APPROVED AS REVISED BY LETTER DATED 1-10-97
By the Board of Directors of the Metropolitan Water District of Southern California at its meeting held

JAN 14 1997

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METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Dawn Chin for EXECUTIVE SECRETARY

December 17, 1996

To: Board of Directors (Executive Committee--Action) (Water Planning and Resources Committee--Action) (Finance and Insurance Committee--Information)

From: General Manager

Submitted by: Debra C. Man, Chief
Planning and Resources Division

Subject: Resolution to Adopt Wheeling Rates Effective January 15, 1997

RECOMMENDATION

It is recommended that your Board approve (i) the Resolution to Adopt Wheeling Rates attached as Exhibit B to this letter and (ii) by a two-thirds vote, the Resolution Amending and Restating the Definition of Operating Revenues (Fourth Supplemental Resolution) attached as Exhibit C to this letter.

EXECUTIVE SUMMARY

In November 1996, your Board adopted ten principles for wheeling transactions, approved the resolution of intention to adopt wheeling rates, and set a public hearing on the General Manager's recommended wheeling rates effective January 15, 1997. Comments on the proposed rates from the public received at the December 9, 1996, public hearing are summarized and addressed in Exhibit A.

Over the past ten years, Metropolitan provided wheeling service on a case-by-case basis. These service requests resulted from emergency or short-term needs and were handled through negotiated contracts. Participants at the San Pedro Integrated Resources Plan Assembly in 1994 stated that Metropolitan should develop an explicit wheeling policy.

Phase 2 of the Rate Refinement Process (RRP) was to address wheeling, cost containment opportunities, and the San Diego County Water Authority's proposed water transfer with the Imperial Irrigation District. The participants considered different wheeling rates applicable to agencies who wish to wheel water through Metropolitan's system. These rates would be set on an annual basis, and would be provided for both firm and non-firm (interruptible) service, and would apply to transactions of one year or less. These two service levels are

comparable to Metropolitan's basic water service and groundwater replenishment service. Metropolitan staff proposed that the Board adopt rates effective January 15, 1997, for firm and non-firm wheeling service for member agencies.

The proposed rates would recover Metropolitan's reasonable costs for the use of its transportation system, including all committed, unavoidable costs in order to avoid financial harm to other Metropolitan member agencies. Using this method, all unavoidable costs, including unavoidable supply costs, are included in calculating the firm wheeling rate. The proposed rate for firm wheeling is $262 per acre-foot, plus power. The proposed rate for non-firm (interruptible) wheeling is $141 per acre-foot, plus power. Wheeling rates for non-member agencies using Metropolitan's system will be determined on a case-by-case basis.

It is also proposed that the methodology for determining firm and non-firm wheeling rates would be reviewed no later than the end of fiscal year 2000-01, consistent with the

RRP Phase 1 recommendations, as Phase 3 discussions will deal with long-term rate structure reforms, which by necessity would include rates for wheeling services.

Exhibit B is a resolution to adopt short-term firm and non-firm wheeling rates and sets forth the findings the Board is required to make under Sections 1810 through 1814 of the California Water Code related to wheeling. Also included as Attachment 1 to Exhibit B is a technical report explaining the basis for the rates and charges.

Exhibit C is a resolution amending the definition of "Operating Revenues" in Metropolitan's short-term revenue certificate (commerical paper) resolution to include revenues from wheeling service in the revenues pledged for payment of Metropolitan's commercial paper. Pledging revenues from wheeling service as well as water service to support the financial obligations issued to pay for capital improvements is required to prevent shifting of debt service costs from wheeling to non-wheeling member agencies. The short-term revenue certificate resolution is recommended for amendment at this time because authorized commercial paper may be issued on short notice as necessary to fund the capital improvement program.

DETAILED REPORT

Over the past ten years, Metropolitan has participated in wheeling arrangements for specific purposes, including providing services to the Castaic Lake Water Agency, Tijuana, Mexico, and the Santa Barbara County Flood Control and Water Conservation District. These arrangements generally were the result of emergency or short-term needs. All wheeling arrangements to date have been handled on a case-by-case basis and within a negotiated contract. The San Pedro Integrated Resource Plan Assembly Statement, July 1994, stated that

Metropolitan should develop an explicit policy on wheeling. The issues associated with wheeling and the importance of maintaining a fair price that reflected the cost of such service were outlined in two board letters dated September 26, 1995, and October 31, 1995. More recently, significant discussions have centered on the San Diego County Water Authority's (SDCWA) proposed transfer with the Imperial Irrigation District. It is anticipated that any transfer water would be conveyed through Metropolitan's transmission and storage system. Metropolitan has also been approached by third party providers who seek access to the use of Metropolitan's conveyance system.

A number of factors are influencing Metropolitan's need to provide wheeling services via its facilities at this time. Deregulation of the telecommunications and energy industries reflects the trend toward market mechanisms as more efficient than regulation for pricing and allocating resources and services. "Unbundling" water services, which had been provided only as a bundled, full-service package, into categories of supply, transmission, and storage is a step toward this market concept. The success of the California Emergency Water Bank in moving water from willing agricultural sellers to urban buyers during the 1987-1992 drought suggests that a larger market could develop for water transfers. Legislation in California requiring a public agency with excess capacity to wheel is another factor that must be addressed in Metropolitan's wheeling policy. Further, a "Model Water Transfer Act" has been proposed by a consortium including the California Business Roundtable. This proposal, if adopted by the Legislature, would help consolidate, clarify, and simplify legal requirements for transfers and the accompanying need for use of Metropolitan's transmission and storage facilities by agencies other than Metropolitan.

The Rate Refinement Process (RRP) was initiated in January 1996 to address some immediate concerns of member agencies and Metropolitan management about Metropolitan's current rate structure. The RRP involves all member agencies, who are represented in the discussions by participants from Metropolitan, the San Diego County Water Authority, Western Municipal Water District, Municipal Water District of Orange County, Calleguas Municipal Water District, Central and West Basin Municipal Water Districts, the cities of Fullerton, Long Beach, Los Angeles, Santa Monica, and Foothill Municipal Water District. Some member agency representatives in turn bear responsibility to keep other agencies in their geographic area informed of the RRP's activities and progress. Mr. James Waldo of the law offices of Gordon, Thomas, Honeywell, Malanca, Peterson & Daheim is facilitating the RRP.

Wheeling of non-Metropolitan water for the benefit of member agencies, subagencies, and outside parties must be carefully considered, and the impacts of different transactions on the rates and charges of other customers, water quality, and reliability must be evaluated when determining the viability of each transaction. These issues were addressed in the ten wheeling principles adopted by your Board in November, 1996.

The proposed wheeling rates are consistent with the approved principles, and will help ensure equity among member agencies, reduce negative financial impacts to non-participating parties, and assure water quality and reliability to all member agencies.

Under Metropolitan's current rate structure, about 75 percent of revenues are collected through the sale of water, and thus vary from year to year. At the same time, about 85 percent of costs are fixed and unavoidable, without regard to the amount of water sold. Under the adopted principles, a member agency purchasing water from Metropolitan would pay for the fixed, unavoidable costs of the system, including transmission and storage, in a "bundled" full service rate. To avoid financial injury to other member agencies, wheeling member agencies must contribute to Metropolitan's fixed costs on the same basis as member agencies purchasing Metropolitan supplies; therefore, member agencies requesting only wheeling service would pay for all transmission costs and unavoidable storage and supply costs.

Wheeling rates would be collected on a postage stamp, volumetric basis, consistent with past and current Board practice. That is, the price for wheeling water through Metropolitan's system would be assessed on a per acre-foot basis based on the cost of the entire system. This is also consistent with the adopted principles that member agencies pay comparably for the service they receive, whether that service is wheeling or bundled, full service deliveries.

Legally, agencies are required to make available up to 70 percent of unused capacity for use by others. Even though Metropolitan is only required to make 70 percent of unused capacity available, to the extent no other member agency is harmed, in terms of cost, quality, and reliability, the principles allow Metropolitan to make more than 70 percent of unused capacity available.

Firm and Non-firm Wheeling Service

Firm wheeling service would be provided with the same level of certainty as a delivery of basic water service. That is, firm wheeling service would be reduced only during emergencies. Member agencies seeking firm service would request to have conveyance capacity "reserved" for them for a specified period of time, not exceeding one year. The charge for firm service would be made monthly, pursuant to a schedule of delivery in acre-feet submitted by the wheeling party and approved by Metropolitan.

Firm wheeling service would recover the reasonably allocable transmission, storage, operating, and unavoidable supply costs. Such costs include the capital and operating and maintenance costs associated with transporting water on the in-basin system, the Colorado River Aqueduct, and the California Aqueduct. In addition, storage costs associated with Metropolitan's regulating reservoirs, Lake Skinner, and Lake Mathews would be recovered through the firm wheeling rate. Unavoidable supply costs include portions of the contractual commitments to the State Water Project and the water management programs, and operating

costs associated with providing supplies of water. Finally, future costs associated with additional storage and transmission facilities such as the Central Pool Augmentation Project, West Valley Project, Inland Feeder, and the Eastside Reservoir Project would be included in the calculation of the rate, but only as those costs are incurred. The proposed rate for firm wheeling effective January 15, 1997 is $262 per acre-foot, plus power. The development of this rate is more fully described in the Technical Report, which is included as Attachment 1 to Exhibit B.

Non-firm wheeling service is transmission service that has a much lower level of certainty. Service may be interrupted at Metropolitan's discretion for any reason, including operational needs, water quality needs, changes in customer demands, maintenance requirements, or other similar conditions. Non-firm wheeling service is not reserved and is provided on an as-available basis, similar to groundwater replenishment. The non-firm wheeling rate would be utilized for the movement of non-Metropolitan water in order to meet long-term storage requirements that benefit the Metropolitan service area. Such service would be available only at times when replenishment service is available. Scheduling of deliveries will be at Metropolitan's discretion, based on the requested volume in acre-feet, the time frame for delivery, and excess delivery capacity, although service will not be withheld unreasonably. Non-firm wheeling service is the lowest level of service provided by Metropolitan. The proposed rate effective January 15, 1997, would be based on the transmission component only of the firm wheeling rate adjusted to reflect the value of off-peak utilized capacity, or $141 per acre-foot, plus power. The development of this charge is more fully explained in the Technical Report.

Future firm and non-firm wheeling rates for fiscal year 1997-98 and beyond would be determined as part of Metropolitan's annual rate setting process. The proposed methodology for determining firm and non-firm (interruptible) wheeling rates will be reviewed no later than the end of fiscal year 2000-01, consistent with the RRP Phase 1 recommendations, as Phase 3 discussions will deal with long-term rate structure reforms, including wheeling.

Long-Term Wheeling Arrangements

Any proposal for long-term (over one year) wheeling will be a negotiated agreement and the particular costs and benefits will need to be evaluated against the wheeling principles adopted by your Board in November 1996.

Wheeling for Non-Member Agencies

It is recommended that wheeling rates for non-member agencies using Metropolitan's system be determined on a case-by-case basis, consistent with the principles approved by your Board in November, 1996.

Associated Charges

Metropolitan will need to develop operational procedures and special charges to fairly facilitate wheeling transactions. For example, an administrative charge to cover the costs of reviewing wheeling proposals and contract preparation may be appropriate. For firm wheeling

requests, capacity to wheel water is reserved. Once the reservation is made, the agency should be obligated to pay some portion of the firm wheeling charge even if they do not use the capacity as Metropolitan could be precluded from moving water for its own operational needs. This "reservation charge" would be developed as part of the administrative procedures.

It is recommended that the Board direct the General Manager to develop administrative and operational procedures and charges necessary to meet wheeling requests.

California Environmental Quality Act

Recommendations made in this letter are exempt from CEQA under Public Resources Code Section 21080 (b)(8) since they recommend setting of rates and charges for the purposes of: (1) meeting operating expenses, (2) purchasing or leasing supplies, equipment, or materials, (3) meeting financial reserve needs and requirements, and (4) obtaining funds for capital projects necessary to maintain service within existing service areas; and, additionally, Recommendation 2 is exempt from CEQA under State CEQA Guidelines 15378 (b)(5) since it constitutes the creation of government funding mechanisms which do not involve commitment to any specific project which may result in a potentially significant physical impact on the environment or which will be used to fund projects which have CEQA documentation or which will have CEQA documentation in place prior to construction of any facility or facilities.

Attachments

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EXHIBIT A

PUBLIC HEARING COMMENTS AND REPLIES

Written comments and statements were received from the San Diego County Water Authority, the Municipal Water District of Orange County, and the Three Valleys Municipal Water District. Oral statements were also given on December 9, 1996, by Mr. Matt Stone of the Municipal Water District of Orange County; Mr. Vince Biondo, General Counsel of the San Diego County Water Authority; Ms. Marilyn Stout of the Northridge Civic Association; and Mr. Don Kendall, General Manager of the Calleguas Municipal Water District. The comment received, as well as responses, are summarized below.

Adequate Review Time

Comments: Member agencies who participated in the Rate Refinement Process (RRP) negotiations may understand the development of the proposed wheeling rates, but non participants have had only four weeks to review the proposed rates.

Response: The proposed wheeling rates were presented to the Board at an October 18, 1996 workshop. The short-term wheeling rates were formally presented to the Board at its meeting of November 19, 1996. The resolution to adopt the proposed wheeling rates will be presented to the Board at its January 14, 1997, meeting. This schedule allows three months for review from the time the methodology was first proposed.

Support Principles, Move Ahead

Comments: Some of the member agencies support the principles and feel the Board should adopt them and move ahead to resolve outstanding issues through future phases of the RRP or other forums. No one's options are being foreclosed by having the Board adopt short-term wheeling rates. Adoption of the principles, particularly those that deal with potential cost impacts to non-wheeling member agencies, is important.

Response: The Board adopted the principles as proposed by the General Manager at its November 19, 1996, meeting.

Implementation Issues

Comments: Administrative and operational procedures need to be developed to implement wheeling.

Response: Metropolitan staff is in the process of addressing outstanding administrative and operational procedures that need to be developed.

Transaction Specific Rates (Contract Path Paradigm)

Comments: The electric utility industry prices wheeling based on the contracted path over which the electricity will flow.

Response: Contract path pricing was used for wholesale transactions between utilities prior to the National Energy Policy Act of 1992 (NEPA). NEPA dictated that utilities must provide open access to their transmission networks. This federal legislation affects inter- and intrastate transactions, and is therefore controlling over energy wheeling within California. The default rate structure under NEPA is a postage stamp rate applied to a transaction regardless of the distance traveled or actual facilities used.

Legality of Rates

Comments: The proposed rates are not consistent with the State policy of encouraging water transfers.

Response: Metropolitan's wheeling policy and rates make available unused capacity in Metropolitan's system so as to facilitate water transfers, at the lowest rate necessary to prevent injury to other water users and recover a fair share of the conveyance system's costs. Indeed, by making all unused capacity available, rather than the 70% required by law, Metropolitan's policy goes beyond the statute's policy in encouraging transfers.

In addition, the wheeling statute contains an additional policy stating that any transfer must "be made without injuring any legal user of water," a policy which is carried into the substantive provisions of the statute which require that "use of a water conveyance facility is to be made without injuring any legal user of water." (Water Code § 1810(d)) In furtherance of this policy, Metropolitan's wheeling rates recover a proportionate share of the unavoidable supply, power, storage, divisional budget and customer related costs to which the member agencies, through the Board, have committed, in order to prevent the financial injury of cost shifting to non-wheeling member agencies. If Metropolitan's wheeling rates to members were reduced to further facilitate transfers, the effect would be to shift costs from the transferring member to other members in violation of this state policy.

Comment: The wheeling statute allows the conveyance system owner to recover only those incremental costs specifically related to the use of the conveyance system, and no other costs.

Response: The statute broadly authorizes recovery of the reasonable charges incurred by the owner of the conveyance system, including capital, operation, maintenance, replacement costs and increased power costs. It does not limit cost recovery to incremental costs. In fact, a requirement that compensation be limited to only incremental costs ("costs associated with the conveyance facility use" or "marginal costs to the

owner") for the use of the system contained in earlier versions of the proposed statute was specifically deleted from the statute as enacted. Early versions of the bill also would have limited recovery to the costs for the "facility" used, which could have been intended to limit recovery to only those portions of a large, interrelated facility (such as Metropolitan's) actually used. Ultimately, the statute authorized recovery for the costs of the entire conveyance "system."

Perhaps more importantly, as discussed above, the statute requires the conveyance system owner to allow the use of its system for wheeling "without injuring any legal user of water." A wheeling charge which did not recover a proportionate share of the costs of the entire conveyance system and other unavoidable costs would result in financial harm to other member agencies by shifting those costs to them. A simple calculation shows that a water transfer of 100,000 acre-feet would shift costs to other Metropolitan member agencies of about $9 per acre-foot, or a total cost-shift of about $13,500,000 per year, based on current demand estimates.

Comment: The wheeling charge should be based on a point-to-point calculation rather than on the postage stamp method.

Response: This issue is similar to the incremental cost issue discussed above. The statutory authorization to recover the costs of the entire conveyance system, as well as the requirement to protect other member agencies from the negative financial impacts of cost-shifting discussed above also apply here. Moreover, due to blending requirements and other operational factors, Metropolitan's system is operated as a single integrated facility which is not operationally divisible. Simply, put use of any significant portion of the system (such as the Colorado River Aqueduct) depends upon and effects the use of the rest of the system. For these reasons, the postage stamp basis has been historically used by Metropolitan (and most other water supply entities) in calculating rates. In addition, Section 143 of Metropolitan's Act requires that rates shall be uniform for like classes of service and a point-to-point calculation of various wheeling rates in Metropolitan's complicated, interrelated system is administratively impractical.

Accuracy of Rates

Comments: Some commenters supported adoption of the proposed methodology, but reserved judgment on the accuracy of the actual calculation.

Response: This comment is noted. Staff anticipates future review of the calculation of the wheeling rates and possible refinement. The current rates will be in effect through June 30, 1997.

Water Supply Planning

Comments: Metropolitan's low water rates encourage development. Recently passed State legislation requires an identified water supply before developments can be approved.

Response: SB 901 (Costa), SB 1011 (Polanco), and AB 1845 (Cortese) passed the State Legislature and were chaptered in 1995. SB 901 requires planning agencies to include water supply information and an availability assessment in any environmental impact report (EIR) prepared for a development project. Any finding made by a water agency, however, is not binding on the lead planning agency. If the lead agency determines that water supplies will not be sufficient, the lead agency should also include that determination in its findings in the EIR.

SB 1011 updates requirements for Urban Water Management Plans that certain water agencies must prepare periodically. Specific to the comment, it requires urban water suppliers to include an assessment of water supply and demands.

AB 1845 requires urban water suppliers to include in their Urban Water Management Plans an assessment of their water supplies and demands for normal, dry, and critically dry years, over a 20-year period. These assessments must be sent to any city or county within their service area.

None of these bills enables water agencies to disapprove development projects. Metropolitan is reviewing alternatives to its recently suspended new demand charge to ensure growth pays its fair share of facility and supply development costs.

RESOLUTION REVISED--SEE ATTACHMENT TO
LETTER DATED 1-10-97

42238

EXHIBIT B

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

RESOLUTION 8520

RESOLUTION OF THE BOARD OF DIRECTORS OF THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA FIXING AND ADOPTING WHEELING RATES

WHEREAS, The Metropolitan Water District of Southern California (Metropolitan) owns and operates a water conveyance system including the Colorado River Aqueduct, pumping plants, reservoirs, water treatment facilities, pipelines and control structures and associated facilities for the transport, storage and delivery of water to its member public agencies;

WHEREAS, Metropolitan has a contract with the State of California which requires Metropolitan, on a take or pay basis, to pay a proportionate share of the costs of constructing and operating the State Water Project (SWP), which consists of Oroville Dam and Reservoir, the Harvey O. Banks Pumping Plant, the California Aqueduct and its pumping plants, reservoirs and associated facilities for conserving, storing and transporting water to Metropolitan's service area;

WHEREAS, under its contract with the State of California, Metropolitan has an entitlement to water and associated transportation thereof by the SWP and the right to use SWP transport facilities for its own purposes, subject to certain conditions. Metropolitan's conveyance system, and its rights to the use of the SWP conveyance system are hereafter referred to as the "conveyance system";

WHEREAS, Metropolitan has in the past wheeled water on an emergency, ad hoc basis pursuant to negotiated agreements, and continues to receive inquiries regarding the use of its facilities, or its rights to use SWP facilities, to transport water not owned or controlled by Metropolitan ("wheeling");

WHEREAS, Water Code Sections 1810-1814 provide, in part, that no public agency may deny a bona fide transferor of water the use of a water conveyance facility owned by the public agency to the extent it has unused capacity, subject to certain conditions, including that the statute applies to only 70 percent of the unused capacity;

WHEREAS, under authority of Sections 1810 and 1812 of the Water Code, the Board of Directors ("Board") of Metropolitan has the authority to fix the rate or rates for the use of its system for wheeling as will result in recovery of "fair compensation;"

WHEREAS, "fair compensation" is defined in Section 1811(c) of the Water Code as the reasonable charges incurred for use of Metropolitan's conveyance system, including capital, operation, maintenance and replacement costs, increased costs from any necessitated purchase of supplemental power, and including reasonable credit for any benefits for the use of its conveyance system;

WHEREAS, pursuant to Sections 1810 and 1812 of the Water Code, the use of Metropolitan's water conveyance system is to be made without injuring any legal user of water from that system, including financial injury;

WHEREAS, under authority of Sections 133 and 134 of the Metropolitan Water District Act, the Board has the authority to fix the rate or rates for water as will result in revenue which, together with other revenues, will pay Metropolitan's operating expenses and provide for payment of other costs, including payment of the interest and principal of Metropolitan's bonded debt;

WHEREAS, under Section 134 of the Metropolitan Water District Act, the Board is required to set rates that are uniform for like classes of service throughout its service area;

WHEREAS, the Board has fixed rates for the sale of water for firm, noninterruptible service and lower rates for types of non-firm water service which is subject to interruption;

WHEREAS, a Rate Refinement Team, made up of General Managers and other staff representing Metropolitan's member agencies, has been attempting to develop recommendations for Metropolitan's Board's consideration regarding a wheeling policy, including a set of ten Wheeling Principles to guide that policy, which Wheeling Principles were adopted by Metropolitan's Board at its November 19, 1996 meeting;

WHEREAS, by Resolution 8515, adopted at its meeting held November 19, 1996, Metropolitan's Board resolved and determined that the public interest and necessity require Metropolitan to adopt a charge for the use of its conveyance system for wheeling that will recover fair compensation for such use of its conveyance system; that such charge should include the properly allocable transmission costs and unavoidable supply, storage and other costs necessary to avoid financial injury to its member agencies from such use; and that the wheeling rate should be a uniform rate per acre-foot of water wheeled, regardless of the source of the water, the facilities used in the transaction or the distance the water is moved;

WHEREAS, notice was given by Resolution 8515 to the public and to each member agency of Metropolitan of the intention of Metropolitan's Board to consider and take action at its regular meeting to be held January 14, 1997, on the General Manager's recommendation to adopt a wheeling rate for member agencies during non-shortage periods equal to $262 per acre-foot for firm wheeling service and a rate equal to $141 per acre-foot for non-firm wheeling service effective January 15, 1997;

WHEREAS, the wheeling rates, the method of their calculation, and the specific data used in their determination are as specified in "The Metropolitan Water District of Southern California Technical Report--Proposed Wheeling Charge" dated October 1996, a copy of which is attached as Attachment 1;

WHEREAS, notice of the proposed wheeling rates and of a public hearing on the date and at the time and location specified in Resolution 8515 was published prior to the hearing in various newspapers of general circulation within Metropolitan; and

WHEREAS, the Board's Water Planning and Resources Committee conducted a public hearing at its regular meeting on December 9, 1996, at which interested parties were given the opportunity to present their views regarding the proposed wheeling rates.

NOW THEREFORE, the Board of Directors of the Metropolitan Water District of Southern California does hereby resolve, find, determine and order as follows:

Section 1. That the Board of Directors of Metropolitan hereby fixes and adopts wheeling charges effective January 15, 1997.

Section 2. That, subject to the General Manager's determination of available capacity, Metropolitan will offer "firm" wheeling service, with reliability on the same basis as noninterruptible water service, and "non-firm", interruptible wheeling service, which will be on an "as available" basis.

Section 3. That in order to recover fair compensation for the use of its conveyance system for wheeling, it is necessary for Metropolitan to adopt wheeling rates according to the methodology set forth in Attachment 1.

Section 4. That it is appropriate to set the wheeling rate on a "postage stamp" basis; that is, a uniform rate per acre-foot of water wheeled regardless of the source of the water, the facilities used in the transaction or the distance the water is moved. A uniform rate is appropriate because of the integrated nature of Metropolitan's conveyance system; because Metropolitan's historic and current rate setting policy has been, and is, based on the postage stamp concept; because postage stamp rate setting is the standard among California water supply entities; because of the administrative impracticability of establishing point-to-point rates; because Section 134 of the Metropolitan Water District Act requires that rates shall be uniform for like classes of

service throughout Metropolitan; and because Water Code Section 1811(c) defines "fair compensation" to include reasonable charges for the use of the entire conveyance "system."

Section 5. That the allocation of costs as shown in Attachment 1 to Metropolitan's transmission function accurately reflects the capital, operation, maintenance and replacement costs incurred by Metropolitan to convey water to its member agencies, through Metropolitan's conveyance system, including Metropolitan's rights in the State Water Project system, and that including those costs in Metropolitan's wheeling rate is necessary to insure recovery of fair compensation for the use of that conveyance system.

Section 6. That to the extent a wheeling transaction enables Metropolitan to avoid costs, such avoidable costs should not be included in the wheeling rate.

Section 7. That the allocation of costs in Attachment 1 as unavoidable costs attributable to Metropolitan's supply, power, storage, divisional budget and customer related functions accurately reflect unavoidable costs which must be paid by Metropolitan, and that including those unavoidable costs in the wheeling rate is necessary in order to protect Metropolitan's member agencies from financial injury by avoiding the shifting of those costs from a wheeling party to Metropolitan's other member agencies.

Section 8. That the non-firm wheeling rate established for the movement of non-Metropolitan water in order to meet long term storage requirements that benefit the Metropolitan service area will be calculated according to the methodology described in Attachment 1, which appropriately reflects the cost of providing this interruptible class of service.

Section 9. That wheeling rates for member agencies during non-shortage periods shall be a rate equal to $262 per acre-foot for firm wheeling service and a rate equal to $141 per acre-foot for non-firm wheeling service effective January 15, 1997.

Section 10. The wheeling rates shall be reduced by the General Manager, as appropriate and in his sole discretion, to reflect the regional water supply benefits provided to Metropolitan's service area, if any, on a case- by-case basis in response to a particular wheeling transaction. The regional benefits, if any, shall be calculated in the same manner as such benefits are calculated for use in the Local Projects and Groundwater Recovery Program.

Section 11. That such wheeling rates for the period after June 30, 1997 shall be set annually as part of Metropolitan's rate-setting practice under Sections 4300 through 4304 of Metropolitan's Administrative Code.

Section 12. That the rates for wheeling by member agencies during shortage periods, or for non-member agencies, shall be established by the Board on a case-by-case basis in response to specific requests for wheeling, consistent with applicable law, this Resolution and the Wheeling Principles adopted by the Board at its November 19, 1996 meeting.

Section 13. That the Board finds that such charges are reasonable and consistent with all applicable requirements of law, including any requirement to facilitate the voluntary sale, lease or exchange of water, while ensuring that the use of Metropolitan's conveyance system is fairly compensated and does not injure any other legal user of Metropolitan's water and conveyance system.

Section 14. That the General Manager is hereby directed to develop procedures implementing a wheeling policy consistent with applicable law, this Resolution and the Wheeling Principles adopted by the Board on November 19, 1996.

Section 15. That the determination whether there is unused capacity in Metropolitan's conveyance system, and in particular facilities of the conveyance system, shall be made by the General Manager on a case-by-case basis in response to particular requests for wheeling.

Section 16. That whether a particular wheeling request will unreasonably affect fish, wildlife or other instream beneficial uses, or the overall economy or the environment of the county from which water is being transferred shall be reviewed by the General Manager on a case-by case basis in response to a particular request for wheeling.

Section 17. That the General Manager and the General Counsel are hereby authorized to do all things necessary and desirable to accomplish the purposes of this Resolution, including, without limitation, the commencement or defense of litigation.

Section 18. That this Board finds that the proposed wheeling rates provided in this Resolution are exempt from the provisions of the California Environmental Quality Act (CEQA) since they are rates and charges which are for the purposes of meeting operating expenses; purchasing or leasing supplies, equipment or materials; meeting financial reserve needs and requirements; and obtaining funds for capital projects necessary to maintain service within existing service areas; and, additionally, since they constitute the creation of government funding mechanisms which do not involve commitment to any specific project which may result in a potentially significant physical impact on the environment or which will be used to fund projects which have CEQA documentation or will have CEQA documentation in place prior to construction of any facility or facilities.

Section 19. That if any provision of this Resolution or the application to any member agency or person whatsoever is held invalid, that invalidity shall not affect other provisions or applications of this Resolution which can be given effect without the

invalid portion of application, and to that end the provisions of this Resolution are severable.

Section 20. That the Executive Secretary is hereby directed to transmit a certified copy of this Resolution to the presiding officer of the governing body of each member public agency.

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a Resolution adopted by the Board of Directors of The Metropolitan Water District of Southern California, at its meeting held on January 14, 1997.

_____

Executive Secretary
The Metropolitan Water District
of Southern California

#2092

EXHIBIT B, Attachment 1

The Metropolitan Water District of Southern California

Technical Report

Proposed Wheeling Charge

October 1996

Report Purpose

The Metropolitan Water District of Southern California (Metropolitan) has entered into long-term contracts, constructed or is constructing major capital facilities, issued bonds to finance construction or purchase of those facilities, and has implemented water management programs to develop, store, transmit and treat water throughout its service area. The purpose of this report is to describe Metropolitan's proposed charge for wheeling, which is the provision of transportation-only service for water owned by others rather than the traditional "bundled" delivery and sale of water owned by Metropolitan.

Specifically, this report addresses four topics that are central to developing a wheeling policy and associated charges. These four topics are the legal requirements for wheeling as set forth in the California Water Code, the appropriate pricing structure for a wheeling rate, Metropolitan's governance structure and how that process leads to programmatic and financial commitments, and the development of Metropolitan's proposed wheeling rate.

Metropolitan[1] is governed by a board of 51 directors. The board, in its role of overseeing regional water management, has made long-term programmatic and financial commitments on behalf of the region, in the belief that these commitments are in the best interests of the region. These financial commitments must be repaid. As member agencies using water from Metropolitan must pay for these fixed commitments, primarily through water rates[2], members using the system to wheel non-Metropolitan water through the system must pay an equivalent amount to recover their share of these fixed commitments through charges for wheeling. The pricing structure of the wheeling charges must be consistent with the pricing structure for water to ensure fairness and equity in how users pay for the regional system.

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[1] Metropolitan was formed in 1928, under an enabling Act of the California Legislature.

[2] To the extent that member agencies bear more of Metropolitan's costs through fixed revenue sources, rates for purchase of water and for wheeling would be required to cover a smaller portion of these commitments.

Legal Requirements

The legal requirements most directly related to wheeling are found in California Water Code Sections 1810 through 1814. The statute prohibits the owner of a water conveyance facility from denying a water transferor (wheeler) the use of unused capacity in the facility for the period of time the capacity is available. It should be noted that the facility owner is not required to affirmatively take steps to make capacity available, but simply is prohibited from denying use of unused capacity if it is available. "Unused capacity" is defined as space available, within the operational limits of the conveyance system, which the agency is not using during the proposed wheeling period, and which is sufficient to convey the proposed wheeled water.

The requirement to allow such use is subject to certain conditions. These are that:

- "fair compensation" must be paid for the use of the system;
- the use of the conveyance facilities must not injure other users of Metropolitan's water and facilities;
- commingling the water must not diminish beneficial uses or quality of water;
- the requirement applies to only 70 percent of available capacity; and,
- use of the facilities is to be made without unreasonably affecting the economy or the environment of the county from which the water is being transferred.

In addition, current customers are entitled to a priority right to use the facility over a transferor. "Fair compensation" is defined as "reasonable charges incurred by the owner of the conveyance system, including capital, operation, maintenance, and replacement costs" and increased power costs, less any offsetting benefits from such use of the conveyance system.

The agency owning the conveyance facilities has the discretion, consistent with the purposes of the statute, to determine the amount of unused capacity available, to determine fair compensation for the use of that capacity and to impose appropriate terms and conditions, more specifically operation and maintenance requirements, scheduling, quality, terms of use and priority. The agency determinations must be reasonable and consistent with the purposes and policies of

the statute. Agency determinations are to be sustained if supported by substantial evidence.

The statute declares that in order to provide financial relief or supplemental income to agricultural areas during periods of economic hardship, it is the policy of the state to facilitate the voluntary sale, lease or exchange of water or water rights. The Legislature declared further that such sales, leases, or exchanges of water are to be made "without injuring any legal user of water." In particular, the statute also contains the substantive requirement that the "use of the water conveyance facility is to be made without injuring any legal user of water."

The legislative history accompanying the bill strongly indicates that it is intended to permit public agencies to protect their existing customers by permitting recovery of all costs associated with making a conveyance system available. This is consistent with the statutory language providing that water transfers must not result in injury, including economic harm. As long as agencies have "substantial evidence" to support their determinations and have acted in a "reasonable manner," the agencies are given considerable discretion in determining the "reasonable charges" which should be included in "fair compensation" for use of the "conveyance system."

Pricing Structure

When initially formed, Metropolitan's sole source of revenues was property taxes. Over time, Metropolitan moved away from a revenue structure primarily supported by taxes to a revenue structure primarily dependent on variable water sales. The pricing of water by Metropolitan has historically been prepared on a "postage-stamp" basis, or one in which every user of a class of water pays the same price for that water throughout the service area, regardless of source or facilities used or distance traveled. In fact, the Metropolitan Water District Act specifies in Section 134 that rates shall be uniform for like classes of service throughout the district.

Pricing based on a postage-stamp basis has traditionally been used in the water industry. The postage stamp basis recognizes that capital projects to develop supply, transmission, storage or treatment capacity benefit all users and all users should pay equally for the benefits received for their class of service. This notion is so ingrained in water pricing that most authoritative texts on water pricing, including the American Water Works Association's Manual of Water Supply Practices, Water Rates and James Bonbright's "Principles of Public Utility Rates", either do not address uniformity of rates as an issue or recognize that customer beliefs of fairness dictate uniform rates.

The legal requirements for wheeling, discussed above, indicate that while determinations of available capacity are dependent on the conveyance *facility* that will be used (Section 1810), "fair compensation" is defined to include reasonable charges incurred by the owner of the conveyance *system*, including capital, operation, maintenance, replacement costs, and additional costs for power (Section 1811(c)). The distinction between facility and system is an important one, as it recognizes that the charges do not have to be based on the facilities used, but can include the whole system, if the whole system supports the wheeling transaction.

Another reason for using a postage stamp rate is that Metropolitan's delivery system is integrated. Therefore, charges for water service by Metropolitan should reflect the cost of the whole system, and members using the system to wheel should pay for the cost of the whole system.

Metropolitan's major facilities and programs consist of the State Water Project (SWP), the Colorado River Aqueduct (CRA), pumping plants, reservoirs, water treatment facilities, a system of pipelines and control structures, associated facilities for the transportation, storage and delivery of water, as well as water conservation projects and financial assistance for water recycling and groundwater recovery facilities. Metropolitan is currently constructing the Eastside Reservoir Project (ERP), a surface water reservoir that will significantly improve its ability to store water. Specifically, ERP will improve operational reliability in the event of damage to the CRA or the California Aqueduct, due to an earthquake or outages due to scheduled maintenance, and meet member agency objectives for blending. Pending is the Inland Feeder project, which will further integrate the two aqueducts and the ERP.

The integration of Metropolitan's system can be shown through its ability to flexibly operate the system and manage water quality issues. Several examples are provided to illustrate the integrated nature of Metropolitan's system.

One demonstration of system integration and operations is that due to member agency demands that change daily, and given the limited regulating storage in the basin, the large-diameter pipeline system acts as a storage reservoir too, regulating supplies and deliveries and balancing the system. As demands change, water moves back and forth through the pipeline system. As a result, for those member agencies in areas receiving blended water, making a precise determination of how much of that water originated from the CRA versus the SWP becomes very difficult, if not impossible.

The integration of Metropolitan's system is also demonstrated through the operational flexibility of the system during outages and emergencies. Metropolitan has three major importation sources: the West Branch of the SWP, the East Branch of the

SWP, and the CRA terminating at Lake Mathews. An outage on any one of these delivery facilities can be offset by increasing the portion of the service area served by the other two.

For example, in the case of an outage on the West Branch of the SWP, limited deliveries of CRA and SWP through the East Branch could be pushed west to Calleguas Municipal Water District, in Ventura County, and Las Virgenes Municipal Water District, in west Los Angeles County. In the event of an outage on the East Branch of the SWP, West Branch water from the Jensen treatment plant, located at the northwestern-most part of the service area, could be delivered eastward as far as Glendale and Burbank and southward into Orange County, while the CRA supplies the rest of the service area. In the event of a CRA outage, the SWP could deliver to most of the service area, with the exceptions of most of the raw water customers on the Upper Feeder (east of the Etiwanda Pipeline) and the Lower Feeder (east of the Diemer plant). The ERP will allow Metropolitan to withstand such outages for a longer period of time (up to six months, with 25 percent curtailment of deliveries) and with more flexibility. With ERP, Metropolitan could serve most of the service area with only one of the import sources available.

The integration of the system is also demonstrated through management of water quality issues. An example is that at times water delivered by Metropolitan is affected by "taste and odor" events caused by algae blooms in reservoirs, which cannot be entirely resolved through treatment processes. If the problem originates at Lake Mathews, for example, the operational response will be to minimize the affected service area by an increase in the use of SWP reservoirs and deliveries of SWP water from the East and/or West Branches.

The final scenario demonstrating the integration of Metropolitan's system and water quality is blending. Water from the SWP and the CRA differ in their constituent chemical properties. Water from the CRA is high in total dissolved solids; water from the SWP is high in organic constituents, which result in undesirable by-products when treated with disinfectants. To manage this issue, the Board adopted a policy in 1995 to maintain a blend of at least 25 percent SWP water in the Weymouth, Diemer and Skinner service areas during the months of April through September. The ability to take water from two different sources, blend and deliver them requires an integrated system: without the integration, blending could not occur.

Governance

Metropolitan was formed to combine the financial resources of growing cities in order to bring supplemental water to Southern California. These cities joined together as a regional entity because the cost of bringing supplemental water into

Southern California was too great for any one of them to bear. Over the years, other agencies joined Metropolitan, recognizing the power of a regional agency to improve water supply reliability for all of its members. Metropolitan has evolved to a regional water management agency of 27 member agencies and a service area population of nearly 16 million.

Metropolitan is governed by a 51-member board of directors. Each member agency is entitled to at least one director. A simple majority of the board votes is all that is required to carry most board motions.

Metropolitan was formed with the understanding that a majority of votes would determine decision making and that a decision so reached would apply to all member agencies. Further, commitments entered into by the required number of votes, in accordance with the board's power to do so, commits all of the member agencies, regardless of whether it can be determined that all member agencies benefit equally from the specific program or project. A project or program directly improving a portion of the region's water supply, transmission, storage or treatment capabilities provides benefits to the region as a whole because of Metropolitan's integrated supply, storage and transmission system, which was described above.

For example, a conveyance facility may improve conveyance capacity in one portion of the service area, and yet benefit other portions of the service area by further integrating Metropolitan's system, increasing the water available to those agencies with groundwater and surface reservoir resources, increasing deliveries to Metropolitan's reservoirs, and improving the ability of Metropolitan to maintain deliveries in one portion of its service area in the event of an emergency or outage in another portion of its service area.

Development of a Wheeling Charge

Through its governance structure, Metropolitan's member agencies have undertaken substantial financial commitments on behalf of the entire service area. Metropolitan's board has committed Metropolitan's member agencies to the SWP and many capital projects through the use of bonds and cash financing. These fixed commitments and the majority of Metropolitan's annual operating and maintenance expenses are unavoidable, and comprise about 85 percent of Metropolitan's annual budget. Yet about 75 percent of revenues are collected through the sale of water, and therefore vary with the amount of water sold in any year. Under the "Level Playing Field", "Cost Recovery" and "Financial Impact" principles in Exhibit A, if a member agency purchasing water from Metropolitan pays for the fixed, unavoidable costs of the system, including transmission and storage and supply, in a "bundled" full service rate,

then member agencies using that same system for wheeling must contribute to Metropolitan's fixed costs on an equivalent basis. These principles are consistent with the principles included in the San Pedro Integrated Resources Plan Assembly Statement, July 1994, that wheeling should not result in adverse impacts to the rates and charges of any other member agency.

Moreover, the relevant wheeling statute provides that the wheeling charge should be based on the cost of the entire system and should not "harm" any legal user of water; "harm" includes financial harm. Finally, a postage-stamp based rate is a reasonable and appropriate way to charge for water services. Given this foundation, the rest of this paper will discuss how to develop a rate for wheeling.

The steps to calculate water and wheeling rates are:

- determine the revenues necessary to be recovered through the sale of water and wheeling service;
- disaggregate costs into the major functions, or services, provided;
- determine whether the costs are unavoidable or avoidable; and,
- calculate rates to include costs properly allocated to transmission and to unavoidable storage and supply costs.

The rates developed in this paper will apply to member agencies using Metropolitan's system to wheel non-Metropolitan water. The rates are for short-term firm and non-firm (interruptible) wheeling only. Wheeling for non-members will be handled on a case-by-case basis.

Revenue Requirement

Metropolitan's revenue requirement from water rates is based on total expenditures less revenue offsets. For the fiscal year 1996-97, the budgeted revenue requirement is $618.1 million, as shown in Table 1.

Table 1
FY 1996-97 Revenue Requirement

Expenditures	
State Water Project	$243,812
Colorado River Aqueduct	47,924
Water Management Programs	30,003
Transfer Fund Deposits	34,000
Revenue Bond Debt Service	106,330
G.O. Bond Debt Service	56,332
Commercial Paper	9,974
PayGo	90,000
Metropolitan O&M and Operating Equipment	205,754
Adjustments in Reserves	4,379
Total Expenditures	$828,508
Other Revenues	
Property Tax Revenue	$82,620
Readiness to Serve Charge	64,050
Connection Maintenance Charge	2,970
Unrestricted Interest Income	47,280
Power Recoveries	12,785
Total Other Revenues	$209,705
Transfers To/(From) Rate Stabilization Fund	$(696)
Revenue Requirement	$618,107

Schedule A is a summary table showing how the revenue requirement shown above was disaggregated into the major functions of *Transmission, Storage, Supply, Power, and Treatment.* Schedule B is a summary of this same revenue requirement separated into cost categories indicating whether the components are avoidable or unavoidable. Avoidable costs are those costs which vary with the volume of water sold, and can therefore be reduced if Metropolitan sells less water. Unavoidable costs are those costs which do not vary with the volume of water sold, and therefore cannot be reduced if Metropolitan sells less water.

Schedule C is a detailed worksheet supporting the information presented in Schedules A and B. The following is a description of how costs in Schedule C were disaggregated into the major functions of *Transmission, Storage, Supply, Power, and Treatment* .

Disaggregation of Costs

The following definitions of costs provide the basis for disaggregating Metropolitan's budgeted expenditures and offsetting revenues into the five major functional categories. These definitions were taken largely from the "Rate Refinement Progress Report" dated October 15, 1996, and the "Attachments to Rate Refinement Progress Report" dated October 17, 1996; both reports were presented to the Board at its October 18, 1996, workshop.

Transmission: costs categorized as transmission-related include debt service, operations and maintenance expenses, and take-or-pay contract costs associated with aqueducts and pipelines which deliver water from the supply sources to storage facilities, treatment plants and customer service connection points. Generally, all conveyance facilities are categorized as transmission.

For purposes of the cost disaggregation prepared for the wheeling analysis, transmission includes SWP costs identified as transportation (both capital and operations and maintenance), the costs of operating and maintaining the CRA and in-basin systems, and the costs of planning and constructing transmission facilities. Transmission-related costs also include the costs of operating and maintaining regulating reservoirs, as these reservoirs exist solely to meet peak seasonal demands. The regulating reservoirs are Live Oak, Palos Verdes, San Joaquin, Orange County, and Garvey reservoirs.

Storage: Storage costs consist of the costs of operating and maintaining facilities that provide storage for emergency, seasonal, and carryover needs. Storage does not include system regulatory storage, which is attributable to transmission.

Supply: costs categorized as supply-related typically include the costs of operating and maintaining water source facilities, such as dams to control river flows, reservoirs to capture runoff, wells, desalination plants, and the other program costs associated with creating additional water supplies, such as transfers.

Power: power consists of the costs of power contracts and generating facilities needed to pump water from the source of supply to the centers of demand and to the customer. Power also includes the costs of negotiating and managing power contracts and monitoring power operations.

Treatment: treatment includes those incremental costs Metropolitan incurs to provide treatment of water.

The disaggregation of costs is new to Metropolitan but has been practiced by other water and energy utilities for a number of years. Entities presenting their financial statements as electric or water utilities[3] are required to present that data in conformity with uniform system of accounts prescribed by appropriate oversight agencies. Examples are the uniform system of accounts for electric utilities prescribed by the Federal Energy Regulatory Commission or the uniform system of accounts for California water utilities prescribed by the California Public Utilities Commission.

Utilities using these uniform system of accounts would record their cost data into categories known as functions. These functional categories provide a consistent, logical grouping of costs. For a water utility, these functions could include the five major categories above as well as others, such as Customer Billing and Support, Administrative and General, Distribution and Fire Protection. These utilities could use this recorded information in preparing rates. Since Metropolitan does not use this uniform system of utility accounting, this cost disaggregation was prepared outside of the accounting system.

Resource Management International, Incorporated (RMI) was retained by Metropolitan to prepare a Cost-of-Service study, completed in May, 1996. This was the first time such a study was prepared for Metropolitan. The methods RMI used to disaggregate Metropolitan's fiscal year 1995-96 revenue requirement are the basis for the disaggregation of the fiscal year 1996-97 revenue requirement[4].

In addition, the disaggregation of costs and division of those costs into avoidable and unavoidable categories have been reviewed by Metropolitan staff with over twenty years of combined experience in preparing embedded and marginal cost-of-service studies and rates, and by outside counsel with extensive experience with electric and natural gas restructuring. The methodology is currently under review by a consulting firm headed by a nationally recognized authority in the field of water cost-of-service studies and rates.

Departmental Budgets

Many programs cut across multiple functions. These costs have been disaggregated based on discussions with the program managers on how their

[3] Metropolitan presents its financial statements as an enterprise fund; the accounting requirements for presenting data in this manner are less rigorous than for electric or water utility presentation.

[4] The only significant change from the RMI study is that Treatment was handled as an incremental cost, consistent with current Board practice for setting the Treatment Surcharge. The RMI study resulted in Treatment costs that reflected indirect supervision and O&M, and A&G costs, and were substantially higher than those currently recovered through the Treatment Surcharge.

resources are used to support the major functional categories. Detailed information on fiscal year 1996-97 departmental budgets was not available at the time these rates were being prepared, so fiscal year 1995-96 departmental budgets were used as a starting point. The 1996-97 total departmental budgets were disaggregated by functions in the same proportion as budgeted FY 1995-96. Schedule D shows, by branch, how the departmental budgets were disaggregated by function. This table is based on the original prepared by RMI and includes the categories of *Customer Billing and Support* and *Administrative and General.* The costs of these two categories were accumulated and redistributed to the five major functional categories, except *Treatment.* This process is described more fully below.

Costs functionalized as *Supply* include 50 percent of the Colorado River Resources branch and a proportionate share of the three SWP Resources branches (based on the relative portion of SWP non-departmental costs functionalized as *Supply* compared to total SWP non-departmental costs). *Supply* also includes portions of the Integrated Resources, Environmental Planning and Geographical Information Systems branches, and 50 percent of the Water Management Programs branches. Fifty percent of the Water Management Programs branches expenses were allocated to *Supply* based on an analysis from Phase 2 of the Integrated Resources Plan. The analysis was based on the costs of avoided or delayed capital projects compared to capital expenditures had the Water Management Programs not been pursued. A copy of the worksheet calculating the ratio of *Supply* savings to total savings is included as Schedule E.

Treatment includes those incremental costs Metropolitan incurs to provide treatment of water, including chemicals, power and other departmental budgeted expenses of the Operations and Water Quality Divisions directly associated with treatment.

Costs functionalized as *Storage* include departmental budgeted expenses directly associated with supporting the planning, construction and operation and maintenance of non-regulating storage facilities and agreements.

Costs functionalized as *Transmission* include departmental budgeted expenses directly associated with supporting the planning, construction and operation and maintenance of Metropolitan's CRA and in-basin conveyance facilities. It also includes 50 percent of the Water Management Programs branches' expenses, which is the portion of the Water Management Programs expenses not included as Supply (discussed previously, Schedule E).

Power includes the costs of the Power Resources branch.

Costs functionalized as *Customer Billing and Support* include departmental budgeted expenses directly associated with meter reading, meter maintenance and operations, data processing, billing, collections, and general customer support activities. *Customer Billing and Support* costs were redistributed back to the five major functions based on each function's proportionate share of total departmental budgets. This redistribution was recommended by a technical subgroup of the RRP participants.

Costs functionalized as *Administrative and General* consist of management, administration, and other general costs which cannot be included in other functions. For this study, these costs are departmental budgeted expenses of the Executive Offices; executive level activities in the Planning and Resources, Engineering, and Operations Divisions; the majority of the budgeted expenses for the Information Systems and Finance Divisions; all of the budgeted expenses for the Human Resources, Public Affairs, Administrative Services and Compliance Divisions; and the Legal and Audit Departments.

Administrative and General costs were redistributed back across functions, except for *Treatment* , which recovers incremental costs only consistent with current Board practice for setting the Treatment Surcharge. Fifty percent of *Administrative and General* costs was redistributed based on each function's proportionate share of the total departmental budgets and 50 percent was redistributed based on Gross Plant-in-Service as recorded in the financial records at the end of fiscal year 1994-95, and shown in Schedule F. Allocating common costs back to the major functions is a common dilemma, particularly when utilities try to unbundle the costs of their formerly bundled product because direct cost/causation links are not apparent. Various measures of output, such as revenues, proportion of total costs, and assets can be used. The method proposed here is a combination of costs and assets. This method has been used previously and is reasonable as using one measure of output could skew the redistribution of common costs.

Non-Departmental Budgets

Next, non-departmental operating and maintenance expenses were separated into functions. Non-departmental costs include the SWP, the CRA, the water management programs incentives, and payments associated with conjunctive use agreements. The disaggregation of non-departmental costs is shown in Schedule C.

Metropolitan costs categorized as *Supply* include the Delta Water Charges as identified on the SWP Statement of Charges and a portion of the projected credits for overpayment of debt service coverage on the SWP (the analysis of projected SWP credits is shown in Schedule G). Also included are IID 1 O&M and Capital,

50 percent of the Water Management programs incentives (based on the Water Management Benefits analysis from Phase 2 of the IRP and included as Schedule E), and the moneys budgeted for the transfer fund. The IID costs and the transfer fund moneys were included with *Supply* as they create or add water to the system.

Costs functionalized as *Storage* include payments associated with conjunctive use agreements, as these programs store water during wet periods for use during droughts.

Non-departmental costs functionalized as *Power* include a majority of the projected credits for the SWP, as shown in Schedule G.

No non-departmental operating and maintenance expenses were functionalized as *Treatment.*

Costs functionalized as *Transmission* include SWP Transmission charges, both O&M and capital, identified as transportation expenses on the SWP Statement of Charges, and a portion of the projected credits associated with prior year's overpayments for debt service coverage, as shown in Schedule G. SWP take-or-pay contract costs are reasonably included in transmission expenses. The recently negotiated Monterey Agreement recognizes the use of the SWP system to transmit non-Project water. Also, the DWR allows non-contractors to use the aqueduct to move water. These operational activities recognize the transmission function of the SWP.

Other costs functionalized as *Transmission* include 50 percent of the incentives and program costs for the Water Management programs as discussed previously and included as Schedule E.

Debt Service

Next, costs of the capital program were separated into functional categories. By past practice, the Board has established rates for a Treatment Surcharge. Calculating this rate required that debt service associated with construction of Treatment facilities be tracked. An informational Board letter dated August 6, 1996, discussed the Treatment Surcharge and the costs recovered through this charge. Debt service and Pay-go were first disaggregated in such a way that the total debt service allocated to *Treatment* matched the August 6, 1996, Board letter, shown as Schedule H.

The remaining debt service costs were disaggregated as follows. The balance of General Obligation (G.O.) Bond debt service not allocated to *Treatment*, but was divided based on Gross Plant-in-Service, as recorded for fiscal year 1994-95 and

shown in Schedule F. Plant-in-Service reflects capitalized facilities. Plant-in-Service is a reasonable basis to allocate G.O. debt service as the payments reflect the cost of debt incurred to construct Metropolitan's existing system. G.O. bonds have not been issued to finance facilities in many years and a more current balance would reflect a different pattern of expenses. Revenue Bond and Variable Rate Debt (commercial paper interest expense) expenses were disaggregated based on the projected Construction-Work-In-Progress balance at the end of fiscal year 1996-97, as shown in Schedule I. Construction-Work-In-Progress (CWIP) is a "holding" account for expenses associated with construction projects that are not yet finished and not capitalized. CWIP represents the current pattern for construction expenditures and is a reasonable basis for disaggregation of Revenue Bond and Variable Rate Debt service as these are the funding instruments for current construction projects.

Pay-As-You-Go requirements were disaggregated into functional categories based on projected capital expenditures for FY 1996-97, adjusted for the amount of PayGo expected to be used for *Treatment*-related capital projects. This basis was suggested by the RRP technical subgroup, and is also shown in Schedule I.

The *Supply* category received a small portion of debt service and Pay-As-You-Go, as some costs of the Desalination project are in the CWIP balance.

The additional Reserves represent changes in operating funds required by revenue bond covenants and administrative code policies. Reserves were distributed to functions based on each function's portion of total departmental budgeted costs and the change in SWP costs from fiscal year 1995-96 to 1996-97.

Other Revenue Requirements

Finally, other revenues were divided into appropriate functional categories. Revenues from in-basin hydroelectric generating facilities were assigned to Transmission as this is where the expenses and assets were assigned. Property Tax revenues are used first to offset G.O. Bond debt service and second to offset SWP capital costs. Property Tax revenues were distributed so that G.O. Bond debt service was offset (except that no revenues were credited to *Treatment*), with the excess portion of Ad Valorem Taxes over G.O. Bond debt service credited to SWP supply and transmission costs based on their proportionate share of total SWP capital charges.

A proportionate share of unrestricted interest was allocated to *Treatment* as the Treatment Surcharge fund accrues interest. The portion of interest allocable to the Treatment Surcharge fund was based on the proportion of fiscal year 1995-96 actual interest from the Treatment Surcharge to the total fiscal year 1995-96 actual interest, as shown on Schedule J. The rest of unrestricted interest was credited to the

remaining functions based on their proportionate share of total costs. The change in the Rate Stabilization Fund was apportioned based on the total of all other expenses, except *Treatment.*

The total functionalized revenue requirement is detailed in Schedule C.

Avoidable and Unavoidable Expenses

After determining the revenue requirement and disaggregating costs into functional categories, the third step is to separate costs into categories of avoidable and unavoidable expenses. This separation is also detailed in Schedule C.

Avoidable costs are those cost which vary with the volume of water sold, and can therefore be reduced if Metropolitan sells less water. Unavoidable costs are those costs which do not vary with the volume of water sold, and therefore cannot be reduced if Metropolitan sells or delivers less water.

For example, if Metropolitan did not sell any water, it would incur no cost to pump water through the California Aqueduct or the CRA. Therefore, all costs associated with energy to pump water is considered avoidable, and include CRA power, SWP power and SWP Off-Aqueduct costs.

A portion of departmental budgeted operating and maintenance expenses (O&M) are discretionary and could be reduced if short-term forecasts for water sales indicated a lowered expectation for revenues. Therefore, for purposes of this calculation, 15 percent of departmental O&M is considered avoidable by wheeling rather than selling supply.

The moneys budgeted for the increase in the water transfer fund are considered avoidable as they could be eliminated if member agencies chose to negotiate their own transfers.

The majority of Metropolitan's costs, however, are unavoidable if a member agency chose to purchase transmission services only rather than bundled full-service water from Metropolitan. These include the balance of the departmental budgeted O&M expenses, all debt service, the water management program incentives as these are costs associated with existing contracts, costs of the SWP take-or-pay contract, and the CRA IID 1 O&M and capital. In addition, none of the Transmission costs are avoidable because they would be required for transmission-only services as well as bundled services from Metropolitan.

The proposed firm wheeling rate of $262 per acre-foot, including reasonably allocable costs of transmission and unavoidable storage and supply costs is appropriate as it will prevent wheeling by a member agency from financially harming another member agency who is not part of the transaction. To the extent a member agency can avoid its fair share of Metropolitan's unavoidable costs through wheeling, Metropolitan has no alternative other than to shift these costs to other non-participating water users. The impacts of cost shifting if unavoidable costs are not included in the wheeling rate are shown in Table 2, which was presented to the Board at its workshop on October 18, 1996.

Table 2
Potential Impact of Cost Shifting
Assuming 100,000 acre-feet of Water is Wheeled

	Firm Wheeling Rate ($/AF)	Costs Shifted to Water Rate ($000's)*	Impact on MWD Water Rate ($/AF)
All Unavoidable Costs	$262	$0	$0
Less: portions of Inland Feeder and Storage	$247	$1,500	$1
Less: Water Management Programs	$238	$2,400	$2
Less: SWP Transport and Supply	$116	$14,600	$9

Calculation of Wheeling Rates

Firm Wheeling Rates

The firm rate for member agencies wheeling non-Metropolitan supplies through any part of Metropolitan's facilities is the sum of unavoidable Transmission, Storage and Supply costs, as shown on Schedule C, divided by total throughput of water. For purposes of calculating the fiscal year 1996-97 rates, total throughput is the budget forecast for Metropolitan sales of 1,664,000 acre-feet.

Category	**Expense**
Transmission	$291,231,815
Storage	$70,252,827
Supply	$74,312,442
Total	$435,797,084
Throughput	1,664,000
Wheeling Rate	$262/acre-foot

Firm wheeling service is non-interruptible transmission service that includes storage costs. Wheeling participants may inquire of Metropolitan whether capacity exists for such service. If so, Metropolitan will provide firm wheeling service for a specified time, up to one year, during which wheeling capacity will be "reserved" for the wheeling party's use. Current legal requirements apply to only 70 percent of unused capacity. Even though Metropolitan is only required to make 70 percent of unused capacity available, to the extent no other member agency is harmed, in terms of cost, quality, and reliability, the principles allow Metropolitan to make more than the 70 percent threshold available. Once committed, firm wheeling service will be provided on the same basis as Metropolitan's basic water deliveries, and will be interrupted only for act-of-God-type emergencies.

Payments for firm wheeling service will be made monthly, pursuant to a schedule of delivery submitted by the wheeling party and approved by Metropolitan. Metropolitan will verify its receipt of the wheeling agency's transfer water before providing the wheeling service.

Non-firm Wheeling Rates

Metropolitan is proposing to calculate non-firm wheeling rates by using the transmission component of the firm wheeling rate of $175 per acre-foot ($291,231,815 divided by 1,664,000 acre-feet), and adjusting this charge for system peaking capacity and system utilization. A storage component is not included as non-firm service will be provided on an "as available" basis and will not require storage other than transport time. The unavoidable supply component is not included as water wheeled under non-firm rates may be used only to meet non-firm needs, such as groundwater replenishment. Agencies using non-firm wheeling cannot depend on this service during droughts, periods of high demands, or during other times when demands on Metropolitan's system would take priority.

Non-firm Rate = Transmission Component - (Transmission Component * System Peaking Capacity Adjustment * System Utilization)

Schedule K shows peaking factors on Metropolitan's in-basin system for eleven recent fiscal years. The peaking factor is calculated by dividing peak week deliveries, in acre-feet, by average week deliveries, in acre-feet. Dividing the number 1 by the peaking factor and subtracting this result from 100% yields a percentage which expresses the amount the in-basin system delivery capacity must be increased by to meet peak demands.

System Peaking Capacity Adjustment = 100% - (1 / Peaking Factor)

For the ten-year period of 1985-1994, the peaking factor is 1.48, resulting in a system peaking capacity adjustment of 32%; for the eleven-year period of 1985-1995, the peaking factor is 1.49, resulting in a system peaking capacity adjustment of 33%. For purposes of planning transmission projects, Metropolitan uses a system-wide peaking factor of 1.5, resulting in a system peaking capacity adjustment of 33%.

Non-firm wheeling will only occur when excess capacity exists in the conveyance system. Since non-firm wheeling will not contribute to peaking, it is appropriate to adjust the transmission-only rate so it does not include a system peaking cost.

The amount of excess capacity that exists in Metropolitan's system varies from year to year depending on Metropolitan's forecast of system throughput. The forecast for system throughput for fiscal year 1996-97 is 1,664,000 acre-feet. Studies by Metropolitan's Operations planning engineers indicate that for normal demands and a 25% blend, Metropolitan's in-basin system can deliver about 2,800,000 acre-feet.

For fiscal year 1996-97, the anticipated system utilization is about 59% (1,664,000 / 2,800,000).

System Utilization = Actual Throughput / Maximum Delivery Capacity

In a year of high demands, much less excess capacity will exist to move non-firm supplies. In order to encourage non-firm transactions in a narrower window of opportunity, it is reasonable to adjust the non-firm rate downward to account for system utilization.

For fiscal year 1996-97, the non-firm rate would be $141 per acre-foot, plus power, and is calculated as follows:

Non-firm Rate = $175 - ($175 * .33 * .59), or $141 per acre-foot

Non-firm wheeling service is transmission service that may be interrupted by Metropolitan for any reason, including operational needs, changes in customer demands, maintenance requirements, or other conditions. Non-firm wheeling service will be provided on an "as-available" basis, and will be provided to a wheeling party for a specified period of time, up to one year. Scheduling of deliveries will be at Metropolitan's discretion, although service may not be withheld unreasonably. Non-firm wheeling service is the lowest level of service provided by Metropolitan, and is available only when replenishment service is available. If non-firm wheeled water cannot be accepted for immediate delivery, short-term storage services may be provided upon mutual agreement of Metropolitan and the wheeling party with a storage fee of approximately $0.50 per acre-foot per day. The storage fee would be approved at the execution of the agreement.

The following are other provisions which should be considered in a wheeling transaction:

1 Power Costs: Power will be provided by the wheeling party, or purchased by Metropolitan on the wheeling party's behalf.

2. Annual Rates: Wheeling rates should be recalculated annually as part of Metropolitan's regular rate-setting process consistent with the Principles outlined in Exhibit A. Wheeling rates will be set after a public hearing and Board approval.

3. Water Quality: Wheeling should not result in unmitigated adverse water quality impacts. Water quality mitigation, if required, shall be agreed upon by Metropolitan and the wheeling and affected agencies.

4. Service Limits: If requests for firm wheeling services exceed capacity, then access to capacity will occur on a pro rata basis among those agencies requesting wheeling service before a deadline set by Metropolitan based on such agencies' purchases of Metropolitan basic service. Non-firm service is offered on an as-available basis only and is the lowest priority of service offered by Metropolitan.

5. Interim Program: The rate methodology for firm and non-firm wheeling service as described in this document is anticipated to be in place through fiscal year 2000-01, consistent with the RRP Phase 1 recommendations, as Phase 3 discussions will deal with long-term rate structure reforms which may encompass member agency wheeling.

6. Associated Charges: Operational procedures and special charges require development. An administrative charge to cover the costs of reviewing wheeling proposals and contract preparation is appropriate. For firm wheeling requests, capacity to wheel is reserved. Once the reservation is made, the agency should be obligated to pay for some or all of the reserved capacity even if they do not use it, as Metropolitan or other wheeling parties could be precluded from moving water.

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Schedule A
Unbundled 1996-97 Revenue Requirement ($ 000's)

	Total	Transmission	Storage	Supply	Power	Treatment
O&M						
Departmental	$ 198,684	$ 142,136	$ 15,241	$ 7,879	$ 2,420	$ 31,008
Other	11,449	9,485	769	885	310	-
CRA	47,924	-	-	10,560	37,364	-
SWP	243,812	171,058	-	54,379	18,375	-
WMP	64,003	14,552	900	48,551	-	-
MWD Capital	262,636	87,947	114,873	900	-	58,916
Total Exp.	828,508	425,178	131,783	123,154	58,469	89,924
less Other Rev.	(210,401)	(133,946)	(58,302)	(13,565)	(3,809)	(779)
Total Rev. Req.	$ 618,107	$ 291,232	$ 73,481	$ 109,589	$ 54,660	$ 89,145

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Schedule B
Unavoidable and Avoidable Costs
Unbundled 1996-97 Revenue Requirement ($ 000's)

Function	Total	Unavoidable	Avoidable
Transmission	291,232	291,232	-
Supply	109,589	74,312	35,277
Storage	73,481	70,253	3,228
Treatment	89,145	84,643	4,502
Power	54,660	(1,477)	56,137
Total	618,107	518,963	99,144

Schedule C

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
1996-97 BUDGET
FUNCTIONALIZED REVENUE REQUIREMENTS

	Total 1996-97 Budget	Total Power	Power		Total Treatment	Treatment		Total Transmission	Transmission		Total Storage	Storage		Total Supply	Supply		Basis for Allocation
			Unavoidable	Avoidable		Unavoidable	Avoidable		Unavoidable	Avoidable		Unavoidable	Avoidable		Unavoidable	Avoidable	
Departmental O&M																	
CRA	15,809,674	909,927	773,438	136,489	-			14,307,994	14,307,994	-	-	-	-	591,753	502,990	88,763	O&M Analysis 1995-96 Budget
SWP	5,252,494	395,854	336,478	59,378				3,685,149	3,685,149	-	-	-	-	1,171,492	995,768	175,724	Pro Rata Based on SWP Total Costs
In Basin	89,118,067	-	-	-	30,013,000	25,511,050	4,501,950	48,121,178	48,121,178	-	7,704,163	6,548,539	1,155,624	3,279,726	2,787,767	491,959	O&M Analysis 1995-96 Budget
Administrative and General	82,128,629	1,036,789	881,270	155,518	-	-	-	71,460,983	71,460,983	-	7,047,763	5,990,596	1,057,164	2,583,094	2,195,630	387,464	O&M Analysis 1995-96 Budget
Customer Costs	6,375,341	77,660	77,660	-	994,978	994,978	-	4,560,838	4,560,838	-	489,050	489,050	-	252,816	252,816	-	All Other Departmental Costs
Sub-Total	198,684,205	2,420,229	2,068,844	351,385	31,007,978	26,506,028	4,501,950	142,136,141	142,136,141	-	15,240,975	13,028,186	2,212,789	7,878,881	6,734,972	1,143,910	
Other Revenue Req.																	
Operating Equipment	7,070,100	89,253	75,865	13,388	-	-	-	6,151,768	6,151,768	-	606,712	515,705	91,007	222,367	189,012	33,355	Pro-Rata Share of A&G
Reserves	4,379,000	221,298	188,104	33,195	-	-	-	3,332,973	3,332,973	-	162,192	137,864	24,329	662,536	563,156	99,380	Pro-Rata Share of Dprt. O&M & SWP Ch. Adj. for Trt.
Sub-Total	11,449,100	310,551	263,968	46,583	-	-	-	9,484,741	9,484,741	-	768,904	653,568	115,336	884,904	752,168	132,736	
Colorado River Aqueduct																	
IID I O&M	3,779,000	-	-	-	-	-	-	-	-	-	-	-	-	3,779,000	3,779,000	-	Supply 100 %
Capital Charges	6,781,000	-	-	-	-	-	-	-	-	-	-	-	-	6,781,000	6,781,000	-	Supply 100 %
Power	37,364,000	37,364,000	-	37,364,000	-	-	-	-	-	-	-	-	-	-	-	-	Power
Sub-Total	47,924,000	37,364,000	-	37,364,000	-	-	-	-	-	-	-	-	-	10,560,000	10,560,000	-	
State Water Project																	
Off-Aqueduct	41,915,717	41,915,717		41,915,717	-	-	-	-	-	-	-	-	-	-	-	-	Power
Variable Power	9,117,981	9,117,981		9,117,981	-	-	-	-	-	-	-	-	-	-	-	-	Power
SWP Transport O&M	74,297,341	-	-	-	-	-	-	74,297,341	74,297,341	-	-	-	-	-	-	-	Transmission 100 %
SWP Transport Capital	113,141,200	-	-	-	-	-	-	113,141,200	113,141,200	-	-	-	-	-	-	-	Transmission 100 %
SWP Credits I	(50,670,500)	(32,658,861)	-	(32,658,861)	-	-	-	(16,380,301)	(16,380,301)	-	-	-	-	(1,631,338)	(1,631,338)	-	Credits Analysis
Delta Water Charge (O&M)	20,219,588	-	-	-	-	-	-	-	-	-	-	-	-	20,219,588	20,219,588	-	Supply 100 %
Delta Water Charge (Capital)	25,990,368	-	-	-	-	-	-	-	-	-	-	-	-	25,990,368	25,990,368	-	Supply 100 %
Bay Delta Accord Category III Funding	10,000,000	-	-	-	-	-	-	-	-	-	-	-	-	10,000,000	10,000,000	-	Supply 100 %
Sub-Total	243,811,695	18,374,837	-	18,374,837	-	-	-	171,058,240	171,058,240	-	-	-	-	54,378,618	54,378,618	-	
Water Management Programs																	
Conservation	13,683,000	-	-	-	-	-	-	6,841,500	6,841,500	-	-	-	-	6,841,500	6,841,500	-	50% Trans & 50% Supply (IRP Benefits)
LPP	12,140,000	-	-	-	-	-	-	6,070,000	6,070,000	-	-	-	-	6,070,000	6,070,000	-	50% Trans & 50% Supply (IRP Benefits)
GRP	3,280,000	-	-	-	-	-	-	1,640,000	1,640,000	-	-	-	-	1,640,000	1,640,000	-	50% Trans & 50% Supply (IRP Benefits)
Conjuctive Use	900,000	-	-	-	-	-	-	-	-	-	900,000	-	900,000	-	-	-	Storage 100%
Transfers	34,000,000	-	-	-	-	-	-	-	-	-	-	-	-	34,000,000	-	34,000,000	Supply 100%
Sub-Total	64,003,000	-	-	-	-	-	-	14,551,500	14,551,500	-	900,000	-	900,000	48,551,500	14,551,500	34,000,000	
MWD Capital																	
G.O. Bonds	56,332,000	-	-	-	9,991,913	9,991,913	-	42,840,231	42,840,231	-	3,499,856	3,499,856	-	-	-	-	Plant In Service
Revenue Bond Debt Service	106,330,000	-	-	-	44,066,657	44,066,657	-	17,639,205	17,639,205	-	44,051,315	44,051,315	-	572,823	572,823	-	CWIP (adjusted for treatment)
Commercial Paper Interest	9,974,000	-	-	-	3,287,430	3,287,430	-	1,894,063	1,894,063	-	4,730,668	4,730,668	-	61,839	61,839	-	CWIP
PAYGO	90,000,000	-	-	-	1,570,000	1,570,000	-	25,573,956	25,573,956	-	62,590,754	62,590,754	-	265,290	265,290	-	Proportionate share of 96-97 capital expenditures
Sub-Total	262,636,000	-	-	-	58,916,000	58,916,000	-	87,947,454	87,947,454	-	114,872,594	114,872,594	-	899,952	899,952	-	
Total Expenditures	**828,508,000**	**58,469,617**	**2,332,812**	**56,136,805**	**89,923,979**	**85,422,029**	**4,501,950**	**425,178,077**	**425,178,077**	**-**	**131,782,473**	**128,554,348**	**3,228,124**	**123,153,855**	**87,877,210**	**35,276,645**	
	(0)																
Revenue Offsets																	
Property Taxes	(82,620,000)	-	-	-	-	-	-	(73,454,790)	(73,454,790)	-	(4,254,500)	(4,254,500)	-	(4,910,710)	(4,910,710)	-	G.O. Debt Service & SWP Capital
Unrestricted Interest Income:																	
All except Treatment Surcharge Fund	(46,964,246)	(3,717,900)	(3,717,900)	-	-	-	-	(27,035,743)	(27,035,743)	-	(8,379,635)	(8,379,635)	-	(7,830,968)	(7,830,968)	-	All costs, adj'd for Treatment
Treatment	(315,754)	-	-	-	(315,754)	(315,754)	-	-	-	-	-	-	-	-	-	-	Treatment
Hydro-Revenue	(12,785,000)	-	-	-	-	-	-	(12,785,000)	(12,785,000)		-	-	-	-	-	-	Transmission 100 %
Readiness to Serve Charge	(64,050,000)	-	-	-	-	-	-	(18,145,365)	(18,145,365)		(45,315,375)	(45,315,375)		(589,260)	(589,260)	-	Pro-Rata Rev. Bond Debt Serv., adj'd for Treat.
Connection Maintenance Charge	(2,970,000)	(36,178)	(36,178)	-	(463,518)	(463,518)	-	(2,124,700)	(2,124,700)		(227,827)	(227,827)		(117,776)	(117,776)	-	All Other Departmental Costs
Rate Stabilization Fund	(696,000)	(55,098)	(55,098)	-	-	-	-	(400,664)	(400,664)	-	(124,184)	(124,184)	-	(116,053)	(116,053)	-	All costs, adj'd for Treatment
Sub-Total	(210,401,000)	(3,809,177)	(3,809,177)	-	(779,272)	(779,272)	-	(133,946,262)	(133,946,262)	-	(58,301,522)	(58,301,522)	-	(13,564,768)	(13,564,768)	-	
Net Water Revenue Requirement	**618,107,000**	**54,660,440**	**(1,476,365)**	**56,136,805**	**89,144,707**	**84,642,757**	**4,501,950**	**291,231,815**	**291,231,815**	**-**	**73,480,951**	**70,252,827**	**3,228,124**	**109,589,087**	**74,312,442**	**35,276,645**	
Total System Deliveries (Acre-Feet)	1,664,000																
Treated	1,145,000																

1 reflects previous years' payments and will not necessarily be projected at this level in future years

Schedule C

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Functionalization of Total Operation & Maintenance Costs From Operations & Maintenance Budget
fy 1995-96
Metropolitan Water District Of Southern California

Program	Total	Source Of Supply			Storage	Treatment	Transmission			Power	Customer Billing & Support	Administrative & General	
		CRA	SWP	General			SWP	CRA	In Basin				
DEPARMENTAL BUDGETS													
Executive Offices:													
Administration	$ 2,716,800	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,716,800	Administrative & General
Legislative Activties	1,276,600	-	-	-	-	-	-	-	-	-	-	1,276,600	Administrative & General
Office of Diversity	957,100	-	-	-	-	-	-	-	-	-	-	957,100	Administrative & General
Total Executive Offices	$ 4,950,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,950,500	
Planning & Resources Division:													
Power Resources	$ 907,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 907,000	$ -	$ -	Power
Colorado River Resources	1,179,700	589,850	-	-	-	-	-	589,850	-	-	-	-	50% Source Of Supply; 50% Transmission
Financial Planning	777,500	-	-	-	-	-	-	-	-	-	-	777,500	Administrative & General
Facility Planning	1,647,100	-	-	-	823,550	-	-	-	823,550	-	-	-	50% Storage; 50% Transmission
Water Supply & Demand	1,742,800	-	-	290,467	290,467	-	-	-	290,467	-	-	871,400	50% A&G; 50% Split Into Source, Tran, Storage
Environmental Planning	1,555,900	-	-	-	777,950	-	-	-	777,950	-	-	-	50% to Storage; 50% Transmission
Reclaimed Water & Resource Management	978,800	-	-	489,400	-	-	-	-	489,400	-	-	-	Benefits Analysis
Water Transfers & Exchange	1,565,300	-	-	1,565,300	-	-	-	-	-	-	-	-	Source Of Supply
Regional Groundwater Resources	1,127,500	-	-	563,750	-	-	-	-	563,750	-	-	-	Benefits Analysis
Legislation & Policy Dev.	1,088,800	-	-	-	-	-	-	-	-	-	-	1,088,800	Administrative & General
Planning & Resource Division Administration	1,877,700	-	-	-	-	-	-	-	-	-	-	1,877,700	Administrative & General
SWP Supplies	942,900	-	210,267	-	-	-	661,916	-	-	70,718	-	-	Prop. of SWP Power, Supply and Transmission
SWP Contract	1,299,800	-	289,855	-	-	-	912,460	-	-	97,485	-	-	Prop. of SWP Power, Supply and Transmission
Bay/Delta Hearings	2,992,900	-	667,417	-	-	-	2,101,016	-	-	224,468	-	-	Prop. of SWP Power, Supply and Transmission
Geographic Information System	861,900	-	-	-	430,950	-	-	-	344,760	-	86,190	-	50% to Storage; 50% Trans, With 25% Of Trans to Customer
Total Planning & Res.	$ 20,545,600	$ 589,850	$ 1,167,539	$ 2,908,917	$ 2,322,917	$ -	$ 3,675,391	$ 589,850	$ 3,289,877	$ 1,299,670	$ 86,190	$ 4,615,400	
Engineering Division:													
Engineering	$ 9,440,900	$ -	$ -	$ -	$ 1,510,544	$ -	$ -	$ -	$ 6,042,176	$ -	$ -	$ 1,888,180	20% A&G; Other 80% split 20% Storage, and 80% Trans
Facilities Inspection	1,281,500	-	-	-	384,450	-	-	-	897,050	-	-	-	30% Storage; 70% Transmission
Survey	836,300	-	-	-	167,260	-	-	-	669,040	-	-	-	20% Storage; 80% Transmission
Material Quality Control	2,980,100	-	-	-	298,010	-	-	-	2,682,090	-	-	-	10% Storage; 90% Transmission
Substructure	924,800	-	-	-	-	-	-	-	832,320	-	92,480	-	90% Transmission; 10% Customer
As-Built	372,500	-	-	-	74,500	-	-	-	298,000	-	-	-	20% Storage; 80% Transmission
Engineering Studies & Major O&M Projects	863,200	-	-	-	138,112	-	-	-	552,448	-	-	172,640	20% A&G; Other 80% split 20% Storage; 80% Transmission
Right Of Way Program	2,189,400	-	-	-	350,304	-	-	-	1,291,746	-	109,470	437,880	20% A&G; Other 80% split 20% Storage, and 80% Transmission with 5% to Customer from Transmission
Total Engineering	$ 18,888,700	$ -	$ -	$ -	$ 2,923,180	$ -	$ -	$ -	$ 13,264,870	$ -	$ 201,950	$ 2,498,700	
Operations Division:													
Planning & Management	$ 2,683,000	$ -	$ -	$ -	$ -	$ 10,000	$ -	$ -	$ 1,689,840	$ -	$ 983,160	$ -	Factors Developed from Ops Detailed Budget
CRA Operations	6,312,100	-	-	-	-	-	-	6,312,100	-	-	-	-	Factors Developed from Ops Detailed Budget
Water Distribution System Maintenance	11,826,400	-	-	-	632,092	-	-	-	10,183,620	-	1,010,688	-	Factors Developed from Ops Detailed Budget
Treatment	24,914,600	-	-	-	-	24,551,130	-	-	351,400	-	12,070	-	Factors Developed from Ops Detailed Budget
Control Systems	2,164,300	-	-	-	-	709,750	-	-	1,454,550	-	-	-	Factors Developed from Ops Detailed Budget
Hydroelectric Plant Maintenance	1,816,500	-	-	-	-	-	-	-	1,816,500	-	-	-	Factors Developed from Ops Detailed Budget
Maintenance Shop Services	4,113,600	-	-	-	-	1,069,660	-	528,900	2,499,350	-	15,690	-	Factors Developed from Ops Detailed Budget
Facilities And Roads	6,054,200	-	-	-	83,353	569,107	-	2,952,789	2,448,952	-	-	-	Factors Developed from Ops Detailed Budget
Fleet And Equip Maint	1,548,300	-	-	-	9,804	308,404	-	913,754	288,202	-	28,136	-	Factors Developed from Ops Detailed Budget
Operations Administration	8,605,300	-	-	-	80,407	2,529,276	-	1,790,184	2,718,909	-	1,486,525	-	Factors Developed from Ops Detailed Budget
Emergency Preparedness & Protective Services	4,164,900	-	-	-	243,491	698,587	-	702,754	2,273,693	-	246,375	-	Factors Developed from Ops Detailed Budget

Schedule D

Functionalization of Total Operation & Maintenance Costs From Operations & Maintenance Budget
fy 1995-96
Metropolitan Water District Of Southern California

Program	Total	Source Of Supply			Storage	Treatment	Transmission			Power	Customer Billing & Support	Administrative & General	
		CRA	SWP	General			SWP	CRA	In Basin				
Training	2,623,900	-	-	-	32,676	1,027,858	-	471,643	960,529	-	131,195	-	Factors Developed from Ops Detailed Budget
Maint Mngmt Spprt Srvcs	2,969,000	-	-	-	-	1,627,619	-	-	1,318,678	-	22,702	-	Factors Developed from Ops Detailed Budget
Total Operations	$ 79,796,100	$ -	$ -	$ -	$ 1,081,823	$ 33,101,391	$ -	$ 13,672,123	$ 28,004,222	$ -	$ 3,936,541	$ -	
Human Resources Division:													
Medical / Claims / Risk	$ 1,437,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,437,500	Administrative & General
Office Of Director Of H.R.	2,977,600	-	-	-	-	-	-	-	-	-	-	2,977,600	Administrative & General
Human Resources	1,135,400	-	-	-	-	-	-	-	-	-	-	1,135,400	Administrative & General
Total Human Resources	$ 5,550,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,550,500	
Information Systems Division:													
Division Management & Support	$ 1,012,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,012,500	Administrative & General
Application Projects Res	3,156,600	-	-	-	-	-	-	-	-	-	-	3,156,600	Administrative & General
Communic & Network Op	3,025,800	-	-	-	-	-	-	-	-	-	-	3,025,800	Administrative & General
Appl Prjct Mngment	197,300	-	-	-	-	-	-	-	-	-	-	197,300	Administrative & General
User Services	5,076,200	-	-	-	-	-	-	-	-	-	-	5,076,200	Administrative & General
Data Center Services	3,371,800	-	-	-	-	-	-	-	-	-	337,180	3,034,620	10% Customer; 90% A&G
Workstation Training	290,000	-	-	-	-	-	-	-	-	-	-	290,000	Administrative & General
Total Information Systems	$ 16,130,200	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 337,180	$ 15,793,020	
Finance Division:													
Financial Analysis	$ 502,200	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 502,200	Administrative & General
Accounting	2,847,800	-	-	-	-	-	-	-	-	-	711,950	2,135,850	25% Cust. Bill./Info.; 75% Administrative & General
Treasury	1,575,700	-	-	-	-	-	-	-	-	-	-	1,575,700	Administrative & General
Budget	864,800	-	-	-	-	-	-	-	-	-	-	864,800	Administrative & General
Administration	767,800	-	-	-	-	-	-	-	-	-	-	767,800	Administrative & General
Risk Management	943,400	-	-	-	-	-	-	-	-	-	-	943,400	Administrative & General
Total Finance	$ 7,501,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 711,950	$ 6,789,750	
Public Affairs Division:													
Administration	$ 714,500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 714,500	Administrative & General
Media	733,600	-	-	-	-	-	-	-	-	-	-	733,600	Administrative & General
Community Programs	1,369,900	-	-	-	-	-	-	-	-	-	-	1,369,900	Administrative & General
Education	1,091,100	-	-	-	-	-	-	-	-	-	-	1,091,100	Administrative & General
Publications	1,426,100	-	-	-	-	-	-	-	-	-	-	1,426,100	Administrative & General
Government Relations	1,136,800	-	-	-	-	-	-	-	-	-	-	1,136,800	Administrative & General
Water Conservation	18,514,000	-	-	9,257,000	-	-	-	-	9,257,000	-	-	-	Benefits Analysis
Total Public Affairs	$ 24,986,000	$ -	$ -	$ 9,257,000	$ -	$ -	$ -	$ -	$ 9,257,000	$ -	$ -	$ 6,472,000	
Water Quality Division:													
Director's Office	$ 1,801,300	$ -	$ -	$ 360,260	$ 90,065	$ 630,455	$ -	$ -	$ 270,195	$ -	$ 450,325	$ -	20% Source; 35% Treat; 15% Trans; 5% Store; 25% Cust.
Chemistry	2,454,200	-	-	-	490,840	1,227,100	-	-	490,840	-	245,420	-	50% Treat; 20% Trans; 20% Storage; 10% Customer
Purification	1,540,200	-	-	-	308,040	770,100	-	-	308,040	-	154,020	-	50% Treat; 20% Trans; 20% Storage; 10% Customer
Microbiology	1,444,700	-	-	-	288,940	722,350	-	-	288,940	-	144,470	-	50% Treat; 20% Trans; 20% Storage; 10% Customer
Lab Services	867,900	-	-	-	173,580	433,950	-	-	173,580	-	86,790	-	50% Treat; 20% Trans; 20% Storage; 10% Customer
Total Water Quality	$ 8,108,300	$ -	$ -	$ 360,260	$ 1,351,465	$ 3,783,955	$ -	$ -	$ 1,531,595	$ -	$ 1,081,025	$ -	
Administrative Services Division:													
Mngmnt & Support	$ 1,187,400	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,187,400	Administrative & General
Purchasing/Warehouse	3,563,300	-	-	-	-	-	-	-	-	-	-	3,563,300	Administrative & General
Off Srvcs & Support	2,340,400	-	-	-	-	-	-	-	-	-	-	2,340,400	Administrative & General
Facilities Management	4,779,900	-	-	-	-	-	-	-	-	-	-	4,779,900	Administrative & General
Graphics Systems	1,491,000	-	-	-	-	-	-	-	-	-	-	1,491,000	Administrative & General

Schedule D

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Functionalization of Total Operation & Maintenance Costs From Operations & Maintenance Budget
fy 1995-96
Metropolitan Water District Of Southern California

Program	Total	Source Of Supply			Storage	Treatment	Transmission			Power	Customer Billing & Support	Administrative & General	
		CRA	SWP	General			SWP	CRA	In Basin				
Fleet Management	2,821,700	-	-	-	-	-	-	-	-	-	-	2,821,700	Administrative & General
Total Administrative Ser.	$ 16,183,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,183,700	
Environmental Compliance Division:													
Office of the Director	$ 294,600	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 294,600	Administrative & General
Regulatory Affairs	2,242,000	-	-	-	-	-	-	-	-	-	-	2,242,000	Administrative & General
Work Place Hlth &Sfty	3,584,600	-	-	-	-	-	-	-	-	-	-	3,584,600	Administrative & General
Environmental	4,966,800	-	-	-	-	-	-	-	-	-	-	4,966,800	Administrative & General
Total Environmental Comp.	$ 11,088,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,088,000	
Subtotal: GM Department	$213,729,300	$ 589,850	$ 1,167,539	$12,526,177	$ 7,679,384	$36,885,346	$ 3,675,391	$14,261,973	$ 55,347,564	$1,299,670	$ 6,354,836	$ 73,941,570	
Legal Department, Total	$ 5,267,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,267,000	Administrative & General
Audit Department, Total	$ 1,006,300	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,006,300	Administrative & General
TOTAL DEPARMENTAL	$220,002,600	$ 589,850	$ 1,167,539	$12,526,177	$ 7,679,384	$36,885,346	$ 3,675,391	$14,261,973	$ 55,347,564	$1,299,670	$ 6,354,836	$ 80,214,870	

METROPOLITAN'S 25 YEAR EXPENDITURES (PRESENT VALUE) [1]
USED IN THE IRP PHASE 2 BENEFIT CALCULATIONS
7/11/95

	GW Case (PV Dollars)					Preferred Case (PV Dollars)					Difference (PV Dollars)				
	Capital	CIP O&M	Supply Costs	All Other Costs	Total	Capital	CIP O&M	Supply Costs	All Other Costs	Total	Capital	CIP O&M	Supply Costs	All Other Costs	Total
1995	223,200,343	200,977,123	312,016,762	85,461,734	819,227,264	227,323,768	194,425,000	312,016,762	85,461,734	819,227,264	-4,123,425	6,552,123	0	0	2,428,697
1996	245,157,503	194,996,343	339,468,707	96,124,749	873,919,224	248,643,805	188,639,202	339,468,707	96,124,749	872,876,463	-3,486,303	6,357,141	0	0	2,870,838
1997	282,278,744	195,310,022	327,881,124	96,015,099	900,332,466	285,115,198	188,942,655	327,236,492	96,015,099	897,309,444	-2,836,455	6,367,367	644,632	0	4,175,544
1998	327,268,940	188,891,263	309,774,824	101,816,796	927,639,714	327,676,013	182,733,156	309,017,510	100,842,553	920,269,231	-407,073	6,158,107	757,315	974,243	7,482,591
1999	363,191,714	182,684,075	291,491,782	98,355,120	936,476,585	354,392,548	176,728,330	290,659,196	94,202,930	915,983,005	8,799,166	5,955,745	832,586	4,152,189	19,739,686
2000	372,258,865	177,146,007	295,993,272	100,832,334	947,332,428	317,394,642	171,370,810	295,713,477	95,944,773	880,423,702	54,864,223	5,775,196	279,795	4,887,561	65,806,776
2001	374,123,241	176,214,577	293,008,509	87,443,982	931,957,069	305,987,379	170,469,747	292,271,341	80,768,181	849,496,647	68,135,862	5,744,830	737,168	6,675,801	81,293,662
2002	386,147,327	170,423,102	274,595,401	74,996,132	907,739,666	303,991,007	164,867,081	273,708,651	69,046,126	811,612,865	82,156,320	5,556,021	886,751	5,950,006	94,549,098
2003	347,686,897	180,810,763	257,290,800	74,283,017	860,600,008	291,857,193	159,449,223	256,717,904	67,167,734	775,192,054	55,829,704	21,361,541	572,896	7,115,283	84,879,424
2004	337,735,871	174,708,983	241,888,773	69,300,088	824,177,334	303,026,439	154,209,175	241,436,413	63,094,118	761,766,146	34,709,432	20,499,807	452,360	6,205,970	61,867,569
2005	327,487,579	169,416,002	227,222,586	67,162,980	791,815,997	298,661,414	149,140,885	226,511,411	61,371,650	735,685,360	28,826,165	20,275,118	711,175	5,791,330	55,603,787
2006	313,065,934	168,749,873	214,690,645	65,502,372	762,290,963	301,111,380	144,239,536	214,030,239	58,350,692	717,731,847	11,954,554	24,510,337	660,406	7,151,680	44,276,977
2007	299,205,432	162,406,282	204,380,605	64,049,945	730,275,153	299,378,639	139,661,869	203,612,131	55,502,197	698,154,836	-173,207	22,744,413	768,474	8,547,748	31,887,429
2008	280,859,117	156,404,285	192,943,606	61,180,142	691,476,780	273,194,536	135,071,822	192,309,597	53,627,446	654,203,402	7,664,580	21,332,463	634,009	7,552,696	37,183,748
2009	268,662,723	150,754,896	184,207,555	54,158,507	657,832,172	256,192,203	130,632,999	183,477,993	50,418,276	620,721,471	12,470,520	20,121,897	729,562	3,740,232	37,062,211
2010	257,649,552	144,465,859	187,683,664	47,082,392	636,931,530	244,366,291	126,339,775	186,814,199	47,663,616	605,183,881	13,283,261	18,126,084	869,465	-581,223	31,697,586
2011	242,618,764	136,510,007	200,907,038	42,589,463	622,657,027	229,000,126	122,246,712	198,499,517	42,589,463	592,335,818	13,618,638	14,263,295	2,407,522	0	30,289,454
2012	240,335,682	130,752,042	190,799,182	39,596,154	601,660,354	225,012,758	118,229,146	188,306,787	39,596,154	571,144,845	15,322,924	12,522,896	2,492,395	0	30,338,215
2013	236,512,849	125,668,365	179,079,395	37,078,291	578,611,304	214,957,826	114,343,762	176,387,656	37,078,291	542,767,534	21,555,024	11,324,603	2,691,738	0	35,571,365
2014	229,192,656	121,170,519	166,503,979	34,926,086	552,077,047	205,709,863	110,586,007	163,730,432	34,926,086	514,952,387	23,482,793	10,584,512	2,773,547	0	36,840,853
2015	209,038,312	117,144,023	159,358,026	32,855,913	518,439,017	186,332,799	106,951,798	157,035,256	32,855,913	483,175,767	22,705,512	10,192,225	2,322,770	0	35,220,507
2016	174,641,441	113,220,476	149,606,231	30,889,110	467,892,463	160,767,973	103,436,895	147,354,078	30,889,110	442,448,057	13,873,468	9,783,581	2,252,152	0	25,909,202
2017	173,176,114	109,720,800	143,537,575	29,372,683	455,429,401	153,337,794	100,037,475	141,191,974	29,154,400	423,721,643	19,838,320	9,683,325	2,345,602	218,283	32,085,529
2018	166,316,049	106,228,831	137,070,690	28,180,766	437,405,673	146,253,745	96,749,821	135,141,815	27,418,784	405,564,165	20,062,304	9,479,010	1,928,875	761,982	32,232,171
2019	168,473,418	102,808,190	127,101,967	28,203,608	426,347,893	136,990,218	93,570,316	125,693,152	25,848,599	382,102,285	31,483,200	9,237,875	1,408,815	2,355,008	44,484,898
2020	144,579,852	99,510,141	119,787,313	25,044,655	388,348,780	129,851,046	90,495,237	118,957,436	23,113,795	362,417,513	14,728,807	9,014,904	829,876	1,930,861	26,504,448
TOTAL	6,990,864,920	3,957,092,848	5,728,290,011	1,572,502,120	18,248,893,313	6,426,526,604	3,633,568,433	5,697,300,124	1,499,072,471	17,256,467,633	564,338,315	323,524,415	30,989,887	73,429,650	992,282,267

Breakdown of LRP Benefits:	Total	Transmission	Supply
Capital Projects			
CPA project	178,330,908	178,330,908	
West Valley	24,266,548	24,266,548	
Desalination	278,783,128	104,543,673	
SD Pipeline	16,930,149	16,930,149	
Perris	66,027,583	66,027,583	
Total	564,338,315	390,098,860	
Desal [2]			174,239,455
O&M Savings [3]			323,524,415
Total Supply Savings			497,763,870
Total Savings	992,282,267		
Ratio of Supply Savings to Total Savings			50%

Notes:
1 Assumes a discount rate of 6.5 percent.
2 Assumes that 62.5 percent of the capital costs associated with desalination facility are for plant and 37.5 percent is for transmission
3 Reflects decreased O&M associated with less need for transfers and no desal O&M.

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Schedule E

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Schedule F
GrossPlant In-Service
Metropolitan Water District Of Southern California

Name Or Category Of Facilities	Total	(1) Source Of Supply	(2) Storage	(3) Water Treatment	(4) Transmission	(5) Other
Parker Power Plant & Dam	$ 13,008,688	$ -	$ -	$ -	$ 13,008,688	$ -
Power Recovery Plants	103,397,629	-	-	-	103,397,629	-
Other Dams & Reservoirs	103,550,064	-	103,550,064	-	-	-
Water Tranportation Facilities	856,251,135	-	-	-	856,251,135	-
Water Tranportation Facilities–CRA	223,074,861				223,074,861	
Pumping Plants & Facilities	71,779,360	-	-	-	71,779,360	-
Treatment Plants & Facilities	295,630,208	-	-	295,630,208	-	-
Power Lines & Communications	12,478,574	-	-	-	-	12,478,574
Software Applications	700,000	-	-	-	-	700,000
Miscellaneous Features	35,832,243	-	-	-	-	35,832,243
Subtotal	$ 1,715,702,762	$ -	$ 103,550,064	$ 295,630,208	$ 1,267,511,673	$ 49,010,817
Preliminary Organization Expense	$ 5,571,001	$ -	$ -	$ -	$ -	$ 5,571,001
Interest, Original Construction	$ 36,232,889	$ -	$ -	$ -	$ -	$ 36,232,889
Unused Energy, Original Construction	$ 2,790,868	$ -	$ -	$ -	$ -	$ 2,790,868
Total	$ 1,760,297,520	$ -	$ 103,550,064	$ 295,630,208	$ 1,267,511,673	$ 93,605,575
Plus: Other Plant		$ -	$ 5,815,630	$ 16,603,330	$ 71,186,616	
Adjusted Total	$ 1,760,297,520	$ -	$ 109,365,694	$ 312,233,538	$ 1,338,698,289	
Percent	100.00%	0.00%	6.21%	17.74%	76.05%	
Adjust Treatment	$ 1,448,063,982	$ -	$ 109,365,694		$ 1,338,698,289	
	100.00%	0.00%	7.55%	0.00%	92.45%	

Source: Pages 9 through 18 of March 31, 1995 Operations Report.

Schedule G

SWP Transport Capital	113,141,200	81.32%
SWP Delta Water Capital	25,990,368	18.68%
	139,131,568	

FY 1996-97	Credit Amount	Transmission	Supply	Power
WSRB Cover	3,360,500	2,732,744	627,756	
WSRB Cover	4,077,682	3,315,954	761,728	
OAPF Cover	2,993,985			2,993,985
OAPF Cover	2,993,985			2,993,985
East Branch Cover	5,110,729	5,110,729		
WSRB Earnings	1,940,408	1,577,932	362,476	
OAPF Interest	5,028,877			5,028,877
OAPF Adjustment	11,500,000			11,500,000
Devil Canyon 2nd Afterbay	1,725,118	1,725,118		
Variable Refund	7,500,000			7,500,000
Replacement Accting System	2,500,000	1,250,000		1,250,000
Subtotal	48,731,284	15,712,477	1,751,960	31,266,847
Earnings on Securities	2,139,216	689,750	76,908	1,372,559
Total	50,870,500	16,402,226	1,828,868	32,639,406
		32.2%	3.6%	64.2%

OAPF = Off Aqueduct Power Facilities
WSRB = Water System Revenue Bond

Schedule H

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MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

9-12

August 6, 1996

To: Board of Directors (Special Budget and Financial Analysis Committee--Information) (Finance and Insurance Committee--Information) (Water Planning and Resources Committee--Information)

From: General Manager

Submitted by: Debra Man, Chief Planning and Resources

Subject: Report on Water Treatment Surcharge

RECOMMENDATION

For information only.

EXECUTIVE SUMMARY

This letter is in response to your Board's request for the identification of the existing cost components included in the water treatment surcharge. In Fiscal Year 1996-97 it is estimated that the cost of providing treated water service will total $88.9 million. Approximately $30.0 million of this total is attributed to operations and maintenance with the remaining $58.9 million being allocated to capital costs. It is also estimated that the delivery of 1.16 million acre-feet of treated water will generate $89.2 million in treatment surcharge revenues, resulting in a deposit of $0.3 million into the Treatment Surcharge Stabilization Fund. In Fiscal Year 1995-96, $3.6 million was withdrawn from the Treatment Surcharge Stabilization Fund to fund costs that exceeded treatment surcharge revenues. As adopted by your Board, the Fiscal Year 1996-97 treatment surcharge will remain at the Fiscal Year 1995-96 level of $82 per acre-foot. Your Board also requested that the concept of incorporating a standby component into the water treatment surcharge be explored. This will be done during Phase Three of the Rate Refinement Process which is scheduled to be completed by March 1997.

DETAILED REPORT

During the review of the 1996-97 Annual Budget by the Special Budget and Financial Analysis Committee, a number of issues were raised. In response to one of these issues, this report identifies the existing cost components included in the water treatment surcharge.

The major costs associated with providing treated water service include operating and maintenance costs, debt service and Pay As You Go (PAYGO) expenditures. Operating and maintenance costs include: (1) a portion of the expenditures for the Water Quality Division and Laboratory; (2) operating and maintenance costs for the treatment plants; and (3) power and chemicals for the treatment plants.

The attached table summarizes the current costs and revenues associated with providing treated water service. It is expected that O&M costs in Fiscal Year 1996-97 will not increase significantly above the Fiscal Year 1994-95 and 1995-96 level of around $30 million. Debt service costs for treatment facilities increased $6.9 million from $46.6 million in Fiscal Year 1994-95 to $53.5 million in Fiscal Year 1995-96 as revenue bond proceeds were used to fund treatment facilities. Debt service costs are expected to increase by $3.9 million in Fiscal Year 1996-97 as commercial paper and revenue bond proceeds are used to fund additional treatment facilities. Pay as You Go (PAYGO) expenditures for treatment facilities vary from year to year depending upon the type and cost of treatment facilities being financed. Generally, projects costing less than $1.0 million or projects that have useful lives less than the average term of long-term debt financing are funded by PAYGO.

The Treatment Surcharge Stabilization Fund (the Fund) was established in 1988 for the primary purpose of mitigating increases in the treatment surcharge. In Fiscal Year 1995-96, $3.6 million was withdrawn from the Fund to cover costs that exceeded revenues. The Fund's balance has decreased from $4.6 million in Fiscal Year 1994-95 to $1.4 million in Fiscal Year 1995-96. It is estimated that approximately $0.3 million will be deposited into the Fund in Fiscal Year 1996-97.

The treatment surcharge is intended to recover the full cost of treatment. The current treatment surcharge is $82 per acre-foot for basic service, $57 per acre-foot for seasonal service and $58 per acre-foot for agricultural service. This surcharge will remain the same for Fiscal Year 1996-97, as approved by your Board in March 1996.

In Fiscal Year 1996-97, the average unit cost of providing treated water service is expected to be $77 per acre-foot. O&M costs account for $26 of this total with the remaining $51 per acre-foot being allocated to capital costs.

CM:arb

Attachment

CMBDTSR/BOARD

Attachment

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
TREATED WATER COSTS ($1,000's)

	(Actual) 1994-95	(Actual) 1995-96	(Estimate) 1996-97
Operation and Maintenance	$ 29,572	$ 29,692	$ 30,013
Capital			
Outstanding Debt Service	$ 46,570	$ 53,471	$ 53,471
Debt Service for New Facilities	$ -	$ -	$ 3,875
Pay-As-You Go (PAYGO)	$ 5,564	$ 6,889	$ 1,570
Sub-Total Capital	$ 52,134	$ 60,360	$ 58,916
Total Treated Water Costs	$ 81,706	$ 90,052	$ 88,929
Total Treated Deliveries (Fiscal Year kAF)	1,162	1,178	1,159
Treated Water Sales (Cash Year kAF)			
Basic	945	826	957
Seasonal	135	100	140
Agricultural[1]	68	239	48
Total	1,148	1,165	1,159
Total Treatment Surcharge Revenue	$ 81,947	$ 86,444	$ 89,192
Increase/(Decrease) in Treatment Surcharge Stabilization Fund	$ 241	$ (3,608)	$ 263
Treatment Surcharge Stabilization Fund Balance (End of Year)	$ 4,640	$ 1,364	$ 1,627
Treatment Surcharge ($/AF)			
Basic	$ 77	$ 82	$ 82
Seasonal	$ 53	$ 57	$ 57
Agricultural	$ 53	$ 58	$ 58
Average Cost of Treatment ($/AF)			
O&M	$ 25	$ 25	$ 26
Capital	$ 45	$ 51	$ 51
Total	$ 70	$ 76	$ 77

Notes:

1 Agricultural water sales in 1995-96 reflect adjustments for interim agricultural program.

FY 1996-97
Functionalization of Construction Work In Progress
Metropolitan Water District of Southern California

Approp.	Description	Total	Func No.	(1) Supply	(2) Storage	(3) Treatment	(4) SWP	(5) Transmission CRA	(6) In Basin	(7) Other
	Beginning Balance	1,564,455,712.65		11,064,191.63	684,071,185.86	571,788,909.15	-	13,630,380.26	258,255,495.24	25,645,278.68
	Additions	472,764,400.00		1,050,000.00	248,866,900.00	76,609,400.00			101,663,000.00	44,575,100.00
	Projected CWIP FY 1996-97	2,037,220,112.65		12,114,191.63	932,938,085.86	648,398,309.15	-	13,630,380.26	359,918,495.24	70,220,378.68
	Capitalized Interest	211,426,652.00		1,257,234.29	96,822,122.85	67,292,033.30	-	1,414,587.28	37,353,039.06	7,287,607.01
		2,248,646,764.65		13,371,425.92	1,029,760,208.71	715,690,342.45	-	15,044,967.54	397,271,534.30	77,507,985.69
	Plus Other Plant	77,507,974.98		477,349.63	36,761,647.98	25,549,595.15	-	537,093.78	14,182,288.43	
	Adjusted Total	2,248,646,453.91		13,848,775.55	1,066,521,856.70	741,239,937.60	-	15,582,061.32	411,453,822.74	
	Percent			0.62%	47.43%	32.96%	0.00%	0.69%	18.30%	
	Adjusted for Treatment	1,507,406,516.30		13,848,775.55	1,066,521,856.70	-	-	15,582,061.32	411,453,822.74	
				0.92%	**70.75%**	**0.00%**	**0.00%**	**1.03%**	**27.30%**	
	Paygo Alternative FY 1996-97 Capital Expenditures	472,764,400.00		1,050,000.00	248,866,900.00	76,609,400.00	-	-	101,663,000.00	44,575,100.00
	Plus Other Plant			109,306.46	25,907,389.45	7,975,144.79	-	-	10,583,259.30	
	Adjusted for Treatment	388,179,855.21		1,159,306.46	274,774,289.45	-	-	-	112,246,259.30	
		100.00%		0.30%	70.78%	0.00%	0.00%	0.00%	28.92%	
	Paygo Allocation, Non-Treatment	90,000,000		265,290	62,590,754	-	-	-	25,573,956	
	Paygo Allocation, Treatment					1,570,000				

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Schedule I

Approp.	Description	Total	Func No.	(1) Supply	(2) Storage	(3) Treatment	(4) SWP	(5) Transmission CRA	(6) Transmission In Basin	(7) Other
15002	15002 - Studies for Distribution of Northern Water	23.94	6	0.00	0.00	0.00	0.00	0.00	23.94	0.00
15007	15007 - Box Springs Fdr., Schs. 316, 317, 318	3,000,552.00	6	0.00	0.00	0.00	0.00	0.00	3,000,552.00	0.00
15009	15009 - Hydroelectric Generating Facilities	416.76	6	0.00	0.00	0.00	0.00	0.00	416.76	0.00
15013	15013 - Skinner No. 2, Study for Construction	92.93	3	0.00	0.00	92.93	0.00	0.00	0.00	0.00
15016	15016 - Distn System, Repl Flowmeter Instruments	455,513.64	6	0.00	0.00	0.00	0.00	0.00	455,513.64	0.00
15017	15017 - Chino Basin, Conjunctive Use Storage Study	4,442,521.31	2	0.00	4,442,521.31	0.00	0.00	0.00	0.00	0.00
15030	15030 - Santa Ana River Crossing - Seismic Stability Analysis	1,810,186.03	6	0.00	0.00	0.00	0.00	0.00	1,810,186.03	0.00
15045	15045 - Pump Plants, Rehab. Main Pumps, units 1, 2 & 3	12,239,681.45	5	0.00	0.00	0.00	0.00	12,239,681.45	0.00	0.00
15072	15072 - Weymouth, Modifications	3.00	3	0.00	0.00	3.00	0.00	0.00	0.00	0.00
15073	15073 - Mills Filtration Plant - Expansion	3,306.77	3	0.00	0.00	3,306.77	0.00	0.00	0.00	0.00
15085	15085 - Skinner Filt Plt, Design	102,875,818.10	3	0.00	0.00	102,875,818.10	0.00	0.00	0.00	0.00
15088	15088 - Arvin-Edison Water Storage	2,180,808.33	2	0.00	2,180,808.33	0.00	0.00	0.00	0.00	0.00
15090	15090 - Joseph Jensen Filtration Plant	171,629,013.85	3	0.00	0.00	171,629,013.85	0.00	0.00	0.00	0.00
15091	15091 - Etiwanda Pipeline	90,055,504.24	6	0.00	0.00	0.00	0.00	0.00	90,055,504.24	0.00
15099	15099 - Granular activated carbon & oxidents studies	26,567,635.74	3	0.00	0.00	26,567,635.74	0.00	0.00	0.00	0.00
15101	15101 - Lake Mathews by pass Study	4,224.00	6	0.00	0.00	0.00	0.00	0.00	4,224.00	0.00
15107	15107 - Enlargement of Washwater Recl. Fac.In Weymouth	12,904,842.19	3	0.00	0.00	12,904,842.19	0.00	0.00	0.00	0.00
15109	15109 - Replacement of 75 Underground Storage Tank	4,948.42	7	0.00	0.00	0.00	0.00	0.00	0.00	4,948.42
15112	15112 - Jensen Plt. Sec. Sys.	182,883.65	3	0.00	0.00	182,883.65	0.00	0.00	0.00	0.00
15113	15113 - Modification of Diemer Filtration Plt.	26,153,942.82	3	0.00	0.00	26,153,942.82	0.00	0.00	0.00	0.00
15114	15114 - Garvey Reservoir O & M Center	273,856.83	6	0.00	0.00	0.00	0.00	0.00	273,856.83	0.00
15118	15118 - Minor Capital Project for F/Y 1988/89	15.02	7	0.00	0.00	0.00	0.00	0.00	0.00	15.02
15119	15119 - Preliminary Study for Orange County Area	4,263,649.86	3	0.00	0.00	4,263,649.86	0.00	0.00	0.00	0.00
15120	15120 - Preliminary Study for Mills Plant Area	124,945,758.00	3	0.00	0.00	124,945,758.00	0.00	0.00	0.00	0.00
15121	15121 - Preliminary Study for S. Riverside & San Diego	7,092,656.68	6	0.00	0.00	0.00	0.00	0.00	7,092,656.68	0.00
15122	15122 - Preliminary Study for Inland Feeder Area	61,098,686.09	6	0.00	0.00	0.00	0.00	0.00	61,098,686.09	0.00
15123	15123 - Preliminary Study for Eastside Res. Area	672,242,854.06	2	0.00	672,242,854.06	0.00	0.00	0.00	0.00	0.00
15124	15124 - Preliminary Study for San Joaquin Res. Improvement Project	1,981,041.96	6	0.00	0.00	0.00	0.00	0.00	1,981,041.96	0.00
15125	15125 - Etiwanda Power Plant.	22,521,064.00	6	0.00	0.00	0.00	0.00	0.00	22,521,064.00	0.00
15130	15130 - Operations Control Center	2,811,972.82	6	0.00	0.00	0.00	0.00	0.00	2,811,972.82	0.00
15131	15131 - Expansion of Admin.Bldg. at Mills	4,586,370.51	3,6	0.00	0.00	2,293,185.26	0.00	0.00	2,293,185.26	0.00
15132	15132 - Expansion of Admin. Bldg. at Lake Skinner	1,531,198.62	3,6	0.00	0.00	765,599.31	0.00	0.00	765,599.31	0.00
15136	15136 - Installation of Clorination Fac. for Skinner	3,650,467.95	3	0.00	0.00	3,650,467.95	0.00	0.00	0.00	0.00
15137	15137 - Corrosion Protection Sys. for the Palos Verdes Feeder	1,093,911.22	6	0.00	0.00	0.00	0.00	0.00	1,093,911.22	0.00
15139	15139 - Minor Capital Project F/Y 1989/90	21,170.92	7	0.00	0.00	0.00	0.00	0.00	0.00	21,170.92
15140	15140 - Computer-Based Control Sys. for Jensen/Eagle Rock & O.C.C.	7,712,908.33	6	0.00	0.00	0.00	0.00	0.00	7,712,908.33	0.00
15143	15143 - Preliminary Study for Perris Area	1,167,903.61	3	0.00	0.00	1,167,903.61	0.00	0.00	0.00	0.00
15144	15144 - Preliminary Study for Lake Mathews & Weymouth	51,554.11	3	0.00	0.00	51,554.11	0.00	0.00	0.00	0.00
15147	15147 - Upgrading Communication System	6,082,993.56	7	0.00	0.00	0.00	0.00	0.00	0.00	6,082,993.56
15150	15150 - Corrosion Material Test Plt. at La Verne	648,404.86	6	0.00	0.00	0.00	0.00	0.00	648,404.86	0.00
15151	15151 - Seismic Upgrading of the LA. H.Q. Building.	353,320.03	7	0.00	0.00	0.00	0.00	0.00	0.00	353,320.03
15152	15152 - Seismic Upgrading of L.V. Maint.Shop.	525,837.97	6	0.00	0.00	0.00	0.00	0.00	525,837.97	0.00
15154	15154 - Evaluation of MWD Domestic Water Sys.	1,387,493.46	6	0.00	0.00	0.00	0.00	0.00	1,387,493.46	0.00
15160	15160 - Slope Stability Analysis-San Jacinto Struct.	444,681.14	6	0.00	0.00	0.00	0.00	0.00	444,681.14	0.00
15161	15161 - MWD Share for Design & Construction SC.LA-35	3,045,609.11	6	0.00	0.00	0.00	0.00	0.00	3,045,609.11	0.00
15162	15162 - West Valley Area Study	2,787,905.86	6	0.00	0.00	0.00	0.00	0.00	2,787,905.86	0.00
15163	15163 - Modifying the Ventilation Hoods at Water Quality Lab	388,237.12	3	0.00	0.00	388,237.12	0.00	0.00	0.00	0.00
15164	15164 - Protection of the Box Spring Fdr. at FRW 215	(50.84)	6	0.00	0.00	0.00	0.00	0.00	-50.84	0.00
15165	15165 - Minor Capital Projects F/Y 90-91	28,155.67	7	0.00	0.00	0.00	0.00	0.00	0.00	28,155.67

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Approp.	Description	Total	Func No.	(1) Supply	(2) Storage	(3) Treatment	(4) SWP	(5) Transmission CRA	(6) In Basin	(7) Other
15166	15166 - Diemer & Weymouth, Relocation of Chemical Storage Facilities	25,006,304.10	3	0.00	0.00	25,006,304.10	0.00	0.00	0.00	0.00
15167	15167 - Study for a Desalination Pilot Plt.	5,731,621.66	1	5,731,621.66	0.00	0.00	0.00	0.00	0.00	0.00
15169	15169 - Enlargement of the Chemical Unloading Fac.	765,849.27	3	0.00	0.00	765,849.27	0.00	0.00	0.00	0.00
15170	15170 - Seismic Upgrading of the Discharge Pipeline & Pumping Plt.	5,412,053.51	6	0.00	0.00	0.00	0.00	0.00	5,412,053.51	0.00
15171	15171 - Backflow Prevention Assby from Diemer,Mills & Jensen.	940,677.57	3	0.00	0.00	940,677.57	0.00	0.00	0.00	0.00
15173	15173 - Study to Retrofit all Fltr.Plt.W/ Oxidation Facil.	30,595,115.19	3	0.00	0.00	30,595,115.19	0.00	0.00	0.00	0.00
15174	15174 - Centralized Emergency PWR.Generation SYS. in Skinner	1,829,915.35	3	0.00	0.00	1,829,915.35	0.00	0.00	0.00	0.00
15176	15176 - Installation of 2-Way Radio Links	34,343.90	7	0.00	0.00	0.00	0.00	0.00	0.00	34,343.90
15180	15180 - Pathogen Removal Pilot-Plant Study	102,348.87	6	0.00	0.00	0.00	0.00	0.00	102,348.87	0.00
15183	15183 - Fire Sprinkler sys. & Ventilation at LAHD.	285,076.19	7	0.00	0.00	0.00	0.00	0.00	0.00	285,076.19
15184	15184 - New Main Switchgear at Diemer	400,205.45	3	0.00	0.00	400,205.45	0.00	0.00	0.00	0.00
15186	15186 - Chlorination System at CRA OC, PV & Garvey Reservoirs	4,673,277.37	2,6	0.00	2,336,638.69	0.00	0.00	0.00	2,336,638.69	0.00
15190	15190 - Water Discharge Elimination Study	34,865.64	6	0.00	0.00	0.00	0.00	0.00	34,865.64	0.00
15191	15191 - Addn'l Fencing Lighting & Parking Lot in L.S.	235,074.42	3,6	0.00	0.00	117,537.21	0.00	0.00	117,537.21	0.00
15192	15192 - Install Chlorine & Ammonia Analyzers	1,989,872.15	3	0.00	0.00	1,989,872.15	0.00	0.00	0.00	0.00
15194	15194 - Capital Project Less Than $250,000.00	2,040,947.91	7	0.00	0.00	0.00	0.00	0.00	0.00	2,040,947.91
15196	15196 - Replace Type M" Meters	7,526,871.49	6	0.00	0.00	0.00	0.00	0.00	7,526,871.49	0.00
15197	15197 - Information Syst. Div. (ISD) Strategic Plan	1,109,731.23	7	0.00	0.00	0.00	0.00	0.00	0.00	1,109,731.23
15198	15198 - Expansion of the Water Quality Lab.	1,383,048.66	3	0.00	0.00	1,383,048.66	0.00	0.00	0.00	0.00
15199	15199 - Purchase of Four Homes At Chem. Unloading Fac.	592,392.43	3	0.00	0.00	592,392.43	0.00	0.00	0.00	0.00
15200	15200 - Engr.& Environm. Study, San Gab. Grdwater Storage	1,083,238.71	2	0.00	1,083,238.71	0.00	0.00	0.00	0.00	0.00
15202	15202 - Refurbish Five Serv. Conn. East Orange Fdr.#2	245,795.43	6	0.00	0.00	0.00	0.00	0.00	245,795.43	0.00
15203	15203 - Garvey Reservoir Repair	8,611,592.75	6	0.00	0.00	0.00	0.00	0.00	8,611,592.75	0.00
15204	15204 - Install of Screens at the Inlet to I.S.Bypass2	1,604,136.18	3,6	0.00	0.00	802,068.09	0.00	0.00	802,068.09	0.00
15205	15205 - On Line Procurement System	1,667,397.67	7	0.00	0.00	0.00	0.00	0.00	0.00	1,667,397.67
15208	15208 - 92/93 Capital Proj. less Than $250,000.00	617,808.57	7	0.00	0.00	0.00	0.00	0.00	0.00	617,808.57
15209	15209 - Constr. 2nd Intertia Rialto Pipeline Devil	1,414,838.16	6	0.00	0.00	0.00	0.00	0.00	1,414,838.16	0.00
15210	15210 - All American & Coachella Canal Lining	201,000.00	1	201,000.00	0.00	0.00	0.00	0.00	0.00	0.00
15211	15211 - Design+ Constr. Perm. Electrolysis test	177,897.61	6	0.00	0.00	0.00	0.00	0.00	177,897.61	0.00
15212	15212 - Refurbish Serv. Conn. Lower, Middle,West Coast	1,895,892.99	6	0.00	0.00	0.00	0.00	0.00	1,895,892.99	0.00
15214	15214 - Landfill Expansion at L.S.	623,288.24	3	0.00	0.00	623,288.24	0.00	0.00	0.00	0.00
15216	15216 - Installation of Chlorination Facilities	258,037.45	3	0.00	0.00	258,037.45	0.00	0.00	0.00	0.00
15218	15218 - Hazardous Waste Storage area at L.V.	35,083.56	3	0.00	0.00	35,083.56	0.00	0.00	0.00	0.00
15219	15219 - Purchase & Installation of Lathe at La Verne	504,324.41	6	0.00	0.00	0.00	0.00	0.00	504,324.41	0.00
15220	15220 - Remediation of the slope at Diemer	317,602.97	3	0.00	0.00	317,602.97	0.00	0.00	0.00	0.00
15221	15221 - Feasibility Study of Foothill Area Study	187,359.42	6	0.00	0.00	0.00	0.00	0.00	187,359.42	0.00
15222	15222 - Demonstration Plant Operating	5,104,892.00	1	5,104,892.00	0.00	0.00	0.00	0.00	0.00	0.00
15224	15224 - Minor Capital Project F/Y 93-94	765,647.81	7	0.00	0.00	0.00	0.00	0.00	0.00	765,647.81
15225	15225 - Replacement of 45 Gate Valves at the L.M. Tower	1,070,310.70	6	0.00	0.00	0.00	0.00	0.00	1,070,310.70	0.00
15227	15227 - Land Acquisition & EIR Study Diemer PLt. Adj.	345,834.81	3	0.00	0.00	345,834.81	0.00	0.00	0.00	0.0
15229	15229 - Pilot Filter Tests at Skinner	194,894.64	3	0.00	0.00	194,894.64	0.00	0.00	0.00	0.0
15230	15230 - Modification of the Service Water System at L.M.	1,031,985.92	6	0.00	0.00	0.00	0.00	0.00	1,031,985.92	0.0
15233	15233 - Mass Spectrometer Repl. Water Quality Lab.	786,443.05	3	0.00	0.00	786,443.05	0.00	0.00	0.00	0.0
15234	15234 - Upgrading the Concrete Access to Settling Basin	379,650.44	3	0.00	0.00	379,650.44	0.00	0.00	0.00	0.0
15236	15236 - Electric Fish Barrier System at Skinner	1,542.22	6	0.00	0.00	0.00	0.00	0.00	1,542.22	0.0
15237	15237 - Protection of a Portion of the Upper Feeder	340,387.32	6	0.00	0.00	0.00	0.00	0.00	340,387.32	0.0
15238	15238 - SCADA System for CRA Pumping Plants	1,027,536.40	5	0.00	0.00	0.00	0.00	1,027,536.40	0.00	0.0
15239	15239 - Upgrading the Chlorine System at Diemer	3,414,122.13	3	0.00	0.00	3,414,122.13	0.00	0.00	0.00	0.0
15240	15240 - Fac. Modification (American W/ Dis. Act.of 1990)	309,157.47	7	0.00	0.00	0.00	0.00	0.00	0.00	309,157.4

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Approp.	Description	Total	Func No.	(1) Supply	(2) Storage	(3) Treatment	(4) SWP	(5) Transmission CRA	(6) Transmission In Basin	(7) Other
15241	15241 - Seismic Upgrade of the Auto & Utility Shop at L.V.	468,777.12	6	0.00	0.00	0.00	0.00	0.00	468,777.12	0.00
15242	15242 - Installing SB Emergency Pwr Gen System at Diemer, Weymout	650,529.82	3	0.00	0.00	650,529.82	0.00	0.00	0.00	0.00
15243	15243 - Rec. of Diemer Chem. Feed Sys.	618,784.66	3	0.00	0.00	618,784.66	0.00	0.00	0.00	0.00
15244	15244 - Insulation Joint Monitor Station on MWD Pipeline	452,306.65	6	0.00	0.00	0.00	0.00	0.00	452,306.65	0.00
15245	15245 - Seismic Mod. to Chemical Storage Tanks at Jensen	171,022.13	3	0.00	0.00	171,022.13	0.00	0.00	0.00	0.00
15246	15246 - All American Canal Lining Project EIR Planing	26,677.97	1	26,677.97	0.00	0.00	0.00	0.00	0.00	0.00
15247	15247 - HQ. Fac. Devep. Activities	9,938,444.25	7	0.00	0.00	0.00	0.00	0.00	0.00	9,938,444.25
15248	15248 - Remote Meter Sys. Installation	3,667,296.72	6	0.00	0.00	0.00	0.00	0.00	3,667,296.72	0.00
15249	15249 - Electrical Conduct replacement at Jensen	333,148.44	3	0.00	0.00	333,148.44	0.00	0.00	0.00	0.00
15250	15250 - Minor Capital Projects FY 94-95	1,012,575.45	7	0.00	0.00	0.00	0.00	0.00	0.00	1,012,575.45
15251	15251 - Newhall Tunnel Steel Liner Repair	5,090,045.88	6	0.00	0.00	0.00	0.00	0.00	5,090,045.88	0.00
15253	15253 - Drainage Water Quality/Lake Mathews Watershed	1,277,164.03	2	0.00	1,277,164.03	0.00	0.00	0.00	0.00	0.00
15254	15254 - Weymouth Filtration Plant Sludge Handling and Dewatering Fac	274,905.79	3	0.00	0.00	274,905.79	0.00	0.00	0.00	0.00
15255	15255 - Feasibility Study for Processing Sludge at Jensen	74,883.34	3	0.00	0.00	74,883.34	0.00	0.00	0.00	0.00
15256	15256 - Slope Repair at San Joaquin Resvr	461,796.07	6	0.00	0.00	0.00	0.00	0.00	461,796.07	0.00
15258	15258 - 34.5 Kv Circuit Breakers	206,588.36	7	0.00	0.00	0.00	0.00	0.00	0.00	206,588.36
15259	15259 - Strategic O & M Management System Operations	504,540.91	6	0.00	0.00	0.00	0.00	0.00	504,540.91	0.00
15260	15260 - Etiwanda Cavitation Testing Facility	588,448.57	3,6	0.00	0.00	294,224.29	0.00	0.00	294,224.29	0.00
15261	15261 - Diemer Filt Plt, Upgrade Flocculator Drives	95,614.04	3	0.00	0.00	95,614.04	0.00	0.00	0.00	0.00
15262	15262 - Relocation of Data Center To San Dimas	318,904.56	7	0.00	0.00	0.00	0.00	0.00	0.00	318,904.56
15263	15263 - Skinner & Mills, Communications Equipment	16,889.44	7	0.00	0.00	0.00	0.00	0.00	0.00	16,889.44
15264	15264 - Mechanical Repairs to Carlton Horizontal Boring Mills	335,898.83	6	0.00	0.00	0.00	0.00	0.00	335,898.83	0.00
15265	15265 - Procurement of AM ICP Mass Spectrometer	271,821.71	2,3,6	0.00	90,516.63	90,516.63	0.00	0.00	90,516.63	0.00
15267	15267 - Acquisition of Property for Iron Mtn Rip/Rap, Eagle Mtn Borrow	277,191.96	6	0.00	0.00	0.00	0.00	0.00	277,191.96	0.00
15268	15268 - Record Drawing Restoration Program, Phase One	828,719.66	6	0.00	0.00	0.00	0.00	0.00	828,719.66	0.00
15269	15269 - Upgrade of Domestic Water Pumping System at Diemer Filt Plt	302,213.87	3	0.00	0.00	302,213.87	0.00	0.00	0.00	0.00
15271	15271 - Repair/Retrofit 28 Manhole Risers on Santa Monica Fdr	755,037.21	6	0.00	0.00	0.00	0.00	0.00	755,037.21	0.00
15273	15273 - Minor Capital Projects, FY 1995-96	793,505.15	7	0.00	0.00	0.00	0.00	0.00	0.00	793,505.15
15274	15274 - Skinner Filt Plt, Replace Flocculators in Modules 1 and 2	116,905.76	3	0.00	0.00	116,905.76	0.00	0.00	0.00	0.00
15275	15275 - Cryptosporidium Action Plan	545,636.36	3	0.00	0.00	545,636.36	0.00	0.00	0.00	0.00
15276	15276 - Improvements to Lake Perris Pumpback Facility	156,084.88	6	0.00	0.00	0.00	0.00	0.00	156,084.88	0.00
15277	15277 - Lake Mathews Outlet Facilities Replacement/Repair Alternatives	834,888.22	2,6	0.00	417,444.11	0.00	0.00	0.00	417,444.11	0.00
15278	15278 - La Verne Facility Materials Testing Laboratory Renovation	66,131.02	6	0.00	0.00	0.00	0.00	0.00	66,131.02	0.00
15279	15279 - CRA Lakeview Siphon, Repair Deteriorated Joints in First Barrel	363,162.41	5	0.00	0.00	0.00	0.00	363,162.41	0.00	0.00
15280	15280 - Diemer, Facilities Location Study & Geotechnical & Environmen	109,309.00	3	0.00	0.00	109,309.00	0.00	0.00	0.00	0.00
15282	15282 - Joint Use Agreement with SCE, Upgrade Desert Communicatio	37,657.10	7	0.00	0.00	0.00	0.00	0.00	0.00	37,657.10
15283	15283 - Jensen Filt Plt, Site Improvements	19,489,378.00	3	0.00	0.00	19,489,378.00	0.00	0.00	0.00	0.00
15285	15285 - Second Lower Fdr at Dominguez Channel	763,988.22	6	0.00	0.00	0.00	0.00	0.00	763,988.22	0.00
		1,564,455,712.65		11,064,191.63	684,071,185.86	571,788,909.15	-	13,630,380.26	258,255,495.24	25,645,278.68

Schedule I

42238

Allocation of Interest				
	fy 1995-96		fy 1996-97	
Fund	Interest		47,280,000	
Water Revenue	40,874			
Water Standby	907,432			
Water Transfer	607,228			
O&M	2,995,922			
Rev Bond I&P	2,003,001			
Revenue Reserve	1,236,142			
Revenue Remainder	13,438,070			
General	3,786,640			
PAYGO	7,096,550			
WRSF	12,953,130			
Treatment Surcharge	331,297	0.67%	315,754	Treatment
Special Tax	7,760			
SWP	2,708,367			
1931 Bond I&P	7,042			
1966 GO I&P	1,395,611			
Commercial Paper	92,326			
Unrestricted interest	49,607,392		46,964,246	All Other

System Peak Factors

Schedule K

	System Deliveries (acre-feet)	Average Delivery (acre-feet)	Peak Delivery (acre-feet)	Peaking Factor
1985	2,000,078	5,480	8,807	1.61
1986	2,027,367	5,554	8,452	1.52
1987	1,989,605	5,451	7,573	1.39
1988	2,078,370	5,679	8,331	1.47
1989	2,381,113	6,524	8,781	1.35
1990	2,629,183	7,203	9,825	1.36
1991	1,846,666	5,101	7,972	1.56
1992	1,938,672	5,311	7,589	1.43
1993	1,835,621	5,029	7,413	1.47
1994	2,123,246	5,817	9,872	1.70
1995	1,467,545	4,021	6,467	1.61

EXHIBIT C

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

RESOLUTION 8521

RESOLUTION OF THE BOARD OF DIRECTORS OF
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
FURTHER AMENDING AND RESTATING
THE DEFINITION OF OPERATING REVENUES
(FOURTH SUPPLEMENTAL RESOLUTION)

WHEREAS, pursuant to the Act (as defined in the hereinafter defined Short-Term Revenue Certificate Resolution), the Board of Directors of The Metropolitan Water District of Southern California (the "District") may authorize the issuance of short-term revenue certificates and revolving notes for any purpose permitted under the Act;

WHEREAS, pursuant to Resolution 8322 adopted by the District on May 14, 1991 (as amended and supplemented by Resolutions 8470, 8480 and 8495, the "Short-Term Revenue Certificate Resolution"), the District has heretofore authorized the issuance of Commercial Paper Notes and Revolving Notes (each as defined in the Short-Term Revenue Certificate Resolution) on behalf of the District with the payment of the principal of and interest thereon being secured by and payable from Net Operating Revenues (as defined in the Short-Term Revenue Certificate Resolution);

WHEREAS, pursuant to Resolution 8470 adopted by the District on March 14, 1995, the definition of Operating Revenues in the Short-Term Revenue Certificate Resolution was amended to include additional charges implemented by the District as part of its new revenue structure;

WHEREAS, pursuant to Resolution 8480 adopted by the District on August 22, 1995, the Short-Term Revenue Certificate Resolution was amended to provide for the issuance of Commercial Paper Notes in book-entry form;

WHEREAS, pursuant to Resolution 8495 adopted by the District on April 6, 1996, the Short-Term Revenue Certificate Resolution was amended to increase the aggregate principal amount of Commercial Paper Notes and Revolving Notes authorized to be issued under the Short-Term Revenue Certificate Resolution;

WHEREAS, pursuant to the Short-Term Revenue Certificate Resolution, the District has issued and there are currently outstanding, $60,000,000 aggregate principal amount of the District's Commercial Paper Notes, Series A, and $140,000,000 aggregate principal amount of the District's Commercial Paper Notes, Series B, and there are no issued and outstanding Revolving Notes;

WHEREAS, pursuant to Section 7.01(3) of the Short-Term Revenue Certificate Resolution, the Short-Term Revenue Certificate Resolution may be amended by a supplemental resolution adopted by the Board of Directors of the District without the consent of Holders of the Notes (each as defined in the Short-Term Revenue Certificate Resolution) to make changes in the provisions thereof as the District may deem necessary or desirable and which shall not materially adversely affect the interests of the Holders of the Commercial Paper Notes;

WHEREAS, the District has adopted a resolution today authorizing the adoption and implementation of rates for the use of unused capacity in its conveyance system to transport water not owned by or controlled by the District ("wheeling service");

WHEREAS, the District deems it desirable and in the public interest to, among other things, clarify that the definition of Operating Revenues contained in the Short-Term Revenue Certificate Resolution and for all other purposes includes the aforementioned rates for wheeling service, together with any other fees, rates and charges authorized by the District;

NOW, THEREFORE, the Board of Directors of The Metropolitan Water District of Southern California, DOES HEREBY RESOLVE, DETERMINE AND ORDER as follows:

Section 1.01 Fourth Supplemental Resolution. This Fourth Supplemental Resolution is adopted in accordance with the provisions of the Short-Term Revenue Certificate Resolution.

Section 1.02 Amendment of the Short-Term Revenue Certificate Resolution. Pursuant to Section 7.01(3) of the Short-Term Revenue Certificate Resolution, the definition of "Operating Revenues" set forth in Section 1.01 of the Short-Term Revenue Certificate is hereby amended and restated to read as follows:

> "Operating Revenues" means all revenues received by the District from charges for the sale and availability of water and from wheeling service, including, without limitation, the District's water rates, readiness-to-service charge, standby charge, new demand charge, connection maintenance charge and treated water peaking charge, and the District's wheeling service.

Section 1.03 Short-Term Revenue Certificate Resolution. The Short-Term Revenue Certificate Resolution, as amended and supplemented by this Fourth Supplemental Resolution, is in all respects ratified and approved.

Section 1.04 Severability of Invalid Provisions. If any one or more of the provisions contained in this Fourth Supplemental Resolution shall be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions contained in this Fourth Supplemental Resolution and such invalidity, illegality or unenforceability shall not affect any other provision of this Fourth Supplemental Resolution, and this Fourth Supplemental Resolution shall be construed as if such invalid or illegal or unenforceable provision had never been contained herein. The District hereby declares that it would have adopted this Fourth Supplemental Resolution and each and every other Section, paragraph, sentence, clause or phrase hereof irrespective of the fact that any one or more Sections, paragraphs, sentences, clauses or phrases of this Fourth Supplemental Resolution may be held illegal, invalid or unenforceable.

Section 1.05 Further Actions. The General Manager and the General Counsel are hereby authorized to do all things necessary and desirable to accomplish the purposes of this Fourth Supplemental Resolution including, without limitation, the commencement or defense of litigation.

Section 1.06 Section Headings and References; Interpretation. The headings or titles of the several Sections hereof shall be solely for convenience of reference and shall not affect the meaning, construction or effect of this Fourth Supplemental Resolution.

The words "herein," "hereof," "hereby," "hereunder" and other words of similar import refer to this Fourth Supplemental Resolution as a whole and not to any particular section or subdivision hereof; and words of the masculine gender shall mean and include words of the feminine and neuter genders.

Section 1.07 Governing Law. This Fourth Supplemental Resolution shall be construed and governed in accordance with the laws of the State of California.

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a Resolution adopted by a two-thirds (2/3) vote of the total vote of the Board of Directors of The Metropolitan Water District of Southern California at its meeting held on January 14, 1997.

_____

Executive Secretary
The Metropolitan Water District
of Southern California

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