

- **Board of Directors**  
**Water Planning, Quality and Resources Committee**

March 13, 2001 Board Meeting

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**9-6**

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**Subject**

Authorize entering into: (1) an agreement with San Bernardino Valley Municipal Water District to coordinate the use of facilities and State Water Project supplies and (2) Principles of Agreement with Kern Delta Water District to proceed with feasibility and environmental studies and final negotiations on a dry-year transfer program.

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**Description**

While the implementation of the CALFED program offers potential environmental assurances and long-term increases in the water supply capabilities of the State Water Project (SWP), it remains important for Metropolitan to hedge against regulatory and operational risks to ensure reliable supply deliveries through the SWP system. Metropolitan and its member agencies continue to face the challenge of managing resource and economic impacts due to increasingly stringent water quality standards, litigation against existing agreements for supply allocation, environmental constraints, and changes in operational criteria.

One means of providing insurance against such risks is to secure water transfers to supplement our efforts in conservation, water recycling, groundwater programs, and imported water supplies. To assess transfer opportunities, the Board has directed staff to proceed with negotiations on agreements for dry-year supplies short-listed through a competitive Request-for-Proposal (RFP) process in October 2000. In addition, the Board approved a Coordinated Operating Agreement between Metropolitan and San Bernardino Valley Municipal Water District (Valley District) in June 2000 to develop projects that would provide benefits to both districts through the coordinated use of facilities and SWP supplies.

**Overall Assessment.** In accordance with Board directives, negotiations have proceeded with five multiple-year transfer proposals. These include proposals from San Bernardino Valley Municipal Water District, Kern Delta Water District/Arvin-Edison Water Storage District, Rosedale-Rio Bravo/West Kern/Buena Vista Water Districts, Azurix and Semitropic Water Storage District. A detailed evaluation of these proposals is included in the "Status Report on Water Transfer Options" ([Attachment 1](#)). The evaluation indicates that two of the five transfer proposals are favorable in terms of cost, supply reliability and water quality. These transfers are the San Bernardino Valley Municipal Water District Program and the Kern Delta Water District/Arvin-Edison Program. Negotiations on the other proposals (Rosedale, Semitropic and Azurix) will continue in an effort to reduce the cost and improve the overall benefits of each proposal. Metropolitan staff will report to and seek direction from the Board regarding the status of these remaining proposals.

**San Bernardino Valley Municipal Water District Program.** Under this program, Metropolitan would purchase water provided to Valley District's from its annual SWP water allocation, and Valley District would deliver the purchased supplies to Metropolitan's service area through the coordinated use of facilities and interconnections within the water conveyance systems of the two districts. This program has a proposed term of 10 years with annual extensions. The available SWP supply would include direct deliveries through the California Aqueduct to Metropolitan's service area and deliveries of recaptured SWP water previously stored in the San Bernardino groundwater basin to various delivery points designated by Metropolitan. Metropolitan would purchase from Valley District a minimum of 20,000 acre-feet per year (afy) of SWP allocation. In addition, Metropolitan would have an option to purchase Valley District's additional SWP allocation if available; and the first-right-of-refusal to purchase additional SWP supplies available beyond the minimum and option amounts. In the event that Metropolitan's operational needs do not require all, or a portion of the minimum purchase water, that unused amount may be carried forward up to a total of 50,000 acre-feet (af) for later delivery. In order to facilitate the

transfer, the program also provides the coordinated use of facilities, including the Foothill Pipeline and Inland Feeder, to improve the conveyance capabilities for the delivery of SWP water to the service areas of both districts.

Metropolitan would pay to Valley District \$150 per acre-foot for purchases delivered to Metropolitan's service area under the minimum, option, and first-right-of-refusal provisions. Metropolitan's annual payment would be adjusted to reflect the change in the actual power costs of delivering SWP water. No up-front capital expenditure is required for this program. Based on the purchase price conditions, the Valley District Program is cost-effective and competitive with alternative supply options. Details of the payment terms and cost evaluations are discussed in Attachment 1.

The program would provide the following benefits to Metropolitan: (1) supply reliability during hydrologic and regulatory droughts, (2) facilitation of the initial fill of Diamond Valley Lake (DVL) and Colorado River storage programs, (3) additional replenishment water for system storage and groundwater basins, (4) opportunity to transfer water to Environmental Water Account to recover costs during years of non-use and gain environmental assurances for SWP deliveries, (5) improvements in conveyance capabilities through connections between the Foothill Pipeline, Inland Feeder, Santa Ana River and local pipelines, (6) cost-effective supply option, and (7) dismissal with prejudice of existing lawsuits between the two districts regarding water supplies.

The program would provide the following benefits to Valley District: (1) financial return on existing SWP entitlement to offset operational costs and finance system improvements, (2) improved cash flow from minimum purchase provision, (3) high groundwater mitigation, (4) emergency access to the Inland Feeder, if needed and (5) dismissal of existing law suits between the two districts regarding water supplies.

An agreement to implement this program has been completed for Board consideration. Valley District has approved and certified the Regional Water Facilities Master Plan Final Environmental Impact Report dated February 1, 2001 ("EIR"). Valley District is the Lead Agency for environmental review of this agreement and has determined that the EIR complies with CEQA requirements for this agreement. Metropolitan, as the responsible agency under CEQA for this agreement, must certify that it has reviewed and considered the information in the Valley District EIR and adopt Lead Agency's findings on the EIR. A copy of the EIR is available with the Executive Secretary.

**Kern Delta Water District/Arvin-Edison Water Storage District Program.** This program consists of a groundwater banking and exchange transaction for a proposed term of 25 years. Metropolitan would store its available SWP water in the groundwater basin underlying Kern Delta. Metropolitan would have a storage account of 250,000 af. During dry years, Kern Delta/Arvin-Edison would return up to 50,000 af of water to Metropolitan, at Metropolitan's request. Water can be returned to Metropolitan through the following priorities: (1) an exchange of stored water for SWP water in the California Aqueduct, (2) an exchange of stored water for other local surface water deliverable to and into the California Aqueduct, and (3) the recovery of stored water and delivery into the California Aqueduct via existing or new Kern Delta facilities and third party facilities, such as the Arvin-Edison Canal and Cross Valley Canal. The return of local surface water that has good quality could potentially improve the water quality of deliveries through the California Aqueduct

The payment terms for this program are structured according to a cost-plus basis. Metropolitan would pay approximately \$105 per acre-foot to store ("put") the water and \$40 per acre-foot plus power costs to extract the supplies. Metropolitan would also pay actual operation, maintenance and power costs for the program facilities. This program does not require up-front capital expenditures by Metropolitan nor storage fee payments. Based on the payment terms, the Kern Delta/Arvin-Edison Program is cost-effective and competitive with alternative supply options. Details of the payment terms and cost evaluations are discussed in [Attachment 1](#).

The program would provide the following benefits to Metropolitan: (1) supply reliability during hydrologic and regulatory droughts, (2) water quality improvement in deliveries through the California Aqueduct, (3) opportunity to transfer water to Environmental Water Account to recover costs and gain environmental assurances for SWP deliveries, and (4) cost-effective supply option.

The program would provide the following benefits to Kern Delta: (1) financial return to offset operational costs and finance system improvements, and (2) improvement in system operations through the coordinated use of new facilities.

Principles of Agreement have been prepared for Board consideration. Based on the Principles of Agreement, Kern Delta and Metropolitan would jointly prepare feasibility and environmental studies and continue negotiations of final agreement terms. The draft of the final agreement would be provided to the Board for consideration.

**Single-Year Transfers.** In further response to the RFP process, Metropolitan has received two proposals offering single-year water purchases of up to 35,000 af of SWP and Central Valley Project (CVP) supplies available in the spring and summer of 2001. These include proposals from San Luis Water District/Del Puerto Water District and Rosedale-Rio Bravo Water District. These proposals provide Metropolitan with the following opportunities: (1) to secure additional water supplies if dry hydrology and high demands continue; (2) to carryover these supplies in San Luis Reservoir for use in the following year; (3) to assist the CALFED Environmental Water Account program with additional supplies if Metropolitan so desires; and (4) to establish new partnerships with Central Valley agricultural interests and a working relationship with the U.S. Bureau of Reclamation on the coordination of SWP and CVP deliveries. In an effort to demonstrate our interest in proceeding with discussions on the specific payment and terms of agreement, letters of interest will be sent from the General Manager to the districts. Metropolitan staff will report to and seek direction from the Board regarding the status of the proposed transactions.

## **Policy**

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The Board's water transfer policy as outlined in Metropolitan's Administrative Code Section 4203 indicating that Metropolitan will vigorously pursue the development of water transfers to meet its public water supply objectives in the future. The agreements also would implement one option that will help meet the future water quality needs of Metropolitan's service area as outlined in Metropolitan's March 1996 Integrated Resources Plan.

## **Board Options/Fiscal Impacts**

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### **Option #1**

Authorize the following: (1) To certify the Board has reviewed and considered the information contained in the Valley District's EIR and adopts the Lead Agency's findings, and authorizes entering into an agreement with the San Bernardino Valley Municipal Water District to coordinate the use of facilities and State Water Project supplies; and (2) to enter into a Principles of Agreement with the Kern Delta Water District, in form approved by the General Counsel, to proceed with feasibility and environmental studies and final negotiations on a dry-year supply program.

**Fiscal Impact:** \$3.2 million for FY 2001-02 (\$3 million is required for the minimum purchase of water under agreement with Valley District; \$200,000 is estimated as Metropolitan's share (50 percent) of the cost for feasibility and environmental studies for the Kern Delta program). The funds for FY 2001-02 are included in Metropolitan's current transfer fund. Annual expenditures of \$3 million with power cost adjustments are estimated over the 10-year term of the Valley District agreement for the minimum purchase of water. These funds would be included in Metropolitan's annual operating budget. These program expenditures would not result in any rate impacts.

### **Option #2**

Authorize either of the following: (1) To certify the Board has reviewed and considered the information contained in the Valley District's EIR and adopts the Lead Agency's findings, and authorizes entering into an agreement with the San Bernardino Valley Municipal Water District to coordinate the use of facilities and State Water Project supplies; or (2) to enter into a Principles of Agreement with the Kern Delta Water District, in form approved by the General Counsel, to proceed with feasibility and environmental studies and final negotiations on a dry-year supply program.

**Fiscal Impact:** For the agreement with Valley District, \$3 million for FY 2001-02 and \$3 million with power cost adjustments paid annually over the 10-year term for the minimum purchase of water. For the Principles of Agreement with Kern Delta, \$200,000 is estimated for FY 2001-02 as Metropolitan's share (50 percent) of the cost of feasibility and environmental studies for the program. Funds required for either program in FY 2001-02 are budgeted in Metropolitan's current transfer fund. Funds required beyond FY 2001-02 would be included in Metropolitan's annual operating budget. These program expenditures would not result in any rate impacts.

**Option #3**

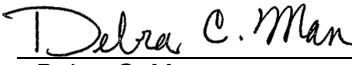

Take no action.

**Fiscal Impact:** None

**Staff Recommendation**

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Option #1.

	3/5/2001
Debra C. Man	Date
Executive Assistant to the General Manager	
	3/5/2001
General Manager	Date

**Attachment 1**

BLA #

**Status Report**  
**on**  
**Water Transfer Options**

*March 3, 2001*

## **Status Report on Water Transfer Options**

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The following is a status report on dry-year transfer options available to Metropolitan. Through our continued efforts to develop resources for the region, opportunities to secure water transfers over multiple-year terms and on a single-year basis for 2001 have been identified. These opportunities confirm that water supplies are available to be transferred for beneficial uses by interested parties in California.

### **Background**

While the implementation of the CALFED program offers potential environmental assurances and long-term increases in the water supply capabilities of the State Water Project (SWP), it remains important for Metropolitan to hedge against regulatory and operational risks to reliable supply deliveries through the California Aqueduct. The region has diligently planned and developed water supplies to maintain reliability even in a repeat of the worst droughts that have occurred in the past 77 years of hydrologic record. However, Metropolitan and the member agencies are faced today with resource and economic impacts due to the future promulgation of increasingly stringent water quality standards, litigation on existing agreements for supply allocations, environmental constraints, and changes in operational criteria. These regulatory and operational uncertainties are many times unanticipated developments and not easily quantifiable. However, uncertainties of this nature have occurred throughout the history of California's resources development. It is expected that they will continue in the future. A major challenge in the water industry is to determine the appropriate measures of insurance to safeguard against these uncertainties to ensure supply reliability.

One way of providing supply insurance against such risks is to secure water transfers to supplement our efforts in conservation, water recycling, groundwater programs, and imported water deliveries on a cost-effective basis. In order to assess transfer opportunities, the Board has directed staff to proceed with negotiations on preliminary agreements for supply programs that have been shortlisted through a competitive Request-for-Proposal (RFP) process in October 2000. In addition, the Board approved the Coordinated Operating Agreement between Metropolitan and San Bernardino Valley Municipal Water District (Valley District) in June 2000 to develop projects that would provide benefits to both districts through the coordinated use of facilities and SWP supplies.

### **Multiple-Year Transfer Proposals**

In accordance with these Board directives, Metropolitan staff has proceeded to negotiate preliminary agreements for five water transfer programs and to determine the opportunities to secure transfers in a competitive process. These programs collectively represent opportunities to secure dry-year supplies of 210,000 to 290,000 acre-feet (af) and annual firm supplies of 40,000 af over the next 10 - 25 years. Negotiations have proceeded simultaneously such that a report on the status of all programs can be presented to the Board at the same time. This status report can provide the Board a basis to compare the competitiveness of the individual programs, as well as, to assess the level of reliability insurance that the programs can provide collectively. The programs are summarized below and their locations are shown in Figure 1:

**TABLE 1  
MULTIPLE-YEAR TRANSFER PROPOSALS**

<b>PROPOSED PROGRAM</b>	<b>STATUS OF NEGOTIATIONS</b>	<b>TYPE OF TRANSACTION</b>	<b>TERM</b>	<b>ESTIMATED YIELD</b>
San Bernardino Valley Municipal Water District	Completed negotiation of draft Principles Agreement	New water supply/ Coordinated use of existing conveyance facilities	10 years w/annual extensions	20,000 to 50,000 afy in any year
Kern Delta Water District/Arvin Edison Water District	Completed draft Principles of Agreement	Bank surplus SWP water	25 years	50,000 afy in dry years
Azurix	Received initial proposal; Discussions ongoing	Bank surplus SWP water	30 years	100,000 afy in dry years
Semitropic Water Storage District	Negotiating draft Principles of Agreement.	Enhanced recovery of banked surplus SWP water	30+ years (extends to 2035)	70,000 afy in dry year
Rosedale-Rio Bravo/ Buena Vista/ West Kern WD	Received initial proposal.	New water supply	10 years	20,000 afy every year
<b>TOTAL</b>	<b>210,000 to 290,000 afy in dry years 40,000 afy annually</b>			

San Bernardino Valley Municipal Water District Program

*Proponent:* San Bernardino Valley Municipal Water District (Valley District) is a public agency with boundaries including areas in both San Bernardino and Riverside counties. Valley District has the authority to secure supplemental water supplies and is a State Water Contractor with an entitlement of 102,600 afy.

*Status of Negotiations:* Negotiations and preparation of the draft Agreement between Metropolitan and Valley District have been completed for consideration by the respective Boards.

*Program Description:* Under this program, Metropolitan would purchase a portion of Valley District’s annual available SWP water supply (not entitlement) and Valley District would deliver that purchased water to Metropolitan’s service area through the coordinated use of facilities and interconnections within the water conveyance systems of the two districts. This project has a proposed term of 10 years with annual extensions. The available SWP supply would include direct deliveries through the California Aqueduct to Metropolitan’s service area at locations requested by Metropolitan and deliveries of recaptured SWP water previously stored in Valley District’s groundwater basin. Metropolitan would purchase water from Valley District in three ways: (1) minimum annual purchase of 20,000 afy of SWP, (2) option to purchase additional SWP water, and (3) first-right-of-refusal to purchase SWP available beyond the minimum and option amounts. In the event that Metropolitan’s operational needs do not require all, or a portion, of the minimum purchase water, that unused amount may be carried forward up to a total of 50,000 af for later delivery. Beyond Metropolitan’s purchases under minimum, option, and first-right-or-refusal provisions, Valley District can sell excess SWP water to parties that serve demands outside of Metropolitan’s service area, consistent with Metropolitan’s SWP contract.

*Payments:* Metropolitan would pay to Valley District \$150 per acre-foot for purchases delivered to Metropolitan's service area under the minimum, option, and first-right-of-refusal provisions. Metropolitan's annual payment would be adjusted to reflect the change in the actual power costs of delivering SWP incurred in the base year, calendar year 1999, and the actual power costs of delivering SWP water incurred in the year the water is delivered. In calendar year 1999, \$55 per acre-foot is the estimated cost of power, which is approximately one-third of the purchase price of \$150 per acre-foot. One fifth of the total change in power costs would be added or deducted to the charges for the year of delivery and each of the succeeding years. In this manner, the two districts would be protected from risks of extreme decreases or increases in power costs. No up-front capital expenditure is required for this program.

*Program Benefits to Metropolitan:* The proposed program would provide the following benefits to Metropolitan.

- Supply Reliability – The program provides additional supplies to insure against droughts and regulatory/operational uncertainties in the SWP system. These supplies are available as early as spring 2001.
- Cost-Effective Supply Option – The purchase price is competitive with alternative supply options.
- Water Quality Assurances – Valley District would ensure that the quality of purchased SWP water to Metropolitan would not degrade the water conveyed from the Devil Canyon Power Plant Afterbay through the Foothill Pipeline to the designated delivery points. As a result, the quality of delivered water would be consistent with the Board's adopted policy governing the quality of new sources of water introduced into conveyance facilities.
- Initial Fill of Diamond Valley Lake (DVL) and Colorado River Storage Programs – The program provides additional supplies that would facilitate the initial fill of DVL, groundwater conjunctive use programs, and the Colorado River storage programs within an early time frame even under drought conditions.
- Replenishment Supplies – The program ensures additional replenishment supplies for system storage and groundwater basins.
- Environmental Water Account (EWA) – Metropolitan has the opportunity to transfer the agreement water to the Department of Water Resources (DWR) as additional EWA water for fish, in return for assurances that CVP exports will not be reduced, beyond existing regulatory levels, over the next several years. It is expected that sales to DWR would be at cost and would occur in normal and wet years when supplies are not needed and allow Metropolitan to recover its supply costs.
- Improved Conveyance Capabilities – The program improves conveyance capabilities to move SWP water from Devil Canyon to both service areas through system interconnections between the Foothill Feeder, Inland Feeder, the Santa Ana River, its tributaries, local pipelines, or canals.
- Dismissal of Existing Lawsuits – The agreement provides for the dismissal of all existing lawsuits between Valley District and Metropolitan regarding water supplies. However, dismissal of the lawsuits will require approval from DWR resources. It is anticipated that DWR's approval will be forthcoming.

*Program Benefits to Valley District:* The proposed program would also provide the following benefits to Valley District.

- Financial Return on Existing SWP Entitlement – Valley District has not used more than 20 percent of its SWP entitlement and pays the fixed costs for its full entitlement. The sale of its unused SWP water provides revenue to offset SWP payment or to finance master plan improvements and groundwater conjunctive use facilities that would benefit San Bernardino Valley and Metropolitan.
- Improved Cash Flow – The revenue from Metropolitan's minimum purchase of SWP water provides an assured cash flow to finance system improvements and groundwater conjunctive use facilities.
- High Groundwater Mitigation – The program enhances the ability of Valley District to manage the replenishment and withdrawal of SWP in order to alleviate high groundwater impacts.
- Improved Conveyance Capabilities – The program improves conveyance capabilities through the coordinated use of the Foothill Feeder and the Santa Ana River crossing of the Inland Feeder.
- Dismissal of existing law suits. The agreement allows the dismissal of all existing lawsuits between Valley District and Metropolitan regarding water supplies.



### Kern Delta Water District and Arvin-Edison Water Storage District Program

*Proponents:* Kern Delta Water District (Kern Delta) and Arvin-Edison Water Storage District (Arvin-Edison) are both public agencies located in Kern County. Kern Delta has pre-1914 water rights, under which it is entitled to annually divert up to 180,000 af of Kern River water. In addition, Kern Delta also contracts with the Kern County Water Agency and is entitled to 25,500 af of SWP supplies and has an agreement for water under the Friant-Kern system.

*Status of Negotiations:* Negotiations and preparation of the draft Principles of Agreement between Metropolitan and Kern Delta/Arvin-Edison have been completed for consideration by the respective Boards.

*Program Description:* This project is a groundwater banking and exchange transaction for a proposed term of 25 years. Metropolitan would store its available SWP water in the groundwater basin underlying Kern Delta and Arvin-Edison. Metropolitan would have a storage account of 250,000 af. During dry years, Kern Delta and Arvin-Edison would return up to 50,000 af of the water in the storage account to Metropolitan, at Metropolitan's request. Water can be returned to Metropolitan in three ways, prioritized in the following order: (1) an exchange of stored water for SWP water in the California Aqueduct, (2) an exchange of stored water for other local surface water deliverable to and into the California Aqueduct, and (3) the recovery of stored water and delivery into the California Aqueduct via existing or new Kern Delta facilities and third party facilities, such as the Arvin-Edison Canal and Cross Valley Canal.

*Payments:* The payment terms for Metropolitan include a "put" fee to place its SWP into groundwater storage, a "take" fee to return the water from storage, and the associated actual O&M and power costs. Metropolitan would pay approximately \$105 per af to put its available SWP into the groundwater storage account. This "put" fee is based on the anticipated costs to construct conveyance, extraction, and spreading facilities to provide 50,000 af of program yield in a dry year. In addition, Metropolitan would pay O&M and power costs to convey water to storage facilities. Metropolitan would then pay \$40 per af plus actual power costs to extract water from the account. This "take" fee is based on the anticipated O&M costs associated with returning the stored water to the California Aqueduct and reserve funds for contingency and mitigation requirements. Based on these payment terms, Metropolitan does not pay any up-front capital costs nor storage fees to hold water in the account.

*Program Benefits to Metropolitan:* The proposed program would provide the following benefits to Metropolitan.

- Supply Reliability – The program provides additional supplies to insure against droughts and regulatory/operational uncertainties in the SWP system. These supplies are available after 2003.
- Water Quality Improvements – A potential improvement in the quality of supplies delivered to Metropolitan could be gained as the local surface water is of high quality.
- Cost-Effective Supply Option – The cost of this proposed banking program is competitive with the cost of existing banking programs with Arvin-Edison Water Storage District and Semitropic Water Storage District.
- Environmental Water Account (EWA) – Metropolitan has the opportunity to transfer the agreement water to DWR, at cost, as additional EWA water for fish, in return for assurances that CVP exports will not be reduced, beyond existing regulatory levels, over the next several years. It is expected that sales to DWR would occur in normal and wet years when supplies are not needed and allow Metropolitan to recover its supply costs.

*Program Benefits to Kern Delta:* This proposed program would also provide the following benefits to Kern Delta.

- Financial return – Metropolitan payments would offset Kern Delta's future operating costs.
- Coordinated use of new facilities – When Metropolitan is not using the program facilities, Kern Delta can use those facilities to improve system operations.

### Azurix

*Proponent:* Azurix is subsidiary of Enron that focuses on water-related issues, such as providing water solutions to the industrial sector, supplying cities and municipalities with water, and providing water agencies with custom-made services and tools.

*Status of Negotiations:* Azurix prepared an initial feasibility report, dated February 2001, on their proposed in-lieu dry-year transfer project. Metropolitan is currently in discussions with Azurix on the proposal.

*Program Description:* Azurix's initial proposal envisioned in the RFP was to acquire a portfolio of new water supplies to meet Metropolitan's dry-year needs through a service-agreement approach. Azurix revised their proposal in their February 2001 Feasibility Report, and is now focusing on an in-lieu dry-year transfer project. Under this proposal, Azurix would take responsibility for implementing the specific transactions including environmental and regulatory review, design and construction of facilities, and the delivery of water to the California Aqueduct for Metropolitan's use.

The project would require Metropolitan to provide surplus SWP allocations to Azurix in wet-years for a dry-year supply of up to 100,000 acre-feet per year. The cumulative "put" of surplus supplies would be 900,000 acre-feet with a maximum take of 600,000 acre-feet over the 30-year contract. This would result in a "put to take" ratio of 1.5 to 1. The extraction capability of 100,000 acre-feet could be taken in consecutive years.

*Payments:* Azurix's proposal envisions Metropolitan paying the following costs: (1) all capital costs of construction of new wells and piping to enable delivery of groundwater to the California Aqueduct, and operation and maintenance (O&M) costs; (2) a 20 percent overhead on capital and O&M for Azurix's management and development of the project; and (3) an imbedded water banking (put) to extraction (take) ratio of 1.5 to 1. The total capital payments over the 30-year project are estimated to range from \$53 to \$78 million. Operation and maintenance costs are estimated at \$85 million over 30 years. The average dollar per acre-foot payment to Azurix based on combining the capital and O&M payments averages \$275 per acre-foot. This calculation does not consider inflation, discounting, debt service, energy costs, and the ability to utilize those supplies.

*Program Benefits to Metropolitan:* The proposed program would provide the following benefits to Metropolitan.

- Supply Reliability – The program provides additional supplies to insure against droughts and regulatory/operational uncertainties in the SWP system. These supplies are available as early as spring 2005.
- Water Quality Assurances – Azurix would ensure the quality of water delivered to Metropolitan at the California Aqueduct would meet all California Health Codes and pump-in requirements as defined by DWR.
- Environmental Water Account (EWA) – Metropolitan has the opportunity to transfer the agreement water to DWR as additional EWA water for fish, in return for assurances that CVP exports will not be reduced, beyond existing regulatory levels, over the next several years. It is expected that sales to DWR would be at cost and would occur in normal and wet years when supplies are not needed and allow Metropolitan to recover its supply costs.

*Program Benefits to Azurix:* The proposed program would provide the following benefits to Azurix.

- Financial Return – Azurix receives a percentage fee for the management and development of the project; and
- Local groundwater benefits

### Semitropic Water Storage District Project

*Proponent:* Semitropic Water Storage District (Semitropic) is a public agency with the authority to manage the groundwater basin beneath its service area generally located north and northwest of the City of Bakersfield, California.

*Status of Negotiations:* A draft Principles of Agreement has been prepared. Outstanding issues in the agreement must be negotiated. The primary outstanding issue is the responsibility and cost for water treatment to meet future water quality standards for contaminants, including arsenic and chromium-6.

*Program Description:* This project is an expansion of the existing Semitropic groundwater banking program. There are five banking partners in the existing program: Metropolitan, Santa Clara Water District, Alameda Water District, Zone 7, and Vidler Water Company. The existing program allows the banking partners to store water during wet periods and extract the stored water during dry periods. Currently, Metropolitan has stored 390,000 acre-feet in the Semitropic groundwater bank and has the capability to withdraw from its storage account in the amounts of 31,500 afy by basin extraction and up to 46,500 afy by entitlement exchange. This project increases the direct basin extraction capability of the existing Semitropic Groundwater Bank. Metropolitan's basin extraction capability would increase from its current 31,500 af to 101,500 af, a gain of 70,000 af.

*Payments:* The payment terms for Metropolitan and the other banking partners include debt service for the capital investments to construct the enhanced recovery facilities, a "take" fee to return the water from storage, and associated O&M and power costs. At its 35 percent share in the Semitropic Banking Program, Metropolitan would pay an annual debt service of \$2.5 million to finance \$36 million of capital investment. Metropolitan would continue to make "take" payments of \$40-\$50 per af for water returned from storage through the enhanced recovery capabilities.

*Program Benefits to Metropolitan:* The proposed program would provide the following benefits to Metropolitan.

- Supply Reliability – The program provides additional dry-year yield from the existing banking program to insure against droughts and regulatory/operational uncertainties in the SWP system.
- Environmental Water Account (EWA) – Metropolitan has the opportunity to transfer the agreement water to DWR at cost as additional EWA water for fish, in return for assurances that CVP exports will not be reduced, beyond existing regulatory levels, over the next several years. It is expected that sales to DWR would occur in normal and wet years when supplies are not needed and allow Metropolitan to recover its supply costs.

*Program Benefits to Semitropic:* This proposed program would also provide the following benefits to Semitropic.

- Financial return – Metropolitan payments would offset Semitropic's future operating costs.
- Coordinated use of new facilities – When facilities are not used by Metropolitan, Semitropic has access to facilities to improve system operations.

#### Rosedale-Rio Bravo/Buena Vista/West Kern Program

*Proponents:* This program is jointly proposed by Rosedale-Rio Bravo Water Storage District (Rosedale-Rio Bravo), Buena Vista Water Storage District (Buena Vista) and West Kern Water District (West Kern). The three agencies have been associated via an ongoing and permanent water banking program since 1983.

- Rosedale-Rio Bravo is a member unit of the Kern County Water Agency with a contractual entitlement of 30,000 afy of SWP water. Rosedale-Rio Bravo has a contract with the City of Bakersfield for Kern River water and an agreement with the Central Valley Project (CVP) for 215 water from the Friant-Kern system. Currently, Rosedale-Rio Bravo has in excess of 300,000 af of SWP water and Friant Kern and Kern River flood water that is stored in the underlying groundwater basin and exportable.
- Buena Vista, an agricultural water supplier, is a member unit of Kern County Water Agency and has 21,300 afy of contractual entitlements to SWP water. Buena Vista also has pre-1914 Kern River water rights along with perpetual storage rights in Lake Isabella. Historically, this has provided more water than Buena Vista's annual consumptive needs. Currently, 600,000 af of Kern River water is banked in the groundwater basin.

- West Kern, an urban water supplier, is a member unit of the Kern County Water Agency and has contractual entitlements to SWP water. Over the years, West Kern has banked in excess of 230,000 af of their SWP water supply beyond their demands.

*Status of Negotiations:* The proponents have submitted an initial draft term sheet for the program. Metropolitan and the proponents are proceeding with negotiations.

*Program Description:* In an initial proposal, these agencies would sell and deliver to the California Aqueduct up to 20,000 af of water annually over a 10-year term, a total of 200,000 af. The water would be from the following sources: (1) SWP entitlement delivered at San Luis Reservoir, (2) SWP supplies that have been delivered and stored in the local groundwater basin, and/or (3) local groundwater that is deemed exportable. Negotiations with Rosedale Rio Bravo and these two agencies are still ongoing. Issues under discussion include the flexibility of the sellers to deliver to Metropolitan greater amounts of supply in dry years and less in wet years and the appropriate price for water transfers in dry, normal and wet years.

*Payments:* Under discussion.

*Program Benefits to Metropolitan:* The proposed program would provide the following benefits to Metropolitan.

- Supply Reliability – The program provides additional supplies to insure against droughts and regulatory/operational uncertainties in the SWP system. These supplies are available as early as Spring 2001.
- Initial Fill of DVL and Colorado River Storage Programs – The program provides additional supplies that would facilitate the initial fill of DVL, groundwater conjunctive use programs, and the Colorado River storage programs within an early time frame even under drought conditions.
- Replenishment Supplies – The program ensures additional replenishment supplies for system storage and groundwater basins.
- Environmental Water Account (EWA) – Metropolitan has the opportunity to transfer the agreement water to DWR, at cost, as additional EWA water for fish, in return for assurances that CVP exports will not be reduced, beyond existing regulatory levels, over the next several years. It is expected that sales to DWR would occur in normal and wet years when supplies are not needed and allow Metropolitan to recover its supply costs.

*Program Benefits to Proponents:* The proposed program would also provide the following benefit to the proponents.

- Financial return on the proponents' unused supplies – The proponents have substantial amounts of water supplies that exceed their demands. This unused water consists of SWP entitlement, stored SWP water, and exportable local groundwater. The sale of unused supplies would provide revenue to offset SWP payments and future operating costs.

### **Single-Year Transfer Proposals for Year 2001**

In further response to the RFP process and to the recent DWR forecast of a 20 percent SWP allocation, Metropolitan has received two proposals offering single-year purchases of up to 35,000 af of water supplies in 2001. These supplies would be available in the spring and summer of this year. These proposals provide Metropolitan the opportunity to secure additional water supplies if dry hydrology and high demands continue; carryover these supplies in the San Luis Reservoir for use in the following year; establish new partnerships with additional Central Valley entities; and work with the Bureau to coordinate SWP and CVP deliveries. In order to secure these supplies, Metropolitan would need to indicate interest to purchase the water by March. Two proposals are summarized below and their specific terms and conditions are outlined in Attachments 5 and 6.

**TABLE 2  
SINGLE-YEAR TRANSFER PROPOSALS FOR 2001**

SELLERS	SOURCE AND DELIVERY POINT OF SUPPLY	ESTIMATED YIELD
San Luis Water District / Del Puerto Water District	<u>Source:</u> CVP water stored in the federal share of San Luis Reservoir <u>Delivery Point:</u> San Luis Reservoir	15,000 to 17,000 afy
Rosedale-Rio Bravo / West Kern / Buena Vista Water District	<u>Source:</u> SWP supplies or stored groundwater <u>Delivery Point:</u> San Luis Reservoir or California Aqueduct south of Banks Pumping Plant	~ 20,000 afy

**Economic Assessment of Water Transfers**

An important factors in considering these potential water transfers is cost competitiveness. The cost competitiveness of the potential transfers have been assessed in two ways: (1) Comparison between the purchase prices of the proposed transfers of new water supplies and the purchase prices of transactions that have already been completed or have been negotiated, and (2) Comparative economic analysis based on IRPSIM and relative unit value method.

Comparison of Purchase Prices

Based on a survey of completed transactions, transfer prices vary according to hydrologic conditions and the availability of supplies. For example, in a wet year, supplies are abundant and supply allocations on the SWP and CVP systems approach 100 percent. Transfer prices are typically lower under wet conditions. As hydrologic conditions become dryer the supply allocations are reduced accordingly. So, in a critically dry year, supplies are less available and supply allocations on the SWP and CVP systems could fall to 10 percent to 20 percent. Transfer prices are higher typically under dry conditions.

A comparison of the purchase prices for proposed and completed transfers is presented in Table 3. This comparison indicates that the proposed Valley District program and the single-year transfers with Rosedale and San Luis/Del Puerto are cost competitive with transfers, which have been completed by Westlands Water District and the DWR Drought Water Bank and negotiated for the Environmental Water Account.

**TABLE 3  
COMPARISON OF PROPOSED AND COMPLETED WATER PURCHASES**

TRANSFER	SUPPLY	TERM	PRICE *
<b>Proposed Multiple-Year Transfers</b>			
San Bernardino Valley Municipal Water District	20,000-50,000 afy SWP water @ 20%-100% allocation	10 years with annual extensions	\$150 per af *
Rosedale-Rio Bravo/ Buena Vista/ West Kern	20,000 afy SWP water @ 20%-100% allocation	10 years	Under discussion
<b>Proposed Single-Year Transfers for 2001</b>			
Rosedale-Rio Bravo Water District	20,000 af SWP @ 20% allocation	1 year	\$135 -150 per af
San Luis Water District / Del Puerto Water District	15,000-25,000 af CVP water @ 40% allocation	1 year	\$160 per af
<b>Transfers Completed or Negotiated</b>			
Westlands Water District (7 transactions in 1999 & 2000)	CVP water @ 100% allocation CVP water @ 65% allocation	1 year 1 year	\$52 per af \$117 per af
DWR Drought Water Bank (1991)	SWP water @ 20% allocation	1 year	\$175 per af
DWR Enviro. Water Acct (4 transactions in 2000)	SWP water @ 100% allocation SWP water @ 50% allocation SWP water @ 20% allocation	1 year 1 year 1 year	\$130 - 138 per af \$280 - 312 per af \$460 per af

\* Price includes the power costs for pumping over the Tehachapis in Calendar Year 1999.

Comparative Economic Analysis Based on IRPSIM & Relative Unit Value Method

The following is an initial economic evaluation of the water transfer proposals short-listed under Metropolitan’s competitive Request-for-Proposal (RFP) process and the Coordinated Operating Agreement with Valley District. The evaluation analyzed five transfer proposals that vary in length from 10 to 35 years. Three of the proposals (Kern Delta, Azurix and Semitropic) are based on banking Metropolitan’s surplus wet-year State Water Project supplies for use during dry periods, while two proposals (San Bernardino and Rosedale-Rio Bravo) are based on delivering new supplies to Metropolitan.

The evaluation of the San Bernardino and Kern Delta/Arvin-Edison proposals are based specific terms negotiated by Metropolitan and the districts. The evaluation of the Rosedale-Rio Bravo, Semitropic, and Azurix proposals are based on the initial terms presented in their original proposals. The evaluation indicates that Metropolitan staff is currently in discussion with these agencies in an effort to reduce the cost and improve the overall benefits of each proposal. However, based on the proposals to date, the Kern Delta and San Bernardino programs appear the most cost effective.

To perform a comparative economic analysis of the proposals, the Integrated Resource Planning Simulation Model (IRPSIM) and the Relative Unit Value (RUV) Method were utilized. This analysis evaluated the amount of supplies available, timing of deliveries, put and take capacities, cost components, inflation factors, debt service, and Metropolitan’s ability to use the new supplies over the length of the program. To model the regulatory, operational and water quality risks, the IRPSIM utilized one possible what-if scenario, an impact on water supply

due to endangered species act restrictions in the Bay-Delta. DWRSIM modeling of this impact has shown a possible regulatory risk of approximately 250,000 af/year. The following Table 4 is a summary of the economic analysis of this initial what-if scenario.

**TABLE 4  
ECONOMIC ANALYSIS BASED ON IRPSIM & RELATIVE UNIT VALUE METHOD**

<b>PROPOSALS</b>	<b>PROJECT DESCRIPTION</b>	<b>PROGRAM LENGTH</b>	<b>AVERAGE EXPECTED YIELD<sup>1</sup></b>	<b>ANNUAL AMORTIZED COST</b>	<b>AVERAGE COSTS<sup>2</sup> \$/AF</b>
<b>Kern Delta<sup>3</sup></b>	<b>Banking</b>	<b>25 yrs.</b>	267 TAF	\$3.2 M/yr.	\$258/af
<b>San Bernardino</b>	<b>New Supply</b>	<b>+10 yrs.</b>	357 TAF	\$4.0 M/yr.	\$221/af
<b>Rosedale-Rio Bravo</b>	<b>New Supply</b>	<b>10 yrs.</b>	17 TAF	TBD	TBD
<b>Azurix<sup>3</sup></b>	<b>Banking</b>	<b>30 yrs.</b>	169 TAF	\$8.5 M/yr.	\$1,070/af
<b>Semitropic (Enhanced)<sup>3</sup></b>	<b>Banking</b>	<b>35 yrs.</b>	36 TAF	\$3.9 M/yr.	\$1,196/af

**Notes**

1. The “average expected yield” is calculated using the IRPSIM. The IRPSIM analyzes the ability of Metropolitan to use new supplies during a repeat of the wet, normal, and dry hydrologic sequences associated with the historical 77-year hydrologic record.
2. The “average costs” are calculated based on the relative unit value (RUV) method and the IRPSIM. The RUV method considers inflation factors and debt service over the term of the program. The RUV method also allows for combining multiple-cost components into a single number. These cost components include up-front capital payments, put costs, take costs, storage fees, and operation/maintenance costs.
3. The cost performance of these proposals may improve if Metropolitan is successful in developing additional core supplies to meet consumptive-use demands beyond year 2020, and provide additional opportunities for storage.

Overall Assessment of Water Transfer Proposals

In accordance with Board directives, negotiations have proceeded with five multiple-year transfer proposals in order to secure the necessary supplies to maintain reliability under hydrologic and regulatory drought conditions. A detailed evaluation of these proposals has been completed. The evaluation indicates that two of the five transfer proposals are favorable in terms of cost, supply reliability, and water quality. These transfers are the San Bernardino Valley Municipal Water District Program and the Kern Delta Water District/Arvin-Edison Program. Negotiations on the other proposals (Rosedale, Semitropic and Azurix) will continue in an effort to reduce the cost and improve the over benefits of each proposal.

The single-year transfers, proposed by Rosedale-Rio Bravo Water District and San Luis/Del Puerto Water Districts, would provide SWP and CVP supplies for 2001 and could be coordinated with supplies available in DWR's Supplemental Supply Program to meet Metropolitan's dry-year supplies needs in the most reliable and cost-effective manner. These transfers also provide Metropolitan with the opportunities to secure additional supply insurance, carryover supplies in San Luis Reservoir, assist the Environmental Water Account program, establish new partnerships with Central Valley agricultural interests, and work with the Bureau on the coordinated use of SWP and CVP supplies. Discussions on these single-year transfers should continue.