
- The PAs pay for the services through a system of Sewer System Charges, Existing Capacity Charges and New Contract Capacity Charges. The Sewer System Charge is an annual full cost recovery – based calculation which takes into consideration both the flow and strength of the wastewater conveyed to the Metro system.
- The PAs' share of facilities expansion costs is determined based on the *proportion* of flows received and strength of the flows.
- The PAs' share of Metro O&M costs are based on their *proportionate* flow into the Metro system and the strength of their wastewater.
- The City determines the Sewer System Charge unit rates by allocating net O&M and capital costs among parameters of Flow, COD and TSS based on the approved Functional-Design Methodology of allocation.

EXISTING RATE STRUCTURE

The City's existing wastewater rate structures for the SFR, MFR and Commercial/Industrial user classes include a fixed Base Fee and a Usage Rate. While the base fee is charged to each water meter, the usage rate is applied to a user's water usage. The City's existing rates for the various user classes are included in [redacted]

Base Fee

In the existing rate structure the base fee varies by user class. The MFR and commercial/industrial users have the same monthly base fee of $0.51 per meter. SFR users have a much higher monthly base fee of $8.77. These fees were effective as of March 1, 2001.

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Usage Rate

The usage rate for all user classes is based on the volume of wastewater flow and the strength of TSS. The existing rate structure does not bill for the organic content (COD) of wastewater. The usage rate varies by user class. The usage rates for SFR, MFR and Commercial/Industrial user classes are discussed below.

SFR Usage Rate: The current SFR usage rate effective as of July 1, 2001 is $3.0481 per hcf of water usage. This usage rate is established based on a 100 percent return of annualized winter water usage and a TSS strength of 275 mg/l. SFR users are billed based on a computed 30-day average winter month water usage. The 30-day average winter months' water usage is set on July 1 of each year, based upon the SFR user's average water consumption during the previous winter months of December through March. Once an SFR user's monthly sewer charge is established, it remains in effect until the beginning of the next fiscal year.

In the existing rate structure, the 30-day average winter water usage that is used to establish bi-monthly sewer charges is capped at 10 hcf to compensate for landscape irrigation usage which occurs even during winter. This means that if a user's 30-day average winter water usage exceeds 10 hcf, then the usage rate is applied only to the first 10 hcf of consumption, and the usage in excess of 10 hcf is not billed. New users who do not have a winter water usage history pay a flat bi-monthly charge until their winter water usage is established.

Under the existing rate structure the maximum bi-monthly sewer charge including base fee that a SFR user can be charged is $78.50.

MFR Usage Rate: The current MFR usage rate effective as of March 1, 2001 is $2.71 per hcf of water usage. This usage rate is applied to MFR user's actual monthly water usage. The usage rate is established based on a 95 percent return to sewer and a TSS strength of 275 mg/l. Return to sewer is the percentage of water usage that is returned to sewer as wastewater.

Commercial/Industrial Usage Rate: The current Commercial/Industrial usage rates are based on percent of water returned to sewer and the strength of TSS. Commercial/industrial users are classified based on Standard Industrial Classification (SIC) code and are assigned TSS strengths and percent return to sewer that are characteristic of their type of business. The existing rate schedule is in the form of a 10x20 TSS/Return to Sewer matrix with 200 user rates. The rate applied to a user's monthly water usage depends on the user's TSS strength and percent return to sewer. The commercial /industrial user matrix is included in [redacted]

Rates for Commercial/Industrial users that have TSS strengths greater than 1,000 mg/l, are computed individually and adjusted for percent return to sewer. Rates are computed on the basis of $2.100 per hcf of flow, and $0.272 per 100 mg/l of TSS.

While there are exceptions, most of the City's users are billed bi-monthly on a combined water and sewer bill.

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Section 4
User Classification and Loadings

One of the major tasks in the cost of service and rate design process is the classification of the users of the wastewater system and the determination of annual flows and wastewater loadings (TSS, COD and other wastewater constituents) associated with each class. The existing and proposed classification of the City's users, the estimation of wastewater flows and loadings for each of the proposed user classes and the mass balance analysis are discussed in this section of the report.

SEWER USER CLASSIFICATION

In addition to the 15 PAs, who are the City's "wholesale" users, the City's wastewater enterprise has a mix of "retail" users within the City's service area. The City's retail users primarily comprise regular water/sewer, sewer only and the Department of Navy users. Since the focus of this Study is the City's retail users, discussions on sewer user classification relates exclusively to the users within the City's service area and henceforth these users are referred in this report as "City's Users". A review of the City's existing user classifications, and the proposed changes to the classifications are discussed in the following subsections.

Existing City User Classifications

The City currently serves a population of nearly 1.28 million within the City's service area. As per FY 2000 estimate the City has a total of 259,340 sewer accounts. The breakdown of the City's sewer user classes and the number of accounts associated with each class as of FY 2000, are as follows:

User Class Description	Number of Accounts
Single Family Residential (SFR)	214,860
Multiple Family Residential (MFR)	29,140
Commercial/Industrial	15,340

The percentage distribution of the accounts is shown in Figure 4-1. Residential accounts comprise 94% of the total sewer user accounts serviced.

Residential Classification: The City's residential users are classified into SFR and MFR classes. The residential classes are homogenous in that all the users have the same TSS and COD strengths. However, the volume of flows can vary among the users depending on water usage. The residential users are classified into SFR and MFR since they differ in their water usage characteristics. SFR water usage includes significant irrigation usage whereas MFR water usage includes very low irrigation usage.

Commercial/Industrial Classification: Typically, there is significant variability in both the volume of wastewater flows and wastewater strengths, among the different types of commercial/industrial users such as food service establishments, retail stores, and supermarkets. Therefore, to ensure fair and equitable determination of wastewater service charges, the City has developed a commercial/industrial user class matrix based on the two variables of TSS concentration and percent return to sewer.

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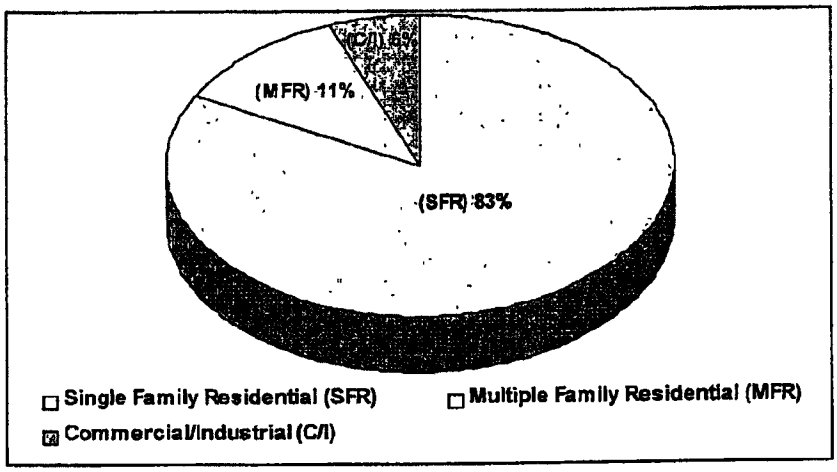
Commercial/Industrialusers with a TSS concentration of greater than 1,000 milligrams per liter (mg/l) are considered as large users and as mentioned in Section 3, their rates are computed individually. The commercial/industrialuser classificationis discussed further in Section 6.

FIGURE 4-1 – DISTRIBUTION OF SEWER USER ACCOUNTS (FISCAL YEAR 1999-2000)



Proposed User Classifications

Black & Veatch recommends that the City's users be grouped into four broad user classes: SFR, MFR, Commercial/Industrial with [· 25,000 gpd discharge, and Commercial/Industrial with > 25,000 gpd discharge. No changes are proposed for the City's SFR and MFR classes. However, we propose changes to the City's Commercial/Industrial user classification in order to be consistent with the SWRCB user classification guidelines and to accommodate the required incorporation of COD parameter in the proposed rate structure.

Commercial/IndustrialClassification: In the proposed user classification, the City's commercial/industrialusers are classified into two groups:

- Commercial/Industrialusers that discharge greater than 25,000 gpd of wastewater flows
- Commercial/Industrialusers that discharge less than or equal to 25,000 gpd of flows.

The classificationof commercial/industrialusers with greater than 25,000 gpd of wastewater discharge is consistent with the SWRCB user classification guidelines. The guidelines stipulate that costs must be allocated individuallyto large commercial users discharging more than 25,000 gpd.

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In the proposed user classification scheme, the City's commercial/industrial users, other than the large commercial users, are further classified using a *user class matrix* that is based on TSS and COD wastewater parameters instead of the current TSS/Return to Sewer variables. The return to sewer percentage in the proposed classification would be directly applied to each user's metered water consumption (to estimate wastewater flows) during sewer bill computations.

WASTEWATER FLOW ESTIMATION

In order to perform a cost of service analysis, wastewater flow needs to be estimated and projected for each user class. Wastewater flow is not measured for a vast majority of users because of cost and/or technology concerns. Typically, flows are estimated based on winter water usage for SFR users and as a percentage return of water usage for MFR and most Commercial/Industrial users. Actual wastewater flow is measured for only a few commercial/industrial users.

Residential Class

Black & Veatch reviewed the methods that the City currently uses to estimate annual wastewater flows for the residential class. The City currently uses annualized winter water usage with a usage cap of 10 hcf to estimate wastewater flows for the SFR users and actual monthly water usage to estimate wastewater flows for the MFR users. The methods used in estimating wastewater flows differ between SFR and MFR users due to the differences in their water consumption patterns.

SFR Wastewater Flow Estimation: SFR water consumption includes two types of water usage: domestic use (water used inside the home) and irrigation use (water used in the yard). While the level of domestic water usage is expected to remain fairly stable throughout the year, fluctuation in irrigation usage could occur due to seasonal changes, which in turn causes significant variations in water usage during the year. Irrigation usage is at its minimum levels during the winter period and therefore the water used during the winter period can be associated with domestic usage. Typically, domestic water returns to the sewer system and irrigation water does not. Therefore, for SFR users it is appropriate to use annualized *winter water usage* as a direct approximation of annual wastewater flows returned to the sewer. The four-month period from December through March is deemed as the SFR winter water usage period.

In San Diego, weather conditions are moderately dry even during winter months, which would result in some level of irrigation water use even during the winter period. To account for winter irrigation usage that does not return to the sewer, the City currently has set a usage cap of 10 hcf per month in estimating and billing annual SFR wastewater flows. The usage cap limits the level of water consumption that is included in sewer billing. Any water usage beyond the usage cap level is deemed as not being returned to the sewer and hence is not included in sewer billing. Black & Veatch performed an analysis that indicates a need for a higher usage cap than the current 10 hcf level. Based on that analysis and feedback obtained from the stakeholder group, we propose a SFR usage cap of 14 hcf instead of the current 10 hcf. The issue of SFR usage cap is discussed in greater detail in Section 6.

MFR Wastewater Flow Estimation: MFR water consumption relates predominantly to domestic use with very little or no irrigation use since most MFR complexes have small green areas. MFR

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complexes with very large green belts are likely to have separate irrigation water meters. Therefore, MFR water usage levels remain relatively stable throughout the year and it is appropriate to use actual monthly water usage in estimating wastewater flows. However, MFR complexes do have some minimum irrigation usage, which does not return to the sewer, and therefore generally the City estimates MFR annual wastewater flows to be 95 percent of their annual water usage.

Commercial Class

Wastewater flows for the commercial/industrial users are estimated based on actual monthly water consumption. Water usage patterns vary significantly among the different types of commercial/industrialbusinesses and therefore the City typically assigns to each user a percent return to sewer. Users whose return to sewer varies significantly from what has been assigned can take advantage of an appeals process to have the return to sewer factor and usage rate reduced.

TSS/COD STRENGTH ASSIGNMENT

The City's existing sewer user classification and rate structures are based on wastewater flows and TSS concentrations. The City currently assigns TSS strengths to the different classes of commercial/industrial users based on SIC codes. The City's Sewer Classification Program Industrial Classification Guidelines List is included as [redacted]. No changes were made to the existing TSS assignments.

Since the proposed rate structure needs to include the COD parameter, Black & Veatch assigned COD strengths based on SIC codes to the different types of commercial/industrialusers. A list of SIC codes with the corresponding proposed TSS and COD strengths is included in Appendix 4-2. The COD assigned to the different SIC codes is based on past sampling studies data from the Los Angeles County Sanitation District (LACSD), City of Los Angeles (LA) and SWRCB guidelines. BOD data was obtained from these sources and was then converted to COD strengths by applying a conversion factor of 2.

MASS BALANCE ANALYSIS

Black & Veatch used the historical FY 1999 water consumption as the base data to estimate annual wastewater flows and TSS/COD loadings for all user classes. The use of reliable data is critical since these historical flows and loadings are used to project future user class annual flows and strength loadings. Projected flows and loadings are later used in the cost of service analysis (to derive the unit costs of service and user class costs). A mass balance analysis is usually performed to verify the appropriateness of the estimated flows and loadings.

Mass balance is the process of matching and reconciling calculated total annual flows and strength loadings in pounds with the quantities actually received at the treatment facilities. The mass balance analysis takes into consideration other non-user flows such as the infiltration & inflow (I&I) flows that get into the sewer system. I&I flows refers to water other than wastewater that enters a sewer system from other sources including cracked sewer mains, manholes and sewer vents. Variances

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between the actual flows and loadings received at the treatment facilities and the calculated historical flows and loadings are usually reconciled against the SFR flows and loadings since the flows and loadings from that user class can be compared against industry standards.

The City's share of total annual average flows including I&I flows for FY 1999 is estimated at 119 mgd of which 2 mgd is the estimated I&I flow. When the calculated annual City flow and loadings were compared with the actual City share (net of I&I) received at the treatment facilities, the analysis indicated a 3.7 percent variance. The calculated flows were higher than the actual City's share of flows received.

The City's measured annual average TSS and COD strengths are 269 mg/l and 610 mg/l respectively. The mass balance analysis on loadings indicated that calculated TSS was 1.2% higher than measured TSS. The calculated COD was 7.3% higher than measured COD.

Black & Veatch adjusted the City's average annual SFR flow estimate from 55 mgd to 50.5 mgd. Similarly, the City's SFR TSS strength estimate was reduced from 275 mg/l to 265 mg/l and the SFR COD estimate was reduced from 550 mg/l to 450 mg/l. With these adjustments to the historical SFR estimates of flows and loadings, Black & Veatch was able to reconcile the variances and achieve a reliable mass balance as presented in the mass balance summary in Table 4-1.

TABLE 4-1 MASS BALANCE ANALYSIS SUMMARY

DESCRIPTION	WASTEWATER FLOW (HCF/YR)	TSS LOADINGS (LBS/YR)	COD LOADINGS (LBS/YR)
Total Calculated City User Flows (HCF/Year)	58,947,931	98,975,653	226,185,436
Estimated City User Flows not discharged to City Facilities	1,854,278	3,104,061	6,208,123
Net Calculated City Flows (HCF/Year) (1)	57,093,653	95,871,592	219,977,313
City's Actual 1999 Flows into the plant (HCF/Year)	58,068,182	96,846,114	219,613,864
City's Estimated 1999 I&I (HCF/YR)	975,936	544,572	726,096
City's Actual 1999 Loadings net of I&I Flows (HCF/YR)	57,092,246	96.301,542	218,887,768
VARIANCE ANALYSIS OF ANNUALFLOWS AND LOADINGS			
Variance between actual and calculated (HCF/YR or LBS/YR)	1,406	-429,950	1,089,545
Variance between actual and calculated (%)	0.0025%	-0.45%	0.50%

(1) Mass Balance perfomed based on calculated annual wastewater flow generation of all user classes.

ANNUAL WASTEWATER FLOWS AND LOADINGS PROJECTION

Annual wastewater flows and TSS/COD loadings need to be projected for each user class to determine

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each user class' cost of service and sewer rates. A brief discussion on the method used in estimating user class flows and loadings for FY 2002 follows. User class flows and loadings are projected for the fiscal year, for which cost of service allocations are made and rates are calculated. In this Study, cost of service analysis and rate design is performed for FY 2002.

Table 4-2, summarizes the historical and projected average number of customer accounts and annual wastewater flows for FY 2001 to FY 2005. The projection of customer accounts shown in Table 4-2, is based upon the assumption that annual growth for most of the City's user classes will continue at the rate of one and one-half percent and there will be no increases in the government users.

TABLE 4-2 HISTORICAL AND PROJECTED NUMBER OF ACCOUNTS

User Class Description	Growth Rate	# Accounts FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Water/Sewer - SFR	1.50%	203,611	206,665	209,765	212,912	216,106	219,348	222,639
Water/Sewer - MFR	1.50%	28,038	28,459	28,885	29,319	29,759	30,205	30,658
Water/Sewer - Commercial/Industrial	1.50%	13,711	13,917	14,125	14,337	14,552	14,770	14,992
Sewer Only - SFR	1.50%	7,623	7,737	7,853	7,971	8,091	8,212	8,335
Sewer Only - MFR	1.50%	305	310	314	319	324	329	334
Sewer Only - Commercial/Industrial	1.50%	284	288	293	297	301	306	311
Gov/Mil - SFR	0.00%	458	458	458	458	458	458	458
Gov/Mil - MFR	0.00%	372	372	372	372	372	372	372
Gov/Mil - Commercial/Industrial	0.00%	988	988	988	988	988	988	988
Water/Sewer Very Large Users (ComInd)	1.50%	110	112	113	115	117	119	121
Govt./Mil. Very Large Users	0.00%	35	35	35	35	35	35	35
Total		255,535	259,340	263,202	267,123	271,103	275,142	279,243

The wastewater flows and loadings for FY 2002 for each user class are estimated based on the projected increase in the number of accounts and the current annual wastewater flow and loadings. Wastewater flows are projected to increase proportionately with growth. A summary of projected estimates of user class wastewater flows and loadings is shown in Table 4-3.

TABLE 4-3 PROJECTED FY 2002 WASTEWATER FLOWS AND LOADINGS

User Class Description	Annual Wastewater Flows FY 2002 (HCF)	Annual TSS Loadings FY 2002 (LBS)	Annual COD Loadings FY 2002 (LBS)
Single Family Residential	24,955,925	41,006,578	69,915,241
Multiple Family Residential	18,116,067	29,576,749	50,753,048
Commercial/Industrial (< 25,000 gpd discharge)	9,654,784	19,410,018	48,374,123
Commercial/Industrial (> 25,000 gpd discharge)	6,782,952	9,980,078	60,297,945
Total	59,509,728	99,973,423	229,340,357

Section 5
Revenue Requirements

A review of a utility's revenue requirements is a key first step in the rate design process. The review involves an analysis of annual operating revenues under existing rates, capital revenues, O&M and capital expenditures, transfers if any between operating and capital funds, and operating and capital reserve requirements. This section of the report provides a discussion of the projected revenues, O&M and capital expenditures, capital improvement financing plan, debt service requirements, and the revenue adjustments required to ensure the financial stability of the wastewater enterprise. The wastewater system revenues and expenditures are discussed from a regional system perspective and the discussion on required revenue adjustments relates exclusively to the City's users.

SYSTEM REVENUES

The City's Metropolitan Wastewater Department (MWWD) operates the regional wastewater system. The City derives its required annual operating and capital revenues from a number of sources. The principal sources of operating revenues are the sewer service charges from the City's users and the full cost recovery revenues from the PAs per their cost sharing agreement with the City. Other revenue sources include miscellaneous operating revenues such as Shipboard Waste and Trucked Waste Revenues and other non-operating revenues including revenue transfers from the rate stabilization fund. Capital revenue sources include sewer connection fees, capital funds, bond proceeds, state and federal grants & loans, capacity fees from the City and the PAs, pay-as-you-go revenues from the PAs, and interest earnings.

Black & Veatch reviewed the various sources of operating and capital revenues and the City's financing plan. Table 5-1 presents the details of the operating and capital related revenues including the City and PA user and capital revenues. The footnotes explain the basis for the revenue projections during the study period. The table however does not reflect other available revenues such as interest earnings, rate stabilization transfers, bond proceeds and capital grant monies. The comprehensive operating and capital flow of funds statements presented at the end of this section includes all those other revenues.

SYSTEM EXPENDITURES

To provide for the continued operation of the City's regional wastewater system on a sound financial basis, the revenues generated must be sufficient to meet the revenue requirements or cash obligations of the system. Revenue requirements include O&M expenses, capital improvement program (CIP) expenditures, principal and interest payments on existing debt, and other obligations. The wastewater enterprise's annual expenditures include two major components: the Muni and the Metro. Muni relates essentially to the collection system in the City's own retail service area and Metro relates to treatment and disposal services shared both by the City and the PAs.

The City's Financing Services Division annually receives O&M and capital expenditures information for the Metro component from MWWD. Financing Services incorporates these costs with the Muni annual O&M and CIP expenditures and develops comprehensive O&M and CIP cost projections for the entire wastewater enterprise as part of its annual "Rate Case" development.

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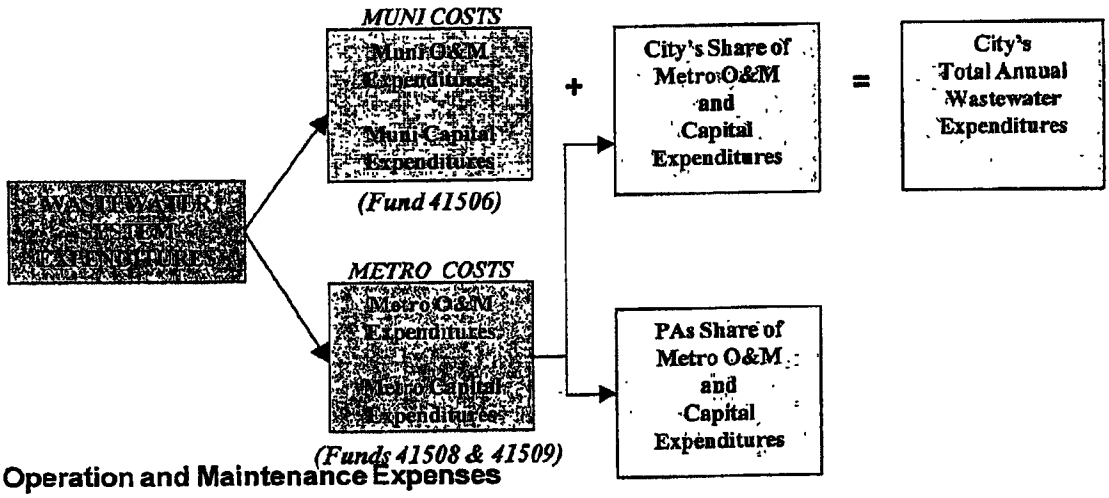
TABLE 5-1 DETAILS OF PROJECTED OPERATING AND CAPITAL REVENUES

Description	2000 $	2001 $	2002 $	2003 $	2004 $	2005 $
City User Charge Revenues						
Single Family Residential Revenues (1)	67,697,000	72,296,000	73,380,000	74,481,000	75,598,000	76,732,000
MFR/Commercial/Industrial Revenues (1)	95,803,000	104,252,000	106,858,000	108,461,000	110,088,000	111,739,000
Total City User Charge Revenues	163,500,000	176,548,000	180,238,000	182,942,000	185,686,000	188,471,000
Revenues from PA's (Treatment O&M) (2)	22,273,000	24,554,000	26,004,000	26,876,000	28,408,000	29,638,000
Shipboard Waste	601,000	631,000	631,000	631,000	631,000	631,000
Other City Operating Revenues						
Treatment Plant Services Other (3)	812,000	844,000	878,000	913,000	950,000	988,000
Treatment of Tijuana Sewage (4)	760,000	402,000	0	0	0	0
O&M Muni (3)	755,000	694,000	722,000	751,000	781,000	812,000
Transportation Charges Muni (5)	210,000	210,000	211,000	211,000	212,000	213,000
Total Other Muni Operating Revenues	2,537,000	2,150,000	1,811,000	1,875,000	1,943,000	2,013,000
Other Non-Operating Revenues						
Services Rendered to Others (5)	1,556,000	1,618,000	1,683,000	1,750,000	1,820,000	1,893,000
Sale of Power from Co-Generation (5)	589,000	613,000	638,000	664,000	691,000	719,000
Other Revenues (6)	224,000	224,000	224,000	224,000	224,000	224,000
Total Non-Operating Revenues	2,369,000	2,455,000	2,545,000	2,638,000	2,735,000	2,836,000
Capital Related Revenues						
New Sewer Connections - City (7)	110,000	111,000	112,000	113,000	114,000	115,000
Capacity Charge Revenues - City (8)	8,535,000	8,963,000	9,409,000	9,881,000	10,375,000	10,893,000
Contributions in Aid - SRF (9)	27,402,000	31,684,000	7,923,000	0	0	0
Contributions in Aid from City Entities (10)	598,000	1,630,000	3,631,000	3,271,000	3,191,000	3,091,000
Pay-Go Revenues from PA's (11)	2,138,000	5,772,000	5,498,000	4,901,000	4,674,000	7,404,000
Capacity Charge Revenues - PA's	1,198,000	1,198,000	1,198,000	1,198,000		
Total Capital Related Revenues	39,981,000	49,358,000	27,771,000	19,364,000	18,354,000	21,503,000
Total System Revenues (12)	231,261,000	255,696,000	239,000,000	234,326,000	237,757,000	245,092,000

NOTE
(1) Based on a revenue growth rate of 1.5% for SFR, MFR and commercial/industrial users beginning FY 02.
(2) Operating revenues equal the operating expenditures allocated to the PA's and projected revenues are shown.
(3) FY 99-01 figures provided by Metro; Beyond FY 01 projected at the inflation rate of 4%.
(4) Assumes no sewage flows from Tijuana beyond FY 01 and consequently no revenues beyond FY 01.
(5) Projected year figures are based on an inflation rate of 4%.
(6) Figures are estimated to remain constant as per Metro.
(7) Muni's new sewer connections
(8) FY 00 figure based on a 5-yr rolling average estimate of EDUs.
(9) Based on SRF loans already approved.
(10) Figures provided by Metro.
(11) Based on Metro Allocations/Rate Case Calculations.
(12) Excludes interest earning, bond proceeds, prior balances and encumbrances.

The City maintains three types of O&M and CIP funds for the wastewater enterprise: Muni Fund (41506) for the Muni component and, Metro Existing Facilities Fund (41508) and Metro New Construction Fund (41509) for the Metro component. Figure 5-1 provides a graphical representation of the different components and the relationship between them. Discussions on the different components of the wastewater system expenditures follow.

FIGURE 5-1 COMPONENTS OF THE WASTEWATER SYSTEM EXPENDITURES



Operation and Maintenance Expenses

O&M expenditures include the cost of operating and maintaining wastewater collection, conveyance, treatment, and sludge disposal facilities. O&M Expenses also include costs incurred in providing technical services including laboratory services, cogeneration services, and other administrative and general costs of the wastewater system. These costs are a continuing normal obligation of the system, and are met from operating revenues as they are incurred.

The City is exclusively responsible for the Muni Fund 41506 annual O&M costs as they relate to the City's own retail service area. These Muni O&M expenditures include City's pumping and collection costs, treatment costs associated with the San Pasqual Facility, laboratory and other City's wastewater related administrative costs. Metro 41508 and 41509 O&M costs relate to the regional system operations shared by both the City and the PAs. Accordingly, the annual O&M costs of the Metro Funds 41508 and 41509 are allocated between the City and the PAs. These Metro annual O&M costs include:

- Metro pumping
- Metro treatment at PLWTP, NCWRP, MBC and minimum O&M costs associated with the SBWRF that is under construction
- Technical Services including Wastewater Chemistry and Biology/Ocean Operations
- Cogeneration
- Administrative and general costs including other City department services, data processing,

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general accounting and clean water program administration

Black & Veatch reviewed MWWD's allocation of annual Metro O&M expenditures between the City and the PAs. In deriving the annual Metro O&M costs allocable to the PAs, MWWD first identifies the billable and non-billable O&M costs. Non-billable costs include costs associated with central support facilities and maintenance and these costs are the exclusive responsibility of the City. Billable O&M is that portion of Metro annual O&M costs that is shared between the City and the PAs.

In order to allocate billable costs between the City and the PAs, MWWD first allocates the total billable O&M costs to the three parameters of Flow, TSS and COD. The allocation, which is discussed in detail in Section 6, is based on a technical allocation study conducted in 1998. The parameter costs are in turn allocated between the City and the PAs in proportion to their contributions of Flow, TSS and COD. These costs allocated to the City are the basis of the City's budget.

The comprehensive forecasted annual O&M expenditures for the study are based upon the City's budgeted FY 2000 expenditures, adjusted for anticipated changes in operations and the effect of inflation in future years. The City conservatively uses an inflationary factor of four percent in projecting all O&M expenditures. The City's projections of annual regional wastewater O&M expenditures are in the range of $173 - $198 million during FY 2001 through FY 2005. Table 5-2 presents the comprehensive annual O&M costs. As of FY 2001, O&M expenditures of Metro Funds 41508 and 41509 have been merged into one. Hence the amounts in Metro Existing (41508) non-billable and billable line items are indicated as zero for FY 2001 through FY 2005, and the amounts are included in the Metro fund 41509 projections in Table 5-2.

The City's annual O&M expenditures, which include its own service area related Muni expenditures and its share of Metro annual O&M are presented in Table 5-3. The City's retail service area O&M expenditures, which are the focus of this Study, are estimated to be in the range of $148 to $168 million during FY 2001 through FY 2005.

Wastewater Capital Improvement Program

The City has developed a comprehensive wastewater CIP to address both the Muni and Metro wastewater system needs. The Muni system CIP projects generally include rehabilitation or replacement of sewer trunk lines and interceptors, upgrade or expansion of pump stations and San Pasqual Facility related projects. The Metro CIP projects include:

- PLWTP site improvements, plant upgrades and outfall upgrades
- NCWRP effluent pipelines, sludge processing, cogeneration
- SBWRF plant, sludge processing, and conveyance
- South Bay ocean outfall
- MBC sludge processing
- Metro Operations Center and other Metro projects

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TABLE 5-2 PROJECTED REGIONAL WASTEWATER O&M EXPENDITURES

Description	Projected (Calculated) 2001 $	2002 $	2003 $	2004 $	2005 $
CITY OF SAN DIEGO					
Collection					
O&M (Non-Contract Metro) Pumping	3,496,617	3,539,617	3,582,617	3,627,617	3,672,617
Wastewater Collection	47,701,000	46,201,000	45,051,000	44,877,000	44,877,000
Total Collection	51,197,617	49,740,617	48,633,617	48,504,617	48,549,617
Total Collection (Inflated)	53,245,522	53,799,451	54,706,205	56,743,541	59,068,032
Treatment					
San Pasqual Water Reclamation Plant	3,013,383	3,013,383	3,013,383	3,013,383	3,013,383
Total Treatment	3,013,383	3,013,383	3,013,383	3,013,383	3,013,383
Total Treatment (Inflated)	3,133,918	3,259,275	3,389,646	3,525,232	3,666,241
Laboratory					
Environmental Monitoring & Tech Svcs.	4,955,516	4,696,516	4,696,516	4,696,516	4,696,516
Total Laboratory	4,955,516	4,696,516	4,696,516	4,696,516	4,696,516
Total Laboratory (Inflated)	5,153,737	5,079,752	5,282,942	5,494,259	5,714,030
Administration & General					
Non-Activity Related Items (Environmental Svcs.)	706,484	706,484	706,484	706,484	706,484
Other Expenditures	462,000	462,000	462,000	462,000	462,000
Total Administration & General	1,168,484	1,168,484	1,168,484	1,168,484	1,168,484
Total Administration & General (Inflated)	1,215,223	1,263,832	1,314,386	1,366,961	1,421,639
City's Share of Metro O&M Expenditures					
From Metro Existing (41508) - Non-Billable O&M	0	0	0	0	0
From Metro Existing (41508) - Billable O&M	0	0	0	0	0
From Metro New (41509) - Non-Billable O&M	24,775,000	25,626,000	26,526,000	22,905,000	24,005,000
From Metro New (41509) - Billable O&M	61,067,000	64,289,000	67,073,000	71,021,000	74,469,000
Total City's Share of Metro O&M Costs	85,842,000	89,915,000	93,599,000	93,926,000	98,474,000
Subtotal: City's O&M Expenditures	148,590,400	153,317,310	158,292,179	161,055,993	168,343,942
PARTICIPATING AGENCIES					
From Metro Existing (41508) - Billable O&M	0	0	0	0	0
From MetroNew (41509) - Billable O&M	24,554,000	26,004,000	26,876,000	28,408,000	29,638,000
Subtotal: PAs Share of O&M	24,554,000	26,004,000	26,876,000	28,408,000	29,638,000
TOTAL REGIONAL ANNUAL O&M	173,144,400	179,321,310	185,168,179	189,463,993	197,981,942

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TABLE 5-3 BUDGETED AND PROJECTED CITY'S ANNUAL O&M EXPENDITURES

Description	Budgeted	Projected				
	2000	2001	2002	2003	2004	2005
	$	$	$	$	$	$
Muni Collection System	54,266,617	53,245,522	53,799,451	54,706,205	56,743,541	59,068,032
Muni Treatment - San Pasqual	3,013,383	3,133,918	3,259,275	3,389,646	3,525,232	3,666,241
Muni Laboratory	4,635,516	5,153,737	5,079,752	5,282,942	5,494,259	5,714,030
Muni Administration	706,484	1,215,223	1,263,832	1,314,386	1,366,961	1,421,639
City's Share of Metro O&M	83,019,000	85,842,000	89,915,000	93,599,000	93,926,000	98,474,000
Total: City's Annual O&M	145,641,000	148,590,400	153,317,310	158,292,179	161,055,993	168,343,942

The City maintains replacement and expansion funds for financing capital projects. Consistent with SWRCB revenue program requirements, the City distinguishes between replacement and expansion CIP costs. Similar to the O&M, the City maintains three CIP funds. The Muni Fund 41506 includes CIP that is associated exclusively with the City's retail service area collection and pumping needs. The City bears exclusive responsibility for the Fund 41506 CIP project costs. The Metro Funds 41508 and 41509 CIP relate to the regional system infrastructure shared by both the City and the PAs. Therefore, the City and the PAs share the responsibility for these Metro Funds CIP costs. The Muni Fund and Metro Fund CIP projects include both replacement and expansion related projects.

A summary of planned wastewater CIP expenditures for each year during the study period FY 2001 to FY 2005, is shown in Table 5-4. The total wastewater CIP estimated for the study period is nearly $618 million. As Table 5-4 indicates, nearly $169 million of CIP expenditures are scheduled for FY 2002. A list of proposed CIP projects for both the Muni and the Metro funds as reflected in the FY 00 Rate Case is included in [redacted].

Major Capital Improvement Financing Plan

The CIP is to be funded through a combination of system revenues and debt financing. The CIP funding sources include the following:

System Revenues:

- Capacity charges from the City and the PAs
- Pay-as-you-go revenues from PAs
- City connection fees

Capital Financing:

- Bond proceeds
- Contributions in aid – SRF
- Grant receipts
- Interest earnings

TABLE 5-4 SUMMARY OF CAPITAL IMPROVEMENT PROGRAM

Description	2001 $	2002 $	2003 $	2004 $	2005 $
MUNICIPAL SEWER FUND - 41506					
Total Municipal Capital Expenditures	65,938,000	98,656,000	69,589,000	48,477,000	38,182,000
METRO EXISTING SEWER FUND - 41508					
Total Metro Existing Capital Expenditures	20,511,000	8,624,000	11,101,000	12,409,000	4,471,000
METRO NEW CONSTRUCTION SEWER FUND - 41509					
Total Metro New Construction Capital Expenditures	88,098,000	61,941,000	31,032,000	33,658,000	25,171,000
TOTAL SYSTEM CIP					
Total Wastewater System Capital Expenditures	174,547,000	169,221,000	111,722,000	94,544,000	67,824,000

The CIP financing plan anticipates annual system revenues in the range of $15 to $18 million during the study period, FY 2001 through FY 2005. In addition, total capital financing revenues for the study period are estimated at nearly $345 million, of which $278 million are estimated bond proceeds. Interest earnings computed at an annual rate of 5% are estimated at $17 million. Table 5-5 presents the proposed CIP financing plan to finance major CIP projects over the five-year period from FY 2001 to FY 2005.

Debt Service Requirements

Debt service requirements are summarized in Table 5-6, and consist of principal and interest payments on existing debt. The City currently has debt payments associated with outstanding parity bonds (Series 1993 and Series 1995), Series 1997A and 1997B bonds, Series 1999A and 1999B bonds, and State Revolving Fund (SRF) interest free loans. Existing debt service requirements during the study period include annual payments in the range of $77 to $99 million.

Debt Service Coverage

The City needs to meet debt service coverage requirements on its existing outstanding bond issues. Typically, to meet debt service coverage requirements and obtain a good rating, the City needs to ensure that adequate revenues are available to meet its expenditures. Rating agencies use coverage as a measure of an agency's ability to repay debt and ensure financial stability.

Coverage requirements typically vary between 1.10 and 1.25. The Parity Obligations stipulate that City's Net System Revenues shall amount to at least 1.20 times the Maximum Annual Debt Service on

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TABLE 5-5 CAPITAL IMPROVEMENT PROGRAM FINANCING PLAN

Description	Fiscal Year Ending June 30				
	2001	2002	2003	2004	2005
	$	$	$	$	$
Source of Funds					
Transfers					
Transfer from Operating Fund (Pay-as-you-go)	0	0	0	0	0
Prior Year Appropriations	194,877,000	141,811,000	91,638,000	78,453,000	66,250,000
Capital Revenues					
New Sewer Connections	111,000	112,000	113,000	114,000	115,000
Capacity Charge Revenues - City	8,963,000	9,409,000	9,881,000	10,375,000	10,893,000
Pay-as-You-Go-Revenues - PA's	5,772,000	5,498,000	4,901,000	4,674,000	7,404,000
Capacity Charge Revenues - PA's	1,198,000	1,198,000	1,198,000	0	0
Capital Financing					
Bond Proceeds	0	112,909,000	67,035,000	61,454,000	37,304,000
Contributions in Aid - SRF Loans	31,684,000	7,923,000	0	0	0
Contributions in Aid - City Entities	1,630,000	3,631,000	3,271,000	3,191,000	3,091,000
Other Financing - COP	0	0	0	0	0
Anticipated Grant Funds	11,704,000	0	0	0	0
Interest Income [1]	6,854,400	2,445,900	3,023,600	2,269,200	2,234,100
Total Funds Available	262,793,400	284,936,900	181,060,600	160,530,200	127,291,100
Use of Funds					
Major Capital Improvements	174,547,000	169,221,000	111,722,000	94,544,000	67,824,000
CIP Encumbrances	141,811,000	91,638,000	78,453,000	66,250,000	54,780,000
Transfer to Operating Fund	0	0	0	0	0
Capital Financing Reserve Requirement	0	8,646,300	5,133,400	4,706,000	2,856,600
Capital Financing Issuance Expense	0	3,791,000	2,250,000	2,063,000	1,253,000
Total Use of Funds	316,358,000	273,296,300	197,558,400	167,563,000	126,713,600
Capital Fund Balance					
Net Annual Cash Balance	(53,564,600)	11,640,600	(16,497,800)	(7,032,800)	577,500
Beginning Balance	108,402,700	54,838,100	66,478,700	49,980,900	42,948,100
Funds on Hand at End of Year	54,838,100	66,478,700	49,980,900	42,948,100	43,525,600

[1] Interest on available capital funds computed at a 5% annual interest rate.

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TABLE 5-6 OPERATING FLOW OF FUNDS

Line No	Description	Projected 2001 $	2002 $	2003 $	2004 $	2005 $
	Revenue					
1	Sewer Service Charges Under Existing Rates	176,548,000	180,238,000	182,942,000	185,686,000	188,471,000
	Additional Service Charge Revenue Required:					
	Year / Annualized Revenue Increase / Months Effective					
2	2002 7.5% 4.0		4,506,000	13,720,700	13,926,500	14,135,300
3	2003 7.5% 4.0			4,916,600	14,970,900	15,195,500
4	2004 7.5% 4.0				5,364,600	16,335,100
5	2005 7.5% 4.0					5,853,400
6	Total Additional Service Charge Revenue	0	4,506,000	18,637,300	34,262,000	51,519,300
7	Total Sewer Service Charge Revenue	176,548,000	184,744,000	201,579,300	219,948,000	239,990,300
8	Total Operating Revenues from PA's	24,554,000	26,004,000	26,876,000	28,408,000	29,638,000
9	Total Shipboard Waste Revenues	631,000	678,300	729,200	783,900	842,700
10	Total Other Muni Operating Revenues	2,150,000	1,811,000	1,875,000	1,943,000	2,013,000
11	Total User Charge Revenues Available	203,883,000	213,237,300	231,059,500	251,082,900	272,484,000
	Non-operating Revenue					
12	Total Non-Operating Revenues	2,455,000	2,545,000	2,638,000	2,735,000	2,836,000
13	Debt Service Revenues from PA's	19,065,000	19,650,000	20,394,000	21,014,000	21,507,000
14	Total Non-Operating Revenue	21,520,000	22,195,000	23,032,000	23,749,000	24,343,000
	Transfer Revenues					
15	Transfer from Capital Fund	0	0	0	0	0
16	Transfer from Rate Stabilization Fund	12,000,000	9,000,000	11,000,000	500,000	0
17	Total Transfer Revenues	12,000,000	9,000,000	11,000,000	500,000	0
	Interest Income					
18	Interest Income From Operations (1)	11,330,700	12,034,800	12,863,300	14,337,900	15,900,800
19	Interest Income from Capital Fund	6,854,400	2,445,900	3,023,600	2,269,200	2,234,100
20	Interest Income From Restricted Reserves (2)	1,094,400	1,112,900	1,548,800	1,811,100	2,048,500
21	Total Interest Income	19,279,500	15,593,600	17,435,700	18,418,200	20,183,400
	Total Revenues					
22	Total Revenues Available	256,682,500	260,025,900	282,527,200	293,750,100	317,010,400
	Revenue Requirements					
23	Operation and Maintenance Expense	173,144,400	179,321,300	185,168,200	189,464,000	197,981,900
24	Transfer to Operating Reserve	654,000	772,000	731,000	1,037,000	1,065,000
	Total O&M Expense	173,798,400	180,093,300	185,899,200	190,501,000	199,046,900
	Debt Service					
25	Existing Revenue Bonds	77,054,000	81,893,000	89,596,000	95,107,000	99,344,000
26	Existing Other Financing	0	0	0	0	0
27	Existing State Revolving Fund Loans	1,096,000	1,473,000	4,021,000	4,021,000	4,021,000
28	Total Debt Service	78,150,000	83,366,000	93,617,000	99,128,000	103,365,000
29	Total Revenue Requirements	251,948,400	263,459,300	279,516,200	289,629,000	302,411,900
	Operating Fund Balance					
30	Net Operating Funds Available	4,734,100	(3,433,400)	3,011,000	4,121,100	14,598,500
31	Beginning Operating Fund Balance	18,350,800	23,084,900	19,651,500	22,662,500	26,783,600
32	Cumulative Operating Fund Balance	23,084,900	19,651,500	22,662,500	26,783,600	41,382,100
33	Minimum Desired Balance (3)	21,643,100	22,415,200	23,146,000	23,683,000	24,747,700
	Minimum Desired Balance with Adjustments	19,204,000	19,976,000	20,707,000	21,744,000	22,809,000

(1) Interest on available funds computed at 5% annual interest rate.
(2) Interest income from restricted reserves transferred to O&M.
(3) Estimated at 45 days of operation and maintenance expense.

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all Parity Obligations Outstanding. The System Revenues include sewer service charges from the City's users and the PAs, Shipboard Waste and other Muni Revenues. In addition, system revenues also include all other moneys derived from the ownership and operation of the system including sewer connection fees, capacity fee revenues from the City and the PAs, Pay-as-You-Go revenues from PAs, anticipated Grant Funds, funds transferred from the Rate Stabilization Fund and other interest earnings on reserve funds. Maximum Annual Debt Service includes annual principal and interest payments on outstanding bonds.

A higher debt service coverage results in lower interest rates on debt. The revenue requirements projected for the study period will help the City to successfully meet its existing debt service coverage requirement, which is 1.20.

Reserves

The City needs to have adequate cash reserves to meets its operating, capital and debt service requirements. Debt service reserves provide protection from defaulting on annual debt service payments in times of financial crisis. The annual debt service reserve amount is estimated to be in the range of $22 to $45 million during the study period.

Operating reserves may be used to meet ongoing cash flow requirements as well as emergency requirements. Typically, a balance in the range of 10 percent and 50 percent of annual operating expenses is considered appropriate. This represents one to six months of working capital. The City maintains 45-day operating reserves. The estimated 45-day operating reserves are shown in Table 5-6. Interest from reserve funds may be used to finance operations.

PROPOSED REVENUE ADJUSTMENTS

The pro forma operations statement or cash flow summary presented in Table 5-6 provides a basis for evaluating the timing and level of wastewater revenue increases required to meet the projected revenue requirements for the study period. In order to meet projected revenue requirements and to maintain desired operating and debt reserve fund balances, the City proposed the following revenue adjustments, which were approved by the City Council. The required revenue adjustments are shown in Table 5-6. The proposed increases are as follows:

Effective Date	Increases
March 1, 2002	7.5 percent
March 1, 2003	7.5 percent
March 1, 2004	7.5 percent
March 1, 2005	7.5 percent

As shown in Line 32 in Table 5-6, available working capital funds are adequate to meet the recommended minimum levels of working capital.

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Section 6
Study Issues/Stakeholder Input

As the graphical representation of the cost of service and rate design process indicates in the introductory section of this report, once the revenue and service requirements are determined, the next critical step in the process is the allocation of revenue requirements to the wastewater parameters. The allocation of costs and the design of rate structures are of particular significance in this Study due to the introduction of COD as an additional parameter in the allocation of costs and in the rate structure. Since stakeholder participation and input is an important element of this study, several issues pertaining to cost allocation methods and rate structure alternatives were discussed with the stakeholder group. It is essential to highlight the important issues that were examined and the stakeholder contributions to those issues since they provide the framework for the cost of service and rate design discussions presented in Sections 7 and 8.

ISSUES

The issues examined in this study can be classified into the following four major areas:

- SWRCB Regulatory Requirements
- Sewer User Classification
- Cost Allocation
- Rate Structure Design

The issues mentioned above are highly interdependent and hence both the analysis and the results of each of the issues have to be examined in terms of the potential impact on each other.

SWRCB Regulatory Requirements

The City has received federal and state Clean Water Grant (CWG) funds and State Revolving Fund (SRF) loans for the construction of wastewater treatment facilities. As a recipient of the federal grants and state loans, the City is obligated to establish a revenue program that complies with the revenue program requirements set forth by the SWRCB. One of the specific conditions that the City agreed to meet when it accepted the federal grant funds was to include strength-based billing in addition to flow-based billing. In compliance, the City established a flow and strength based billing for the PAs in 1998. Since 1998, the City has been billing all the PAs on the basis of flow, TSS and COD parameters.

However, the City continues to bill its own retail service area users only on the basis of flow and TSS and has not included COD into its billing structure. The SWRCB has now mandated that the City include either BOD or COD in its sewer billing. Since COD is easier to measure, the City has agreed to incorporate COD into the rate structure instead of BOD. Incorporation of COD into the sewer rate structure is not an issue of choice, but a mandatory regulatory requirement that the City needs to comply with.

The SWRCB provides guidelines that enable grantees and loan recipients to develop a revenue program

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that complies with its requirements. The guidelines include various aspects of a revenue program's development, including revenue requirements determination, user classification, cost allocation and implementing ordinances. The SWRCB's guidelines on user classification and cost allocation have direct implications on this study.

User Classification

The SWRCB's guidelines on the identification of users state that,

> ".....the users of the treatment works and their associated wastewater flows and loadings (BOD_5, SS or other appropriate constituents) must be identified. Flows and loadings must be documented ...., in order that proportional costs can be calculated."

The City's residential users are classified into SFR and MFR user classes. The commercial/industrial users are classified into a user matrix of 200 discrete classes based on the users' percentage of water returned to sewer and the strength of TSS parameter. The users are assigned a characteristic TSS depending on the type of business activity and return to sewer percentage. The existing user matrix has 10 TSS classes with TSS range from 0 to 1,000 mg/l, increasing in 100 mg/l increments. The matrix has 20 return to sewer classes with the first 19 classes having a range from 5 to 99 percent with return to sewer increasing in four percentage increments. The twentieth class's return to sewer is equal to the metered water use. Figure 6-1 shows this 10x20 matrix with the rates projected for the 7.5 percent increase in March 2002 under the current rate structure.

FIGURE 6-1 PROJECTED COMMERCIAL/INDUSTRIALUSER CLASS MATRIX

Return to Sewer	TSS 50	TSS 150	TSS 250	TSS 350	TSS 450	TSS 550	TSS 650	TSS 750	TSS 850	TSS 950
	A	B	C	D	E	F	G	H	I	J
100%	$2.54	$2.85	$3.14	$3.42	$3.73	$4.01	$4.31	$4.59	$4.89	$5.18
95-99%	$2.47	$2.77	$3.04	$3.32	$3.61	$3.89	$4.17	$4.45	$4.75	$5.02
90-94%	$2.34	$2.62	$2.89	$3.14	$3.43	$3.69	$3.97	$4.12	$4.50	$4.76
85-89%	$2.22	$2.48	$2.73	$2.98	$3.24	$3.49	$3.71	$4.00	$4.26	$4.50
80-84%	$2.08	$2.34	$2.57	$2.70	$3.06	$3.29	$3.53	$3.77	$4.01	$4.25
75-79%	$1.96	$2.20	$2.42	$2.63	$2.87	$3.09	$3.32	$3.54	$3.77	$3.99
70-74%	$1.83	$2.05	$2.26	$2.45	$2.68	$2.87	$3.10	$3.30	$3.52	$3.73
65-69%	$1.70	$1.91	$2.10	$2.29	$2.50	$2.69	$2.89	$3.08	$3.28	$3.53
60-64%	$1.58	$1.77	$1.94	$2.12	$2.31	$2.49	$2.67	$2.85	$3.03	$3.21
55-59%	$1.45	$1.63	$2.00	$1.95	$2.13	$2.29	$2.45	$2.62	$2.79	$2.95
50-54%	$1.32	$1.48	$1.63	$1.78	$1.94	$2.09	$2.25	$2.39	$2.57	$2.69
45-49%	$1.19	$1.34	$1.47	$1.61	$1.75	$1.89	$2.02	$2.16	$2.30	$2.43
40-44%	$1.07	$1.20	$1.32	$1.44	$1.56	$1.69	$1.81	$1.93	$1.95	$2.17
35-39%	$0.94	$1.06	$1.16	$1.27	$1.38	$1.45	$1.59	$1.70	$1.81	$1.92
30-34%	$0.85	$0.91	$1.00	$1.09	$1.19	$1.28	$1.38	$1.49	$1.57	$1.66
25-29%	$0.90	$0.77	$0.85	$0.92	$1.01	$1.08	$1.16	$1.24	$1.32	$1.40
20-24%	$0.56	$0.63	$0.69	$0.74	$0.82	$0.88	$0.95	$1.01	$1.08	$1.14
15-19%	$0.44	$0.49	$0.53	$0.58	$0.64	$0.68	$0.73	$0.78	$0.83	$0.88
10-14%	$0.31	$0.34	$0.38	$0.41	$0.45	$0.48	$0.52	$0.55	$0.59	$0.62
05-09%	$0.18	$0.20	$0.22	$0.24	$0.26	$0.28	$0.27	$0.32	$0.34	$0.36

In addition, the City has established a separate class "K" for commercial/industrial users with greater than 1,000 mg/l of TSS and computes rates individually for those users. The City's existing user classification for the most part complies with the revenue program requirements.

With respect to large users the revenue program guidelines, Section 1-3, state that,

> "Large commercial users discharging more than 25,000 gallons per day must have their costs allocated individually."

While the City currently assigns costs individually for commercial/industrial users with greater than 1,000 mg/l of TSS, it does not assign costs individually for users that discharge greater than 25,000 gpd of flows. In addition, the incorporation of COD necessitates changes to the existing user matrix. Therefore, Black & Veatch performed a review of the user classifications and proposed alternatives to classify commercial/industrial users.

User Classification Options: No changes were required for the residential classifications. To comply with the requirements, commercial/industrial users with greater than 25,000 gpd of discharge were first identified as large users. Different options were then examined for redefining commercial/industrial users discharging less than 25,000 gpd of wastewater flows.

The existing user class matrix method with 200 discrete classes enables the City to efficiently accommodate high levels of flow and strength variability that usually exists among the different types of business users. Therefore, most of the options examined are centered on the matrix method. The four options considered for commercial/industrial user classification (< 25,000 gpd of discharge) were:

- ***Option 1:*** Retain the existing commercial/industrial 20X10 user class matrix but convert the 10 TSS classes to 10 classes of cost weighted TSS/COD index.
- ***Option 2:*** Modify the existing commercial/industrial matrix to a 10X5 matrix of 50 discrete classes.
- ***Option 3:*** Eliminate the Matrix method and instead define 7-9 TSS/COD strength based commercial/industrial user groups.
- ***Option 4:*** Define a 10X11 matrix of 110 classes based on TSS and COD increments.

Option 1: This option retains the 20X10 user class matrix with 200 discrete classes. The matrix includes the existing 20 return to sewer classes but instead of the 10 TSS strength based classes, the matrix includes 10 TSS/COD based classes in the form of a cost-weighted TSS/COD index. This option while retaining the familiar 20X10 matrix also accommodates the inclusion of the COD parameter in classifying users.

Option 2: This option involves developing a modified user class matrix with fewer discrete classes. Instead of the 200 discrete classes, the modified matrix would be a 10X5 matrix with only 50 classes. The matrix would be based on 10 return to sewer classes and five TSS/COD based classes. As in Option 1, the TSS/COD classes will be in the form of a cost-weighted index. This option has fewer classes than Option 1 since the TSS/COD index increases in larger increments and the return to sewer percentage decreases in larger decrements than that proposed in Option 1.

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Option 3: This option eliminates the use of the matrix method and instead defines seven to nine broad TSS/COD strength based commercial user groups. In this option, the return to sewer variable would be applied to each user's water usage, directly at the time of billing.

Option 4: This option defines user classes based on the existing matrix method. However, instead of the return to sewer/TSS matrix, this option substitutes a strength-based 10X11 TSS/COD matrix with 110 discrete classes. The 10 TSS strength classes would increase in 100 mg/l increments and the 11 COD strength classes would increase in 200 mg/l increments. As in option 3, the user's return to sewer percentage would be directly applied to the user's water usage during billing.

The stakeholders' group decided to recommend implementation of Option 4 since the City' users are familiar with the matrix format and this option provides greater equity than the other options examined.

Cost Allocation

The approach used in allocating costs to the wastewater parameters is fundamental to a fair and equitable apportioning of costs among the City's various user classes. The two specific cost allocation issues that were examined during this Study include:

1. Selection of a cost allocation method to allocate the City's cost of service to the wastewater parameters.
2. Application of the selected cost-allocation method in actually allocating costs.

Selection of Cost Allocation Method

Utilities use different cost allocation methods taking into consideration several factors including local policy, characteristics of the wastewater flows received, type of wastewater system (regional system versus single municipal system), type of treatment facilities, geographic and engineering operational considerations and regulatory requirements.

The City operates a regional system that provides retail service to the City's users and wholesale service to the PAs. In addition, as a recipient of federal grants and state loans the City is obligated to comply with CWG and SRF program requirements.

With respect to establishing a system of user charges, the SWRCB guidelines state that:

> "User charges must recover the cost of operation and maintenance (including replacement) from all users based on their proportionate contribution to the total wastewater loadings from all users. The State recommends that user rates designed to recover all other costs be proportional to the cost of the service rendered."

Further, the Clean Water Act of 1972, P.L. 92-500 as amended, (Act) states, in part:

> "The Administrator shall not approve any grant for any treatment works under

section 201(g)(1) after March 1, 1973, unless he shall first have determined that the applicant (A) has adopted or will adopt a system of charges to assure that each recipient of waste treatment services within the applicant's jurisdiction, as determined by the Administrator, will pay its proportionate share (except as otherwise provided in this paragraph) of the costs of operation and maintenance..."

To ensure compliance with SWRCB revenue program requirements, the allocation of costs to the different parameters has to be based on the following three underlying principles:

- The wastewater parameters used in allocating cost responsibility to the different user classes must include flow, TSS and COD.

- Cost allocations to the flow, TSS and COD parameters need to be done using a "system-wide" approach. In order to recognize the shared configuration of the City's wastewater system that includes a complex exchange of solids, centrates and effluents and the sharing of a common outfall, the facilities need to be considered not in isolation but as components of an integrated "regional system".

- A proportional cost allocation method needs to be used to allocate costs between the different parameters and the different user classes.

In addition to the above, factors that were considered in the selection of a cost allocation method include:

- The revenue program developed for the City's wholesale service to the PAs. The City developed a revenue program, which is based on a system-wide approach with a functional-design based allocation of costs to the wastewater parameters of flow, TSS and COD. This method, which was approved by the SWRCB, is outlined in the Regional Wastewater Disposal Agreements between the City and the PAs. Changes to the cost allocation method for the City's own retail users have to be reviewed in the context of its potential impact on the City's existing contractual obligations to the PAs.

- Fair and equitable allocation of costs among user classes.

Cost Allocation Options: Black & Veatch outlined three allocation methods taking into consideration the factors discussed above. The three methods reviewed include:

- ***Option 1: Functional Method.*** In this method costs are allocated to wastewater parameters based on the functions of the various steps in the treatment process. This allocation is based on the premise that operational function drives costs. This method usually results in higher cost allocations to strength parameters.

- ***Option 2: Design Method.*** In this method costs are allocated to wastewater parameters based on design criteria used to size individual facilities or processes. This allocation is based on the premise that design considerations drive costs. This method results in higher

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cost allocation to flow.

- *Option 3: Functional-Design Method.* In this method costs are allocated to wastewater parameters based on the functional, design and operational performance criteria of the different processes. This is the method that is currently used by the City and generally provides a balance between the other two methods.

It was decided to retain the functional-design method as the appropriate method for allocating the City's cost of service. This method has already been approved by the City and the PAs and provides a balanced and proportionate approach to allocating costs.

Application of the Selected Cost Allocation Method

Black & Veatch reviewed MWWD's application of the functional-design method in allocating costs to the wastewater parameters. In addition, Black & Veatch also reviewed the allocation methodology described in a paper presented in the Water Pollution Control Federation in 1986 by Dr. C.W. Corssmit. While the methodology prescribed in the paper titled, "Wastewater Utility Unit Process Cost Parameter Allocations: Advancing Towards A Scientific Method", is not universally accepted as a definitive industry standard, Black & Veatch reviewed Corssmit's allocation methodology at the request of the stakeholder group.

Review Findings: MWWD had conducted an extensive cost allocation study in 1998 to determine the Metro O&M and capital allocation percentages for the parameters of flow, TSS and COD. MWWD conducted the allocation study using the three alternative allocation methods: Functional, Design and Functional-Design. MWWD ultimately adopted the cost allocation percentages derived using the *Functional-Design* method after the SWRCB and the PAs approved it. The allocations are currently used in determining the City and PAs' share of Metro O&M and capital costs.

Black & Veatch concurred with the functional-design allocation method adopted by MWWD for the following reasons:

- The method is based on the *proportional* cost allocation method, as stated in the Clean Water Act.

- Consistent with the definition of functional-design method, the allocation takes into consideration the operational performance characteristics of the facilities and the regulatory requirements. For example, PLWTP, which is an advanced primary treatment plant, removes nearly 85 to 87 percent of the influent TSS and nearly 60 percent of the influent BOD. PLWTP needs to comply with the NPDES requirements established by the EPA. The permit requires PLWTP to achieve 80 percent removal of TSS and 58 percent removal of BOD. While PLWTP's primary function is to mainly remove TSS, it also incidentally removes BOD during the process. To meet the NPDES 58 percent BOD removal requirement, PLWTP has to actually achieve 85 to 87 percent TSS removal since BOD removal in an advanced primary facility is essentially accomplished through TSS removal.

Taking into consideration PLWTP's BOD removal requirement and the operational performance

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required to meet the NPDES requirements, the MWWD functional-design method allocates PLWTP strength costs between TSS and BOD/COD in proportion to the relative removal of these two strength constituents of the wastewater.

- The method of allocating strength costs between TSS and BOD/COD proportionate to relative removal is consistently applied to all other facilities in the system, in recognition of the fact that the City's various facilities operate as an integrated regional system.

- The allocation process appropriately classifies wastewater system costs into various component costs including direct and indirect costs and allocates the indirect costs to the parameters in proportion to the allocation of direct costs.

Black & Veatch reviewed the methodology proposed in Corssmit's paper and concluded that the methodology is not applicable to the City's regional system for the following reasons:

- The functional-design based allocation method proposed for advanced primary treatment facilities in Corssmit's paper does not allocate any costs to BOD removal, and instead allocates all costs between flow and TSS. This approach is not suitable to PLWTP, which has a unique regulatory obligation to remove BOD.

- Corssmit's method does not take into account the removal of BOD in advanced primary plants. The use of Corssmit's cost allocation approach to PLWTP would result in excessive allocation of PLWTP costs to the TSS parameter and consequently adversely impact users that contribute high amounts of TSS and benefit users that contribute high amounts of BOD/COD. The method would lead to a disproportionate allocation of PLWTP costs between TSS and COD.

MWWD's cost allocation approach develops defensible unit costs of flow, TSS and COD and meets regulatory requirements. However, a few minor changes were made to fine-tune MWWD's method and the revised allocation percentages were used for the City's retail service area cost allocations. The revisions relate to the allocation of Metro Biosolids Center annual O&M costs and the allocations of a few sewer trunk line CIP costs. The revisions are discussed in Section 7 of this report.

Rate Structure Design

The classification of the users, the allocation of costs and the design of the rate structure, all have an impact on user rates. The factors considered in the design of rate structure options include:

- Inter-class revenue neutrality: The rate structure for each user class would result in each user class paying its allocated share of costs. In other words, no user class would pay more or less than its fair share.

- The rate structure would include a fixed charge and a variable charge component.

- The fixed charge in the form of a base fee would include only those administrative and

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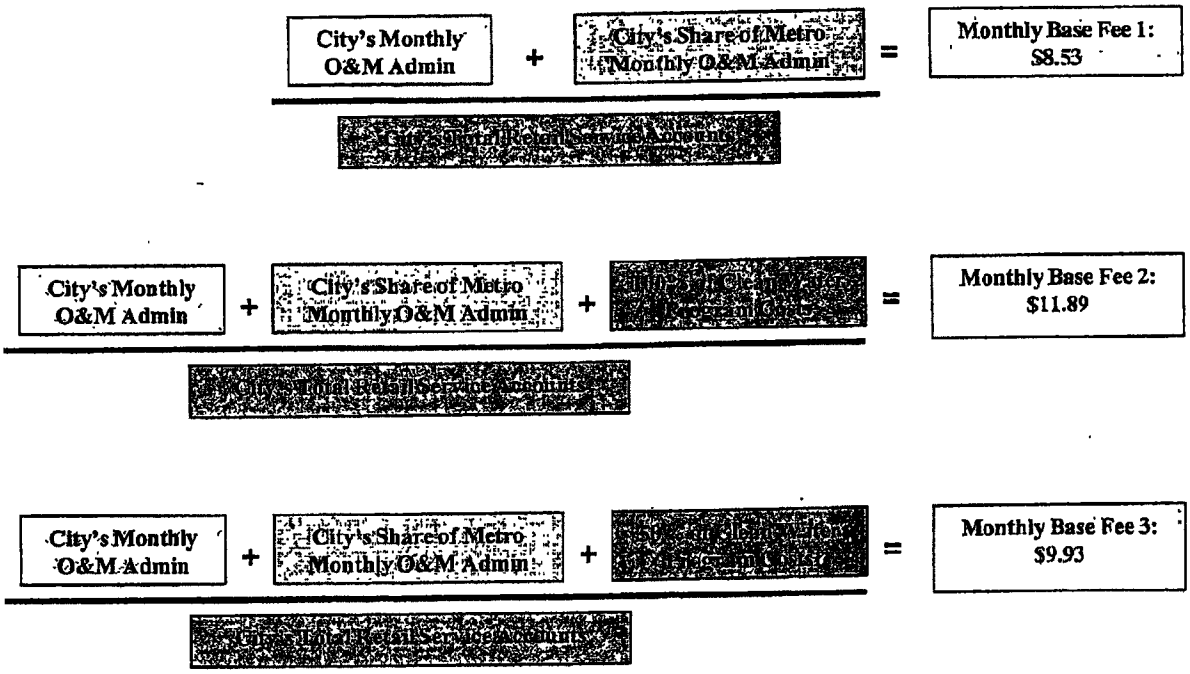
general costs that are common to all and would be the same for each account.

The following issues were examined as part of the evaluation of the rate structure alternatives:

- Level of Base Fee
- Level of SFR Usage Cap
- TSS/COD loadings computation for the different classes in the commercial/industrial matrix

Level of Base Fee: Three different levels of Base Fee were evaluated: monthly base fees of $8.53, $11.89 and $9.93. Figure 6-1 shows the costs included in the computation of the different Base Fee levels. A monthly Base Fee of $9.93 was agreed upon by the stakeholders' group.

FIGURE 6-2 COMPUTATION OF DIFFERENT LEVELS OF BASE FEES



Level of SFR Usage Cap: The City currently has a usage cap of 10 hcf for the SFR class and therefore water usage greater than 10 hcf is not considered for sewer billing. However, the mass balance analysis indicates a need for a higher usage cap level. While the increase or decrease of usage cap levels does not impact any other user class, it does impact individual users within the SFR user class. Typically, lower usage caps benefit high volume water users and higher usage caps benefit low volume water users.

It was necessary to increase the level of SFR usage cap to achieve a reliable mass balance. Three different alternative SFR usage cap levels were proposed: Usage Cap levels at 12, 14 and 16 hcf of water usage. An incremental increase to 12 hcf would be appropriate, however, the stakeholders' group consensus was to increase the usage cap to 14 hcf.

At the 10 hcf cap, 76 percent of winter water usage is captured and at 12, 14 and 16 hcf levels, the capture rate is 82, 87 and 90 percent, respectively.

TSS/COD Loadings Computation: In the proposed commercial/industrial rate matrix, each TSS and COD class is defined by a range of strength, for example, 101 – 200 mg/l of TSS or 201 – 400 mg/l of COD. To compute the actual rate per hcf of wastewater for each class in the matrix, the following two methods could be used:

- Mid-point of the strength range
- The actual strength computed based on the available user data for all the users that belong to a particular class in the matrix

There are both pros and cons to both of the methods mentioned above. The benefit of using the mid-point of the strength range is that it can be consistently applied to all the strength ranges in the matrix. However, the mid-point strength for any given range also has the potential of being either higher or lower than the actual average strength of all the users in a given class, which could lead to higher or lower user revenues than projected.

The benefit of using actual strength computed based on available user data is that it is likely to be a more accurate representation of user class strength characteristics and revenue collection. However, the disadvantage is that in reality user data may not be available for some strength ranges if currently no users belong to those strength ranges. In such a situation, mid-point of the strength range would have to be used to compute the wastewater rate. In addition, rates would have to be recomputed when users and/or flows or strengths for any given range changes.

The stakeholders' group decided to use the mid-point of the strength range in computing the rates since it provides for a more consistent approach, which could be used to derive the rates for all the classes in the matrix, irrespective of user data availability.

STAKEHOLDER INPUT

The study process included the participation of a stakeholders' group with members representing a broad range of interests, both residential and businesses. The goal of stakeholder participation was to ensure public understanding of the complexities of the cost of service and rate design process and to create an opportunity for the group to examine rate structure alternatives, to voice concerns and to provide recommendations. While detailed discussions on stakeholder participation are presented in an independent report titled, "Sewer Cost of Service: stakeholders' group Final Report", the group's recommendations are outlined here.

User Classification: Black & Veatch presented the four different options available for classifying

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commercial/industrial users with discharge less than 25,000 gpd of flows. The group reviewed the alternatives presented and preferred the strength based matrix classification. Therefore, the group recommended Option 4, which involves establishing a 10X11 TSS/COD user class matrix.

Cost Allocation: The group reviewed the three alternative cost allocation methods and accepted the use of the functional-design method to allocate costs to flow, TSS and COD. However, a subgroup of members disagreed with the way the functional-design method was applied in allocating costs, even though in concept, they accepted the functional-design method. Instead of the City's method of proportionate allocation of costs to the parameters, the subgroup preferred an alternative incremental allocation based method. The subgroup's alternative method, which is referred as the "Straight TSS Method", is included in Appendix B of the Sewer Cost of Service Stakeholders' Group Final Report.

Black & Veatch reviewed the "Straight TSS Method" method proposed by the stakeholder subgroup and found the method unacceptable due to the following reasons:

- The method uses an incremental approach rather than proportional cost sharing in allocating PLWTP and MBC costs, leading to a disproportionately higher allocation of costs to the TSS than to the COD parameter.

- The method advocates an incremental cost allocation approach to PLWTP primary costs, but proposes proportional cost allocation for primary and secondary costs at NCWRP. This approach results in internal inconsistencies in the methods used across the different processes and facilities of an integrated system.

In an effort to obtain the SWRCB's opinion on the cost allocation issue, Black & Veatch derived allocation percentages for flow, TSS and COD using three different methods and sent the analysis to the SWRCB. The three alternative cost allocation methods sent were:

- City's functional-design allocation based on MWWD's proportionate removal of TSS and COD.
- stakeholder subgroup's allocation based on the "Straight TSS Method".
- City's allocation based on the "Modified Straight TSS Method", which allocated costs consistently at PLWTP and NCWRP.

The cost allocation package sent to the SWRCB is included in [redacted] The SWRCB's response essentially states that the "Straight TSS Method" and the "Modified Straight TSS Method" do not comply with the CWG program regulations and SRF program guidelines since these methods do not allocate costs proportionately between TSS and COD. The allocation method used for the City needs to be consistently applied to the regional system and the PA's. This would necessitate a change from the current method and possibly extensive negotiations with the PA's to obtain their approval. The SWRCB's response is included in [redacted]

Rate Structure Design: The group provided input on all three issues examined as part of rate structure design.

- *Base Fee:* With respect to the Base Fee alternatives presented, the group recommended setting the monthly base fee under $10 to ensure that low income/low volume users are not burdened with a high fixed monthly charge. Therefore the group selected the $9.93

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monthly base fee option.

- *SFR Usage Cap:* As regards the SFR usage cap level, the group preferred that usage cap be set at 16 hcf of water usage. However, taking into consideration the impact of the 16 hcf usage cap level on both the City's high water users as well as the large low-income families, the group recommended that SFR usage cap be set at the 14 hcf level in FY 2002 and be increased to the ultimate 16 hcf over a period of two years.

- *TSS/COD Loadings Computation:* While most of the individual members did not have any specific preference with respect to the method used in the computation of rates for each class in the matrix, the group as a whole recommended that loadings be computed using the mid-point strength of the range.

The stakeholders' input in conjunction with input from City staff provided the direction for the subsequent phases of the Study, which include the allocation of costs and the design of rate structures. The allocation of costs is discussed in Section 7 and the proposed rate structures are discussed in Section 8.

Section 7
Cost of Service

The determination of the City's user class flows and loadings discussed in Section 4 of this report, and the revenue requirements reviewed and finalized through the operating and capital cash flow analysis discussed in Section 5 of the report, provide the basis for performing the cost of service analysis. This section of the report discusses the allocation of operating and capital costs to the Flow, TSS and COD parameters, the determination of unit rates, and the estimation of user class cost responsibility.

COST OF SERVICE ANALYSIS

The total revenue requirements net of revenue credits from miscellaneous sources, is by definition, the net cost of providing service. This cost of service is then used as the basis to develop unit rates for the wastewater parameters and to allocate costs to the various user classes in proportion to the wastewater services rendered. The concept of proportionate allocation to user classes implies that allocations should take into consideration the quantity of wastewater a user contributes and the strength of wastewater.

In this Study, wastewater rates need to be calculated for FY 2002, and accordingly FY 2002 revenue requirements are used in the cost allocation process.

Cost of Service to be Allocated

The annual revenue requirements or costs of service to be recovered from wastewater charges include operation and maintenance expenses, costs associated with annual renewal and replacements, and other capital related costs. O&M expenses include costs directly related to the collection, treatment, and disposal of wastewater, and maintenance of system facilities. Renewals and replacements represent the annual recurring capital outlay for minor system improvements and purchase of equipment.

The total FY 2002 cost of service to be recovered from the City's retail users, as shown on line 15 in Table 7-1, is estimated at nearly $194 million, of which $130 million is operating costs and the remaining $64 million is capital costs. The cost of service analysis is based upon the premise of generating annual revenues adequate to meet the estimated annual revenue requirements. As part of the cost of service analysis, revenues from other non-City user sources such as revenues from shipboard waste and PAs are deducted from the appropriate cost elements. Additional deductions are made to reflect the use of rate stabilization fund and operating interest income during FY 2002. Adjustments are also made to account for cash balances and annualization of rate increases.

To allocate the cost of service among the different user classes in proportion to their flows and strength contribution, costs first need to be allocated to selected wastewater parameters. The following subsection describes the allocation of the operating and capital cost of service amounts to the selected parameters of the wastewater system.

TABLE 7-1 COST OF SERVICE TO BE RECOVERED FROM USER RATES

Line Line No.	Description	Operating Expense (FY 2002) $	Capital and Other Costs (FY 2002) $	Total (FY 2002) $
	Total Revenue Requirements			
1	Operation & Maintenance Expense	180,093,300		180,093,300
2	Total Debt Service		83,366,000	83,366,000
3	**Subtotal**	180,093,300	83,366,000	263,459,300
	Less Other Operating Revenues			
4	Total Operating Revenues from PA's	26,004,000		26,004,000
5	Total Other Muni Operating Revenues	1,811,000		1,811,000
6	Total Other Revenues from Shipboard Waste	678,300		678,300
7	Total Non-Operating Revenues	2,545,000		2,545,000
8	Debt Service Revenues from PA's		19,650,000	19,650,000
9	Transfer from Rate Stabilization Fund	9,000,000		9,000,000
10	Interest Income	15,593,600		15,593,600
11	**Subtotal**	55,631,900	19,650,000	75,281,900
	Less Adjustments			
12	Adjustment for Annual Cash Balance	3,433,400	0	3,433,400
13	Adjustment for Partial Year Rate Increase	(9,012,000)		(9,012,000)
14	**Subtotal**	(5,578,600)	0	(5,578,600)
15	**Cost of Service to be Recovered from Rates**	130,040,000	63,716,000	193,756,000

Cost Allocation to Wastewater Parameters

The three major parameters selected in this Study for allocation are Wastewater Flows (Flows), TSS and COD. TSS and COD constitute the strength components of the wastewater discharge. In this study, the percentages used to allocate the FY 2002 cost of service to the wastewater parameters are derived based on the functional-design method of allocation. The allocation of costs to the three parameters involves:

- Identification of functional areas and costs of the wastewater system.
- Apportioning of FY 2002 costs into O&M and Capital costs of service (presented in Table 7-1).
- Determination of O&M and CIP allocation percentages to the three parameters.

Identification of Functional Areas and Costs

As described in Section 5, O&M costs can be categorized broadly into the functional areas of collection, treatment, laboratory and administrative and general services. The allocation basis used to allocate each of these functional costs to the Flow, TSS and COD parameters differs.

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In the functional-design method of allocation, both the function and the design of the facilities need to be considered in allocating costs to the parameters. The primary *function* of collection facilities such as trunk lines, sewer lines and interceptors is to convey untreated influents to the treatment facilities and treated effluents from the treatment facilities to the final discharge location, which in the City's case is the ocean. These collection facilities are *designed* (sized) according to the volume of flows that they are expected to handle. Hence, based on the *functional-design* method, since both the functional and design elements of the collection facilities relate exclusively to flow, all capital and O&M expenditures related to collection facilities are usually allocated entirely to wastewater flows.

From a functional-design perspective, treatment facilities include processes that relate to all three wastewater parameters. For instance, the primary *function* of the City's PLWTP is the removal of TSS. In terms of design, the components in the plant including clarifiers and sedimentation basins are *designed* to handle expected volume of flows. With respect to operational performance, PLWTP removes TSS and is required to remove a portion of the COD. Therefore, since the treatment facilities relate to all three parameters, capital and O&M expenditures associated with treatment facilities are allocated to Flow, TSS and COD parameters.

Laboratory services (also referred to as Technical Services) relate to both the flow and strength elements of wastewater and hence laboratory services related O&M costs are allocated to all three parameters.

Administrative and general services relate to indirect support activities necessary to operate a wastewater system and hence indirect costs are usually allocated to the parameters in proportion to the allocation of all other direct costs such as collection, treatment and technical services costs.

Determination of Allocation Percentages

As shown in Figure 5-1 in Section 5 of this report, the City's wastewater costs which are the focus of this Study include both Muni costs and the City's share of Metro costs. Available historical actual costs are usually used to derive allocation percentages. In this Study, FY 1999 Muni and Metro Annual O&M and FY 1997 Muni and Metro CIP total project costs are used as the basis to derive the allocation percentages. At the time this study was initiated, this was the most recent data available and the PAs and SWRCB had approved these allocations.

Black & Veatch performed the following steps to derive the allocation percentages for allocating the City's O&M and Capital costs.

- *Step 1:* Reviewed MWWD's Metro O&M and Capital allocation percentages and made changes where necessary.
- *Step 2:* Derived the overall cost allocation percentages for the City's O&M and Capital Costs.

Step 1: Black & Veatch reviewed MWWD's allocation methods and made minor changes to the Metro allocation. The changes relate primarily to Metro's allocation of 1999 MBC O&M costs and four of the 1997 Metro CIP project costs. Details of the allocation of the various components of Metro O&M costs and of the Metro CIP project costs are included in [redacted] respectively. The summary of the derived Metro O&M and capital allocation percentages is presented in Table 7-2.

TABLE 7-2 METRO O&M AND CIP COST ALLOCATION PERCENTAGES

Description	Functional - Design Method Wastewater Parameters		
	Flow	TSS	BOD
	%	%	%
TOTAL METRO O&M COSTS	41.14%	33.24%	25.62%
TOTAL METRO 41508 & 41509 CIP COSTS	58.21%	21.64%	20.16%

Step 2: Metro O&M and Capital allocation percentages derived in Step 1, were applied to the relevant Muni O&M costs and to the City's share of Metro O&M and capital costs. The allocation of the City's FY 1999 O&M functional component costs is presented in Table 7-3 and the overall O&M and capital allocation percentages derived for the City's cost of service are presented in Table 7-4.

TABLE 7-3 DERIVATION OF CITY'S O&M ALLOCATION PERCENTAGES (FY 1999)

Description	Amount	Functional - Design Method Wastewater Parameters			Functional - Design Method FY 1999 Costs		
	$	Flow	TSS	COD	Flow	TSS	COD
		%	%	%	$	$	$
City Collection System	50,000,000	100.00%	0.00%	0.00%	50,000,000	0	0
City Treatment - San Pasqual (1)	3,000,000	28.20%	40.36%	31.44%	846,131	1,210,707	943,162
City's Share of Metro Treatment (2)	60,000,000	41.14%	33.24%	25.62%	24,684,614	19,943,402	15,371,985
City Laboratory (3)	5,000,000	30.00%	40.00%	30.00%	1,500,000	2,000,000	1,500,000
City Total - Direct O&M Costs	118,000,000	65.28%	19.62%	15.10%	77,030,745	23,154,108	17,815,147
City Administration	11,000,000	65.28%	19.62%	15.10%	7,180,832	2,158,434	1,660,734
Total City O&M Cost	129,000,000	65.28%	19.62%	15.10%	84,211,577	25,312,542	19,475,881

NOTE
(1) Used Metro Treatment O&M allocation percentages.
(2) Used Total Metro Direct O&M allocation percentages
(3) Used Metro Technical Services O&M allocation percentages.

TABLE 7-4 DERIVED ALLOCATION PERCENTAGES FOR CITY'S COST OF SERVICE

Description	Functional - Design Method Wastewater Parameters		
	Flow	TSS	BOD/COD
	%	%	%
Total City O&M Cost Allocation	65.28%	19.62%	15.10%
Total City Capital Cost Allocation	66.67%	17.26%	16.07%

Apportioning of City's FY 2002 O&M and Capital Cost of Service Costs

The O&M and Capital cost allocation percentages presented in Table 7-3 were used to allocate FY 2002 cost of service amounts to Flow, TSS and COD. Table 7-5 shows the allocation of FY 2002 cost of service to the three parameters.

TABLE 7-5 ALLOCATION OF COST OF SERVICE TO FLOW, TSS AND COD

Description	Amount	Wastewater Parameters		
	$	Flow $	TSS $	COD $
City's Cost of Service O&M Costs	130,040,000	84,890,000	25,514,000	19,636,000
City's Cost of Service Capital Costs	63,716,000	42,480,000	10,997,000	10,239,000
Total City's Cost of Service (1)	193,756,000	127,370,000	36,511,000	29,875,000

NOTE: (1) With a 7.5% rate increase effective March 1st, 2002.

Unit Costs of Service

In order to allocate costs of service to the different user classes, unit costs of service need to be developed for Flow, TSS and COD. The unit costs of service are developed by dividing the total annual costs allocated to each parameter by the total annual loadings of the respective parameter (the projected annual Flows, TSS and COD loadings for FY 2002 were discussed in Section 4). Table 7-6 shows the development of the FY 2002 unit costs for each of the three wastewater parameters.

TABLE 7-6 DEVELOPMENT OF UNIT COSTS OF SERVICE (FY 2002)

Description	Wastewater Parameters		
	Flow	TSS	COD
Annual Costs of Service	($)	($)	($)
Total City's Cost of Service ($)	127,370,000	36,511,000	29,875,000
Annual User Loadings	(hcf)	(lbs)	(lbs)
Total City's Annual User Loadings (1)	59,509,728	99,973,423	229,340,357
Unit Costs of Service			
Unit Costs of Flow ($/hcf) (1)	$2.1403		
Unit Costs of TSS ($/lb) (1)		$0.3652	
Unit Costs of COD ($/lb)(1)			$0.1303

NOTE: (1) The loadings and unit costs projected for FY 2002 above are based on Mass Balance Analysis performed using FY 1999 data. The unit costs in the table are shown to four decimal places. The full unit costs are as follows:Flow - $2.14032233519871, TSS - $0.365207061080623 and COD - $0.130264905796759

User Class Costs

The unit cost of Flows, TSS and COD shown in Table 7-6 are then applied to the projected FY 2002 flows and loadings of each user class to derive user class costs. Table 7-7 shows the FY 2002 user class loadings and cost responsibility for each user class.

TABLE 7-7 USER CLASS WASTEWATER COST OF SERVICE (FY 2002)

User Class Description	Annual Wastewater Flows FY 2002 (HCF)	Annual TSS Loadings FY 2002 (LBS)	Annual COD Loadings FY 2002 (LBS)	Annual User Class Sewer Revenues $
Single Family Residential	24,955,925	41,006,578	69,915,241	77,497,118
Multiple Family Residential	18,116,067	29,576,749	50,753,048	56,187,202
Commercial/Industrial (< 25,000 gpd discharge)	9,654,784	19,410,018	48,374,123	34,054,476
Commercial/Industrial (> 25,000 gpd discharge)	6,782,952	9,980,078	60,297,945	26,017,205
Total	59,509,728	99,973,423	229,340,357	193,756,001

The SFR user class has the highest assignment of costs at over $77 million followed by MFR user class at over $56 million. Together, the City's residential class is responsible for 69 percent of the total cost of service. The commercial/industrial user class discharging less than 25,000 gpd of flows is responsible for nearly 18 percent of the cost of service and commercial/industrialuser class discharging more than 25,000 gpd of flows is responsible for the remaining 13 percent of the annual cost of service. Table 7-8 shows the distribution of each user class' accounts, annual flows, TSS and COD loadings, estimated FY 2002 revenues and actual FY 2000 revenues.

TABLE 7-8
USER CLASS DISTRIBUTION OF ACCOUNTS, FLOWS/LOADINGS, PROPOSED ANNUAL REVENUES (FY 2002) AND EXISTING ANNUAL REVENUES

User Class Description	Annual Wastewater Flow %	Annual TSS 2002 %	Annual COD 2002 %	Annual Wastewater Revenues % of Total Revenues FY 2002	Annual Wastewater Revenues (1) % of Total Revenues FY 2000
Single Family Residential	41.9%	41.0%	30.5%	40.0%	42.4%
Multiple Family Residential	30.4%	29.6%	22.1%	29.0%	29.5%
Commercial/Industrial (≤ 25,000 gpd discharge)	16.2%	19.4%	21.1%	17.6%	28.1%
Commercial/Industrial (> 25,000 gpd discharge)	11.4%	10.0%	26.3%	13.4%	
Total	100%	100%	100%	100%	

NOTE: (1) Commercial/Industrial includes both ≤ 25,0000 and > 25,000 gpd users

Table 7-8 also presents a comparison of user class revenue distribution among the different user classes under the proposed cost allocation and the City's existing allocation. There is a small reduction in the percentage of total revenues collected from MFR users under the proposed cost of service. Under the proposed rate structure, SFR user revenue contribution decreases from 42.4 percent to 40 percent of the total user revenues when compared to the current rate structure. This represents approximately a two percent reduction. These decreases in residential revenue contributions are offset by an increase in commercial/industrial user class revenues. The shift in user class revenue distribution between the residential and commercial/industrial user classes can be attributed to the introduction of COD parameter in the cost of service allocations. Many commercial/industrial businesses including supermarkets, food processing and organic chemical industries, and restaurants have much higher COD strengths than residential users, resulting in the shift in user class cost of service distribution.

The cost of service allocations conducted in this study based on the functional-design method comply fully with the SWRCB's revenue program requirements since the City's FY 2002 revenue requirements are allocated to the different user classes *proportionate* to their use of the wastewater system. As

mandated by SWRCB, allocations are based on flows, TSS and COD parameters. The cost of service allocation performed for the City's retail service area users is also consistent with the system-wide proportionate use approach used by MWWD in allocating wastewater system revenue requirements between the City and the PAs.

Once the user class cost responsibility is determined, then the next step, discussed in the next section, is to design user rate schedules to recover the revenues required from each user class.

Section 8
Rate Design

The revenue requirements and cost of service analysis described in the preceding sections of this report provide a basis for the design of wastewater rates. Rate design involves the development of rate schedules for each user class so as to recover the annual cost of service determined for each user class. In this Study, the focus of rate design is on the development of rate schedules for each of the City's retail service user classes, which was accomplished with input from the stakeholders' group. This section of the report discusses proposed wastewater rate structures, presents a schedule of rates for the City's user classes, and analyzes the impact on user classes due to the proposed changes in the user classifications, cost allocation and rate design.

RATE STRUCTURE

Rate structures need to be fair and equitable to ensure that every user class pays its fair share of costs. In addition, rate structures should be easy to understand, simple to administer, and comply with regulatory requirements. A review of the existing rate structures provides insights into the equitability of the current methodology and the changes, if any, that need to be made. The existing rate structure was discussed in detail in Section 3. The proposed rate structures are discussed in the following subsections.

Proposed Rate Structure

The proposed rate structures for all of the City's user classes will include both a fixed charge in the form of a base fee and a variable charge in the form of a usage rate. In other words, the annual revenues required from each user class presented in Table 7-7 would be recovered through a combination of a fixed monthly base fee and variable usage rate. The base fee and the proposed usage rate for the various user classes are discussed in detail.

Base Fee

A base fee is a cost recovery mechanism that is included in the rate structure to recover certain fixed and indirect costs. They provide a stable source of revenues independent of usage. We recommend that the City continue its existing practice of applying a monthly base fee to all its users. However, we recommend that the City modify its practice of applying different base fees to different user classes. Instead, we propose that the City apply a uniform monthly base fee to all its users.

Wastewater utilities incur *direct* costs that vary with changes in the quality and volume of flows received and *indirect* costs that typically do not change with flow characteristics. Direct costs are variable expenditures that include costs associated with collection, conveyance, treatment, and disposal operations. Indirect costs are fixed expenditures that relate to operational support activities including accounting, sewer billing, customer service, and administrative and technical support.

The indirect costs are essentially common-to-all costs that are independent of user class characteristics. A base fee provides a mechanism for recovering these common-to-all costs and ensures a stable source of user revenues for the utility. To determine the monthly base fee, the City's fixed indirect costs need

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to be identified. The City's FY 2002 indirect costs that are used to determine the monthly base fee are estimated based on the Muni indirect O&M costs and the City's share of Metro indirect O&M costs. The City's indirect costs for FY 2002 are estimated at $32 million. Table 8-1 presents details of the costs included in the indirect costs.

TABLE 8-1 ESTIMATION OF INDIRECT COSTS USED TO DETERMINE BASE FEE

Description	Amount FY 2002 $
Muni Indirect O&M (Management, Administration & Support) - Inflated	**$1,260,000**
Metro Indirect O&M (Management, Administration & Support): City's Share	
Metro Admin	17,101,000
Central Support Facility	4,002,000
Technical Services Admin	2,426,000
Equipment Purchases & Income Credits	(1,092,000)
Other City Depts. Applicable to Sewer	3,396,000
General Accounting	243,000
Clean Water Program Admin	4,496,000
City's Share of Metro Indirect O&M (Inflated)	**$30,571,000**
Total Estimated City Indirect Costs allocated to Base Fee ($1,260,000 + $30,571,000)	**$ 31,831,000**

As mentioned in the discussion of issues in Section 6, the stakeholder group preferred to set the monthly base fee at under $10.00 and hence only 50 percent of Metro's Clean Water Program Administration costs were used in estimating the City's share of Metro indirect costs.

Since the indirect costs are common to all users, we propose that these costs be shared equally by all the City's user accounts. The monthly base fee is obtained by dividing the FY 2002 indirect costs by the total number of annual City's user accounts. The estimated monthly base fee of $9.93 for FY 2002 is shown in Table 8-2.

Usage Rate

The usage rate is the rate determined for each user class to recover the City's variable direct costs. The annual estimated FY 2002 revenues required, less annual base fee revenues, are the revenues that need to be recovered through a usage rate. Table 8-3 shows the Base Fee revenues and the usage rate revenues for FY 2002.

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TABLE 8-2 ESTIMATED MONTHLY BASE FEE FOR FY 2002

Description	FY 2002
City's Estimated Indirect Costs	$31,831,000
City's Estimated User Accounts	267,123
City's Monthly Base Fee (1)	$9.93

NOTE:
(1) Annual indirect costs divided by (267,123*12)

TABLE 8-3 SUMMARY OF ESTIMATED BASE FEE AND USAGE CHARGE REVENUES

Description	Amount $ (FY 2002)
City's O&M Cost of Service	$130,040,000
Less City's Indirect Costs (1)	($31,831,000)
City's O&M less Indirect Costs	$98,209,000
City's Capital Cost of Service	$63,716,000
City's Revenues Required from Usage Rates	$161,925,000

NOTE: (1) Indirect costs to be recovered from all users through Base Fee.

Usage rates are developed for each user class based on the principle of maintaining inter-class revenue neutrality. This means that each user class would only pay its assigned share of costs of service (Refer Table 7-7 for revenues required from each user class). Since a portion of the revenues required from each user class is to be recovered through uniform monthly base fees, each user class' usage rate needs to be designed to recover only that portion of revenues that is not recovered through the base fee.

Annual base fee revenues for each user class for FY 2002 are estimated based on the number of accounts in a given class and the proposed monthly base fee of $9.93. The portion of revenues to be recovered through usage rates is then determined by deducting the annual base fee revenues from the user class's FY 2002 cost of service. Table 8-4 shows the total assigned costs of service amount, the annual base fee revenues and the annual usage revenues.

TABLE 8-4
USER CLASS COST OF SERVICE, BASE FEE REVENUES AND USAGE REVENUES

User Class Description	Total Sewer Revenues $	Annual Base Fee Revenues $	Annual Usage Revenues $
Single Family Residential	77,497,118	26,374,993	51,122,125
Multiple Family Residential	56,187,202	3,575,992	52,611,210
Commercial/Industrial (< 25,000 gpd discharge)	34,054,476	1,861,518	32,192,958
Commercial/Industrial (> 25,000 gpd discharge)	26,017,205	17,874	25,999,331
Total Annual User Revenues	**193,756,001**	**31,830,377**	**161,925,624**

SFR and MFR residential users are a homogenous group with similar strength characteristics and user rates can be established based on the usage revenues required and the estimated annual volume of flows. However, commercial/industrial users vary significantly in terms of both the volume of discharge and the strengths of TSS and COD parameters. Hence it would not be fair or equitable to establish a uniform sewer rate for the entire commercial/industrial class. User rates have to be established for each of the proposed 110 user classes in the user class matrix. In addition, SWRCB rules require that sewer rates be computed individually for each of the commercial/industrial users that discharge greater than 25,000 gpd of flow. The design of usage rates for the various user classes is discussed in the following subsections.

SFR Usage Rate and Computation of Bi-monthly Wastewater Charge

The proposed SFR sewer usage rate is estimated based on a 30-day average winter water usage with a usage cap of 14 hcf. The SFR user class annual wastewater flow is estimated as 100 percent return of annualized 30-day winter water usage. The proposed SFR usage rate for FY 2002 is estimated at $2.22 per hcf of water. The usage rate is computed by dividing the estimated SFR FY 2002 usage revenue requirement by the annualized billable winter water usage estimated using a 14 hcf usage cap. Table 8-5 presents the estimated SFR cost of service, water usage at various caps including the recommended 14 hcf usage cap, and the sewer rate.

The City should retain its existing method of computing monthly SFR wastewater charges, but with a monthly usage cap of 14 hcf instead of the existing monthly usage cap of 10 hcf. As in the existing method, winter water usage during the months of December through March would be obtained and the 30-day average usage would be computed. The $2.22 per hcf wastewater rate would then be applied to this 30-day average water usage to determine a SFR user's monthly usage charge. However, the portion of the 30-day average usage that exceeds the 14 hcf cap would not be billed. For instance, a SFR user with a 10 hcf, 30-day usage would be billed a monthly SFR *usage* charge of $22.20. The total monthly SFR wastewater charge for that user including the monthly base fee of $9.93 would be $32.13. With the proposed usage cap set at 14 hcf, the maximum monthly wastewater charge (including the

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monthly base fee) a SFR user can be billed is $41.01.

TABLE 8-5 DETERMINATION OF SFR USAGE RATE

Class	Monthly Water Usage Cap (HCF)	Annual Wastewater Flow (1) (HCF)	Annual Revenue Required ($)	Monthly Sewer Rate ($)
SFR	10	20,088,909	51,122,125	2.55
	11	21,040,675	51,122,125	2.43
	12	21,835,290	51,122,125	2.35
	13	22,508,166	51,122,125	2.28
	14	23,070,372	51,122,125	2.22
	15	23,537,402	51,122,125	2.18
	16	23,926,962	51,122,125	2.14

(1) Annual Wastewater Flow computed based on annualized 60-day Winter Water Usage and is estimated as 100 % of annualized winter water usage.

MFR Usage Rate and Computation of Monthly Wastewater Charge

The MFR Usage Rate is estimated based on annual MFR usage revenues required and estimated annual water use. Typical MFR wastewater flow is 95 percent of annual metered water usage. The proposed MFR usage rate for FY 2002 is $2.77 per hcf of water. Table 8-6 shows the determination of MFR usage rate per hcf of water.

TABLE 8-6 DETERMINATION OF MFR USAGE RATE

	Annual Wastewater Flows $	Annual Usage Revenues $	MFR Rate $/hcf of WW	MFR Rate $/hcf of Water
Multi-Family Residential MFR Rate per hcf of Water (1)	18,116,067	52,611,512	$2.91	$2.77

NOTE:
(1) MFR Rate per hcf of Water = $/hcf of Wastewater * 95%

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To compute monthly wastewater charges, the usage rate of $2.77 per hcf of water is directly applied to the user's water consumption. For example, for a MFR user with monthly water usage of 20 hcf of water, the usage charge is $55.40. With the inclusion of the $9.93 monthly base fee, the total monthly wastewater charge would be $65.33. For a MFR user with a return rate different than 95 percent return to sewer, the usage rate would be

($2.77/0.95) x Return factor x Water Usage

For an MFR user with 20 units of water use per month and a return factor of 90 percent the usage charge would be

(2.77/0.95) x 0.90 x 20 = $52.48

With the inclusion of the $9.93 monthly base fee, the total monthly wastewater charge would be $62.41.

Commercial/Industrial (< 25,000 gpd) Usage Rate and Computation of Monthly Wastewater Charge

The development of wastewater rates for the commercial/industrial(≤ 25,000 gpd) user class involves a two step process, which includes the development of user class unit costs for flow, TSS and COD and the determination of wastewater rates. The FY 2002 annual *usage* revenue requirement estimated for the commercial/industrial(≤ 25,000 gpd) user class is first allocated to flow, TSS and COD. The cost allocated to each parameter is then divided by this user class' annual flows and loadings to derive the unit costs. Table 8-7 shows the development of commercial/industrial(≤ 25,000 gpd) user class unit costs for the three parameters.

TABLE 8-7 DEVELOPMENT OF USER CLASS UNIT COSTS OF FLOW, TSS AND COD

User Class Description	Usage Revenues $	Flow Revenues $	TSS Revenues $	COD Revenues $	Unit Costs Flow $	Unit Costs TSS $	Unit Costs COD $
Commercial/Industrial (≤ 25,000 gpd discharge)	32,192,958	19,563,661	6,647,846	5,981,452	$2.0263	$0.3425	$0.1236

Based on the unit costs determined for the commercial/industrial(≤ 25,000 gpd discharge) user class, wastewater rates are computed for each TSS/COD strength range in the matrix. The rates are computed for each TSS/COD strength range based on the mid-point strength of the range. Table 8-8 shows the development of rates for the classes in the matrix assuming 100 percent return to sewer.

In computing monthly wastewater charges, the user's wastewater flows are first determined by applying the user's assigned return to sewer percentage to monthly water usage. The rate specific to the user's

TABLE 8-8 DEVELOPMENT OF COMMERCIAL/INDUSTRIALRATE MATRIX (1) (FY 2002)

(mg/l)		TSS 0-100	TSS 101-200	TSS 201-300	TSS 301-400	TSS 401-500	TSS 501-600	TSS 601-700	TSS 701-800	TSS 801-900	TSS 901-1000
COD	COD	A	B	C	D	E	F	G	H	I	J
0-200	AA	$2.21	$2.43	$2.64	$2.85	$3.06	$3.28	$3.49	$3.70	$3.91	$4.13
201-400	BB	$2.37	$2.58	$2.79	$3.00	$3.22	$3.43	$3.64	$3.85	$4.07	$4.28
401-600	CC	$2.52	$2.73	$2.95	$3.16	$3.37	$3.58	$3.79	$4.01	$4.22	$4.43
601-800	DD	$2.67	$2.89	$3.10	$3.31	$3.52	$3.74	$3.95	$4.16	$4.37	$4.59
801-1000	EE	$2.83	$3.04	$3.25	$3.46	$3.68	$3.89	$4.10	$4.31	$4.53	$4.74
1001-1200	FF	$2.98	$3.19	$3.41	$3.62	$3.83	$4.04	$4.25	$4.47	$4.68	$4.89
1201-1400	GG	$3.13	$3.35	$3.56	$3.77	$3.98	$4.20	$4.41	$4.62	$4.83	$5.05
1401-1600	HH	$3.29	$3.50	$3.71	$3.92	$4.14	$4.35	$4.56	$4.77	$4.99	$5.20
1601-1800	II	$3.44	$3.65	$3.87	$4.08	$4.29	$4.50	$4.71	$4.93	$5.14	$5.35
1801-2000	JJ	$3.59	$3.81	$4.02	$4.23	$4.44	$4.66	$4.87	$5.08	$5.29	$5.51
2001-2200	KK	$3.75	$3.96	$4.17	$4.38	$4.60	$4.81	$5.02	$5.23	$5.45	$5.66

NOTE: (1) The rate for each TSS/COD range is calculated based on mid-point loading of the range.

TSS and COD strength is then selected from the matrix and applied directly to the computed monthly wastewater flows. Table 8-9 shows a sample monthly sewer charge calculation for a user with a monthly water usage of 25 hcf, an assigned return to sewer of 80%, TSS of 380 mg/l and a COD of 620.

TABLE 8-9 SAMPLE CALCULATION OF MONTHLY WASTEWATER CHARGE

Monthly Water Usage (hcf)	25
Estimated Wastewater Flows (hcf) (1)	20
Wastewater Rate ($ per hcf) (2)	3.31
Monthly Wastewater Usage Charge (3)	66.20
Monthly Base Fee	9.93
Total -Monthly Wastewater Charges (4)	**$76.13**

NOTE:

(1) Based on an assigned 80% return to sewer.

(2) Based on an assigned TSS of 380 mg/l and a COD of 620 mg/l.

(3) Estimated Monthly flows times $3.31.

(4) Monthly usage charge plus monthly base fees.

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Commercial/Industrial (> 25,000 gpd discharge): Wastewater charges for Commercial/Industrial users discharging more than 25,000 gpd are computed on an individual basis. Based on the cost of service unit costs shown in Table 7-6 of Section 7, wastewater charges are computed for each user individually. The annual wastewater charges computed individually for each large user account are included in [redacted]. A sample monthly wastewater charge calculation for a large user with TSS strength of 640 mg/l and COD strength of 2,000 mg/l is shown in Table 8-10.

TABLE 8-10 SAMPLE MONTHLY CHARGE CALCULATION FOR LARGE USER

Monthly Flow (hcf)	TSS (mg/l)	TSS (lbs)	COD (mg/l)	COD (lbs)	Total Monthly Charge (1) $	Monthly Base Fee $	Monthly Usage Charge (2) $
1,064	640	4,249	2,000	13,279	$5,558.86	$9.93	$5,548.93

Note:
(1) Total Monthly Charge computed based on the proposed cost of service unit costs: Flow - $2.1403/hcf, TSS - $0.3652/lb, and COD - $0.1303/lb.
(2) Monthly Usage Charge is Total Monthly Charge less Monthly Base Fee.

ADEQUACY OF PROPOSED RATES AND CHARGES

The rates as proposed in this report should generate adequate wastewater user revenues to meet projected requirements through FY 2003. We recommend that the City conduct a financial review during FY 2003 to review program changes and adjustments, and the adequacy of expected revenues for FY 2004 and subsequent years.

IMPACT ANALYSIS

Black & Veatch performed an impact analysis to evaluate the impact of the proposed changes to user classification, the changes to the SFR usage cap level, the introduction of the COD parameter and the changes in rate design. The impacts of each of these changes among user classes and within user classes are discussed below.

User Classification

The proposed changes to user classification relate primarily to commercial/industrial user classes and hence there is no impact on the SFR and MFR residential user classes due to user classification changes. In the proposed classification, commercial/industrial users with greater than 25,000 gpd of

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discharge have been categorized as large users into a separate class as required by the SWRCB revenue program. These users may see an increase or decrease in their bi-monthly wastewater charges depending on whether they are at the low or high end of the TSS/COD range. The change is due to the fact that charges are to be computed on their actual TSS/COD strengths instead of the existing method where charges are based on the user class rate matrix.

Commercial/industrial users with less than 25,000 gpd may see an increase or decrease in bi-monthly charges due to the fact that users in the proposed classification are categorized based on TSS/COD instead of TSS/Return to Sewer. This leads to reconfiguration of users within the matrix. For instance two users who belong to the same TSS/Return to Sewer class in the existing user class matrix may, in the proposed classification scheme, belong to two different classes due to the differences in their COD strengths.

Usage Cap

The usage cap applies only to the SFR user class and hence the proposed change to the usage cap level would not impact the other user classes. However, it would impact the users within the SFR class. The increase in the level of the cap from 10 to 14 hcf results in the lowering of per-unit usage costs, which would benefit all SFR users with water usage less than 10 hcf per month. Since usage up to 14 hcf is to be billed under the proposed method instead of the existing 10 hcf, bills could be higher for users with high water usage.

COD Parameter

The introduction of the COD parameter will result in revenue redistribution between residential and commercial/industrial user classes and also impact certain user classes within the commercial/industrial category. Many commercial/industrial user classes have high concentrations of COD. Residential TSS (265 mg/l) is comparable to average system TSS (269 mg/l). However, Residential COD (450 mg/l) is lower than system COD (610 mg/l). Therefore, introduction of the COD parameter results in a shift in cost burden from the residential to the commercial/industrial user classes.

Within the commercial/industrial category, there is wide variability in TSS and COD strengths and the introduction of COD may result in sewer charge increases for user classes with high COD and sewer charge decreases for user classes with low COD.

Rate Design

The proposed fee structure with uniform base fee for all users will result in sewer charge changes for many user classes. The existing 2001 monthly base fee for MFR and commercial/industrial users is just $0.51, hence the proposed uniform monthly base fee of $9.93 would impact all non-SFR user classes. However, the recovery of a larger portion of user class cost of service through the base fee will lead to lowering of user class unit costs – a benefit for higher volume dischargers in each class.

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The overall impact on any given user or user class depends on one or more of the factors discussed above. The combination of changes proposed, including user reclassification, introduction of COD and the establishment of uniform base fees, however, results in a fair and equitable cost allocation among the various user classes.

Table 8-11 shows monthly SFR wastewater charges under the proposed rates and existing 2001 rates at different levels of water usage. Under the proposed rate structure, after March 2002, all SFR users will benefit as shown in Table 8-12. Table 8-12 also shows the impact on a sample of commercial/industrial user types and on SFR and MFR user classes based on the proposed method and existing method using March 2002 rates. Most MFR customers will benefit under the proposed rates. Impacts on commercial customers are mixed depending on their flow and strength.

TABLE 8-11 COMPARISON OF PROPOSED RATES AND EXISTING 2002 RATES

Monthly Usage (HCF)	Proposed Method Monthly Charge (FY 2002) $	Existing Method Monthly Charge (FY 2002) $	Monthly Charge Difference $	Percent Charge Difference %
1	12.15	12.71	-0.56	-4.4%
2	14.37	15.99	-1.62	-10.1%
3	16.59	19.27	-2.68	-13.9%
4	18.81	22.55	-3.74	-16.6%
5	21.03	25.83	-4.80	-18.6%
6	23.25	29.11	-5.86	-20.1%
7	25.47	32.39	-6.92	-21.4%
8	27.69	35.67	-7.98	-22.4%
9	29.91	38.95	-9.04	-23.2%
10	32.13	42.23	-10.10	-23.9%
11	34.35	42.23	-7.88	-18.7%
12	36.57	42.23	-5.66	-13.4%
13	38.79	42.23	-3.44	-8.2%
14	41.01	42.23	-1.22	-2.9%
15	41.01	42.23	-1.22	-2.9%
16	41.01	42.23	-1.22	-2.9%

Note:
Proposed and Existing Monthly Charges include monthly base fee and usage fee. The proposed charges are based on a usage cap of 14 hcf and a 7.5% revenue requirement adjustment. The existing monthly charge is based on 10 hcf usage cap.

IMPACT ON SFR USER CLASS

MWWD-BH0348

6-30-05 COS SEC Subpoena

TABLE 8-12 IMPACT ON A SAMPLE OF USER CLASSES (1) PROPOSED METHOD VS. EXISTING METHOD – 2002 RATES

User Class	Wastewater Flow	Class TSS Range MG/L	Class COD Range MG/L	Monthly Charges (2) Proposed Method 2002	Monthly Charges (2) Existing Method 2002	Difference Proposed vs Existing $	Difference Proposed vs Existing %
<= 25,000 gpd Commercial (2)							
Hospitals	(hcf)	101-200	401-600				
Lo. Monthly Flow	70			$201.03	$200.05	$0.98	0%
Med Monthly Flow	200			$555.93	$570.55	-$14.62	-3%
Hi. Monthly Flow	750			$2,057.43	$2,138.05	-$80.62	-4%
Printing/Graphics Services		201-300	201-400				
Lo. Monthly Flow	10			$37.83	$31.95	$5.88	18%
Med Monthly Flow	60			$177.33	$188.95	-$11.62	-6%
Hi. Monthly Flow	200			$567.93	$628.55	-$60.62	-10%
Offices/Auto Service Stations		201-300	401-600				
Lo. Monthly Flow	15			$54.18	$47.65	$6.53	14%
Med Monthly Flow	60			$186.93	$188.95	-$2 02	-1%
Hi. Monthly Flow	200			$599.93	$628.55	-$28.62	-5%
Auto Dealers		801-900	401-600				
Lo Monthly Flow	10			$52.13	$49.45	$2 68	5%
Med Monthly Flow	60			$263.13	$293.95	-$30.82	-10%
Hi. Monthly Flow	150			$642.93	$734.05	-$91.12	-12%
Retail/Commercial Businesses		201-300	1001-1200				
Lo. Monthly Flow	15			$61.08	$47.65	$13.43	28%
Med. Monthly Flow	60			$214.53	$188.95	$25.58	14%
Hi. Monthly Flow	250			$862.43	$785.55	$76.88	10%
Hotels		301-400	601-800				
Lo. Monthly Flow	60			$208.53	$205.75	$2.78	1%
Med. Monthly Flow	250			$837.43	$855.55	-$18.12	-2%
Hi. Monthly Flow	700			$2,326.93	$2,394.55	-$67.62	-3%
Mini-Shopping Centers		601-700	1001-1200				
Lo. Monthly Flow	30			$137 43	$129.85	$7.58	6%
Med. Monthly Flow	70			$307 43	$302.25	$5.18	2%
Hi. Monthly Flow	200			$859 93	$862.55	-$2.62	0%
Industrial Laundry		601-700	1201-1400				
Lo. Monthly Flow	150			$671.43	$647.05	$24.38	4%
Med Monthly Flow	350			$1,553.43	$1,509.05	$44.38	3%
Hi. Monthly Flow	800			$3,537.93	$3,448.55	$89.38	3%
Food Service Establishments		601-700	1801-2000				
Lo. Monthly Flow	15			$82.98	$65.20	$17.78	27%
Med Monthly Flow	50			$253.43	$216.05	$37.38	17%
Hi. Monthly Flow	150			$740.43	$647.05	$93.38	14%
Supermarkets		801-900	1601-1800				
Lo Monthly Flow	30			$164.13	$147.25	$16.88	11%
Med Monthly Flow	70			$369.73	$342.85	$26.88	8%
Hi. Monthly Flow	200			$1,037.93	$978.55	$59.38	6%
Residential							
Multi Family Residential Class		201-300	201-400				
Lo. Monthly Water Usage	55			$162.28	$160.60	$1.68	1%
Med Monthly Water Usage	500			$1,394.93	$1,455.55	-$60.62	-4%
Hi. Monthly Water Usage	1000			$2,779.93	$2,910.55	-$130.62	-4%
Single Family Residential Class (3)		201-300	201-400				
Lo. Monthly Water Usage	4			$18.81	$22.55	-$3.74	-17%
Med. Monthly Water Usage	10			$32.13	$42.23	-$10.10	-24%
Hi. Monthly Water Usage	14			$41.01	$42.23	-$1.22	-3%

Note:
(1) The monthly charges computed under proposed and existing rate scenarios reflect the 7.5% revenue adjustment effective March 2002
(2) Businesses other than those listed may fall in the strength ranges indicated
(3) The proposed water usage cap is 14 hcf and the existing usage cap is 10 hcf

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REVENUE PROGRAM

The revenue program developed as part of this Study is designed to meet all aspects of SWRCB guidelines including identification of costs, user classification, allocation of costs, and design of rate structures.

Black & Veatch compiled and reviewed the City's financial information to ensure that annual O&M costs including replacement costs are identified and aggregated by wastewater functions. Other costs including capital costs related to expansion of system facilities, debt service costs and operating and capital requirements were also reviewed to ensure that they are aggregated and maintained in accordance with SWRCB guidelines.

The City's user classification was reviewed. Users and their associated flows and loadings were identified and where necessary, users were reclassified to ensure compliance with SWRCB revenue program requirements. In this Study, users with similar characteristics have been identified and grouped so that the costs of the system could be allocated to the classes in proportion to the user classes' demand on the wastewater system.

In accordance with the revenue program requirements, the City's annual costs were identified and allocated to the parameters of flow, TSS and COD in proportion to the percentage of costs that these three parameters represent. The functional-design method has been used to allocate the City's retail service area costs to the parameters. The allocation of costs is consistent with the proportional and system-wide allocation approach, which has been approved by the SWRCB and that is currently outlined in the contractual agreements between the City and its PAs.

The rate structures designed in this Study incorporate the COD parameter as mandated by the SWRCB and provide for a system of user charges that enable fair and equitable recovery of costs from the various user classes.

Overall, this Study conforms to the revenue program guidelines in that it complies with the requirements mandated by the SWRCB and is designed to ensure recovery of costs in proportion to services received.

The preceding sections of this report discussed all aspects of the Study from financial planning through development of wastewater rates. The user charge system that is designed to recover the costs of the system includes not only wastewater user rates but also one time capacity fees that are charged to users that join the system. Black & Veatch reviewed the City's capital projects, capacity of various facilities, the existing capacity fee design and the adequacy of the City's existing capacity fees. The capacity fee review is discussed in the final section of this report.

Section 9
Capacity Fee Review

As indicated in Section 5, one of the sources of system revenues is the one-time capacity (developer) fee that is applied to all users that connect to the City's Regional Wastewater System. This section of the report outlines the existing capacity fee structure, the regulatory requirements, computational methods, the approach used in this Study to compute capacity fees and the capacity fee schedule.

The City applies two types of one-time fees to its wastewater system users: Capacity Fees and Connection Fees. A capacity fee is a one-time fee which is charged for new, additional or larger connections to the City's wastewater system. Capacity Fees recover the costs associated with providing additional facility capacity to new users and existing users requiring additional capacity. Connection fees are used to recover costs associated with the physical installation of lateral connections to sewer mains, and can be thought of as "plumbing charges". The scope of this study is limited to a review of the Capacity Fees.

CAPACITY FEES

The City's users and the PAs are required to pay capacity charges in proportion to their anticipated use of the system. The PAs system of capacity charges includes both an Existing Capacity Charge (ECC) and a New Contract Capacity Charge (NCCC). PAs are charged an ECC for a specified period and are billed annually at the beginning of the calendar year. PAs that require new contract capacity are charged a NCCC in the amount required to provide the New Contact Capacity. The terms of determining the ECC and NCCC are outlined in the Regional Wastewater Disposal Agreements between the City and the PAs that participate in the regional system. The following sections of the report relate specifically to the City's service area Municipal Capacity Charges.

Existing Capacity Fees

The City's existing capacity charge, based on Equivalent Dwelling Units (EDU), is a one-time charge determined as per the City's Municipal Code Section 64.0410. An EDU is defined in terms of volume of wastewater flow discharged or the number of plumbing fixture units, which equate to an EDU. The City's EDU's are defined as follows:

- 280 gallons per day of wastewater flows = 1 EDU for single family residences
- Twenty Plumbing Fixture Units = 1 EDU for non residential users

The minimum capacity assigned to any sewer connection is one EDU. MFR units having individual, City read water meters are charged one EDU per unit, while MFR units that share a common water meter are charged based on a density-adjusted formula. The formula is based on the theory that the more units per acre, the smaller the unit and therefore the less sewer capacity needed. The Departmental Instruction governing the application of sewer capacity charges is included as Appendix 9-1.

MWWD-BH0351

6-30-05 COS SEC Subpoena

EXHIBIT 6

From: Mick Gammon
To: Bill Hanley
Date: Thursday, January 31, 2002 2:48:14 PM
Subject: Fwd: Requirements for draft revenue program

Richard was called by the project engineer for the SRF wet-weather loan and was told that Ron Blair was asking some questions, and asked Richard to respond. Richard called Ron and wasn't quite sure how to answer his questions. I suggested that Ron e-mail us the questions. He has done so and they are attached. I am a little puzzled as to why he is asking these questions, specifically about this facility. This has never happened before. I guess he must have some concerns about how strength based billing would apply to a facility like this. So rather than call him I thought I would pass this on to you first and if you so direct I will ask Hedy (?) to answer the questions. Please advise.

EXHIBIT 7

Zeleny

REQUEST FOR COUNCIL ACTION
CITY OF SAN DIEGO

1. CERTIFICATE NUMBER: N/A

TO: CITY ATTORNEY

2. FROM: (ORIGINATING DEPARTMENT) METROPOLITAN WASTEWATER DEPARTMENT

3. DATE July 17, 2002

4. SUBJECT: State Water Resources Control Board - Low Interest Loans

#51 9/23/02 #200 9/9/02

5. FOR INFORMATION, CONTACT: (NAME & MAIL STA.) Richard Enriquez/Mick Gammon

6. TELEPHONE NO. (858) 292-6364/6361

7. CHECK HERE IF BOX 1472A, "DOCKET SUPPORTING INFORMATION," HAS BEEN COMPLETED ON PAGE 2: X.

8. COMPLETE FOR ACCOUNTING PURPOSES

FUND	41509			
DEPT.	779			
ORGANIZATION	n/a			
OBJECT ACCOUNT	n/a			
JOB ORDER	n/a			
C.I.P. NO.	41-925.0			
AMOUNT				

9. ADDITIONAL INFORMATION / ESTIMATED COST:
Matching funds are available in CIP#41-925.0 budgets and are included in the Wastewater Financing Plan/Rate Case.

10. ROUTING AND APPROVALS

ROUTE (#)	APPROVING AUTHORITY	APPROVAL SIGNATURE	DATE SIGNED	ROUTE (#)	APPROVING AUTHORITY	APPROVAL SIGNATURE	DATE SIGNED
1	DEPARTMENT DIRECTOR		7/17/02	5	CITY MANAGER		8/1/02
2	EAS		7/25/02	6	AUDITOR	Carole O'Hanlon	8/14/02
3	ECOP		7-18-02	7	CITY ATTORNEY		8/19/02
4	CIP SB 80030197		7/31/02	8	ORIGINATING DEPARTMENT		
					MGR. DOCKET COORD. _____ COUNCIL REP. _____		
				✓	RULES COMMITTEE ☐ CONSENT ☐ ADOPTION		
					☐ Refer to _____ Date _____		

11. PREPARATION OF: [x] RESOLUTION(S) [x] ORDINANCE(S) [ ] AGREEMENT(S) [ ] DEED(S)

See Reverse Side

11a. MANAGER'S RECOMMENDATIONS:
Adopt ordinance and resolutions

12. SPECIAL CONDITIONS (REFER TO A.R. 3.20 FOR INFORMATION ON COMPLETING THIS SECTION.)

COUNCIL DISTRICTS: All

COMMUNITY AREAS: All

CITY CLERK INSTRUCTIONS: Please forward a copy of the Ordinance and resolution to MWWD, MS 901 Attn: Rose Salarda

ENVIRONMENTAL IMPACT: This activity is exempt under CEQA pursuant to Section 15061 (b) (3) of the State CEQA Guidelines; it is not a "project" as defined in section 15378

SUBJECT

State Water Resources Control Board - Low Interest Loans

72A.

DOCKET SUPPORTING INFORMATION

P ' CKGROUND:

The State Water Resources Control Board's State Revolving Fund (SRF) is a low interest loan program that allows municipalities and wastewater agencies to obtain loans for construction of wastewater capital projects. Currently, the City has contracted and/or approved with the State for ten loans in an amount totaling approximately $110 million. Of the various loan programs, the City has elected to participate in the "zero/low" interest program. This program is comprised of Federal and State funds. The participating municipalities have the option to pay the State's share of the loan (16.7%) in return for a zero- interest, thereby allowing the State to have more funds available for other applicants. The "zero-interest" is applied over the loan repayment period of 20 years. The savings are significant when compared to traditional bond funding of capital projects.

In order to obtain these loans, the State requires certain authorizations and compliance from the City. The first of which is authorization for the City Manager or his designated representative to enter into the loans and oversee matters related to loan administration, as well as to certify that the City has funds necessary to construct a project. The second is a Resolution certifying that the City will provide the State match and administrative fee, if requested, establishing an account for this purpose and providing required documentation to the State as part of the administration of the loans. With exception of a change to reflect that the City Manager has designated more than one duly designated representative from the Manager's staff and project specific information, the requested Ordinance and Resolution for the Point Loma Fourth Sludge Pump Modification is the same as for previous projects authorized by the City Council to obtain low interest loans. The loan amount for this project is expected to be $3,900,000.

FISCAL IMPACT: Matching funds are available in CIP#41-925.0 budgets and are included in the Wastewater Financing Plan / Rate Case.

BY LINE: (CITY MANAGER / DEPT. HEAD / AUTHOR INITIALS)

MENDES / TULLOCH / RJE

SIGNATURES:

ORIGINATING DEPT. HEAD

CITY MANAGER
(FOR MANAGERIAL DEPARTMENTS ONLY)

Box 11 Continued - Preparation of Resolutions:

1. Authorizing the City Manager and duly designated representatives from the Manager's staff to apply for, enter into, conduct all negotiations, execute and comply with loan requirements regarding matching funding to fund zero-interest loans, provided that the City Auditor first furnishes one or more certificates demonstrating that the funds necessary are, or will be, on deposit in the City Treasury.

2. Authorizing the City Manager or his duly authorized representative to enter into loans for the Point Loma Fourth Sludge Pump Modifications Project CIP #41-925.0, in the sum not to exceed $3,900,000

3. Authorizing a resolution for: a) the City to provide the necessary state match for the SRF loan for the Point Loma Fourth Sludge Pump Modifications Project, SRF Number C-06-4786-110 in the amount of $700,000; b) provide the State match for administrative fee not to exceed 0.575 percent of the eligible project cost, if requested; c) establish a match account for the project and deposit sufficient funds to make State match payments to contractors; d) provide certification with progress payments certifying payment has been made to contractor; and e) provide copies of canceled checks documenting payments.

(O-2003-55)

ORDINANCE NUMBER 19106 (NEW SERIES)

ADOPTED ON 9/24/02

AN ORDINANCE PURSUANT TO SAN DIEGO CHARTER SECTION 99 AUTHORIZING AND ACCEPTING STATE REVOLVING FUND LOAN PROGRAM CONTRACTS

WHEREAS, on March 17, 1997, the San Diego City Council adopted Resolution No. R-288425, authorizing the City Manager or, at his designation, the Metropolitan Wastewater Department Director or Assistant Director, to conduct all negotiations and submit all documents necessary to apply for and obtain loans from the State Water Resources Control Board [SWRCB] for the construction of wastewater infrastructure, pursuant to the SWRCB State Revolving Fund [SRF] Loan Program; and

WHEREAS, the City Manager and Metropolitan Wastewater Department Director have accordingly applied to the SWRCB and qualified the City to receive twenty-year zero percent interest SRF loans; and

WHEREAS, as a condition of making such loans, the SWRCB requires the recipient to certify a dedicated source of revenue for repayment of the loans; NOW, THEREFORE,

BE IT ORDAINED, by the Council of the City of San Diego, that the City Manager and his duly designated representatives are hereby authorized to apply for, enter into, conduct all negotiations for, and execute and comply with all loan requirements regarding matching funding to fund zero-interest SRF loans, provided that the City Auditor and Comptroller first furnishes one or more certificates demonstrating that the necessary matching funds are, or will be, on deposit in the City Treasury.

BE IT FURTHER ORDAINED, that the City Manager or his duly authorized representatives are hereby authorized to enter into specified SRF loans for the Point Loma Fourth Sludge Pump Modifications Project, CIP No. 41-925.0, in an amount not to exceed $3,900,000 and pursuant to terms and conditions set forth in the form of the documents on file in the office of the San Diego City Clerk as Document Number OO-_____.

BE IT FURTHER ORDAINED, that the Net System Revenues (as defined in the Master Installment Purchase Agreement, dated as of September 1, 1993, between the City and the Public Facilities Financing Authority of the City of San Diego, as originally executed and as it may from time to time be amended or supplemented in accordance with the provisions thereof), are hereby designated as the dedicated source of funds for repayment of the above SRF loans made by the SWRCB, and shall remain so until such time as the loans are fully repaid, unless change of such dedication is approved by the SWRCB.

BE IT FURTHER ORDAINED, that consistent with the authority granted by Resolution No. R-288425, the City Manager or his duly designated representatives may execute the documents for the loans accepted by this ordinance.

BE IT FURTHER ORDAINED, that a full reading of this ordinance is dispensed with prior to its final passage, a written or printed copy having been available to the City Council and the public a day prior to its final passage.

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BE IT FURTHER ORDAINED, that this ordinance shall take effect and be in force on the thirtieth day from and after its passage.

APPROVED: CASEY GWINN, City Attorney

By _____
Thomas C. Zeleny
Deputy City Attorney

TB:TCZ:mb:ccm
8/14/02
Aud.Cert:N/A
Or.Dept:MWWD
MWD-2213
O-2002-55
Form=o&t.frm

Superceded

(R-2003-269)

RESOLUTION NUMBER R-_____

ADOPTED ON _____

WHEREAS, the City of San Diego can obtain zero percent interest state revolving fund [SRF] loans by providing the necessary State matching funds and administrative fees, if requested; and

WHEREAS, the State requires the Council to adopt a resolution for new SRF loans; NOW, THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, as follows:

1. That a transfer not to exceed $700,000 from CIP No. 41-925.0 to a newly established match account is hereby authorized to make State match payments to the contractor on the Point Loma Fourth Sludge Pump Modifications Project;

with Const. 2. That an expenditure not to exceed $700,000 from the newly established match account is hereby authorized solely and exclusively to provide the State matching funds for SRF Loan Number C-06-4786-110 [the Point Loma Fourth Sludge Pump Modifications Project], provided the Auditor and Comptroller first furnishes one or more certificates demonstrating that the necessary matching funds are, or will be, on deposit in the City Treasury.

3. That an expenditure not to exceed 0.575 percent of the eligible project cost is hereby authorized for the State's administrative fees, provided the Auditor and Comptroller first furnishes one or more certificates demonstrating that the necessary matching funds are, or will be, on deposit in the City Treasury.

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(4) That the City Manager is hereby authorized to provide certification to the State Water Resources Control Board that progress payments have been made to the contractor, and to provide copies of canceled checks documenting payments.

APPROVED: CASEY GWINN, City Attorney

By _____
Thomas C. Zeleny
Deputy City Attorney

TB:TCZ:mb:ccm
8/14/02
Aud.Cert:N/A
Or.Dept:MWWD
MWD-2213
R-2003-269
Form=r-t.frm

(R-2003-269)
(COR. COPY)

RESOLUTION NUMBER R-_____

ADOPTED ON _____

WHEREAS, the City of San Diego can obtain zero percent interest state revolving fund [SRF] loans by providing the necessary State matching funds and administrative fees, if requested; and

WHEREAS, the State requires the Council to adopt a resolution for new SRF loans; NOW, THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, as follows:

1. That the City hereby provides the necessary state matches in the amount of $700,000 for the Point Loma Fourth Sludge Pump Modifications Project, SRF Loan Number C-06-4786-110.

2. That the City hereby provides the state match for administrative fee in an amount not to exceed 0.575 percent of the eligible project cost, if requested, provided the Auditor and Comptroller first furnishes one or more certificates demonstrating that the necessary matching funds are, or will be, on deposit in the City Treasury.

3. That the City hereby establishes a match account for the project and deposits sufficient funds to make state match payments to contractors on the above project.

4. That the City hereby provides certification with progress payments certifying that payment has been made to contractors on the above projects.

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5. That the City hereby provides copies of canceled checks to the State Water Resources Control Board documenting payments.

APPROVED: CASEY GWINN, City Attorney

By _____
Thomas C. Zeleny
Deputy City Attorney

TB:TCZ:mb:ccm
8/14/02
8/22/02 COR. COPY
Or.Dept:MWWD
Aud.Cert:N/A
MWD-2213
R-2003-269
Form=r-t.frm

Metropolitan Wastewater
9192 Topaz Way
San Diego, CA 92123
(858) 292-6300

THE CITY OF SAN DIEGO

FAX TRANSMITTAL

Date: 8/21/02

The following 3 total pages (including this cover page) are intended for:

To:	Jon Zeleny	From:	Richard Enriquez
Company	City Atty.	Division	MWWD
FAX #	X35856	FAX #	
Phone #		Phone #	X26364

Subject:

Comments:

See attached two pages.

If there are any problems with receiving this FAX transmission (such as missing pages), please contact the Sender at the "From" phone number given above.

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED, AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL, AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. RECEIPT BY AN UNINTENDED RECIPIENT DOES NOT CONSTITUTE A WAIVER OF ANY APPLICABLE PRIVILEGE.

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If you have received this communication in error, please notify us immediately by telephone, and return the original message to us at the above address via the U.S. Postal Service.

Tom:

Re 1472 for SRF Loan (Resolution)

FYI. We have had 10 SRF Loans approved by the City Council. We have always used the same format for the 1472, resolutions and ordinances. This has never raised a question.

Sub section 3 (c) has always been included in all 1472, that we have sent forward to the City Council for approval of SRF Loans.

The attached resolution is the boiler plate that we have used on all of our SRF Loans. It does address the establishing of a match account, essentially the CIP. That is why the 1472 indicates that matching funds are available under the projects CIP #. In this case CIP#41-925.0. This reflected in the Fiscal Impact section of the 1472.

Our recommendation is to use the attached resolution language for this action.

Any questions, please call me at X26364

Richard Enriquez

Revised/Corrected Reso 5338 - 5856

Attachment F

3 Subsection C

(R-2002-141)

RESOLUTION NUMBER R- 295690

ADOPTED ON NOV 5 2001

Use 1st clause from current reso. here

~~WHEREAS, the Council authorized State Revolving Loans by Ordinance No. O-19781 adopted on February 22, 2000, and~~

WHEREAS, the state requires the Council to adopt a resolution for new SRF loans;

NOW, THEREFORE,

BE IT RESOLVED, by the Council of the City of San Diego, as follows:

1. That the City hereby provides the necessary state matches in the amount of ~~$2,000,000~~ $700,000 for the ~~Otay River Pump Station & Conveyance Project~~ Point Loma Fourth Sludge Pump Modifications Project, SRF Loan Number C-06-~~4721-110, and in the amount of $2,200,000 for the Environmental & Technical Services Laboratory, Phase 1, SRF Loan Number C-06-4703-110.~~ 4786-110

2. That the City hereby provides the state match for administrative fee in an amount not to exceed 0.575 percent of the eligible project cost, if requested, provided the Auditor & Comptroller first furnishes one or more certificates demonstrating that the necessary matching funds are, or will be on deposit in the City Treasury

3. That the City hereby establishes a match account for the project and deposits sufficient funds to make state match payments to contractors on the above project~~s~~.

4. That the City hereby provides certification with progress payments certifying that payment has been made to contractors on the above projects.

5. That the City hereby provides copies of canceled checks to the State Water Resources Control Board documenting payments.

APPROVED: CASEY GWINN, City Attorney

By Ted Bromfield

Ted Bromfield
Senior Deputy City Attorney

EXHIBIT 8

Eric Adachi - Revision #2 to Sewer COS Briefing Document

From: Dennis Kahlie
Ed Ryan; George Loveland; Kelly Salt; Mary Vattimo; Patricia Frazier; Richard Mendes
Date: 11/13/02 4:40 PM
Subject: Revision #2 to Sewer COS Briefing Document

The attached document has been revised to include the impact of a Council decision which results in the need to repay the grants and loans. As described at the top of page 2, such a decision would require the issuance of some $403 million in new debt (principal, reserve & costs), resulting in about $28 million in new debt service per year for 30 years. Generating sewer service charge revenue sufficient to service this new debt in addition to meeting previously identified needs going forward at a coverage level of at least 1.25x1 would require that FY 2003 rates be increased by 52.5 percentage points above the 7.5% previously authorized by the Council in October of 2001 - an increase of 60% in a single year.

- D

Eric Adachi 7CAB
MS7B
sewer cost of service
Box 1.
Folder "D"

0001

SALIENT POINTS
SEWER COST OF SERVICE COMPLIANCE ISSUE
November 13, 2002

ISSUE: SHALL THE COUNCIL ADOPT A SEWER RATE STRUCTURE WHICH RECOVERS THE COST OF WASTEWATER TRANSPORTATION, TREATMENT AND DISPOSAL ON A BASIS PROPORTIONATE TO USE, CONSISTENT WITH THE REQUIREMENTS OF GRANT AND LOAN CONTRACTS PREVIOUSLY AND PROSPECTIVELY ENTERED INTO BY THE CITY, SO AS TO AVOID POTENTIAL BREACH OF CONTRACT LITIGATION LEADING TO POSSIBLE REPAYMENT OF GRANTS AND ACCELERATED REPAYMENT OF LOANS ALREADY RECEIVED AND DENIAL OF FUTURE LOW INTEREST LOANS?

- THE CITY HAS BEEN THE RECIPIENT OF SOME $370 MILLION IN STATE AND FEDERAL WASTEWATER GRANTS AND LOW INTEREST STATE REVOLVING FUND (SRF) LOANS, BEGINNING WITH THE POINT LOMA ACCELERATED PROJECTS GRANTS IN THE 1970'S. SINCE THAT TIME, GRANTS AND LOANS HAVE BEEN USED TO FUND ADDITIONAL WORK AT THE POINT LOMA PLANT, PORTIONS OF THE COST OF CONSTRUCTING THE NORTH CITY WASTEWATER TREATMENT PLANT AND THE METRO BIOSOLIDS CENTER, AS WELL AS NUMEROUS WASTEWATER PIPELINE AND PUMP STATION PROJECTS THROUGHOUT THE CITY. THE ABOVE TOTAL CONSISTS OF THE FOLLOWING MIX OF GRANTS AND LOANS:

GRANTS	$223 MILLION
OUTSTANDING SRF LOANS	$114 MILLION
IN-PROCESS SRF LOANS	$ 33 MILLION

- THE CITY'S ACCEPTANCE OF GRANTS AND LOW INTEREST LOANS MATERIALLY LOWERED ITS OUT-OF-POCKET EXPENDITURES FOR MUCH NEEDED CAPITAL IMPROVEMENTS AND REDUCED UPWARD PRESSURE ON RATES.

- EACH GRANT AND LOAN CONTRACT ENTERED INTO REQUIRED THAT THE CITY ADOPT A WASTEWATER RATE STRUCTURE WHICH RECOVERS COSTS ON A BASIS PROPORTIONATE TO USE, CONSISTENT WITH THE REQUIREMENTS OF THE FEDERAL CLEAN WATER ACT, AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). FAILURE TO COMPLY WITH THIS REQUIREMENT IS GROUNDS FOR A

DEMAND THAT GRANT MONIES RECEIVED BE REPAID, AND THAT PAYMENTS DUE ON LOW INTEREST LOANS BE ACCELERATED.

- A DECISION WHICH RESULTS IN THE REPAYMENT OF THE PREVIOUSLY RECEIVED GRANTS AND ACCELERATED REPAYMENT OF THE EXISTING AND IN-PROCESS SRF LOANS WOULD REQUIRE THE ISSUANCE OF APPROXIMATELY $403 MILLION IN NEW SEWER REVENUE BONDS HAVING AN ANNUAL DEBT SERVICE COST APPROXIMATING $28 MILLION PER YEAR FOR 30 YEARS. SERVICING THIS NEW DEBT AT A COVERAGE LEVEL OF AT LEAST 1.25 X 1 WOULD REQUIRE THAT FY 2003 RATES BE INCREASED BY AN ADDITIONAL 52.5 PERCENTAGE POINTS ABOVE THE 7.5% INCREASE AUTHORIZED BY THE COUNCIL IN OCTOBER OF 2001 – A 60% INCREASE IN A SINGLE YEAR.

- THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) IS THE EPA DESIGNATED ADMINISTRATOR OF WASTEWATER GRANTS AND LOANS IN CALIFORNIA.

- TO RECEIVE SWRCB APPROVAL, THE RATE STRUCTURE MUST RECOVER THE COST OF DEALING WITH WASTEWATER FLOW, SUSPENDED SOLIDS (SS) AND ORGANICS (COD) FROM EACH SYSTEM USER ON A BASIS PROPORTIONATE TO THAT USER'S CONTRIBUTION OF THOSE CONSTITUENTS TO THE AGGREGATE AMOUNTS PROCESSED.

- THE CITY PROVIDES WASTEWATER TRANSPORTATION, TREATMENT AND DISPOSAL SERVICES TO 15 OTHER CITIES AND DISTRICTS, WHICH ARE REFERRED TO AS THE METRO PARTICIPATING AGENCIES (PA's).

- THE CITY HAS BEEN BILLING THE PA's USING AN SWRCB-APPROVED FLOW / SS / COD BILLING STRUCTURE SINCE 1997, WHEN THE CURRENT CITY / PA CONTRACTS WERE EXECUTED, BUT HAS CONTINUED TO BILL ITS MUNICIPAL USERS ON THE BASIS OF FLOW AND SS ONLY, WHICH IS A VIOLATION OF OUR GRANT / LOAN OBLIGATIONS AND THE SOURCE OF THE LITIGATION RISK WE FACE TODAY.

- THE MUNICIPAL BILLING STRUCTURE WAS NOT BROUGHT INTO COMPLIANCE WITH SWRCB REQUIREMENTS IN 1997 BECAUSE OF CONCERNS ABOUT THE ADVERSE IMPACT OF SO DOING ON CERTAIN LARGE VOLUME DISCHARGERS OF ORGANICS IN A THEN-SOFT ECONOMY. SWRCB DID NOT TAKE ISSUE WITH THIS SITUATION

BECAUSE IT WAS UNDER THE MISTAKEN IMPRESSION THAT THE PA BILLING STRUCTURE IT HAD APPROVED WAS APPLICABLE TO THE CITY'S MUNICIPAL USERS AS WELL.

- IN THE FALL OF 1999, PURSUANT TO A REQUEST BY THEN-COUNCILMEMBER KEHOE, WHO WAS CONCERNED THAT RESIDENTIAL RATEPAYERS MIGHT BE SUBSIDIZING OTHER SEWER USERS, THE MANAGER WAS DIRECTED TO PREPARE, WITH THE ASSISTANCE OF A MAYOR-APPOINTED STAKEHOLDERS' GROUP, A COST OF SERVICE STUDY WHICH WOULD ADDRESS BOTH USER AND CAPACITY CHARGE EQUITY ISSUES AND SET THE STAGE FOR THE STRUCTURAL CHANGES WHICH WOULD BRING THE MUNICIPAL BILLING STRUCTURE INTO COMPLIANCE WITH SWRCB REQUIREMENTS.

- ALTHOUGH MAYORAL APPOINTMENT OF THE STAKEHOLDERS' GROUP DID NOT OCCUR UNTIL LATE JULY OF 2000, THE CONSULTING TEAM OF BLACK & VEATCH / KATZ & ASSOCIATES BEGAN PREPARATORY WORK IN LATE APRIL OF THAT YEAR. COLLABORATORY WORK BY CITY STAFF, CONSULTANTS AND STAKEHOLDERS BEGAN IN SEPTEMBER OF 2000 AND CONTINUED UNTIL MAY OF 2001, AT WHICH TIME THE STAKEHOLDERS' GROUP ISSUED A REPORT ON ITS FINDINGS. CITY STAFF AND THE CONSULTANTS CONTINUED TO WORK TO UPDATE DATA AND RESOLVE OUTSTANDING ISSUES UNTIL LATE FALL OF 2001.

- BECAUSE OF THE NEED TO INSURE THAT THE COST OF SERVICE STUDY RECOMMENDATIONS WOULD BE ACCEPTABLE TO THE SWRCB, CITY STAFF AND ITS CONSULTANTS HAD NUMEROUS EXCHANGES WITH SWRCB STAFF DURING THE COURSE OF THE PROJECT. SWRCB STAFF MADE IT CLEAR ON NUMEROUS OCCASIONS THAT THE CITY'S CURRENT RATE STRUCTURE IS NOT IN COMPLIANCE AND THAT THE CITY HAS EXHAUSTED THE SWRCB's PATIENCE.

- AS EXPECTED, THE STUDY, BASED ON FY 1999 DATA AND PREPARED UTILIZING COST ALLOCATION METHODOLOGY REQUIRED BY SWRCB, INDICATED THAT WHEN COD WAS INCLUDED IN COST CALCULATIONS, COSTS WOULD BE SHIFTED FROM RESIDENTIAL AND OTHER SYSTEM USERS DISCHARGING LOW LEVELS OF ORGANICS SUCH AS HOTELS AND ELECTRONICS MANUFACTURERS TO OTHER USERS DISCHARGING HIGHER LEVELS OF ORGANICS SUCH AS RESTAURANTS, GROCERY STORES AND MARINE PRODUCTS MANUFACTURERS, SEVERAL OF

WHOM ARE QUITE VOCAL IN THEIR OPPOSITION TO SUCH SHIFTS, REGARDLESS OF THEIR EQUITY.

- IN JANUARY OF 2002 THE CITY ATTORNEY, IN CLOSED SESSION, REQUESTED DIRECTION FROM MAYOR AND COUNCIL AS TO HOW TO ADDRESS THE NOTICING AND PROPORTIONAL COST OF SERVICE REQUIREMENTS OF ARTICLE XIIID, SECTION 6. (PROPOSITION 218) IN CONNECTION WITH FUTURE SEWER RATE INCREASES. THIS QUESTION WAS RAISED IN ANTICIPATION OF AN ISSUANCE OF DEBT EXPECTED TO OCCUR LATER THAT YEAR, AND THE PROPOSITION 218 DISCLOSURE REQUIREMENTS THAT WOULD HAVE TO BE MET IN CONNECTION THEREWITH. THIS LEAD TO A DISCUSSION OF THE SWRCB's PROPORTIONATE TO USE BILLING REQUIREMENTS, THEIR APPLICABILITY TO THE PROPOSITION 218 PROPORTIONATE TO USE REQUIREMENTS, AND DIRECTION THAT THE CITY ATTORNEY REPORT BACK ON THE CITY'S OBLIGATION TO COMPLY WITH THE BILLING REQUIREMENTS CONTAINED IN THE GRANT AND LOAN DOCUMENTS IT HAD SIGNED.

- IN OCTOBER 2002, THE CITY ATTORNEY ISSUED AN OPINION WITH RESPECT TO THE CITY'S OBLIGATION TO COMPLY WITH THE SWRCB's BILLING REQUIREMENTS. IT INDICATES THAT SIGNIFICANT EXPOSURE TO LITIGATION WOULD EXIST IF THE CITY FAILS TO COMPLY WITH FEDERAL AND STATE LOAN AND GRANT GUIDELINES, AND RECOMMENDS THAT THE CITY BRING ITS SEWER RATES AND CHARGES INTO COMPLIANCE WITH THOSE GUIDELINES.

- THE COST OF SERVICE STUDY, ESSENTIAL TO ACHIEVEING COMPLIANCE, WAS BEGUN IN LATE 2000 USING 1999 DATA AND PROJECTIONS, WAS NEVER FORMALLY COMPLETED AND ISSUED, AND IS NOW OUT OF DATE. SHOULD STAFF BE DIRECTED TO BRING RATES INTO COMPLIANCE, SOME 3-6 MONTHS WOULD BE REQUIRED FOR THE UPDATE TO BE ACCOMPLISHED AND A REVISED RATE STRUCTURE BROUGHT FORWARD FOR ADOPTION.

EXHIBIT 9

ATTORNEY TO CLIENT CORRESPONDENCE

FOR CONFIDENTIAL USE ONLY

Office of
The City Attorney
City of San Diego

MEMORANDUM

236-6220

DATE: November 14, 2002

TO: Honorable Mayor and City Council

FROM: Mary Vattimo, City Treasurer and Kelly J. Salt, Deputy City Attorney

SUBJECT: Significant Exposure to Litigation: Metropolitan Wastewater Department's Compliance With Federal and State Loan and Grant Guidelines

---

RECOMMENDATION

Direct the City Manager to perform and implement the findings of a Cost of Service Study [CSS] for the City of San Diego's [City] sewer rates and charges, and bring such sewer rates and charges into compliance with Federal Clean Water Act grant conditions and State Revolving Fund loan requirements by ensuring the City's wastewater user fees be proportionate to the cost of providing the services.

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0002
W-S cost of svc
FY 03 Folder

COUNCIL DISTRICT: All

Salt Cos 03 3553-3558

INTRODUCTION

Recently, a question was raised about the need to perform and implement the findings of a cost of service study of the City's wastewater user fees and charges. This memorandum addresses that issue.

In sum, the City currently has approximately $370 million in outstanding loans and grants related to improving the Metropolitan Wastewater System. A condition of those grants and loans is that

the City's user fees and charges be "proportionate." To ensure compliance with these conditions, the City must perform a Cost of Service Study of the City's sewer rates and charges. Failure to comply with these conditions and requirements may result in litigation for the repayment of the grant monies and acceleration of the repayment of the loan monies. Additionally, failure to comply may result in the loss of future State Revolving Loan Fund [SRF] loan monies.

BACKGROUND

A. Clean Water Grants and State Revolving Fund Loans

Since the late 1970's, the Metropolitan Wastewater Department [MWWD] has received a series of federal and state Clean Water Grants and SRF loans, that have provided the City financial assistance for the construction and improvement of the City's Metropolitan Sewerage System. Each of these grants and loans has required that the City adopt and maintain a user charge system that complies with the Clean Water Act [33 U.S.C. § 1251, *et seq.*] For example, the November 2, 2000 SRF Loan Match Program Contract Between the State Water Resources Control Board [State Board] and the City, provides that the City shall adopt and maintain in effect a user charge system which at all times complies with the requirements of Section 204(b)(1) of the federal Clean Water Act and applicable federal and state rules, regulations and guidelines. Specifically, the Clean Water Act requires a user charge system that charges users in proportion to the cost of providing treatment services. *See* 33 U.S.C. § 1284(b) and 40 C.F.R. § 35.2140.

The SRF loan program is a joint federal and state program that loans money at a low interest rate to local agencies for construction of wastewater treatment and water reclamation facilities, correction of non-point source and storm drainage pollution problems, and implementation of estuary enhancement activities. The SRF loan program replaced prior Clean Water Act grants and in 1987 was established by amendments to the Clean Water Act. The State Board is the California agency responsible for administering the SRF loan program.

To date, MWWD has received, or has existing proposals for, a total of approximately $370 million in grants and loans under the Clean Water Act grant and SRF loan programs. Approximately $114 million of that amount consists of outstanding SRF loans, with an additional $33 million in the process of being approved. MWWD anticipates it will remain active in the loan application process over the next few years.

Throughout most of the 1980s, when MWWD's wastewater treatment system performed only primary wastewater treatment, MWWD's user charge system moved gradually toward compliance with the Clean Water Act, and, briefly, in the late 1980s, the user charge system was in compliance. With the introduction of secondary treatment facilities in the City's Metropolitan

Sewerage System, and the City becoming subject to a revised National Pollutant Discharge Elimination System [NPDES] permit, which required removal of biological components from effluent, the user charge system again became non-compliant.

In the interim, MWWD has continued to enter into SRF loans requiring compliance with the Clean Water Act's proportionate fee system. In its SRF loan applications, MWWD has represented that its user charge system is in compliance with all federal and state requirements.

B. NPDES Permit for Discharge of Effluent at the Point Loma Ocean Outfall

On November 9, 1995, the United States Environmental Protection Agency [USEPA] and the Regional Board jointly issued the City a permit, for the City's E.W. Blom Point Loma MWWD Plant [Point Loma] for discharge into the Pacific Ocean through the Point Loma Ocean Outfall. The Permit established requirements for a discharge of up to 205 million gallons per day of advanced primary treated effluent.

On February 11, 2002, the USEPA and the California Regional Water Quality Control Board [Regional Board] jointly proposed issuance of a draft renewal of the Permit. As modified, the Permit will continue the initial Permit's requirement that the City remove 80% of Total Suspended Solids [TSS] and 58% of Biochemical Oxygen Demand [BOD] from the effluent discharged from the Point Loma Ocean Outfall. The Final Permit was issued September 13, 2002 and became effective October 16, 2002.

C. MWWD Cost of Service Study

In 1999, at the direction of the City Council, the City Treasurer's office on behalf of MWWD began the process of preparing a CSS for the City's Metropolitan Sewerage System. By April 2000, a consultant had been selected and had begun preparing the CSS.

The CSS was intended to determine how, if at all, MWWD's user charge system must be modified to make the City's cost allocation method for wastewater treatment costs compliant with the Clean Water Act. Specifically, the issue was whether, and if so, how, the City's cost allocation system must be modified to take into account the costs of removing biological components (BOD or Chemical Oxygen Demand [COD]) from wastewater. In conjunction with the CSS, a stakeholder's group of industrial users discharging to Point Loma was also selected to meet and offer recommendations concerning the CSS.

The Regional Board is aware that the City has undertaken the CSS. A final draft of the CSS was prepared for presentation and adoption by the City Council; however, due to concerns raised in a prior closed session with the City Council regarding the matters discussed herein, finalization of

the report and its presentation was delayed. As a result of that delay, changes in municipal wastewater flow volumes and other factors, the CSS will require updating to insure that an equitable apportionment of current costs is achieved prior to its presentation and adoption by the Council.

D. MWWD's Allocation of Wastewater Treatment Costs

(1) Existing Allocation of Wastewater Treatment Costs

In addition to providing service for its retail customers throughout the City, MWWD provides transportation, treatment and disposal of wastewater for fifteen other cities and water/sanitation districts [Participating Agencies].[1] MWWD provides service to the Participating Agencies on a contract basis. Before 1997, the Participating Agencies were charged for the costs incurred in processing their wastewater solely based on quantity. Following a review and audit of the City's user fee system, the State Board determined that the fee system for the Participating Agencies did not comply with the Clean Water Act because it relied solely on the flow of wastewater. To become compliant, the State Board required the City to use a strength-based billing system that would include, in addition to flow, charges for wastewater strength, as determined by sampling and testing for TSS and BOD. In response, and for administrative reasons, MWWD proposed using TSS and COD to measure strength. The State Board approved this method in November 1997. This is the method that MWWD has used for billing the Participating Agencies since 1997.

In contrast, MWWD's retail customers are charged based on the components of flow and TSS. There is no biological component, either BOD or COD, to the retail customer's user charge system.

(2) Proposed Changes to the Allocation of Wastewater Treatment Costs

In a May 2001 letter to the State Board, the City, in conjunction with the stakeholders group involved in the CSS, presented three alternative cost allocation methodologies for review and possible approval. The three alternative methodologies were:

(a) Allocating to all users, both Participating Agencies and retail customers, the same unit cost for wastewater treatment services, based on percentage of TSS and BOD

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[1] The participating agencies are: the Cities of Chula Vista, Coronado, Del Mar, El Cajon, Imperial Beach, La Mesa, National City and Poway; and the Lakeside-Alpine Sanitation District, Lemon Grove Sanitation District, East Otay Mesa Sewer Maintenance District, Otay Water District, Spring Valley Sanitation District, Padre Dam Municipal Water District and the Wintergardens Sewer Maintenance District.

removal at various MWWD plants. Overall allocation under this method would be: 65.73% to flow, 18.87% to TSS, and 15.40% to BOD. [This approach is consistent with that utilized for billing the Participating Agencies since 1997.]

(b) Straight TSS Method [STSS]. This method would retain method (a), above, at all MWWD treatments plants other than Point Loma. For Point Loma, it would allocate 94% of the strength allocation costs to TSS removal and six percent to BOD removal. This allocation method is based on the premise that the City's NPDES Permit requires removal of 58% BOD and 80% TSS at Point Loma. However, the processes used to achieve the 58% BOD removal *also* results in the removal of 86% TSS. Because satisfying the NPDES permit for BOD removal results in the removal of 86% TSS, this stakeholder sponsored proposal would allocate all O&M and capital costs to TSS up to the cost to achieve 80% TSS, then shift all remaining costs to achieve TSS from 80% to 86% only to BOD. Overall allocation under this method would be: 66.92% to flow, 25.46% to TSS, and 7.61% to BOD.

(c) Modified TSS Method. This method would extend method (b), above, to all three MWWD treatment pants. Overall allocation under this method would be: 66.92% to flow, 23.23% to TSS, and 9.85% to BOD.

In a July 2001 letter responding to the City's submitted alternatives, the State Board specifically disapproved methods (2) and (3), above, noting that the City's NPDES permit requires removal of *both* BOD and TSS and therefore, the cost allocations must be fully proportionate to both BOD and TSS from the start. The State Board's position is that methods (2) and (3) fail to allocate any costs to BOD until the TSS removal requirement has been met. Therefore, these methods both fail to comply with the Clean Water Act requirement that costs be allocated proportionately.

Finally, the State Board letter provided that, before the State Board would approve a new method of cost allocation, the City must provide data that demonstrate that the allocation was proportional to actual costs, as required by the Clean Water Act. The revenue program guidelines for SRF loans provide that the City must have a Regional Board approved revenue program in place as a condition of receiving its SRF loan, and that any City rate changes must be reviewed and approved by the State Board.

DISCUSSION

Although MWWD has not been in compliance with Clean Water Act standards for its user charge system through much of the time it has been receiving the Clean Water grants and loans,

MWWD has generally been moving toward compliance, e.g., the City added strength-based billing for Participating Agencies in 1997; and, in 1999, the City began preparing the COSS to determine what, if any, changes are required for the City user fee system to comply.

The typical loan contract that MWWD has entered into for financial assistance for the construction and improvement of the City's Metropolitan Sewerage System includes an acceleration provision. This provision permits immediate acceleration of the loan if the City violates a material provision of the contract.

While the State Board has not provided written notice of termination of any of the loan contracts, the State Board staff, in conversations with MWWD staff, has indicated that MWWD's user charge system does not comply with the Clean Water Act. Additionally, the State Board is aware that the City has undertaken the COSS. The typical loan contract provides that, in any litigation between the State Board and the City arising from the contract, the prevailing party is entitled to reasonable costs and/or attorney fees.

In light of the Clean Water Act's requirement of a proportionate fee system, and the SRF loan program's condition of compliance with the Clean Water Act, the City should finalize and adopt the findings of an updated COSS. If the City does not proceed, it risks losing its SRF loans, which would have a severe and immediate impact on the City's budget and ability to proceed with necessary improvements.

RECOMMENDATION

The City has approximately $370 million in grants and loans, either outstanding or proposed, from the state and federal government that have provided financial assistance for the construction and improvement of the City's Metropolitan Sewerage System. Each of these grants and loans requires the City to maintain a user charge system that is compliant with the Clean Water Act. Currently, the City's user charge system does not comply with the Clean Water Act.

Each of the loan contracts permits immediately acceleration of loan repayments by the City upon breach of the contract. Thus, if the acceleration provision is invoked, the City could be required to immediately repay all of the outstanding loans. Additionally, the federal and state governments could conceivably request repayment of the grants received by the City if the City is found to have been out of compliance with grant requirements.

Finally, in any litigation concerning the loan contracts, the prevailing party is entitled to receive attorney fees and costs.

To avoid the possible acceleration of the repayment of approximately $370 million in Clean Water grant and SRF loan monies, and to ensure the continuing availability of SRF loans for the City's MWWD program, the City should perform and implement the findings of a Cost of Service Study and continue to take steps toward making the City's wastewater user fees and charges proportionate to the cost of providing the wastewater conveyance, transmission, and treatment services.

EXHIBIT 10

From: Dennis Kahlie
To: Bill Hanley; Keri Katz; Richard Mendes; Scott Tulloch
Date: 3/6/03 11:34AM
Subject: Re: Cost of service study-questions

Keri,

The memo you requested is attached.

- D

>>> Keri Katz 03/05/03 04:17PM >>>
Good Afternoon,
Regarding Council member Frye's questions at NRC today, Dennis Kahlie has agreed to prepare a memo from financing services to my office answering the following questions:
1) What is the current status of the most recent cost of services study?
2) What is the time line for completion of this study?
3)What are the dates for the past cost of service studies?
I will then forward the information to the Council member's office. Additionally, pursuant to Richard's suggestion, I plan on talking to Leslie Devaney about this. In the meantime, however, I wanted to start working on this with Dennis since we only have a week to get the memo out. Please let me know if you have any problems with me proceeding in this manner and if you have any questions.
Thanks,
Keri

CC: Leslie Devaney

CITY OF SAN DIEGO
MEMORANDUM

DATE: March 6, 2003

TO: Head Public Works Deputy City Attorney Keri Katz

FROM: Utilities Finance Administrator, Office of the City Treasurer

SUBJECT: INFORMATION REQUESTED RELATIVE TO UTILITY COST OF SERVICE STUDIES

Cost of service studies are complex engineering and economic analyses whose primary objectives are determining the cost of providing a service and allocating that cost to customers on a basis proportional to their use of that service. Numerous such studies have been performed on both the water and wastewater (sewer) utilities in the past, and two such studies are currently contracted for and in progress.

By e-mail dated March 5, 2003, you requested certain information relative to utility cost of service studies as reflected below:

Q. What is the status of the most recent cost of service study, and what is the schedule for its completion?

A. As noted above, both a water cost of service study and an update to the most recently completed wastewater cost of service study are currently in progress. The water study is scheduled for completion in the first week of June, 2003. The wastewater study update is scheduled for completion during the week of July 21st, 2003.

Q. What are the dates of past cost of service studies?

A. Previous cost of service studies of which I have knowledge, the dates of their issuance, and the firms by which they were performed, are as follows:

<u>Water Studies</u>

7/24/58	Roy A. Wehe
11/15/66	Wilsey & Ham
9/17/73	Brown & Caldwell

EA 01785

Water Studies (continued)

3/30/90	Brown & Caldwell
11/21/97	Pinnacle Consulting / Chester Engineers

Wastewater Studies

11/16/66	Wilsey & Ham
3/30/90	Brown & Caldwell
5/14/98	Pinnacle Consulting / Chester Engineers
5/01/02	Black & Veatch (Draft, requiring material updates, distributed to Mayor and Council in November, 2002.)

Should you, Councilmember Frye, or others have additional questions with respect to water / wastewater cost of service studies, please feel free to contact me directly, either by e-mail at dkahlie@sandiego.gov, or by phone at 619-235-5832.

D. H. KAHLIE

EXHIBIT 11

CITY OF SAN DIEGO
SEWER COST-OF-SERVICE REPORT

PREPARED FOR: CITY OF SAN DIEGO
FINANCING SERVICES
202 C STREET, MS-7B
SAN DIEGO, CALIFORNIA 92101

PREPARED BY THE TEAM OF: PINNACLEONE
CHESTER ENGINEERS

MAY 14, 1998

MWWD-BH0950

6-30-05 COS SEC Subpoena

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CITY OF SAN DIEGO
SEWER COST-OF- SERVICE REPORT

I. EXECUTIVE SUMMARY

Purpose of the Report.

The purpose of this report is to determine the costs of providing wastewater collection, conveyance, and treatment services to the City of San Diego and the Participating Agencies outside the City and to establish rates based on those costs. Operation, maintenance, and replacement (OM&R) costs, debt service costs, and costs for planned capital improvements were allocated to the cost-causative components of the wastewater system and were divided by the total plant loadings to determine unit costs for flow, suspended solids (SS), and chemical oxygen demand (COD). The contribution of each user or user class was then multiplied by the unit cost for each parameter to establish a sewer rate in proportion to the user's demand on the system. The procedure used in preparing this report meets with the requirements of the State Water Resources Control Board (SWRCB). Cost information from this report will be used to prepare the Wastewater System Revenue Program that must be submitted to the SWRCB for approval.

City's Current Billing System and Changes to be Made.

The City's current system bills sewer customers within the City based on their flow and suspended solids contributions to the system. However, the organic strength of the sewage is not factored into sewer bills for City customers. Participating Agencies in the Metropolitan sewer system are billed on the basis of flow, suspended solids, and organic strength. The costs of providing wastewater collection, conveyance, and treatment services to the City of San Diego and the Participating Agencies in total based upon flow, suspended solids, and organic strength are determined so that all of the entities pay their "fair and equitable" share for collection, treatment, and disposal/reuse of the total wastewater flow, including suspended solids content and organic strength loading.

Changes are made so that costs are allocated within the City to individual customer classes so that the revenue generated by each user class is in proportion to the customer's demand on the system. Annual revenue requirements for the Metro wastewater system and the City's Municipal (Muni) wastewater system through 2003 were provided by the City for use in determining rates that would be charged to users that reflect their contributions to flow, suspended solids and organic strength.

The report includes the:

- Executive Summary,
- Introduction,
- Summary of the SWRCB requirements for revenue programs including the procedures to be used in developing a revenue program,
- A description of the wastewater system that serves the City of San Diego and the Participating Agencies (see subsection IV.F for the definition of Participating Agencies) and the organizational structure of the department that oversees the operation of the sewer

system. Information is presented on current sewer system customers and classifications, the capital improvement program for the system, and a summary of the service agreements between the City and Participating Agencies,

- OM&R and debt service costs are projected based on current operations and planned system improvements,
- Expenses are allocated to the cost-causative components, resulting in unit costs for the treatment parameters of flow, SS, and COD. The unit costs are allocated to individual customers or customer classes based on the relative contribution of each customer to the system.

SWRCB.

The SWRCB developed Revenue Program Guidelines to assist local governments and public agencies in preparing, implementing, and maintaining revenue programs that comply with Section 204(b)(1) of the Federal Clean Water Act, Federal and State Regulations and Policies of the State Water Resources Control Board (SWRCB). These Guidelines apply to all recipients of wastewater system grants and loans from the U.S. Environmental Protection Agency (EPA) and the SWRCB.

The City of San Diego, as a previous recipient of EPA Construction Grant Program moneys, is required to comply with Appendix B of 40, Part 35, Subpart E of the Federal Regulations. Adopting a user charge system based on strength-based billing is not only a condition for retention of previously awarded grant funds under the EPA program, but it is a requirement for future funding under California's State Revolving Fund for Construction of Wastewater Treatment Facilities. MWWD is presently pursuing low/no interest loans under the state revolving fund program.

The Wastewater System.

The Wastewater System consists of the Municipal (Muni) System, which is a municipal sewage collection system for the City's residents, and the Metropolitan (Metro) System, which is a regional sewage collection, treatment and disposal system initiated in 1958 (and operational since 1963) to serve the City and various other public agencies including cities situated within common drainage areas. The Metro System was designed to provide sufficient capacity to accommodate a regional population of 2,600,000. The City, as owner and operator of the Metro System, is the holder of the National Pollutant Discharge Elimination System (NPDES) permit and is responsible for maintaining the discharge requirements required under Federal law.

The Metropolitan Wastewater Department (MWWD) manages the Metro system and assumed responsibility for the Muni system on July 1, 1996. The wastewater system is operated with funds derived primarily from sewer service charges. All system revenues are deposited in the Sewer Revenue Fund, which is used to finance operation, maintenance, replacement, and capital improvements in both the Metro and Muni systems. As an enterprise fund, the Sewer Revenue Fund is held separate and apart from other funds of the City.

Wastewater generated by the Participating Agencies (see subsection IV.F for the definition of Participating Agencies) is metered as it enters the Metro system and charges for treatment are based

on flow, SS, and COD. Within the City, wastewater flows from individual locations are not measured and metered water consumption is used to approximate each customer's sewage flow.

The Metro system serves the City of San Diego and fourteen Participating Agencies located outside the City. Within the City, sewer customers are grouped into the following four major classifications:

Description	Total Customers (Connections)
Single family dwelling	198,979
Other domestic (multiple living units)	29,340
Commercial	19,146
Industrial	596

OM&R Costs and Allocation Methodology.

The wastewater system OM&R cost information was collected from City and MWWD financial reports. This information was summarized and allocated to the cost centers. The three operating cost centers are (1) Municipal System ("Muni"), Fund 41506, (2) Metro Projects ("Metro"), Fund 41508, and (3) Metropolitan Wastewater Plan ("Metro" or "Metro New Construction"), Fund 41509. Within each fund are a number of departments. The total OM&R costs for each department were determined so the costs could be allocated to the different treatment parameters.

Capacity Fees.

Capacity fees are imposed on developers of real property as a means of recovering all or part of the cost of constructing plants or other facilities necessitated by growth. Capacity fees are not to be confused with connection fees, which are charges for time and materials necessary to connect property to the system. Three levels of capacity fees are described and modeled in this report:

1. No capacity fee. All costs and expenditures would be recovered via monthly service charges and other charges such connection fees.

2. A full cost recovery fee. All cost of expansion would be borne by new development.

3. A fee set in between the two. This is the current method adopted by the City of San Diego.

The City currently imposes a capacity fee which only partially funds expansion of wastewater facilities necessitated by new development. In most cases, the fee is $2,500 per EDU of capacity required. Under certain circumstances, a reduced fee of $1,500 per EDU is charged.

A full cost recovery capacity fee would be computed by dividing the total cost of facility expansion by the units of new capacity created. The expansion program that began in 1988 will increase capacity from 219 million gallons per day to 277 million gallons per day in 2003; an increase of 58 million gallons per day. The cost of the expansion is $913.8 million in 1998 dollars. Expansion capacity is designed on the basis of 280 gallons per day per EDU. The fee is determined as follows:

The cost per unit of capacity would be $913,841,000/58,000,000 = $15.76 per gallon per day.

The single family capacity fee in 1998 would be $4,412 ($15.76 * 280) and this is the EDU. Other land uses would be related to the single family based on EDUs.

Capacity fees are collected on a pay-as-you-go basis which means that the funds needed for adding plant capacity are received over a period of years as development occurs. To construct capacity so it is available when needed, the City must borrow the necessary funds. Therefore, the capacity fee should be increased each year for increased construction and financing costs.

Strength Based Billing Rates for Fiscal Year 1998.

Monthly sewer bills for different types of customers within the City based on 1997 and 1998 rates under the City's current system are compared to the strength-based billing (SBB) rates for 1998 determined in this report. The 1998 SBB rates include charges for flow, SS, and COD, but do not include a base fee or a sewer cap based on winter water use. The SBB rate is a straight calculation using the flow, SS, and COD contributed by each customer times the respective unit cost for each parameter.

Table I-1 shows that SBB will increase sewer charges for commercial and industrial customers compared to the current system in which bills are based only on flow and SS. The largest rate increases will be experienced by customers that contribute significant amounts of COD to the system. In contrast, sewer bills for single family customers will generally decrease when the SBB system is instituted. Single family customers who use less than the average amount of water (14 HCF per month) will pay less than their current sewer bills. For example, a single family customer using 10 HCF per month would pay 44 percent less with SBB in 1998 than it would based on projected existing 1998 rates. At the same time, single family customers who use more than the average amount of water will get higher sewer bills with SBB.

Table I-2 shows the differences in SBB bills under the three different Capacity Fee alternatives. If the Capacity Fee is reduced from the current fee to no fee, the rates are increased by approximately 3.4%, and if the Capacity Fee is increased under a full cost recovery method, the rates decrease by approximately 3.1%.

II. INTRODUCTION

A. Purpose of Report

This sewer cost-of-service report was prepared to determine the costs of providing wastewater collection, conveyance, and treatment services to the City of San Diego and the Participating Agencies outside the City. Operation, maintenance, and replacement (OM&R) costs, debt service costs, and costs for planned capital improvements were allocated to the cost-causative components of the wastewater system and were divided by the total plant loadings to determine unit costs for flow, suspended solids (SS), and chemical oxygen demand (COD). The contribution of each user or user class was then multiplied by the unit cost for each parameter to establish a sewer rate in proportion to the user's demand on the system. The procedure used in preparing this report meets with the requirements of the State Water Resources Control Board (SWRCB). Cost information from this report will be used to prepare the Wastewater System Revenue Program that must be submitted to the SWRCB for approval.

B. Scope and Content

This report allocates costs between the individual Participating Agencies and the City of San Diego so that all of the entities pay their "fair and equitable" share for collection, treatment, and disposal/reuse of the total wastewater flow, including suspended solids content and organic loading. Costs are further allocated within the City to individual customer classes so that the revenue generated by each user class is in proportion to the user's demand on the system.

The report includes an Executive Summary, Introduction, and five other main sections. Section III summarizes SWRCB requirements for revenue programs, including the procedures to be used in developing a revenue program. Section IV describes the wastewater system that serves the City of San Diego and the Participating Agencies and the organizational structure of the department that oversees the operation of the sewer system. The section also includes information on current sewer system customers and classifications, describes the capital improvement program for the system, and summarizes the service agreements between the City and Participating Agencies. Section V presents OM&R and debt service cost projections based on current operations and planned system improvements, while Section VI allocates these expenses to the cost-causative components resulting in unit costs for the various treatment parameters. In Section VII, the unit costs are allocated to individual customers or customer classes based on the relative contribution of each customer to the system. The Appendices and Exhibits referred to in Volume I of this Report can be found in Volume II.

C. Assumptions

The primary assumptions used in preparing this report are as follows:

1. Annual revenue requirements for the Metro and Muni systems are based on historical cost information and cost projections developed by the Metropolitan Wastewater Department (MWWD) and the City's Financing Services Division. The City's Financing Services Division includes an annual

inflation rate for expenditures of three percent for Fiscal Years 1998 through 2000 and four percent for Fiscal Years 2001 through 2003.

2. Wastewater flow and load projections for the Metro system are based on an October 7, 1996, memorandum titled Wastewater Flow and Load Projections - 1997 Financial Plan, as prepared by the MWWD Technical Services Division.

3. Baseline sampling data from June 1995 through December 1996 was used to determine the chemical oxygen demand (COD) and suspended solids (SS) loadings produced by the individual Participating Agencies and the City as a whole. Flow weighted COD and SS concentrations were used to calculate the total pounds contributed by each entity.

4. COD was measured at sampling sites within the Metro system. The flow weighted average COD concentration for the City was higher than the average concentration for the Participating Agencies.

5. Operation, maintenance, replacement, and capital costs for the Metro system were allocated to the three treatment parameters of flow, COD, and SS using the functional-design approach developed for the MWWD by Montgomery-Watson in June 1996. The same functional-design approach was used to allocate Muni system costs to flow, COD, and SS.

6. The Muni and Metro system capital improvement projects are financed by both debt and pay-as-you-go funding. The amount of debt financing varies each year to accommodate cost needs and financing constraints. The amount of debt outstanding at any one time on the sewer system is limited to no more than 80 percent of the capitalized plant value.

7. Expansion-related capital improvement projects are partially funded by capacity fees.

III. STATE WATER RESOURCES CONTROL BOARD REVENUE PROGRAM GUIDELINES

This section of the report presents the guidelines and requirements ("Guidelines") set forth by the State Water Resources Control Board (SWRCB) for sewer system revenue programs.

A. General Requirements

The Revenue Program Guidelines were developed to assist local governments and public agencies (municipalities) in preparing, implementing, and maintaining revenue programs that comply with Section 204(b)(1) of the Federal Clean Water Act, Federal and State Regulations and Policies of the State Water Resources Control Board (SWRCB). These guidelines apply to all recipients of wastewater system grants and loans from the U.S. Environmental Protection Agency (EPA) and the SWRCB.

The City of San Diego, as a previous recipient of EPA Construction Grant Program moneys, is required to comply with Appendix B of 40, Part 35, Subpart E of the Federal Regulations. Paragraph f(1) of Appendix B states:

> The user charge system must result in the distribution of the cost of operation and maintenance of treatment works within the grantee's jurisdiction to each user (or user class) in proportion to such user's contribution to the total wastewater loading of the treatment works. Factors such as strength, volume, and delivery flow rate characteristics shall be considered and included as the basis for the user's contribution to ensure a proportional distribution of operation and maintenance costs to each user (or user class).

Adopting a user charge system based on strength-based billing is not only a condition for retention of previously awarded grant funds under the EPA program, but it is a requirement for future funding under California's State Revolving Fund for Construction of Wastewater Treatment Facilities.

A revenue program is a formally documented user charge system that is developed by the municipality. A user charge system is designed to provide a revenue source for wastewater system operation, maintenance, and replacement (OM&R) costs that satisfies federal and state requirements. Rates under a user charge system are set based on the number and type of identified users and their respective contributions to the wastewater loading of the treatment works.

In contrast, a service charge system includes the user charge OM&R costs, plus additional charges, if appropriate for the local agency, to cover capital related payments such as debt service costs and contributions to capital reserve accounts. A system of service charges is developed by estimating the municipality's annual revenue requirements for the total wastewater system OM&R, including those portions not grant or loan funded. Debt service, as well as revenue for capital reserve and operating reserve funds, may also be collected by the system of charges based on actual use or, if approved, by ad valorem taxes. The SWRCB recommends that funds for the cost of debt service, capital improvements, etc. also be collected in proportion to the costs of service rendered.

B. Annual System Costs

Annual system costs for a wastewater system include OM&R costs and, in most cases, capital costs such as pay-as-you-go capital costs, debt service, and contributions to capital reserve accounts. Municipalities may also establish an operating reserve fund to ensure proper operation of the treatment works.

OM&R expenditures include the costs for labor, power, chemicals, supplies, laboratory control and monitoring, general administration, billing, and other miscellaneous expenses incurred during normal system operation. This category also includes expenses for ordinary repairs that are needed to keep the treatment works in proper operating condition, administrative costs such as overhead and accounting which are directly related to the OM&R of the system, and replacement costs as defined below. An estimate of future OM&R costs should be made by adjusting the most recent operating cost data to reflect projected operational modifications, wage increases, or staffing changes.

Replacement costs as defined by the SWRCB include all expenditures required for a facility to operate for its design life. This includes costs for items such as pumps, motors, electrical controls, telemetry equipment, air scrubbing equipment, chlorination equipment, dechlorination equipment, vehicles, radios, and other components which require periodic replacement. However, replacement costs do not include capital costs for major upgrades of individual process units, structural rehabilitation of existing facilities, expenses for plant expansions that are undertaken to meet future user demands, or costs to upgrade the treatment process. Replacement costs may be based on a minimum five-year planning cycle, and the annual replacement cost to be included in the user charge must be recalculated each year. In lieu of the five-year replacement plan, the municipality may deposit an amount in the replacement fund equal to the sum of the straight line depreciation of the replacement items based on their current costs, but excluding related structural facilities such as buildings, pipes, etc.

Debt service is the annual sum of the principal and interest payments on proposed or outstanding obligations that are secured by bonds or loan contracts. Although it is not required, municipalities are encouraged to establish an operating reserve fund to ensure proper operation of the treatment works. This fund is intended to satisfy costs associated with unexpected price increases, additional chemical or power usage, and other such items, but does not include costs for replacement of equipment. According to the SWRCB, wastewater agencies in California normally operate with reserves of between 10 and 50 percent of annual revenue requirements.

C. Identification of Users

After the annual costs of the wastewater system are determined, the users of the treatment works and their associated wastewater flows and loadings must be identified. Flows and loadings must be documented for residential, commercial, institutional, and industrial user groups. Individual cost allocations do not have to be made for various types of residential users, but dividing residential users into single family, multiple family, or mobile home subgroups will allow more refined cost allocations to be made. Commercial and industrial users may need to be divided into appropriate subgroups that reflect the great variability in wastewater flow rates and strengths. Commercial or industrial users that

discharge more than 25,000 gallons per day (gpd) to the system must also have their costs allocated individually. Similar to the commercial and industrial groups, costs must be allocated to individual institutional users or user groups such as hospitals, correctional facilities, schools, and colleges. The City of San Diego's user groupings and cost allocations comply with these requirements.

Any outside municipality that discharges to the treatment works must be listed as a separate user group. Additionally, if septage (septic tank discharge) is received by the treatment works, this category must also be listed as a user group with corresponding flows and loadings. The charges established for septage must be based on its contributing loadings. Generally, a 1,000 gallon dump from residential septic tanks contains 5,400 milligrams per liter (mg/L), or 45 pounds, of five-day biochemical oxygen demand (BOD), and 12,000 mg/L, or 100 pounds, of suspended solids (SS). Other types of septage from commercial and industrial sources must be sampled at the discharger's expense to prevent unacceptable discharges and to allow a proper charge to be calculated.

D. Procedures for Allocating Annual Revenue Requirements and Determining Rates

Allocating annual costs to the system users is a three-step process. The initial step is to allocate the cost among the treatment parameters in proportion to the percentage of costs that the flow, BOD_5, SS, and other components represent. The City of San Diego has requested in writing a variance to use COD rather than BOD. A written response was received on November 6, 1997 granting the variance. The second step is to divide the allocated costs by either total plant loadings or total design loadings to determine unit costs for each treatment parameter. The final step is to multiply each user's contribution to the system by the unit costs for each parameter to establish a sewer rate in proportion to the user's demand on the system.

OM&R costs for the treatment works must be recovered from system users through a user charge system that is based either on actual use or through a pre-approved ad valorem tax system. User charges must recover OM&R costs from users based on their proportionate contribution to the total wastewater loading from all system users. However, the total OM&R budget may be offset by income derived from the operation of the treatment works. This type of income can result from the sale of used equipment, sewage sludge, digester gas, reclaimed wastewater, treatment plant residues, or power generated from plant by-products. Investment income from assets of the wastewater enterprise is also considered operating income if the assets were originally funded with income generated from user charges.

If desired, a municipality may adopt reduced or less than proportionate share rates for low income residential users. A low income user is defined as any user whose income level is below the poverty rate established within the municipality's service area. If used, the reduced service charge must be based on an economic consideration only and may not be applied only to a subgroup under the poverty level, such as senior citizens. If a municipality decides to adopt a low income discount, a number of rules apply. First, the discount rate selected will apply to all users who qualify for the discount. Second, eligibility for the discount must be verified on an annual basis. Finally, all revenues that are lost because of the discount must be recovered from other system users through increased service charges. A notice that informs the public about the low income discount must also be published in a newspaper of general circulation within the municipality's service area. Under the

Guidelines, any pre-existing agreements which levy OM&R charges that are different than the proportional use rates calculated by the revenue program will not be allowed to continue, and the charges must be revised to reflect the approved rates. The user charge system shall take precedence over any terms or conditions contained in agreements or contracts that the municipality may be a party to that are inconsistent with the requirements of the SWRCB Guidelines. If there are any pre-existing contracts or agreements that are inconsistent with the Guidelines, the municipality must notify the SWRCB at the time the revenue program is submitted for review.

In the Guidelines, the SWRCB recommends that funds for the cost of debt service, capital improvements, etc. be collected with the OM&R user charge in proportion to the cost of the service rendered. A municipality may meet these revenue requirements through service charges, ad valorem taxes, standby charges, or assessments. If debt service and capital improvement costs are collected through service charges, and the municipality does not wish to recover these costs in proportion to system use, then a public notice describing the impacts of the proposed rate structure is required. An opportunity for public comment prior to final adoption of the rate ordinance must be given. Notice of the proposed rate shall be given by direct mailing to all organizations and individuals who have previously requested such notice, as well as to all system users who would be adversely affected by the change in rates.

Allocation of OM&R costs based on flow only can be made if the system serves less than 10,000 people, has no industrial users, and does not receive septage. A flow only OM&R cost allocation can also be used where the residential design flow for the treatment works exceeds 95 percent of the total design flow and there are no industrial or septage flows.

A municipality's user charge system based on ad valorem (A/V) taxes may be approved if the municipality had a system of dedicated A/V taxes in existence on December 27, 1977 and has continued to use that system to collect revenues to pay OM&R costs for wastewater treatment works within its service area. The A/V user charge system must distribute OM&R costs for all treatment works within the municipality's service area to the residential and small non-residential user classes including, at the municipality's option, other users that are not required to have their costs allocated individually. Each industrial and commercial user that discharges more than 25,000 gpd or more than 5 percent of the plant's design flow must pay its share of OM&R costs for the treatment works based on charges for actual use. Finally, a system of surcharges and rebates must be instituted to ensure that all users and user groups pay their proportionate share of the OM&R costs.

OM&R costs for all infiltration and inflow (I/I) that is not directly attributable to users must be distributed among all users in the same manner that it distributes the costs for their actual use. Alternatively, I/I costs can be distributed under a system that uses one or any combination of the following factors on a reasonable basis: flow volume of the users, land area of the users, number of hookups or discharges of the users, and property valuation of the users (if A/V taxes are used).

The Guidelines state that administrative costs for the wastewater system may be included in the OM&R cost allocation, or they may be separated and allocated on another equitable basis such as the number of sewer accounts.

E. Other Considerations

The California Administrative Code prescribes a uniform system of accounts for wastewater disposal systems. Municipalities that are not subject to the uniform system of accounts must establish accounting systems for wastewater conveyance, treatment, and disposal that will provide essentially the same level of detail as the uniform system. Wastewater activities shall be accounted for in an enterprise fund which will consist of at least two revenue and three expense accounts. Revenue accounts include a service charge revenue account and a capital revenue account. Funds from the service charge revenue account can be used for any wastewater-related activity. However, funds from the capital revenue account may only be used for facility expansion, upgrade, or major rehabilitation. OM&R costs may not be funded from the capital revenue account. Expense accounts include an operation and maintenance account, a replacement account, and a capital expenditures account. The first two accounts must be funded from the service charge revenue account. Either revenue account can be used to fund the capital expenditures account. The replacement account should not include money set aside for unexpected price increases. Funds for this purpose should be accumulated in an operating reserve fund. The City's system of accounts, while different from the uniform system of accounts described by the California Administrative Code, provides essentially the same level of detail as the uniform system.

Connection fees can be used to recover debt service costs which would have been recovered on an annual basis if the user had been connected when the treatment works began operation. This fee may not be used to recover excessive costs from future users of treatment works in order to reduce charges to current users. Connection fees may not be used to fund replacement costs (as defined by the SWRCB).

If a municipality charges a flat rate for some users and a variable rate based on water consumption for others, a minimum charge may be established for the variable rate users to collect the fixed costs of providing service. This charge must not be more than the minimum charged to any user group which is charged a flat rate. The same minimum charge must be applied to all user groups which have a minimum charge, unless it can be shown that fixed costs vary significantly.

When treatment works serve more than one municipality, the user charge system outlined in the revenue program must cover all wastewater treatment services provided, and each participating municipality must adopt its own user charge system and rate ordinance or resolution. If the regional municipality is authorized to bill all of the individual users of the system, only one revenue program and rate ordinance is required. If the regional municipality bills a subscribing municipality, which in turn bills the individual users, separate revenue programs and rate ordinances are required for the regional municipality and each subscribing municipality. The regional municipality's charges to a subscribing municipality must be based on actual usage and include the fixed cost of reserved capacity, if capacity is reserved for specific subscribing municipalities.

In 1973, the SWRCB adopted guidelines for administering the "Fair and Equitable" clause contained in Clean Water Grant contracts. The intent of this clause is to protect municipalities that are required to join regional systems, as a result of State Board planning decisions, from undue financial burdens or inequitable treatment by the regional agencies. The guidelines focus on two areas of concern: the

costs assessed to participating agencies, and the appropriateness of conditions imposed by the regional agency. In determining reasonable costs and charges to a participating agency, consideration should be given to the amount of flow, the strength of waste, and any special waste characteristics. Costs for treatment, including both OM&R costs and capital costs, must be apportioned among the users in direct proportion to the actual or allocated use. Costs of conveyance may be assigned directly to a participating agency in direct proportion to use if it is geographically separate or has other distinct and discrete characteristics. Otherwise, all conveyance costs shall be considered a basic part of the regional facilities, shall be combined with treatment costs, and will be apportioned in the same manner as are treatment costs. Costs that exceed the actual costs incurred by the regional agency and which, in effect, penalize participating agencies are improper and are not considered fair and equitable.

IV. METROPOLITAN WASTEWATER SYSTEM ORGANIZATION AND OPERATION

A. The Wastewater System

The Wastewater System that is the subject of this cost-of-service study consists of the Municipal (Muni) System, which is a municipal sewage collection system for the City's residents, and the Metropolitan (Metro) System, which is a regional sewage collection, treatment and disposal system initiated in 1958 (and operational since 1963) to serve the City and various other public agencies including cities situated within common drainage areas. The Metro System was designed to provide sufficient capacity to accommodate a regional population of 2,600,000. The City, as owner and operator of the Metro System, is the holder of the National Pollutant Discharge Elimination System (NPDES) permit and is responsible for maintaining the discharge requirements required under Federal law. The Metro System, as presently designed, provides advanced primary treatment of sewage at its Point Loma Wastewater Treatment Plant.

The map included as Exhibit IV-1 shows the sewer service area boundaries of the wastewater system which covers approximately 450 square miles, including most of the City.

1. **Muni System Facilities.** The Muni System is comprised of 2,528 miles of trunk and collector mains, 82 sewer pump stations and 14 stormwater interceptor pump stations serving in excess of 240,000 customer accounts. On average, these accounts generate 128 million gallons per day (mgd) of wastewater which is conveyed by the Muni system to the Metro system for treatment and disposal. The Wastewater System Capital Improvement Program (CIP) contemplates expenditures of $360.1 million for Muni system facilities during the seven Fiscal Years ending June 30, 2003.

2. **Metro System Facilities.** The current Metro System infrastructure, with the exception of the South Metro interceptor, is located within the jurisdictional boundaries of the City and is concentrated along a kidney shaped corridor running from Mission Bay to the north and along the perimeter of the San Diego Bay to the south. The map included as Exhibit IV-1 shows the geographic concentration of the Metro System's infrastructure and identifies the major interceptor lines north and south which service the Participating Agencies.

The Metro System's infrastructure consists of one main wastewater treatment plant, an ocean outfall, a sludge drying facility, two pump stations, and force mains and gravity flow interceptors. A brief description of the current facilities and their primary functions is provided below.

a. **Point Loma Wastewater Treatment Plant.** The wastewater treatment process currently employed at the Point Loma Plant consists of advanced primary treatment currently rated at 240 mgd of average daily wastewater flow and includes mechanical screening, by which raw wastewater flows into the Point Loma Plant through five 15 millimeter mesh mechanically self-cleaning traveling screens, the addition of chemical coagulants to enhance settling to achieve at least 80 percent removal of suspended solids, sedimentation, and sludge digestion. A digester gas utilization facility is also a part of the Point Loma Plant. Dewatering and disposal and/or reuse of sludge are provided off site.

Several capital improvement projects have been completed at the Point Loma Plant to rehabilitate, modify, and expand various components, and additional capital improvements are planned. Ongoing capital improvements include construction of two new sedimentation basins for a total of twelve basins, completion of a new effluent channel to all of the sedimentation basins, repair and modernization of two of the six digesters, construction of a new sludge pumping station, a new water tank, two additional digesters, automation of process control facilities, and restoration of the ocean outfall intake structure. Projects under design include upgrade of the headworks, odor control and grit removal facilities, modernization of two existing digesters, a new operations building, expansion of the gas utilization facility, a central boiler facility, and expansion of the maintenance building.

b. **Point Loma Plant Ocean Outfall.** The Point Loma Plant Ocean Outfall was constructed in 1963 to provide a method for disposal of all plant effluent. The original capacity of the 11,316-foot long, 108-inch diameter outfall has been estimated at 390 mgd under the original design configuration. The City commenced construction in 1992 of a 12,500-foot extension of the original outfall. The Point Loma Plant Ocean Outfall Extension was completed in November 1993 resulting in a 4.5 mile long outfall discharging treated sewage effluent at a depth of 320 feet of water. It is one of the longest, deepest ocean outfalls in the United States. The capacity of the ocean outfall in its current configuration is estimated to be at least 432 mgd.

c. **Fiesta Island Sludge Drying Facilities; Metro Biosolids Center.** A portion of Fiesta Island, located in Mission Bay, is currently used by the City for mechanical dewatering and air drying of sewage sludge. Since 1963, digested liquid sludge at three percent solids has been pumped from the Point Loma Plant through an eight mile pipeline to Fiesta Island. At the facility, mechanical belt filter presses provide initial dewatering functions. Solar energy dries the sludge cake in open sand drying beds. When the sludge solids content reaches 50 percent, the dried sludge is transported off-site for either beneficial use or landfill disposal. The California Coastal Commission has directed that the City vacate its sludge drying facilities at Fiesta Island since the use of the island for sludge processing has been determined to be incompatible with its intended recreational use and the commission is imposing mitigation charges on the City until the facilities are vacated. The charges were $2 million per year for 1993 and 1994. The commission reduced the charge to $1.5 million per year as a result of the progress that has been made constructing the replacement facilities described below. These charges have been paid from Wastewater System Revenues to the City's Department of Parks and Recreation. The City plans to cease its sludge operations at the Fiesta Island facility in February 1998.

The City will complete the construction of replacement facilities in 1997 of the Metro Biosolids Center on a site at Miramar Marine Corps Air Station. The overall capital budget for the replacement facilities to be located at the Miramar site is expected to be approximately $238 million.

The Metro Biosolids Center will perform the following two primary functions. It will digest biosolids generated at the North City Water Reclamation Plant, and it will mechanically dewater biosolids from the North City Plant and the Point Loma Wastewater Treatment Plant. The Metro Biosolids Center will replace dewatering operations currently located on Fiesta Island which service the Point Loma Plant. A for-profit enterprise is operating a cogeneration facility at the site. A sludge drying facility is also proposed to be located at the Metro Biosolids Center. The sludge drying facility may be

undertaken by a for-profit enterprise to produce agricultural fertilizer pellets. Other beneficial use options such as composting and direct land application are being considered along with landfill disposal.

d. **Pump Stations.** The two Metro pump stations began operation in 1963. The pumping facilities are reported to be in good condition, and all structures, including wet wells, are expected to last at least another 25 years. No major modifications or improvements are anticipated except for installation of additional new pumps and motors and the overhaul of existing pumps and motors as needed.

e. **Metro Interceptors.** The Metro System interceptors consist of two major branches, the South and North, which meet at Pump Station No. 2. Interceptor capacities are normally adequate for current peak flow, but in the near future some interceptor sections may be subject to peak flows that exceed design capacities. Under the Wastewater System Capital Improvement Program, it is contemplated that expenditures of $35.7 million remain to be made for interceptors during the period ending June 30, 2003. Construction projects are currently underway to address these future capacity needs.

3. **Additional Contractual Capacity Through the Escondido Wastewater Treatment Plant.** In addition to the Metro System facilities described above, in 1972 the City entered into a sewage disposal agreement with the City of Escondido, whereby up to five mgd of sewage from the Rancho Bernardo sewer service area of the City of San Diego may be treated at Escondido's Hale Avenue Treatment Plant. The term of the agreement is 50 years and may be extended for an unlimited number of ten- year periods at the City's option. The Escondido Wastewater Treatment Plant is not owned by the City of San Diego and is not part of the Metro System.

B. General Operating Principles and Practices

The MWWD manages the Metro system and the Muni system. The wastewater system is operated with funds derived primarily from sewer service charges. All system revenues are deposited in the Sewer Revenue Fund, which is used to finance operation, maintenance, replacement, and capital improvements in both the Metro and Muni systems. As an enterprise fund, the Sewer Revenue Fund is held separate and apart from other funds of the City.

Wastewater generated by the Participating Agencies is metered as it enters the Metro system and charges for treatment are based on the measured flow, SS, and COD. Within the City, wastewater flows from individual locations are not measured, and metered water consumption is used to approximate each customer's sewage flow.

C. Customer Information and Classifications

The Metro system serves the City of San Diego and fourteen Participating Agencies located outside the City. Within the City, sewer customers are grouped into the following four major classifications:

Description	Rate Codes	Total Customers (Connections)
Single family dwelling	11 to 15	198,979
Other domestic (multiple living units)	21 to 25	29,340
Commercial	31 to 35	19,146
Industrial	41 to 45	596

Exhibit IV-2 provides descriptions for all of the rate codes currently used by the City for billing purposes.. Customers with rate codes ending in "4" or "5" do not return any flow to the sewer system. Rate codes ending with "4" designate customers that are served by septic tanks or other on-lot sewage disposal systems. Rate codes ending with a "5" identify customer locations that have separate irrigation meters. Rate codes 51 through 97 designate customers located outside the City, fire sprinkler service, backflow meter locations, and temporary water meters for construction projects. Customers with these rate codes also do not return any flow to the sewer system.

D. Current Sewer Rate Structure

Participating Agencies located outside the City are currently billed for sewage conveyance, treatment, and disposal services . Customers within the City of San Diego are billed based on both the volume and suspended solids (SS) content of the wastewater generated. However, no charge is currently made for the organic content of the wastewater.

Sewer bills for single family dwellings in the Muni service area are based on winter month water usage and a SS concentration of 277 milligrams per liter (mg/L). Previous analyses have determined that winter month water consumption (December through March) in single family dwellings approximates the water used inside the dwelling unit on an average annual basis. Wastewater returned to the sewer system from single family residences is estimated to be 90 percent of winter month water use. Sewer bills for multiple living units are calculated using actual metered water usage and a 277 mg/L concentration for SS. The total calculated sewer bill is then reduced by five percent to reflect a 95 percent return to sewer for this user class. Water and sewer rates for the City of San Diego, as of January 1, 1997, are summarized in Exhibit IV-3. This rate schedule includes a six percent increase in sewer rates which became effective on October 1, 1996. An additional six percent increase in sewer rates became effective on July 1, 1997.

Sewer bills for non-residential customers are calculated using a separate rate schedule. A Sewer Classification Program was implemented in 1988 to determine the amount and strength of sewage discharges from commercial and industrial customers within the City. Amount refers to the percent of metered water that is discharged into the sewer system while strength refers to the SS (suspended solids) concentration of the wastewater. Similar customers were placed into categories and were assigned characteristic SS concentrations based on the type of business activity. The first ten SS

classes range from 0 to 1,000 mg/L, in 100 mg/L increments. An eleventh class also exists for dischargers with SS concentrations in excess of 1,000 mg/L.

In addition to the classifications for SS, field inspections were conducted at various customer locations to determine what type of establishment a water meter is serving and how the water is used. This included gathering data on irrigation usage, cooling tower evaporation, water used in the product produced, and other similar information. This information was used in conjunction with the water consumption history of the customers to calculate the percent of total water use that is returned to the sewer system. There are a total of 20 return-to-sewer components in the current rate schedule for commercial and industrial accounts. The first 19 classes range from 5 to 99 percent return to sewer, in four percent increments. The twentieth class is for customers whose return to sewer is equal to the metered water use.

The current sewer rate schedule for commercial and industrial accounts is shown in Exhibit IV-4. Sewer Quality Codes (SQC) were developed to express both the SS concentration and percent return to sewer for non-residential customers. Classes A through K and L through V refer to the SS classes for commercial and industrial customers, respectively, while the 01 through 20 designation describes the percent return to sewer. For example, a SQC of A02 identifies a commercial customer that returns between 90 and 94 percent of metered water use to the sewer at a SS concentration between 0 and 100 mg/L. A SQC of L02 identifies an industrial customer with the same discharge characteristics. Bills for customers with a SS concentration in excess of 1,000 mg/L are computed based on 100 percent return to the sewer.

E. Description of the Capital Improvement Program

The Wastewater System Capital Improvement Program (CIP) consists of projects to upgrade both the Metro and Muni systems. Metro CIP projects include the following:

- Metro Biosolids Processing Projects
- North City Water Reclamation Plant
- Point Loma Plant Upgrade
- Point Loma Outfall Upgrade
- South Bay Water Reclamation Plant
- South Bay Sewer Conveyance System
- South Bay Ocean Outfall
- North and South Metro Interceptor Sewer Upgrades
- Other Metro System Projects

Muni System CIP projects generally include replacement of deteriorated sewer lines, rehabilitation of existing sewage pumping stations, and construction of new interceptor lines and pump stations.

The Wastewater System CIP will be funded by a combination of system revenues and debt financing. The projected source of funds for the capital improvement projects for Fiscal Years ending June 30, 1997, to June 30, 2003, include:

- New Bond Issues
- Grant Receipts
- Contributions in Aid
- Pay-As-You-Go Moneys
- State Revolving Fund Loans[1]

As part of this cost-of-service study, six estimates of CIP cost projections were reviewed to evaluate the reasonableness of the cost projections and the soundness of the estimating methodology. The projects were chosen randomly and included both Metro and Muni System projects. Overall, the total estimated project costs appear to be conservative. The cost estimates were prepared by engineering firms based on industry standards and are adequate for projecting future capital improvement costs.

F. Agreements With Participating Agencies

The Metro system provides "wholesale" treatment services, including some sewage transport, treatment and disposal operations, to other cities and districts. The following entities, referred to as the "Original Participating Agencies" entered into sewage disposal agreements with the City of San Diego in 1960:

- City of Chula Vista
- City of Coronado
- City of El Cajon
- City of Imperial Beach
- City of La Mesa
- City of National City
- Lemon Grove Sanitation District
- Spring Valley Sanitation District

Subsequent to that time, the City entered into sewage disposal agreements with the following entities, also known as the "Later Participating Agencies:

- City of Del Mar
- City of Poway
- Lakeside/Alpine Sanitation District
- Otay Water District
- Padre Dam Municipal Water District
- Wintergardens Sewer Sanitation District

Sewage disposal agreements expire on August 21, 2003, for the Original Participating Agencies and on June 30, 2003, for the Later Participating Agencies and, in each case, have a ten year extension option to 2013.

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[1]*Presently, the City's Financing Plan takes a conservative approach and does not anticipate revenue from State Revolving Loan Fund.*

Each participating agency pays its proportionate share of the OM&R expenses of the Metro System. Under the agreements, the OM&R costs include all required repairs, reconstruction, and replacements to the Metro System. As of October 29, 1996, the City and the Participating Agencies agreed on the "Principles of Understanding" (see Exhibit IV-5). This document was established as a basis for agreement regarding the sharing of certain sewer costs.

One important provision of the "Principles of Understanding," Principle 2, states that the Participating Agencies are responsible for paying their fair share based on their proportionate flow within the Metro System, for the entire Metro System including but not limited to the Point Loma and North City facilities, up to their current contract capacity, which includes 234 mgd (now reestablished as 240 mgd), plus all facilities required by the Ocean Pollution Reduction Act of 1994 (OPRA).

Another provision, Principle 6, establishes the Metro System share of the costs for four specific capital improvement projects. The percentages to be paid by the Participating Agencies for these four projects are:

29% of Pump Station No. 2, Pumps 7-8
55% of the North Metro Interceptor
66% of Sedimentation Basins Nos. 9 and 10
24% of Sedimentation Basins Nos. 11 and 12

However, certain Later Participating Agencies (the City of Poway, the Lakeside/Alpine Sanitation District, the Padre Dam Municipal Water District, and the Wintergardens Sewer Maintenance District) will continue to pay the costs of both sedimentation basin projects based on 100 percent.

Another important provision of the "Principles of Understanding" is found in Principle No. 10, which states that the Metro System, including the Participating Agencies, shall not pay for City of San Diego right-of-way charges. The current Fiscal Year 1997 budget and future budget projections through Fiscal Year 2003 do not allocate right-of-way charges to any of the Participating Agencies.

Through Fiscal Year 1997, OM&R costs were recovered from the Participating Agencies on a flow-only basis without consideration of strength of discharge. The Participating Agencies were billed quarterly by MWWD on the basis of budgeted cost estimates and sewage flow estimates. In the following fiscal year, when actual costs and actual flow data were known, billing adjustments were made to correct for any under or over charges in the previous year. Starting in Fiscal Year 1998, strength based billing was implemented based on budgeted cost estimates and cash flow analyses and on estimated flow, SS, and COD. The same process of adjusting to actuals will take place for Fiscal Year 1998. This will include actual costs, flow, strength and oxygen demand based on cumulative sampling for strength and COD.

The Participating Agencies are responsible for the "retail" sewage collection operations within their respective jurisdictions. The collection systems and many of the transport trunk lines are owned by the individual Participating Agencies. There are also transportation agreements between agencies as flows enter and leave other agencies' boundaries.

VII. ALLOCATION OF EXPENSES TO CUSTOMER CLASSES

For purposes of this discussion, the customer classes are Participating Agencies, the City of San Diego, and Trucked Wastes.

A. Review of Flow and Load Allocation Information

The MWWD Technical Services Division provides City Financing Services personnel with periodic updates on Metro System wastewater flows and loadings. A memorandum dated October 7, 1996 discussed wastewater flow and load projections for the 1997 Financial Plan. That memo is included as Exhibit VII-1. The flow, COD, and SS projections in the memorandum were developed based on historic loadings at the Point Loma Plant and estimated rates of population growth for the City of San Diego and the Participating Agencies. The figures presented in the October 1996 memo were used in this cost-of-service study as the total projected loadings on the Metro System. The average percentage of flow contributed by the City and each of the Participating Agencies from 1994 to 1996 was applied to the projected total Metro System flow for 1997 through 2003 to estimate the flow contribution of each.

Chemical oxygen demand (COD) was used by the MWWD for sampling rather than biochemical oxygen demand (BOD). COD testing was selected over BOD testing because of overall ease of sampling, less potential for procedural error, more timely results, and significantly lower laboratory costs. The Participating Agencies agreed to COD sampling.

COD and SS concentrations were measured at various sampling points within the City and at Participating Agency connection points for the purpose of establishing a strength based billing system. Exhibit VII-2 shows the baseline data measured between June 1995 and December 1996, along with the sampling points at which the measurements were made. Flow-weighted average COD and SS concentrations were calculated for the City and each Participating Agency. Organic and solids loadings on the system were then estimated using the flow projections in conjunction with the average concentrations. Organic and solid loadings of the system are tested daily. Cumulative data was analyzed and estimates for system flow, SS, and COD were provided for Fiscal Year 1998 Strength Based Billing.

For the implementation of Fiscal Year 1998 strength based billing, solid and organic loadings were estimated based on at least six individual samples for each agency, including the City of San Diego. System flow, suspended solids, and COD were also estimated based on plant data collections. Exhibit VII-2 (Table 1) (without system loadings) shows the Flow, SS, and COD sampling average for each agency, for the City of San Diego, and for the system as a whole.

In addition to the flow, solids, and organic loadings contributed by the Participating Agencies, the City of San Diego, and the City of Tijuana via the emergency connection, the Metro System processes trucked wastes. In 1996, over 34 million gallons of trucked domestic and industrial wastes were received from permitted haulers. An additional 1.40 million gallons of domestic only waste was received from permitted haulers by the El Cajon Department of Public Works. Three haulers were also permitted to discharge 1.60 million gallons of grease trap water after separation of grease solids

and oil. A domestic trucked waste characterization study conducted in January 1996 measured average COD and SS concentrations of 19,226 mg/L and 13,780 mg/L, respectively, for more than 60 samples of portable toilet, septic tank, and holding tank wastes. Likewise, return flows from the Fiesta Island sludge dewatering facility add to system loadings. The average decant from Fiesta Island in 1996 was 1.679 mgd and contained 597 mg/L of COD and 1,231 mg/L of SS. Information on trucked waste and Fiesta Island loadings is contained in Appendix VII-1 and, respectively, Exhibit VII-3.

Return flows from Fiesta Island are shared by all system users based on the proportion of flow, COD, and SS that each contributes. Infiltration and inflow (I/I) to the Metro System is component that should be shared proportionately by all users. Wastewater flows from areas outside the City are metered as they enter the Metro System. As a result, the Participating Agencies pay for all of the I/I that occurs in their individual systems. However, adequate data is not currently available to allocate Metro I/I to all system users. MWWD is planning to conduct additional flow monitoring so that I/I can be allocated between the City and the Participating Agencies.

B. Distribution of System Loadings to City and Participating Agencies

Tables VII-1, VII-2 and VII-3 present projected annual flow, COD, and SS contributions, respectively, for the Metro System. As discussed above, return flows from Fiesta Island have been allocated to all the system users based on the proportion of flow, COD, and SS that each contributes.

Including its share of Fiesta Island loadings, the City contributes an estimated 70.19 percent of the flow, 73.74 percent of the COD, and 74.89 percent of the SS to the Metro System. The Participating Agencies contribute approximately 29.75 percent of the flow, 24.74 percent of the COD, and 22.49 percent of the SS. System flow was estimated to be 68,225 million gallons, which included 638.74 million gallons of return flow. COD was estimated to be 411,125 thousand pounds, including 3,051 thousand pounds regional return. Trucked wastes only account for 0.06 percent of the flow but contribute an estimated 1.52 percent of the COD and 2.62 percent of the SS.

C. Distribution of System Loadings to Customer Classes Within The City

Metered water use and sewer billing records were analyzed to estimate system loadings from sewer customers within the City. Annual water usage in hundred cubic feet (HCF) was provided by the Water Utilities Department for the single family and other domestic customer classes. Similar information was also provided for individual commercial, industrial, and other sewer accounts that have been assigned a sewer quality code (SQC). The SQC designates the SS contributed by a customer and the percentage of the metered water that is returned to the sewer system.

Table VII-4 lists historic water usage for single family and other domestic accounts. These two customer classes used 53,572,742 HCF during the 12 month period ending March 31, 1997. However, the estimated return to the sewer is less than the metered water use and, therefore, sewer bills for single family dwellings are based on 90% of the winter months water use (December through March). The average winter months water use for single family dwellings translates to a 67.78 percent return to sewer relative to the total metered HCF for the entire year. Literature on this

subject indicates that between 60 and 80 percent of the water consumed typically becomes wastewater, with the lower percentages applicable to semi-arid regions of the Southwestern United States. The calculated return to sewer for single family dwellings (67.78%) is within the typical range (60% to 80%). Sewer bills for multiple living units are calculated using actual metered water usage, but receive a 5.0 percent reduction to reflect an estimated 95 percent return to sewer for this user class.

The City's share of Metro System loadings was allocated to City sewer customers by adjusting total metered water use to reflect the percent return to sewer and calculating SS and COD loadings based on assigned concentrations for each rate code or sewer quality code. SS concentrations of 277 mg/L were used to determine loadings for single family and other domestic customers. All sewer customers with Sewer Quality Codes have been assigned representative SS concentrations by the Water Utilities Department Sewer Classification Program based on the Standard Industrial Classification (SIC) of the sewer customer. The SIC Guidelines list used by the Sewer Classification Program is included as Exhibit VII-6.

Commercial and industrial accounts were sorted by SIC code and SQC and were assigned the SS concentrations listed in Exhibit VII-4. However, some of the original classification assignments have been changed through an appeal process which allows reassignment to another SQC if sampling data shows that the actual SS is not consistent with the assigned SQC. Where the SS for the SIC code did not agree with the SS for the SQC, the mid-point value for the SQC was assigned to the account.

COD values were assigned to City sewer customers based on typical COD concentrations provided by Los Angeles County Sanitation District No. 1 and BOD information contained in the SWRCB Guidelines.

Appendix VII-2 presents the City's contribution to flow, COD and SS based on metered water use for the period ending March 31, 1997. Calculations for the single family category were based on a 67.78 percent return to sewer and a 95 percent rate was used for the other domestic category. The mid-point return to sewer percentage was used for all customers with SQC assignments. Table VII-5 summarizes the results of this analysis. As shown by the comparison at the bottom of Table VII-5, the total City loadings produced by this analysis do not match the City's overall share of system loadings presented in Tables VII-1, VII-2 and VII-3. Therefore, the unit cost factors for flow, COD, and SS that are calculated for the Metro and Muni systems have to be adjusted by the multipliers shown when determining cost allocations for City customers.

As noted above, total loadings for the City based on the allocation to customer classes do not match the City's overall share of Metro system loadings. The City's flow contribution calculated by the allocation process is only about seven percent less than the City's share of Metro flows, but the COD and SS loads are more than 20 percent lower. It is reasonable to assume that part of the difference in flow can be attributed to I/I in the Muni and Metro systems. The amount of I/I in the system is not known, but it may constitute a considerable amount of the seven percent, in which case the assumed return to sewer values would produce flows comparable to actual and projected values. The infiltration component of I/I is typically low in both COD and SS, while the amount of COD and SS from inflow varies based on the source. Since inflow events are isolated and directly related to

precipitation events, it is anticipated that inflow does not contribute much to the total COD and SS loads. The most likely explanation for the difference in COD and SS loadings is that the concentrations used in the allocation process do not accurately reflect actual conditions. Rather than adjusting concentrations for individual customers or customer classes to increase the total loadings, a unit cost multiplier was used to increase the cost allocation to each class by a proportional amount.

D. Unit Costs for Flow, COD, and SS

Table VII-6 calculates unit costs for flow, COD, and SS for the Metro and Muni systems for the years 1997 through 2003, inclusive, and the average for the seven year period. More than 90 percent of Muni System costs are related to flow while Metro System costs are more evenly distributed between flow, COD, and SS. The calculated unit costs vary from year to year based on projected expenditures but generally exhibit an upward trend. Unit costs are higher for the City than for the Participating Agencies because the City has to fund its share of Metro System costs plus all of the costs related to the Muni System. Each of the Participating Agencies will have to calculate the costs related to their individual sewage collection and conveyance systems.

E. Total Annual Cost Allocations for Flow, COD, and SS

Projected annual cost allocations for the Participating Agencies, the City, and trucked waste haulers are shown in Table VII-7. The separate cost allocations for flow, COD, and SS which are combined in Table VII-7 are presented in Tables VII-7a, 7b, and 7c.

Table VII-7 allocates system costs to the City, Participating Agencies, and trucked waste haulers. Total costs for the City include both Muni and Metro system costs. As shown in Tables VII-1, 2, and 3, the City accounts for about 70 percent of flow and about 74 percent of COD and SS. Overall, the City is responsible for about 82 percent of system costs which includes both the Muni and Metro systems, the Participating Agencies account for approximately 17 percent, and trucked wastes make up the balance.

EXHIBIT 12

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* ITEM-105: State Water Resources Control Board - Low Interest Loans - Reimbursement Resolution.

CITY MANAGER'S RECOMMENDATION:

Adopt the following resolution:

(R-2003-1074)

The City does hereby resolve, order and determine as follows:

Section 1 - States its intention and reasonably expects to reimburse Expenditures paid prior to the issuance of the Obligations or the approval by the Board of the Project Funds;

Section 2 - The reasonably expected maximum principal amount of the Project Funds is $41,000,000 for costs associated with the Project;

Section 3 - This resolution is being adopted no later than 60 days after the date on which the City will expend monies for the portion of the Project costs, other than preliminary costs, to be reimburse with Project Funds;

Section 4 - Each expenditure by the City will be of a type properly chargeable to a capital account under general federal income tax principles;

Section 5 - To the best of its knowledge, the City is not aware of the previous adoption of official intents by the City that have been made as a matter of course for the purpose of reimbursing expenditures and for which tax-exempt obligations have not been issued;

Section 6 - This resolution is adopted as official intent of the City in order to comply with Treasury Regulation §12.150-2 and any other regulations of the Internal Revenue Service relating to the qualification for reimbursement of Project costs;

Section 7 - All the recitals in this resolution are true and correct and the City so finds, determines and represents.

CITY MANAGER SUPPORTING INFORMATION:

The State Water Resources Control Board's State Revolving Fund (SRF) Loan Program is a low interest loan program. This program enables municipalities and wastewater agencies to obtain loans for construction of wastewater capital projects. Currently, the City has contracted and/or received preliminary approval from the State for thirteen loans, in an amount totaling approximately $143 million. Of the various loan programs, the City has elected to participate in the "zero/low" interest program. This program is now comprised of bonds, Federal and State

funds. The participating municipalities have the option to pay the State's share of the loan (16.7%) in return for a zero-interest, thereby allowing the State to have more funds available for other applicants. The "zero interest" is applied over the loan repayment period of 20 years. The savings are significant when compared to traditional bond funding of capital projects.

In the past year the State has begun leveraging their SRF Loan Program funding contribution through issuance of bonds. This allows for a greater pool of funds to maintain the program's current and future commitments. Due to bond financing regulations, the State is requiring agencies who receive loans to adopt an administrative "Reimbursement Resolution," allowing the City's loan to consist of State bond proceeds in addition to the traditional State and Federal funds. This resolution will encompass three projects to be funded through the loan program, they are: Point Loma Fourth Sludge Pump Station ($4.7 million estimated loan), Point Loma Digesters S1 and S2 Upgrade Project ($11.7 million estimated loan) and the Point Loma Grit Processing Improvement Project ($16.3 million estimated loan).

Mendes/Tulloch/RJE

ADOPTION AGENDA, CONSENT ITEMS
RESOLUTIONS:

* ITEM-106: Balboa Park Grant Application to the State of California.

(Balboa Park Community Area. District-3.)

CITY MANAGER'S RECOMMENDATION:

Adopt the following resolution:

(R-2003-1034)

Authorizing the City Manager, or designee, to apply to the State of California for a grant from the 2002 Resources Bond Act, Historical and Cultural Resources Preservation Opportunity Grant Program, in the amount of $6,000,000, for historical and cultural improvement projects in Balboa Park;

Authorizing the City Manager, or designee, to take all necessary actions to secure and accept grant funds from the State of California for Balboa Park historical and cultural projects, including entering into and executing a grant funding agreement;

Certifying that the City has, or will have, sufficient funds to operate and maintain the projects at no cost to the State;

Certifying that the Council reviewed and understands the General Provisions contained in the Grant Project Contract shown in the Procedural Guide, and that it understands the assurances and certification in the grant application form;

Authorizing the City Auditor and Comptroller to establish a special interest-bearing fund for the grant, if secured;

EXHIBIT 13

SEP - 8 2003

City of San Diego
MEMORANDUM

DATE: September 5, 2003

TO: Honorable Mayor and City Council Members

FROM: Patricia Frazier, Deputy City Manager, and,
Richard Mendes, Utilities General Manager

SUBJECT: Cost of Service Timetable

Pursuant to the direction of the City Council, the Office of the City Treasurer has overseen the preparation of Cost of Service Studies for both the Water Department and the Metropolitan Wastewater Department. The studies are expected to be completed by mid-October. Although the studies analyze the water and the sewer enterprise funds separately, the potential impacts of changes to rates and charges would affect the same customers in a cumulative fashion. Therefore, it is our intention to release the reports at the same time, and to schedule public discussions and consideration jointly for water and sewer.

It is our current schedule to deliver the studies to the Mayor and Council Members by October 17, 2003. We will present the studies to the Public Utilities Advisory Commission (PUAC) at their October 20, 2003 meeting. We anticipate that, at that meeting, the PUAC will develop and schedule their processes for accepting public input and discussing the issues. Given the studies' potential significant impacts on water/sewer customers, undoubtedly the PUAC will want to provide for a complete, inclusive and thorough public input process and consideration.

We anticipate that the PUAC will transmit its analysis and recommendations to the Natural Resources and Culture Committee.

Patricia Frazier
Deputy City Manager

Richard Mendes
Utilities General Manager

EXHIBIT 14

CITY OF SAN DIEGO
MEMORANDUM

DATE: October 3, 2003

TO: Distribution

FROM: Eric Adachi, Rate Analyst, Financing Services

SUBJECT: Draft Wastewater Cost of Service Study

Attached is the draft Wastewater Cost of Service Study for your review. As you know, both the water and wastewater final reports are scheduled to be delivered to the Mayor and Council by October 17, and to the Public Utilities Advisory Commission at their October 20 meeting.

Therefore, please provide any comments to me directly, either electronically or via interoffice mail to station 7B by Wednesday October 8, 2003.

If you have any questions, please call me at x34531.

EAd

ERIC ADACHI

Attachment

Distribution:

George Loveland
Patricia Frazier
Richard Mendes
Scott Tulloch
Mary Vattimo (Executive Summary only)
Bill Hanley
Dennis Kahlie

EXHIBIT 15

Salt

[redacted]

Office of the City Manager
202 C Street, MS 9B
San Diego, CA 92101
619/236-6363

[redacted]

THE CITY OF SAN DIEGO

FAX TRANSMITTAL

Date: October 16, 2003

The following 4 total pages (including this cover page) are intended for:

To:	Salt/ Kahlie/ Hanley	**From:**	Kathi Ward, Secretary to
Company	Atty/ FM/ MWWD	**Division**	Utilities General Manager
FAX #	35856/ 55840/ 26370	**FAX #**	619-236-6750
Phone #		**Phone #**	619-236-6751

Subject: Background material for meeting with Richard Mendes

Comments:

Please mark your calendar for a meeting with Richard Mendes in his office regarding the attached letter from Richard Opper. This meeting is set for:

Tuesday, November 4,2003 - @ 8:00am in Richard's office.

Please mark your calendars accordingly.

Thanks,

Kathi

If there are any problems with receiving this FAX transmission (such as missing pages), please contact the Sender at the "From" phone number given above.

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MTH

October 16, 2003

CONFIDENTIAL ATTORNEY-CLIENT PRIVILEGE COMMUNICATION

Celeste Wills, Esq.
Associate Counsel
International Specialty Products
1361 Alps Road, Building 10
Wayne, New Jersey 07470

Re: Analysis of Letter Concerning a Proposed Change to Wastewater Revenue Program Cost Allocation Methodology

Dear Ms. Wills:

At the request of your consultants we have carefully reviewed the letter to Mr. D.H. Kahlie of the City of San Diego, Financing Services, from Mr. Ronald R. Blair, Revenue Program Specialist for the State Water Resources Control Board, dated July 10, 2001. The letter is written in response to an inquiry from the City, it interprets information the City provided and comes to a conclusion that although the City's current "user charge system" is acceptable and approved, if it is to be changed, changes must made in a way that preserve equity when allocating the costs of operation and maintenance among the users (Participating Agencies).

Discussion

First, it is clear that more information would have to be reviewed in order to determine the full scope and implications of Mr. Blair's letter of July 10, 2001. In that letter he refers both to the Clean Water Grant (CWG) Program Regulations and State Revolving Fund (SRF) Program Guidelines. In addition, specific requirements may have been made in connection with either of the two different grants that are noted, or the six different revolving fund loans that were noted.

Significantly, Mr. Blair is responding to a description of three different cost allocations methodologies, but none of these methodologies is described in sufficient detail to make any conclusion with regard to the equity and proportionality that each provides. It is clear that some of the facts relied on in Mr. Blair's letter may have been

taken out of context, and other significant facts related to these three methodologies may not have been reviewed. Given the succinct nature of Mr. Blair's summary of these three methodologies it is simply impossible to determine the legal acceptability of alternatives even though Mr. Blair concludes that two of the methods may not provide the necessary proportionality that the Clean Water Act requires.

For example, Mr. Blair concludes that, "neither the STSS Method nor the modified TSS Method complies with the Clean Water Act...." Yet he admits that he does not fully understand the STSS method because his discussion of it notes that the assumption behind it "*seems* to be that the 80 percent TSS removal requirement ... is separate and independent." Clearly, Mr. Blair is making assumptions (some of which he is uncertain about) in reaching conclusions with regard to the methodologies described to him.

The one clear message that emerges from Mr. Blair's July 10, 2001 letter is, apparently, that the City's current system is acceptable and satisfactory. He makes this point in two places. First he discusses (in the section marked "Review"), that the current method "allocates all users in the City and Participating Agencies ... the same unit cost for wastewater treatment services." Later, Mr. Blair's first comment under the next section (entitled Analysis and Comment) is that "the City's method of allocating costs... has been previously reviewed *and approved* by this office." Mr. Blair notes that this method is used by numerous agencies and it is outlined in the service contract between the City and the other participating agencies receiving treatment services. As such, it is clear that in Mr. Blair's view, at least, the current "users charge system" is both acceptable and approved.

Conclusion

One cannot conclude, as a result of Mr. Blair's letter, that the City should change its current practices. Rather, Mr. Blair's letter reiterates the position of his office, which is that the City's current practices are "approved." The point of Mr. Blair's letter seems to focus on the possibility of changes to the current system, and notes that any such changes must preserve equity and proportionality. In order to assess any new system of charges and their impact on these critical issues, more detailed investigation would be required than that which is possible to discern from Mr. Blair's review.

Certainly, one would not expect that the City would propose amending the current system of "user service charges" based on Mr. Blair's letter, as that letter clearly does not require any changes and only suggests guidance if changes are considered.

Yours very truly,
OPPER & VARCO LLP

Richard G. Opper

RGO:taz

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HILDING KIPNIS LYON & KELLY
11975 EL CAMINO REAL
SUITE 200
SAN DIEGO, CALIFORNIA 92130
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DATE: October 16, 2003

TO: Heidi A. Wierman, Deputy City Attorney

COMPANY: THE CITY OF SAN DIEGO

FACSIMILE: (619) 533-5856

TELEPHONE: (619) 533-5800

FROM: Howard A. Kipnis, Esq.

CLIENT/MATTER: The City of San Diego v. Wells Fargo Bank, et al.
San Diego Superior Court Case No. GIC 806216

CMID NO.: 2447

NUMBER OF PAGES, INCLUDING THIS COVER MEMO: 33

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Enclosures: Letter dated October 16, 2003

Comments:

EXHIBIT 16

Bill Hanley - Re: COSS Presentations

From: Richard Mendes
To: Kahlie, Dennis
Date: 10/29/2003 10:52 AM
Subject: Re: COSS Presentations
CC: Frazier, Patricia; Hanley, Bill; Vattimo, Mary; Yackly, Charles

In response to your questions:

1. You should plan on doing the presentation at the November PUAC meeting. I think about 30 minutes of a general background on what a cost of service study is and how it is conducted, some background on the public participation for the MWWD study. You can have the consultants review the highlights of the study--conclusions and recommendations. We should separate the conclusions and recommendations of the consultant from the City administration's position on issues, which will be developed as a result of the public input process. I'm sure the PUAC members will have questions.

2. I don't believe the studies will be divided up by department. If anything, different committees may look at the capital and O&M issues. My best guess, however, is that there will be a unified committee review.

3. Everyone anticipates a thorough, multi-month review and public input process. We have to insure adequate consultant participation. If we need to add to the contract, please work with Charles Yackley and Bill Hanley to add what is needed.

4. We are not going to set parameters for the PUAC--they work for the Council and Mayor. They have been reasonable and practical in dealing with other important issues, but suggesting what is "out-of-bounds" to them would not be appropriate (or work).

Please let me know if you have any questions or want to discuss anything further. Thanks.

>>> Dennis Kahlie 10/22/03 11:39AM >>>
Richard -

In order to schedule and estimate cost of consultant resources, we need to determine COSS presentation requirements for PUAC and/or the assigned review committees. Some issues:

1. You've scheduled a PUAC presentation for next month, but I understand that PUAC voted to have the studies assigned to committees for review. If you still want to go forward with the PUAC presentation, I need to know what you have in mind so I can evaluate, plan for and schedule resources.

2. We decided to bring both studies forward at the same time on the basis that they're related, but if they'll be reviewed by different committees, there may well be divergent viewpoints on overlapping issues that will have to be resolved in some manner.

3. In any event, dealing with two committees plus PUAC will require a substantially greater application of consultant resources, some of which are east coast based. Please be aware that this level of consultant involvement was not anticipated in connection with the development of the COSS budgets, and that it may be necessary to go back to Council for additional funding to get the job done.

4. Scope of review - PUAC and the committees need to know what their review parameters are. As I see it, their role is to read and understand the studies and what they contain, then to formulate recommendations for use by NR&C and Council based on them; it is *not* to re-engineer the studies to produce a different result. This is important , because it is exactly what Kelco will attempt to accomplish through its public input and behind-the-scenes lobbying efforts, even if it serves no purpose other than to delay moving forward to mayor and council.

- D

From: Dennis Kahlie
To: Mary Vattimo; Patricia Frazier
Date: 10/29/03 12:10PM
Subject: Fwd: Re: COSS Presentations

FYI,

Reference #1, there are no consultant "recommendations" in either report; only suggestions. There's no doubt in my mind as to what the "City administration's position on issues" will be if it's based on the "public input process".

Reference #'s 3 & 4, we can certainly expect to spend months and months and lots more money on this if we don't make any effort to at least point out that the study results are the study results and that we're not there to get direction to re-do the study in a manner more pleasing to Kelco.

Sorry, but I don't expect to get much if any support from Richard on this matter. I can't help feeling that, if anything, he'll bend over backwards to try to find some way to give Kelco what they want at the continued expense of the residential ratepayers just because they won't come to his office and complain.

- D

EXHIBIT 17

OHS Draft No. 5
June 20, 2003

CITY OF SAN DIEGO

CITY COUNCIL

Dick Murphy, *Mayor*

Scott Peters
Michael Zucchet
Toni Atkins
Charles Lewis
Brian Maienschein
Donna Frye
Jim Madaffer
Ralph Inzunza

CITY OFFICIALS

Michael T. Uberuaga
City Manager

Casey Gwinn
City Attorney

Ed Ryan
City Auditor and Comptroller

Patricia T. Frazier
Deputy City Manager

Charles Abdelnour
City Clerk

Mary Vattimo
City Treasurer

PUBLIC FACILITIES FINANCING AUTHORITY OF THE CITY OF SAN DIEGO

BOARD OF COMMISSIONers

Joseph Craver, *Chair*

Samuel Brown, *Vice Chair*

Renee Comeau, *Secretary*

Mary Vattimo

Hank Cunningham

CO-BOND COUNSEL

Orrick, Herrington & Sutcliffe LLP
Los Angeles, California

Webster & Anderson
Oakland, California

DISCLOSURE COUNSEL

Orrick, Herrington & Sutcliffe LLP
Los Angeles, California

TRUSTEE

Wells Fargo Bank, National Association
Los Angeles, California

FINANCIAL ADVISOR

Montague DeRose and Associates, LLC
Walnut Creek, California

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June 20, 2003

[MAP]

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June 20, 2003

SUMMARY STATEMENT

This Summary Statement is qualified in all respects by the more complete information contained elsewhere in this Official Statement, including the Appendices. This Official Statement should be read in its entirety, and no one subject discussed herein should be considered less important than any other by reason of its location in the text. Unless otherwise defined below, all capitalized terms used in this Summary Statement have the meanings ascribed thereto in Appendix C to this Official Statement.

City of San Diego

The City is the seventh largest city in the United States and the second largest city in the State of California. The City's population is approximately 1.3 million. See APPENDIX B — "CERTAIN INFORMATION REGARDING THE CITY OF SAN DIEGO AND AREA."

The San Diego Wastewater System

The Wastewater System is owned and operated by the City under the administration of the Metropolitan Wastewater Department of the City ("MWWD") and consists of the Metropolitan System and the Municipal System. The Metropolitan System provides sewage transportation, treatment and disposal services to more than two million residents within a regional service area which encompasses the City and 15 Participating Agencies (eight cities and seven districts). The Municipal System provides sewage collection within the City and consists of over 2,950 miles of trunk and collector mains, 82 sewer pump stations and 16 stormwater interceptor pumping stations serving in excess of 260,000 customer accounts. The communities and agencies served by the Wastewater System form the second largest integrated metropolitan area in the State of California surpassed only by the Los Angeles metropolitan area. See "WASTEWATER SYSTEM." The operations of the Wastewater System are accounted for in an enterprise fund — the Sewer Revenue Fund — which was established by amendment to the Municipal Code of the City on August 2, 1956. All Wastewater System Revenues are deposited in the Sewer Revenue Fund.

The Authority

The Authority is a joint powers authority created by the City and its Redevelopment Agency to engage in financing activities. The Authority has no taxing power. See "THE AUTHORITY."

Purpose of Financing

Proceeds of the Series 2003A Subordinated Bonds are to be applied: (1) to acquire certain capital improvements to the Metropolitan System; (2) to fund a portion of the debt service reserve fund and to pay a portion of the fees relating to any Reserve Fund Credit Facility securing the Series 2003 Subordinated Bonds; (3) to refund a portion of the Outstanding Parity Bonds; and (4) to pay certain costs of issuance relating to the issuance of the Series 2003A Subordinated Bonds. Proceeds of the Series 2003B Subordinated Bonds are to be applied: (1) to acquire certain capital improvements to the Municipal System; (2) to fund a portion of the debt service reserve fund and to pay a portion of the fees associated with any Reserve Fund Credit Facility securing the Series 2003 Subordinated Bonds; (3) to refund a portion of the Outstanding Parity Bonds; and (4) to pay certain costs of issuance relating to the issuance of the Series 2003B Subordinated Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS."

The Series 2003 Subordinated Bonds

The Series 2003 Subordinated Bonds will be issued in the combined aggregate principal amount of $[•]*. The Series 2003 Subordinated Bonds shall be in denominations of $5,000 and any integral multiple thereof. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS."

Redemption Provisions

* Preliminary, subject to change.

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The Series 2003 Subordinated Bonds are subject to optional redemption as described herein, and the Series 2003 Subordinated Bonds designated as Term Bonds are subject to mandatory redemption, all as more fully described herein. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS."

Security for the Series 2003 Subordinated Bonds

The Series 2003 Subordinated Bonds are limited obligations of the Authority payable solely from Revenues. Revenues include: (1) the 2003 Subordinated Installment Payments to be made by the City to the Authority (as more fully described herein); and (2) amounts on deposit in the funds and accounts established under the Subordinated Indenture (other than amounts on deposit in the Rebate Fund). The 2003 Subordinated Installment Payments are secured by a second priority lien on, and are payable solely from, the Net System Revenues. The 2003 Subordinated Installment Payments are subordinated in right of payment to the Installment Payments securing the Outstanding Parity Bonds, and any other Parity Obligations (as defined herein) that may be issued from time to time in accordance with the Installment Purchase Agreement (as defined herein). All Parity Obligations, including the Installment Payments securing the Outstanding Parity Bonds, are secured by a first priority lien on the Net System Revenues.

The City has covenanted in the Installment Purchase Agreement not to discontinue or suspend any Installment Payments required to be made by it thereunder whether or not the Project or any part thereof is operating or operable or has been completed, or its use is suspended, interfered with, reduced, curtailed or terminated in whole or in part, and such Installment Payments will not be subject to reduction whether by offset or otherwise and will not be conditioned upon the performance or non-performance by any party of any agreement for any cause whatsoever.

The obligation of the City to make Installment Payments, including the 2003 Subordinated Installment Payments, does not constitute an obligation of the City for which the City is obligated to levy or pledge any form of taxation or for which the City has levied or pledged any form of taxation. Neither the pledge made by the Authority, nor the obligation of the City to make Installment Payments, creates a legal or equitable pledge, charge, lien or encumbrance upon any of the City's property, or upon its income, receipts or revenues, other than Net System Revenues. The Authority has no taxing power. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS."

Insurance on Certain Series 2003 Subordinated Bonds

The payment of principal of and interest on the Series 2003 Subordinated Bonds when due will be guaranteed by a municipal bond insurance policy issued by [•], simultaneously with the delivery of the Series 2003 Subordinated Bonds. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Bond Insurance" and APPENDIX F — "SPECIMEN MUNICIPAL BOND INSURANCE POLICY."

Rate Covenant

The City has covenanted in the Installment Purchase Agreement to fix, prescribe and collect rates and charges for the wastewater service that will be at least sufficient to pay during each Fiscal Year all Obligations, including Subordinated Obligations but excluding Parity Obligations, payable in such Fiscal Year, and to yield during each Fiscal Year Net System Revenues equal to 120% of the aggregate amount of principal, sinking fund payments and interest payable in respect of Parity Obligations for such Fiscal Year. Net System Revenues may be increased or reduced by transfers in or out of the Rate Stabilization Fund. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS" and "WASTEWATER SYSTEM FINANCIAL OPERATIONS — Impact of Proposition 218 on Sewer Service Rates and Charges."

Reserve Fund

For information regarding the Reserve Fund for the Series 2003 Subordinated Bonds, see "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS."

Outstanding Parity Bonds

The City has outstanding $[•] in Parity Obligations incurred in connection with the issuance of the Authority's Outstanding Parity Bonds (as defined herein). See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Outstanding Parity Bonds."

A portion of the proceeds of the Series 2003 Subordinated Bonds will be used to refund a portion of the Outstanding Parity Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS – Plan of Refunding."

Other Outstanding Obligations

The State of California (the "State"), acting by and through the State Water Resources Control Board (SWRCB"), has made loans to the City pursuant to eight revolving fund loan arrangements (the "Other Outstanding Obligations"). Each Other Outstanding Obligation is an Obligation under the Installment Purchase Agreement, which means that it is payable from, but not secured by a pledge of or lien on, Net System Revenues. The right of payment of the Other Outstanding Obligations is subordinated to and ranks junior to the right of payment of the Parity Obligations and the Subordinated Obligations, including the 2003 Subordinated Installment Payments securing the Series 2003 Subordinated Bonds. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Other Outstanding Obligations."

Issuance of Additional Obligations

Parity Obligations. The City may not create any Obligations the payments of which are senior or prior in right to the payment made by the City of Parity Obligations. The City may at any time and from time to time issue or create any other Parity Obligations, so long as no Event of Default under the Installment Purchase Agreement has occurred and is continuing and no event of default or Termination Event (as defined in any Qualified Swap Agreement) under any Qualified Swap Agreement has occurred and is continuing, and provided the City obtains or provides a certificate or certificates, prepared by the City or at the City's option by a Consultant, showing that: (1) the Net System Revenues as shown by the books of the City for any 12 consecutive month period out of the 18 consecutive months ending immediately prior to the incurring of such additional other Parity Obligations shall have amounted to at least 1.20 times the Maximum Annual Debt Service on all Parity Obligations Outstanding during such period; and (2) the estimated Net System Revenues for the next 12 months following the date of issuance of such other Parity Obligations will be at least equal to 1.20 times the Maximum Annual Debt Service for all Parity Obligations which will be Outstanding immediately after the issuance of the proposed Parity Obligations. See Appendix D – "SUMMARY OF PRINCIPAL LEGAL DOCUMENTS" and "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS."

Subordinated Obligations. The City may at any time issue or create other Subordinated Obligations on a parity with the 2003 Subordinated Installment Payments securing the Series 2003 Subordinated Bonds that are payable from Net System Revenues on a basis subordinate to the payment by the City of the Installment Payments securing the Outstanding Parity Obligations and any other Parity Obligations, so long as no Event of Default has occurred and is continuing and no Event of Default or Termination Event (as defined in any Qualified Swap Agreement) under any Qualified Swap Agreement has occurred and is continuing, and provided the City obtains or provides a certificate or certificates, prepared by the City or at the City's option by a Consultant, showing that (1) the Net System Revenues as shown by the books of the City for any 12-consecutive month period out within the 18-consecutive months ending immediately prior to the incurring of such additional other Subordinated Obligations shall have amounted to at least 1.00 times the Maximum Annual Debt Service on all Obligations Outstanding immediately after the issuance of the proposed Subordinated Obligations; or (2) the estimated Net System Revenues for the five Fiscal Years following the earlier of (a) the end of the period during which interest on those Subordinated Obligations is to be capitalized or, if no interest is to be capitalized, the Fiscal Year in which the Subordinated Obligations are issued, or (b) the date on which substantially all new facilities financed with such Subordinated Obligations are expected to commence operations, will be at least equal to 1.00 times the Maximum Annual Debt Service on all Obligations which will be Outstanding immediately after the issuance of the proposed

Subordinated Obligations. See APPENDIX D – "SUMMARY OF PRINCIPAL LEGAL DOCUMENTS." See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS."

Other Outstanding Obligations. The obligation of the City to make all payments required by the Other Outstanding Obligations to the SWRCB is solely from Net System Revenues and is subordinate in right of payment to Parity Obligations and Subordinated Obligations, including the 2003 Subordinated Installment Payments securing the Series 2003 Subordinated Bonds. The Other Outstanding Obligations contain the agreement of the City that the City may incur additional Parity Obligations (the payments of which are senior or prior in right to the payment by the City of its obligations required by the Other Outstanding Obligations, and all other contracts between the City and the SWRCB that, by their terms, expressly provide therefor), provided that: (1) all Parity Obligations (including the Parity Obligations proposed to be incurred) shall have an "A" rating (without regard to any refinement or gradation of such rating category by a numerical modifier or otherwise) or better by at least two nationally recognized rating agencies; and (2) the City fixes, prescribes and collects rates and charges for the Wastewater Service which will be sufficient to ensure that Net System Revenues to pay the obligations required by the Other Outstanding Obligations are at least 1.1 times the current year's debt service on the Other Outstanding Obligations. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS – Other Outstanding Obligations" and "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS – Issuance of Additional Obligations."

Special Considerations For Prospective Investors

See "SPECIAL CONSIDERATIONS FOR PROSPECTIVE INVESTORS" for a description of certain risk factors relating to the Series 2003 Subordinated Bonds.

Continuing Disclosure and Additional Information

See "CONTINUING DISCLOSURE" and APPENDIX G — "FORM OF CONTINUING DISCLOSURE CERTIFICATE" regarding the City's obligation to provide annual financial and operating information and information regarding the occurrence of certain events. Copies of the Subordinated Indenture, the Installment Purchase Agreement, the Continuing Disclosure Certificate, the City Charter, the Sewer Revenue Fund audited financial statements and additional information relating to the City and the Series 2003 Subordinated Bonds may be obtained from the Office of the City Clerk, City Administration Building, 202 C Street, MS 2A, San Diego, California 92101.

OHS Draft No. 5
June 20, 2003

$[•]*

PUBLIC FACILITIES FINANCING AUTHORITY OF THE CITY OF SAN DIEGO SUBORDINATED SEWER REVENUE BONDS, SERIES 2003A AND SERIES 2003B

(Payable Solely From Subordinated Installment Payments Secured By Wastewater System Net Revenues)

INTRODUCTION

This Official Statement, which includes the cover page and appendices, is being furnished in connection with the issuance by the Public Facilities Financing Authority of the City of San Diego (the "Authority") of its $[•]* combined aggregate principal amount of Subordinated Sewer Revenue Bonds, Series 2003A and Series 2003B (Payable Solely From Subordinated Installment Payments Secured By Wastewater System Net Revenues) (individually, the "Series 2003A Subordinated Bonds" and the "Series 2003B Subordinated Bonds" or a "Series" and, collectively, the "Series 2003 Subordinated Bonds"). The Series 2003 Subordinated Bonds will be subordinate in right of payment from Net System Revenues (as defined herein) to (1) the Outstanding Parity Bonds, which consist of the Series 1993 Bonds, the Series 1995 Bonds, the Series 1997 Bonds, and the Series 1999 Bonds (each of which is defined herein) and (2) any other Parity Obligations (as defined herein) that the City may issue from time to time in the future in accordance with the provisions of the Installment Purchase Agreement (as defined herein). See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Outstanding Parity Bonds. Capitalized terms not otherwise defined herein shall have the meaning given to the terms in APPENDIX C — "DEFINITIONS OF CERTAIN TERMS."

The Master Installment Purchase Agreement, dated as of September 1, 1993 as amended and supplemented, including as amended by that certain First Amendatory Supplement dated as of [•], 2003 (the "Master Installment Purchase Agreement"), and as supplemented by the 2003 Supplement to Master Installment Purchase Agreement, dated as of [•], 2003 (the "2003 Supplement"), each between the Authority and the City of San Diego (the "City") (the Master Installment Purchase Agreement, together with all amendments and supplements thereto, including the 2003 Supplement, are collectively referred to as the "Installment Purchase Agreement"), provides for the sale of certain Components of the Project to the City by the Authority in consideration of the City's payment of Installment Payments to the Authority in an amount equal to the principal of and interest on the Series 2003 Subordinated Bonds and the Outstanding Parity Bonds. The Indenture (Subordinated Bonds), dated as of [•], 2003 (the "Subordinated Indenture"), between the Authority and Wells Fargo Bank, National Association, as trustee (the "Trustee"), provides for the issuance of the Series 2003 Subordinated Bonds and any Additional Subordinated Bonds in accordance with the provisions thereof. The Series 2003 Subordinated Bonds are being issued pursuant to the provisions of the Joint Powers Act (commencing with Section 6500), comprising Article 1, Article 2 and Article 4 of Chapter 5 of Division 7 of Title 1 of the Government Code of the State of California.

The Series 2003 Subordinated Bonds are limited obligations of the Authority payable solely from Revenues. Revenues include: (1) the 2003 Subordinated Installment Payments to be made by the City to the Authority (as more fully described herein); and (2) amounts on deposit in the funds and accounts established under the Subordinated Indenture (other than amounts on deposit in the Rebate Fund). The 2003 Subordinated Installment Payments are secured by a second priority lien on, and are payable solely from, the Net System Revenues. The 2003 Subordinated Installment Payments are subordinated in right of payment to the Installment Payments securing the Outstanding Parity Bonds, and any other Parity Obligations that may be issued from time to time in accordance with the Installment Purchase Agreement. All Parity Obligations, including the Installment Payments securing the Outstanding Parity Bonds, are secured by a first priority lien on the Net System Revenues.

"System Revenues" consist primarily of moneys that the City derives from the ownership and operation of the Wastewater System. "Net System Revenues," for any Fiscal Year, are System Revenues for such Fiscal Year less Maintenance and Operation Costs of the Wastewater System for such Fiscal Year. The City has granted a first priority lien on the Net System Revenues pursuant to the Installment Purchase Agreement to the payment of Parity Obligations and has granted a second priority lien pursuant to the Installment Purchase Agreement to the payment of

* Preliminary, subject to change.

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the Subordinated Obligations including the 2003 Subordinated Installment Payments. Pursuant to the Subordinated Indenture, the Authority has irrevocably pledged the Revenues to the payment of principal of and interest on the Series 2003 Subordinated Bonds. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS."

The payment of principal of and interest on the Series 2003 Subordinated Bonds, when due, will be guaranteed by a municipal bond insurance policy (the "Bond Insurance Policy") issued by [•] (the "Insurer"), simultaneously with the delivery of the Series 2003 Subordinated Bonds. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Bond Insurance" and APPENDIX F — "SPECIMEN MUNICIPAL BOND INSURANCE POLICY."

The Installment Purchase Agreement defines the Wastewater System to be any and all facilities, properties and improvements at any time owned, controlled or operated by the City as part of the Sewer Revenue Fund for the collection, treatment, distribution, administration, disposal or reclamation of waste, including the Metropolitan System and the Municipal System. The Metropolitan System consists of any and all facilities, properties and improvements, designated by the City in its sole discretion as part of the Metropolitan System, and used for conveyance from the Municipal System and the treatment of sewage collected by the City through the Municipal System or by any of the Participating Agencies (as defined herein). The Municipal System consists of any and all facilities, properties and improvements at any time owned, controlled or operated by the City, and designated by the City in its sole discretion as part of the Municipal System for the collection of sewage from points of origination thereof and the conveyance thereof to the Metropolitan System.

Pursuant to the 2003 Supplement, the Authority (1) will acquire certain Components of the Project with a portion of the proceeds of the Series 2003 Subordinated Bonds and sell such Components of the Project to the City; and (2) will transfer to the City a portion of the proceeds of the Series 2003 Subordinated Bonds (which will ultimately be used to refund a portion of the Outstanding Parity Bonds), in both cases, in consideration of the City's payment of the 2003 Subordinated Installment Payments to the Authority. The portion of the proceeds that the City uses to acquire Components of the Project will be spent on design and engineering costs, costs of land acquisition, construction and other costs relating to certain capital improvements to the Metropolitan System and Municipal System.

The obligation of the City to make 2003 Subordinated Installment Payments does not constitute an obligation of the City for which the City is obligated to levy or pledge any form of taxation or for which the City has levied or pledged any form of taxation. Neither the pledge made by the Authority, nor the obligation of the City to make 2003 Subordinated Installment Payments, creates a legal or equitable pledge, charge, lien or encumbrance upon any of the City's property, or upon its income, receipts or revenues, other than Net System Revenues. The Authority has no taxing power.

DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS

General Terms

The Series 2003 Subordinated Bonds will be issued in two series as Series 2003A Subordinated Bonds and Series 2003B Subordinated Bonds in the respective aggregate principal amounts, will bear interest at the rates per annum and will mature in the principal amounts in each year (subject to prior redemption), as set forth on the inside cover page hereof. The Series 2003 Subordinated Bonds are issuable only in fully registered form and, when issued, will be registered in the name of Cede & Co., as registered owner and nominee of The Depository Trust Company, New York, New York ("DTC"). DTC will act as securities depository for the Series 2003 Subordinated Bonds. Purchasers will not receive certificates representing their interest in the Series 2003 Subordinated Bonds purchased. See APPENDIX I — "INFORMATION REGARDING THE BOOK-ENTRY-ONLY SYSTEM."

The Series 2003 Subordinated Bonds may be transferred on the registration books of the Trustee kept for that purpose at the principal corporate trust office of the Trustee. The Trustee will not be required to register the transfer or exchange of any Series 2003 Subordinated Bond (1) during any period commencing with the close of business on the 15th day next preceding any Interest Payment Date and ending on such Interest Payment Date;

(2) during the period commencing 15 days before the mailing of any notice of redemption and ending on the day of such mailing; or (3) that has been selected for redemption in whole or in part.

Interest on the Series 2003 Subordinated Bonds will be paid to the persons in whose names such Series 2003 Subordinated Bonds are registered as of the Record Date preceding the applicable Interest Payment Date, which is the 15th day (whether or not such day is a Business Day) preceding such Interest Payment Date. Interest on the Series 2003 Subordinated Bonds will be payable by check mailed by first class mail on such Interest Payment Date to the registered owners at the addresses shown on the registration books of the Trustee kept for that purpose at the principal corporate trust office of the Trustee; provided, however, that if the ownership of such Series 2003 Subordinated Bonds is no longer maintained in book-entry form by DTC, interest shall be payable by wire transfer to any registered owner who owns Series 2003 Subordinated Bonds in an aggregate principal amount of at least $1,000,000, in immediately available funds to an account in the United States of America designated in writing by such owner to the Trustee prior to the applicable Record Date. Interest on the Series 2003 Subordinated Bonds will be payable in lawful money of the United States of America and will be calculated on the basis of a 360-day year consisting of twelve 30-day months. The principal and redemption price of all Series 2003 Subordinated Bonds will be payable at the principal corporate trust office of the Trustee.

Notwithstanding the foregoing, payment of interest on any Series 2003 Subordinated Bond registered as of each Record Date in the name of Cede & Co. shall be made by wire transfer of same-day funds to the account of Cede & Co. on the Interest Payment Date for the Series 2003 Subordinated Bond at the address indicated on the Record Date or special record date for Cede & Co. in the registration books of the Trustee.

Series 2003 Subordinated Bonds

The Series 2003 Subordinated Bonds will be dated the date of delivery and interest thereon will accrue from such date. Beneficial ownership of Series 2003 Subordinated Bonds may be purchased in denominations of $5,000 or any integral multiple thereof in book-entry form only. Interest on the Series 2003 Subordinated Bonds is payable on May 15 and November 15 of each year, commencing May 15, 2004.

Optional Redemption. If the City elects its option to prepay 2003 Subordinated Installment Payments under the terms of the 2003 Supplement, the Series 2003A Subordinated Bonds and the Series 2003B Subordinated Bonds maturing on [•], through and including [•], are each separately subject to redemption prior to their respective stated maturities on or after [•], in whole or in part on any date (by lot within any maturity for each Series and among maturities as specified by the Authority), at the redemption prices set forth below (expressed as a percentage of the principal amount, or portion thereof, to be prepaid), plus accrued interest to the date fixed for redemption:

Redemption Period (Both Dates Inclusive)	Redemption Price

Mandatory Sinking Account Redemption — Series 2003A Subordinated Bonds. The Series 2003A Subordinated Bonds maturing on [•] (the "2003A Term Bonds") are subject to mandatory sinking account redemption at a redemption price equal to the principal amount thereof without premium plus accrued interest to the redemption date.

The 2003A Term Bonds are subject to mandatory sinking account redemption on May 15 in the years and in the principal amounts set forth in the table below:

Year	Principal Amount

* Maturity

Mandatory Sinking Account Redemption — Series 2003B Subordinated Bonds. The Series 2003B Subordinated Bonds maturing on [•] (the "2003B Term Bonds" and together with the 2003A Term Bonds, the "Term Bonds") are subject to mandatory sinking account redemption at a redemption price equal to the principal amount thereof without premium plus accrued interest to the redemption date.

The 2003B Term Bonds are subject to mandatory sinking account redemption on May 15 in the years and in the principal amounts set forth in the table below:

Year	Principal Amount

* Maturity

Credit Against Mandatory Sinking Account Requirement. At the option of the Authority, it may credit against any mandatory sinking account requirement Term Bonds or portions thereof that are of the same Series and maturity as the Term Bonds subject to mandatory sinking fund redemption and that, prior to said date, have been purchased, with funds other than moneys in a Sinking Account, at public or private sale or redeemed and canceled by the Authority and not theretofore applied as a credit against any mandatory sinking account requirement. The Authority and the City may also elect to have moneys in the Sinking Account applied to the purchase of Series 2003 Subordinated Bonds, which in turn shall be credited against any mandatory sinking account redemption requirement, all as provided for in the Subordinated Indenture. If, during the 12-month period immediately preceding said mandatory sinking account payment date, the Trustee has purchased any Term Bonds and maturity with moneys in such Sinking Account, such Term Bonds so purchased will be applied, to the extent of the full principal amount thereof, to reduce said mandatory sinking account payment.

Notice of Redemption. The Trustee will give a notice of redemption not less than 30 days nor more than 60 days prior to the redemption date to (1) the respective Owners of the Series 2003 Subordinated Bonds designated for redemption at their addresses appearing on the registration books of the Trustee by first class mail and (2) the Securities Depositories and the Information Services by certified or registered mail or overnight delivery. Each notice of redemption will state the date of such redemption, the Series of Series 2003 Subordinated Bonds or Outstanding Parity Bonds to be redeemed, the redemption price, if any, (including the name and appropriate address of the Trustee), the CUSIP number (if any) of the maturity or maturities, and, if less than all of any such maturity is to be redeemed, the distinctive certificate numbers and Series of the Series 2003 Subordinated Bonds of such maturity to be redeemed and, in the case of Series 2003 Subordinated Bonds to be redeemed in part only, the respective portions of the principal amount thereof to be redeemed. Each such notice will also state that on said date there will become due and payable on each of said Series 2003 Subordinated Bonds thereof and in the case of a Series 2003 Subordinated Bond to be redeemed in part only, the specified portion of the principal amount thereof to be redeemed, together with interest accrued thereon to the redemption date, and that from and after such redemption date interest thereon will cease to accrue, and shall require that such Series 2003 Subordinated Bonds be then surrendered at the address of the Trustee specified in the redemption notice. Notice of any redemption of Series 2003 Subordinated Bonds will either: (1) explicitly state that the proposed redemption is conditioned on there being on deposit in the Redemption Account on the redemption date sufficient money to pay the full redemption price of the Series 2003 Subordinated Bonds to be redeemed; or (2) be sent only if sufficient money to pay the full redemption price of the Series 2003 Subordinated Bonds to be redeemed is on deposit in the Redemption Account or other applicable fund or account.

Effect of Redemption. If notice of redemption is duly given as described above and money for the payment of the redemption price of the Series 2003 Subordinated Bonds called for redemption is held by the Trustee, then on the redemption date designated in such notice, the Series 2003 Subordinated Bonds will become due and payable, and from and after the date so designated interest on the Series 2003 Subordinated Bonds so called for redemption will cease to accrue, and the Owners of such Series 2003 Subordinated Bonds will have no rights in respect thereof except to receive payment of the redemption price thereof.

Purpose of Financing

Proceeds of the Series 2003A Subordinated Bonds are to be applied: (1) to acquire certain capital improvements to the Metropolitan System; (2) to fund a portion of the debt service reserve fund and to pay a portion of the fees relating to any Reserve Fund Credit Facility securing the Series 2003 Subordinated Bonds; (3) to refund a portion of the Outstanding Parity Bonds; and (4) to pay certain costs of issuance relating to the issuance of the Series 2003A Subordinated Bonds. Proceeds of the Series 2003B Subordinated Bonds are to be applied: (1) to acquire certain capital improvements to the Municipal System; (2) to fund a portion of the debt service reserve fund and to pay a portion of the fees associated with any Reserve Fund Credit Facility securing the Series 2003 Subordinated Bonds; (3) to refund a portion of the Outstanding Parity Bonds; and (4) to pay certain costs of issuance relating to the issuance of the Series 2003B Subordinated Bonds. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM." The portion of the proceeds that the City uses to acquire capital improvements (*i.e.*, Components) of the Project will be spent on design and engineering costs, costs of land acquisition, construction and other costs relating to certain capital improvements to the Metropolitan System and Municipal System. In addition to funding certain Wastewater System capital improvements, the remaining proceeds of the Series 2003 Subordinated Bonds will be used to refund a portion of the Outstanding Parity Bonds and to pay certain costs of issuance.

Plan of Refunding

Proceeds of the Series 2003 Subordinated Bonds in the aggregate principal amount of $[•] will be deposited in an escrow fund (the "Escrow Fund") established under an escrow agreement between the City, the Authority and the Trustee. The moneys so deposited will be used to purchase certain securities, the interest and principal of which will be sufficient to pay the interest and principal represented by those Outstanding Parity Bonds of the Series maturing on the dates and in the principal amounts shown on the following table:

Series 1993 Bonds*

Maturity Date ([•])	Principal Amount	Interest Rate
[•]	[•]	[•]
[•]	[•]	[•]

Series 1995 Bonds*

Maturity Date ([•])	Principal Amount	Interest Rate
[•]	[•]	[•]
[•]	[•]	[•]

Series 1997A Bonds*

Maturity Date ([•])	Principal Amount	Interest Rate
[•]	[•]	[•]
[•]	[•]	[•]

* Preliminary, subject to change.

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Series 1997B Bonds*

Maturity Date ([•])	Principal Amount	Interest Rate
[•]	[•]	[•]
[•]	[•]	[•]

Series 1999A Bonds*

Maturity Date ([•])	Principal Amount	Interest Rate
[•]	[•]	[•]
[•]	[•]	[•]

Series 1999B Bonds*

Maturity Date ([•])	Principal Amount	Interest Rate
[•]	[•]	[•]
[•]	[•]	[•]

Estimated Sources and Uses*

The proceeds of the Series 2003 Subordinated Bonds are to be applied as follows:

	Series 2003A Subordinated Bonds	Series 2003B Subordinated Bonds	Total
Principal Amount	$	$	$
Net Original Issue (Discount)/Premium			
Total			
Deposit to Escrow Fund for Series 1993 Bonds(1)			
Deposit to Escrow Fund for Series 1995 Bonds(2)			
Deposit to Escrow Fund for Series 1997A Bonds(3)			
Deposit to Escrow Fund for Series 1997B Bonds(4)			
Deposit to Escrow Fund for Series 1999A Bonds(5)			
Deposit to Escrow Fund for Series 1999B Bonds(6)			
Deposit to Acquisition Fund Account(7)			
Deposit to Reserve Fund(8)			
Cost of Issuance(9)			
Total			

* Preliminary, subject to change.
* Preliminary, subject to change.

(1) As a result of the current refunding of $[•] aggregate principal amount of the Series 1993 Bonds with a portion of the proceeds of the Series 2003 Subordinated Bonds, $[•] aggregate principal amount of the Series 1993 Bonds will remain outstanding following the date of delivery of the Series 2003 Subordinated Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS – Plan of Refunding."

(2) As a result of the advance refunding of $[•] aggregate principal amount of the Series 1995 Bonds with a portion of the proceeds of the Series 2003 Subordinated Bonds, $[•] aggregate principal amount of the Series 1995 Bonds will remain outstanding following the date of delivery of the Series 2003 Subordinated Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS – Plan of Refunding."

(3) As a result of the advance refunding of $[•] aggregate principal amount of the Series 1997A Bonds with a portion of the proceeds of the Series 2003 Subordinated Bonds, $[•] aggregate principal amount of the Series 1997A Bonds will remain outstanding following the date of delivery of the Series 2003 Subordinated Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS – Plan of Refunding."

(4) As a result of the advance refunding of $[•] aggregate principal amount of the Series 1997B Bonds with a portion of the proceeds of the Series 2003 Subordinated Bonds, $[•] aggregate principal amount of the Series 1997B Bonds will remain outstanding following the date of delivery of the Series 2003 Subordinated Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS – Plan of Refunding."

(5) As a result of the advance refunding of $[•] aggregate principal amount of the Series 1999A Bonds with a portion of the proceeds of the Series 2003 Subordinated Bonds, $[•] aggregate principal amount of the Series 1999A Bonds will remain outstanding following the date of delivery of the Series 2003 Subordinated Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS – Plan of Refunding."

(6) As a result of the advance refunding of $[•] aggregate principal amount of the Series 1999B Bonds with a portion of the proceeds of the Series 2003 Subordinated Bonds, $[•] aggregate principal amount of the Series 1999B Bonds will remain outstanding following the date of delivery of the Series 2003 Subordinated Bonds. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS – Plan of Refunding."

(7) To be held by the City and applied to pay Acquisition Costs relating to the Metropolitan System with a portion of the proceeds of the Series 2003A Subordinated Bonds and to pay Acquisition Costs relating to the Municipal System with a portion of the proceeds of the Series 2003B Subordinated Bonds.

(8) This deposit comprises that portion of the Reserve Requirement that will be deposited as cash in the Reserve Fund, if any. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Reserve Fund."

(9) Includes legal fees, financial advisor fees, rating agency fees, printing costs, the underwriters' discount (see "UNDERWRITING"), premiums for the Bond Insurance Policy and the Reserve Fund Credit Facility (if any), and other required expenses.

Debt Service Requirements

The following table shows the total debt service requirements from Net System Revenues with respect to the Installment Payments securing the Outstanding Parity Bonds, the Series 2003A Subordinated Bonds, and the Series 2003B Subordinated Bonds, the Other Outstanding Obligations, and total debt service.

Table 1
TOTAL DEBT SERVICE REQUIREMENTS

	Outstanding Parity Bonds[1]		Series 2003A Subordinated Bonds		Series 2003B Subordinated Bonds		Other[2] Outstanding Obligations		
Year Ending June 30	Principal	Interest	Principal	Interest	Principal	Interest	Principal	Interest	Total Debt Service
2004	$	%	$	%	$	%	$	%	
[•]									
TOTAL	$	%	$	%	$	%	$	%	

(1) The debt service on the Outstanding Parity Bonds reflects the refunding of a portion of the Outstanding Parity Bonds with the proceeds of the Series 2003 Subordinated Bonds. See "Plan of Refunding" and "Estimated Sources and Uses" above.

(2) Subordinated in right of payment to the Installment Payments securing the Outstanding Parity Bonds the Series 2003A Subordinated Bonds, and the Series 2003A Subordinated Bonds. For a description of the Other Outstanding Obligations, see "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Other Outstanding Obligations."

SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS

Source of Payment

The Series 2003 Subordinated Bonds are limited obligations of the Authority payable solely from Revenues. Revenues include: (1) the 2003 Subordinated Installment Payments to be made by the City to the Authority; and (2) amounts on deposit in the funds and accounts established under the Subordinated Indenture (other than amounts on deposit in the Rebate Fund). The 2003 Subordinated Installment Payments are secured by a second priority lien on, and are payable solely from, the Net System Revenues. The 2003 Subordinated Installment Payments are subordinated in right of payment to the Installment Payments securing the Outstanding Parity Bonds, and any other Parity Obligations that may be issued from time to time in accordance with the Installment Purchase Agreement. All Parity Obligations, including the Installment Payments securing the Outstanding Parity Bonds, are secured by a first priority lien on the Net System Revenues. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Outstanding Parity Bonds."

The payment of principal of and interest on the Series 2003 Subordinated Bonds when due will be guaranteed by the Bond Insurance Policy. See "Bond Insurance" below.

The Installment Purchase Agreement provides for the issuance thereunder by the City of Obligations, including Parity Obligations and Subordinate Obligations. All Parity Obligations, including the Installment Payments pledged to the payment of the Outstanding Parity Bonds, are secured by a first priority lien on Net System Revenues. All Parity Obligations are of equal rank without preference, priority or distinction of any Parity Obligations over any other Parity Obligations. All Subordinated Obligations, including the 2003 Subordinated Installment Payments securing the Series 2003 Subordinated Bonds, are secured by a second priority lien on Net System Revenues that is junior and subordinate to the lien on and pledge of Net System Revenues securing Parity Obligations. All Subordinated Obligations are of equal rank with each other without preference, priority or distinction of any Subordinated Obligations over any other Subordinated Obligations. However, any Subordinated Obligations that do not secure Subordinated Bonds would not have access to any Reserve Fund established under the Subordinated Indenture for the Subordinated Bonds. The Installment Purchase Agreement provides that no Owner of Subordinated Obligations has any right to take any action or enforce any right that would have a material adverse effect on the interests of the Owners of the Installment Payment Obligations and the Authority may not take any action to enforce, on behalf of any Owner of Subordinated Obligations, any such right. The Installment Purchase Agreement provides that nothing therein shall limit the ability of the City to grant liens on and pledges of Net System Revenues that are subordinate to the liens on and pledges of Net System Revenues for the benefit of Parity Obligations and Subordinated Obligations contained in the Installment Purchase Agreement. See APPENDIX D – "SUMMARY OF PRINCIPAL LEGAL DOCUMENTS."

The City has incurred the Other Outstanding Obligations, which are subordinated in right of payment to the Parity Obligations and the Subordinated Obligations (including the Subordinated Installment Payments securing the Series 2003 Subordinated Bonds). See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Other Outstanding Obligations."

Pledge Under the Subordinated Indenture

Pursuant to the Subordinated Indenture, the Authority has irrevocably pledged all Revenues and amounts on deposit in the funds and accounts established under the Subordinated Indenture (other than amounts on deposit in the Rebate Fund) to the payments of principal and interest on the Series 2003 Subordinated Bonds. The Subordinated Indenture defines the term "Revenues" to mean all Subordinated Installment Payments paid by the City pursuant to the Installment Purchase Agreement to secure any Subordinated Bonds issued under the Subordinated Indenture, including the Series 2003 Subordinated Bonds, and the interest or profits from the investment of money in any account or fund (other than the Rebate Fund) pursuant to the Subordinated Indenture. The Authority has irrevocably pledged and transferred to the Trustee, for the benefit of the Owners, all of the Authority's rights, title and interest in the right to receive the 2003 Subordinated Installment Payments from the City under the 2003 Supplement.

The Trustee has established and will maintain special trust funds to be held by the Trustee called the Payment Fund and the Reserve Fund. For information on the Reserve Fund, see "Reserve Fund." Within the Payment Fund, the Trustee has established and will maintain the Interest Account, the Principal Account and the Redemption Account, and within the Principal Account, separate Sinking Accounts. Subject to the priorities established in the Installment Purchase Agreement, the City will pay 2003 Subordinated Installment Payments out of the Sewer Revenue Fund to the Trustee for deposit into the Payment Fund so that the principal and interest due on the Series 2003 Subordinated Bonds shall be paid no later than the last Business Day on which such payment is due. Subject to the provisions of the Subordinated Indenture, all money in the Payment Fund will be deposited by the Trustee in the following respective special accounts within the Payment Fund in the following order of priority: (1) Interest Account, (2) Principal Account, and (3) Redemption Account. See APPENDIX D — "SUMMARY OF PRINCIPAL LEGAL DOCUMENTS."

The Sewer Revenue Fund

The City accounts for its wastewater operations through an enterprise fund known as the Sewer Revenue Fund. The Sewer Revenue Fund was established by amendment to the Municipal Code of the City on August 2, 1956. All System Revenues are deposited in the Sewer Revenue Fund.

All moneys in the Sewer Revenue Fund must first be used to pay: (1) all Maintenance and Operation Costs of the Wastewater System; (2) amounts due in respect of Parity Installment Obligations, which secure the Outstanding Parity Bonds; (3) amounts due in respect of all Parity Obligations (other than Parity Installment Obligations, Qualified Take or Pay Obligations or Qualified Swap Agreements); (4) any Qualified Take or Pay Obligation; and (5) any Qualified Swap Agreement. After such payments have been made, any remaining System Revenues must be used to make up any deficiency in the Reserve Funds or Reserve Accounts for Parity Obligations (including restoring the amount of a reserve fund credit facility deposited in the Reserve Fund for Parity Obligations to its pre-draw amount). After such payments have been made, any remaining System Revenues must be used to pay (1) any Subordinated Credit Provider Expenses and (2) amounts due in respect of any Subordinated Obligations, including 2003 Subordinated Installment Payments in an amount equal to the principal of and interest on the Series 2003 Subordinated Bonds. After such payments have been made, any remaining System Revenues must be used to fund or to contribute to, or to make up any deficiency in, the Reserve Funds or Reserve Accounts for Subordinated Obligations (including restoring the amount of a Reserve Fund Credit Facility deposited in the Reserve Fund for Subordinated Obligations to its pre-draw amount). After such payments have been made, subject to certain conditions, then the City may use any remaining moneys in the Sewer Revenue Fund for capital expenditures for the Wastewater System or any other Wastewater System purpose, including the payment of debt service on the Other Outstanding Obligations.

As of the date of issuance of the Series 2003 Subordinated Bonds, there will be no Outstanding Qualified Take or Pay Obligations or Qualified Swap Agreements.

Net System Revenues

"Net System Revenues" means, for any Fiscal Year, System Revenues for such Fiscal Year less Maintenance and Operation Costs of the Wastewater System for such Fiscal Year. The term "System Revenues" is defined in the Installment Purchase Agreement to include all income, rents, rates, fees, charges and other moneys that the City derives from the ownership or operation of the Wastewater System. Notwithstanding the foregoing, there shall be deducted from System Revenues any amounts transferred into the Rate Stabilization Fund, and there shall be added to System Revenues any amounts transferred out of such Rate Stabilization Fund to pay Maintenance and Operation Costs of the Wastewater System. See "Rate Stabilization Fund; Impact of Proposition 218" below. Under the Installment Purchase Agreement, the City has retained the right to transfer ownership of the Metropolitan System. For a more detailed description of this potential transfer of ownership, see "Possible Transfer of Ownership of Metropolitan System" below. Upon any such transfer of the Metropolitan System permitted by the Installment Purchase Agreement, System Revenues shall be deemed to consist of Municipal System Revenues with respect to the City and Metropolitan System Revenues with respect to the transferee. For a more detailed description of System Revenues, Metropolitan System Revenues and Municipal System Revenues, see APPENDIX C — "DEFINITIONS

OF CERTAIN TERMS."

"Maintenance and Operations Costs of the Wastewater System" is defined in the Installment Purchase Agreement to include, among other things, (1) a Qualified Take or Pay Obligation; and (2) the reasonable and necessary costs spent or incurred by the City for maintaining and operating the Wastewater System, calculated in accordance with generally accepted accounting principles, but excluding in all cases (a) depreciation, replacement and obsolescence charges or reserves therefor, (b) amortization of intangibles or other bookkeeping entries of a similar nature, (c) costs of capital additions, replacements, betterments, extensions or improvements to the Wastewater System, which under generally accepted accounting principles are chargeable to a capital account or to a reserve for depreciation, (d) charges for the payment of principal and interest on any general obligation bond theretofore or hereafter issued for Wastewater System purposes, and (e) charges for the payment of principal and interest on any debt service on account of any obligation on a parity with or subordinate to the Installment Payments. "Qualified Take or Pay Obligation" means the obligation of the City to make use of any facility, property or services, or some portion of the capacity thereof, or to pay therefor from System Revenues, or both, whether or not such facilities, properties or services are ever made available to the City for use, and there is provided to the City a certificate of an Independent Engineer to the effect that the incurrence of such obligation will not adversely affect the ability of the City to comply with the rate covenant contained in the Installment Purchase Agreement. Under the Installment Purchase Agreement, the City has retained the right to transfer ownership of the Metropolitan System. For a more detailed description of this potential transfer of ownership, see "Possible Transfer of Ownership of Metropolitan System" below. Upon any such transfer of the Metropolitan System permitted by the Installment Purchase Agreement, Maintenance and Operations Costs of the Wastewater System shall be deemed to be Maintenance and Operations Costs of the Municipal System with respect to the City and Maintenance and Operations Costs of the Metropolitan System with respect to the transferee. For a more detailed description of Maintenance and Operations Costs of the Wastewater System, the Metropolitan System, and the Municipal System, respectively, see APPENDIX C — "DEFINITIONS OF CERTAIN TERMS."

Obligation of City Under Installment Purchase Agreement

Pursuant to the Installment Purchase Agreement, the City commits, absolutely and unconditionally, to make Installment Payments (including the 2003 Subordinated Installment Payments) to the Authority solely from Net System Revenues until such time as the Purchase Price for the Components of the Project financed has been paid in full (or provision for the payment thereof has been made pursuant to the Installment Purchase Agreement). The City will not discontinue or suspend any Installment Payments (including the 2003 Subordinated Installment Payments) required to be made by it under the Installment Purchase Agreement whether or not the Project or any part thereof is operating or operable or has been completed, or its use is suspended, interfered with, reduced, curtailed or terminated in whole or in part, and such Installment Payments (including the 2003 Subordinated Installment Payments) will not be subject to reduction whether by offset or otherwise and will not be conditioned upon the performance or non-performance by any party of any agreement for any cause whatsoever.

Rate Covenant; Impact of Proposition 218

The City has covenanted in the Installment Purchase Agreement to fix, prescribe and collect rates and charges for the wastewater service that will be at least sufficient to pay during each Fiscal Year all Obligations, including Subordinated Obligations but excluding Parity Obligations, payable in such Fiscal Year, and to yield during each Fiscal Year Net System Revenues equal to 120% of the aggregate amount of principal, sinking fund payments and interest payable in respect of Parity Obligations for such Fiscal Year. The City may make adjustments from time to time in such rates and charges including reclassification of users as it deems necessary, but shall not reduce the rates and charges then in effect unless the Net System Revenues from such reduced rates and charges will at all times be sufficient to meet the requirements of the Installment Purchase Agreement. However, for information on the possible limitation on the City's ability to comply with the rate covenant, see "WASTEWATER SYSTEM FINANCIAL OPERATIONS — Impact of Proposition 218 on Sewer Service Rates and Charges."

Possible Transfer of Ownership of Metropolitan System

Under the Installment Purchase Agreement, the City has retained the right to transfer ownership of the Metropolitan System to the San Diego Wastewater Management District (the "District") or another governmental agency whose primary purpose is to provide wastewater treatment and disposal service, provided the District or such entity agrees to assume all obligations of the City under the Installment Purchase Agreement relating to the Metropolitan System and all other obligations relating to the Metropolitan System that are payable from Metropolitan System Revenues, Net Metropolitan System Revenues, System Revenues or Net System Revenues, and provided that the terms and conditions (including certain financial and ratings maintenance covenants) contained in the Installment Purchase Agreement with respect to such transfer are satisfied. Upon any transfer, the City will no longer be responsible for such obligations and such successor entity will be responsible for the obligations. See APPENDIX D — "SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — THE INSTALLMENT PURCHASE AGREEMENT — Covenants of the City — Transfer of Metropolitan System Components."

The California legislature created the District in 1992 to provide wastewater treatment services on a regional basis. The legislation creating the District was an outgrowth of a consensus developed by representatives of the City, the Participating Agencies (defined below) and others to provide a regional approach to wastewater treatment. Initially, the District consisted of 13 member agencies, including the City. As a consequence of unresolved issues relating to cost sharing and governance among the member agencies, the City withdrew from the District. From time to time, certain member agencies have withdrawn from the District and certain others have rejoined. There is nothing preventing any or all of the withdrawing agencies from rejoining the District. The City has made no determinations with respect to whether it will return to the District as a member or whether it will transfer ownership of the Metropolitan System to the District. See "WASTEWATER SYSTEM — The Participating Agencies and the Regional Wastewater Disposal Agreement" for information on the City's obligation to provide the Participating Agencies the right of first refusal on any offer to sell the Metropolitan System.

Rate Stabilization Fund; Impact of Proposition 218

The City has established the Rate Stabilization Fund as a fund within the Sewer Revenue Fund. From time to time, the City may deposit into the Rate Stabilization Fund, from current System Revenues, such amounts as the City shall determine and the amount of available current System Revenues shall be reduced by the amount so transferred. From time to time, the City may transfer amounts on deposit in the Rate Stabilization Fund to the Sewer Revenue Fund solely and exclusively to pay Maintenance and Operation Costs of the Wastewater System, and any amounts so transferred shall be deemed System Revenues when so transferred. All interest or other earnings upon amounts in the Rate Stabilization Fund may be withdrawn therefrom and accounted for as System Revenues. However, for information on the possible limitation on the City's ability to set rates and charges at levels which would permit the City to make deposits into the Rate Stabilization Fund, see "WASTEWATER SYSTEM FINANCIAL OPERATIONS — Impact of Proposition 218 on Sewer Service Rates and Charges." See also Table 14 and certain discussion under the caption "FINANCIAL PROJECTIONS — Projected Operating Results" for currently anticipated deposits into and withdrawals from the Rate Stabilization Fund incident to the currently contemplated Wastewater System Capital Improvement Program.

Bond Insurance

[TO COME]

Reserve Fund

The Reserve Requirement is defined to be, as of any date of calculation, the least of (1) 10% of the proceeds of the Subordinated Bonds; (2) Maximum Annual Debt Service on the Subordinated Bonds for the current or any future Fiscal Year; or (3) 125% of average Annual Debt Service on the Subordinated Bonds. The Authority anticipates that, at the time of delivery of the Series 2003 Subordinated Bonds, the Reserve Requirement will equal $[•]. The Authority may fund the Reserve Requirement by depositing cash from the proceeds of the Series 2003 Subordinated Bonds into the Reserve Fund, by securing a Reserve Fund Credit Facility in like principal amount, or by a combination of both.

At the option of the City, amounts required to be held in the Reserve Fund may be withdrawn, in whole or in part, upon the deposit of a Reserve Fund Credit Facility with the Trustee, in a stated amount equal to the amounts so withdrawn, provided, among other things, that before the deposit of such Reserve Fund Credit Facility, the Rating Agencies are notified of such proposed withdrawal and the deposit of such Reserve Fund Credit Facility will not result in a withdrawal or downgrading of any rating of the Series 2003 Subordinated Bonds then in effect by the Rating Agencies. For purposes of determining if the amount on deposit in the Reserve Fund equals the Reserve Requirement, any Reserve Fund Credit Facility shall be deemed to be a deposit in the face amount or stated amount of such Reserve Fund Credit Facility, less any unreimbursed draws or other amounts not reinstated under such Reserve Fund Credit Facility. Any such withdrawn moneys will be transferred, at the election of the City, to the Acquisition Fund, to the Redemption Account in the Payment Fund, to the Principal Account of the Payment Fund, or to a special account to be established for the payment of any fees in connection with obtaining such Reserve Fund Credit Facility.

To the extent that the Reserve Fund is comprised of both funds on deposit and a Reserve Fund Credit Facility, as may be the case upon the initial issuance of the Series 2003 Subordinated Bonds, withdrawals from the Reserve Fund will be made first from funds on deposit and then from the Reserve Fund Credit Facility. To the extent that the Reserve Fund is replenished by the City, the amount so replenished will be credited first to funds on deposit in the Reserve Fund and then to any Reserve Fund Credit Facility. To the extent that replenishment funds are credited to the Reserve Fund Credit Facility, the Trustee will pay the same to the provider of the Reserve Fund Credit Facility in lieu of retaining such funds in the Reserve Fund, conditioned upon reinstatement of the Reserve Fund Credit Facility for the amount so paid.

If provider of a Reserve Fund Credit Facility makes payments to the Trustee as part of the Reserve Requirement, then the provider would become subrogated to the rights of the recipients of such payments, but such right of subrogation shall be subordinate to the rights of the provider of any policy of municipal bond insurance which has been drawn upon for payment of principal or interest on the Series 2003 Subordinated Bonds.

The Outstanding Parity Bonds are secured by a reserve fund separate and apart from the Reserve Fund securing the Series 2003 Subordinated Bonds. The Owners of the Outstanding Parity Bonds have no claim on the Reserve Fund for the Series 2003 Subordinated Bonds, and the Owners of the Series 2003 Subordinated Bonds have no claim on the reserve fund for the Outstanding Parity Bonds.

Outstanding Parity Bonds

The City has incurred Parity Obligations in the outstanding principal amount of $1,078,290,000 in connection with (1) the Authority's Sewer Revenue Bonds, Series 1993 (Payable Solely From Installment Payments Secured By Wastewater System Net Revenues) (the "Series 1993 Bonds"), issued in the original aggregate principal amount of $250,000,000, of which $213,185,000 is currently outstanding, (2) the Authority's Sewer Revenue Bonds, Series 1995 (Payable Solely From Installment Payments Secured By Wastewater System Net Revenues) (the "Series 1995 Bonds"), issued in the original aggregate principal amount of $350,000,000, of which $323,935,000 is currently outstanding, (3) the Authority's Sewer Revenue Bonds, Series 1997A and 1997B (Payable Solely From Installment Payments Secured By Wastewater System Net Revenues) (collectively, the "Series 1997 Bonds"), issued in the original combined aggregate principal amount of $250,000,000, of which $233,455,000 is currently outstanding, and (4) the Authority's Sewer Revenue Bonds, Series 1999A and 1999B (Payable Solely From Installment Payments Secured By Wastewater System Net Revenues) (collectively, the "Series 1999 Bonds"), issued in the original combined aggregate principal amount of $315,410,000, of which $307,715,000 is currently outstanding (the Series 1993 Bonds, the Series 1995 Bonds, the Series 1997 Bonds and the Series 1999 Bonds are collectively referred to as the "Outstanding Parity Bonds"). The City incurred these Parity Obligations to finance the costs of certain improvements relating to the Metropolitan System and the Municipal System. A portion of the proceeds of the Series 2003 Subordinated Bonds will be used to refund a portion of the Outstanding Parity Bonds. After giving effect to such refunding, the following principal amounts of the Outstanding Parity Bonds will remain Outstanding: (1) $[•]* aggregate principal amount will remain Outstanding with respect to the Series 1993 Bonds; (2) $[•]* aggregate principal amount will remain Outstanding with respect to the Series 1995 Bonds; (3) $[•]*

* Preliminary, subject to change.

aggregate principal amount will remain Outstanding with respect to the Series 1997 Bonds; and (4) $[•]* aggregate principal amount will remain Outstanding with respect to the Series 1999 Bonds. Except with respect to the Installment Payments securing the Outstanding Parity Bonds, the City does not at present have Outstanding any other Parity Obligations.

Other Outstanding Obligations

The City has incurred the Other Outstanding Obligations, which consist of eight revolving fund loan arrangements made to the City by the SWRCB. Each Other Outstanding Obligation is an Obligation under the Installment Purchase Agreement, which means that it is payable from, but not secured by a pledge of or a lien on, Net System Revenues. The right of payment of the Other Outstanding Obligations is subordinated to and ranks junior to the right of the Parity Obligations and the Subordinated Obligations, including payment of the 2003 Subordinated Installment Payments securing the Series 2003 Subordinated Bonds. For a description of debt service on the Other Outstanding Obligations, see "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS — Debt Service Requirements."

The City is considering accepting two more revolving fund loans by the SWRCB in the near future in the aggregate principal amount of approximately $20,414,309. The City anticipates that such new revolving fund loans, if accepted, would mature on [•] and that they would add an additional debt service obligation of the City equal to approximately $402,941.15 in Fiscal Year 2004, $1,008,501.15 in Fiscal Years 2005 through 2011 each such Fiscal Year and [•] in Fiscal Years 2012 through [•] each such Fiscal Year.

Issuance of Additional Obligations

Parity Obligations. The City may not create any Obligations the payments of which are senior or prior in right to the payment made by the City of Parity Obligations. The City may at any time and from time to time issue or create any other Parity Obligations, so long as no Event of Default under the Installment Purchase Agreement has occurred and is continuing and no event of default or Termination Event (as defined in any Qualified Swap Agreement) under any Qualified Swap Agreement has occurred and is continuing, and provided the City obtains or provides a certificate or certificates, prepared by the City or at the City's option by a Consultant, showing that:

(1) the Net System Revenues as shown by the books of the City for any 12 consecutive month period out of the 18 consecutive months ending immediately prior to the incurring of such additional other Parity Obligations shall have amounted to at least 1.20 times the Maximum Annual Debt Service on all Parity Obligations Outstanding during such period; and

(2) the estimated Net System Revenues for the next 12 months following the date of issuance of such other Parity Obligations will be at least equal to 1.20 times the Maximum Annual Debt Service for all Parity Obligations which will be Outstanding immediately after the issuance of the proposed Parity Obligations.

The certificate or certificates with respect to clause (2) above will not be required if, among other things, the Parity Obligations being issued are for the purpose of refunding: (a) then-Outstanding Parity Obligations if at the time of the issuance of such Parity Obligations a certificate of an Authorized City Representative is delivered showing that Debt Service in each Fiscal Year on all Parity Obligations Outstanding after the issuance of the refunding Parity Obligations will not exceed the Debt Service in each corresponding Fiscal Year on all Parity Obligations Outstanding prior to the issuance of such Parity Obligations; or (b) then-Outstanding Balloon Indebtedness, Tender Indebtedness or Variable Rate Indebtedness, but only to the extent that the principal amount of the refunding Parity Obligations (without regard to amounts thereof which after issuance are to be accreted) does not exceed the principal amount of such indebtedness that has been put, tendered to or otherwise purchased by a standby purchase or other liquidity facility relating to such indebtedness. For additional information relating to the terms and conditions for the issuance of the Parity Obligations under the Installment Purchase Agreement, see APPENDIX C — "DEFINITIONS OF CERTAIN TERMS" and APPENDIX D — "SUMMARY OF PRINCIPAL LEGAL DOCUMENTS."

Subordinated Obligations. The City may at any time issue or create other Subordinated Obligations on a parity with the 2003 Subordinated Installment Payments securing the Series 2003 Subordinated Bonds that are payable from Net System Revenues on a basis subordinate to the payment by the City of the Installment Payments securing the Outstanding Parity Obligations and any other Parity Obligations, so long as no Event of Default has occurred and is continuing and no Event of Default or Termination Event (as defined in any Qualified Swap Agreement) under any Qualified Swap Agreement has occurred and is continuing, and provided the City obtains or provides a certificate or certificates, prepared by the City or at the City's option by a Consultant, showing that:

(1) the Net System Revenues as shown by the books of the City for any 12-consecutive month period out within the 18-consecutive months ending immediately prior to the incurring of such additional other Subordinated Obligations shall have amounted to at least 1.00 times the Maximum Annual Debt Service on all Obligations Outstanding immediately after the issuance of the proposed Subordinated Obligations; or

(2) the estimated Net System Revenues for the five Fiscal Years following the earlier of (a) the end of the period during which interest on those Subordinated Obligations is to be capitalized or, if no interest is to be capitalized, the Fiscal Year in which the Subordinated Obligations are issued, or (b) the date on which substantially all new facilities financed with such Subordinated Obligations are expected to commence operations, will be at least equal to 1.00 times the Maximum Annual Debt Service on all Obligations which will be Outstanding immediately after the issuance of the proposed Subordinated Obligations.

The certificate or certificates described above in clause (2) above will not be required (a) with respect to the issuance of the 2003 Subordinated Installment Payments, or (b) if the Subordinated Obligations being issued are for the purpose of refunding (i) then-Outstanding Parity Obligations or Subordinated Obligations if at the time of the issuance of such Subordinated Obligations a certificate of an Authorized City Representative is delivered showing that the sum of Debt Service for all remaining Fiscal Years on all Parity Obligations and Subordinated Obligations Outstanding after the issuance of the refunding Subordinated Obligations will not exceed the sum of Debt Service for all remaining Fiscal Years on all Parity Obligations and Subordinated Obligations Outstanding prior to the issuance of such refunding Subordinated Obligations; or (ii) then-Outstanding Balloon Indebtedness, Tender Indebtedness or Variable Rate Indebtedness, but only to the extent that the principal amount of such indebtedness has been put, tendered to or otherwise purchased by a standby purchase or other liquidity facility relating to such indebtedness. For additional information relating to the terms and conditions for the issuance of the Subordinated Obligations under the Installment Purchase Agreement, see APPENDIX C — "DEFINITIONS OF CERTAIN TERMS" and APPENDIX D — "SUMMARY OF PRINCIPAL LEGAL DOCUMENTS."

Other Outstanding Obligations. The obligation of the City to make all payments required by the Other Outstanding Obligations to the SWRCB is solely from Net System Revenues and is subordinate in right of payment to Parity Obligations and Subordinated Obligations, including the 2003 Subordinated Installment Payments securing the Series 2003 Subordinated Bonds. The Other Outstanding Obligations contain the agreement of the City that the City may incur additional Parity Obligations (the payments of which are senior or prior in right to the payment by the City of its obligations required by the Other Outstanding Obligations, and all other contracts between the City and the SWRCB that, by their terms, expressly provide therefor), provided that:

(1) all Parity Obligations (including the Parity Obligations proposed to be incurred) shall have an "A" rating (without regard to any refinement or gradation of such rating category by a numerical modifier or otherwise) or better by at least two nationally recognized rating agencies; and

(2) the City fixes, prescribes and collects rates and charges for the Wastewater Service which will be sufficient to ensure that Net System Revenues to pay the obligations required by the Other Outstanding Obligations are at least 1.1 times the current year's debt service on the Other Outstanding Obligations.

Rights of Insurer

So long as the Bond Insurance Policy remains in effect and the Insurer is not in default thereunder, the Indenture may be amended with the consent of the Insurer but without the consent of the Owners of the Series 2003 Subordinated Bonds and the Insurer is deemed to be the Owner of all Series 2003 Subordinated Bonds for all purposes of the 2003 Supplement and the Installment Purchase Agreement. See APPENDIX D—"SUMMARY OF PRINCIPAL LEGAL DOCUMENTS — Subordinated Indenture."

SPECIAL CONSIDERATIONS FOR PROSPECTIVE INVESTORS

In connection with the purchase of the Series 2003 Subordinated Bonds, prospective investors should specially consider the following sections:

1. See "ACTIONS RELATING TO TREATMENT OF SEWAGE" below.

2. See "ACTIONS RELATING TO THE COLLECTION SYSTEM" below.

3. See "WASTEWATER SYSTEM — Metropolitan System Facilities — Metropolitan Biosolids Center" below.

THE AUTHORITY

The Authority was established pursuant to a Joint Exercise of Powers Agreement, dated May 14, 1991, as amended to date between the City and the Redevelopment Agency of the City of San Diego. The Authority is intended as a financing vehicle for City facilities and projects. The Authority has no taxing power.

WASTEWATER SYSTEM

The Wastewater System

The Wastewater System consists of (1) the Metropolitan System, which is a regional sewage collection, treatment and disposal system initiated in 1958 (and operational since 1963) to serve the City and various other public agencies including cities situated within common drainage areas, and (2) the Municipal System, which is a municipal sewage collection system for the City's residents. The Metropolitan System was designed to provide sufficient capacity to accommodate a regional population of 2,600,000. The City, as operator of the Metropolitan System, is the holder of two National Pollutant Discharge Elimination System ("NPDES") permits, one of which is for the discharge of sewage at the Point Loma Wastewater Treatment Plant (the "Point Loma Plant") (the "Point Loma Discharge Permit"), and the other of which is for the discharge of sewage at the South Bay Water Reclamation Plant (the "South Bay Reclamation Plant") (the "South Bay Discharge Permit"). As the holder of such permits, the City is responsible for complying with the discharge requirements required under Federal law, including the Clean Water Act. The Metropolitan System, as presently designed, provides advanced primary treatment of sewage at the Point Loma Wastewater Treatment Plant, secondary treatment of sewage at the South Bay Reclamation Plant, and tertiary treatment of sewage at its North City Water Reclamation Plant. The South Bay Reclamation Plant also has the capacity to process sewage to a tertiary treatment level. See "ACTIONS RELATING TO TREATMENT OF SEWAGE — Relief From Secondary Treatment Standards" for information regarding the waiver from secondary treatment standards of the Clean Water Act which the City received on September 13, 2002 and which expires in June 2008.

The map which follows the Table of Contents of this Official Statement shows the sewer service area boundaries of the Wastewater System which covers approximately 450 square miles, including most of the City.

Wastewater System Management

The MWWD manages the Wastewater System. For the Fiscal Year ending June 30, 2004, the MWWD has a $511 million budget and employed approximately 1,055 employees.

The MWWD operates the Wastewater System with funds derived primarily from service charges which are deposited in the Sewer Revenue Fund. The Sewer Revenue Fund was established by amendment to the Municipal Code of the City on August 2, 1956. Funds in the Sewer Revenue Fund are used for the operation, maintenance and capital improvement of the Metropolitan System and the Municipal System.

Metropolitan System Facilities

The current Metropolitan System infrastructure, with the exception of the South Metro Interceptor, is located within the jurisdictional boundaries of the City and is concentrated along a kidney-shaped corridor running from Mission Bay to the north, and along the perimeter of the San Diego Bay to the south. The map that follows the Table of Contents of this Official Statement shows the geographic concentration of the Metropolitan System's infrastructure and identifies the major trunk lines that service the Participating Agencies. The Wastewater System Capital Improvement Program contemplates appropriations of $129.1 million for Metropolitan System facilities during the seven Fiscal Years ending June 30, 2009. A portion of the proceeds of the Series 2003A Subordinated Bonds will be used to finance improvements to the Metropolitan System. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM." Depending on whether the City obtains successive Modified Waivers and if the City obtains clarification of the Ocean Pollution Reduction Act of 1994 ("OPRA") in its favor (whether by judicial or legislative means), the City may be required to incur additional expenditures, which may be substantial and which are not reflected in this amount. See "ACTIONS RELATING TO TREATMENT OF SEWAGE — Special Considerations by Prospective Investors." A portion of the proceeds of the Series 2003A Subordinated Bonds will also be used to refund a portion of the Outstanding Parity Bonds, the proceeds of which originally financed improvements to the Metropolitan System. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS — Plan of Refunding."

The Metropolitan System's infrastructure currently consists of three wastewater treatment plants, two ocean outfalls, a biosolids center, three pump stations and force mains and gravity flow interceptors. A brief description of the current facilities and their primary functions is provided below.

Point Loma Plant. The Point Loma Plant is the principal treatment facility in the Metropolitan System, with a permitted treatment capacity of 240 million gallons per day ("mgd") average daily flow. The Point Loma Plant currently provides advanced primary treatment of sewage in accordance with a waiver from the secondary treatment standards of the Clean Water Act which the City originally received in 1995, and which was renewed for five years on September 13, 2002.

The Point Loma Plant began operation in 1963. The site is part of the Fort Rosecrans military reservation and was acquired by the City from the U.S. Department of the Interior, Bureau of Land Management. From 1963 to 1985, the Point Loma Plant functioned as a primary treatment plant; gravity separation was used to reduce suspended solids levels by 60% before being discharged into ocean. In 1985, the Point Loma Plant was equipped to use chemical coagulants to achieve 75% suspended solids removal. The Point Loma Plant achieves suspended solids removal rates in the 82-85% range through operational improvements of its chemical treatment processes.

The wastewater treatment process currently employed at the Point Loma Plant consists of advanced primary treatment and includes mechanical screening by which raw wastewater flows into the Point Loma Plant through five mechanically self-cleaning 3/8th inch climber screens, and the addition of chemical coagulants to enhance settling to achieve at least 80% removal of suspended solids, sedimentation, and sludge digestion. A digester gas utilization facility is also a part of the Point Loma Plant. Dewatering and disposal of sludge are provided at the Metropolitan Biosolids Center (described below).

Several capital improvement projects have been completed at the Point Loma Plant to rehabilitate, modify and expand various components, and additional capital improvements are planned. In 1994, a capital improvements master plan for the Point Loma Plant was approved that resulted in the build out of the facility to its current maximum hydraulic capacity of 240 mgd. Recently completed capital improvements include construction of two new sedimentation basins for a total of twelve basins, construction of a new effluent channel to all of the sedimentation basins, repair and modernization of four of the six digesters and two additional digesters. Ongoing

capital improvements to the Point Loma Plant are included in the Wastewater System Capital Improvement Program described herein. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM."

North City Water Reclamation Plant. The North City Water Reclamation Plant (the "North City Plant") is a sewage treatment facility providing up to tertiary treatment which commenced operations in September 1997 at its location adjacent to Interstate 805 and Miramar Road in the northwestern quadrant of the City. The North City Plant receives effluent through the North City Tunnel Connector. The North City Plant process includes screening, grit removal, settling, flow equalization, activated sludge processing, tertiary filtration and effluent disinfection. The Metropolitan Biosolids Center, which is described below, digests and dewaters the sludge that is processed at the North City Plant. Support facilities include an administration building, operation and maintenance building and chemical building. The North City Plant has a permitted capacity of 30 mgd average daily flow and is producing 3.3 mgd of reclaimed water each day. The reclaimed water is distributed to users through a reclaimed water distribution system operated by the City's Water Department. Revenues from the sale of reclaimed water are collected by the City's Water Department for deposit in the Water Utility Fund and used to pay for the cost of the reclaimed water distribution system and then operations and maintenance costs for the distribution system. Any revenues in excess of these amounts will be transferred to the MWWD for Metropolitan System costs. Sewage that has been treated at the North City Plant flows to one of two destinations. First, any sewage treated at the North City Plant that is to be discharged into the ocean flows to the Point Loma Plant and is then discharged. Second, sewage that is treated at the North City Plant that is to be used as reclaimed water flows to the Water Department's Northern Water Distribution System and is distributed to customers from there.

South Bay Water Reclamation Plant. The South Bay Reclamation Plant is a recently completed sewage treatment facility that is capable of processing sewage to both secondary and tertiary treatment levels. It commenced operations on May 13, 2002. The South Bay Reclamation Plant is located on Dairy Mart Road west and north of the International Border with Tijuana, Mexico and adjacent to the International Wastewater Treatment Plant. See "International Wastewater Treatment Plant" below. The South Bay Reclamation Plant has a permitted capacity of 15 mgd average daily flow. With start-up of the South Bay Reclamation Plant the City fulfilled the condition under OPRA to provide 45 mgd of reclaimed water capacity within the Wastewater System. See "ACTIONS RELATING TO TREATMENT OF SEWAGE—Relief from Secondary Treatment Requirements" below. The South Bay Reclamation Plant uses a phased tertiary process that allows the tertiary portion of the plant to be bypassed when reclaimed water is not being produced. This design increases efficiency and reduces plant operations and maintenance costs as compared to similar plants not using the bypass design. The City's Water Department is at present seeking customers for reclaimed water in the South Bay area. For example, the City is currently finalizing an agreement with the Otay Water District pursuant to which the Otay Water District will purchase up to 6 million gallons per day of reclaimed water beginning in January 2007. Treated effluent from the South Bay Reclamation Plant flows to the ocean through the South Bay Ocean Outfall. Sludge from the South Bay Reclamation Plant is pumped to the Point Loma Plant and from there to the Metro Biosolids Center for processing.

Point Loma Plant Ocean Outfall. The Point Loma Plant Ocean Outfall was constructed in 1963 to provide a method for disposal of all Point Loma Plant effluent. The original capacity of the 11,316-foot long, 108-inch diameter outfall has been estimated at 390 mgd under the original design configuration. The City commenced construction in 1992 of a 12,500-foot extension of the original outfall (the "Point Loma Plant Ocean Outfall Extension"). The Point Loma Plant Ocean Outfall Extension was completed in November 1993 resulting in a 4.5-mile long outfall discharging treated sewage effluent at a depth of 320 feet of water. It is one of the longest, deepest ocean outfalls in the United States. In January 1998, additional ballasting of the original section of the outfall was completed to provide additional stability on the seabed.

South Bay Ocean Outfall. The South Bay Ocean Outfall, an outfall running seaward from the Tijuana River Valley, was constructed under the auspices of the International Boundary and Water Commission (the "IBWC") and the City, and completed in December 1998. The City was construction manager on the project and has a 39.9% ownership interest in the outfall or approximately 133 mgd of the peak flow capacity of 333 mgd. The 3.5-mile long outfall is now handling flows from Tijuana, Mexico, processed through the International Wastewater Treatment Plant, and the South Bay Reclamation Plant. See "International Wastewater Treatment Plant" below.

Metropolitan Biosolids Center. The Metropolitan Biosolids Center commenced operations in April 1998 on a leased site within the Miramar Marine Corps Air Station located off Highway 52 in the north central portion of the City. The facility is composed of anaerobic digestors, storage tanks, screening and degritting polymer injectors, eight dewatering centrifuges, five thickening centrifuges, a state of the art odor control facility, chemical building, operations and maintenance building and a privately operated cogeneration facility serving the energy needs of both the Metropolitan Biosolids Center and the North City Plant. The facility digests sludge from the North City Plant that is received through the North City Raw Sludge Pipeline. The facility mechanically dewaters the North City Plant digested sludge and sludge digested at the Point Loma Plant and pumped to the facility through a 17-mile long digested sludge pipeline. Completion of the Metropolitan Biosolids Center allowed the City to close its mechanical dewatering and air sludge drying facility on Fiesta Island located in Mission Bay, thereby bringing the City into compliance with the California Coastal Commission's direction and returning 106 acres for recreational use.

The site of the Metropolitan Biosolids Center is leased from the United States Navy under a 50-year lease which expires in 2045. The lease permits the Navy to terminate the lease during its term without the payment of any compensation to the City without cause only in the event of a national or military emergency or with cause if the City were to fail to cure any breaches within 30 days notice from the Navy. If the lease were terminated during its term by the Navy, then the City would be obliged to vacate the site and relocate this facility elsewhere. The existence of this facility is an essential part of the waiver from secondary treatment requirements received by the City described under the caption "ACTIONS RELATING TO TREATMENT OF SEWAGE — Relief From Secondary Treatment Requirements."

A for-profit enterprise operates a cogeneration facility at the Metropolitan Biosolids Center. Under the agreement with the cogeneration operator, the City bears the risk of loss of the value of these facilities of the cogeneration operator should the City's lease with the Navy be terminated. At the option of the City, the value of the facilities is calculated as either a "stipulated purchase price" or as the "fair market value" of the facilities, as each of these terms are defined in the agreement with the for-profit operator. The maximum amount of exposure to the City for the loss of these facilities is $28 million, but such a loss would only arise upon the occurrence of a default by the City or a national or military emergency sufficient to cause the Navy to terminate the lease.

Once sludge is dewatered and digested at the Metropolitan Biosolids Center, the MWWD then disposes of resulting solid waste through landfill disposal, direct land application, or alternate daily cover. See "WASTEWATER SYSTEM REGULATORY REQUIREMENTS — Additional Regulatory Requirements" for information regarding the City's obligation to use its good faith efforts to divert at least 50% of all solid waste from landfill disposal by December 31, 2004.

Pump Stations. There are three pump stations that service the Metropolitan System. Two pump stations began operation in 1963. These pumping facilities are in good condition, and all structures, including wet wells, are expected to last at least another 25 years. The City does not anticipate any major modifications or improvements to these two pump stations except for installation of additional new pumps and motors and overhauls of existing pumps and motors, as needed. The Grove Avenue Pump Station is the Metropolitan System's third pump station. It was completed and began operations in 2002. The Grove Avenue Pump Station was added to the Metropolitan System to pump wastewater to the new South Bay Reclamation Plant.

Interceptors. The Metropolitan System interceptors consist of two major branches, the South Branch and the North Branch, which meet at Pump Station No. 2. Interceptor capacities are normally adequate for current peak flows. The City currently anticipates that additional interceptor capacity will not be required until after 2011, which the City anticipates will be provided by the South Bay Sewer Conveyance System and the South Bay Wastewater Treatment Plant. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM —Capital Improvement Projects — Metropolitan System" for a description of the South Bay Sewer Conveyance System and the South Bay Wastewater Treatment Plant. The interceptors are currently being refurbished to extend their useful lives. Under the Wastewater System Capital Improvement Program, it is contemplated that appropriations of $8.0 million will be made for interceptors during the seven Fiscal Years ending June 30, 2009 to undertake this refurbishment. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM — Capital Improvement Projects — Metropolitan System — Major Interceptors (North and South)" for a description of the

proposed improvements to the interceptors.

International Wastewater Treatment Plant

The International Wastewater Treatment Plant is the IBWC's primary treatment facility in the Tijuana River Valley. The International Wastewater Treatment Plant accepts sewage from Tijuana, Mexico, and treated sewage flows from the International Wastewater Treatment Plant to the South Bay Ocean Outfall, where it is then discharged into the ocean. The International Wastewater Treatment Plant is not owned by the City, is not part of the Metropolitan System, and does not accept any sewage from the Wastewater System.

Municipal System Facilities

The Municipal System consists of over 2,950 miles of trunk and collector mains, 82 sewer pump stations and 16 storm water interceptor pump stations serving in excess of 260,000 customer accounts. Approximately 80% of these accounts are single-family dwellings, 10% are multi-family dwelling accounts and the remaining 10% of these accounts are commercial and industrial (these percentages include multiple accounts at some locations). On average, these accounts generate 123 mgd of wastewater which is conveyed by the Municipal System to the Metropolitan System for treatment and disposal.

The Municipal System has in the past included the San Pasqual Water Reclamation Plant which has a production capacity of one mgd of reclaimed water and was formerly operated by the City's Water Department. The San Pasqual Water Reclamation Plant was transferred to MWWD on July 1, 1997. The San Pasqual Water Reclamation Plant was taken out of service in 2002 when production cost growth made the plant economically inefficient given the size of the customer base for reclaimed water in its service area and the cost of potable water. The City anticipates that the plant will remain inactive for at least five years. If reactivated, the plant process would be converted from the past experimental use of water hyacinths to a sequencing batch reactor plant. The most recent cost estimate for this conversion, prepared in 2002, estimated that it would cost the City approximately $6.5 million to effect this conversion.

Due to numerous recent sewer spills within the Municipal System, the Municipal System's collection system has also been the subject of litigation, an EPA Administrative Order, and actions by the City Council of the City. For a discussion of these recent sewer spills and related actions and litigation, see "ACTIONS RELATING TO COLLECTION SYSTEM" below.

The Wastewater System Capital Improvement Program contemplates appropriations of $877.2 million for Municipal System facilities during the seven Fiscal Years ending June 30, 2009. A portion of the proceeds of the Series 2003B Subordinated Bonds will be used to finance improvements to the Municipal System. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM." A portion of the proceeds of the Series 2003B Subordinated Bonds will also be used to refund a portion of the Outstanding Parity Bonds, the proceeds of which originally financed improvements to the Municipal System. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS — Plan of Refunding."

Additional Contractual Capacity Through the Escondido Plant

In addition to the Metropolitan System facilities and Municipal System facilities described above, the City in 1972 entered into a sewage disposal agreement with the City of Escondido, whereby up to five mgd of sewage emanating from the Rancho Bernardo sewer service area of the City, may be treated at Escondido's Hale Avenue treatment plant (the "Escondido Plant"). This agreement runs for 50 years (1972-2022), and at the City's option may be extended for an unlimited number of ten-year periods. The Escondido Plant is not owned by the City and is not part of the Wastewater System.

Historical Wastewater System Flow

Table 2 below shows total annual system flow through the Point Loma Plant and the Escondido Plant, and

total annual reclaimed water flow through the North City Plant.

Table 2
TOTAL ANNUAL WASTEWATER SYSTEM FLOW IN MILLION GALLONS

Fiscal Year Ended June 30	City Flow through Point Loma Plant[1]	Participating Agency Flow through Point Loma Plant	City Flow through Escondido Plant	Reclaimed Water through North City Plant	Total System Flow	Average MGD For The Year
1965	16,440	6,703	420	0	23,563	65
1970	19,950	9,658	709	0	30,317	83
1975	26,125	13,269	562	0	39,956	109
1980	36,708	17,572	944	0	55,224	151
1985	39,397	20,246	1,218	0	60,861	167
1990	48,628	20,836	1,405	0	70,869	194
1995	46,802	19,724	1,321	0	67,847	186
1996	46,848	19,115	1,325	0	67,288	184
1997	47,326	20,048	1,252	0	68,626	188
1998	50,619	21,109	1,509	100	73,337	201
1999	45,117	20,934	1,319	745	68,115	187
2000	44,771	21,489	1,401	1,267	68,928	188
2001	44,735	21,437	1,412	879	68,464	188
2002	43,395	21,326	1,316	958	66,995	184

(1) All sewage that is treated at the North City Plant that is discharged into the ocean is discharged through the Point Loma Plant.

Source: MWWD.

For the Fiscal Year ended June 30, 2002, the Metropolitan System (181 mgd) and the Escondido Plant (3 mgd) on a daily basis treated and disposed of more than 184 million gallons of sewage per day generated by approximately two million residents and businesses within the Metropolitan System service area and the Rancho Bernardo service area. Although the City completed the South Bay Reclamation Plant in calendar year 2002 and treated sewage in Fiscal Year 2003, the Point Loma Plant continues to treat comparable flows as in prior periods. The City estimates that for the Fiscal Year 2003, the South Bay Reclamation Plant treated an average of approximately 4.5 mgd of the flow of the Wastewater System.

The Participating Agencies and the Regional Wastewater Disposal Agreement

The Metropolitan System provides "wholesale" treatment services, including some sewage transportation, treatment and disposal operations to the cities of Chula Vista, Coronado, Del Mar, El Cajon, Imperial Beach, La Mesa, National City, Poway, and to the districts of the East Otay Sewer Maintenance District, the Lakeside/Alpine Sanitation District, Lemon Grove Sanitation District, the Otay Water District, the Padre Dam Municipal Water District, the Spring Valley Sanitation District and the Winter Gardens Sewer Maintenance District (those cities and districts being collectively referred to as, the "Participating Agencies") pursuant to the Regional Wastewater Disposal Agreement, effective June 24, 1998 (the "Regional Wastewater Disposal Agreement"). The Regional Wastewater Disposal Agreement replaces separate sewage disposal agreements between the City and the Participating Agencies (other than the East Otay Sewer Maintenance District) that were entered into as early as 1960. The Participating Agencies and the City are responsible for the "retail" collection operations within their respective jurisdictions. The Participating Agencies also transport collected sewage through large trunk lines to the Metropolitan System. The collection systems and many of the transport trunk lines are owned by the individual Participating Agencies.

Key provisions of the Regional Wastewater Disposal Agreement include:

Term of Regional Wastewater Disposal Agreement. The Regional Wastewater Disposal Agreement

expires on December 31, 2050. On or before December 31, 2040, the parties are to begin discussions on an agreement to provide wastewater treatment services beyond the year 2050.

Ownership and Operation of the Metropolitan System. The City has full ownership of the Metropolitan System, including all additions to the Metropolitan System and facilities constructed pursuant to the Regional Wastewater Disposal Agreement. The City, in consultation with the Metro Commission described below, has the right to make all decisions with respect to the planning, design, construction, operation and maintenance of the Metropolitan System.

System of Charges. The Participating Agencies agree to pay the City a Sewer System Charge and New Contract Capacity Charge. The Sewer System Charge is an annual calculation, billed quarterly and based on flow and strength coming into the Metropolitan System. The New Contract Capacity Charge is an amount agreed to be paid by any Participating Agency for the right to discharge any new or additional capacity into the Metropolitan System beyond its existing allotted capacity.

Payment for Metropolitan System Facilities. All parties agree to proportionate payment based on flow and strength for all facilities, including water reclamation facilities (but excluding any water reclamation distribution pipelines), necessary to expand the Wastewater System as specified in the Regional Wastewater Disposal Agreement. The facilities listed in the Regional Wastewater Disposal Agreement include all facilities required to comply with the Clean Water Act and OPRA. See "ACTIONS RELATING TO TREATMENT OF SEWAGE." The Participating Agencies are limited to an advisory role in decisions regarding the Metropolitan System's capital improvements.

Maintenance and Operations Costs. All parties agree to proportionate payment of operation and maintenance costs of all Metropolitan System facilities based on their proportionate flow in the Metropolitan System and the strength of their wastewater in relation to the aggregate of all parties.

Limitation on Types and Condition of Wastewater. Each Participating Agency will comply with all applicable laws, rules and regulations including its regulatory obligations associated with the discharge of wastewater into its respective system and from such system into the Metropolitan System. Enforcement responsibilities, however, are not specified. The Regional Wastewater Disposal Agreement does not affect the validity of the existing interjurisdictional pretreatment agreements (dealing with responsibility for regulating industrial waste) or the separate transportation agreements (dealing with charges for conveyance of wastewater from Participating Agency collection systems to the Metropolitan System through City owned trunk lines).

Right of First Refusal For Sale of Metropolitan System. The City may not sell or agree to sell the Metropolitan System without first offering it to the Participating Agencies (including a Participating Agency, a group of Participating Agencies or a third party representing one or more Participating Agencies). If the City transfers ownership of the Metropolitan System, the City's successor shall be bound by the terms of the Regional Wastewater Disposal Agreement. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Possible Transfer of Ownership of Metropolitan System."

Metro Commission. The Metro Commission consists of one representative from each Participating Agency and is created to advise the City on matters affecting the Wastewater System. Although the Metro Commission may make recommendations to the City, the City retains ownership and decision-making authority over all elements of the Metropolitan System.

Dispute Resolution. Disputes between the City and any Participating Agency are subject to mediation and arbitration; however, all payments must be maintained without interruption. There have been no disputes among the parties since the execution of the Regional Wastewater Disposal Agreement.

Reclamation of Water. The Regional Wastewater Disposal Agreement also provides that revenue from the sale of reclaimed water from the North City Plant will be collected by the City's Water Department for deposit in the Water Utility Fund and used to pay for the cost of the reclaimed water distribution system and then operation and

maintenance for the distribution system. Any revenues in excess of these amounts will be transferred to the MWWD for Metropolitan System costs. Except for the foregoing, all compensation from the sale of Metropolitan System byproducts, including reclaimed water, are Metropolitan System revenues and are used to offset operation and maintenance costs.

For the Fiscal Year ended June 30, 2002, out of a total average daily sewage flow of 180.97 million gallons, the total City flow through the Metropolitan System was 122.56 million gallons, or 67.05% of the total flow. This overall proportion of the flow from the City and from the Participating Agencies is expected to continue.

The Participating Agencies in the Metropolitan System are listed in the following table, together with the estimated population, present capacity rights (in mgd), and the percentage of total capacity represented by the capacity rights. The communities and agencies served by the Wastewater System form the second largest integrated metropolitan area in the State of California surpassed only by the Los Angeles metropolitan area.

Table 3
METROPOLITAN SYSTEM
CITY AND PARTICIPATING AGENCIES FLOW AND CAPACITY RIGHTS
Fiscal Year Ended June 30, 2002

Participating Agencies	Estimated Population[1]	Capacity Rights (in mgd)	% of Total Capacity	Flow (mgd)[3]	% of Total Flow
City of Chula Vista[2]	190,238	19.843	8.268%	15.186	8.565%
City of Coronado	16,160	3.078	1.283	2.215	1.249
City of Del Mar	5,000	0.821	0.342	0.705	0.398
City of El Cajon	96,000	10.260	4.275	8.346	4.707
City of Imperial Beach	29,000	3.591	1.496	2.152	1.214
City of La Mesa	56,000	6.434	2.764	4.785	2.70
City of National City	54,000	7.141	2.975	5.15	2.906
City of Poway	43,000	5.630	2.346	3.734	2.106
East Otay Sewer Maintenance District		1.00	0.417		
Lakeside/Alpine Sanitation District	38,000	4.586	1.911	3.183	1.795
Lemon Grove Sanitation District	26,900	2.873	1.197	2.312	1.304
Otay Water District	3,800	1.231	0.513	0.39	0.22
Padre Dam Sanitation District	58,300	5.882	2.451	3.274	1.847
Spring Valley Sanitation District	88,000	9.808	4.087	6.076	3.427
Winter Gardens Sewer Maintenance District	11,000	1.241	0.517	.913	0.515
SUBTOTAL	715,438	83.619	34.841	58.42	32.95
City of San Diego	1,270,000	156.381	65.159	122.562	67.05
TOTAL:	**1,985,438**	**240.000**	**100.000%**	**180.97[4]**	**100.00%**

(1) Source: Participating Agencies. Population served by Metropolitan System.
(2) Included as Participating Agency since May 15, 2000.
(3) Average for Fiscal Year. Includes inter-agency flows between individual Participating Agencies.
(4) Total flow in Table 3 (181 mgd) differs from Table 2 (184 mgd) because Table 2 includes City flow through the Escondido Plant and reclaimed water at the North City Plant.

Source: MWWD

As the foregoing table illustrates, the Participating Agencies are currently not utilizing all of their capacity rights for sewage treatment and disposal.

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June 20, 2003

WASTEWATER SYSTEM REGULATORY REQUIREMENTS

General

The Clean Water Act subjects the Wastewater System to numerous regulatory requirements. The EPA, the California State Water Resources Control Board (the "State Board"), and the San Diego Regional Water Quality Control Board (the "Regional Board") each administer these regulatory requirements of the Clean Water Act. Regulations of these agencies primarily address the quality of effluent that may be discharged from the Wastewater System, the disposal of sludge generated by the Wastewater System, and the nature of waste material (particularly industrial waste) discharged into the collection system.

Enacted in 1972, the Clean Water Act was a comprehensive revision of prior federal water pollution control by requiring operators of wastewater treatment plants to obtain and be regulated by a National Pollution Discharge Elimination System ("NPDES") permit that controls and regulates all discharges of pollutants. The NPDES permit sets effluent limitations on what is discharged into any public waters and prohibits any non-authorized discharges such as sewer system overflows from the collection system that transports the sewage to the treatment plant. Because, at present, all of the Wastewater System's sewage that is discharged into the ocean is discharged through either the Point Loma Plant or the South Bay Reclamation Plant, they must each obtain an NPDES permit authorizing them to discharge sewage into the ocean (these permits are referred to herein as the "Point Loma Discharge Permit" and the "South Bay Discharge Permit," respectively). The City must renew the Point Loma Discharge Permit and the South Bay Discharge Permit every five years.

Treatment of Sewage

Since the United States Congress enacted the Clean Water Act in 1972, the Point Loma Plant has been the subject of multiple waiver applications, litigation, and additional legislation related to the secondary treatment requirements of the Clean Water Act. See "ACTIONS RELATING TO TREATMENT OF SEWAGE" below.

Collection System

Due to numerous recent sewer spills within the Municipal System, the Municipal System's collection system has also been the subject of litigation, an EPA Administrative Order, and actions by the City Council of the City. The City Council has adopted an accelerated program of replacing and rehabilitating pipeline to reduce these sewer spills. According to that program, the City will use the majority of the proceeds of the Series 2003B Subordinated Bonds to improve and replace the Municipal System's collection system to reduce the number of sewer spills. For information regarding these issues, see "ACTIONS RELATING TO COLLECTION SYSTEM" below.

Industrial Waste Program

To comply with other federal regulations concerning the discharge of waste materials into the Wastewater System, the City must administer and enforce industrial pretreatment limitation standards upon industrial users of the Wastewater System. The City has had an industrial waste program in effect since the early 1970s. The City's industrial waste ordinance sets forth water quality standards that industrial users must meet and provides enforcement procedures for violators. The Industrial Waste Division of the MWWD is currently responsible for regulating 1,678 permitted industries located in the Metropolitan System service area. In addition, each Participating Agency is required to permit and monitor all industries within its respective service area. While each Participating Agency as a condition of the Regional Wastewater Disposal Agreement is required to comply with quality standards set by the City, the City, at the urging of the EPA, has required separate pretreatment agreements with each Participating Agency to ensure industrial pretreatment requirements are met. All Participating Agencies have entered into such pretreatment agreements.

Additional Regulatory Requirements

As a condition of having received federal EPA grant funds under the Clean Water Act for the planning and

construction of various improvements to the Wastewater System, the City is subject to additional regulatory requirements. For example, a federal EPA grant of approximately $76 million that the City received and used for the construction of the North City Plant provides that the City shall attempt to meet the goal of beneficial reuse of 25% of the flows treated at the North City Plant by December 31, 2003 and 50% by December 31, 2010. The City estimates that for the Fiscal Year ended June 30, 2003, beneficial reuse was approximately 17% of the North City Plant flows. The City is currently extending the distribution system to increase the volume of beneficial reuse and evaluating various alternatives for compliance with these goals. If the City were found by the EPA to have not made a good faith effort to meet the conditions of this grant, the City could be required to return the grant monies to the EPA.

Among other grant-related requirements are guidelines which must be followed concerning planning methodologies, design criteria, construction activities, and the operation, maintenance and financing of facilities. As another condition of its past receipt of federal grants, the State Board, as the delegate of the EPA, must approve the sewer service charge structures of the City and the Participating Agencies. Such service charge structures require the recovery of annual operations, maintenance and replacement costs from users of the system in a proportionate manner according to the customer's level of use. Such factors as volume, infiltration/inflow, delivery flow rate, and strength of sewage are to be considered for determining proportionate use. Sewer service charge rates for all retail users are reviewed periodically and established at a level necessary to generate sufficient revenues to recover the annual operations, maintenance and replacement costs. Sewer service charge rates for users are established to recognize the volume and strength characteristics of wastewater contributed to the Wastewater System. The City's rate structure has been reviewed by the State Board and no grant funds or costs under grant funded programs have been disallowed based on the nature of the rate structures.

In addition to federal requirements, the City must also comply with effluent water-quality based State requirements, otherwise known as the State Ocean Plan. Another State law concerned with control of water quality is the Porter-Cologne Water Quality Control Act of 1969, as amended. The Porter-Cologne Act directly addresses the issues of water reclamation and reuse. A declared policy of the law is that the people of the State of California have a primary interest in the development of facilities to reclaim wastewater to supplement existing surface and underground water supplies to meet their water requirements. The legislative intent was to undertake all possible development of water reclamation facilities to make reclaimed water available for use. The law requires the State Department of Health Services to establish statewide reclamation criteria for each type of use where such use involves public health. The City's proposed water reclamation projects are subject to the Porter-Cologne Act and are being designed in consultation with State officials to comply with its requirements. Furthermore, a different State law requires that the City make a good faith effort to divert at least 50% of all solid waste from landfill disposal by December 31, 2004. For the current calendar year to date, the City estimates that it is diverting approximately 42% of solid waste from landfill disposal.

ACTIONS relating to treatment of sewage

General

In general, the Clean Water Act requires that all wastewater treatment plants in the nation provide secondary treatment for sewage before it is discharged into waterways. The Clean Water Act directs the EPA to enforce this requirement. The Clean Water Act allows wastewater treatment plants to apply for a waiver from the secondary treatment standards for certain ocean discharges (a "Treatment Waiver"). The Clean Water Act grants the EPA the discretion to grant or deny any Treatment Waiver. When the EPA grants or denies a Treatment Waiver, the EPA's action is difficult to reverse.

To renew the Point Loma Discharge Permit and the South Bay Discharge Permit, the City must comply with the secondary treatment requirements of the Clean Water Act, or obtain a Treatment Waiver. Since the enactment of the Clean Water Act, the Point Loma Plant only treats sewage to an advanced primary treatment level, and has relied on successive Treatment Waivers to discharge sewage into the ocean. The South Bay Reclamation Plant complies with the secondary treatment requirements of the Clean Water Act, and, thus, has no need for a Treatment Waiver.

Between 1979 and 1987, the City submitted an application, and augmented the same from time to time, for a Treatment Waiver for the Point Loma Plant. This effort was unsuccessful, and the application was withdrawn in February 1987. Since the Point Loma Plant did not provide secondary treatment of sewage that it discharged into the ocean, after the City withdrew its waiver application in 1987, the Point Loma Plant failed to comply with the Clean Water Act. This, in part, led to the litigation and Final Order that are discussed under "EPA Litigation and Final Order" below. As a result of that litigation and the Final Order, the City Council directed the City's staff to renew its efforts to obtain a Treatment Waiver. As a result of these efforts, at the request of the City, the United States Congress adopted The Ocean Pollution Reduction Act of 1994 ("OPRA"), which was special legislation allowing the City to apply for a Treatment Waiver even though the deadline to apply for a Treatment Waiver had expired. See "Relief From Secondary Treatment Requirements" below.

As is discussed in more detail below, the City believes that the Wastewater System complies with all federal and state laws regulating the discharge of sewage from the Point Loma Plant (by virtue of the current Modified Waiver (as defined below)) and the South Bay Reclamation Plant (by virtue of complying with the secondary treatment requirements of the Clean Water Act).

EPA Litigation and Final Order

In July 1988, the United States of America, acting through the Department of Justice and the EPA, and the State of California sued the City for alleged violations of the Clean Water Act and the Point Loma Discharge Permit due to sewer overflows, failure to meet the secondary treatment requirements of the Clean Water Act, and alleged irregularities in the City's pretreatment program that regulates industrial waste. As a result of this lawsuit, the court issued a penalty of $3,000,000, $500,000 of which the City paid to the U.S. Treasury, and $2,500,000 of which the City satisfied by means of an optional credit project. To resolve future violations of the secondary treatment requirements of the Clean Water Act, the City requested Congress adopt OPRA, which it did in 1994. See "Relief from Secondary Treatment Requirements" below. In addition, the City and the EPA agreed to a stipulated final order (the "Final Order"). Under court supervision, the Final Order required certain improvements to the Wastewater System, all of which the City has completed. The Final Order contemplates supervision through June 30, 2003, at which time it may be terminated upon a showing of completion of all requirements. **[Place status of termination as of the date of the printing of the POS]**

Relief From Secondary Treatment Requirements

OPRA and its Conditions. As described above under "General," after eight years of efforts to obtain from the EPA a Treatment Waiver from the secondary treatment requirements of the Clean Water Act, the City discontinued its efforts to obtain a Treatment Waiver in 1987. In 1994, the City, with the support of the federal court, renewed its efforts to seek a Treatment Waiver, and on October 31, 1994, at the request of the City, the United States Congress adopted OPRA, which amended the Clean Water Act. OPRA allowed the City to apply for a Treatment Waiver, but also imposed certain conditions on the City. These conditions required, among other things, that the City:

(1) implement a wastewater reclamation program that would achieve a system capacity of 45 mgd of reclaimed wastewater per day by January 1, 2010;

(2) remove not less than 80% of total suspended solids (on a monthly average) in the discharge of the Point Loma Plant;

(3) remove not less than 58% of the biological oxygen demand ("BOD") (on an annual average) in the discharge of the Point Loma Plant; and

(4) reduce the quantity of suspended solids discharged by Wastewater System into the Pacific Ocean over the five-year period of the waiver.

The City has satisfied OPRA requirement (1) above by constructing facilities necessary to achieve the

45 mgd system capacity of reclaimed water. The City completed the North City Plant in 1997 with a reclaimed wastewater capacity of 30 mgd, and the City completed the South Bay Reclamation Plant in 2002 with a reclaimed wastewater capacity of 15 mgd. The Point Loma Plant has consistently met or exceeded the 80%-removal requirement for suspended solids in OPRA requirement (2) above. However, considerable disagreement has arisen regarding whether OPRA requirements (3) and (4) above apply only to the initial Modified Waiver or whether they also apply to Modified Waivers applied for after the EPA approved the initial Modified Waiver. See "Interpretation Disagreement with OPRA" below.

EPA's Granting of Modified Waivers. Subject to OPRA's conditions, the City filed an application for a Treatment Waiver in April of 1995, and the EPA granted the Point Loma Plant a Treatment Waiver on November 9, 1995 (a Treatment Waiver granted pursuant to OPRA is referred to herein as a "Modified Waiver"). As the Point Loma Discharge Permit is valid for only five years, every five years the City must seek a renewal of its Modified Waiver if it seeks to renew the Point Loma Discharge Permit without complying with the secondary treatment requirements of the Clean Water Act. Toward the end of the first Modified Waiver period, the City, the EPA and certain environmental groups disagreed regarding how OPRA's requirements apply to future Modified Waivers. See "Interpretation Disagreement with OPRA" below. This delayed the City's application for a second Modified Waiver, and the duration of the first Modified Waiver and the deadline for approval or denial of the second Modified Waiver were, as a consequence of these disagreements, extended.

The City filed its renewal application for a Modified Waiver on April 11, 2001. After the EPA reviewed the application, it issued a Tentative Decision and Tentative Order (the "Tentative Order") granting the renewal application on February 11, 2002. The Tentative Order was subject to the approval of the California Coastal Commission and the Regional Board. In September 2002, after reconsideration of a prior negative ruling at the City's request, the Coastal Commission approved the.Tentative Order for the Modified Waiver. The Regional Board approved the Tentative Order but reduced the discharge requirement for suspended solids limit during the first four years of the Modified Waiver period from the EPA-allowed 15,000 metric tons per year to 13,995. On appeal to the State Board, the 15,000 metric tons per year provision was restored. For the calendar year 2002, the quantity of the suspended solids discharged into the Pacific Ocean by the Wastewater System was 10,146 metric tons. With the necessary two State approvals achieved, the EPA renewed the Modified Waiver until June 2008. However, if as a result of the litigation described below the OPRA limit of the discharge of suspended solids is lowered, the City will be required to meet that limit as a condition of the current Modified Waiver.

Interpretation Disagreement with OPRA. The City, the EPA, and certain environmental groups disagree as to whether certain of OPRA's conditions apply to Modified Waivers applied for after the EPA approved the initial Modified Waiver. The City believes that OPRA requirements (3) and (4) no longer apply to any Modified Waivers. Whereas the EPA and certain environmental groups believe that OPRA requirements (3) and (4) apply to all Modified Waivers, the EPA and those environmental groups disagree as to the permissible limit of suspended solids in OPRA requirement (4).

These interpretation disagreements are the subject of two administrative appeals and a lawsuit. The City has appealed the part of the Tentative Order requiring the City to comply with OPRA requirements (3) and (4) to the Environmental Appeals Board ("EAB"). In addition, three environmental groups have appealed the EPA's issuance of the current Modified Waiver to the EAB. Also, an environmental group filed an action in Superior Court in San Diego County challenging the State Board's reinstatement of the 15,000 metric ton per year limit of suspended solids. All of these actions have been stayed as the parties discuss possible legislative amendments to OPRA that would address all parties' concerns. If these actions proceed, they will contest the interpretation and continuing applicability of OPRA requirements (3) and (4).

Special Considerations by Prospective Investors

Prospective investors should consider with particular attention two of the risks that OPRA, the Clean Water Act, and the related the lawsuits create for the Wastewater System and for the City.

First, OPRA does not create a vested right in the City to obtain Modified Waivers. Under the Clean Water

Act, the EPA has the discretion to grant or deny Treatment Waivers, and OPRA did not change this with respect to the Modified Waivers. Although the City has obtained the two successive Modified Waivers from the EPA, the City can give no assurances that the EPA will grant Modified Waivers to the City in the future.

If the City does not obtain a renewal of its next Modified Waiver (or any subsequent Modified Waiver), the City may no longer be permitted to continue discharging sewage from the Point Loma Plant without complying with the secondary treatment requirements of the Clean Water Act. The City, at present, is considering two alternatives to address this contingency. One of these contemplates upgrading the Point Loma Plant with conventional secondary treatment capabilities. This alternative would include building a new treatment plant in the south bay (which would be the South Bay Wastewater Treatment Plant) to recover lost flow capacity that would accompany any reconstruction of the Point Loma Plant. The City is also considering another alternative to implement a new process of treating sewage at the Point Loma Plant that may entail less capital costs but would entail more maintenance and operation costs. The City has yet to verify the effectiveness of this new process. Any additional capital or maintenance and operation expenditures that the City incurs under either of these alternatives are not reflected in Table 4 or in Table 14. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PLAN" and "FINANCIAL PROJECTIONS" below.

Second, the City believes that it will comply with OPRA requirement (4) for at least until the expiration date of the current Modified Waiver, which is June 2008, regardless of OPRA's interpretation and continuing applicability. However, the historical flow of the Wastewater System has consistently remained at the lower end of the amount of sewage that industry standards predict. This means that the quantity of sewage flows within the Wastewater System could rise even without a proportionate increase in the area's population, and, in any event, the amount of sewage flow may increase as the population increases. Any increase in the amount of sewage flow may also increase the number of metric tons of suspended solids. If the quantity of suspended solids that the Wastewater System discharges into the Pacific Ocean increases above the levels required by OPRA (as finally determined), based on present considerations, the City would be required to build additional solids processing facilities to reduce the burden at the Point Loma Plant, or the City may bring the Point Loma Plant into compliance with the secondary treatment requirements of the Clean Water Act. Any additional capital or maintenance and operation expenditures that the City incurs under either option are not reflected in Table 4 or in Table 14. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PLAN" and "FINANCIAL PROJECTIONS" below.

actions relating to collection system

General

As described above, the Clean Water Act and the NPDES permit system set both effluent limitations on the discharge of pollutants at treatment plants and generally prohibit the discharge of pollutants into navigable waterways from the collection system that transports the sewage to the treatment plants. Such prohibited discharges from the collection system are also subject to injunctive or penalty proceedings by the Regional Board. Therefore, the Point Loma Discharge Permit and the South Bay Discharge Permit, and State law, prohibit unauthorized discharges from the collection system and require proper operation and maintenance of the Municipal System's collection system.

Despite the City's efforts, blockages of the Municipal System's collection system occur and cause sewer spills. 365 sewer spills in the Municipal System's collection system were reported in 2000, 238 in 2001, and 215 in 2002. Although the number of sewer spills has declined, concerns regarding sewer spills have nevertheless been considerable. The City Council adopted an accelerated program to replace and rehabilitate components of the Municipal System's collection system. See "Accelerated Program of the City Council" below. In addition, environmental groups and the EPA have pursued judicial and administrative relief detailed below to ensure that the improved operation and maintenance of the Municipal System's collection system is sustained or accelerated. See "EPA Administrative Order Relating To Sewer Spills" and "Litigation Regarding Collection System" below.

Accelerated Program of the City Council

As a result of the increasing concerns related to the deficiencies in the Municipal System's collection system, in May 2002 the City Council approved an accelerated program to replace and to rehabilitate sewer mains, trunk sewers, and pump stations within the Municipal System. In connection with this accelerated program, the City Council established the goal of reducing sewer spills from 10.3 spills per 100 miles of sewer to 6.6 spills per 100 miles by calendar year 2006. In as much as no "safe harbors" for spill volumes exist, it is uncertain whether achieving these goals will satisfy the EPA or otherwise be adequate.

EPA Administrative Order Relating To Sewer Spills

The adequacy of the City's municipal sewage collection system is also the subject of an Administrative Order issued on April 16, 2002 by the EPA. The Administrative Order requires specified actions to control sewage spills from the Municipal System's collection system. The Administrative Order is a non-judicial enforcement tool under the Clean Water Act that enables the EPA to require specified remedial actions without court involvement. The Administrative Order of April 16, 2002 requires studies, system cleaning, system inspection, and rehabilitation of at least 60 miles of sewer pipe annually for ten years, beginning in 2004.

To date, the City is fully complying with the Administrative Order, has submitted all documents as required and is preparing for the required pipe rehabilitation and replacement, some of which are planned to be accomplished with a portion of the proceeds of the Series 2003B Subordinated Bonds. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM — Municipal System." With the litigation described below and the EPA's Administrative Order covering the same collection system elements, the EPA has indicated it will be filing its own complaint in federal court to ensure uniformity of court supervised remedies to the Wastewater System.

The capital improvements and maintenance and operation expenses necessary to comply with EPA's Administrative Order and to implement the accelerated program adopted by the City Council have been included into Table 4 and Table 14. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PLAN" and "FINANCIAL PROJECTIONS" below.

Litigation Regarding Collection System

On April 2, 2001, two environmental groups filed suit against the City alleging that the Municipal System's collection system was deficient as a result of sewer spills from December 1996 to the time of the filing. The complaint seeks injunctive relief to prevent illegal discharges, a compliance schedule to upgrade the Municipal System's collection system, and civil penalties of $27,500 per day for each day of a violation. The City contests the plaintiffs' claims. The parties have met several times to negotiate a settlement. Since the case involves the adequacy of the Municipal System's collection system, any settlement may involve upgrades to the Municipal System's collection system infrastructure, some of which may already be planned to be accomplished with a portion of the proceeds of the Series 2003B Subordinated Bonds. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROJECTS — Capital Improvement Projects — Municipal System." If a negotiated settlement cannot be reached, a federal court trial will decide the nature of the necessary upgrades.

Special Considerations for Prospective Investors

Given the early stages of the litigation, and the uncertainty as to the nature and scope of any EPA parallel litigation, it is not possible to predict the ultimate outcome of either. Should an order be entered against the City in the litigation described above or any parallel action brought by the EPA, the City could be required to submit to a Municipal System replacement, maintenance, and operational schedule that is more or less demanding than the goals contemplated by the City Council approved accelerated program, and subsequent judicial oversight. If a court were to require significantly greater or accelerated capital or maintenance and operation expenditures, the City may incur financial obligations to satisfy such requirements substantially in excess of those specified in or contemplated by Table 14 herein. See "FINANCIAL PROJECTIONS" below. Approximately $630 million of the amount set forth in Table 4 under the expected capital improvement appropriations for the Municipal System will be appropriated through Fiscal Year 2009 to implement the accelerated program and to comply with the EPA's Administrative Order. See "WASTEWATER SYSTEM CAPITAL IMPROVEMENT PLAN" below. Approximately $202 million of the

"Total Maintenance and Operation Costs" projected on Table 14 below are projected through Fiscal Year 2009 to implement the accelerated program and the EPA's Administrative Order. See "FINANCIAL PROJECTIONS" below. The City anticipates that additional capital expenditures and maintenance and operation expenditures will be incurred beyond Fiscal Year 2009 to implement the accelerated program and the EPA's Administrative Order.

WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM

Background

As described above under "ACTIONS RELATING TO TREATMENT OF SEWAGE," in July 1988 the City was sued for alleged violations of the Clean Water Act and certain other matters and was later required to improve the Wastewater System. As a result, the City embarked on a major capital improvement program for its Wastewater System in 1993. As of the date of this Official Statement, a number of major projects have been completed. For a description of the completed projects, see APPENDIX H — "DESCRIPTION OF COMPLETED PROJECTS."

At present, the Wastewater System Capital Improvement Program contains projects to upgrade the Metropolitan System and the Municipal System. Certain of these projects have been added to the Wastewater System Capital Improvement Program since 1999. All of the Metropolitan System projects and the budgeting for the Municipal System projects are managed by the MWWD. The predesign, design, project cost estimating and construction management processes for the Municipal System projects, as well as other City-wide capital improvement projects, are managed by the Engineering and Capital Projects Department of the City. Table 4 shows the current contemplated projects for which appropriations will be made during the period July 1, 2002 through June 30, 2009.

The expected appropriations of the Wastewater System Capital Improvement Program set forth on Table 4 below reflect a greater focus on the Municipal System than the Metropolitan System.

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Table 4
EXPECTED WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM APPROPRIATIONS
(July 1, 2002 through June 30, 2009)

Expected Projects	Estimated Amounts[1] (In Millions)
Metropolitan System Projects	
Point Loma Plant Upgrade	$38.4
South Bay Sewer Conveyance System	37.4
South Bay Reclamation Plant[2]	(2.7)
South Bay Wastewater Treatment Plant[3]	- 0 -
Major Interceptors (North & South)	8.0
Mission Valley Water Reclamation Plant[2]	(1.2)
Centrate Treatment Facility	.1
Environmental Monitoring & Technical Services Lab	10.8
Other Metropolitan System Projects	38.3
Subtotal Metropolitan System Projects	129.1
Municipal System Projects	
Annual Allocation Sewer Mains Replacement	$440.1
Annual Allocation Trunk Sewers Replacement	76.7
Annual Allocation Trunk Sewer Rehabilitation	60.0
Annual Allocation Pump Station Restoration	40.5
Annual Allocation – Accelerated Projects	38.0
Other Annual Allocations	6.1
Brine Management Program[2]	(3.3)
Trunk Sewer Projects	181.8
Other Municipal System Projects	37.3
Subtotal of Municipal System Projects	877.2
TOTAL	**$1,006.3**

(1) Reflects amounts expected to be appropriated during the period indicated without regard to the timing of expenditure of such amounts. See Table 5 for the timing of expenditures.
(2) Dollar numbers that are in parenthesis denote deappropriations for completed, delayed, or deleted projects.
(3) The South Bay Wastewater Treatment Plant project has been rescheduled beyond 2011. If the City does not renew its current Modified Waiver or if the City ceases to meet the conditions for Modified Waivers, the City may be required to accelerate this project. See "ACTIONS RELATING TO TREATMENT OF SEWAGE — Special Considerations by Prospective Investors."

Source: MWWD.

Capital Improvement Projects

1. Metropolitan System

Point Loma Plant Upgrade. The Point Loma Plant upgrade commenced in 1990, is 88% complete and is expected to be complete in the year 2008. Completed capital improvements include upgrade and expansion of the digester facility, upgrade to the chemical feed system and improvements to the headworks, odor control and grit removal systems, completion of sedimentation basins, upgrade to the power generation and distribution, completion of a new maintenance building, access road improvements, and various site and parking improvements. Table 4 includes additional site improvements, completion of digester upgrades, south access road protection project, and substantial additional improvements in the grit processing facility. Expansion of the Point Loma Plant is being implemented through construction of a series of projects that will not significantly disrupt wastewater flow during the construction period.

South Bay Sewer Conveyance System. Certain portions of the South Bay Sewer Conveyance System related to the South Bay Reclamation Plant, including a pump station, sewer pipeline and sludge pipeline have been completed Components of the conveyance system related to the future South Bay Wastewater Treatment Plant have

been rescheduled beyond 2011. The scheduling of construction of these projects after 2011 depends on whether the City obtains successive Modified Waivers and if the City obtains clarification of OPRA in its favor (whether by judicial or legislative means). See "ACTIONS RELATING TO TREATMENT OF SEWAGE — Relief from Secondary Treatment Requirements." Table 4 includes $37.4 million for environmental, design, land acquisition and construction for the Wet Weather Storage Facility (formerly known as the System Flow Stabilization Project). Though average flows from the South Bay region are expected to remain within the capacity of the South Metro Interceptor (until construction of the South Bay Wastewater Treatment Plant), there are still possible spill situations (during peak flows along with unusual weather patterns) that led to the addition of the System Flow Stabilization Project to provide for the routing to and temporary storage of peak flows.

South Bay Wastewater Treatment Plant. The South Bay Wastewater Treatment Plant will provide secondary treatment of sewage and have a 21 mgd capacity. Previously scheduled design, environmental, engineering and permitting costs have been removed from the Wastewater Capital Improvement Program through 2011. The construction of the South Bay Wastewater Treatment Plant will be required when growth in the area exceeds the requirements of OPRA for the Point Loma Plant and growth in flows exceeds the capacity of the South Metro Interceptor. The scheduling of construction of the South Bay Wastewater Treatment Plant after 2011 depends on whether the City obtains successive Modified Waivers and if the City obtains clarification of OPRA in its favor (whether by judicial or legislative means). See "ACTIONS RELATING TO TREATMENT OF SEWAGE – Special Considerations by Prospective Investors."

Major Interceptors (North and South). Table 4 reflects additional design, construction and environmental mitigation costs related to the further rehabilitation of the North Metro Interceptor.

Mission Valley Water Reclamation Plant. The Mission Valley Water Reclamation Plant was one of the system-wide options for providing the final 8 mgd of a 45 mgd total water reclamation system capacity by the year 2010 as required by OPRA as described above under "ACTIONS RELATING TO TREATMENT OF SEWAGE — Relief From Secondary Treatment Requirements." Instead, additional reclaimed water capacity of 8 mgd was added at the South Bay Reclamation Plant. Accordingly, the City has placed this project on hold and retained the land for future treatment plant requirements.

Centrate Treatment Facility. The Centrate Treatment Facility was intended to treat centrate, which is the liquid removed during the dewatering of biosolids at the Metropolitan Biosolids Center. The MWWD considered this project as a possible means of reducing mass emissions at the Point Loma Plant to meet certain of the discharge conditions under OPRA. After conducting a study, the MWWD determined that this project was not cost effective, and accordingly cancelled it.

Environmental Monitoring and Technical Services Laboratory. Table 4 includes completion of the design and construction of Phase I of the project with a reduced scope which includes a two-story 34,000 square foot administrative and public support facility along with an ocean monitoring laboratory. Completion of the project is expected in 2004 at a cost of approximately $17.3 million. Phase 2 enhancements may be reprogrammed after 2010.

Other Metropolitan System Projects. Annual allocations in an aggregate amount of $15.8 million for repair and upgrade of Pump Stations 1 and 2, the North City Plant, the Metropolitan Biosolids Center and South Bay Reclamation Plant are included in Table 4. This revised amount includes the transfer of the Point Loma Plant annual allocation amount of $2.5 million to Point Loma Plant Upgrades and the reduction in the remaining new facility Annual Allocations based upon experience at the facilities. Table 4 also includes costs of $26.6 million for the Wastewater Operations Management Network ("COMNET"), a system-wide standardized means of providing the Metropolitan System with process control and monitoring. COMNET includes plant support as well as system communications. In addition to this central COMNET project, each individual facility project has its own COMNET cost element for instrumentation and software specific to that facility. A pooled contingency for all of the Metropolitan System projects is also included in Table 4.

2. Municipal System

Annual Allocations. Annual allocations are included in a capital budget each year to cover numerous small capital projects.

Annual Allocation for Sewer Main Replacement. Table 4 includes $440.1 million in appropriations for the annual allocation for sewer main replacements. Sewer mains are the backbone system arteries located within streets for the collection of residential wastewater.

Annual Allocations for Trunk Sewers Replacement. Table 4 includes $76.7 million for replacement trunk sewers. Trunk sewers are the larger collector sewers which transport wastewater collected from the sewer mains and transport that wastewater to the Metropolitan System's North Branch Interceptor and the South Branch Interceptor.

Annual Allocations for Trunk Sewer Rehabilitation. Table 4 includes $60.0 million for the rehabilitation of existing trunk sewers.

Annual Allocations for Pump Station Restoration. Table 4 includes $40.5 million for the restoration program for the Municipal System's 82 pump stations. Pump stations are components of the trunk sewer system and maintain wastewater flow where gravity pressure within the system in insufficient.

Annual Allocations Accelerated Projects. Table 4 includes $38.0 million for replacement of sewer mains as may be required in emergencies.

Other Annual Allocations. Table 4 include $6.1 million for other minor annual allocations such as sewer canyon access, freeway relocations in conjunction with Caltrans, and for large Pump Stations 64, 65, Penasquitos, and East Mission Bay.

Brine Management Program. These projects were intended to provide the means for disposal of non-polluting industrial brine from the City's growing industrial park in the Rancho Bernardo area of the City without transporting it through costly treatment at the City of Escondido's Hale Avenue Treatment Plant. Because of changes in the industrial processes used by a number of the industries in the Rancho Bernardo industrial park, this project has been eliminated from the program.

Trunk Sewer Projects. These projects provide for the replacement, rehabilitation, expansion, or construction of existing sewer lines and new sewer lines. These projects are typically larger and more expensive than projects funded through the annual allocations described above. Table 4 includes design, construction and related costs for 18 stand-alone projects. Major projects include the Otay Mesa Trunk Sewer at $34.5 million, Pipeline Rehabilitation in the Right of Way at $35.7 million, USIU Trunk Sewer at $15.7 million, South Mission Valley trunk sewer at $11.2 million, and the Sorrento Valley Trunk Sewer Relocation at $11.1 million.

Other Municipal Projects. Table 4 includes costs for the replacement, expansion or construction of existing sewer pump stations and new pump stations. Major projects include the Pump Station 45 at $13.3 million and Pump Station 79 at $12 million. Table 4 also includes pooled contingency for all of the Municipal System projects.

Contract Disputes

From time to time, the City is engaged in disputes with contractors and subcontractors working on the Wastewater System Capital Improvement Program. Currently, there are no known pending disputes with contractors or subcontractors, although one case is on appeal that involved a one-million dollar judgment against the City in which both the plaintiff and the City are contesting the judgment.

CAPITAL IMPROVEMENT FINANCING PLAN

The projected Wastewater System Capital Improvement Program is funded by a combination of financing

from Net System Revenues and debt financing. Table 5 summarizes the actual sources and uses of funds for the Wastewater System Capital Improvement Program and the projected sources and uses of funds for the Wastewater System Capital Improvement Program, in each case, for the Fiscal Years ending June 30, 2003 through June 30, 2009. The Wastewater System Capital Improvement Program includes the costs of the projects described in Table 4. If the City fails to obtain successive Modified Waivers or if the City fails to obtain clarification of OPRA in its favor (whether by judicial or legislative means), the capital costs of the Wastewater System Capital Improvement Program could increase substantially. See "ACTIONS RELATING TO TREATMENT OF SEWAGE – Special Considerations by Prospective Investors." If the City is obligated to incur greater costs in repairing and rehabilitating the Municipal System than the City projects herein, the capital costs of the Wastewater System Capital Improvement Program could increase substantially. See "ACTIONS RELATING TO COLLECTION SYSTEM—Special Considerations by Prospective Investors."

Table 5 also gives effect to the financial assumptions contained under the heading "FINANCIAL PROJECTIONS — Projected Operating Results."

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Table 5
SOURCES AND USES OF FUNDS FOR CAPITAL EXPENDITURES
WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROGRAM
(In Thousands of Dollars)
Fiscal Years Ending June 30, 2003 to 2009

	2003[5]	2004	2005	2006	2007	2008	2009	Total[6]
SOURCE OF FUNDS								
Beginning Balance of Construction Fund	0	0	175,533	0	0	0	0	175,533
New Bond Issue[1]	0	676,229	0	149,903	129,053	139,415	156,041	1,250,641
Grant Receipts	2,136	963	0	0	0	0	0	3,099
Contributions in Aid	0	0	0	0	0	0	0	0
Other Outstanding Obligations	13,325	0	0	0	0	0	0	13,325
Pay-as-You-Go	100,890	24,105	30,976	33,628	28,951	31,276	35,005	284,831
TOTAL SOURCES	116,351	701,297	206,509	183,531	158,004	170,691	191,046	1,727,429
USES OF FUNDS								
Issue Costs	0	20,286	0	4,497	3,871	4,182	4,680	37,516
Debt Service Reserve Fund	0	42,744	0	10,890	9,375	10,129	11,336	84,474
Bond Defeasance Escrow[2]	0	281,065	0	0	0	0	0	281,065
Reimbursement of Prior Capital Expenditures	197	20,000	0	0	0	0	0	20,197
Contribution to Construction Fund	0	175,533	0	0	0	0	0	175,533
Capital Expenditures[3][4]	116,154	161,669	206,509	168,144	144,758	156,380	175,030	1,128,644
TOTAL USES	116,351	701,297	206,509	183,531	158,004	170,691	191,046	1,727,429

(1) The amount shown as a New Bond Issue with respect to Fiscal Year 2004 represents the Series 2003 Subordinated Bonds. With respect to all other Fiscal Years, the New Bond Issues are assumed to be bonds secured by Installment Payments that are Parity Obligations. Fiscal Year 2004 New Bond Issue includes the portion of the proceeds of the Series 2003 Subordinated Bonds to be deposited into an escrow account to refund a portion of the Outstanding Parity Bonds.

(2) Bond Defeasance Escrow includes the portion of the proceeds of the Series 2003 Subordinated Bonds to be deposited into an escrow account to refund a portion of the Outstanding Parity Bonds See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS -- Plan of Refunding."

(3) Capital Expenditures by System:

Fiscal Year Ending June 30	2003	2004	2005	2006	2007	2008	2009	Total
Municipal System	76,833	122,508	176,206	146,226	122,746	129,401	147,409	921,329
Metropolitan System	39,321	39,161	30,303	21,918	22,012	26,979	27,621	207,315
Total System	116,154	161,669	206,509	168,144	144,758	156,380	175,030	1,128,644

(4) Projected cash expenditures for the Wastewater System Capital Improvement Program rather than projected appropriations as shown in Table 4

(5) Amounts listed under Fiscal Year 2003 reflect estimates and do not reflect actual results.

(6) Reflects total of projected sources and uses for Fiscal Years ending June 30, 2003 through June 30, 2009.

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Source: Office of City Treasurer, Financing Services Division.

WASTEWATER SYSTEM FINANCIAL OPERATIONS

The City's primary sources of moneys deposited in the Sewer Revenue Fund are derived from sewer service charges to City residents and commercial enterprises, capacity charges on new, additional or larger connections to the Wastewater System within the City, revenues from the Participating Agencies pursuant to the Regional Sewage Disposal Agreement and interest income on fund balances.

Establishment, Calculation and Collection of Sewer Service Charges

Sewer service charges to City utility customers, which are collected with municipal water bills and enforceable by discontinuance of water service, have been collected by the City since 1956. Periodically, sewer service charges have been revised, the City Council approved the latest revision on October 16, 2001, which became effective on March 1, 2003.

The City has dedicated personnel and resources to analyze rates and charges necessary to support the Wastewater System. They are responsible for collecting and collating revenue and expenditure data from key administrative, engineering, financial and budgetary City departments, then evaluating the adequacy of revenues and recommending rate adjustments in concert with debt size and timing. Once projected revenues and expenditures are validated, financing options are evaluated for the optimal mix of internally generated revenue and debt. This process, conducted semi-annually for management purposes and as required to facilitate planned debt issuances and rate adjustments, involves an extensive technical review by a multi-departmental finance team with oversight by a senior management executive committee comprised of the City Manager, the Auditor and Comptroller, a Deputy City Manager, the MWWD Director, and a Deputy City Attorney. After final review and validation, a financing plan is presented to the City Council for consideration, incorporating near-term debt and rate considerations as specific recommendations. See "City Council Actions Relating to Rate Changes."

Sewer service charges are based on the characteristics (volume of sewage, or flow, and suspended solids, or strength) of the wastewater discharged by each particular sewer user. All sewer users are charged based upon the amount of flow and solids which they discharge into the Wastewater System. As sewage discharge is not metered, water sales are used to approximate each customer's sewage flow. Suspended solids are based upon the classification of the user, determined by site inspections and/or analyses as required or requested.

Single-family residential customers are billed based on average winter months' water usage. The average winter months' water usage is set on July 1 of each year, based upon the individual customer's lowest water bill for water consumption during the previous winter months' monitoring period when the local area normally receives most of its annual rainfall and irrigation needs are minimized. Once set, the customer's monthly sewer service charge is fixed until the next July 1.

With respect to the Metropolitan System, the Participating Agencies set the sewer service charges that they charge their respective customers and the City does not have any control over those sewer service charges. The sewer services charges that the Participating Agencies have currently adopted vary substantially both in how large such service charges are and also in how they are calculated. Pursuant to the terms of the Regional Wastewater Disposal Agreement, the City bills each Participating Agency based on its use of the Wastewater System and its capacity rights. See "WASTEWATER SYSTEM — The Participating Agencies and the Regional Wastewater Disposal Agreement." Therefore, if a Participating Agency fails to charge adequate rates to its customers, such failure would not impact the amounts that the Participating Agency owes to the City.

The historical sources of sewer service revenues of the Sewer Revenue Fund for the Fiscal Years ended June 30, 1998 to 2002, are set forth in Table 6 below.

Table 6
HISTORICAL SOURCES OF SEWER SERVICE REVENUES[1]
(In Thousands of Dollars)
Fiscal Years Ended June 30, 1998 to 2002

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(Unaudited)

Source	1998	1999	2000	2001	2002
Single Family Domestic	$63,712	$64,618	$71,871	$76,356	$81,133
Other Domestic	45,151	43,791	50,065	50,798	54,059
Commercial	38,317	35,680	42,595	43,380	45,238
Industrial	7,564	5,744	5,090	4,435	3,547
Outside City	9	9	8	11	12
Treatment Plant Service for Others(2)	49,473	47,649	50,799	37,406	67,658
TOTAL	$204,226	$197,491	$220,428	$212,386	$251,647

(1) Does not include capacity charges or other operating revenues which are included in calculating Net System Revenues.
(2) Includes revenues from Participating Agencies, the United States Navy and other agencies.
Source: Office of the City Auditor and Comptroller.

The ten largest customers of the Municipal System, as measured by the Fiscal Year ended June 30, 2002 billings, are estimated to have accounted for approximately 9.71% of the Sewer Revenue Fund's total revenues for that Fiscal Year. Table 7 shows the billings for these customers and the related percentages of total revenues for the Sewer Revenue Fund.

Table 7
TEN LARGEST CUSTOMERS WITHIN MUNICIPAL SYSTEM(1)
Fiscal Year Ended June 30, 2002
(Unaudited)

Customer	Billings	Percent of Total Sewer Fund Revenues(2)
1. United States Navy	$ 6,209,072	3.36%
2. University of California, San Diego	4,146,899	2.24
3. Kelco	1,902,355	1.03
4. Federal Government (excluding US Navy)	1,429,948	0.77
5. R.J. Donovan State Prison	1,269,240	0.69
6. City of San Diego	922,357	0.50
7. Sony	796,675	0.43
8. San Diego Unified School District	530,841	0.29
9. San Diego Zoo	473,994	0.26
10. San Diego State University	252,741	0.14
TOTAL	$17,934,122	9.71%

(1) Does not include Participating Agencies or customers served by Participating Agencies.
(2) Total Sewer Revenue Fund Revenues includes receipts from Participating Agencies.
Source: Water Department and MWWD.

Set forth below as Table 8 is a rate history and approved rate increases for sewage service charges.

Table 8
RATE HISTORY AND APPROVED RATE INCREASES
FOR SINGLE FAMILY DOMESTIC AND OTHER DOMESTIC,
COMMERCIAL & INDUSTRIAL

Effective Date	% Increase[1]	Single Family Domestic[2]	Other Domestic, Commercial & Industrial[3] *(Monthly Charge)*
July 1, 1994	6.00%	$22.91	$0.40 plus SS Charge of $1.318 to $2.684 per Hcf
October 2, 1996	6.00	24.28	$0.42 plus SS Charge of $1.397 to $2.845 per Hcf
July 1, 1997	6.00	25.74	$0.45 plus SS Charge of $1.481 to $3.016 per Hcf
March 20, 1999	5.00	27.03	$0.47 plus SS Charge of $1.555 to $3.167 per Hcf
March 1, 2000	5.00	28.38	$0.49 plus SS Charge of $1.633 to $3.325 per Hcf
March 1, 2001	5.00	29.80	$0.51 plus SS Charge of $1.714 to $3.491 per Hcf
March 1, 2002[4]	7.50	32.05	$0.55 plus SS Charge of $1.831 to $3.727 per Hcf
March 1, 2003	7.50	34.45	$0.59 plus SS Charge of $1.968 to $4.007 per Hcf
March 1, 2004	7.50	37.03	$0.63 plus SS Charge of $2.116 to $4.308 per Hcf
March 1, 2005	7.50	39.81	$0.68 plus SS Charge of $2.275 to $4.631 Hcf

(1) Indicated increases reflect percentage increases in both Single Family Domestic sewer rates and Other Domestic, Commercial, and Industrial sewer rates.
(2) Represents the average monthly amount.
(3) Other domestic, commercial and industrial monthly charges are based upon volume of flow and suspended solids.
(4) On October 16, 2001, the City Council adopted 7.5% rate increases for monthly sewer rates effective each March 1, starting in 2002 and concluding 2005.

Source: Office of City Treasurer, Financing Services Division.

Accounts Receivable

Typically, the City seeks to collect unpaid bills by: (1) issuing an initial shut-off notice as early as 30 days after a bill is issued; (2) issuing a final shut-off notice as early as 45 days after a bill is issued; and (3) shutting off the customer's water service as early as 50 days after a bill is issued. This procedure results in almost all past due bills being paid. If necessary, the City establishes time payments for customers who are unable to pay a past due amount. If an account is closed with an amount due which remains unpaid, that account is referred to the City Treasurer for collection activities. An allowance is taken each Fiscal Year for accounts receivable that are not expected to be paid. During the five Fiscal Years ended June 30, 2002, this amount ranged from $458,878 for the Fiscal Year ended June 30, 1998 to $1,457,530 for the Fiscal Year ended June 30, 2002.

Table 9 sets forth information related to accounts receivable and number of shut-offs.

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Table 9
SEWER CUSTOMER ACCOUNTS RECEIVABLE AND SHUT-OFFS BY FISCAL YEAR
(In Thousands of Dollars)
For Fiscal Years Ended June 30, 1998 to 2002
(Unaudited)

	1998	1999	2000	2001	2002
Sewer Service Revenue(1)	$204,226	$197,491	$220,428	$212,386	$251,647
Accounts Receivable(1)(2)	$16,498	$14,656	$14,976	$15,594	$17,931
Accounts Receivable Over 120 Days(3)(4)	$1,253	$1,311	$1,379	$1,429	$1,503
No. of Shut-Offs(1)(5)	20,496	21,157	16,676	17,302	19,040

(1) For the year ended June 30.
(2) Excludes amounts payable by Participating Agencies.
(3) As of June 30.
(4) Estimated.
(5) Amounts reflect multiple shut-offs from time to time of the same sewer customer account.
Source: Office of the City Auditor and Comptroller and MWWD.

City Council Actions Relating to Rate Changes

Effective July 1990, the City Council adopted a five-year revenue plan which established rate increases of 6% per year for monthly sewer rates, and 16% per year for capacity charges. On October 2, 1996, the City Council adopted 6% rate increases for monthly sewer rates effective for each of the Fiscal Years ending June 30, 1997 and June 30, 1998. On January 19, 1999, the City Council adopted 5% rate increases for monthly sewer rates effective on March 20, 1999, March 1, 2000 and March 1, 2001. On October 16, 2001, the City Council adopted 7.5% rate increases for monthly sewer rates effective each March 1, starting in 2002 through 2005 The financial projections for the Wastewater System Capital Improvement Program reflect such increases, as well as assumed increases in later years. See "FINANCIAL PROJECTIONS."

See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Rate Covenant; Impact of Proposition 218" for information regarding the City's obligation under the Installment Purchase Agreement to fix sewer rates at certain levels. However, for information on the possible limitation on the City's ability to comply with the rate covenant, see "WASTEWATER SYSTEM FINANCIAL OPERATIONS — Impact of Proposition 218 on Sewer Service Rates and Charges."

Historically, residential water service charges and residential sewage service charges were billed on a bi-monthly basis. On April 30, 2002 the City Council directed the Water Department to begin billing such charges on a monthly basis no later than December 31, 2003. At present, the City anticipates that this change will occur in September 2003, although it may occur later than that date.

Collection and Calculation of Capacity Charges

A capacity charge is a one-time fee for a new, additional or larger connection to the Municipal System within the City. Capacity fees are not treated as operating income for financial reporting purposes but are considered System Revenues and are deposited in the Sewer Revenue Fund. Pursuant to California law, capacity fees are applied only to capital expansion, bonds, contracts, or other indebtedness of the Wastewater System related to expansion. Because capacity fees are primarily collected on new construction within the City, revenues obtained on such fees vary based upon construction activity. See "FINANCIAL PROJECTIONS." Historical capacity charge revenues and equivalent dwelling units ("EDU") are shown in Table 10 below.

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Table 10
SEWER REVENUE FUND
HISTORICAL CAPACITY CHARGE REVENUES
(unaudited)

Fiscal Year Ended June 30	Equivalent Dwelling Units	Capacity Charge Revenues
1998	5,987	$16,136,839
1999	5,758	$14,654,037
2000	7,747	$18,984,897
2001	6,443	$17,183,826
2002	7,497	$18,742,675

Source: Office of the City Auditor and Comptroller and MWWD.

Table 11
RATE HISTORY
FOR SEWER CAPACITY CHARGES

Effective Date	Sewer Capacity Charges (Per Unit)	% Decrease
April 22, 1996	$2,500	(64%)

Source: Office of City Treasurer, Financing Services Division.

In response to a request by the City Manager to reduce sewer capacity charges in order to stimulate economic development and affordable housing, the City Council approved in June 1996, retroactive to April 22, 1996, a 64% reduction of sewer capacity charges. See "Impact of Proposition 218 on Sewer Service Rates and Charges" regarding the applicability of Proposition 218 to sewer capacity charges.

Impact of Proposition 218 on Sewer Service Rates and Charges

On November 5, 1996, the voters of the State approved Proposition 218, the so-called "Right to Vote on Taxes Act." Proposition 218 added Articles XIIIC and XIIID to the State Constitution, which contain a number of provisions affecting the ability of the local governments to levy and collect both existing and future taxes, assessments, fees and charges.

Article XIIID conditions the imposition or increase of any "fee" or "charge" upon there being no written majority protest after a required public hearing and, for fees and charges other than for sewer, water or refuse collection services, voter approval. Article XIIID defines "fee" or "charge" to mean levies (other than ad valorem or special taxes or assessments) imposed by a local government upon a parcel or upon a person as an incident of the ownership or tenancy of real property, including a user fee or charge for a "property-related service." It is not clear whether Article XIIID applies to the City's sewer service fees and charges, which are the ultimate source of revenues pledged to debt service on the Series 2003 Subordinated Bonds and the Outstanding Parity Bonds.

In addition, by July 1, 1997, under Article XIIID, all property-related fees and charges, including those which have been in existence since prior to the passage of Proposition 218 in November 1996, should have met the following substantive standards:

(1) Revenues derived from the fee or charge cannot exceed the funds required to provide the property-related service.

(2) Revenues derived from the fee or charge must not be used for any purpose other than that for which the fee or charge was imposed.

(3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership must not exceed the proportional cost of the service attributable to the parcel.

(4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted. Standby charges, whether characterized as charges or assessments, must be classified as assessments and cannot be imposed without compliance with Section 4 of Article XIIID (relating to assessments).

(5) No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services where the service is available to the public at large in substantially the same manner as it is to property owners.

Without conceding that its sewer rates and charges are subject to Article XIIID, the City believes that its rates comply with the foregoing standards. In the opinion of the City Attorney, the City's capacity charges are charges imposed as a condition of property development and therefore are not subject to the requirements of Article XIIID. It is unclear whether under the foregoing standards rates and charges may be established at levels which would permit deposits to a Rate Stabilization Fund or maintenance of uncommitted cash reserves. See paragraph 4 under the heading "FINANCIAL PROJECTIONS — Projected Operating Results."

[Property owners have argued in the past that sewer capacity charges are also subject to Proposition 218. However, in _____, the court held that sewer capacity charges [explain] are property-related fees and charges under Proposition 218 and, therefore, are not subject to voter approval or the other requirements of Proposition 218.]

Article XIIIC removes limitations on the initiative power in matters of local taxes, assessments, fees and charges. Consequently, the voters of the City could, by future initiative, repeal, reduce or prohibit the future imposition or increase of any local tax, assessment, fee or charge. "Assessment," "fee" and "charge" are not defined in Article XIIIC and it is unclear whether the definitions of such terms contained in Article XIIID (which are generally property-related as described above) are so limited under Article XIIIC. No assurance can be given that the voters of the City will not, in the future, approve initiatives which repeal, reduce or prohibit the future imposition or increase of assessments, fees or charges, including the City's sewer service fees and charges, which are the source of Net System Revenues pledged to the payment of debt service on the Series 2003 Subordinated Bonds and the Outstanding Parity Bonds.

In addition to the foregoing, the City's general financial condition may be affected by other provisions of Article XIIIC and Article XIIID, including: (1) provisions of Article XIIIC (a) requiring taxes for general governmental purposes to be approved by a majority vote and taxes for specific purposes, even if deposited into the general fund, to be approved by a two-thirds vote, (b) requiring any general purpose tax which the City imposed, extended or increased, without voter approval, after December 31, 1994 to be approved by majority vote by November 5, 1998, (c) subjecting all taxes, assessments, fees and charges to reduction or repeal at any time through the initiative process (as mentioned above), and (2) provisions of Article XIIID that could reduce the ability of the City to fund certain services or programs that it may be required or choose to fund from its general fund, such as provisions (a) adding requirements making it generally more difficult to levy and maintain "assessments," defined to mean a levy or charge upon real property for a particular and distinct benefit to the property over and above general benefits conveyed to property located in the district or to the public at large and (b) requiring any imposition or increase of property-related fees or charges other than for sewer, water and refuse collection services or fees for electrical or gas service (which are not treated as property-related for purposes of Article XIIID) to be approved by "majority of the property owners" subject to the fee or charge or, at the option of the local government, two-thirds vote of the electorate residing in the affected area.

The interpretation and application of Proposition 218 will ultimately be determined by the courts or through implementing legislation with respect to a number of the matters discussed above, and it is not possible at this time to predict with certainty the outcome of such determination or the nature or scope of any such legislation.

Effect of Proposition 218 and of Possible General Limitations on Enforcement Remedies

The ability of the City to comply with its covenants under the Installment Purchase Agreement and to generate Net System Revenues sufficient to pay Installment Payments thereunder and, ultimately, the ability of the Authority to pay principal of and interest on the Series 2003 Subordinated Bonds and the Outstanding Parity Bonds may be adversely affected by actions and events outside of the control of the City and may be adversely affected by actions taken (or not taken) under Article XIIIC or Article XIIID by voters, property owners, taxpayers or payers of assessments, fees and charges. Furthermore, any remedies available to the owners of the Series 2003 Subordinated Bonds and the Outstanding Parity Bonds upon the occurrence of an event of default under the Subordinated Indenture are in many respects dependent upon judicial actions which are often subject to discretion and delay and could prove both expensive and time consuming to obtain. In addition to the possible limitations on the ability of the City to comply with its covenants under the Installment Purchase Agreement, the ability of the Authority to comply with its obligations under the Subordinated Indenture, the rights and obligations under the Series 2003 Subordinated Bonds, the Outstanding Parity Bonds, the Subordinated Indenture and the Installment Purchase Agreement may be subject to bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium and other laws relating to or affecting creditors' rights, to the application of equitable principles, to the exercise of judicial discretion in appropriate cases and to limitations on legal remedies against cities in the State of California.

Based on the foregoing, if the City fails to comply with its covenants under the Installment Purchase Agreement, including its covenants to generate sufficient Net System Revenues, as a consequence of the application of Article XIIIC and Article XIIID, or to pay Installment Payments thereunder and ultimately, the ability of the Authority to pay principal of or interest on the Series 2003 Subordinated Bonds and Outstanding Parity Bonds, there can be no assurance that available remedies will be adequate to fully protect the interests of the holders of the Series 2003 Subordinated Bonds and the Outstanding Parity Bonds.

Historical Revenues and Debt Service Coverage

Table 12 contains the Statement of Income for Fiscal Years ended June 30, 1998 through 2002, and Table 13 contains the Calculation of Debt Service Coverage for such years. See also APPENDIX A – "AUDITED FINANCIAL STATEMENTS OF THE METROPOLITAN WASTEWATER UTILITY FOR YEARS ENDED JUNE 30, 2002 AND JUNE 30, 2001."

Table 12
METROPOLITAN WASTEWATER UTILITY STATEMENT OF INCOME
Fiscal Years Ended June 30, 1998 to 2002

	1998	1999	2000	2001[1]	2002[2]
OPERATING REVENUES					
Sewer Service Charges:					
Inside City:					
Domestic	$108,863,152	$108,409,493	$121,936,484	$127,154,768	$135,191,538
Commercial and Industrial	45,881,035	41,423,995	47,685,115	47,814,574	48,785,001
Outside City:					
Domestic, Commercial & Industrial	9,151	8,639	7,508	10,541	12,091
Treatment Plant Service for Others	49,612,651	47,648,792	50,799,332	37,405,656	67,658,398
Total Sewer Service Revenues	$204,365,989	$197,490,919	$220,428,439	$212,385,539	$251,647,028
Other Operating Revenues:					
Aquaculture Operating Grants	0	1,927,743	494,114	199,221	71,829
Miscellaneous (Net)	2,068,870	1,505,229	1,190,412	2,045,591	5,085,096
TOTAL OPERATING REVENUES	$206,434,859	$200,923,891	$222,112,965	$214,630,351	$256,803,953
OPERATING EXPENSES	146,857,627	164,214,016	172,309,094	205,803,354	200,066,109

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OPERATING INCOME	59,577,232	36,709,875	49,803,871	8,826,997	56,737,844
NON-OPERATING REVENUES (EXPENSES):					
Interest Income	$19,338,425	$13,682,182	$15,748,955	$30,126,691	$18,633,844
Gain (Loss) on Sale/Retirement of Fixed Assets	63,189	(4,101,075)	1,802,541	(2,937,284)	(272,398)
Interest Expense	(38,653,904)	(42,056,626)	(53,616,540)	(54,900,181)	(54,027,656)
Non-Operating Grants	25,054,559	2,309,233	0	0	4,359,511
Other	(26,437,154)	(5,218,181)	1,493,319	4,361,646	(55,392)
TOTAL NON-OPERATING REVENUES (EXPENSES)	($20,634,885)	($35,384,467)	($34,571,725)	($23,349,128)	($31,362,091)
Operating Transfer In	$33,239	$1,250,000	$0	$134,029	$0
Operating Transfer Out	(694,853)	(1,332,602)	(1,144,844)	(959,717)	(1,077,829)
NET INCOME/CHANGE IN NET ASSETS BEFORE CAPITAL CONTRIBUTIONS	$38,280,733	$1,242,806	$14,087,302	($15,347,819)	$24,297,924
Capital Contributions				33,889,247	83,741,404
Change in Net Assets				18,541,428	108,039,328

(1) As of July 1, 2001, the City adopted the provisions of Governmental Accounting Standards Board (GASB) Statement No. 34, "Basic Financial Statements – and Management's Discussion and Analysis – For State and Local Governments;" GASB Statement No. 37, "Basic Financial Statements – and Management's Discussion and Analysis – For State and Local Governments: Omnibus;" and GASB Statement No. 38, "Certain Financial Statement Note Disclosures." This will include Capital Contributions in the calculations of the Change in Net Assets.
(2) Interest received from the Bond Acquisition Fund for the Metropolitan Wastewater Utility Fund is not included in the System Revenue, although it is reflected in Net Income.
Source: Office of the City Auditor and Comptroller.

Table 13
CALCULATION OF DEBT SERVICE COVERAGE
Fiscal Years Ended June 30, 1998 to 2002
(Unaudited)

	1998	1999	2000	2001	2002
TOTAL OPERATING REVENUES	$206,434,859	$200,923,891	$222,112,965	$214,630,351	$256,803,953
OPERATING EXPENSES:					
Transmission	$44,422,508	$34,185,686	$32,993,221	$47,859,465	$40,735,449
Treatment and Disposal Plant	43,725,429	44,931,282	45,801,526	55,680,874	51,862,318
Special Projects	0	0	0	0	0
Accounting	5,927,117	5,654,509	5,221,117	7,233,305	6,800,804
General and Administrative	37,011,963	49,704,110	51,846,094	57,253,525	65,133,236
TOTAL OPERATING EXPENSES[1]	$131,087,017	$134,475,587	$135,861,958	$168,027,169	$164,531,807
TOTAL OPERATING INCOME	$75,347,842	$66,448,304	$86,251,007	$46,603,182	$92,272,146
OTHER INCOME (CHARGES):					
Capital Grant Receipts	$37,552,666	$26,902,800	$32,000,524	$17,097,236	$11,010,186
Operating Transfer In/(Out)	(661,614)	(82,602)	(1,144,844)	(825,688)	(1,077,829)
Trunk Line Sewer Area Charge	0	0	0	0	0
Capacity Charge Municipal System	16,136,839	14,654,037	18,984,897	17,183,826	18,742,675
Interest Income	19,338,425	13,682,182	15,748,955	29,058,571	18,633,844
Reverse Repurchase Agreement Interest Expense	0	0	0	0	0
Rate Stabilization Fund	(5,000,000)	0	0	0	0
Other Income[2]	(25,655,496)	(4,321,413)	2,390,087	5,258,414	5,200,887
TOTAL OTHER INCOME	$41,710,820	$50,835,004	$67,979,619	$67,772,359	$52,509,763

NET SYSTEM REVENUES	$117,058,662	$117,283,308	$154,230,626	$114,375,541	$144,781,909
PARITY OBLIGATIONS DEBT SERVICE COVERAGE					
Principal and Interest Due in Fiscal Year	$56,537,491	$56,537,795	$77,054,809	$77,054,525	$77,053,885
Coverage	2.07	2.07	2.00	1.48	1.88

(1) The difference between Operating Expenses in Tables 12 and 13 is due to depreciation expense being excluded in Table 13.
(2) Interest received from the Bond Acquisition Fund for the Metropolitan Wastewater Utility Fund is not included in the System Revenue, although it is reflected in Net Income.
Source: Office of the City Auditor and Comptroller.

Management's Discussion and Analysis

The following discussion relates to certain items shown in Table 12.

The MWWD adopted Governmental Accounting Standards Board (GASB) Statement No. 34, 37 and 38 on July 1, 2001. The adoption had little effect on the basic financial statements except for the inclusion of a Management's Discussion and Analysis (MD&A) providing analysis of Wastewater System's overall financial position and results of operations. Retained earnings are now referred to as Net Assets and the Statement of Cash Flows is presented using the direct method. In addition, Capital Contributions are included in the calculation of the Change in Net Assets for 2001 and 2002.

Operating Revenues. Sewer Service charge revenue for domestic and industrial customers increased consistently from 1999 to 2002 due primarily to approved rate increases. The City Council adopted 6% rate increase for Fiscal Year 1998, 5% rate increases for Fiscal Years 2000 and 2001 and 7.5% for Fiscal Year 2002.

The Participating Agencies are billed for their portion of the total expenses of the Metropolitan System for operation and maintenance expense, construction costs and debt service payments related to the Wastewater System Capital Improvement Plan. The construction cost component of the bill can vary widely from year to year, depending upon what projects are underway. Due to the variability, Treatment Plant Services for Others will increase or decrease accordingly in any given Fiscal Year. The decrease in Treatment Plant Service for Others from 2000 to 2001 was attributable to the decrease in capital improvement expenses that were allocable for billing to the Participating Agency and an increase in income credits related to the Series 1999 Bond proceeds. The increase in Treatment Plant Service for Others revenue from 2001 to 2002 was due to increased cash funding of the construction program by the Participating Agencies once the Series 1999 Bonds were fully expended.

Operating Expenses. Operating expenses increased from 1998 to 2000 mainly due to an increase in depreciation expense. The increase in depreciation expense was due to the Metro Biosolids Center and North City Plant beginning their first year of depreciation. The increase in operating expenses from 2000 to 2001 was primarily due to the payment to the City of Escondido for the Escondido Plant expansion project, increased operating expenses for the COMNET system, and a 72% increase ($7.7 million) in energy costs. Operating expenses decreased slightly from 2001 to 2002 mainly due to a 33% decrease ($6.2 million) in energy costs.

Since 1994, the City has imposed right-of-way charges, payable to the General Fund, on the Wastewater System for use by the MWWD of City streets for sewage lines. The charges are considered Wastewater System maintenance and operations charges and are therefore expenses, which are payable prior to Parity Obligations, including the Series 1999 Bonds. The City's right-of-way charges for the Fiscal Years ending 1998 to 2002 were $7.8 million, $5.9 million, $4.1 million, $2.6 million, and $1.1 million, respectively.

The Operations and Maintenance Division of the MWWD implemented a six-year "Public Contract Operations" agreement in 1998 termed "Bid to Goal." This agreement is aimed at improving productivity by combining the most appropriate practices from both the public and private sectors. The agreement established an optimized competitive goal, which, if met, will mean an approximate 18% savings when compared to the baseline

Fiscal Year 1997 long-term plan. Improved practices associated with these savings include process streamlining and automation, centralization of major maintenance and warehousing functions, increased emphasis on predictive and preventative maintenance, a pilot performance pay program and an enhanced labor/management partnership. The results for the first five years of the program showed savings of $35.7 million in excess of the established budget goal. In 2002, the Wastewater Collection Division of the MWWD implemented a separate six-year Bid to Goal agreement containing similar goals and objectives.

Interest Income. Interest income increased in 1998 due to a higher investment yield and a larger average balance in pooled cash. The increase in interest income in 2001 was due to higher cash balances after the final draw down of the Outstanding Parity Bonds and receipt of the proceeds from the Other Outstanding Obligations. In 2002, the decrease in interest income was primarily attributed to the decrease in cash balances due to the continued cash funding of Wastewater System Capital Improvement Program expenditures and the dramatic decline in interest rates.

Gain (Loss) on Sale/Retirement of Fixed Assets. In 2000, the gain experienced was due to the addition of sewer flow meters which were originally purchased in previous Fiscal Years. In 2001, a loss was reported due to the retirement of assets with an original value of $3,000 and below.

Interest Expense. Interest expense increased steadily from 1998 to 2000 was due to the issuance of the Outstanding Parity Bonds.

Non-Operating Grants. Revenues from this source arose from an agreement with the IBWC to construct the federal portion on the South Bay Ocean Outfall, an outfall running seaward from the Tijuana River Estuary. The outfall will be jointly owned by the IBWC and the City. Revenues decreased in 1999 due to the completion of the majority of the outfall.

Other. The decrease in Other Non-Operating Revenues (Expenses) is directly related to the decrease in Non-Operating Grants. The expenditures for the South Bay Ocean Outfall project decreased in 1999 as the project was near completion. The increase in Non-Operating Revenues in 2001 was due to interest revenue received from the acquisition fund under the indenture relating to the Outstanding Parity Bonds.

The following discussion relates to certain income statement items shown in greater detail in Table 13.

Transmission. Transmission costs increased in 2001 due mainly to an increased emphasis on sewer main televising and subsequent main cleaning. These are preventative measures to alleviate main blockages.

General and Administrative. General and Administrative costs increased from 2000 to 2001 due to increase of contractual services and the additional staff needed to due the expansion of the main replacement program. The increase from 2001 to 2002 was primarily due to increased costs associated with the COMNET system and an increase in non-CIP engineering expenses.

Capital Grant Receipts. Capital Grant Receipts decreased in 2001 and 2002 mainly due to the completion of the large capital projects for the construction of new treatment facilities, which were partially funded with grant funds.

FINANCIAL PROJECTIONS

Set forth below in Table 14 are the projected cash receipts and operating expenditures for the eight Fiscal Years ending June 30, 2009. Table 14 incorporates the assumptions described below, including assumed inflation and interest rates, rate increases and the amount of indebtedness to be issued during the projection period. For purposes of complying with the Continuing Disclosure Certificate, the actual results for any future year specified in Table 14 will be reflected in Schedules F-1 and F-2 of the City's Metropolitan Wastewater Utility annual financial statements for that year and will be comparable to the financial data contained in Schedules F-1 and F-2 of the financial statements attached as Appendix A. The City has chosen to present projections on the basis of cash receipts and operating expenses when paid.

The projections presented below differ from those projections contained in the Official Statement dated March 2, 1999 related to the Series 1999 Bonds primarily as a result of the rate increases, additional capital expenditures, and additional maintenance and operation expenses undertaken pursuant to the City Council's accelerated program to repair and replace the aged Municipal System's collection system. See "ACTIONS RELATED TO COLLECTION SYSTEM."

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Table 14
FINANCIAL PROJECTIONS
(In Thousands of Dollars)
Fiscal Years Ending June 30, 2003 to 2009

	2003[4]	2004	2005	2006	2007	2008	2009
SYSTEM REVENUES							
Sewer Service Charges	193,865	210,324	228,184	247,911	269,840	292,758	316,335
New Sewer Service Connections	150	153	155	157	160	162	164
Sewage Treatment Plant Services	63,690	71,899	73,799	75,135	76,792	79,823	82,658
Sludge Handling Charge	0	0	0	0	0	0	0
Interest Earnings[1]	4,337	3,790	3,917	3,564	3,441	7,860	8,280
Services Rendered Other Funds/Others[2]	5,617	5,842	6,075	6,318	6,571	6,834	7,107
Capacity Charge Municipal System	15,292	15,547	15,802	16,057	16,227	16,397	16,566
Sale of Electricity/Gas Engine Generation	818	714	796	785	773	686	580
Contributions in Aid/Grant Receipts	2,136	963	0	0	0	0	0
Other Revenue	229	229	229	229	229	229	229
Rate Stabilization Fund Transfer[3]	16,000	9,000	18,000	0	(1,000)	(1,000)	(13,000)
TOTAL SYSTEM REVENUES	302,134	318,461	346,957	350,156	373,033	403,749	418,919
OPERATING EXPENSES							
Total Maintenance & Operation Costs	205,447	225,904	219,606	227,124	237,192	246,671	258,048
TOTAL SYSTEM REVENUES LESS OPERATING EXPENSES	96,687	92,557	127,351	123,032	135,841	157,078	160,871

(1) Includes interest on amounts deposited in the Reserve Fund and in the reserve fund with respect to the Outstanding Parity Obligations, as indicated in the Metropolitan Wastewater Utility financial statements, but excludes interest on amounts deposited in Construction Fund
(2) Projected amounts include services rendered to others.
(3) Proposition 218 may effect the City's ability to set rates and charges sufficient to make the projected deposits to the Rate Stabilization Fund. See "Projected Operating Results", paragraph 4.
(4) Amounts listed under Fiscal Year 2003 reflect estimated cash receipts and operating expenses paid, and do not reflect actual results.
Source: Office of the City Treasurer, Financing Services Division.

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Projected Operating Results

Table 14 provides the operating revenues of the Wastewater System for the Fiscal Years ending June 30, 2003 through June 30, 2009.

The following reflects the principal assumptions used in the preparation of these financial projections:

1. The Wastewater System will continue to be owned and operated by the City and the facilities contained in the Wastewater System Capital Improvement Program will be constructed and come into operation as currently planned by the City.

2. The City will continue to maintain a 45-day operating reserve.

3. Maintenance and operations expenditures (in thousands) for the Fiscal Years ending June 30, 2003 through June 30, 2009 will be as follows:

	2003	2004	2005	2006	2007	2008	2009
Metropolitan System	95,273	107,762	103,022	104,242	109,463	113,325	118,385
Municipal System	110,174	118,142	116,584	122,883	127,729	133,345	139,664
TOTAL	205,447	225,904	219,606	227,124	237,192	246,671	258,048

Inflation rates were applied to maintenance and operations estimates at a rate of 4.0% per Fiscal Year.

4. For the Fiscal Years ending June 30, 2003 through June 30, 2009, growth projections of single family residential accounts are based upon the average growth rate of approximately 1.1% of single family accounts in Fiscal Years 1998-2002. For all other accounts, growth projections are based upon the average growth rate of their aggregate flow in 1998-2002, which was approximately 0.8%. Sewer service charges are assumed to increase by 7.5% in March 2004 and March 2005, which the City Council has approved, and 8.0% in March 2006, 7.5% in 2007 and 2008 and 6.0% in March 2009, which the City Council will need to approve before they become effective.

It has been assumed that the City will be able to set rates and charges sufficient to make deposits into the Rate Stabilization Fund as contemplated by Table 14, so as to make less volatile its ability to meet coverage tests. It is unclear whether under Proposition 218 the City can set rates and charges sufficient to make deposits to the Rate Stabilization Fund. See "WASTEWATER SYSTEM FINANCIAL OPERATIONS — Impact of Proposition 218 on Sewer Service Rates and Charges." If it were determined that Proposition 218 prevented the City from setting rates and charges sufficient to make the deposits in the Rate Stabilization Fund projected on Table 14, the amount of needed rates and charges and the timing thereof may be different than as assumed herein.

No increases in capacity charge rates are assumed. New system hook-ups (measured in EDU's) are projected based on the average of the last five years, increased at the estimated rate of population growth. These projections are summarized below.

For the Fiscal Year Ending June 30,
Projected

	2003	2004	2005	2006	2007	2008	2009
Single-Family Monthly Service Charge (Average)	$34.44	$37.02	$39.80	$42.59	$45.57	$48.30	$51.20
Single-Family Residential Accounts	214,969	217,380	219,818	222,284	224,778	227,299	229,849
Total Service Charge Revenues (000)	$193,865	$210,324	$228,184	$247,237	$266,998	$287,536	$307,603
Capacity Charge (Per EDU)	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
Annual Increase in EDU's	6,649	6,760	6,870	6,981	7,055	7,129	7,203

Total Capacity Charge Revenue (000)	$15,292	$15,547	$15,802	$16,057	$16,227	$16,397	$16,566

5. The City will fund the capital costs of the Wastewater System Capital Improvement Plan from a combination of proceeds of indebtedness and Wastewater System revenues as set forth in Table 5.

6. The average annual interest rate on indebtedness issued to finance the Wastewater System Capital Improvement Plan will be 4.75% for Fiscal Year 2004 and 6.0% through Fiscal Year ending June 30, 2009, and such debt will be amortized over 30 years from time of issuance.

7. The amount of indebtedness (in thousands) that will be issued in each of the Fiscal Years ending June 30, 2004 through June 30, 2009 to fund the Wastewater System Capital Improvement Program will be as follows:

Fiscal Year Ending June 30	Principal Amount (in thousands)
2004	$395,164
2005	$0
2006	$149,903
2007	$129,054
2008	$139,415
2009	$156,041

The amount of indebtedness set forth on the foregoing table only includes new-money indebtedness, that is, indebtedness that will be used to purchase Components, pay for costs of issuance related to the issuance of such indebtedness, and any amounts deposited in any reserve fund securing such indebtedness. The amount of indebtedness set forth on the foregoing table does not include any indebtedness that will be issued to refund or to refinance previously issued indebtedness. The amount of indebtedness assumed to be issued in Fiscal Year 2004 constitutes that portion of the proceeds of the Series 2003 Subordinated Bonds that the City will use to purchase Components of the Wastewater System, the Costs of Issuance, and any amounts that are deposited into the Reserve Fund. However, a portion of that indebtedness assumed to be issued in Fiscal Year 2004 may include some amounts that the City receives pursuant to revolving fund loans from the State. The indebtedness table above assumes that all indebtedness assumed to be incurred in Fiscal Years 2006 through 2009 will be Parity Obligations.

The projections on Table 14 reflect the defeasance and refunding of $[•] of the Outstanding Parity Obligations from a portion of the proceeds of the Series 2003 Subordinated Bonds, the effect of which can be seen on Table 1 herein. See "DESCRIPTION OF THE SERIES 2003 SUBORDINATED BONDS — Debt Service Requirements" above.

8. The average annual interest rate on invested funds will be 2.0% through 2007, and 4.5% thereafter.

9. The City and the 15 Participating Agencies are parties to a 50-year Regional Wastewater Disposal Agreement. The agreement provides for the Participating Agencies to pay their proportionate share of Metropolitan System costs as described under "WASTEWATER SYSTEM — The Participating Agencies and the Regional Wastewater Disposal Agreement." The Participating Agencies will contribute approximately 30% of the total Metropolitan System effluent flow.

10. Annual flows of the City for Fiscal Years ending June 30, 2003 through June 30, 2009 will be as follows:

	2003[1]	2004	2005	2006	2007	2008	2009
Average daily mgd	121	123	125	127	128	129	131
Percent (%) Increase	4.31	1.65	1.63	1.60	0.79	0.78	1.55

(1) Amounts listed under Fiscal Year 2003 reflect assumptions and do not reflect actual results.

11. The EPA will renew the City's Modified Waiver as discussed under "ACTIONS RELATING TO TREATMENT OF SEWAGE — Relief From Secondary Treatment Standards." The consequences of not renewing the Modified Waiver may materially affect the projections set forth above.

12. The accelerated program adopted by the City Council and the EPA's Administrative Order constitute the only actions that the City must take to remedy the Municipal System's collection system. See "ACTIONS RELATING TO COLLECTION SYSTEM – Special Considerations by Prospective Investors."

LABOR RELATIONS

Approximately 98% of the MWWD employees are represented by either the Municipal Employees Association ("MEA") or the American Federation of State and County Municipal Employees ("Local 127"). In general, the MEA represents all technical, professional, and supervisory staff and administrative support personnel. Local 127 represents maintenance workers laborers, skilled trades positions and equipment operators.

MEA represented employees and Local 127 represented employees received a 2% pay increase effective December 26, 1998, a 4% increase in December 1999, a 2% increase in July 2000, a 2% increase in December 2000, a 5% increase in December 2001, and a 1% increase in December 2002. The current agreement provides for a 2% increase in December 2003, a 2% increase in June 2004, a 3% increase in December 2004 and a 3% increase in December 2005 (Local 127, 3%) These agreements expire on June 30, 2005.

PENSION PLAN

All benefited City employees participate with the full-time employees of the San Diego Unified Port District (the "District") in the City Employees' Retirement System ("CERS"). CERS is a public employee retirement system that acts as a common investment and administrative agent for the City and the District. Through various benefit plans, CERS provides retirement benefits to all general, safety (police and fire), and legislative members.

The CERS plans are structured as defined benefit plans in which benefits are based on salary, length of service, and age. City employees are required to contribute a percentage of their annual salary to CERS. State legislation requires the City to contribute to CERS at rates determined by actuarial valuations.

The City's last actuarial valuation dated June 30, 2002 stated the funding ratio (Valuation of Assets available for Benefits to Total Actuarial Accrued Liability), of the CERS fund to be 77.3%. The CERS fund has an Unfunded Actuarial Accrued Liability (UAAL) of $720.7 million as of June 30, 2002, which represents a $436.8 million increase in the UAAL since the previous actuarial calculation dated June 30, 2001. The UAAL is the difference between total actuarial accrued liabilities of $3.169 billion and assets allocated to funding of $2.448 billion. The increase in the UAAL as of June 30, 2002, results primarily from the lower than anticipated investment returns. The UAAL is amortized over a 30-year period, which started July 1, 1991, with each year's amortization payment reflected as a portion of the percentage of payroll representing the employer's contribution rate. As of June 30, 2002, there were 19 years remaining in the amortization period.

INSURANCE

The MWWD is self-insured for workers' compensation and long-term disability and for public liability claims exposure up to $1,000,000 per occurrence. For liability between $1,000,000 and $54 million, the MWWD is covered by the City which purchases insurance from commercial insurers in layers for its public liability exposure.

The annual budget and expenditures for liability claims of the Wastewater System for Fiscal Years 1998 through 2002 is reflected in Table 15 as follow:

Table 15
LIABILITY CLAIMS BUDGET AND EXPENDITURES
Fiscal Years Ending June 30, 1998 to 2002
(Unaudited)

Fiscal Year	Budget	Expenditure[1]
1998	$1,464,000	$2,714,552
1999	$1,464,000	$2,018,540
2000	$1,464,000	$2,091,430
2001	$1,464,000	$2,905,287
2002	$1,464,000	$2,149,467

(1) Over budget expenditures paid from sewer fund balance available for appropriation.
Source: Office of the City Auditor and Comptroller and MWWD.

The City maintains commercial property insurance on all City owned buildings of an insurable nature, and currently carries property and extended loss insurance coverage of $200 million per occurrence with a $25,000 deductible on all City buildings, and earthquake insurance coverage of up to $100 million on all bond-funded buildings. Depending on availability and affordability of such earthquake insurance, the City may elect not to purchase such coverage in the future. The City does not maintain any casualty insurance on the pipelines of the Wastewater System as such insurance is not commercially available.

INVESTMENT OF FUNDS
[UPDATE TO MAY 31, WHEN AVAILABLE]

The Treasurer of the City of San Diego, in accordance with the Charter of the City of San Diego and authority granted by the City Council, is responsible for investing the unexpended cash in the Treasurer's pooled operating investment fund (the "City Pool"). Responsibility for the daily investment of funds in the City Pool is delegated to the City's Chief Investment Officer. The City is the only participant in the City Pool; there are no other City Pool participants either voluntary or involuntary. The investment objectives of the City Pool are preservation of capital, liquidity and return.

Oversight and Reporting Requirements

The City Treasurer provides an investment report on a monthly basis to the City Manager, the City Auditor and Comptroller and the City Council and annually presents a statement of investment policy (the "Investment Guidelines") to the City Manager, the City Council and the City Manager's Investment Advisory Committee. The Investment Advisory Committee was established in 1990 and is composed of the City Auditor and Comptroller, a Deputy City Manager and three investment professionals from the private sector. The Committee is charged with oversight responsibility to review on an ongoing basis the Investment Guidelines and practices of the City Treasurer and recommend changes. Investments in the City Pool are audited by an independent firm of certified public accountants as part of the overall audit of the City's financial statements.

The City's investment section uses outside services to provide investment portfolio valuations and accounting and reporting services. The service provides monthly portfolio valuation, investment performance statistics and other statistical security reports, which are distributed to the City Treasurer accounting section and the City Auditor and Comptroller's office for review and reconciliation. The City Treasury accounting section prepares a series of monthly reports, which includes portfolio market valuation, and distributes these to the Mayor, City Council, City Manager and other officials.

Authorized Investments

Investments in the City Pool are governed by State law and further restricted by the City's Investment Guidelines. The Guidelines have been written with safety of principal being the foremost objective. Permitted investments include U.S. Treasury securities, U.S. Agency securities, corporate medium term notes, money market instruments and the Local Agency Investment Fund (California State Pool). Reverse repurchase agreements ("reverse repos") are restricted to 20% of the base value of the portfolio and are governed by various maturity restrictions as well. The main operating funds of the City are being managed in two separate portfolios. In its management of the "Liquidity" portfolio, comprising about 35% of total funds, the City invests in a variety of debt securities with maturities ranging from one day to one year. The remaining 65% of funds are managed in a separate "Core" portfolio that consists of a variety of debt securities ranging from one day to five years; performance is measured against the Merrill Lynch 1 to 3 year U.S. Treasury Index. Safety of principal and liquidity are the paramount considerations in the management of both portfolios.

Pool Liquidity and Other Characteristics

The City Pool (including both the "Liquidity" and the "Core" portfolios) is highly liquid. As of January 31, 2003, approximately 10% of the pool investments mature within 60 days, 21% within 90 days and 35% within 181 days (on a cumulative basis). As of January 31, 2003, the Pool had a weighted average maturity of 1.59 years (580 days) and its weighted yield was 2.90%. For purposes of calculating weighted average maturity, the City Treasurer treats investments in the Statewide Local Agency Investment Fund (California State Pool) as maturing within one day. The Liquidity portfolio had a duration of 0.35 years and the Core portfolio had a duration of 1.42 years as of January 31, 2003. Duration is a measure of the price volatility of the portfolio and reflects an estimate of the projected increase or decrease in the value of the portfolio based upon a decrease or increase in interest rates. Accordingly, the Liquidity portfolio should decrease in market value by 0.35% for every 1% increase in market interest rates while the Core portfolio should decrease in market value by 1.42% for every 1% increase in market interest rates. The City Pool's composition is designed with a goal of having sufficient liquid funds available to meet disbursement requirements. The composition and value of investments under management in the City Pool will vary from time to time depending on cash flow needs of the City, maturity or sale of investments, purchase of new securities, and fluctuations in interest rates.

Table 16
CITY OF SAN DIEGO POOLED OPERATING INVESTMENT FUND (I)
at January 31, 2003
(Unaudited)

Investment Instrument	Book Value	Market Value	Percent of Total[1]
U.S. Treasury Bills and Notes	$ 491,710,525	$ 495,537,305	38.88%
Federal Agency Securities	569,354,218	575,278,317	45.01%
Medium Term Notes (Corporate)[2]	140,059,070	139,036,161	11.07%
Money Market Instruments[3]	43,397,533	43,443,305	3.43%
Local Agency Investment Fund	20,334,871	20,334,871	1.61%
NET ASSETS	$1,264,856,217	$1,273,629,959	100.00%

(1) Based on Book Value.
(2) These notes consist of both fixed and floating interest rate securities. The notes with floating interest rates are reset at intervals ranging from one day to three months.
(3) These securities consist of commercial paper, negotiable certificates of deposit, term and overnight repurchase agreements, banker's acceptances, bank notes and/or thrift notes.
Source: City of San Diego, Office of the City Treasurer

Derivatives

As of January 31, 2003, and at least since October 14, 1997, the City Pool has had no assets invested in structured notes or derivatives prohibited in California Government Code 53601. The City Treasurer defines a

derivative as a financial instrument whose value is derived from an underlying asset, price, index or rate, *e.g.*, options, futures or interest rate swaps. A structured note is an investment instrument that can contain within its structure various combinations of derivatives such as imbedded calls and interest rate swaps that will offer returns to an investor within a defined set of parameters and interest rate scenarios, *e.g.*, step-ups, multiple-indexed notes, inverse floaters or leveraged constant maturity notes. The City Treasurer does not define fixed rate notes, debentures with call features or single index non-leveraged floating rate notes, *e.g.* monthly LIBOR plus or minus a spread, as structured notes. The City Treasurer limits structured notes eligible for purchase to those investments which, at the time of purchase, have no risk of principal loss if held to maturity and offer an estimated return at purchase that exceeds the return on a comparable fixed term investment in the judgment of the City's Investment Officer. The City Treasurer does not allow the purchase of securities that have a negative amortization of principal. In addition, California law prohibits the purchase by local governments of inverse floaters, range notes or interest only strips derived from pools of mortgages.

Reverse Repurchase Agreements

A reverse repo is a transaction in which the City Pool sells a security and concurrently agrees to buy it back from the same party at a later date for a price that includes an interest component for the City Pool's use of the money. Although the City from time to time uses reverse repos, as of January 31, 2003, and since September 18, 1996, the City has had no reverse repos in the City Pool. The Investment Guidelines require that all proceeds of a reverse repo be reinvested in securities whose maturity date or coupon reset date match the maturity of the reverse repo. The Investment Guidelines limit the use of reverse repurchase agreements to 20% of the base value of the City Pool. The City's reverse repo program is monitored daily and reported monthly, as described above under "Oversight and Reporting Requirements"

TAX MATTERS

In the opinion of Orrick, Herrington & Sutcliffe LLP, Los Angeles, California, and Webster & Anderson, Oakland, California, Co-Bond Counsel, based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, compliance with certain covenants, interest on the Series 2003 Subordinated Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 (the "Code") and is exempt from State of California personal income taxes. Co-Bond Counsel are of the further opinion that interest on the Series 2003 Subordinated Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Co-Bond Counsel observe that such interest is included in adjusted current earnings when calculating corporate alternative minimum taxable income. A complete copy of the proposed form of opinion of Co-Bond Counsel is set forth in Appendix E hereto.

To the extent the issue price of any maturity of the Series 2003 Subordinated Bonds is less than the amount to be paid at maturity of such Series 2003 Subordinated Bonds (excluding amounts stated to be interest and payable at least annually over the term of such Series 2003 Subordinated Bonds) the difference constitutes "original issue discount," the accrual of which, to the extent properly allocable to each owner thereof, is treated as interest on the Series 2003 Subordinated Bonds which is excluded from gross income for federal income tax purposes and State of California personal income taxes. For this purpose, the issue price of a particular maturity of the Series 2003 Subordinated Bonds is the first price at which a substantial amount of such maturity of the Series 2003 Subordinated Bonds is sold to the public (excluding bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers). The original issue discount with respect to any maturity of the Series 2003 Subordinated Bonds accrues daily over the term to maturity of such Series 2003 Subordinated Bonds on the basis of a constant interest rate compounded semiannually (with straight-line interpolations between compounding dates). The accruing original issue discount is added to the adjusted basis of such Series 2003 Subordinated Bonds to determine taxable gain or loss upon disposition (including sale, redemption, or payment on maturity) of such Series 2003 Subordinated Bonds. Owners of the Series 2003 Subordinated Bonds should consult their own tax advisors with respect to the tax consequences of ownership of Series 2003 Subordinated Bonds with original issue discount, including the treatment of purchasers who do not purchase such Series 2003 Subordinated Bonds in the original offering to the public at the first price at which a substantial amount of such Series 2003

Subordinated Bonds is sold to the public.

The Series 2003 Subordinated Bonds purchased, whether at original issuance or otherwise, for an amount greater than their principal amount payable at maturity (or, in some cases, at their earlier call date) ("Premium Bonds") will be treated as having amortizable bond premium. No deduction is allowable for the amortizable bond premium in the case of bonds, like the Premium Bonds, the interest on which is excluded from gross income for federal income tax purposes. However, the amount of tax exempt interest received, and a purchaser's basis in a Premium Bond, will be reduced by the amount of amortizable bond premium properly allocable to such purchaser. Owners of Premium Bonds should consult their own tax advisors with respect to the proper treatment of amortizable bond premium in their particular circumstances.

The Code imposes various restrictions, conditions and requirements relating to the exclusion from gross income for federal income tax purposes of interest on obligations such as the Series 2003 Subordinated Bonds. The City and the Authority have covenanted to comply with certain restrictions designed to insure that interest on the Series 2003 Subordinated Bonds will not be included in federal gross income. Failure to comply with these covenants may result in interest on the Series 2003 Subordinated Bonds being included in gross income for federal income tax purposes, possibly from the date of original issuance of the Series 2003 Subordinated Bonds. The opinion of Co-Bond Counsel assumes compliance with these covenants. Co-Bond Counsel have not undertaken to determine (or to inform any person) whether any actions taken (or not taken) or events occurring (or not occurring) after the date of issuance of the Series 2003 Subordinated Bonds may adversely affect the value of, or the tax status of interest on, the Series 2003 Subordinated Bonds. Further, no assurance can be given that pending or future legislation or amendments to the Code, if enacted into law, or any proposed legislation or amendments to the Code, will not adversely affect the value of, or the tax status of interest on, the Series 2003 Subordinated Bonds. Prospective Beneficial Owners are urged to consult their own tax advisors with respect to proposals to restructure the federal income tax.

Certain requirements and procedures contained or referred to in the Subordinated Indenture, the Installment Purchase Agreement, the Tax Certificate and other relevant documents may be changed and certain actions (including, without limitation, defeasance of the Series 2003 Subordinated Bonds) may be taken or omitted under the circumstances and subject to the terms and conditions set forth in such documents. Co-Bond Counsel express no opinion as to any Series 2003 Bond or the interest thereon if any such change occurs or action is taken or omitted upon the advice or approval of bond counsel other than Orrick, Herrington & Sutcliffe LLP and Webster & Anderson.

Although Co-Bond Counsel are of the opinion that interest on the Series 2003 Subordinated Bonds is excluded from gross income for federal income tax purposes and is exempt from State of California personal income taxes, the ownership or disposition of, or the accrual or receipt of interest on, the Series 2003 Subordinated Bonds may affect a Beneficial Owner's federal or state tax liability. The nature and extent of these other tax consequences will depend upon the particular tax status of the Beneficial Owner or the Beneficial Owner's other items of income or deduction. Co-Bond Counsel express no opinion regarding any such other tax consequences.

INDEPENDENT ACCOUNTANTS

The financial statements of the Metropolitan Wastewater Utility for the Fiscal Years ended June 30, 2002 and 2001, attached hereto as Appendix A to this Official Statement have been audited by Calderon, Jaham & Osborn, independent accountants, which is a predecessor in interest of Caporicci & Larson, as set forth in their report, dated November 27, 2002.

RATINGS

Moody's Investors Service ("Moody's"), Standard & Poor's Ratings Group ("S&P") and Fitch Ratings, Inc. ("Fitch") have assigned ratings of "[•]," "[•]" and "[•]," respectively, to the Series 2003 Subordinated Bonds based upon the issuance of the Bond Insurance Policy by the Insurer. See "SECURITY FOR THE SERIES 2003 SUBORDINATED BONDS — Bond Insurance." Such ratings reflect only the views of such organizations and any

desired explanation of the significance of such ratings should be obtained from the rating agency furnishing the same, at the following addresses: Moody's, 99 Church Street, New York, New York 10007; S&P, 55 Water Street, New York, New York 10041; and Fitch Ratings, Inc., One State Street Plaza, New York, New York 10004. Such ratings are not a recommendation to buy, sell or hold the Series 2003 Subordinated Bonds. Generally, a rating agency bases its rating on the information and materials furnished to it and on investigations, studies and assumptions of its own. There is no assurance that such ratings will continue for any given period of time or that such ratings will not be revised downward or withdrawn entirely by the rating agencies, if in the judgment of such rating agencies, circumstances warrant. Any such downward revision or withdrawal of such ratings may have an adverse effect on the market price or marketability of the Series 2003 Subordinated Bonds. The Authority and the City assume no responsibility either to notify the owners of any proposed change in or withdrawal of any such rating subsequent to the date hereof, or to contest any such revision or withdrawal.

FINANCIAL ADVISOR

Montague DeRose and Associates, LLC, Walnut Creek, California, has acted as financial advisor to the City in connection with the issuance of the Series 2003 Subordinated Bonds. The Financial Advisor is not obligated to undertake, and has not undertaken to make, an independent verification or assume responsibility for the accuracy, completeness, or fairness of the information contained in this Official Statement.

CERTAIN LEGAL MATTERS

The validity of the Series 2003 Subordinated Bonds and certain other legal matters are subject to the approving opinion of Orrick, Herrington & Sutcliffe llp, Los Angeles, California, and Webster & Anderson, Oakland, California, Co-Bond Counsel. A complete copy of the proposed form of Co-Bond Counsel opinion is attached as Appendix E. Co-Bond Counsel undertakes no responsibility for the accuracy, completeness or fairness of this Official Statement. Certain legal matters are subject to the approval of Casey Gwinn, Esq., the City Attorney of the City of San Diego and General Counsel to the Authority and Orrick, Herrington & Sutcliffe llp, Los Angeles, California, Disclosure Counsel. Sidley Austin Brown & Wood LLP has acted as counsel to the Underwriters for specified purposes. Sidley Austin Brown & Wood LLP was not engaged to make, and has not made, any investigation relating to, and assumes no responsibility for, the accuracy, completeness or fairness of this Official Statement.

LITIGATION

There is no litigation pending concerning the validity of the Series 2003 Subordinated Bonds, the corporate existence of the City or the Authority, or the title of the officers to their respective offices.

UNDERWRITING

The Series 2003 Subordinated Bonds are to be purchased by UBS Financial Services Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated and Redwood Securities Group, Inc., as Underwriters, at a price which includes an underwriters' discount of $[•]. The Underwriters are committed to purchase all the Series 2003 Subordinated Bonds if any are purchased. The Underwriters may offer and sell the Series 2003 Subordinated Bonds to certain dealers (including depositing the Series 2003 Subordinated Bonds into investment trusts) and others at prices lower than the offering prices stated on the inside cover of this Official Statement. After the initial public offering, the public offering prices of the Series 2003 Subordinated Bonds may be changed from time to time by the Underwriters.

CONTINUING DISCLOSURE

The Authority has determined that no financial or operating data concerning the Authority is material to an evaluation of the offering of the Series 2003 Subordinated Bonds or to any decision to purchase, hold or sell the Series 2003 Subordinated Bonds and the Authority will not provide any such information. The City has undertaken all responsibilities for any continuing disclosure to Bondholders as described below, and the Authority shall have no

liability to the Bondholders of the Series 2003 Subordinated Bonds or any other person with respect to S.E.C. Rule 15c2-12.

The City has covenanted for the benefit of Bondholders and beneficial owners of the Series 2003 Subordinated Bonds to provide certain financial information and operating data relating to the City by not later than 270 days following the end of the City's Fiscal Year (which Fiscal Year currently ends June 30) (the "Annual Report"), commencing with the report for the 2002-2003 Fiscal Year, and to provide notices of the occurrence of certain enumerated events, if material. The Annual Report will be filed by the City with each Nationally Recognized Municipal Securities Information Repository and the State Repository, if any. The notices of material events will be filed by the City with the Municipal Securities Rulemaking Board, each Nationally Recognized Municipal Securities Information Repository and the State Repository, if any. The specific nature of the information to be contained in the Annual Report or the notices of material events is summarized below under the caption APPENDIX G — "FORM OF CONTINUING DISCLOSURE CERTIFICATE." These covenants have been made in order to assist the Underwriters in complying with S.E.C. Rule 15c2-12(b)(5). The City has never failed to comply in all material respects with any previous undertakings with regard to said Rule to provide annual reports or notices of material events.

AVAILABILITY OF DOCUMENTS

Copies of the Official Statement, the Subordinated Indenture, the Installment Purchase Agreement, the Continuing Disclosure Certificate, the City Charter, the Sewer Revenue Fund audited financial statements and additional information relating to the City and the Series 2003 Subordinated Bonds will be available, upon written request, from the office of the City Clerk, City Administration Building, 202 C Street, MS 2A, San Diego, California 92101. Additional copies of the Official Statement will be made available upon request from the Financial Advisor, c/o Montague DeRose and Associates, LLC, 3093 Citrus Circle, Suite 165, Walnut Creek, California (925) 256-9797.

MISCELLANEOUS

The purpose of this Official Statement is to supply information to prospective buyers of the Series 2003 Subordinated Bonds. References are made herein to certain documents and reports that are brief summaries thereof that do not purport to be complete or definitive, and reference is made to such documents and reports for full and complete statement of the contents thereof.

Any statements in this Official Statement involving matters of opinion, whether or not expressly so stated, are intended as such and not as representations of fact. This Official Statement is not to be construed as a contract or agreement between the City and the purchasers or holders of any of the Series 2003 Subordinated Bonds. The preparation and distribution of this Official Statement have been authorized by the Authority and the City.

PUBLIC FACILITIES FINANCING AUTHORITY OF THE
CITY OF SAN DIEGO

By:
Authorized Representative

CITY OF SAN DIEGO

By:
Authorized Representative

EXHIBIT 18

From: Dennis Kahlie
To: Richard Mendes
Date: 4/9/04 12:08PM
Subject: Bullet Points

Richard -

The bullet point summaries of the compliance chronology and study findings you requested are attached.

- D

CC: Bill Hanley; Charles Yackly; George Loveland; Kelly Salt; Patricia Frazier

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WATER / SEWER RATE STRUCTURING ISSUES IDENTIFIED IN COST OF SERVICE STUDIES

April 9, 2004

WATER

- The existing user classification scheme is adequate to support a fair and equitable rate structure but would benefit from creation of a new Irrigation & Construction class.
- Existing monthly meter charges are higher than those supported by cost of service analysis.
- Existing monthly meter charges for large meters are disproportionately higher than supported by cost of service analysis.
- Use of cost of service based meter charges would reduce bills for many single-family residential users consuming low to moderate amounts of water each month.
- The current $2,500 per equivalent dwelling unit water capacity charge does not fully recover the cost of providing capacity to new system users. ($2,550 is full cost recovery)

WASTEWATER

- Municipal wastewater rates and charges are not in compliance with SWRCB proportionate-to-use billing requirements because they do not incorporate an organics cost recovery parameter.
- Incorporation of an organics parameter in the municipal wastewater billing structure will result in cost shifts within and between some user classes. In general, costs will shift from the single-family residential class to commercial and industrial user groups which discharge large amounts of organic material to the waste stream.
- The maximum limit on winter months-based single-family residential billings of 10 HCF does not correctly reflect wastewater discharge volume from this class, and should be increased.
- The current $2,500 per equivalent dwelling unit sewer capacity charge does not fully recover the cost of providing capacity to new system users. ($3,710 is full cost recovery)

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CHRONOLOGY OF EVENTS
WASTEWATER RATE STRUCTURE COMPLIANCE EFFORTS AS OF APRIL 9, 2004

BACKGROUND

On November 26, 2003, the City received a letter from the SWRCB seeking documentation of implementation of a SWRCB-approved wastewater rate structure. In a response dated January 8, 2004, the City responded to the SWRCB's request, indicating that although such a structure was not yet in place, substantial progress had been made, and that it was anticipated that compliance would be achieved by the beginning of FY 2005. The following summarizes the chronology of events since June, 1990.

CHRONOLOGY OF EVENTS

- June, 1990 – City Council adopts five year financing plan which is the basis for a primary treatment-based plan approved by SWRCB in 1991.
- September, 1991 – SWRCB approves the system of rates and charges applicable to Metro Agency and municipal primary treatment billing.
- October, 1991 – August, 1998 – Pursuant to SWRCB requirements applicable to a secondary treatment environment, City staff work to revise the wastewater rate structure to incorporate an organics parameter.
- September, 1998 – The City and Metro Participating Agencies agree to rate structure revisions which incorporate the organics parameter, thereby achieving SWRCB compliance at the "wholesale" level. The new structure is not, however, extended to "retail" system users within the City.
- September, 1999 – The City Council directs the city manager to prepare a wastewater cost of service study with input from a "stakeholders' group" representing certain customer classes.
- May, 2001 – City and consultant staff finalize the cost of service study with stakeholders' group input. The stakeholders' group issues a separate report on its findings.
- October, 2003 – An updated cost of service study is completed pursuant to City Council direction and submitted to Council members and the Public Utilities Advisory Commission (PUAC) for review.
- November, 2003 to Present – PUAC conducts a series of public hearings on study findings in preparation for issuing its recommendations.
- March, 2004 – The City received a letter from SWRCB staff acknowledging receipt of the City's January 8, 2004 response letter. With two technical comments which have now been addressed, SWRCB staff indicated its approval of the rate structure modifications proposed by the City for implementation beginning FY 2005.
- March, 2004 – June 8, 2004 hearing date for hearing on wastewater rate restructuring to achieve compliance with SWRCB requirements is set.

3/3

EXHIBIT 19

From: Scott Peters
Date: Wed, Apr 21, 2004
Time: 2:00 PM - 2:15 PM
Subject: Cost of Service Studies & Public Notification
Place: here

Attendees: Richard Mendes, Dennis Kahlie and Les Girard

EXHIBIT 20

W/ATTACHMENT

SWRCB GRANT/LOAN OBLIGATION DISCLOSURE ISSUE
APRIL 26, 2004

BACKGROUND

The City has been contractually obligated to establish and maintain a system of sewer rates and charges which meets with the approval of the State Water Resources Control Board (SWRCB) since it accepted its first Clean Water Act grant in the late 1970's. Each subsequent Clean Water Act grant received by the City incorporated the same requirement, as did each of the eight State Revolving Fund Loan Program (SRF) low interest loans which were accepted by the City once grants were no longer available.

The Clean Water Act requires that the cost of operating and maintaining wastewater transportation, treatment and disposal facilities which are at least partially grant or loan funded be recovered from system users on a basis proportionate to use. Determination of what constitutes cost recovery on a basis proportionate to use in California has been delegated by the federal Environmental Protection Agency to the SWRCB. While the City's Metro Participating Agency "wholesale" level cost allocation and billing structure has been in compliance with SWRCB requirements since September of 1998, the City has never adopted a SWRCB-approved rate structure applicable to "retail" level system users within its corporate limits. The failure to adopt such a "retail" level structure is directly attributable to the facts that (1.) such an action has been regularly opposed by industrial dischargers of large amounts of organic material, and (2.) SWRCB staff were (until recently) less than diligent in pursuing the City's compliance.

Attachment 1 provides a chronology of compliance efforts on the part of the City since March of 1990.

SHOULD WASTEWATER BOND/DISCLOSURE COUNSEL HAVE BEEN AWARE OF THE SITUATION WITH RESPECT TO SWRCB COMPLIANCE?

In all likelihood, yes. A disclosure counsel familiar with grant and loan programs available to California wastewater utilities, and who had prepared disclosure documents for such utilities in the past, could reasonably be expected to be aware of the rate structure compliance obligations incorporated in standard Clean Water Grant and SRF loan contract documents, could reasonably be expected to be aware that cost of service and rate design studies are the means of determining adequacy of compliance by SWRCB, and could have asked to review them to determine the City's compliance status if he felt it was important. Statements with respect to SWRCB compliance status were incorporated in wastewater cost of service and rate design studies completed in March 1990, May, 1998, May, 2001 and October, 2003.

DOES EVIDENCE EXIST THAT WASTEWATER BOND/DISCLOSURE COUNSEL WAS AWARE THAT CITY WASTEWATER RATES WERE/ARE SUBJECT TO SWRCB GUIDELINES?

Yes. In a discussion of sewer service charges beginning on page 28 of the 1993 wastewater OS, the following language is to be found:

> "Sewer service charges are based on the characteristics of the wastewater discharged by a particular sewer user. The service charge is based not only on the volume of sewage discharged, but the composition, or suspended solids, within the sewage. *Based on guidelines set forth by the SWRCB*, annual revenue requirements are categorized as either flow or solids induced." [Emphasis added]

In a discussion of wastewater system regulatory requirements beginning on page 21 of the 1995 wastewater OS, and in substantially the same form beginning on page 23 of the 1997 wastewater OS, the following language is to be found:

> "As a condition of its past receipt of federal grants, the City and the Participating Agencies must have approved sewer service charge structures. Such service charge structures require the recovery of annual operations, maintenance and replacement costs from users of the system in a proportionate manner according to the customer's level of use."
>
> "The rate structure has been reviewed by the SWRCB and no grant funds or costs under grant funded programs have been disallowed based on the nature of the rate structures."

In addition, in a discussion of wastewater system regulatory requirements beginning on page 22 of the 1999 wastewater OS, the following language is to be found:

> "As another condition of its past receipt of federal grants, the State Board, as the delegate of the EPA, must approve the sewer service charge structures of the City and the Participating Agencies. Such service charge structures require the recovery of annual operations, maintenance and replacement costs from users of the system in a proportionate manner according to the customer's level of use. Such factors as volume, infiltration/inflow, delivery flow rate, and strength of sewage are to be considered for determining proportionate use."
>
> "The City's rate structure has been reviewed by the State Board and no grant funds or costs under grant funded programs have been disallowed based on the nature of the rate structures."

Finally, in a discussion of wastewater system regulatory requirements beginning on page 27 of the 2003 wastewater POS, language consistent with that of the 1999 wastewater OS may be found.

DID WASTEWATER BOND/DISCLOSURE COUNSEL HAVE OPPORTUNITIES TO EXPLORE AND DISCLOSE SWRCB RATE STRUCTURE COMPLIANCE ISSUES?

Yes. As bond/disclosure counsel on the 1993, 1995, 1997, 1999 and 2003 wastewater transactions, the firm consistently described the characteristics of the then-existent wastewater billing structure on pages 30, 32 and 32 of the respective OS's.

WOULD WASTEWATER BOND/DISCLOSURE COUNSEL HAVE HAD OCCASION TO REVIEW SRF CONTRACT DOCUMENTS IN THEIR ENTIRETY, INCLUDING THE RATE STRUCTURE COMPLIANCE CLAUSE?

Yes. Prior to acceptance of the first SRF loan in November of 1999, questions arose as to the ability of the City to accept such loans, given the existing wastewater MIPA and the protections it provided to previously issued parity debt. A significant amount of negotiation with SWRCB staff was required to conform the SWRCB SRF loan documents to the MIPA and provide for the acceptance of the SRF loans on a subordinated, unsecured basis. Similar circumstances arose for a second time in 2003, subsequent to SWRCB's collateralization of its existing SRF loan portfolio to generate additional funds for new loans. The SWRCB's sale of public debt resulted in material revisions to its SRF loan documents, rendering the City's ability to accept new SRF loans questionable. Wastewater bond/disclosure counsel was asked to review the new documents

and, having noted several problems, was asked to assist City staff in negotiating changes necessary to eliminate "deal breaker" language from the documents (which has thus far proven unsuccessful). There were no questions raised with respect to rate structure compliance in connection with this work.

CHRONOLOGY OF EVENTS
WASTEWATER RATE STRUCTURE COMPLIANCE EFFORTS AS OF APRIL 9, 2004
(REVISED APRIL 16, 2004)

BACKGROUND

On November 26, 2003, the City received a letter from the SWRCB seeking documentation of implementation of a SWRCB-approved wastewater rate structure. In a response dated January 8, 2004, the City responded to the SWRCB's request, indicating that although such a structure was not yet in place, substantial progress had been made, and that it was anticipated that compliance would be achieved by the beginning of FY 2005. The following summarizes the chronology of events since June, 1990.

CHRONOLOGY OF EVENTS

- March 1990 – Brown & Caldwell completes a cost of service study based on the primary treatment environment which exists at Point Loma.

- June, 1990 – City Council adopts five year financing plan which is the basis for a primary treatment-based plan approved by SWRCB in 1991.

- September, 1991 – SWRCB approves the system of rates and charges applicable to Metro Agency and municipal primary treatment billing.

- October, 1991 – August, 1998 – Pursuant to SWRCB requirements applicable to a secondary treatment environment, City staff work to revise the wastewater rate structure to incorporate an organics parameter.

- May, 1998 – Pinnacle Consulting / Chester Engineers completes a cost of service study incorporating a "retail" level organics parameter.

- September, 1998 – The City and Metro Participating Agencies agree to rate structure revisions which incorporate the organics parameter, thereby achieving SWRCB compliance at the "wholesale" level. The new structure is not, however, extended to "retail" system users within the City.

- September, 1999 – Pursuant to a request from Councilmember Kehoe, Mayor Golding and the City Council direct the city manager to prepare a wastewater cost of service study with input from a "stakeholders' group" representing certain customer classes.

- May, 2001 – City and consultant staff finalize the cost of service study with stakeholders' group input. The stakeholders' group issues a separate report on its findings.

- January, 2002 – Closed session discussion of Prop. 218 and SWRCB requirements with respect to sewer rates. Direction to the Attorney to further study the issue and report back.

- May, 2002 – In conjunction with a Council hearing on water rate increases, Councilmember Frye requests preparation of a water cost of service study. Her primary concern is with respect to capacity charges and whether they are at full cost recovery levels.

- November, 22, 2002 – Pursuant to a request from Councilmember Frye, the Mayor and City Council receive draft cost of service studies with a caution that the MWWD cost data used in the study is out-of-date and will require substantial updating and revision.

- October, 2003 – An updated wastewater cost of service study is completed pursuant to City Council direction and submitted to the Mayor, Council members and the Public Utilities Advisory Commission (PUAC) for review.

- November, 2003 – The City receives a letter from SWRCB requesting a copy of the City ordinance adopting an approved sewer rate structure.

- November, 2003 to Present – PUAC and its subcommittees conduct a series of public hearings on study findings in preparation for issuing its recommendations.

- January, 2004 – The City responds to SWRCB's November, 2003 letter, delineating its efforts to achieve compliance and committing to do so in FY 2004-05

- March, 2004 – The City receives a letter from SWRCB staff acknowledging receipt of it's January, 2004 response letter. With two technical comments which have now been addressed, SWRCB staff indicated its approval of the rate structure modifications proposed by the City for implementation beginning in FY 2005. SWRCB requests a copy of City Council resolution evidencing adoption of revised rates within 90 days.

- March, 2004 – A June 8, 2004 date for a noticed hearing on wastewater rate restructuring to achieve compliance with SWRCB requirements is set.

EXHIBIT 21

Kelly Salt - Re: Fwd: Cost of Service: Original Agreement

From: Dennis Kahlie
To: Bill Hanley; Kelly Salt; Richard Mendes
Date: 5/4/2004 12:20 PM
Subject: Re: Fwd: Cost of Service: Original Agreement

Sorry, but I don't know what "original 1991 agreement" he's referring to.

There is a letter from SWRCB to the effect that the City and the PAs have all submitted revenue plans which were approved which is dated September 18, 1991, which you will find in your January 8, 2004 attachments binder as Attachment 4. If that's what you think he wants, because he wants to argue that we've been in compliance all along, you should understand that at the time the letter was written, the required standard was that applicable to primary treatment facilities i. e., flow and suspended solids parameters only. If you review Attachment 5 in the binder, you will observe that the City was aware by at least July 19, 1989 (over two years earlier) of its obligation to incorporate an organics parameter in its rate structure when it brought secondary facilities on line.

- D

>>> Richard Mendes 05/04/04 11:40AM >>>
anyone have a copy of this?

EXHIBIT 22

Thomas Zeleny - Kelco/ISP Algentes

From: Hank Cunningham
To: Jeff Kawar; Russ Gibbon
Date: 6/30/2004 8:58 AM
Subject: Kelco/ISP Algentes
CC: Bill Hanley; Richard Mendes

Jeff/Russ:

Richard Mendes stopped by today with a great ED opportunity for the BEAR team. Kelco and ISP Algentes are affiliated companies involved with kelp processing for medical/pharmaceutical uses. They're located in Barrio Logan at the foot of the Coronado Bridge. The recent water rate increase has affected them to the tune of an additional $3M per year in charges. Richard's interested in working with us on a financing package to help retain, and possibly expand, this important employer for the City. I mentioned that the site would fall within both the State Metro Enterprise Zone and the federal Renewal Community boundaries for the purpose of tax credits. I also mentioned that we have an upcoming meeting with a financial consultant on the New Market Tax Credit program, and that we're highly motivated to find appropriate projects that could benefit from this incentive. We also discussed IDB financing - directly through our Charter City authority and not CSCDA - and the possibility of a new EDA grant on the heals of our recent award from that agency. Please give me a call to discuss.

Hank