

- **Board of Directors**  
**Budget, Finance and Investment Committee**

October 14, 2003 Board Meeting

---

**11-1**

---

**Subject**

---

Adoption of the Long Range Finance Plan – 2003 Update

---

**Description**

---

**Attachment 1** to this letter is the draft 2003 update of Metropolitan's Long Range Finance Plan. This will be the fifth update of the LRFP. The first LRFP completed in December 1986 was updated in 1987, 1988, 1995, and 1999.

As Metropolitan reviews its financial policies and strategies, the LRFP updates reflect these changes to policy. In addition, the LRFP provides a forecast of costs, revenues, and rates for planning purposes. The LRFP provides comprehensive strategies for financing the operating and capital programs of Metropolitan in an efficient manner using the financial tools available to Metropolitan. The overall goal of Metropolitan's financial planning is to maintain financial flexibility to deal with changing conditions within a framework of solid financial policies in order to ensure a reliable high quality water supply for Southern California at the lowest possible cost to water rate payers within manageable risk parameters.

Since the first LRFP was developed in 1986, numerous financial policies and recommendations have been implemented at Metropolitan. The following list includes some of the significant policy changes, recommendations, and goals that have been developed through the LRFP process:

- Creation of the Water Rate Stabilization Fund
- Ability to impose a water standby and availability of service charge
- Broadened authority to invest funds in Metropolitan's investment portfolio
- Creation of the Pay-As-You-Go Fund
- Development of a PAYG policy and funding strategy
- Development of a variable rate debt management program
- Establishment of the Water Transfer Fund
- A working capital reserve policy
- The minimum and maximum reserve targets

Approximately three years ago, staff began working with the Board through the Board's Budget, Finance, and Investment Committee (BF&I), and the Subcommittee on Investments and Bond Financing (Subcommittee) to develop financial procedures and policies that would enhance value to its member agencies and better manage Metropolitan's assets and liabilities.

Working with the BF&I Committee and the Subcommittee, the following policies and financial strategies have been implemented:

- Adoption of a Master Swap Resolution and Master Swap Policy
- Revised bond refunding guidelines to increase refunding opportunities

- Decreased variable rate debt to 32 percent of outstanding revenue bonds
- Divided the investment portfolio into short-term and long-term portfolios
- Established benchmarks for each portfolio
- Selected outside fund managers to manage the long-term portion of the investment portfolio
- Implemented new reporting and investment management systems
- Established pooling of funds for investment purposes
- Determined funding needs for asset replacement

These policies have been approved by the Board and are reflected in the 2003 Update.

### **2003 Update to the Long Range Finance Plan**

The 2003 Update to the LRFPP outlines how Metropolitan will fund its ongoing operations and maintenance and capital costs over the next ten years. Metropolitan's primary financial objectives over the next five-year period will be to meet all funding requirements of the Capital Investment Program; take advantage of financing opportunities in the capital markets to lessen future increases in debt service costs; and use future financings and available cash reserves to restructure Metropolitan's annual debt service costs in order to smooth out the impacts of financing costs on water rate payers.

In addition, financial support for local resource programs that reduce the demand for imported water will be provided to member agencies, additional water transfer and storage programs will be developed (including programs in California's Colorado River Water Use Plan), and Metropolitan will continue to support the CALFED process. Financing the replacement and rehabilitation of Metropolitan's aging infrastructure, lessening financial risk through asset/liability management, reducing risks in the power market, implementing performance measures to monitor efficiency improvements, and establishing long-term objectives for fixed departmental operations and maintenance costs and increases in outstanding debt are additional challenges addressed in the LRFPP.

The 2003 update to the LRFPP focuses on the financial requirements necessary to provide a reliable high quality water supply in a cost-effective manner. In addition, the ongoing financial plan will incorporate a rolling five-year forecast. Each year, the five-year forecast will be updated to incorporate the latest projections for revenue requirements. In this way, Metropolitan can modify or change financial strategies as needed to minimize necessary increases in water rates and charges over the upcoming five-year period.

The 2003 update to the LRFPP consists of the following:

- Executive Summary
- Financial Forecast
- Risk and Uncertainty
- Debt Management, including a five-year financing plan
- Asset/Liability Management
- Risk Management

The 2003 LRFPP Update includes the following major conclusions and recommendations:

**Variable-Rate Debt Policy:** Metropolitan's existing policy was formulated during the spring of 2000 after extensive analysis by Metropolitan's financial team. As a result of the analysis, the Board set a variable-rate exposure target of 32 percent of total revenue bond debt outstanding. The policy was established to better match Metropolitan's investment portfolio with variable-rate liabilities, thereby lessening the impact of rising and declining interest rates. But, the technical analysis performed and used as the basis for establishing the existing policy was dependent on a number of assumptions that will change over time.

As described in the text of the 2003 update to the LRFP, Metropolitan's tolerance to changes in interest rate levels will be quantified relative to the net dollar impact to Metropolitan rather than a flat percentage of revenue bond debt outstanding. By changing the policy from a flat percentage calculation to a methodology that recognizes the net interest cost impact to Metropolitan, Metropolitan can adjust its variable rate exposure to changes both in interest rates and available cash balances.

Use of Funds Above the Maximum Reserve Level: Metropolitan's minimum and maximum reserve policies were established during the update to the 1999 LRFP. The minimum and maximum reserve levels were set to reserve for the net revenue impact of consecutive years of wet weather. The calculations determined that 17.5 percent of fixed costs over the upcoming three and a half years should be included in the reserve calculations. At present, funds available at fiscal year end above the maximum reserve level may be used for any lawful purpose of Metropolitan. Consistent with that policy, the Plan assumes that funds available above the maximum target will be used to defease debt. This results in lower long-term rates. If funds are not used in this manner, actual rates will be higher.

Financial Planning Guidelines: It is recommended that total fixed departmental operations and maintenance costs be measured against and managed to the five-year rolling average rate of change in inflation as defined by the Los Angeles/Riverside/Orange counties "all in" consumer price index. The LRFP reflects water rates and charges that incorporate this objective.

Rate Forecast: Rates and charges are projected to increase at 3.5 percent to 4.5 percent per year. This forecast will change with changes in Metropolitan's Capital Investment Plan or O&M costs. Further, the rates are sensitive to actual water sales.

## **Policy**

---

Changes to Metropolitan's Administrative Code or board-approved financial policies require board approval.

## **California Environmental Quality Act (CEQA)**

---

CEQA determination for Option #1:

The proposed actions are not defined as a project under CEQA, because they involve continuing administrative activities, such as general policy and procedure making (Section 15378(b)(2) of the State CEQA Guidelines). The proposed actions are also not subject to CEQA because they involve the creation of government funding mechanisms or other government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines). In addition, where it can be seen with certainty that there is no possibility that the proposed actions in question may have a significant effect on the environment, the proposed actions are not subject to CEQA (Section 15061(b)(3) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed actions are not subject to CEQA pursuant to Sections 15061(b)(3), 15378(b)(2), and 15378(b)(4) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

**Board Options/Fiscal Impacts**

---

**Option #1**

Adopt the CEQA determination and approve the 2003 update to the Long Range Finance Plan, including the following changes to policies:

- a. Modify variable rate debt policy from a flat percentage calculation to a net interest cost methodology; and
- b. Establish a budget objective to manage the departmental O&M budget against the level of inflation.

**Fiscal Impact:** None. The Plan is a forecast of expenditures, revenues and rates. Actual costs, rates, and revenues will depend on inflation, interest rates, water sales and capital expenditures.

**Option #2**

Do not approve the 2003 update to the Long Range Finance Plan.


**Fiscal Impact:** None. The Plan is a forecast of expenditures, revenues and rates. Actual costs, rates, and revenues will depend on inflation, interest rates, water sales and capital expenditures.

**Staff Recommendation**

---

Option #1

	9/29/2003
_____ Brian G. Thomas Chief Financial Officer	Date

	9/30/2003
_____ Ronald R. Gastelum Chief Executive Officer	Date

**Attachment 1 – Draft Long Range Finance Plan**

BLA #2223

**Metropolitan Water District of Southern California**  
**Draft Long Range Finance Plan**

**September 26, 2003**

## Table of Contents

<b>EXECUTIVE SUMMARY</b>	<b>7</b>
<b>Financial Forecast</b>	<b>9</b>
Rates and Charges	9
Expenditures	10
Water Sales	11
Risk Factors	11
<b>Policy Recommendations</b>	<b>12</b>
<b>SECTION 1. FINANCIAL FORECAST</b>	<b>14</b>
<b>Uses of Funds</b>	<b>14</b>
Expenditures	14
Colorado River Supply Programs	16
Northern California Supply Programs	18
Power Costs	19
Demand Management Programs	21
Capital Investment Plan	22
Capital Financing Program	23
Operations and Maintenance Costs	26
Fund activity	27
<b>Sources of Funds</b>	<b>30</b>
Other Revenues	30
Property taxes	30
Interest income	31
Hydroelectric power sales	31
Grant funding	31
Rates and Charges Revenue	32
Cost of Service Process	33
Volumetric revenues	34
Water Sales	36
Fixed Charge Revenues	37
<b>Financial Indicators</b>	<b>42</b>
Financial Ratios	42
Revenue bond debt service coverage	42
Fixed charge coverage	42
Fund Levels	42
<b>SECTION 2. RISK FACTORS</b>	<b>44</b>

<b>Rates and Charges Stability and Predictability</b>	<b>44</b>
Power costs	44
CRA Power Costs	44
State Water Project Power Costs	45
Supply program costs	46
Water sales	48
<b>SECTION 3. DEBT MANAGEMENT</b>	<b>50</b>
<b>Five-Year Financing Plan</b>	<b>50</b>
Financing the Capital Investment Program	51
Financing Plan	53
<b>Asset Liability Management</b>	<b>58</b>
Existing Variable Rate Debt Policy	59
Appropriate Level of Variable Rate Debt Exposure	60
Metropolitan's Tolerance to Changes in Interest Rates	61
Metropolitan's Tolerance to Rising Interest Rates	62
Metropolitan's Tolerance to Declining Interest Rates	65
Rating Agency Consideration	67
Liquidity Provider Capacity and Risks	67
How Metropolitan Will Utilize Asset Liability Strategy	68
<b>Metropolitan's Bond Refunding Guidelines</b>	<b>71</b>
Alternatives for Refunding Guidelines	77
Metropolitan's New Bond Refunding Guidelines	81
<b>SECTION 4. RISK MANAGEMENT</b>	<b>85</b>
<b>Introduction</b>	<b>85</b>
<b>Risk Management Responsibilities</b>	<b>85</b>
<b>Authority</b>	<b>86</b>
<b>Risk Finance</b>	<b>86</b>
<b>Risk Control and Claims Exposure</b>	<b>89</b>
<b>Risk Prevention</b>	<b>92</b>
<b>Conclusion</b>	<b>92</b>
<b>APPENDIX 1 - THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA MASTER SWAP POLICY</b>	<b>93</b>
Authority	93
Purpose	93

Form of Swap Agreements	93
Transaction Approval	94
Qualified Swap Counterparties	95
Termination Provisions	95
Term and Notional Amount of Swap Agreement	96
Swap Counterparty Exposure Limits	96
Collateral Requirements	97
Reporting Requirements	98



## Table of Figures

<b>Figure 1. Average Effective Rate (\$/acre-foot)</b>	<b>10</b>
<b>Figure 2. Total Expenditures</b>	<b>15</b>
<b>Figure 3. 2003/04 Capital Investment Plan</b>	<b>23</b>
<b>Figure 4. Outstanding Debt</b>	<b>24</b>
<b>Figure 5. Revenue Bond Debt Service Costs</b>	<b>25</b>
<b>Figure 6. Debt and PAYG Funding of the CIP</b>	<b>26</b>
<b>Figure 7. Receipts</b>	<b>30</b>
<b>Figure 8. Water Sales Trends</b>	<b>37</b>
<b>Figure 9. Readiness-to-Serve Charge</b>	<b>38</b>
<b>Figure 10. Capacity Charge</b>	<b>39</b>
<b>Figure 11. Fund Balances</b>	<b>43</b>
<b>Figure 12. Supply Revenue less Supply Revenue Requirement</b>	<b>47</b>
<b>Figure 13. Capital Investment Plan by Component</b>	<b>52</b>
<b>Figure 14. Five-year Capital Investment Plan</b>	<b>54</b>
<b>Figure 15. Capital Investment Plan Funding Sources</b>	<b>55</b>
<b>Figure 16. Outstanding Revenue Bond Debt Service</b>	<b>57</b>
<b>Figure 17. Outstanding Revenue Bond Debt Service after Restructuring</b>	<b>58</b>
<b>Figure 18. Additional interest payments</b>	<b>63</b>
<b>Figure 19. Water sales revenues</b>	<b>64</b>
<b>Figure 20. Reduced Net Interest realized</b>	<b>66</b>
<b>Figure 21. Weighted Average Cost of Debt</b>	<b>71</b>
<b>Figure 22. Revenue Bond Index</b>	<b>72</b>
<b>Figure 23. Municipal Market Yield vs. Swap Curve</b>	<b>74</b>
<b>Figure 24. Comparison of Savings</b>	<b>76</b>
<b>Figure 25. Historical Excess Workers Compensation Premiums</b>	<b>87</b>
<b>Figure 26. Historical Excess Liability Premiums</b>	<b>87</b>
<b>Figure 27. Workers Compensation, Open Claims Total Incurred – All Years</b>	<b>90</b>
<b>Figure 28. Workers Compensation, First Year Policy Year Total Incurred</b>	<b>90</b>
<b>Figure 29. Liability Claims, Cumulative Total Incurred</b>	<b>91</b>
<b>Figure 30. Liability Claims, Policy Year Total Incurred</b>	<b>91</b>

**Table of tables**

<b>Table 1. Uses and Sources of Funds</b>	<b>28</b>
<b>Table 2. Rates and Charges</b>	<b>40</b>
<b>Table 3. Rates and Charges – High Sales</b>	<b>41</b>
<b>Table 4. Net Interest Costs</b>	<b>64</b>
<b>Table 5. Reduced benefit of Net Interest Costs</b>	<b>67</b>
<b>Table 6. Modified Percentage Savings Straight Sliding Scale</b>	<b>78</b>
<b>Table 7. Modified Percentage Savings Sliding Scale with Refunding</b>	<b>79</b>
<b>Table 8. Adjustment Factors</b>	<b>81</b>
<b>Table 9. Additional Savings</b>	<b>82</b>
<b>Table 10. Adjustment factors</b>	<b>83</b>
<b>Table 11. Coverage Profile</b>	<b>88</b>
<b>Table 11. Swap Approval Requirement</b>	<b>94</b>

## **Executive Summary**

The ability to ensure a reliable high quality water supply for Southern California depends largely on Metropolitan's ability to finance on-going operations and maintenance, fund replacements and refurbishment of existing infrastructure and invest in system improvements. The goals of Metropolitan's long range financial planning are to maintain financial flexibility, ensure predictable and stable water rates, continually improve financial policies and identify risk factors and mitigation strategies.

The 2003 update to the Long-Range Finance Plan (LRFP or Plan) presents a forecast of rates and charges for the next ten years, communicates underlying assumptions and identifies risk factors and mitigation strategies. The member agencies and other local retail water providers use the rate forecast to inform their decisions about investments in additional local resources such as recycling, conservation and desalination. It is therefore critical that the 2003 update to the Plan is well understood and accepted as a reasonable estimate of Metropolitan's future expenditures, sales, and rates and charges.

The 2003 update is the fifth update of the LRFP. The first LRFP completed in December 1986, was followed by updates in 1987, 1988, 1995, and 1999. Since the first LRFP numerous financial policies and recommendations have been implemented including:

- Creation of the Water Rate Stabilization Fund;
- Ability to impose a water standby and availability of service charge;
- Broadened authority to invest funds in Metropolitan's investment portfolio;
- Creation of the Pay-As-You-Go Fund;
- Development of a PAYG policy and funding strategy;
- Development of a variable rate debt management program;
- Establishment of the Water Transfer Fund;
- A working capital reserve policy; and
- The minimum and maximum reserve levels.

More recently, the Board's Budget, Finance, and Investment (BF&I) Committee, and the Subcommittee on Investments and Bond Financing (Subcommittee) worked with staff to develop the following policies and financial strategies:

- Adopted a Master Swap Resolution and Master Swap Policy;
- Revised bond refunding guidelines to increase refunding opportunities;
- Modified the variable rate debt policy to 32 percent of outstanding revenue bonds;
- Divided the investment portfolio into short-term and long-term portfolios;

- Established benchmarks for each portfolio;
- Selected outside fund managers to manage the long-term portion of the investment portfolio;
- Implemented new reporting and investment management systems;
- Established pooling of funds for investment purposes; and
- Determined funding needs for asset replacement.

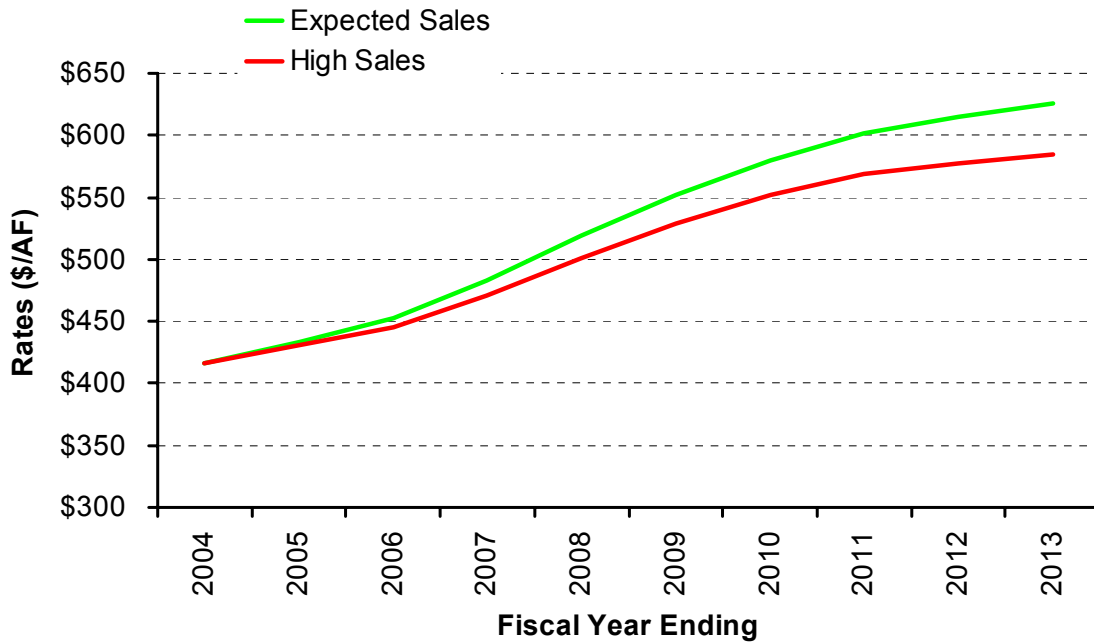
The 2003 update is presented in four major sections. Section One, Financial Forecast, provides a forecast of all uses of funds (expenditures, capital investment plan and fund deposits), a discussion of sources of funds, including receipts and forecasted rates and charges. Section Two, Risk Factors, discusses particular factors that pose a risk to the outcome of the rate forecast including power costs, supply costs, water sales and interest rates. Section Three, Debt Management, discusses asset liability management and establishment of an on-going five-year financial plan. Finally, Section Four, Risk Management, addresses Metropolitan's risk management process.

**Financial Forecast**

To maintain its ability to provide a reliable, high quality supply of imported water Metropolitan will continue to develop supplies to meet the goals set forth by the Integrated Resources Plan (IRP). Continuing initiatives include: providing financial support for local resource programs (recycling, conservation and desalination) that reduce the demand for imported water, developing additional water transfer and storage programs, implementing California's Colorado River Water Use Plan and support of the CALFED Bay-Delta Program. In addition, other challenges recognized by the Plan include: financing \$3.5 billion in capital system improvements, replacements and refurbishments through 2012/2013; managing increasing O&M costs to regional inflationary trends, and mitigating the uncertainty of power costs, supply costs, water sales and interest rates. Through regular and thorough long range financial planning these challenges can be overcome within a range of stable and predictable water rate increases.

**Rates and Charges**

Depending on long-term trends in average sales volumes, the average effective rate (all rates and charges revenue divided by total sales) is expected to increase at an annualized average rate of between 3.8 percent and 4.6 percent through 2012/2013. In the next three to five years, annual increases of between 4.0 percent and 7.5 percent may occur as most of the more rapid increase in expenditures (e.g. debt service) and a return to average sales levels are expected to happen in the next five years. In 2002/2003, the actual costs that had to be recovered from the rates and charges were \$448 per acre-foot. The average effective rate is currently \$417 per acre-foot. If it were not for 2002/2003 being the third highest year of sales on record there would have been a significant use of reserves in 2002/2003 to meet obligations. Depending on sales levels, the average effective rate will increase from \$417 per acre-foot to between \$585 per acre-foot to \$625 per acre-foot by 2012/2013 (see Figure 1). Over this same period, the Tier 1 and Tier 2 full service treated water rates will increase from \$326 per acre-foot and \$407 per acre-foot respectively to \$457 per acre-foot and \$538 per acre-foot respectively by 2012/2013. The projected rate increases are the result of increasing expenditures and declining/stable sales.

**Figure 1. Average Effective Rate (\$/acre-foot)**

## Expenditures

By 2012/2013 the Plan estimates that total obligations (expenditures and fund deposits) will increase by about \$256 million from their current level of \$1,143.7 million to \$1,400.0 million, an annual average rate of 2.3 percent per year. Costs drivers include:

- Capital financing – annual debt service and Pay As You Go (PAYG) financing costs will increase by \$161.9 million by 2012/2013 to finance a \$3.5 billion Capital Investment Program;
- Operations and Maintenance – annual O&M costs will increase at an average annual rate of 3.0 percent or by about \$87 million by 2012/2013;
- Power - the combined cost of State Water Project (SWP) and Colorado River power will increase by over \$47 million by 2012/2013;
- Demand management – Metropolitan’s annual contribution toward local supply resources that help reduce the demand for imported water, including recycling, conservation and desalination, will increase by about \$46 million (over 100 percent from 2003/2004 budget levels) by 2012/2013 in order to fund the goals set forth by the Integrated Resources Plan;
- Through 2012/2013 SWP costs (not including power) are assumed to stay relatively constant and average about \$267 million per year;

- Assuming average weather conditions and not including significant up-front payments for certain Colorado River programs which will be funded from the Water Transfer Fund, a total of about \$29 million per year will be spent on water transfers and storage programs on the Colorado River and in Northern California;
- Variable treatment costs including sludge disposal, power and chemicals, under average conditions, are expected to be about \$29 million per year.

## Water Sales

The level of total water sales is the most important single variable in determining future water rates. Metropolitan currently recovers about 70 percent of its annual obligations from volumetric rates. As sales decrease to average expected levels, all expenditure increases will eventually have to be recovered by rising water rates. At over 2.3 million acre-feet of total sales, 2002/2003 was the third highest sales year on record. Sales in 2003/2004 are expected to decline slightly to about 2.2 million acre-feet assuming a return to normal weather conditions. The Integrated Resources Plan (IRP) incorporates the long-term forecast of retail demands and expected trends in local supply development and therefore serves as the basis for the long-term sales forecast included in the Plan. Total sales are expected to decline further to 2.0 million acre-feet by 2007/2008 as significant amounts of additional local supplies are developed. The assumed rate of development of additional local resources (recycling, conservation and desalination), while desirable from a regional supply reliability standpoint, is a critical driving factor behind the forecasted water rate increases. Moderate increases in sales are expected after 2007/2008 and by 2012/2013 total sales are forecast to be about 2.1 million acre-feet.

## Risk Factors

The Plan recognizes four specific risk factors that have the potential to change the rate forecast significantly. These risk factors are power costs, supply costs, water sales and interest rates. Risk factors are distinguished from other long-term financial challenges such as the management of operations and maintenance costs and the capital investment program because they are largely externally influenced and are more difficult if not impossible for the board and management to control.

### Power Costs

Power costs account for about \$113.1 million of the 2003/04 budget (7.9 percent of total expenditures). Power costs vary significantly with the amount of imported water delivered by Metropolitan and the price of energy in the wholesale power market. The Plan recognizes that through the System Power Rate Metropolitan has a natural hedge against increasing power costs driven by higher sales volumes. However, in the near term, price risk must be actively managed through contracts such as forward price agreements. For the long term Metropolitan needs to establish an energy strategy that addresses such critical milestones as the 2007 expiration of its power scheduling agreement with Southern California Edison for Colorado River Aqueduct Power and the 2017 expiration of the cost-based Federal power contract for Hoover Dam. In

addition, Metropolitan must work with DWR and other State Water Contractors to ensure that DWR has a long-term energy strategy in place to deal with the challenges posed by the energy market.

#### Supply Costs

Expenditures for water transfer and storage programs on both the Colorado River and State Water Project are expected to average about \$29 million per year through fiscal year 2012/2013 (not including up-front payments for Colorado River programs) and include several programs developed to meet the IRP goals. Depending on water supply conditions, these expenditures can vary significantly, ranging from \$17 million to \$106 million per year during dry periods when additional water transfers will be purchased. The Plan anticipates that, as demands increase, revenue from the Tier 1 and Tier 2 Supply Rates will closely match supply cost increases during these dry periods.

#### Water Sales

Although Metropolitan and the member agencies established a ten-year financial commitment from the member agencies to Metropolitan in the form of a Purchase Order, the Purchase Order intentionally does not transfer the risk of the annual variation in sales due to weather to the member agencies. To ensure the stability and predictability of future water rates, the variation in sales due to weather will continue to be absorbed through the rate stabilization reserves (over \$200 million). However, the Plan anticipates that a significant portion of these reserves will be drawn down in the next three to four years to mitigate rate increases. As the rate stabilization reserves are used for this purpose it is important to recognize that it is more likely that water rates may be impacted by a period of low sales due to weather.

#### Interest Rates

In general, Metropolitan's interest rate risk is minimized when long-term assets are matched with long term fixed rate debt, and short-term assets are matched with variable rate debt (asset liability matching). The primary purpose of asset liability matching is to mitigate the risk of changing interest rates in both the taxable and tax-exempt markets. With the proper mix of fixed and variable rate debt, Metropolitan can reduce the risk to water rate payers of rising and declining interest rates by managing variable rate exposure. The Plan recommends modifying Metropolitan's variable rate policy in order to take into account the primary factors (namely the balance available in the short-term investment portfolio and Metropolitan's risk tolerance to rising and declining interest rates) that mitigate the impact on revenue requirements of changes in interest rates.

### ***Policy Recommendations***

Consistent with the long range financial planning goal of continually improving financial policies the development of the Plan has led staff to recommend the following financial policies for the Board's consideration:

#### Variable Rate Debt Policy

Metropolitan's existing policy was formulated during the spring of 2000 after extensive analysis. As a result of the analysis, board policy established variable rate exposure of



32 percent of total revenue bond debt outstanding. The policy was established to better match Metropolitan's investment portfolio with variable rate exposure, thereby lessening the impact of rising and declining interest rates. However, the technical analysis performed and used as the basis for establishing the existing policy was dependent on a number of assumptions that change over time. Although the analysis concluded that 32 percent was considered the appropriate amount of variable rate exposure, it is still necessary to determine an acceptable level of "unhedged" variable rate exposure over and above the hedged position.

As described in Section Three, the tolerance to changes in interest rates must be quantified relative to the net dollar impact to Metropolitan and not a flat percentage of revenue bond debt outstanding. By changing the policy from a flat percentage calculation to a methodology that recognizes the net interest cost impact, Metropolitan can more effectively manage adverse changes in interest rates to mitigate impacts to water rates.

#### Budgeting Guidelines

To help ensure that the long-term trend in water rates is as close to the rate of inflation as possible, it is recommended that total fixed departmental operations and maintenance costs shall not increase at more than the five-year rolling average rate of inflation as determined by the Los Angeles/Riverside/Orange counties "all in" consumer price index.

## **Section 1. Financial Forecast**

This section provides a forecast of Metropolitan's future uses and sources of funds including expenditures and the Capital Investment Program (CIP), receipts, projected rates and charges and financial indicators. The forecast reflects management's best estimates at this time and should not be viewed as a precise prediction but rather as an indication of expected trends given certain expenditure, water sales, and financing assumptions. The forecast is based on current board policies and assumptions about future conditions.

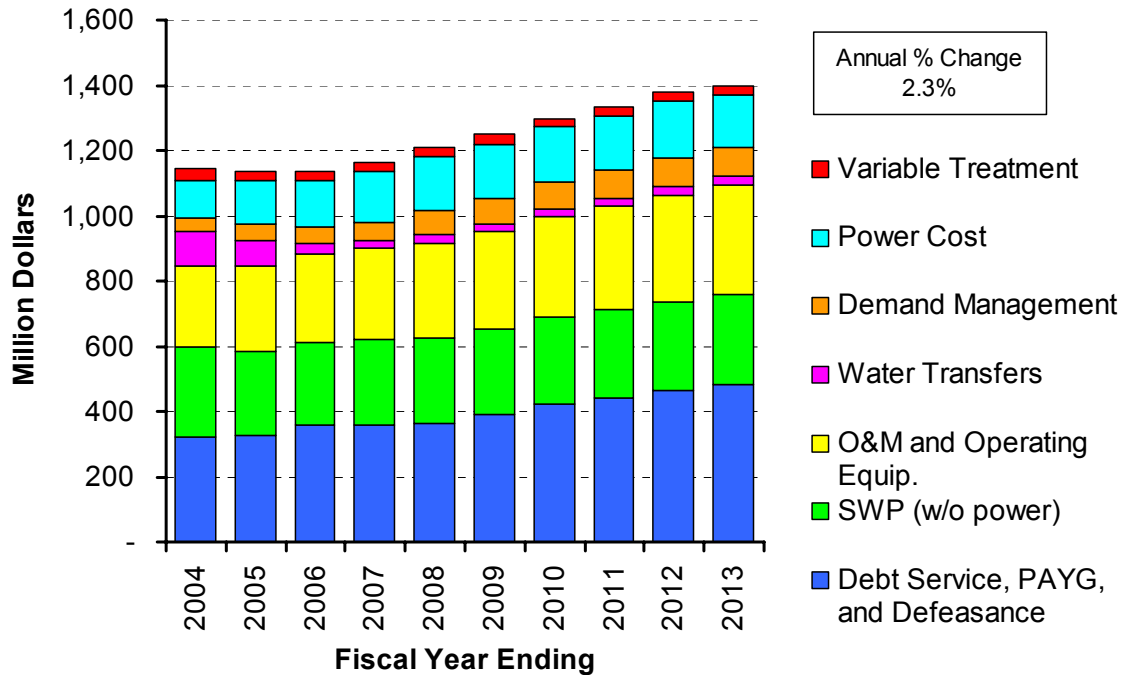
### ***Uses of Funds***

Uses of funds are discussed in terms of expenditures, the CIP and fund activity. Total uses of funds are projected to increase from \$1.49 billion in 2003/04 to \$1.87 billion by fiscal year 2012/13.

### **Expenditures**

Expenditures include the State Water Contract (SWC), supply programs to augment available Colorado River and State Water Project supplies, power costs, capital financing costs (debt service, bond defeasance and PAYG), demand management costs and operations and maintenance costs. Total obligations (expenditures and fund deposits) are expected to increase at an annual average rate of 2.3 percent from \$1.14 billion in 2003/04 to \$1.40 billion by 2012/13. Figure 2 illustrates the overall trend in these expenditure categories.

**Figure 2. Total Expenditures**



**State Water Contract**

Metropolitan is one of 29 agencies that contract with the State of California for service from the State Water Project. Metropolitan is obligated to pay the capital and minimum operations, maintenance, power, and replacement (OMP&R) charges of the project regardless of the amount of water actually received. In addition, Metropolitan pays the power costs to convey the water (discussed below). The Plan assumes that SWC costs (not including power) will remain relatively constant at their current level of about \$267 million through 2012/13. Currently, SWC costs not including power account for 24.3 percent of Metropolitan’s budgeted 2003/04 expenditures. Metropolitan, along with the other State Water Contractors, is working with DWR to identify and manage cost drivers.

The Plan assumes Metropolitan's continued support for the CALFED Bay-Delta program. A recently issued record of decision (ROD) on the Bay-Delta Program pledges, among other things, to restore the Bay-Delta ecosystem, improve water quality, enhance water supply reliability, and ensure long-term protection for Delta levees. The ROD calls for immediate implementation of short-term actions (Stage 1 of the Program), with over \$8 billion dollars to be invested over the next seven years of the program’s 30-year time span. The Plan assumes that funding will be provided by State and Federal appropriations and contributions from local water users, including Metropolitan. It is currently anticipated that Federal, State and local users will each contribute one-third of the cost. Funding by the State will be provided under the authority of Proposition 204, which passed in 1996, Proposition 13, which passed in March 2000, Proposition 50, which passed in November 2002, and annual general fund expenditures. Legislation has been introduced in Congress to authorize funding of additional Federal expenditures for

the ROD; however, such legislation has not been enacted. At this time, exact allocation of costs to local users has not been defined, and therefore, Metropolitan cannot estimate the extent or the timing of its contributions to the Bay-Delta Program.

### **Colorado River Supply Programs**

The baseline forecast included in the Plan assumes that agreement is reached between the California agencies that use Colorado River water. Metropolitan's investment in ensuring adequate water supplies from the Colorado River is made up of several projects described below. The ability of Metropolitan to implement these projects is subject to a number of conditions, including completion of a "Quantification Settlement Agreement" or other agreements with IID and the Coachella Valley Water District ("CVWD"), as well as the completion of environmental documentation. Annual expenditures for Colorado River supply programs are projected to average \$26.4 million through 2012/13. The following programs are included in the Plan.

#### *Metropolitan/Imperial Irrigation District Conservation Agreement*

Under a 1988 water conservation agreement (the "1988 Conservation Agreement") between Metropolitan and the Imperial Irrigation District ("IID"), IID has constructed and is operating a number of conservation projects that are currently conserving a little over 100,000 acre-feet of water per year. The conserved water augments the amount of water available to Metropolitan. The annual average expenditure of \$12.5 million pays for operating costs through 2012/13.

#### *Palo Verde Land Management Agreement*

In July 2001, Metropolitan's Board approved Principles of Agreement for a Land Management, Crop Rotation and Water Supply Program (the "Land Management Agreement") with the Palo Verde Irrigation District ("PVID"). The aim of this program is to make available up to 111,000 acre-feet of water per year for transfer to Metropolitan from PVID. The term of the proposed program is 35 years. In October 2002 the Board authorized Metropolitan to enter into the Land Management Agreement and related community improvement programs. In 2001, Metropolitan also purchased 16,344 acres of land in the Palo Verde Valley area of eastern Riverside County from the San Diego Gas and Electric Company for \$42.5 million. Approximately 9,700 acres of the land are irrigated cropland within PVID. Metropolitan expects to manage a portion of this land consistent with the principles of the Land Management Agreement, resulting in water becoming available for transfer to Metropolitan.

In 2003/04 and 2004/05 there is a potential that there will be significant up-front expenditures for this program. Through 2012/13 the average annual cost of this program is \$13.2 million. The average annual supply yield from the PVID program is currently expected to be about 28,000 acre-feet per year. However, the amount of supply that will be needed from this program depends greatly on the hydrology of the Colorado River Basin. If the recent dry period does not abate and storage levels at

Lake Mead and Lake Powell do not recover, Metropolitan may have to rely more on this program and costs will increase from average levels.

#### Arizona Groundwater Storage Program

Additional water is available to Metropolitan under a demonstration project with the State of Arizona on underground storage of Colorado River water in central Arizona. Metropolitan stored 89,000 acre-feet in central Arizona from 1992 to 1994. Metropolitan has submitted a request for release of up to 80,000 acre-feet of this water to the Department of the Interior for use in 2004. The annual average expenditure for this program is estimated to be \$0.2 million through 2012/2013.

#### Hayfield Groundwater Storage Program

The Hayfield Groundwater Storage Project is located near Chiriaco Summit in Riverside County adjacent to Metropolitan's Julian Hinds Pumping Plant. Metropolitan plans to store up to 800,000 acre-feet of Colorado River water in the Hayfield aquifer. Water would be stored in wet or surplus years. Facilities are currently under design which would enable Metropolitan to return up to 150,000 acre-feet of previously stored Colorado River water to the aqueduct for delivery to its service area in dry years. Metropolitan currently has approximately 70,000 acre-feet of Colorado River water stored in the Hayfield aquifer. Metropolitan anticipates that the extraction wells in the first phase of this project will be completed in 2004, with all phases scheduled to be completed in late 2006 or early 2007. The annual average expenditure for this program is estimated to be about \$1.0 million through 2012/2013.

#### All American and Coachella Canal Lining Projects

On May 4, 2001, the California Department of General Services approved an agreement between the California Department of Water Resources ("DWR") and Metropolitan providing up to \$74 million in State financial assistance to Metropolitan for implementation of the Coachella Canal Lining Project. The request for construction bids is scheduled for release in October or November 2003. DWR entered into a similar funding agreement with IID on October 1, 2001 providing up to \$126 million in State financial assistance to IID for implementation of the All American Canal Lining Project. A consultant firm for project management/construction management was selected in May 2003. The combined annual supply from these two canal lining projects that will be made available to the region is over 90,000 acre-feet. The Plan assumes that the State funds the construction of these two projects and that Metropolitan pays for the operating costs which average \$0.3 million per year through 2012/2013.

#### Coachella Canal Lining

The annual average expenditure for this program is estimated to be \$0.9 million through 2012/2013.

### Other Colorado River Transfers

The annual average expenditure for additional Colorado River transfers is estimated to be about \$0.2 million through 2012/2013.

### **Northern California Supply Programs**

The IRP sets forth a goal of establishing 300,000 acre-feet of dry year supply yield through water transfer and storage programs by 2010. Several programs have already been established to achieve this goal. The total average operating expenditures for other transfer and exchange programs that originate in Northern California are expected to be about \$12.9 million from 2003/04 through 2012/13. These programs include:

#### Arvin-Edison Water Management program

In December 1997, Metropolitan entered into an agreement with the Arvin-Edison Water Storage District (“Arvin-Edison”), an irrigation agency located southeast of Bakersfield, California. Under the program, Arvin-Edison stores water on behalf of Metropolitan. Up to 350,000 acre-feet of Metropolitan’s water may be stored over the 25-year term of the agreement, and Arvin-Edison is obligated to return up to 75,000 acre-feet of water in any year to Metropolitan, upon request. To facilitate the program, new wells, spreading basins and a return conveyance facility connecting Arvin-Edison’s existing facilities to the California Aqueduct have been constructed. The agreement also provides Metropolitan priority use of Arvin-Edison’s facilities to convey high quality water available on the eastside of the San Joaquin Valley to the California Aqueduct. The average annual expenditure for this program is estimated to be \$1.1 million per year through 2012/13.

#### Semitropic Groundwater Storage and Exchange program

In 1994 Metropolitan entered into an agreement with the Semitropic Water Storage District (Semitropic), located adjacent to the California Aqueduct north of Bakersfield, to store up to 350,000 acre-feet of water in the groundwater basin underlying Semitropic. The minimum annual yield available to Metropolitan from the program is 31,500 acre-feet of water and the maximum annual yield is 90,000 acre-feet of water. As of June 30, 2003, Metropolitan’s storage account was approximately 361,000 acre-feet of water under the terms of the Semitropic agreement. This total includes amounts stored under a demonstration program with Semitropic, which provides for storage of up to 40,000 acre-feet of water. The average annual expenditure for this program is estimated to be \$3.2 million per year through 2012/13.

#### San Bernardino Valley Municipal Water District Transfer Agreement

In March 2001 the Board authorized the execution of an agreement with the San Bernardino Valley Municipal Water District (“SBVWD”), under which agreement Metropolitan will purchase a minimum of 20,000 acre-feet of SBVWD’s State Water Project water allocation. SBVWD will 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. Metropolitan will pay to SBVWD

approximately \$150 per acre-foot for purchases delivered to Metropolitan under the minimum deliveries and other related provisions of the agreement. In fiscal year 2002-03, Metropolitan purchased 50,000 acre-feet from SBVWD. The program has a term of 10 years, unless extended. The average annual expenditure for this program is estimated to be \$3.0 million per year through 2012/13.

#### Kern/Delta Water Storage Program

In March 2001, the Board authorized the execution of Principles of Agreement with the Kern Delta Water District. The program is a groundwater banking and exchange transfer program to allow Metropolitan to store up to 250,000 acre-feet of State Water Contract water in wet years, and permit Metropolitan, at Metropolitan's option, a return of up to 50,000 acre-feet of water annually during hydrologic and regulatory droughts. The program is subject to successful negotiation of a final agreement. The average annual expenditure for this program is estimated to be \$4.5 million per year through 2012/13.

#### Other transfer/storage/exchange programs

The Plan anticipates that other projects that help meet the goals set forth in the IRP will lead to additional expenditures once approved by the Board. Metropolitan is currently evaluating the feasibility of water purchase, storage and exchange programs with other agencies in the San Joaquin and Sacramento Valley. These programs will involve the storage of both State Water Project entitlement supplies and water purchased from other sources to enhance Metropolitan's dry-year supplies and the exchange of normal year supplies to enhance Metropolitan's water reliability. The average annual expenditure for additional programs is estimated to be \$1.1 million per year through 2012/13.

The Plan assumes that each year operating revenues sufficient to fund expected water transfer and storage program costs will be generated from water sales, specifically Tier 1 and Tier 2 water rates. The 2003/04 budget, approved by the Board, included a recommendation to suspend further deposits of operating revenues to the Water Transfer Fund after June 30, 2004 and that any remaining balance in the Water Transfer fund be held over until used to fund these types of programs. This recommendation recognizes the change in Metropolitan's rate structure incorporating tiered pricing. In dry years when supply costs are likely to rise, Metropolitan will also be selling a greater amount of water at the higher Tier 2 Supply Rate. An analysis of the variability in supply costs relative to the availability of revenues from the Tier 1 and Tier 2 Supply Rates is discussed in the next section on risk and uncertainty.

#### **Power Costs**

Power costs include pumping costs on the Colorado River Aqueduct (CRA) and Metropolitan's share of the pumping costs on the State Water Project (SWP). The combined average cost of power on these two facilities has averaged \$58 per acre-foot since 1997, ranging from \$36 per acre-foot to a high of \$102 per acre-foot during the California energy crisis. Total power costs are expected to average \$155.0 million

per year through 2012/13. An analysis of the risk of the variability in power costs is discussed in the following section on risk and uncertainty. Projected power costs assume a stable, efficient energy market where Metropolitan and DWR benefit from their ability to purchase primarily off-peak power for remaining energy needs and the development of high efficiency electricity generation capacity in California. The Plan assumes that market energy costs will increase from \$27.35 per Megawatt hour at an average annual rate of 3.4 percent through 2012/13. This assumption is consistent with a forecast for future energy costs developed by the California Energy Commission.

Long-term cost-based contracts with the federal government provide 70 percent of the energy requirement on the CRA assuming a full aqueduct. This forecast assumes total available Colorado River Supplies, due to current dry hydrologic conditions on the Colorado River, will average about 0.9 million acre-feet per year through 2012/13, well below the CRA's capacity of about 1.3 million acre-feet per year. The forecast therefore assumes that the CRA energy requirement will primarily be met from Metropolitan's relatively inexpensive cost based federal power contracts and that little supplemental energy will be purchased in the market.

From 1996/97 through 1999/00, Metropolitan's cost for energy used on the SWP for pumping water to Southern California averaged about \$80 per acre-foot delivered. However, due to the failed restructuring of California's electricity sector, SWP power costs increased significantly. The average cost of SWP power in 2001/02 was \$123 per acre-foot.

The uncertainty and instability in the power market along with cash flow issues caused by the structure of the SWC has led DWR to provide more conservative (i.e., higher) estimates of future power costs. Actual power costs depend greatly on the volume of water delivered by the SWP relative to the amount of SWP energy resources available and power market conditions. Through the operation of the SWP, DWR is both a buyer and seller of energy. With the implementation of appropriate energy risk management policies and market strategies, DWR can to some degree leverage its position in California's energy market to manage energy costs to the benefit of all of the Contractors. Metropolitan will continue to work with the other Contractors to assist DWR with the management of SWP power costs.

Power costs are one of the greatest uncertainties facing Metropolitan. The changing structure and uncertain nature of California's energy sector requires a more active approach to power cost management than that practiced in the past. While a recently adopted energy risk management policy has been implemented for purchases of supplemental energy for the CRA, it is critical that Metropolitan continue to investigate opportunities to develop its own generation resources or partner with others that own or are developing generation to avoid getting caught in another tight or dysfunctional energy market. While increases in sales provide a natural hedge for changes in the volume of energy needed, Metropolitan currently can only hedge its



price risk by forward price contracts for CRA supplemental energy. Metropolitan is currently entirely dependent on DWR for the management of SWP energy costs.

### **Demand Management Programs**

To diversify the region's water supply and reduce the demand for imported water, Metropolitan provides financial incentives to local water agencies that develop conservation, water recycling, groundwater recovery, and desalination projects. Metropolitan funds local projects and programs through its Local Resources Program (LRP) and Conservation Credits Program (CCP). These demand management programs are alternatives to developing more imported supply and regional infrastructure. It is estimated that Metropolitan's annual cost for these programs will be \$89.8 million in 2012/13. This represents a significant increase from actual costs of \$35.5 million in 2002/03. Demand management programs account for \$43.8 million or 3.1 percent of the 2003/04 budget. The extent to which Metropolitan invests in local resources is determined by the IRP. A recent draft update to the IRP includes revisions to recycling and conservation targets and the addition of desalination as a local supply option that would be partially funded by Metropolitan.

A significant amount of existing local supply is already partially funded by Metropolitan. Currently, Metropolitan is participating in 53 water-recycling projects. Thirty-seven of these projects are in operation and the remaining 16 projects are under design or construction. Metropolitan also provides financial assistance to 22 projects that recover contaminated groundwater. The yield from the LRP is expected to increase from 152,000 acre-feet in 2003/04 to 386,000 acre-feet in 2012/13. LRP costs are projected to increase from \$28.8 million to \$74.8 million over the same period. This cost increase reflects the increasing yield of projects that are currently operating, the anticipated yield of projects that are under contract but not yet operating and additional yield from new projects needed to meet the updated IRP 2010 goal for recycling and groundwater recovery.

The Plan also assumes that Metropolitan will provide financial assistance to local agencies that develop desalination plants. A request for proposals for desalination supplies indicated that over 100,000 acre-feet of annual yield could be available. The Plan assumes that Metropolitan pays \$250 per acre-foot for desalination beginning in 2007 and that over 100,000 acre-feet per year of desalination is partially funded by Metropolitan by 2009. This assumption is based on picking the mid-point between the current board-approved desalination goal of 50,000 acre-feet per year and an increased goal of up to 150,000 acre-feet per year that the Board may consider.

The CCP provides financial incentives to local agencies that implement conservation measures such as low flow toilet retrofits. Under this program, Metropolitan pays either one-half the cost of qualifying water conservation projects or \$154 per acre-foot of water saved. The Plan assumes that Metropolitan will continue to fund the CCP at the current level of \$15 million per year through 2012/2013.

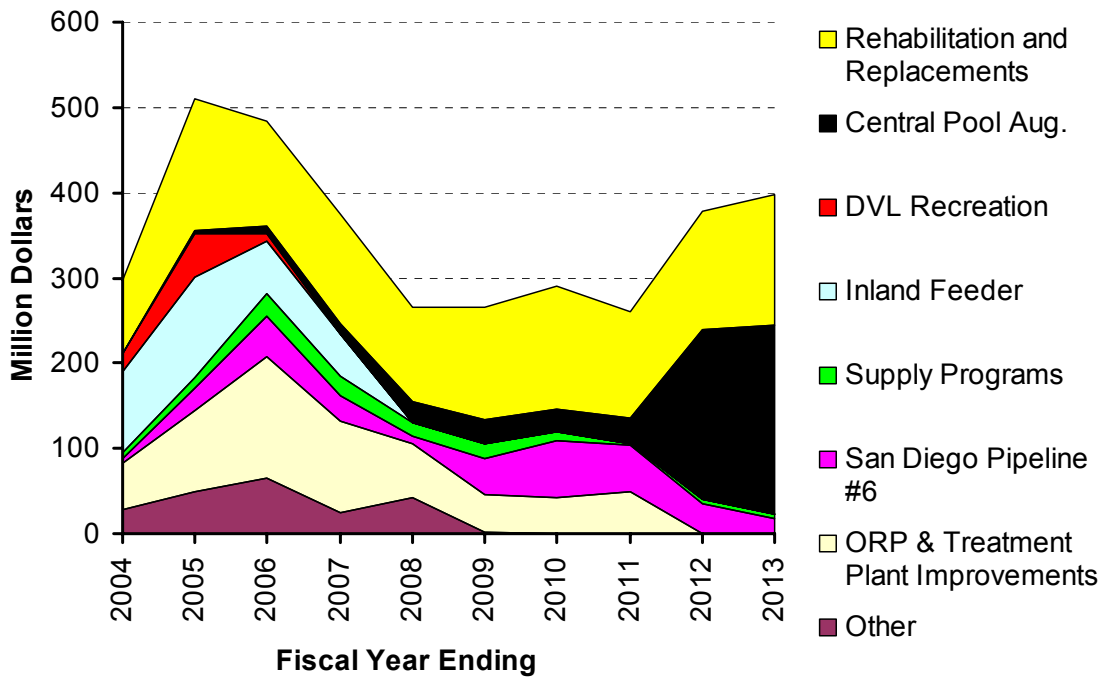
## Capital Investment Plan

The Plan assumes that Metropolitan will fund additional construction costs totaling over \$3.5 billion from 2003/04 through 2012/13. These costs will be incurred to both maintain the existing system through the replacement and refurbishment of ageing infrastructure and to improve the system's ability to meet Metropolitan's mission through the addition of new treatment technologies, additional conveyance, distribution, treatment and storage capacity. A detailed System Overview Study is underway that will further refine the timing and sizing of projects that will add system capacity.

In 2000, an Infrastructure Reliability and Protection Plan (IRPP) identified critical infrastructure that needed to be refurbished or replaced. In 2002, an asset replacement study was completed to formulate a financial policy for funding refurbishments and replacements (R&R). The Asset Replacement Study estimated that the cost of replacing and refurbishing existing infrastructure is about \$12 billion. The estimated cost of R&R projects through 2012/2013 is \$1.3 billion. Recognizing the need for maintaining the integrity of the system, in 2002 at the conclusion of the Asset Replacement Study, the Board approved an R&R funding policy of increasing the annual operating revenue deposit to the PAYG fund by \$5 million per year. PAYG is an appropriate funding source for R&R projects as existing users pay for the replacement and refurbishment of facilities they have used and continue to use.

Major system improvements (new capacity and improvements needed to meet regulatory requirements) identified in the CIP from 2003/04 through 2012/13 total about \$2.2 billion. These improvements include the remaining work on the Inland Feeder Project (\$320.6 million), the Oxidation Retrofit and other treatment plant Improvements (\$601.1 million), San Diego Pipeline Number 6 (\$334.5 million), Central Pool Augmentation Tunnel and Pipeline (\$553.0 million), capital costs and up-front payments for Colorado River storage programs, in-basin groundwater conjunctive use programs and water transfer and exchange programs (\$124.4 million), Diamond Valley Lake Recreation Program (\$83.3 million) and other improvements (\$210.2 million). Figure 3 summarizes Metropolitan's CIP by the major programs.

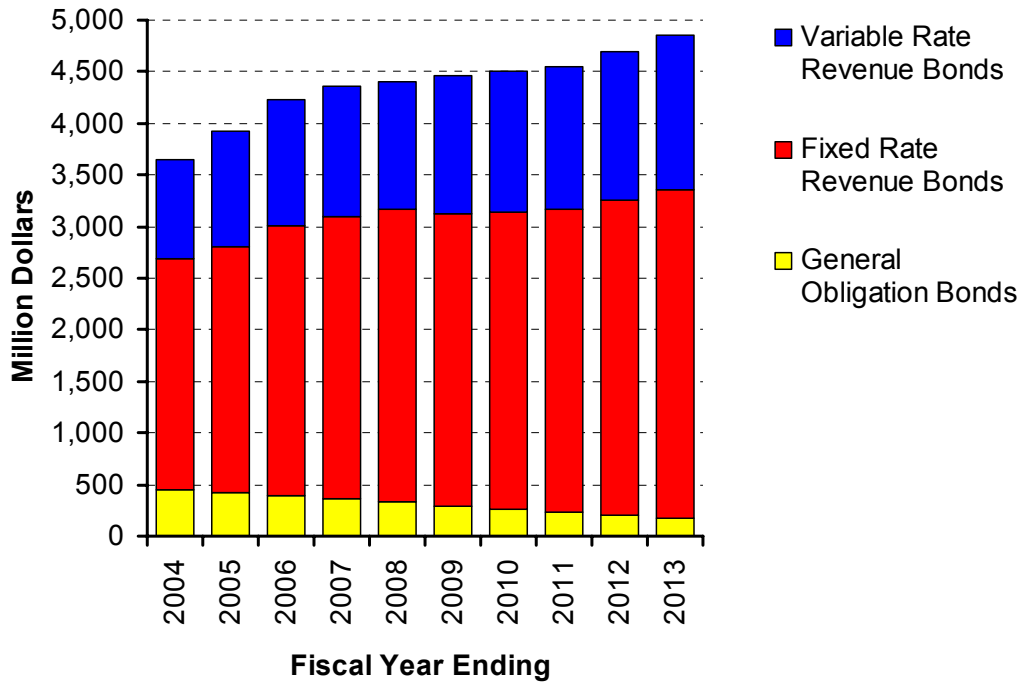
**Figure 3. 2003/04 Capital Investment Plan**



**Capital Financing Program**

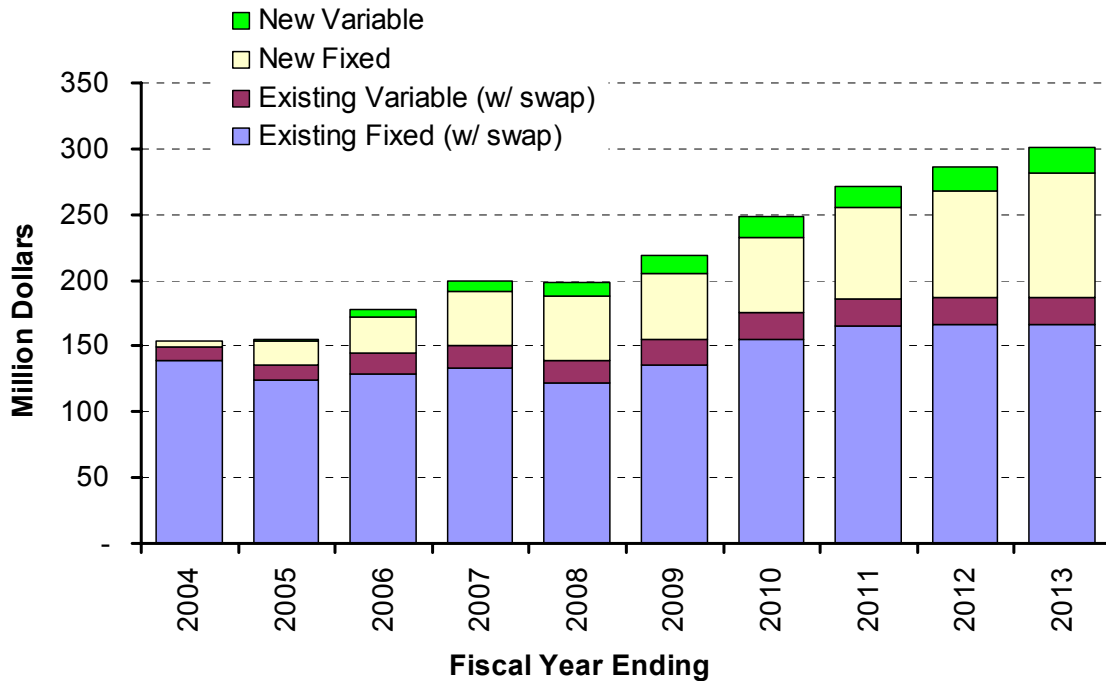
Metropolitan uses a combination of debt and current operating revenues (PAYG) to fund the CIP. As of June 30, 2003 Metropolitan's outstanding debt totaled \$3.5 billion. By 2012/13, outstanding debt will be about \$4.9 billion as illustrated in Figure 4. Fixed rate water revenue bonds will account for the majority of this total at \$3.2 billion and variable revenue bonds will account for \$1.5 billion. The assumed debt structure is consistent with the current policy of maintaining variable rate debt to 32 percent of outstanding water revenue bonds. The Plan assumes that no additional general obligation (G.O.) bonds will be issued. Currently outstanding G.O. bonds will continue to mature over this period decreasing G.O. bond debt to \$170.4 million of the total.

**Figure 4. Outstanding Debt**



Revenue Bond debt service costs are projected to increase from \$153.5 million in 2003/04 to \$300.7 million by 2012/13 as Metropolitan funds about \$2.2 billion of the CIP from bond proceeds. Because variable interest rates tend to be lower than fixed rates a mix of fixed rate debt and variable rate debt will be issued to help manage debt service costs. The forecast assumes that fixed rates trend at 5.0 percent and variable rates increase from 1.25 percent currently to the five-year rolling average of 2.68 percent through 2012/13. If variable and long-term rates were to rise by 1 percentage point in January of 2005 and remain at that level through 2012/13 the total net increase (after accounting for increased interest income from the investment portfolio) in Metropolitan’s debt service cost through 2012/13 would be \$16.3 million higher or about \$1.8 million per year. A discussion of how Metropolitan mitigates interest rate risk is included in the following section on risk and uncertainty. Figure 5 illustrates the expected trend in revenue bond debt service costs.

**Figure 5. Revenue Bond Debt Service Costs**

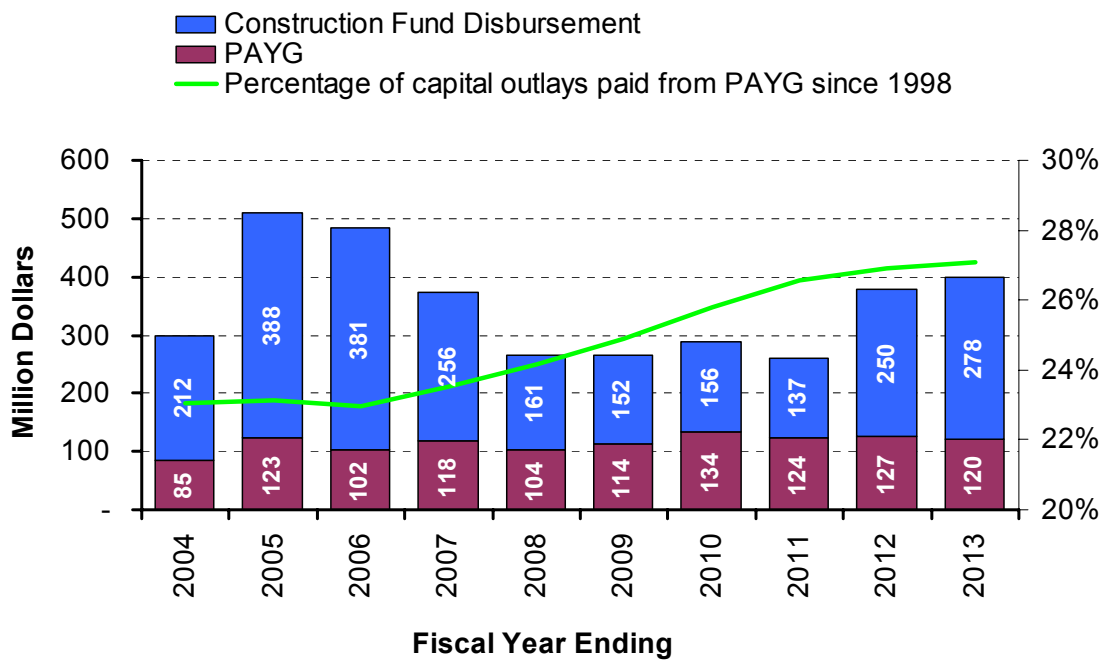


Consistent with the Board's June 2000 action to defease \$84.6 million in debt and use the savings to retire additional debt in subsequent years the Plan assumes that Metropolitan will continue to defease debt ranging from \$21 million to \$24.7 million per year until 2005/2006. In the event that actual conditions result in reserve funds over the maximum reserve level the Board may take action to apply these funds toward further bond defeasance activity to lower long-term annual debt service costs and mitigate future rate increases.

Metropolitan has historically used about \$90 million per year of current operating revenues (PAYG) to finance a portion of annual capital costs. This practice has helped to limit the amount of total outstanding debt and improve financial ratios, such as fixed charge coverage, by keeping debt service costs below what they would have been without the PAYG funding. Recognizing the importance of maintaining the ageing infrastructure that makes up Metropolitan's system, in June of 2002, the Board revised the PAYG policy so that the PAYG amount included in the annual revenue requirement reflects the replacement and refurbishment of the infrastructure that makes up the system. In adopting the revised policy the Board approved a plan to increase the annual PAYG by \$5 million per year. The Plan therefore assumes operating revenues deposited to the PAYG fund will increase by \$5 million per year from \$95 million in fiscal year 2003/04 to \$140 million by 2012/13. An asset replacement study was conducted to support the change in the PAYG policy. The study concluded that the current non-depreciated replacement cost of the system is over \$12 billion (not including land).

Since 1988/89 about 23 percent of total capital expenditures have been financed by PAYG. It is estimated that by 2012/13, about 27 percent of total capital expenditures since 1988/89 will have been funded from PAYG. The amount of PAYG funding is consistent with other large water utility operations. A 1997 survey determined that PAYG funding amounts ranged anywhere from 10 percent to 55 percent of total capital outlays (MWD/MA Finance Work Group Survey – March 1997). Figure 6 illustrates the mix of debt and PAYG funding for the CIP and the expected trend in PAYG funding as a percent of total capital outlays since 1988.

**Figure 6. Debt and PAYG Funding of the CIP**



**Operations and Maintenance Costs**

Operations and Maintenance costs (O&M) includes labor, professional services, non-professional services, materials and supplies and other O&M costs for each of the groups that make up Metropolitan's organizational structure. O&M costs in 2012/13 are projected to be \$364 million. This represents an expected total increase of about \$78 million or about 3.0 percent per year from 2003/04 budgeted O&M costs of \$286 million. This increase reflects regional inflationary trends.

Since 1999/2000, O&M costs have increased by \$89 million to \$286 million in 2003/04. This is an annual average increase of over 13 percent. This rise in O&M costs is a result of increased variable treatment costs, an effort to fill vacant positions and rising labor costs. During this same period the annual average trend in inflation was about 3 percent.

One of the recommendations contained in this Plan is to limit the annual increase in fixed O&M costs (total O&M budget less variable treatment costs) to no more than the five-year rolling average change in the Los Angeles/Orange/Riverside Counties Consumer Price Index. To manage operating and maintenance cost increases within this goal, management will focus on workforce training, the use of technology to increase productivity, and improvements in current business processes.

Since 1999/2000, a significant portion of the increase in O&M costs is due to changes in drinking water standards, increased volumes of treated water and a change in mix of State Water Project and Colorado River supplies. These factors resulted in increased need for chemicals used in the treatment processes and increased production of sludge. During this period low cost sludge disposal alternatives were no longer available and chemical prices increased. About \$24.6 million of the total increase in O&M is due to increased variable treatment costs. The Plan assumes that ozone is implemented as the primary treatment technology at all five of Metropolitan's treatment plants.

### Fund activity

Metropolitan is required to maintain certain restricted reserves per bond covenants and board policies. At the end of each fiscal year transfers are made to or from these funds depending on their required balance. These funds include the revenue bond interest and principal funds (debt service sinking funds), the Operations and Maintenance fund, the State Water Contract fund, the Revenue Remainder fund and the PAYG fund. As costs rise and additional debt is issued these fund requirements will increase. Through 2012/13 the annual increase in required reserves averages \$5.8 million. To mitigate projected rate increases the Plan assumes that over \$370 million will be used from the Water Transfer Fund and Rate Stabilization Fund by 2012/13. Table 1 includes a summary of uses of funds through 2012/13.

**Table 1. Uses and Sources of Funds**

<b>Fiscal Year Ending</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>USES OF FUNDS</b>										
<b>Expenditures</b>										
State Water Contract	374.1	361.1	377.6	392.2	400.6	409.0	414.1	419.8	427.3	412.4
Supply Programs	102.4	80.4	31.0	27.1	26.1	25.4	25.0	25.1	24.6	25.4
Colorado River Power Costs	17.2	28.3	23.5	22.9	25.2	25.2	21.7	19.0	21.5	24.7
Debt Service and Cash Defeasance	225.1	227.6	251.4	248.2	247.8	268.7	297.1	311.4	328.9	342.1
Demand Management Costs	43.8	47.9	51.2	53.7	75.1	75.7	82.7	85.6	87.2	89.8
Departmental O&M	234.3	244.9	252.4	260.1	268.0	276.2	284.6	293.2	302.2	311.4
Treatment O&M	36.5	27.9	28.3	27.5	27.3	28.1	26.8	27.6	28.7	28.0
Other O&M	15.3	16.4	17.3	20.5	21.8	20.4	21.7	23.4	24.2	24.9
<b>Sub-total Expenditures</b>	<b>1,048.7</b>	<b>1,034.6</b>	<b>1,032.6</b>	<b>1,052.4</b>	<b>1,092.0</b>	<b>1,128.6</b>	<b>1,173.8</b>	<b>1,205.4</b>	<b>1,244.6</b>	<b>1,258.8</b>
<b>Capital Investment Plan</b>	302.0	297.4	511.1	483.4	374.3	265.1	266.2	289.6	261.3	377.8
<b>Fund Deposits</b>										
Deposit to Water Transfer Fund	45.0	-	-	-	-	-	-	-	-	-
Deposit to PAYG Fund	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0	135.0	140.0
Increase Reserves	4.1	18.7	34.1	21.3	2.9	30.5	26.8	33.1	46.7	69.2
<b>Sub-total Fund Deposits</b>	<b>144.1</b>	<b>118.7</b>	<b>139.1</b>	<b>131.3</b>	<b>117.9</b>	<b>150.5</b>	<b>151.8</b>	<b>163.1</b>	<b>181.7</b>	<b>209.2</b>
<b>Member Agency Credit</b>	-	-	-	-	-	-	-	-	-	-
<b>TOTAL USES OF FUNDS</b>	<b>1,490.2</b>	<b>1,664.5</b>	<b>1,655.1</b>	<b>1,558.0</b>	<b>1,475.0</b>	<b>1,545.3</b>	<b>1,615.2</b>	<b>1,629.7</b>	<b>1,804.1</b>	<b>1,866.2</b>

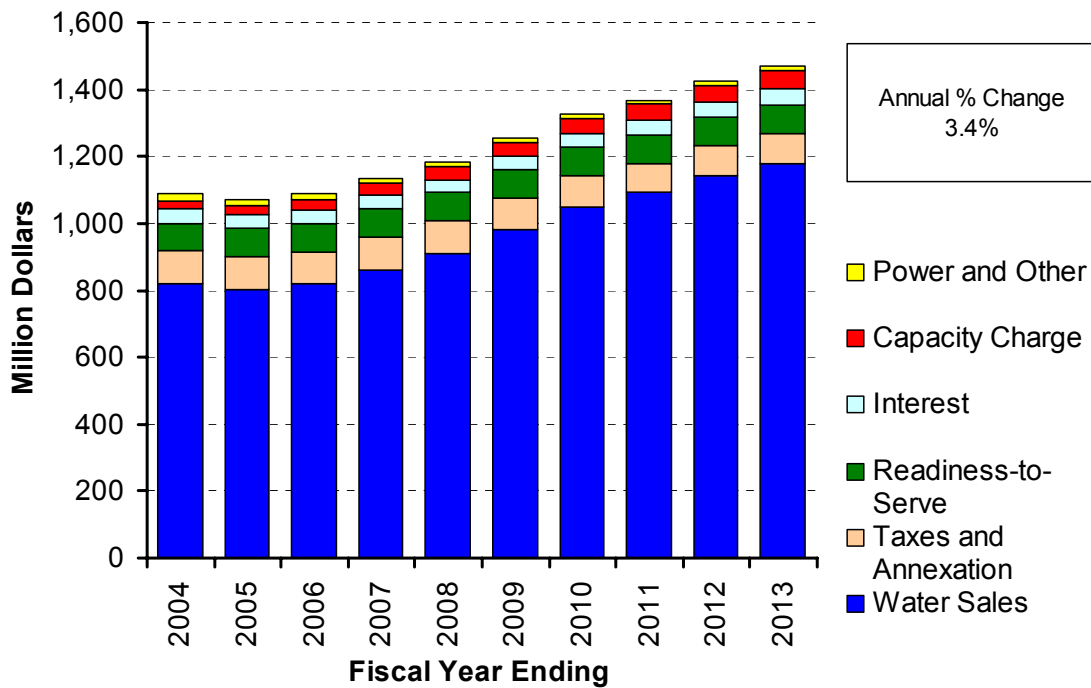


<b>Fiscal Year Ending</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>SOURCES OF FUNDS</b>										
<b>Receipts</b>										
Taxes & Annexation Fees	98.0	97.4	97.0	96.7	96.6	97.5	96.2	86.6	89.0	87.2
Interest, Power and Miscellaneous	67.9	55.3	54.6	53.7	50.7	50.7	52.2	54.6	57.6	62.2
Fixed Charges	102.5	114.9	117.2	120.3	123.5	126.6	129.8	132.9	136.1	139.2
Water Sales Revenue	821.9	802.4	818.1	862.6	911.1	979.5	1,047.4	1,094.3	1,143.6	1,179.4
<b>Sub-total Receipts</b>	<b>1,090.4</b>	<b>1,070.0</b>	<b>1,086.9</b>	<b>1,133.3</b>	<b>1,181.9</b>	<b>1,254.3</b>	<b>1,325.6</b>	<b>1,368.4</b>	<b>1,426.3</b>	<b>1,468.0</b>
<b>Fund Withdrawals</b>										
Transfer Fund	102.4	44.5	-	-	-	-	-	-	-	-
PAYG Funds for Construction	85.5	123.1	102.0	118.5	104.2	114.5	133.7	123.9	127.4	120.5
Bond Funds for Construction	212.0	388.0	381.4	255.8	160.9	151.7	155.9	137.4	250.3	277.8
Decrease in Reserves	-	38.8	84.8	50.4	28.1	24.8	-	-	-	-
<b>Sub-total Fund Withdrawals</b>	<b>399.8</b>	<b>594.4</b>	<b>568.2</b>	<b>424.7</b>	<b>293.2</b>	<b>291.0</b>	<b>289.6</b>	<b>261.3</b>	<b>377.8</b>	<b>398.2</b>
<b>TOTAL SOURCES OF FUNDS</b>	<b>1,490.2</b>	<b>1,664.5</b>	<b>1,655.1</b>	<b>1,558.0</b>	<b>1,475.0</b>	<b>1,545.3</b>	<b>1,615.2</b>	<b>1,629.7</b>	<b>1,804.1</b>	<b>1,866.2</b>
<b>CASH YEAR WATER SALES (AF)</b>	<b>2.22</b>	<b>2.18</b>	<b>2.12</b>	<b>2.10</b>	<b>2.02</b>	<b>2.03</b>	<b>2.05</b>	<b>2.06</b>	<b>2.10</b>	<b>2.13</b>
<b>RATIOS</b>										
<b>Fixed Charge Coverage</b>	1.20	1.20	1.30	1.20	1.30	1.30	1.40	1.40	1.40	1.50
<b>Revenue Bond Coverage</b>	2.60	2.50	2.20	2.10	2.10	2.20	2.20	2.10	2.10	2.10
<b>Var. Rate Debt as % of Rev. Bond Debt</b>	30%	32%	32%	32%	30%	32%	32%	32%	32%	32%

**Sources of Funds**

Metropolitan relies on revenue from property taxes, interest income, hydroelectric power, other miscellaneous sources and rates and charges to fund its expenditures, CIP and other obligations such as fund deposits. Through 2012/13, receipts from rates and charges collected from the member agencies accounts for 73 percent of the total sources of funds with the remainder being made up by other sources. It is expected that fund withdrawals will also be used to stabilize revenues during periods of low sales and to mitigate rate increases. Total receipts are projected to increase by over \$377 million from about \$1.09 billion in 2003/04 to \$1.47 billion in 2012/13. This increase is almost entirely attributed to an increase in water rate revenue. Figure 7 illustrates the general trends in receipts.

**Figure 7. Receipts**



**Other Revenues**

**Property taxes**

Metropolitan is empowered under the Metropolitan Water District Act to levy and collect taxes within its boundaries for the purpose of carrying on its operations and paying debt service obligations on voter approved indebtedness. Metropolitan currently levies a property tax of 0.0061 percent of assessed valuation to recover debt service costs on outstanding general obligation bonds and to pay a portion of its financial commitment to the State Water Project. Property tax revenues are expected to be \$99.3 million in 2003/04. By 2012/13 property tax revenues are expected to

decrease to \$87.2 million per year as General Obligation bonds are retired. The Plan assumes that Metropolitan does not issue any additional G.O. bonds and that the property tax rate continues to decline as Metropolitan's outstanding G.O bond debt matures.

### **Interest income**

Metropolitan earns interest on its investment portfolio and uses this income to reduce the costs that must be recovered by rates and charges. For fiscal year 2003/04 interest income is expected to be \$42.9 million. This assumes an average yield of 4.6 percent on a total portfolio of about \$1.03 billion. Interest income is expected to average about 49.3 this period and a total average portfolio balance of about \$1.06 billion. The investment portfolio also acts as a partial hedge against changes in interest rates on Metropolitan's variable rate debt obligations. Interest income will vary over the next ten-year period as interest rates and cash balances available for investments will fluctuate.

### **Hydroelectric power sales**

Sales of power from sixteen small hydroelectric power plants contribute about \$13 million per year. Hydroelectric sales fluctuate with the amount of water delivered through the system and have historically ranged from \$9 million to \$21 million. The Plan assumes that hydropower revenues average about \$13 million per year through 2012/13 due to new contracts for hydropower sales with price terms that are not as favorable as previous arrangements. This assumption reflects total normal system flows of about 2.1 million acre-feet per year and expected market rates for hydropower.

### **Grant funding**

Metropolitan regularly seeks federal, state and other grant funds. Grant funds are used to offset costs that otherwise would be recovered by the rates and charges. In 2001/02 Metropolitan received a total of about \$2.6 million in grant funds. Of this total about \$1.2 million was received from federal agencies such as the Federal Emergency Management Agency for reimbursement of emergency system repairs, U.S. Bureau of Reclamation for support of conservation projects and U.S. Environmental Protection Agency for water quality and treatment research and desalination research.

State grant funding of about \$1.2 million was also received in 2001/02. State grant funds were used in support of projects like the Hayfield Conjunctive Use Storage Program on the CRA. Additional state grants from Proposition 13, a voter approved water bond measure, are available to Metropolitan for conjunctive use projects on the CRA. The use of these funds is not factored into the Plan as a reduction in the cost of these programs that Metropolitan has to recover through its rates and charges. State grants from Proposition 50, passed by the voters in November 2002, may also be available to Metropolitan for such purposes as the implementation of treatment technologies to meet drinking water standards and the development of groundwater conjunctive use projects. Because very little information is currently available on the availability, amount and timing of these grant funds the Plan does not assume their use

at this time. As these grants become available they will be factored into the Plan as reductions in the amount of cost recovered through rates and charges.

## Rates and Charges Revenue

Metropolitan recently implemented a new rate structure. The new rates and charges became effective January 1, 2003. The new rate structure incorporates several important changes that improve Metropolitan's financial strength.

- The water rate was unbundled to facilitate a water transfer market. By pricing services for the use of system conveyance capacity separately from supply, a clear price signal is created. Because all users of Metropolitan's system are charged equally for using system capacity, Metropolitan's member agencies can now make an economic choice between supplies provided by Metropolitan or some other source. In addition, Metropolitan is compensated for the use of system capacity used to move non-Metropolitan supplies. This change has helped reduce the debate over "wheeling" within Metropolitan's system.
- Tiered pricing of supply was implemented to encourage efficient resource management and recover proportionally more cost from agencies with growing demands for imported water, thereby addressing long-standing equity issues among Metropolitan's member agencies.
- A peaking charge (capacity charge) was included in the rate design to encourage member agencies to reduce the peak day and summer season demands they place on the system. By placing a greater financial burden on member agencies with the higher peak demands customer equity is improved. Additionally, Metropolitan's cost for building additional peak capacity is reduced and/or deferred over the long term as local agencies are encouraged to invest in local resources and infrastructure that helps reduce peak loads on Metropolitan's system.
- A financial commitment to Metropolitan from the member agencies was secured through a Purchase Order. All but two of Metropolitan's 26 member agencies have submitted Purchase Orders for Metropolitan supplies. This represents a commitment by the member agencies to purchase at least 12.3 million acre-feet from Metropolitan through the year 2012. As a water transfer market continues to develop it is important for Metropolitan to secure commitments from its customers as it makes long-term investments in additional water supplies to maintain the region's water supply reliability. The Purchase Order, which has a ten-year term, serves this purpose. A member agency that elects to submit a Purchase Order commits to purchase at least ten times 60 percent of its highest annual demand over the ten-year period. If the agency does not purchase at least this amount over the ten-year period any remaining balance is charged the average Tier 1 Supply Rate over the term of the Purchase Order. In exchange for this commitment the member agency may purchase up to 90 percent of its highest annual demand at the lower Tier 1 Supply Rate. Additional demands are charged

the higher Tier 2 Supply Rate. Member agencies that elect not to submit a Purchase Order may only purchase up to 60 percent of their highest annual demand at the lower rate. Purchases in excess of the 60 percent are charged the higher rate. The Purchase Order provides a financial commitment to Metropolitan without placing too much risk on individual member agencies. The two agencies that did not submit a Purchase Order do not routinely take enough water from Metropolitan to justify a Purchase Order.

### **Cost of Service Process**

To determine the various rates and charges, Metropolitan's costs are analyzed through a cost of service process. The cost of service process groups costs into major service functions and then sorts costs by the purposes that they were incurred to serve. The general cost of service process involves the four basic steps outlined below.

#### **Step 1 - Identification of Service Function Costs**

In the functional allocation step, costs are allocated to different categories based on operational functions. The functional categories are identified in such a way as to allow the development of logical allocation bases. The functional categories used in the cost of service process include:

- Supply - maintaining and developing reliable water supplies (e.g. investments in conjunctive use groundwater storage or water transfers)
- Conveyance and Aqueduct - conveying water to Southern California through the SWP, CRA and other related facilities.
- Storage - storage of supplies within Metropolitan's system
- Treatment - treatment of imported water supplies by Metropolitan's five treatment plants
- Distribution - distributing water throughout Metropolitan's service area
- Demand Management - reducing the demand for imported water through the development of local supplies and conservation
- Administrative and General - operations and maintenance support functions (e.g. human resources, legal, etc.)
- Hydroelectric - operation of 16 hydroelectric facilities throughout the service area

#### **Step 2 - Development of Revenue Requirements**

In the revenue requirement step, the costs that Metropolitan must recover through rates and charges, after consideration of other revenues, are identified. In this step other revenues such as property taxes, interest income and hydropower revenues are

allocated among the various service functions, reducing the amount of costs recovered by the rates and charges.

### Step 3 - Classification of Costs

In the cost classification step, functionalized costs are separated into categories according to their causes and behavioral characteristics. Costs incurred to meet average demands are identified separately from costs incurred to meet peak demands.

### Step 4 - Allocation of Costs to Rate Design Elements

The allocation of costs to the rate design elements depends on the purpose for which the cost was incurred and the manner in which the member agencies use the Metropolitan system. In general, costs incurred to meet average system demands are recovered by dollar per acre-foot rates and are therefore allocated to the member agencies based on the volume of water purchased by each agency. Costs incurred to meet peak demands are recovered through a peaking charge and therefore allocated to the member agencies based on peak demand behavior. Costs incurred to provide standby service in the event of an emergency are recovered through a fixed charge allocated on the basis of an average expected need for emergency service.

The rates and charges revenues are discussed below both in terms of volumetric revenues (revenue recovered by dollar per acre-foot unit rates that varies with the volume of water sold) and fixed revenues (revenue generated by fixed charges that does not vary with the volume of water sold) as well as each of the rates and charges that make up the new rate structure.

### **Volumetric revenues**

Total volumetric revenues (i.e. water sales revenues) are expected to increase from \$825 million in 2003/04 to \$1.18 billion in 2012/13. Over this same period water sales (acre-feet) are expected to decrease about 90,000 acre-feet. A further discussion of water sales is included later in this section. Volumetric revenues include the components of the rate structure that are charged to the member agencies on a dollar per acre-foot basis. These components are:

- **Tier 1 and Tier 2 Water Supply Rates** - The Tier 1 Supply Rate is currently \$73 per acre-foot and the Tier 2 Supply Rate is currently \$154 per acre-foot. The Tier 1 and Tier 2 Supply Rates recover Metropolitan's water supply costs. The Tier 2 Supply Rate reflects Metropolitan's cost of acquiring new supplies. A member agency with a Purchase Order will be charged the Tier 2 Supply Rate for water purchases in excess of 90 percent of its base demand for member agencies with a Purchase Order and 60 percent of a member agency's base demand for member agencies without a Purchase Order. The Tier 1 Supply Rate is set to recover the remaining supply costs after accounting for

revenues from the Tier 2 Supply Rate and a proportional amount of revenue from the Long-term Seasonal Storage Service Program and the Interim Agricultural Water Program. As Metropolitan continues to develop supplies, the Tier 1 Supply Rate is expected to increase from its current level of \$73 per acre-foot to \$100 per acre-foot by 2013. The average annual change in the Tier 1 Supply Rate over the ten-year Plan horizon is 3.6 percent. As the cost of developing additional supply changes the Tier 2 Supply rate will be adjusted as well. The Plan assumes that the cost of developing additional supplies increases by \$27 per acre-foot over the next ten years. This is equivalent to an average annual increase of 1.8 percent.

- **System Access Rate** - The system access rate recovers the allocated capital financing costs and operations and maintenance costs for system conveyance and distribution capacity used to meet average system demands. It is currently set at \$141 per acre-foot with an increase to \$163 per acre-foot set to take effect in January of 2004. As system capacity is expanded to meet growing demands and aging pipelines, canals and aqueducts are replaced and rehabilitated the system access rate is expected to increase \$49 per acre-foot by 2013 to \$212 per acre-foot. This represents an average increase of 3.0 percent per year
- **Water Stewardship Rate** - The water stewardship rate currently recovers the cost of Metropolitan's investments in demand management such as the LRP and Conservation Credits Program. The Plan assumes that the Water Stewardship Rate increases to recover the costs of Metropolitan's support for additional recycling, groundwater recovery and desalination as set forth in revised goals for these programs defined in the IRP update. The water stewardship rate is currently set at \$23 per acre-foot with a scheduled increase to \$30 per acre-foot set to take effect in January of 2004. The water stewardship rate is expected to increase by \$21 per acre-foot by 2013 to a total of \$51 per acre-foot. This is equivalent to a 6.1 percent per year average increase.
- **System Power Rate** - The system power rate recovers the cost of energy used for pumping on the State Water Project and the Colorado River Aqueduct. The system power rate is currently \$89 per acre-foot. The system power rate is projected to decrease in the near term as energy prices return to normal levels following the instability in California's energy market during 2001. The system power rate is set to decrease to \$60 per acre-foot in January of 2004. However, energy costs are projected to rise into the future and the system power rate is therefore expected to increase back to \$94 per acre-foot by 2013. This represents an annual average change of 5.1 percent.
- **Treatment Surcharge** - Metropolitan provides treated water service through five treatment plants located throughout the service area. On average about 70 percent of the water sold by Metropolitan is treated. The Treatment Surcharge recovers the cost of providing treated water service, which is currently at \$82 per acre-foot with a scheduled increase to \$90 per acre-foot in

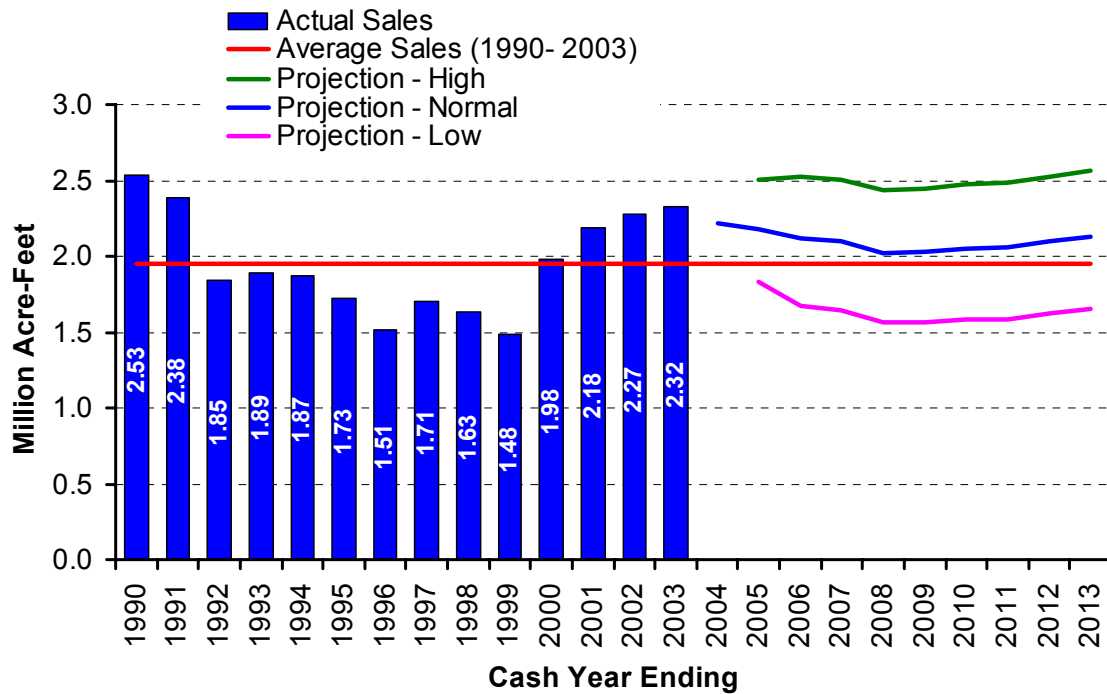
January of 2004. Increases in variable treatment cost, allocated operations and maintenance costs, rehabilitation and replacement of treatment plant facilities and treatment plant improvements such as the Oxidation Retrofit Program are all adding upward pressure to the treatment surcharge. The Treatment Surcharge is expected to increase by \$101 per acre-foot to \$193 per acre-foot by 2013. This represents an average annual increase of 7.4 percent.

### **Water Sales**

Volumetric revenues are directly related to water sales. Water sales for 2002/03 were about 2.3 million acre-feet. The Plan assumes that water sales will return to average levels expected under normal weather conditions. Average sales since 1989/90 were 1.95 million acre-feet. Sales have ranged from a high of over 2.5 million acre-feet at the height of the 1987-1992 drought to a low of 1.5 million acre-feet during the wet El Nino years of 1995 and 1998. The long-term sales forecast is derived from the IRP assumptions and therefore accounts for structural factors such as expected changes in the retail demand for water and the planned development of additional local supplies. The sales forecast assumes aggressive schedules of local supply development as provided by the member agencies. In general, average total water sales are not forecasted to increase significantly over the next ten years. Water sales in fiscal year 2012/13 are estimated to be about 2.1 million acre-feet. Although the rate forecast is based on normal weather and hydrology the Plan recognizes that water sales vary significantly from year to year. The following section on risk and uncertainty discusses the variability of water sales and how this uncertainty is managed. Figure 8 illustrates past and future water sales trends including the range in sales due to weather.



**Figure 8. Water Sales Trends**

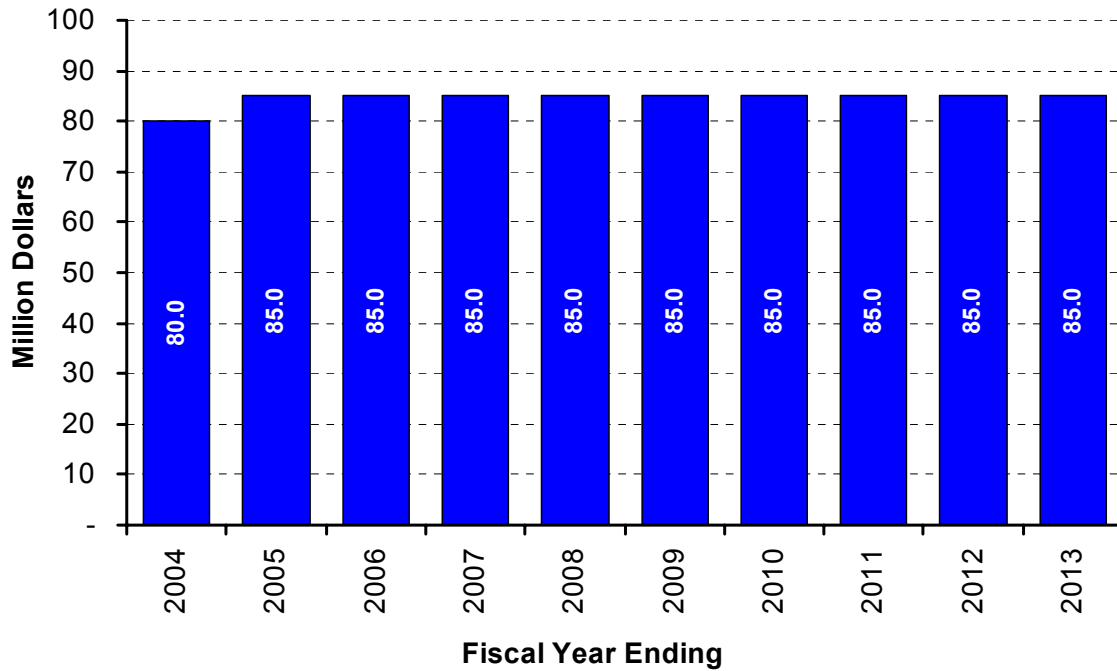


**Fixed Charge Revenues**

Fixed charge revenues are paid to Metropolitan regardless of the amount of water the member agencies purchase in a particular year and therefore reduce the variability in Metropolitan's annual water sales revenues caused by hydrology. The Plan assumes that fixed charge revenues will increase from about \$102.5 million in 2003/04 to about \$139.2 million in 2012/13. Fixed charge revenues include the Readiness-to-serve charge and the Capacity Charge.

- Readiness-to-serve charge** - The Readiness-to-serve charge (RTS) recovers the cost of system emergency storage and conveyance and distribution standby costs not paid by property taxes. The RTS is allocated to member agencies on the basis of a ten-year rolling average of firm (non-interruptible) deliveries. This charge is expected to generate about \$80 million in fiscal year 2003/04. The Plan assumes that the RTS is increased by \$5 million by 2012/13. Over the ten-year plan horizon this is equivalent to an average annual increase of 0.7 percent. Twenty-two of Metropolitan's twenty-six member agencies elect to have Metropolitan recover a portion of their RTS obligation directly from property owners through a per parcel Standby Charge. Metropolitan's Standby Charge recovers \$42 million each year. The Plan assumes that these agencies will continue to use the Standby Charge as a means of recovering a portion of their RTS obligation. Figure 9 illustrates the expected RTS.

**Figure 9. Readiness-to-Serve Charge**



- Capacity Charge** - The Capacity Charge recovers the cost of distribution capacity used to meet peak day demands. Member agencies request an amount of capacity in cubic feet per second (cfs) required to meet peak day demands. The Capacity Charge is a fixed obligation of the member agency and, therefore, a fixed revenue source for Metropolitan. Effective January 1, 2004, the Capacity Charge is \$6,100 per cfs. By 2013, the Capacity Charge is expected to be \$12,400 per cfs and generate about \$55.8 million annually. The Capacity Charge is levied on the maximum day firm demand for the summer months of May through September for the past three years. Figure 10 illustrates the expected steady increase in the Capacity Charge in dollars per cubic foot second read on the left axis and in millions of dollars of revenue read on the right axis.

**Figure 10. Capacity Charge**

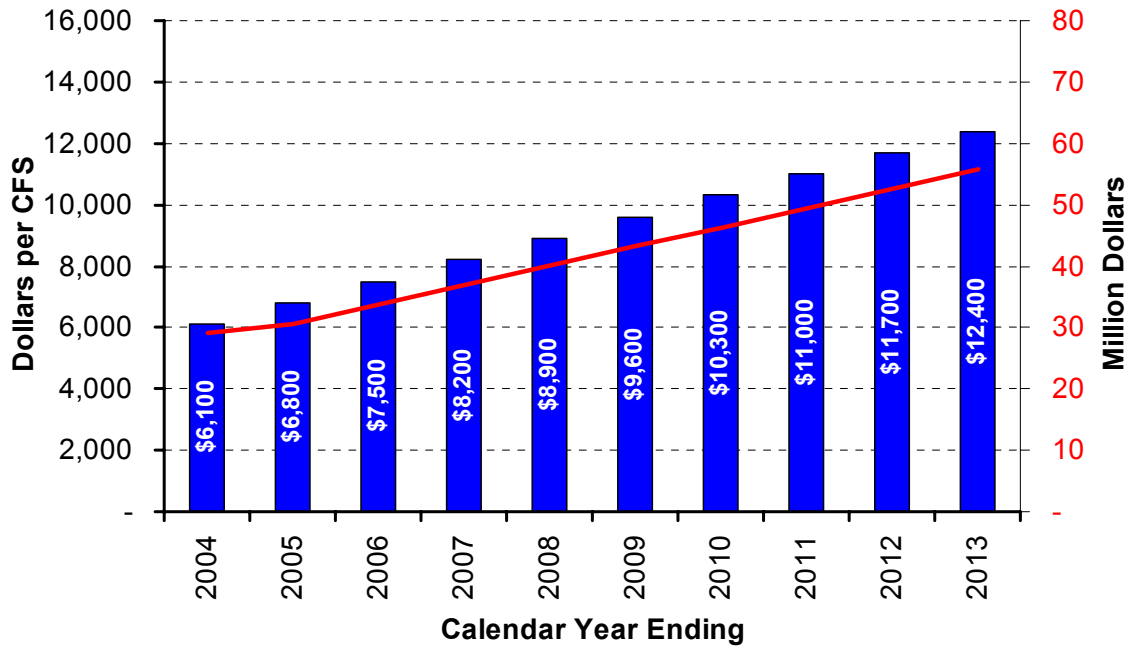


Table 2 provides a forecast of the rates and charges necessary to fund the forecasted uses of funds outlined in the Plan assuming a long-term trend in sales with relatively aggressive rates for the development of additional local resources. Table 3 provides an alternative rate forecast that assumes sales are 200,000 acre-feet higher by 2012/2013 due to a slower rate of growth in local resources development. The rate of local resources development is one of the most critical assumptions influencing the water rate forecast and, as part of on-going collaborative planning efforts between Metropolitan and the member agencies, should be carefully reviewed by the member agencies for its reasonableness.

**Table 2. Rates and Charges**

Rates and Charges Effective January 1st	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tier 1 Supply Rate (\$/AF)	\$73	\$73	\$73	\$77	\$83	\$87	\$90	\$95	\$99	\$99	\$100
Tier 2 Supply Rate (\$/AF)	\$154	\$154	\$154	\$158	\$164	\$168	\$171	\$176	\$180	\$180	\$181
System Access Rate (\$/AF)	\$141	\$163	\$163	\$164	\$172	\$179	\$191	\$201	\$205	\$208	\$212
Water Stewardship Rate (\$/AF)	\$23	\$30	\$30	\$30	\$31	\$45	\$45	\$49	\$50	\$50	\$51
System Power Rate (\$/AF)	\$89	\$60	\$65	\$71	\$82	\$88	\$93	\$93	\$93	\$94	\$94
Full Service Untreated Volumetric Cost (\$/AF)											
Tier 1	\$326	\$326	\$331	\$342	\$368	\$399	\$419	\$438	\$447	\$451	\$457
Tier 2	\$407	\$407	\$412	\$423	\$449	\$480	\$500	\$519	\$528	\$532	\$538
Replenishment Water Rate Untreated (\$/AF)	\$233	\$233	\$238	\$249	\$275	\$306	\$326	\$345	\$354	\$358	\$364
Interim Agricultural Water Program Untreated (\$/AF)	\$236	\$236	\$241	\$252	\$278	\$309	\$329	\$348	\$357	\$361	\$367
Treatment Surcharge (\$/AF)	\$82	\$92	\$107	\$126	\$139	\$146	\$158	\$170	\$181	\$188	\$193
Full Service Treated Volumetric Cost (\$/AF)											
Tier 1	\$408	\$418	\$438	\$468	\$507	\$545	\$577	\$608	\$628	\$639	\$650
Tier 2	\$489	\$499	\$519	\$549	\$588	\$626	\$658	\$689	\$709	\$720	\$731
Treated Replenishment Water Rate (\$/AF)	\$290	\$300	\$322	\$348	\$384	\$420	\$448	\$473	\$487	\$496	\$504
Treated Interim Agricultural Water Program (\$/AF)	\$294	\$304	\$325	\$351	\$387	\$423	\$451	\$476	\$490	\$499	\$507
Readiness-to-Serve Charge (\$M)	\$80	\$80	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85
Capacity Charge (\$/cfs)	\$6,100	\$6,100	\$6,800	\$7,500	\$8,200	\$8,900	\$9,600	\$10,300	\$11,000	\$11,700	\$12,400

**Table 3. Rates and Charges – High Sales**

Rates and Charges Effective January 1st	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tier 1 Supply Rate (\$/AF)	\$73	\$73	\$73	\$74	\$80	\$83	\$86	\$90	\$92	\$92	\$93
Tier 2 Supply Rate (\$/AF)	\$154	\$154	\$154	\$155	\$161	\$164	\$167	\$171	\$173	\$173	\$174
System Access Rate (\$/AF)	\$141	\$163	\$163	\$163	\$167	\$172	\$182	\$189	\$192	\$192	\$197
Water Stewardship Rate (\$/AF)	\$23	\$30	\$30	\$30	\$30	\$43	\$43	\$46	\$47	\$47	\$47
System Power Rate (\$/AF)	\$89	\$60	\$62	\$68	\$79	\$84	\$88	\$88	\$88	\$88	\$88
Full Service Untreated Volumetric Cost (\$/AF)											
Tier 1	\$326	\$326	\$328	\$335	\$356	\$382	\$399	\$413	\$419	\$419	\$425
Tier 2	\$407	\$407	\$409	\$416	\$437	\$463	\$480	\$494	\$500	\$500	\$506
Replenishment Water Rate Untreated (\$/AF)	\$233	\$233	\$235	\$242	\$263	\$289	\$306	\$320	\$326	\$326	\$332
Interim Agricultural Water Program Untreated (\$/AF)	\$236	\$236	\$238	\$245	\$266	\$292	\$309	\$323	\$329	\$329	\$335
Treatment Surcharge (\$/AF)	\$82	\$92	\$103	\$122	\$135	\$140	\$150	\$161	\$169	\$174	\$179
Full Service Treated Volumetric Cost (\$/AF)											
Tier 1	\$408	\$418	\$431	\$457	\$491	\$522	\$549	\$574	\$588	\$593	\$604
Tier 2	\$489	\$499	\$512	\$538	\$572	\$603	\$630	\$655	\$669	\$674	\$685
Treated Replenishment Water Rate (\$/AF)	\$290	\$300	\$315	\$338	\$369	\$398	\$422	\$441	\$450	\$454	\$462
Treated Interim Agricultural Water Program (\$/AF)	\$294	\$304	\$318	\$341	\$372	\$401	\$425	\$444	\$453	\$457	\$465
Readiness-to-Serve Charge (\$M)	\$80	\$80	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85
Capacity Charge (\$/cfs)	\$6,100	\$6,100	\$6,800	\$7,500	\$8,200	\$8,900	\$9,600	\$10,300	\$11,000	\$11,700	\$12,400

### **Financial Indicators**

Metropolitan regularly monitors various measures that indicate its financial strength and flexibility. The following discussion summarizes forecasted trends in these indicators that are a result of the Plan's estimated expenditures and receipts including assumed changes in rates and charges.

#### **Financial Ratios**

Financial ratios are key indicators commonly used by rating agencies and the investment community to measure a municipal utility's financial strength. Metropolitan's current policy sets forth goals of maintaining revenue bond debt service coverage of at least 2.00 times and fixed charge coverage of 1.2 times.

#### **Revenue bond debt service coverage**

Revenue bond debt service coverage is the primary indicator of credit quality, and is calculated by dividing net revenues by debt service, measuring the amount that net revenues exceed or "cover" debt service payments over a period of time. Higher coverage levels indicate a low likelihood of default and a greater margin of protection for bondholders. For example, a municipality with 2.00 times debt service coverage has twice the net operating revenues required to meet debt service payments. The Plan forecasts that Metropolitan's debt service coverage ratio averages 2.2X through 2013 ranging from a low of 2.0X to a high of 2.6X in 2003/04.

#### **Fixed charge coverage**

In addition to revenue bond debt service coverage, Metropolitan also measures total coverage of all fixed obligations after payment of operating expenditures. This additional measure is used primarily because of Metropolitan's unique recurring costs for the State Water Contract. Rating agency analysts expect that a financially sound utility consistently demonstrate an ability to comfortably fund all recurring costs, whether they are operating expenditures, debt service payments or other contractual payments. The Plan forecasts that Metropolitan's fixed charge coverage ratio averages 1.3X over through 2012/2013 ranging from a low of 1.2X to a high of 1.4X in 2012/2013. These levels indicate continued strong credit ratings for Metropolitan through 2012/13.

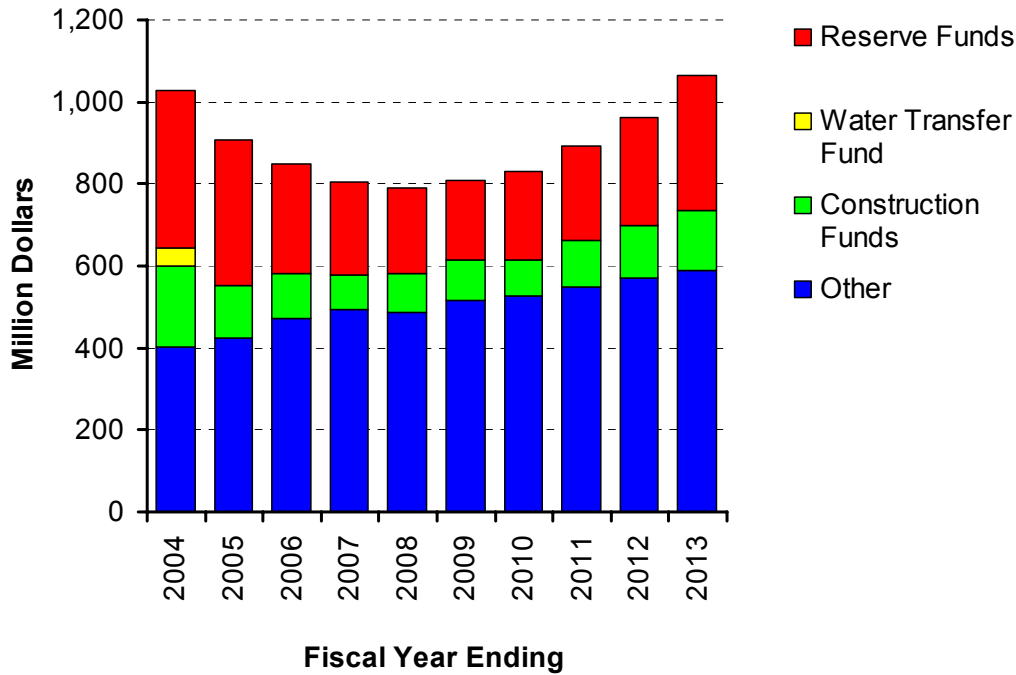
#### **Fund Levels**

Metropolitan's fund policies are generally formulated to meet requirements as set forth in bond covenants and by the Board. Most importantly the reserve fund policies provide Metropolitan with the ability to meet anticipated cash flow requirements, mitigate unanticipated cost increases or revenue decreases, therefore ensuring that rates and charges are stable and predictable. Minimum and maximum reserve levels govern rate stabilization reserves. The minimum and maximum reserve levels are determined by a formula which takes into account the variability in water sales, the amount of fixed costs recovered by volumetric rates and the duration of a period of low sales. As reserves decrease below the maximum reserve level Metropolitan's ability to mitigate for

unforeseen cost increases or decreases in water sales caused by wet weather is diminished.

The Plan anticipates using a total of about \$122 million of rate stabilization reserves in years 2003/04, 2004/05 and 2005/06 to mitigate rate increases. Rate increases for this period are significant even with the planned use of the rate stabilization funds. Total rate stabilization reserves are expected to decrease from an estimated level of \$375 million in 2002/03 to \$199 million by 2008/09. The use of these funds over this period will reduce Metropolitan's ability to mitigate unanticipated decreases in water sales or unforeseen cost increases. Total rate stabilization reserves are expected to increase from 2008/09 to about \$270 million by 2012/13. Figure 11 illustrates the expected trend in fund balances, including the initial use of rate stabilization funds to mitigate rate increases, the use of remaining water transfer fund balances and the steady increase in required fund balances (e.g. debt service reserve funds) as fixed costs continue to increase.

**Figure 11. Fund Balances**



## **Section 2. Risk Factors**

### ***Rates and Charges Stability and Predictability***

Under normal weather conditions Metropolitan, through the member agencies, currently provides over 50 percent of the water supply to almost 18 million people that live in the greater Southern California area. The cost of purchased imported water makes up a significant amount of the annual budget for not only Metropolitan's member agencies but also the many retail purveyors served by them. One of the greatest challenges is to maintain stable and predictable water rates and charges for imported water service. An unexpected increase in Metropolitan's water rates can cause substantial budget problems at the member agency and local agency level. Therefore, Metropolitan's financial policies are designed to insulate the member agencies and their customers from several risks. To maintain stable and predictable water rates Metropolitan uses long range financial planning to identify potential risks and uncertainties that may lead to unexpected or unmanageable water rate increases and to develop ways to mitigate these risks. This section identifies several risk factors that lead to uncertainty in the forecast of rates and charges. These risk factors include power cost variability, supply program cost variability and water sales variability. A fourth risk factor, changes in interest rates, is discussed in the following section on debt management.

#### **Power costs**

The annual energy requirement for pumping water to Southern California on the CRA and SWP is provided through cost based contracts with the Federal government, State Water Project facilities and wholesale power market purchases.

#### **CRA Power Costs**

To move an acre-foot of water to Southern California from the Colorado River requires about 2.0 megawatt hours (MWh) of energy. To supply electricity for this operation, Metropolitan relies on a set of contracts and ownership rights for generation and transmission (long-term contracts), which have a stable and predictable cost structure. These long-term contracts supply approximately 65 percent of the maximum energy requirement for a full CRA. Through a cooperative scheduling agreement with Southern California Edison (SCE), this energy is scheduled to meet mostly on-peak loads to minimize Metropolitan's exposure to on peak market prices.

The remaining 35 percent of the maximum energy requirement is purchased in the wholesale power market when needed. Metropolitan refers to this energy as "supplemental energy". As a purchaser in the wholesale power market, Metropolitan is exposed to volume, price and credit risk.

Prior to the restructuring of California's electricity sector, regulated vertically integrated utilities (i.e. utilities that provide generation, transmission and distribution service) were required to provide enough generation to meet peak loads plus a reserve margin to maintain electric system reliability. As a purchaser of off-peak energy, Metropolitan was virtually assured of stable and predictable prices for ample amounts of



supplemental energy. In the absence of this structure, the stability of prices as seen in the past and availability of supply are less certain.

During 2001 power costs for the supplemental energy requirement rose substantially due to insufficient supply of power to meet demand on the West Coast and irregularities in a recently restructured energy market. Prior to 2001 the average annual cost of supplemental energy was about \$11 million. In fiscal year 2000/01 these costs were on the order of \$75 million, a \$64 million or 580 percent increase.

Unmitigated market price risk combined with a substantial short position could have significant implications for Metropolitan's financial condition in any single year and can cause unanticipated water rate increases for Metropolitan's member agencies.

Recognizing the new risks of the power market, the Board approved a policy in October 2002 to guide staff's efforts to mitigate these risks. Through this policy, staff may enter into financial contracts such as forward price contracts, price caps, price collars or other financial instruments that hedge market price risk. About 90 percent of the 2003 total supplemental energy need was secured through forward price contracts. The policy:

- Establishes a power resource portfolio strategic management objective to maintain operational flexibility and achieve stable and predictable supplemental energy pricing at the lowest reasonable cost.
- Establishes counter-party credit guidelines for procurement of supplemental energy including: (1) limiting the amount of energy that can be provided by any one marketer to no more than 30 percent of the total annual supplemental energy requirement, (2) requiring that all counterparties with which Metropolitan has a purchase contract for energy to be provided beyond the next 90 days have a credit rating for their long-term debt of investment grade or better, or provide a letter of credit or financial guarantee.
- Delegates sufficient purchasing authority to the CEO to secure supplemental energy through purchase contracts with terms of not more than 24 months in duration and at a total payment obligation not to exceed \$35 million.

While this policy establishes parameters within which staff can work to ensure stable and predictable low cost energy for the CRA, it does not address the pressing need for Metropolitan to establish a long-term strategy for investing in energy resources with the objective of providing certainty at a reasonable cost. Metropolitan's scheduling contract with SCE expires in 2007 and by 2017 the cost-based federal power contracts for energy from Hoover Dam also expire. Metropolitan should develop a long-term energy management and operations strategy that addresses these two important milestones and ensures affordable energy for pumping operations.

### **State Water Project Power Costs**

The net power requirement to pump an acre-foot of water through the State Water Project to Southern California requires between 2,580 KWh and 3,236 KWh depending on whether it is moved on the West or East Branch of the SWP respectively.

State Water Project (SWP) power costs have two primary components: the Transportation Variable component of the Operations, Maintenance Power and Replacement Charge and the Off-Aqueduct Charge. The Variable Power Charge is an average rate that melds the net activity of power generation on the SWP, power sales and power purchases. In general, when the power generation on the Project exceeds the need for the SWP's own energy requirement (e.g. when water demands are low during wet periods) the Variable Rate is reduced and sometimes even becomes negative for short periods of time. Conversely, when the demand for water from the SWP is large the SWP energy requirement often outstrips SWP power resources and DWR is forced to purchase energy in the open wholesale market. Hydrologic conditions, SWP operations and energy market conditions all influence the variable rate. The Off Aqueduct Charge recovers DWR's costs for energy generated at the Reid Gardner power plant in Nevada.

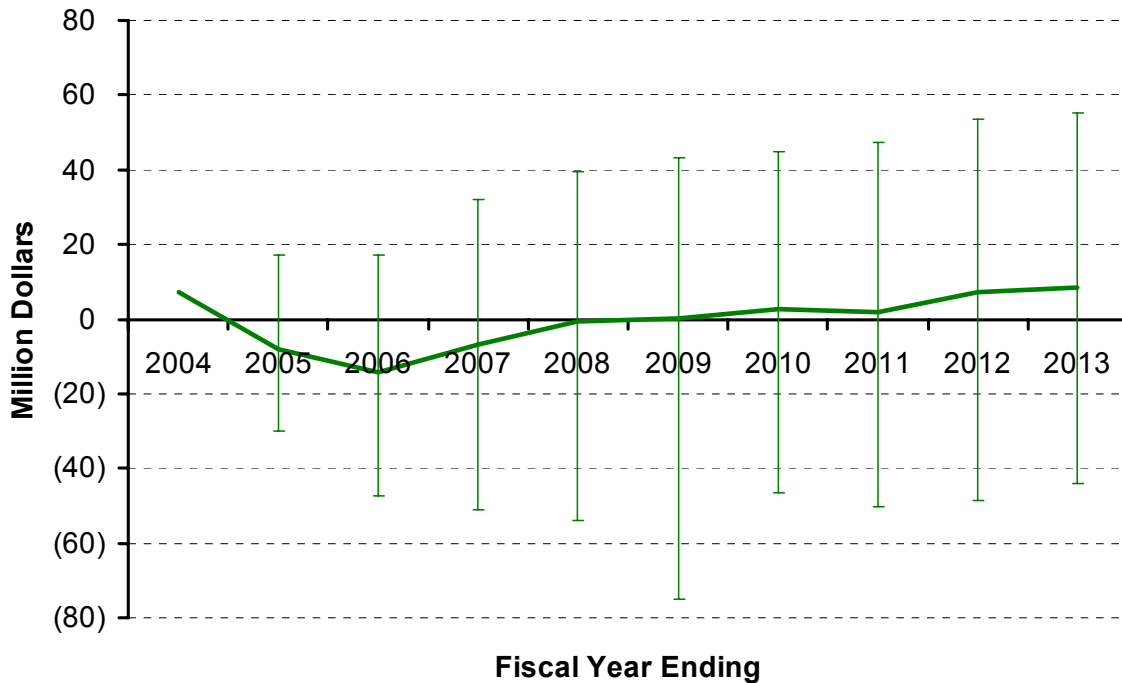
Metropolitan's System Power Rate recovers the combined costs for energy on the CRA and SWP. It is currently set at \$60 per acre-foot. Each year Metropolitan faces both volume risk (the amount of energy it will need) and price risk (the cost of this energy). When Metropolitan is pumping additional amounts of water it is also, most often, selling this water and therefore generating revenue through the System Power Rate. Therefore, water sales revenue provides a natural hedge against volume risk. However, price risk must be actively managed. While a policy is in place to address price risk (and other risks inherent in the energy marketplace such as counterparty credit risk) on the CRA, Metropolitan's control over price risk is less certain on the SWP. DWR, at times, is a major purchaser of energy in the wholesale power market. Metropolitan should actively work with the other State Water Contractors and DWR to ensure that DWR has an energy management strategy and particularly a market strategy that includes adequate resources (e.g. staffing and expertise) to minimize the risk that unexpected energy costs will disrupt State Water Contractor Operations.

### Supply program costs

As Metropolitan continues to develop water transfers and storage programs to meet goals outlined in the updated IRP, it is likely that water supply costs will both increase and become more variable. Rather than structuring water transfers or storage programs so that a fixed annual payment or large up-front payment is made regardless of the amount of supply received, over the long term it is economically preferable to tie payments to the volume of water delivered. By tying the payments to the volume of water delivered there is less of a chance that payments will be made and no benefit received. Although preferred for its close linkage between benefits and costs this approach generally leads to more variable cash flows for water transfer and storage programs. In years when these programs are not needed to meet demand there may be little or no cost. In dry years when a significant amount of supply may be needed it is estimated that annual costs for current water transfer and storage programs may be as high as \$124 million. It is important that Metropolitan recognize this fundamental change in its costs structure and mitigate for these variable cash flows so that they do not cause an unanticipated change in rates or charges.

An analysis of total supply program costs recovered by the Tier 1 and Tier 2 Supply Rates was conducted to estimate the potential future net impact of variable cash flows. The analysis indicates that although water supply program costs do increase significantly during dry years when additional supplies are needed, during these same years, system demands will most likely also increase leading to higher than average water sales and increased Tier 1 and Tier 2 Supply Rate revenue. Figure 12 illustrates that net supply revenue (Tier 1 and Tier 2 Supply Rate revenue less supply costs) on average ranges close to \$0 (i.e. the supply rates are set to recover costs assuming average sales and supply conditions). However, during dry years when sales increase and supply program costs increase the revenues can exceed costs in some cases. During these periods, additional revenues will remain in the water rate stabilization fund to be used to offset those years when sales decline due to short-term weather events and are insufficient to recover fixed costs.

**Figure12. Supply Revenue less Supply Revenue Requirement**



## Water sales

The sales forecast is a critical element of the Plan because it affects so many facets of the Plan. Metropolitan regularly works with the member agencies to review retail level demands and the status of local supplies currently in production and additional local supplies that local agencies intend to develop. This process leads to the development of Metropolitan's expected average sales forecast. After weather and hydrology are factored into the sales forecast a range of demands on Metropolitan's system is available for facility planning, resources planning and financial planning purposes. As the sales forecast increases, future costs for financing additional capital facilities and developing additional water supplies also go up. However, higher expected average sales also help reduce the need for additional rate increases by spreading costs among a larger sales base. As the long-term trend for sales remains flat or decreases additional upward pressure is added to the rates as fixed costs are recovered over a smaller sales base.

It is critical that Metropolitan's long-term financial planning recognize the uncertainty in water sales. As evidenced by historical data, water sales vary substantially from one year to the next and stay at below and above average levels for extended periods of time. Since 1989/90 Metropolitan's total sales have varied by as much as +36 percent to -18 percent from one year to the next. Since 1989/90, sales have ranged from a high of about 2.5 million acre-feet in 1989/90 at the height of the last major drought to a low of about 1.5 million acre-feet in 1997/98 and have averaged about 1.95 million acre-feet. The recent high sales figures are attributed to the dry conditions that Southern California has experienced for the last four years. The Plan assumes that sales will gradually return to average expected levels of about 2.1 million acre-feet by cash year ending 2006, as determined by the updated IRP.

Variations in acre-feet water sales translate into significant variability in water sales revenues. Metropolitan's plan for maintaining predictable and stable volumetric rates that are unaffected by changes in acre-feet sales due to weather and hydrology is to use the water rate stabilization fund, treatment surcharge stabilization fund and revenue remainder fund to balance out variations in water sales revenues so that a below average sales year will not result in an increase in volumetric rates. During years when sales are above average, revenues in excess of what is needed to cover Metropolitan's obligations are deposited into these funds. During years when sales are below average and current year revenues fall short of covering Metropolitan's obligations, revenues from prior periods are withdrawn from these funds.

Current policy governing these funds, developed during the 1998 update of the Long Range Finance Plan, uses a formula to define a minimum and maximum reserve balance for the combined balance of the water rate stabilization and revenue remainder funds. The formula considers three factors: 1) the amount of annual non-treatment related fixed costs that are recovered by volumetric rates; 2) the annual variation in sales revenue; and 3) the duration of a period of low sales. The maximum reserve level is defined as 3.5 times 17.5 percent of annual non-treatment related fixed costs. The 3.5 times represents the duration in years of a period of low sales. The 17.5 percent represents the

annual variation (decrease) in sales. Therefore, Metropolitan may retain reserves sufficient to pay 17.5 percent of its non-treatment related fixed costs for up to 3.5 years. If the combined balance of the water rate stabilization fund and water transfer fund exceed the maximum reserve level the Board may use the funds for any lawful purpose.

## **Section 3. Debt Management**

### ***Five-Year Financing Plan***

Metropolitan's current operating and capital financing strategy is detailed in the 1999 update to the Long Range Finance Plan ("1999 LRFP"). As stated in the 1999 LRFP, the overall goal of Metropolitan's financial planning is to maintain financial flexibility to deal with changing conditions within a framework of solid financial policies in order to ensure a reliable high quality water supply for Southern California at the lowest possible cost to water rate payers.

Since 1999 Metropolitan has successfully met its financial challenges and will continue to meet those challenges in order to mitigate future increases in water rates and charges. Metropolitan will meet the challenge of anticipated increases in fixed costs related to the financing requirements of the Capital Investment Program (CIP), the State Water Project, Colorado River Supplies, and water management programs over the next five-year period. The unanticipated increases in power costs during fiscal year 2001/02 were a good example of unanticipated financial requirements. Metropolitan was able to meet the additional power charges without the need to increase water rates or charges to its member agencies. A five-year financing plan that clearly and concisely outlines the financial objectives of the organization is detailed in this section of the 2003 update to the Long Range Finance Plan.

Metropolitan's primary financial objectives over the next five-year period are as follows:

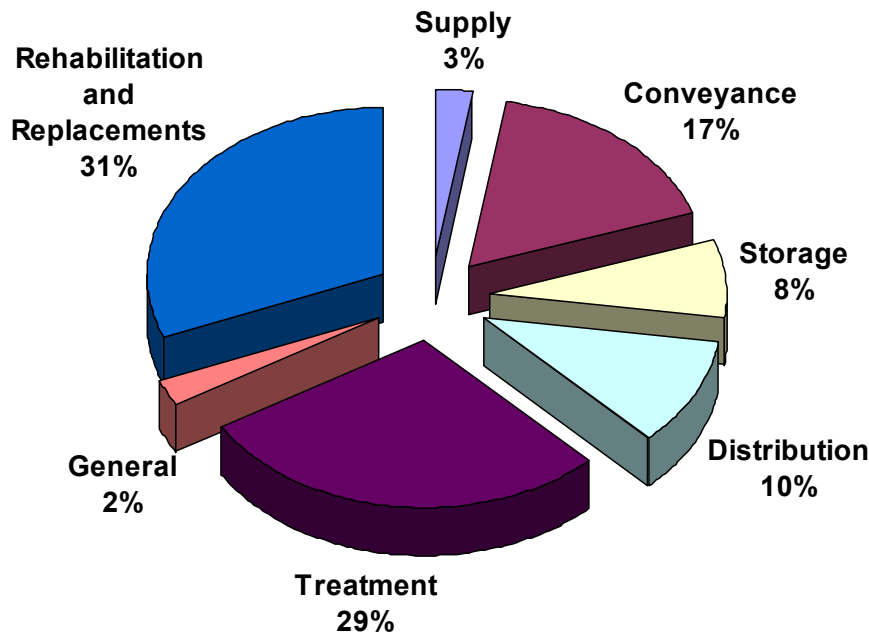
- Meet all funding requirements of the CIP
- Take advantage of financing opportunities in the capital markets to mitigate future increases in debt service costs
- Use future financings and available cash reserves to re-structure Metropolitan's annual debt service costs in order to smooth out the near-term impacts of financing costs on water rate payers

For the past three years, staff has worked closely with the Board through the Board's Budget, Finance, and Investment Committee, and the Subcommittee on Investments and Bond Financing, to develop financial procedures and policies that will enhance value to its member agencies and better manage Metropolitan's assets and liabilities. Metropolitan's Master Swap Policy and Bond Refunding Guidelines enable Metropolitan to take advantage of opportunities in financial markets that in prior years were not available. Since August 2001, interest rate swap transactions and additional bond refunding opportunities have enabled Metropolitan to lower its future debt service obligations on a net present value basis by approximately \$28 million. In addition, Metropolitan has realized \$5.8 million of cash flow savings (through June 30, 2003) from the March 2002 fixed receiver interest rate swap transaction.

Many of the financial challenges faced by Metropolitan in the past will continue to challenge Metropolitan over the next five-year period. Obligations are expected to increase over the next five-year period for the State Water Project, the Colorado River Aqueduct, water management programs, water transfers and exchanges, operations and maintenance costs, and financing costs for the CIP. In addition, revenue from the sale of water will continue to have the potential to vary significantly, and ad valorem property tax revenues are anticipated to continue to decline over the period. Therefore, Metropolitan needs to take advantage of any opportunities available to lower fixed costs in the future. As such, Metropolitan's ability to mitigate increases in annual debt service costs will enable Metropolitan to minimize the impact of that portion of future water rate increases attributable to debt service payments.

### Financing the Capital Investment Program

Metropolitan has historically financed capital requirements from a combination of debt financing and internally generated funding. The five-year financing plan contemplates similar funding requirements. Projected expenditures for the capital investment program over the next five-year period are estimated to be \$1.93 billion. The Inland Feeder project will be the single largest project over this period. Water quality projects, which include oxidation retrofitting of Metropolitan's water treatment plants, will also require large cash outlays over the period. Figure 13 shows the major components of the CIP from 2004 to 2008.

**Figure13. Capital Investment Plan by Component**

Annual outlays of construction expenditures for the CIP are estimated to range from \$297 million to \$511 million for the 2004 to 2008 time period. The annual requirements will be funded with a combination of bonded indebtedness and funds available from Metropolitan's pay-as-you-go program. Metropolitan will manage the funding requirements of the CIP and take advantage of financing opportunities in the capital markets by utilizing the following Board adopted policies:

- Variable rate debt:** consistent with the principles of asset / liability management, it was determined by the Board that Metropolitan would benefit by increasing variable rate debt exposure to 32 percent of total water revenue bonds outstanding. As such, Metropolitan was directed to increase variable rate debt exposure through new money debt issuance and through synthetic financial transactions. In March 2002, Metropolitan entered into a \$200 million fixed receiver interest rate swap to increase variable rate exposure to the 32 percent policy level. The appropriate level of variable rate debt exposure is continually reviewed and analyzed by staff, opportunities to take advantage of favorable market conditions may exist over the next five-year period to restructure debt service payments that could result in an adjustment to Metropolitan's variable rate debt exposure.
- Interest Rate Swap Program:** Metropolitan may utilize interest rate swaps to reduce costs, reduce risk, restructure annual debt service payments, or manage the duration of debt in accordance with California law. As such, in September 2001 Metropolitan established a Master Swap Resolution and a Master Swap Policy that provides the necessary authority to execute such transactions and details the parameters for operating an interest rate swap program. The benefits to Metropolitan of an interest



rate swap program, the policy objectives of the swap program, and the Master Swap Policy are detailed in this update to the LRFP.

- Asset Replacement Study: A database of Metropolitan's fixed assets has been created which will be used to forecast the annual replacement and refurbishment needs of Metropolitan and is used to determine the annual pay-as-you-go funding requirements for the CIP. The information will increase Metropolitan's awareness of the timing of the future funding requirements needed to replace or refurbish its assets. Reserves may be used to fund all or a portion of the asset replacement needs each year. A discussion of the asset replacement study and how the results of the study impact Metropolitan's reserve policies is provided in this update to the LRFP.

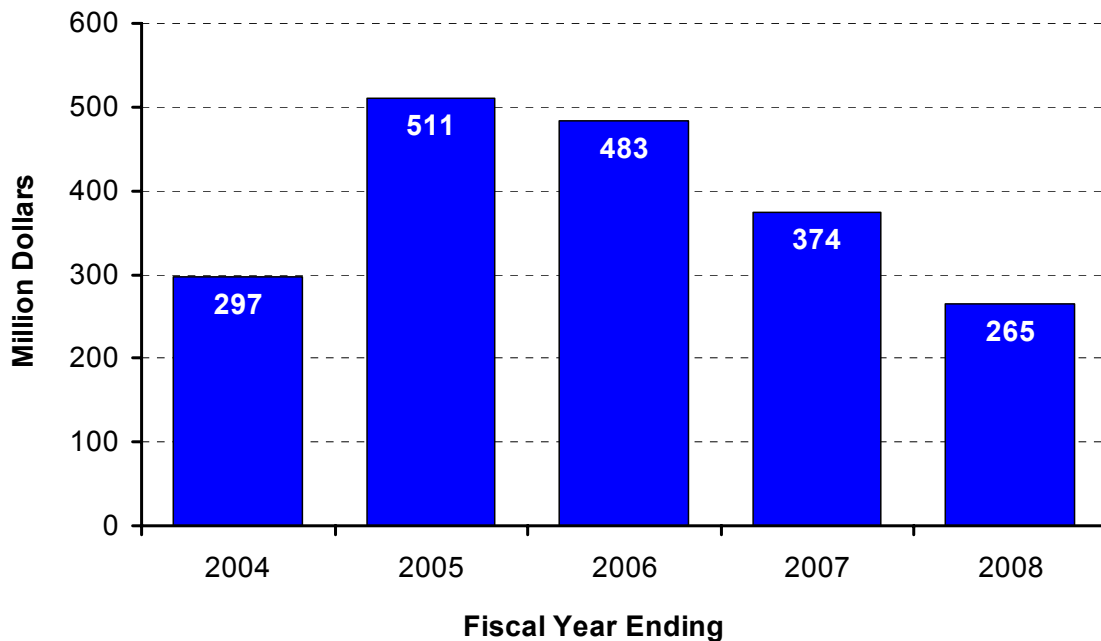
Refunding Guidelines: Metropolitan has been able to take advantage of opportunities in the municipal bond market to lower the cost of outstanding debt obligations through bond refundings (including debt restructuring opportunities). The Board modified Metropolitan's bond refunding guidelines in April 2003. The new bond refunding guidelines will enable Metropolitan to enhance debt portfolio performance and take advantage of market opportunities that were not available under prior bond refunding guidelines. The new bond refunding guidelines are detailed in this update to the LRFP.

## Financing Plan

Metropolitan's financing plan over the next five year period will be to develop strategies that will enable Metropolitan to minimize the impact on water rates and charges of the financing requirements of the CIP, and other financial challenges that will increase fixed costs and put pressure on Metropolitan's water rates and charges. The financing strategy will incorporate the following:

- Utilization of pay-as-you-go funding, either from current year operating revenues, or from prior year reserves available from the asset replacement fund;
- Issuance of variable rate debt or fixed rate debt to meet capital requirements;
- Asset/liability management, through the use of the variable rate debt exposure, interest rate swaps, bond refunding strategies, and by incorporating the hedging impact of Metropolitan's investment portfolio.

Financing costs of the capital investment program currently represent a little over 20 percent of the overall funding requirements of Metropolitan. Annual financing costs are projected to average approximately \$335 million per year over the five-year period.

**Figure 14. Five-year Capital Investment Plan**

### **Funding the Capital Investment Program**

Metropolitan's CIP will be funded over the next five year period by a combination of debt financing and PAYG funding. PAYG funding levels are based on the results of an asset replacement study that indicated Metropolitan's replacement and refurbishment requirements would average approximately \$110 million per year through 2008. Replacement and refurbishment needs are anticipated to total \$602 million through the five-year period. Funding a portion of the CIP through operating revenues (current year or prior period reserves) has been a long standing financial policy at Metropolitan, as well as being a prudent financial policy for public agencies throughout the country. Metropolitan's pay-as-you-go (PAYG) policies have changed and been modified over the years as outlined in prior updates to the LRF. Metropolitan has funded construction expenditures at various levels of debt financing and internally generated funding over the years. In certain years, 100 percent of construction expenditures have been funded by PAYG, while in other years 100 percent of construction expenditures have been funded from debt funding. Various PAYG funding methodologies have been considered and utilized over the years in determining the appropriate level of PAYG funding for Metropolitan at any given point in time.

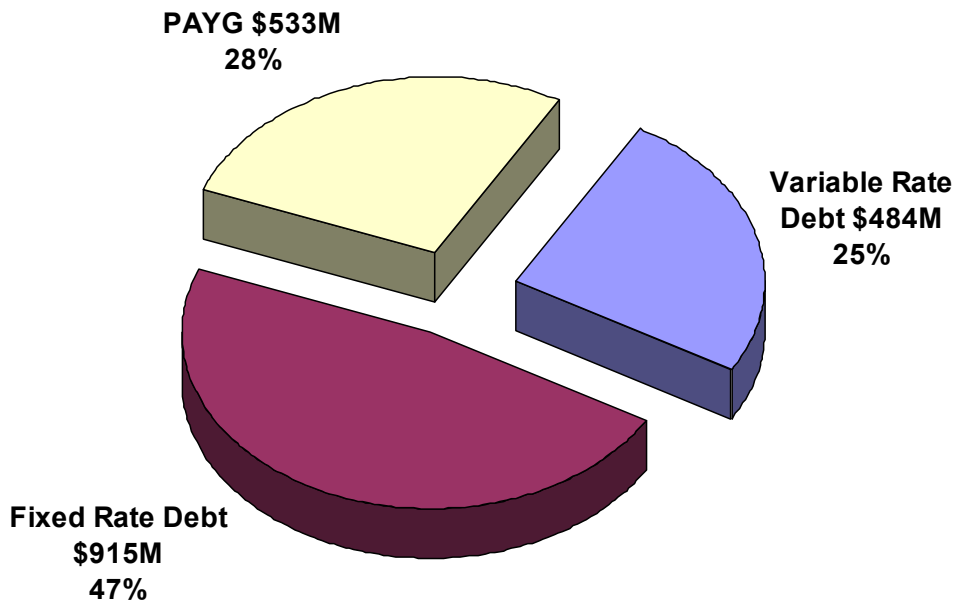
The results of the asset replacement study will enable Metropolitan to augment its PAYG program and thereby reduce bond funding requirements and subsequently the overall cost of capital projects.

Regardless of the level of PAYG funding over the next five year period, Metropolitan will still need to access the capital markets to fund most of the CIP. Given that Metropolitan will have to issue over \$1.3 billion of debt over the next five-year period, a determination of the type of debt and appropriate timing of the debt issuance will be required. In addition, Metropolitan will utilize the flexibility provided within its various financial policies and procedures to manage existing and projected debt obligations and to manage the investment portfolio.

**Debt Management Strategies**

Debt funding requirements will be determined by the funding requirements of the CIP, and the availability of PAYG funding levels either through current year operating revenues or from prior period reserves through the asset replacement fund. The following chart provides a breakout of the type of funding for the CIP from 2004 to 2008:

**Figure 15. Capital Investment Plan Funding Sources**



The type of debt financing at any given point in time is influenced by a number of factors, including, but not limited to the following:

- The existing make-up of Metropolitan’s debt portfolio
- The general level of interest rates for municipal bond financing
- The relative level of interest rates associated with synthetic transactions
- The term of a financing transaction
- Variable rate debt exposure

- The dollar size of Metropolitan's investment portfolio
- The availability and cost of liquidity facilities
- The shape of the various interest rate curves (steep or flat)
- The spread between tax-exempt and taxable interest rates
- Other considerations

### **Debt Restructuring**

Currently, Metropolitan's annual debt service requirements for outstanding debt range from \$155 million to \$187 million per year through 2010. Annual financing costs of the CIP represent approximately 20 percent of the total annual expenditure requirements of Metropolitan. In order to mitigate the impact of increasing debt service payments on water rate payers, Metropolitan can restructure its annual debt service requirements to reduce and smooth out annual debt service payments. The following issues impact Metropolitan's decision making regarding the restructuring of debt:

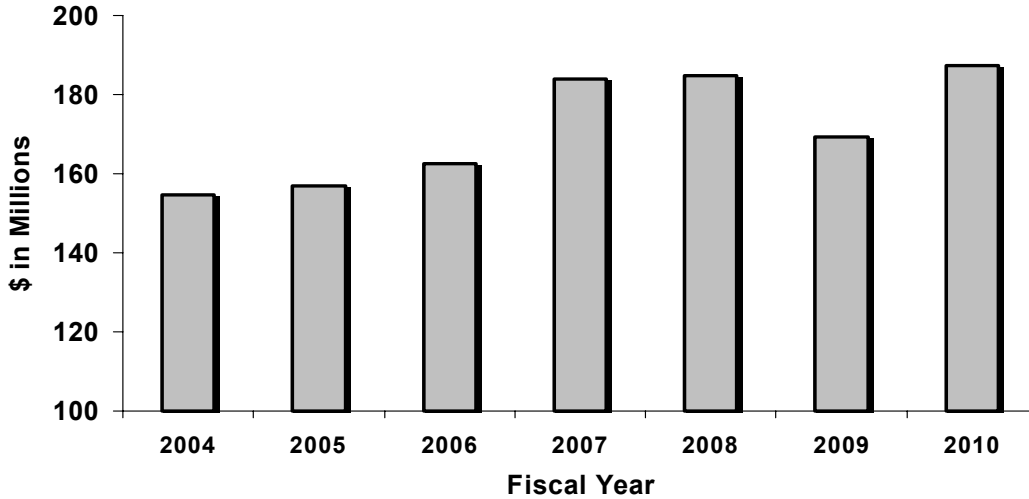
- Timing and sizing of new money debt issuance.
- Structure of annual debt service payments for new money debt issuance.
- Metropolitan's willingness to periodically modify the level of variable rate debt exposure.
- The level of interest rate swap exposure, in total, and by counterparty.
- Amount and timing of available cash reserves for cash defeasances.
- Extent of bond refunding opportunities for outstanding debt.

Once the various financial issues are addressed, Metropolitan can employ various debt restructuring strategies that consider the following:

- Debt restructuring can be realized through bond refundings and through interest rate swap transactions in historically low interest rate markets.
- Use of available cash reserves to defease outstanding debt.
- Reduction in near term debt service requirements, with extension of principal payments to better match the average life of the assets initially funded from debt proceeds.
- Annual debt service payments for new money debt issuance can be structured to level out annual debt service payments.

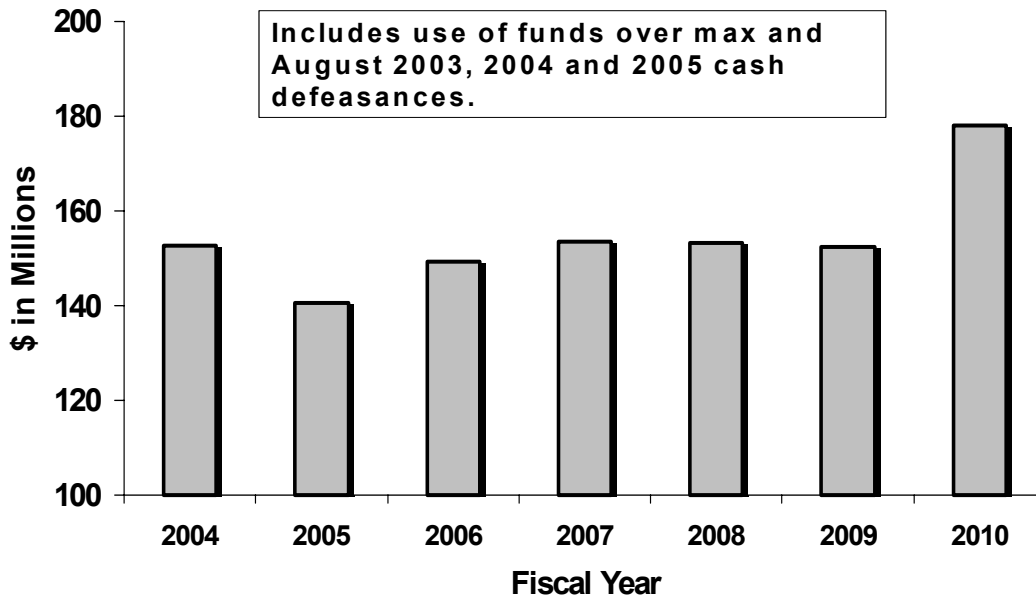
The following graph shows Metropolitan's annual debt service requirements for revenue bonds outstanding as of June 30, 2003:

**Figure 16. Outstanding Revenue Bond Debt Service**



As shown on the graph, debt service requirements were anticipated to increase from \$155 million in 2004 to \$187 million in 2010. Due to prior bond refundings and cash defeasances of debt, Metropolitan’s debt service requirements over this period (and beyond 2010) increase and decrease from year to year in an uneven pattern. The uneven annual debt service requirements and spikes in annual debt service payments present a financial burden on Metropolitan’s water rate payers. Therefore, Metropolitan has embarked on a debt restructuring strategy that will smooth out the annual increases in debt service requirements as the current capital investment program is financed. In July 2003, Metropolitan refunded approximately \$37 million of water revenue refunding bonds. As part of the transaction and as part of the overall debt management strategy, the annual debt service requirements for the refunding bonds was structured to enable Metropolitan to begin a debt restructuring program to mitigate the impact on water rate payers (over the next five-year period) of increasing annual debt service requirements.

Annual debt service requirements after the refunding transaction were reduced by an average \$4 million per year through 2008. This represents approximately \$2 per acre-foot to water rate payers. In addition to restructuring debt service payments through debt refundings, in July 2000 Metropolitan’s Board approved the use of approximately \$84 million of funds available over the June 30, 2000 maximum reserve requirement to be used over a five-year period to cash defease additional debt obligations. As such, Metropolitan is able to further mitigate the impact of debt service payments on water rate payers over the next two-year period by cash defeasing debt to smooth out the annual increases in debt service payments. The following graph shows reduced annual debt service requirements, reflecting the July 2003 refunding transaction, the August 2003 cash defeasance, the anticipated August 2004 and August 2005 cash defeasances and the use of monies over the maximum reserve requirement as of June 30, 2003:

**Figure 17. Outstanding Revenue Bond Debt Service after Restructuring**

As shown on the above graph, debt service requirements will be reduced from to a range of \$153 million in 2004 to \$178 million in 2010. Annual debt service is reduced by between \$1 million and \$32 million per year over the period. As Metropolitan accesses the capital markets to fund its CIP, additional debt service payments will be added to the annual water revenue requirements. As such, new money debt issuance can be structured to gradually level out the impact of annual debt service payments to the water rate payers. Metropolitan's objective will be to gradually level out annual debt service payments thereby eliminating most of the uncertainty of one component of fixed costs that need to be paid by water rate payers.

### ***Asset Liability Management***

During fiscal year 2001-02, at the direction of the Subcommittee on Investments and Bond Financing, Metropolitan modified its approach to managing interest rate risk by focusing on asset liability management. In general, Metropolitan's interest rate risk is minimized when long-term assets are matched with long-term fixed rate debt, and short-term assets are matched with variable rate debt. The primary purpose of asset liability matching is to mitigate the risk to Metropolitan of changing interest rates in both the taxable and tax-exempt markets. With the proper mix of fixed and variable rate debt, Metropolitan can reduce the risk to water rate payers of rising and declining interest rates by managing variable rate exposure.

In a declining interest rate market, Metropolitan's short-term investments will generate less interest income, while the cost of fixed rate debt will remain the same, thereby increasing a hidden net cost in Metropolitan's balance sheet. Metropolitan can issue

fixed rate refunding bonds to take advantage of declining interest rates and lower the cost of its debt. However, the time requirements of pricing fixed rate bond refunding transactions (typically up to 45 days) are prohibitive to Metropolitan when trying to benefit from a declining short-term interest rate environment. In a declining interest rate environment, the cost of variable rate debt will be decreasing, thereby offsetting a portion of the reduced interest income generated from the short-term investment portfolio. The reduction in net interest income will be somewhat mitigated.

Conversely, in a rising interest rate environment, the cost of Metropolitan's variable rate debt will increase, and will be partially offset by additional interest income from short-term investments. Additional income generated from the short-term investment portfolio will typically lag the increased costs of the variable rate debt. Therefore, the additional cost of variable rate debt is not perfectly hedged by additional interest income from the short-term investment portfolio. Since additional costs of variable rate debt in a rising interest rate environment cannot be fully mitigated by additional interest earnings from the short-term investment portfolio, Metropolitan will need to determine the amount of additional costs that are acceptable to water rate payers. The impact of the additional costs may be mitigated by establishing an interest rate mitigation reserve or by modifying Metropolitan's existing maximum reserve calculation. The additional costs to Metropolitan as a result of a rising interest rate environment may be calculated as additional net interest costs (defined as additional interest costs on variable rate exposure less additional interest income from the short-term investment portfolio).

### Existing Variable Rate Debt Policy

Metropolitan's existing variable rate debt policy was implemented in the spring of 2000 after extensive analysis by staff, Metropolitan's financial advisors, and Metropolitan's senior investment banking team. As a result of the analysis, Board policy established variable rate exposure of 32 percent of total water revenue bond debt outstanding. The primary reason for the increase in variable rate exposure to the 32 percent level was to better match Metropolitan's financial investments with variable rate exposure, thereby somewhat mitigating the financial impact to Metropolitan of rising and declining interest rates.

However, financial markets have continued to change since the Board implemented the existing policy as interest rates have declined to historically low levels and other financial factors that influence variable rate debt strategies have changed. In addition, in September 2001 the Board adopted a Master Swap Policy that will enable Metropolitan to utilize synthetic financial products to better manage its asset/liability structure. As such, a different approach to determine the appropriate level of variable rate exposure for Metropolitan is warranted.

In the spring of 2000, staff and Metropolitan's financial advisors reviewed the results of various analyses using statistical simulation models performed by Metropolitan's senior investment banking team to assist Metropolitan in determining the appropriate level of

variable rate exposure. The statistical simulation methods utilized by Metropolitan's senior investment banking team generated sequences of random events (utilizing historical data) related to taxable investment earnings rates and tax-exempt borrowing rates. The focus of the analyses was on the relationship between short-term taxable and short-term tax-exempt interest rate levels. The result of the statistical modeling was used as the basis for Metropolitan to establish the Board's current variable rate debt policy of 32 percent of total water revenue bond debt outstanding. As of November 2001 Metropolitan had \$755.2 million of variable rate water revenue bonds outstanding. In March 2002, Metropolitan priced a \$200 million fixed receiver interest rate swap that increased variable rate exposure from 25 percent to the 32 percent Board policy level. An additional \$452 million of variable rate debt is outstanding, but by virtue of interest rate swap agreements are treated as a fixed rate obligation to Metropolitan.

### Appropriate Level of Variable Rate Debt Exposure

The appropriate level of variable rate exposure for Metropolitan is influenced by a number of factors, including the amount of funds available in the short-term investment portfolio, Metropolitan's tolerance to increases in net interest costs, credit rating considerations, liquidity provider capacity, swap counterparty capacity, and Metropolitan's overall asset and liability management guidelines and policies. The simulation analyses performed in the spring of 2000 considered the above mentioned factors and used the following assumptions and considerations in determining the appropriate level of variable rate exposure for Metropolitan:

- No one level of variable rate exposure will completely eliminate interest rate risk;
- The optimal amount of variable rate exposure is the level that minimizes the variance in net interest margin (net interest margin is defined as the difference between taxable net interest earnings and tax-exempt interest payments);
- A static relationship between the taxable yield curve and the tax-exempt yield curve;
- Short-term tax-exempt interest costs were modeled utilizing the Bond Market Association ("BMA") index;
- The short-term investment portfolio totaled at least \$475 million; and
- No changes in the Federal income tax structure.

The results of the simulation analyses concluded on average that Metropolitan could increase its variable rate exposure to 32 percent of total water revenue bond debt outstanding. Based on a short-term investment portfolio of \$475 million, this conclusion represented "hedged" variable rate debt exposure of \$825 million and "unhedged" variable rate debt exposure of \$275 million. The interest rate hedge assumes that the \$475 million available in the short-term investment portfolio is invested at taxable rates that "cover" the interest payments on \$825 million of tax-exempt variable rate debt. That is, in a rising interest rate environment, the additional interest income generated from the



\$475 million short-term portfolio approximates the additional interest expense associated with \$825 million of variable rate debt.

The analyses also concluded that interest rate risk was reduced by shortening the duration of assets and increasing the amount of the assets available to hedge variable rate exposure. Therefore, the greater the balance in the short-term investment portfolio, the greater the amount of variable rate exposure that could be tolerated by Metropolitan. Conversely, the lower the balance in the short-term investment portfolio, the lower the amount of variable rate exposure that could be tolerated by Metropolitan. This is an important conclusion of the analyses, because the balance in Metropolitan's short-term investment portfolio will vary from year to year. In addition, Metropolitan can derive more benefit by moving down the much steeper tax-exempt yield curve by increasing variable rate exposure, than it loses by shortening investments (and increasing the balance in the short-term portfolio) in a much shorter and much flatter taxable yield curve. The cost benefit analysis concluded that Metropolitan can increase its variable rate debt exposure (the hedged portion) by increasing the amount of funds available for investment in the short-term investment portfolio while simultaneously reducing interest rate risk. The results of the sensitivity analyses illustrated that the value of the results are highly dependent on the assumptions used to reach a result or conclusion.

The existing policy is impacted by principal maturities of fixed rate debt because as fixed rate debt matures, total revenue bonded debt decreases, thereby impacting the variable rate exposure percentage. Metropolitan would have to adjust its variable rate exposure to comply with the policy guidelines as the fixed rate debt matures. This could occur at a time when Metropolitan would not want to adjust its variable rate exposure thereby causing Metropolitan to have variable rate exposure at less than optimal levels.

Even though the analyses were highly technical in nature, Metropolitan must still determine an acceptable level of "unhedged" variable rate exposure over and above the hedged position in order to reach a policy level. The "unhedged position" is subjective in nature, but can be determined by focusing on the net dollar impact to Metropolitan in a changing interest rate environment. Therefore, rather than establish a variable rate exposure policy that focuses primarily on a percentage of total water revenue bonds outstanding, Metropolitan's tolerance to changes in interest rate levels must be quantified relative to revenue and cost projections used during the annual budget and rate setting process. By changing the policy focus from a percentage calculation to a methodology that recognizes the net interest cost impact to Metropolitan, Metropolitan can more effectively determine the dollar impact of changes in interest rates to the water rate payers.

### **Metropolitan's Tolerance to Changes in Interest Rates**

To mitigate interest rate risk, the primary factor in determining the appropriate level of variable rate exposure is the amount of funds available in the short-term investment portfolio. When short-term investments are re-invested in a rising interest rate market a

portion of the interest rate risk associated with variable rate debt instruments is mitigated. As such, the financial impact to Metropolitan of fluctuations in interest rates may be mitigated by managing the amount of variable rate exposure to the short-term portion of the investment portfolio. **The primary goal of asset liability management to Metropolitan will be to mitigate the impact of increased interest costs in a rising interest rate environment, and mitigate the impact of decreased interest income in a declining interest rate environment.** To determine the proper asset/liability balance, Metropolitan must first determine its risk tolerance to rising and declining interest rates. In order to determine Metropolitan's tolerance to rising and declining interest rates, staff examined the financial impact to Metropolitan by determining net interest costs and reduced interest income under a number of interest rate sensitivity scenarios. The following assumptions were used in the sensitivity analysis:

- Short-term investment portfolio of \$500 million
- Short-term investment portfolio weighted average days to maturity of 120 days
- Variable rate exposure of \$955.2 million
- A taxable to tax-exempt ratio of 1.6X, which is representative of the taxable to tax-exempt spread between short-term investment rates and the cost of Metropolitan's variable rate debt

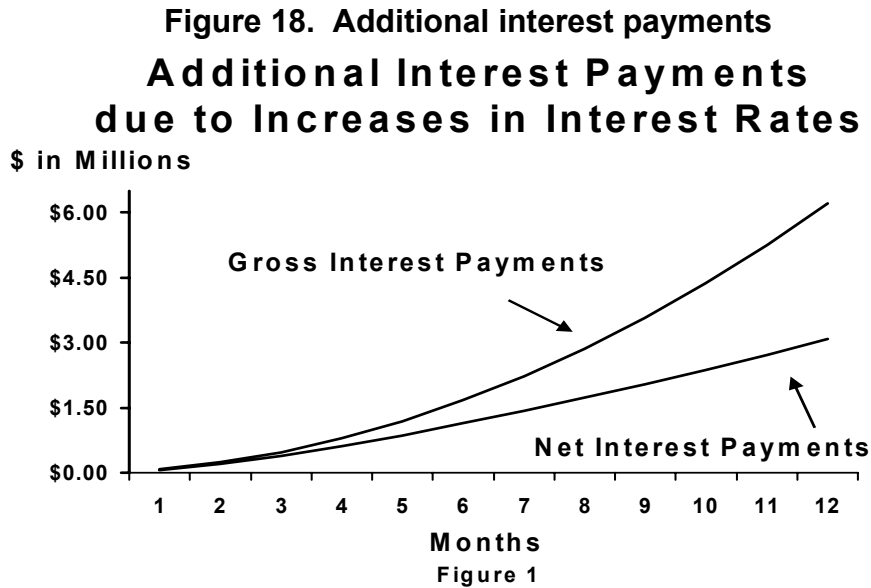
### Metropolitan's Tolerance to Rising Interest Rates

In trying to quantify the potential financial impact to Metropolitan of a rising interest rate market, staff examined the net interest cost to Metropolitan using a number of assumptions. Net interest costs are defined as additional interest costs on variable rate exposure less additional interest income from the short-term investment portfolio. The analysis focused solely on the additional interest income and additional interest costs over the period, not the absolute dollar amounts for interest income or interest expense. In this way the impact to Metropolitan of rising interest rates can be isolated. *The assumption is that the interest income and interest costs with no change in interest rates are already included in the interest income and interest costs used in establishing water rates during the water rate setting and annual budget process.* Therefore, interest income and interest costs using interest rates at the time the budget and water rates and charges are adopted are already factored into Metropolitan's flow of funds. The financial impact (positive or negative) to Metropolitan in a rising interest rate market is therefore based solely on the additional net interest cost not factored into the rate setting or annual budget process (Metropolitan's "reserves at risk").

Given a \$500 million short-term investment portfolio with an average maturity of 120 days, interest income was projected over a one-year period in a rising interest rate market. A proxy for taxable interest rates was used and assumed to increase by 10 basis points per month over the one-year period. As the portfolio rolled off, the funds were reinvested (maintaining the 120 day average maturity) in a rising interest rate environment, thereby increasing Metropolitan's investment income over the period.

Additional interest income was then compared to the additional costs to Metropolitan (when interest rates rise) on \$955.2 million of variable rate exposure.

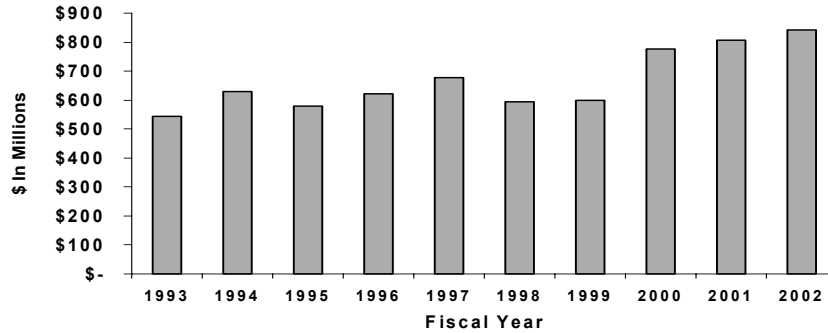
With variable rate exposure of \$955.2 million, a monthly increase of 10 basis points per month will increase the cost of Metropolitan’s variable rate instruments by \$6.2 million over the one-year period. The interest rates for the variable rate exposure are anticipated to re-set in a daily or weekly interest rate mode. Although additional interest costs of \$6.2 million would be borne by Metropolitan over the period, the additional interest income would mitigate the net interest increase to \$3.1 million over the period. Figure 18 illustrates the additional net interest cost to Metropolitan in a rising interest rate market.



Estimating net interest costs in a rising interest rate environment is a difficult if not an impossible proposition for Metropolitan. Therefore, Metropolitan must realize that in a rising interest rate market, there will be additional net interest costs associated with variable rate exposure that were not anticipated during the water rate setting or annual budget process. Metropolitan’s water rate payers would have to bear the financial burden of any additional net interest costs. Rather than providing contingencies in the annual rate setting process, Metropolitan may use available reserves to manage additional net interest costs in a rising interest rate environment. The overall financial impact of additional net interest costs has to be taken into context with Metropolitan’s overall budget. Since water sales revenues have averaged approximately \$670 million per year from 1993 to 2002, a \$3.1 million increase in net interest costs has a relatively minor impact on Metropolitan’s overall financial condition.

**Figure 19. Water sales revenues**

**Water Sales Revenues  
1993 through 2002**



Therefore, in determining the appropriate level of variable rate exposure in a rising interest rate environment, the net interest cost to Metropolitan in relation to Metropolitan’s overall budget must be considered.

Since additional net interest costs will be realized in a rising interest rate environment, staff examined the financial impact to Metropolitan of increasing variable rate exposure above the current level of \$955.2 million. The following table summarizes the potential net interest costs to Metropolitan in a rising interest rate environment for various levels of variable rate exposure:

**Table 4. Net Interest Costs**

Variable Rate Exposure	Additional Net Interest Cost
\$ 955.2 million	\$3.1 million
\$1,055.2 million	\$3.7 million
\$1,155.2 million	\$4.4 million
\$1,255.2 million	\$5.0 million

The analyses used the same set of parameters and assumptions as were previously described including a short-term investment portfolio of \$500 million with a 120-day average maturity. The results of the analyses illustrate that if Metropolitan increases its variable rate exposure above the current level of \$955.2 million, additional net interest costs of up to \$5.0 million may be realized in a rising interest rate environment. Using the additional net interest cost sensitivity, the decision to adjust the level of variable rate exposure above or below the current level will be determined by the amount of “reserves at risk” Metropolitan’s Board deems prudent.

## Metropolitan's Tolerance to Declining Interest Rates

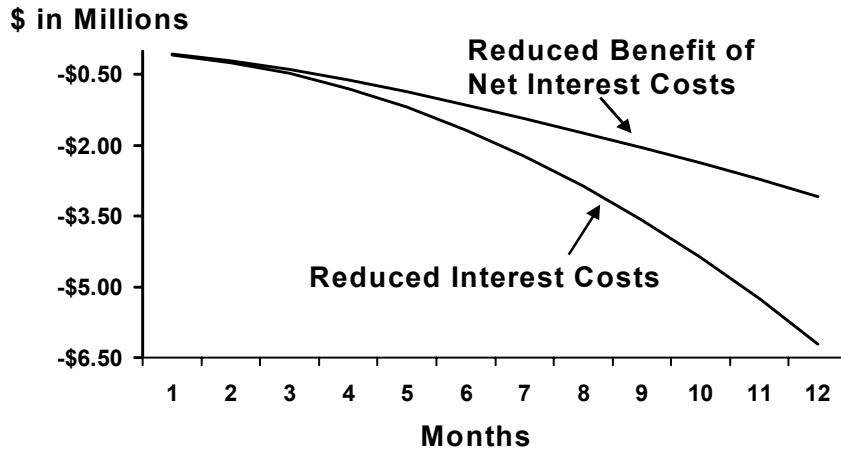
In trying to quantify the potential financial impact to Metropolitan of a declining interest rate market, staff examined the reduction in net interest income to Metropolitan under a number of assumptions. Another way to consider the reduction in net interest income is to focus on the reduced benefit of lower interest costs due to less interest income in a declining interest rate environment. Metropolitan will realize the benefits of lower costs associated with variable rate exposure in a declining interest rate environment, but that benefit will be reduced by the amount of reduced interest income over the same period. Reduced net interest income to Metropolitan is defined as lower interest income in a declining interest rate environment net of the reduced interest costs associated with variable rate exposure. As interest rates decline, the cost of Metropolitan's variable rate exposure will also decrease thereby mitigating the impact on the short-term investment portfolio of a decline in taxable interest rates. The analysis focuses solely on the interest income and additional reduced interest costs over the period, not the absolute dollar amounts of interest income or interest expense. The assumption is that the interest income and interest costs with no changes in interest rates are already included in the interest income and interest costs used during the water rate setting and annual budget process. Therefore, projections for interest income and interest costs at interest rate levels in effect at the start of the budget year, are already factored into Metropolitan's flow of funds. The impact (positive or negative) to Metropolitan of a declining interest rate market is therefore based solely on the amount of reduced net interest income realized in a declining interest rate environment, not the total interest income considered in the rate setting or annual budget process.

Given a \$500 million short-term investment portfolio with an average maturity of 120 days, interest income was projected over a one-year period in a declining interest rate market. A proxy for taxable interest rates was used and assumed to decrease by 10 basis points per month over the one-year period. As the portfolio rolled off, the funds were reinvested (maintaining the 120 day average maturity) in a declining interest rate environment, thereby decreasing Metropolitan's investment income over the period. Reduced interest income was then compared to the reduced costs to Metropolitan associated with \$955.2 million of variable rate exposure.

With variable rate exposure of \$955.2 million, a monthly decrease of 10 basis points per month will decrease the cost of Metropolitan's variable rate exposure by \$6.2 million over the one-year period. Although Metropolitan would realize reduced interest income of \$3.1 million over the period, the reduced interest costs would mitigate the net decrease in interest income to \$3.1 million over the period. The following chart illustrates the reduced net interest realized by Metropolitan from declining interest rates.

**Figure 20. Reduced Net Interest realized**

**Reduced Net Interest from Declining Interest Rates**



Estimating reductions in net interest income in a declining interest rate environment is a difficult if not impossible proposition for Metropolitan. Therefore, Metropolitan must realize that in a declining interest rate market, there will be reduced interest income that is partially offset by reduced costs associated with variable rate exposure. Metropolitan’s water rate payers would have to bear the financial burden of reduced net interest income. Rather than providing contingencies in the annual rate setting process, Metropolitan may use available reserves to manage reductions in net interest income in a declining interest rate environment. As with additional net interest costs associated with a rising interest rate market, any reductions in net interest income have to be taken into context with Metropolitan’s overall budget. Since water sales revenues average approximately \$670 million per year, a \$3.1 million decrease in net interest income has a relatively minor impact on Metropolitan’s overall financial condition.

Since reduced net interest income will be realized in a declining interest rate environment, staff examined the financial impact to Metropolitan of increasing variable rate exposure above the current level of \$955.2 million. The following table summarizes the potential reduced benefit of net interest costs realized by Metropolitan in a declining interest rate environment for various levels of variable rate exposure:

**Table 5. Reduced benefit of Net Interest Costs**

Variable Rate Exposure	Reduced Benefit of Net Interest Costs
\$ 955.2 million	\$3.1 million
\$1,055.2 million	\$3.7 million
\$1,155.2 million	\$4.4 million
\$1,255.2 million	\$5.0 million

The analyses used the same set of parameters and assumptions as were previously described including a short-term investment portfolio of \$500 million with a 120-day average maturity. The results of the analyses illustrate that if Metropolitan increases its variable rate exposure above the current level of \$955.2 million, the reduced benefit of lower interest costs may be up to \$5.0 million in a declining interest rate environment.

### Rating Agency Consideration

In determining the appropriate level of variable interest rate exposure, the credit rating agencies consider such factors as the type of debt issued, Metropolitan's financial flexibility, sources of liquidity, Metropolitan's asset liability management philosophy, and the prudent use of other financial tools such as interest rate swaps. Therefore, any decision to change Metropolitan's variable interest rate exposure will be thoroughly discussed and reviewed with the rating agencies. Metropolitan has been in discussions with Fitch, Moody's, and Standard and Poor's regarding changes or modifications to the existing variable rate policy. Any changes to the policy will be reviewed with the rating agencies to ensure Metropolitan's strong credit ratings.

### Liquidity Provider Capacity and Risks

Variable rate debt obligations have tender features that necessitate the use of liquidity support for the purchase price of tendered but unremarketed variable rate bonds. Metropolitan uses standby bond purchase agreements provided by highly rated financial institutions as the source of liquidity for the tendered bonds. Since there exists the need to constantly provide for a source of liquidity, Metropolitan incurs liquidity risk. The cost to Metropolitan for liquidity facilities currently ranges from 12 basis points to 25 basis points per year of principal and interest coverage for all outstanding variable rate debt obligations. In addition, Metropolitan is exposed to liquidity risk upon the expiration of each liquidity facility. Current market levels for liquidity facilities for Metropolitan is approximately 12 to 40 basis points per year depending on the term of the liquidity agreement. If the market for liquidity facilities changes in the future, Metropolitan's variable rate policy may be impacted. Metropolitan continually monitors

liquidity provider capacity and costs in consideration of increasing variable rate debt exposure.

### How Metropolitan Will Utilize Asset Liability Strategy

Metropolitan's existing variable rate policy is a financially sound method to determine the appropriate level of variable rate exposure. Mainly due to limited funding available in the short-term investment portfolio, concerns over additional unbudgeted interest costs in a rising interest rate environment, and concerns over reduced interest income in a declining interest rate environment, Metropolitan's variable rate policy needs to be modified. Metropolitan's ability to manage both its short-term assets and variable rate liabilities is the primary consideration in trying to develop a prudent variable rate policy that takes into account the overall financial impact to Metropolitan of rising or declining taxable and tax-exempt interest rates.

Metropolitan will manage and communicate its short-term assets and variable rate liabilities by first establishing a baseline from which to determine the financial impact of changing interest rates. The baseline will be used as a measure (starting point) which will enable Metropolitan to quantify at any given point in time the dollar impact of rising or declining interest rates. In order to mitigate the dollar impact of net interest exposure in a rising interest rate environment, a reserve funding mechanism may be established. Through appropriate monitoring, reporting, and strategy recommendations to the Board, Metropolitan will be able to prudently manage and quantify its net interest rate exposure.

#### Establishing a Baseline Methodology

In order to determine how Metropolitan will manage its variable rate exposure (short-term assets and variable rate liabilities), a starting point or a baseline must first be established to use as the basis for monitoring, reporting, and quantifying the financial impact to Metropolitan of the movement of interest rates.

Metropolitan may use one or both of the following baseline methods as a means of measuring the financial impact of changes in interest rates to Metropolitan:

**Start of Period Method** - interest rates applicable to the cost of variable rate exposure and the short-term investment portfolio at the start of a given period (such as July 1<sup>st</sup> for a fiscal year) are used as the baseline.

**Annual Budget Process Method** - interest rate assumptions for the cost of variable rate exposure and for the yield on the short-term investment portfolio are used as a baseline.

During the annual budget process, estimates for interest income and the cost of variable rate exposure are generated. The revenue and cost estimates are based upon a number of factors including projections for taxable and tax-exempt interest rates. By using taxable and tax-exempt interest rates assumed during the adoption of the annual budget,



Metropolitan will be able to determine throughout the fiscal year the financial impact of changes in interest rates. Anticipated interest income and interest costs for variable rate exposure as developed in the annual budget process can be compared against actual dollar amounts for interest income and interest costs associated with the changes in interest rates over the budget period. Therefore, the dollar impact to Metropolitan of changes in interest rates is isolated.

By using the start of a period or the annual budget as a baseline for measuring interest rate movement, Metropolitan can monitor, report, and develop strategies for management of its asset / liability program.

### Monitoring and Reporting

As interest rates change throughout the fiscal year, staff will monitor the net interest cost and net interest income to Metropolitan. Periodic reports throughout the fiscal year will be provided to the Board detailing Metropolitan's net interest cost or net interest income depending upon interest rate levels relative to starting point or budget assumptions. Reporting will include the relative financial impact of increased net interest costs or reduced interest income. In order to determine the overall financial impact to Metropolitan, the increase in net interest costs and reduction in net interest income must be compared to financial indicators of Metropolitan. Comparing the impact of changes in interest rates to operating revenues and net operating revenues should provide the necessary comparison parameter. Net operating revenues are determined in Metropolitan's flow of funds by reducing operating revenues by operating expenses over a certain reporting period. Net operating revenues in conjunction with revenues from the sale of hydroelectric power and interest on investments are used to secure debt payments to Metropolitan's bondholders. The flow of funds for Metropolitan are represented as follows:

+	Operating Revenues
	<u>less Operating Expenses</u>
=	Net Operating Revenues
+	Revenues from the sale of Hydroelectric Power
+	<u>Interest on Investments</u>
=	Adjusted Net Operating Revenues

By linking the financial impact of changes in interest rates to Metropolitan's net operating revenues, Metropolitan may determine the financial significance of changes in interest rates on the overall financial condition of the organization. In this way the relative impact to bondholders and Metropolitan's member agencies can be ascertained.

For example, if net interest costs have increased by \$2 million and Metropolitan's net operating revenues are \$100 million, then the relative financial impact to Metropolitan is two percent. The relative financial impact calculation can be used by Metropolitan to determine if the asset/liability mix needs to be adjusted or modified in order to reduce the percentage impact on net operating revenues. The increased net interest cost or reduction

in interest income can also be used to report the impact on revenue bond debt service and fixed charge coverages. Since revenue bond debt service coverage and fixed charge coverage are primary indicators of Metropolitan's credit quality, the overall financial impact of changes in interest rates to Metropolitan and Metropolitan's bond holders can be quantified. Regardless of what indicators are used to determine the financial impact of changes in interest rates to Metropolitan, the Board must be comfortable with the risk of additional costs or reduced interest income over a certain period of time. Calculations of the impact of changes in interest rates can be communicated and explained to the Board, but the ability of Metropolitan to manage variable rate exposure is of primary importance.

Based on the results of the relative financial impact calculation, a strategy to effectively manage additional net interest costs or a reduction in interest income can be formulated and provided to the Board for consideration. The strategy to modify the asset / liability mix will include utilizing interest swaps (through Metropolitan's Master Swap Policy) to mitigate increasing net interest costs and reductions in net interest income due to changing interest rate markets.

#### Conclusion

Metropolitan's variable rate exposure policy shall not be based on a fixed percentage of total water revenue bond outstanding.

Metropolitan's variable rate exposure policy shall be based on the overall net dollar impact to Metropolitan of changes in interest rates.

The primary factors in determining the amount of variable rate exposure will be the balance available in the short-term investment portfolio and Metropolitan's risk tolerance to rising and declining interest rates.

The annual budget or a starting period methodology shall be used as a baseline against which to measure the impact to Metropolitan's financial condition of changes in interest rate levels.

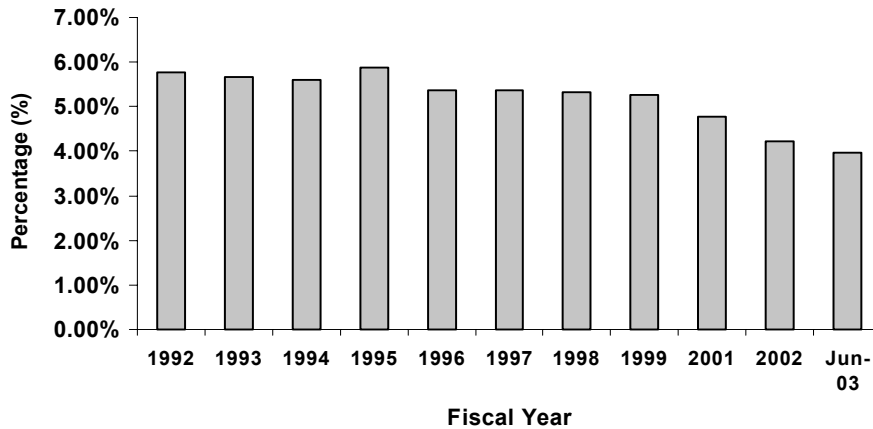
### **Metropolitan’s Bond Refunding Guidelines**

At the April 2003 meeting of the Board of Directors, new refunding guidelines were approved. The new guidelines and other alternatives considered are described in this section of the update to the Long Range Finance Plan.

Through the use of bond refundings, Metropolitan has been able to take advantage of opportunities in the municipal capital markets to lower the cost of its outstanding debt obligations. Metropolitan has utilized market opportunities to current, advance, and synthetically refund outstanding debt obligations to achieve debt service savings. These savings have in turn contributed to the decrease in fixed costs borne by water rate payers and taxpayers within Metropolitan’s service area. As of June 30, 2003 Metropolitan’s weighted average cost of debt was 3.96 percent. This includes a weighted average cost of fixed rate debt of 4.88 percent. As illustrated in the following graph, Metropolitan has been able to lower its cost of outstanding debt obligations from 5.88 percent in 1995 to 3.96 percent.

**Figure 21. Weighted Average Cost of Debt**

### **Weighted Average Cost of Debt 1992 through June 2003**



Bond refundings have been an integral part of Metropolitan’s ability to lower the costs of its debt obligations. Metropolitan’s previous bond refunding guidelines were developed during the 1995 update of the Long Range Finance Plan. In order for Metropolitan to effect a refunding of its debt obligations, the following net present value savings targets had to be achieved:

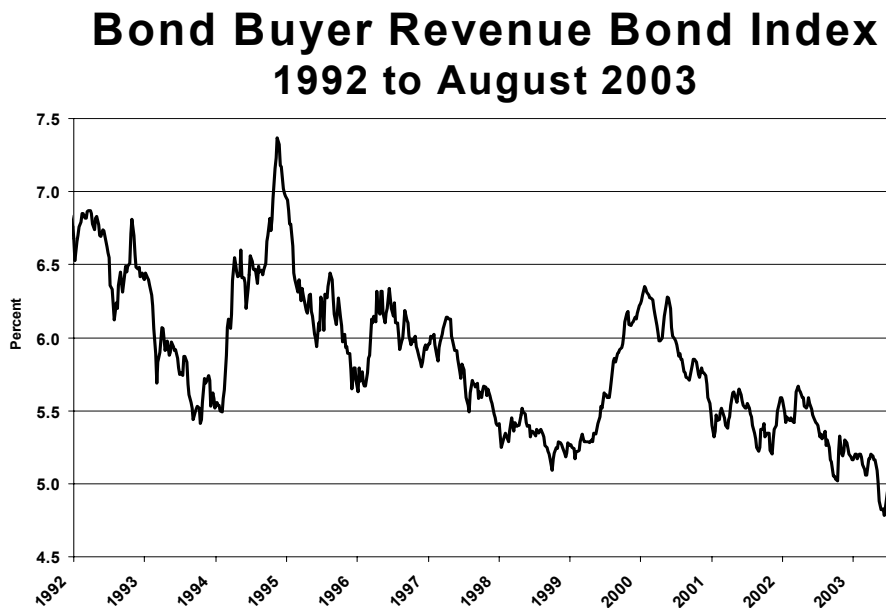
- Current Refundings 3 percent net present value savings

- Advance Refundings 5 percent net present value savings
- Synthetic Refundings 7 percent net present value savings

The savings requirements for advance refundings were greater than the savings requirements for current refundings because the requirement recognized the time value to Metropolitan of the previous call options (call premiums paid by Metropolitan) associated with outstanding debt. Higher savings requirements for synthetic refundings reflect additional net present value savings required to “offset” the greater risks to Metropolitan associated with synthetic financing products (such as tax risk and counterparty risk).

As the overall cost of Metropolitan’s debt obligations have decreased, so have the opportunities to further reduce the cost of Metropolitan’s debt given the previous refunding guidelines. As the following graph illustrates, since 1992 the Revenue Bond Index has not been lower than 4.78 percent. In order for Metropolitan to take advantage of future interest rate reductions in the municipal bond market, to capture the value of call options already paid by Metropolitan, and to continue to lower its cost of debt, Metropolitan modified its bond refunding guidelines. Otherwise, it would have become increasingly difficult for Metropolitan to take advantage of market opportunities to refund bonds and reduce fixed costs to Metropolitan’s member agencies.

**Figure 22. Revenue Bond Index**



In consideration of Metropolitan’s relatively low cost of debt and the limitations associated with the previous refunding guidelines, additional analysis to determine the appropriate savings targets for Metropolitan bond refundings was conducted. The results of the analysis indicated that there were limitations associated with the previous refunding guidelines, as the previous guidelines did not consider the time value of money

and the present value “potential” of Metropolitan’s previous indebtedness. Due to the limitations of the previous refunding guidelines, Metropolitan did not take full advantage of the opportunities to lower the costs of its bonded debt. In order to enhance debt portfolio performance, the previous refunding guidelines were changed and a more customized approach to bond refundings for Metropolitan was implemented.

### The Refunding Process

Interest rates in the municipal bond market have fluctuated between 4.78 percent and 7.37 percent since 1992 (the cost of long-term debt as reflected in the Bond Buyers Revenue Bond Index (RBI)). Metropolitan’s cost of debt financing is typically about 25 to 30 basis points below the RBI, reflecting Metropolitan’s strong financial position and high credit ratings. Metropolitan’s strong financial position and high credit ratings have enabled Metropolitan to access the capital markets at a lower cost of debt than other municipalities and utilities throughout the country. On average for every \$100 million of revenue bond debt issued by Metropolitan, interest costs are lower than the cost of debt priced at the RBI levels by approximately \$250,000 to \$300,000 per year.

When interest rates decline in the municipal bond market, opportunities for Metropolitan to lower the cost of its outstanding debt obligations through bond refundings become viable. Metropolitan has been able to take advantage of declining interest rates to lower the cost of its debt. Metropolitan’s financial team will determine if a market rally offers Metropolitan the opportunity to lower the cost of its debt. Should viable refunding opportunities exist, financing proposals from Metropolitan’s investment banking team that identify potential refunding candidates will be evaluated by the financing team to determine the best course of action for Metropolitan. If a refunding alternative (current, advance, or synthetic) meets the refunding guideline requirements, and the financing team determines that the benefits of such a refunding alternative outweigh the risks, then the authorizing resolution permits the financing team to proceed with the refunding transaction upon approval from an Ad Hoc Committee made up of the Chairman of the Board, the Chairman of the Budget, Finance, and Investment Committee, and the Chief Executive Officer. If a refunding alternative does not meet the refunding guideline requirements, Board approval is required to effect the refunding transaction, and a recommendation will be made to the Board for approval to proceed.

### Factors that Influence Bond Refundings

In order to determine which factors should be considered in changing or modifying the refunding guidelines, the following factors impact refunding decision making at Metropolitan:

- Refunding guidelines/targets

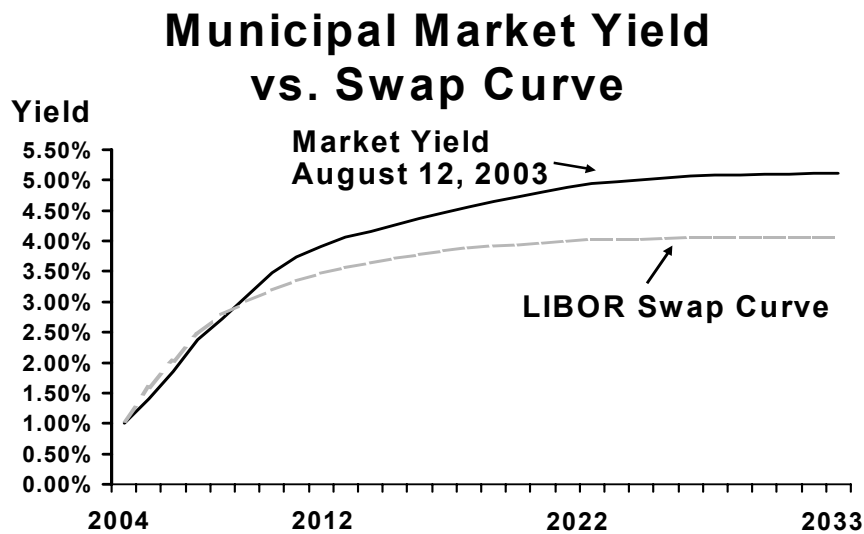
Metropolitan’s previous refunding guidelines distinguished among current, advance, and synthetic refunding transactions. The previous guidelines were generally viewed by the financial community as universally accepted and easily understood. The net present

value savings for a transaction were divided by the proceeds of the refunding bonds to attain a savings ratio. The savings ratio calculation determined if the potential refunding transaction was viable. All bonds within a single financing transaction were aggregated to determine net present value savings. Therefore, savings associated with individual bonds were not considered. For example, if an individual bond has net present value savings (NPV) for an advanced refunding of 4.50 percent (below the advance refunding savings target of 5.00 percent), but inclusion of the bond in the overall refunding analysis results in greater than 5.00 percent NPV savings for the entire proposed refunding transaction, then the bond could still be included in the proposed refunding transaction.

- Type of financing product

Synthetic financial products used to facilitate the refunding of debt have different costs, risks, and benefits than do fixed rate revenue refunding bonds. Metropolitan’s interest rate swap policy approved in September 2001 provides Metropolitan with policies and guidelines to follow in consideration of the use of synthetic products. Due to fluctuating relationships in the tax-exempt municipal bond market, the use of synthetic products can provide Metropolitan with lower cost fixed rate borrowing compared to traditional fixed rate borrowing. The following graph illustrates the lower cost of using synthetic financial products relative to fixed rate municipal bonds:

**Figure 23. Municipal Market Yield vs. Swap Curve**



- Tax limitation on tax-exempt bond refundings

Before 1986, Metropolitan could refinance outstanding debt as many times as possible. However, with enactment of the Tax Reform Act of 1986, advance refundings of a bond are limited to one time (or on a tax-exempt basis, are current refundable not more than 90 days before the call date). Therefore, due to the 1986 tax limitation, Metropolitan

must execute advance refundings of outstanding debt at only the most opportune time. This restriction subjects Metropolitan to interest rate risk (as interest rates could be lower at a future date) when attempting to determine the most opportune time to refund a bond. Once a bond is advance refunded, the bond cannot be advance refunded a second time. However, a proposed bill was introduced in Congress in early 2003 that would allow municipalities such as Metropolitan one additional opportunity to advance refund municipal bonds during a two-year window period. As of the end of September 2003, the proposed bill is pending action.

- Net present value calculations

Net present value calculations are impacted by a number of factors including the time between the refunding date and the call date on the refunded bond; the time between the call date and the maturity date of the refunded bond; the yield on the refunding bonds; the coupon on the refunded bond; the call premium on the refunded bond; the yield generated in the escrow account; the yield on transferred proceeds (if any); and the costs of issuance for the refunding transaction. Metropolitan's previous guidelines (a flat net present value savings percentage) did not take all of these factors into account when determining a bond refunding candidate.

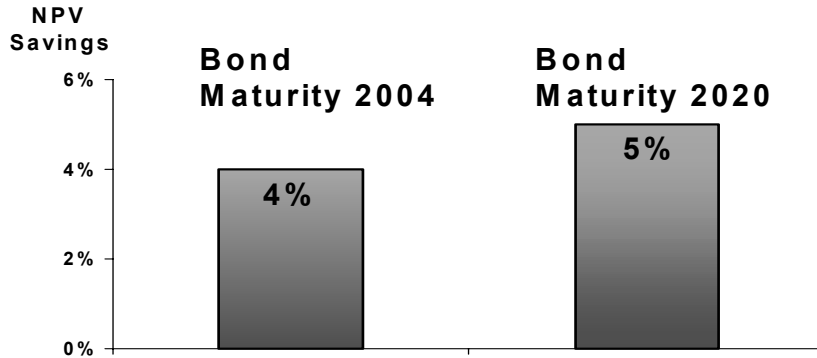
#### Limitations of Previous Refunding Guidelines

Metropolitan's previous refunding guidelines had a number of characteristics and restrictions that limited Metropolitan's ability to lower the cost of its outstanding debt. Although the previous guidelines provided a good basis for determining potential refunding candidates, because of Metropolitan's relatively low cost of debt, future refunding opportunities were limited under the previous policy. In fact, in order for the previous refunding targets to be realized for most of Metropolitan's outstanding debt, tax-exempt yields would have had to decrease to levels far below historically low interest rate levels.

The major drawback of the previous guidelines was that the savings criteria did not distinguish between a bond that has a short time period between the call date and the maturity date, and a bond that has a longer time period between the call date and the maturity date. A relative present value savings comparison between the two bonds will always result in a lower net present value savings for the bond with a shorter time period between the call date and the maturity date. Therefore, due to this limitation with the previous refunding guidelines, long bonds are typically refunded while intermediate term bonds tend to remain outstanding. The following graph illustrates the difference:

**Figure 24. Comparison of Savings**

**Comparison of NPV Savings  
Bonds Callable in 2003**



As illustrated above, the bond with the maturity within one year that has 4 percent net present value savings is a more ideal refunding candidate than the bond that produces 5 percent savings over 17 years, because 4 percent savings can be realized within only one year of the call date of the bond. However, since the bond maturing in one year did not meet the previous refunding guidelines, it could not be refunded.

In distinguishing between refunding candidates, the time value of a potential refunding candidate is also not considered under the previous guidelines. The longer the period of time between the issuance date of a refunding and the call date of the refunded bonds, the higher the potential present value savings that may be generated (as there is a longer period of time for interest rates to decline). The previous refunding guidelines did not consider the impact of the time value of the potential refunding candidate.

Negative arbitrage in the refunding escrow is another factor that impacts the ability of Metropolitan to refund debt. Generally, the existence of negative arbitrage in a refunding escrow reduces the amount of net present value savings, thereby impacting the economics of a refunding transaction.

Therefore, given previous refunding guidelines, the already low weighted average cost of Metropolitan’s debt, and historic interest rate levels, Metropolitan’s previous refunding guidelines reduced if not eliminated potential refunding opportunities. Since there are limited opportunities to lower the cost of Metropolitan’s outstanding debt, and thereby reduce the financial burden for servicing the debt on the water rate payers and taxpayers within Metropolitan’s service area, Metropolitan’s refunding guidelines needed to be modified or changed.



## Alternatives for Refunding Guidelines

### **Previous Guidelines**

The objective of any refunding methodology is to reduce the cost of debt when market opportunities arise. Metropolitan's previous refunding guidelines allowed Metropolitan to reduce the cost of debt in a manner that was easily understood and widely accepted within the financial community. However, as previously described, there are a number of factors that limit Metropolitan's ability to lower the cost of its debt within the previous guidelines. The previous refunding guidelines have served Metropolitan well, and have been an integral part in lowering the weighted average cost of Metropolitan's debt, but did not allow Metropolitan to take full advantage of potential savings opportunities. Since the previous refunding guidelines were set as absolute parameters or targets, refunding opportunities for certain bonds never achieved the potential for savings to Metropolitan (given reasonable market expectations).

It is important for Metropolitan to identify savings opportunities, and to have the tools and dynamic financial policies that will allow Metropolitan to take full advantage of savings opportunities given analysis and consideration of all relevant factors. In order to take full advantage of savings opportunities, alternative refunding methodologies were considered. Two alternative methodologies were identified by staff as potential methods to determine refunding guidelines for Metropolitan: (1) a modified percentage savings method; and (2) a technical methodology using call option valuation and refunding efficiency.

### **Alternative 1: Modified Percentage Savings**

As with the previous refunding guidelines, a refunding guideline based on a percentage savings methodology is universally accepted and is easily understood. In order to enhance previous refunding guidelines, and offer a percentage savings approach that reduces or eliminates the limitations of the previous refunding guidelines, the following three modified percentage savings refunding methodologies are provided for consideration.

Straight Sliding Scale Method - a percentage savings method that considers the time between the call date of a bond and the final maturity of a bond would allow Metropolitan to refund bonds that otherwise might never be refunded. This method uses the time period between the call date of a bond and the maturity date of a bond to determine the savings threshold target. The shorter the time period between the call date of a bond and the maturity date of a bond, the lower the percentage savings target. The following chart illustrates an example of a sliding scale refunding methodology that could be implemented:

**Table 6. Modified Percentage Savings Straight Sliding Scale**

Years from Call Date To Final Maturity	Percent Savings
Less than one	1.0%
1.00 to 2.50	1.5%
2.51 to 4.00	2.0%
4.01 to 5.50	2.5%
5.51 to 7.00	3.0%
7.01 to 8.50	3.5%
8.51 to 10.00	4.0%
Greater than ten	4.5%

This approach takes into consideration the economics that impact a refunding decision. Note that the time period between the call date and the maturity date of a bond directly impacts the net present value savings target that would be acceptable to Metropolitan. Under this method, each bond is examined individually. Therefore, no distinction is made among current, advance, or synthetic refundings. However, negative arbitrage in a refunding escrow and tax law differences between current and advance refundings are not considered.

Sliding Scale with Refunding - this method assumes the same parameters as the straight sliding scale method, but also includes the time period between the issuance date of the refunding bonds and the call date of the refunded bonds as another parameter to be used to determine the sliding savings targets. This approach takes into consideration the possibility that interest rates could be lower prior to the call date of the refunded bonds. As such, the targeted savings levels are impacted by the time between the issuance date of the refunding bonds and the call date of the refunded bonds. The following chart illustrates an example of a sliding scale with refunding methodology that could be implemented:

**Table 7. Modified Percentage Savings Sliding Scale with Refunding**

Years from Refunding Issuance Date to Refunded Call Date	Years from Call Date To Final Maturity	Percent Savings
0 to 1	Less than one	1.0%
	1.00 to 2.50	1.5%
	2.51 to 4.00	2.0%
	4.01 to 5.50	2.5%
	Greater than 5.51	3.0%
1 to 5	Less than one	1.0%
	1.00 to 2.50	2.0%
	2.51 to 4.00	3.0%
	4.01 to 5.50	4.0%
	Greater than 5.51	5.0%
Greater than 5	Less than one	1.0%
	1.00 to 2.50	2.0%
	2.51 to 4.00	3.0%
	4.01 to 5.50	4.0%
	Greater than 5.51	5.0%

Percentage Savings with Adjustment Factors - the third modified percentage savings methodology incorporates a number of factors to determine a percentage savings target in order to reach a refunding decision. The decision factors used to determine the percentage savings target include: determining the degree of savings desired; use of a national revenue bond index as a proxy for the relative level of interest rates; making an adjustment for synthetic refundings to recognize the additional risks associated with synthetic products; adjusting the savings target in consideration of the duration of the refunding candidates; and including the economic impacts of a bond refunding escrow. The following example illustrates how a percentage savings target would be determined under this method:

Step one: determine a percentage savings target to be used as a basis (starting point) to apply the factor adjustments. For this example 3 percent net present value savings will be used as the basis for illustrative purposes.

Percentage savings target after step one: 3 percent

Step two: use the Bond Buyer Revenue Bond Index to adjust the savings target relative to historical levels of interest rates in the municipal market. Historically high or historically low interest rate levels can be defined by using statistical probability analysis. For example, if interest rates are at historic lows, the percentage savings target would be adjusted downward by one percent, if interest rates are at historic highs, the percentage savings target would be adjusted upward by one percent. For this example we will assume that interest rates are at historic lows, therefore, the percentage savings target will be adjusted downward by one percent from 3 percent to 2 percent.

Percentage savings target after step two: 2 percent

Step three: adjust the percentage savings target for additional risks associated with synthetic financial products. For example, if a synthetic refunding is considered and tax risk will be borne by Metropolitan over the term of a swap, then perhaps an additional 3 percent savings to the target will be necessary to reflect the additional risk to Metropolitan. For this example, we will assume that no synthetic products will be used for a refunding, therefore, no adjustment for synthetic financial products will be required. Through step three, the percentage savings target in the example remains at 2 percent. Percentage savings target after step three: 2 percent

Step four: adjust the percentage savings target for the duration of the refunding candidates. For example, a two-year bond can provide similar annual debt service savings to a longer-term bond, but over a shorter period of time, therefore, the net present value savings target should be lower for bonds with shorter durations. In this example, we will assume that the potential refunding candidate is a seven-year bond and will adjust the percentage savings target upward by a fixed percentage (by adding .50 percent to the percentage refunding target). Therefore, our percentage refunding target for this example will be increased from 2 percent to 2.5 percent. Percentage savings target after step four: 2.5 percent

Step five: adjust the percentage savings target for any economic impact attributable to the bond refunding escrow. In a bond refunding transaction, proceeds from a bond refunding are set aside and held in an escrow account. The proceeds from the bond refunding are typically invested in direct obligations of the United States Government; the principal amount of the proceeds ensures the debt service payments on the refunded bonds. In certain instances, negative arbitrage may exist in the escrow account, that is, the escrow yield is less than the bond yield, and therefore, savings on the refunding transaction would be reduced. Assuming negative arbitrage in an escrow results in a reduction in savings, the percentage savings target will need to take into account the impact of the escrow on percentage savings (target will be net of the economic impact of the escrow). Percentage savings target after step five: 2.5 percent (net of economic impact of escrow)

For this example, the percentage savings with adjustment factors methodology results in a percentage savings target of 2.5 percent for the bond refunding candidates. Therefore, if the refunding candidate in question can realize at least 2.5 percent net present value savings (net of the economic impact of the escrow), the bond would meet the minimum refunding savings requirements, and would be a refunding candidate by Metropolitan. This methodology incorporates a number of technical decision factors in a manner that is easily determined and understood. Metropolitan can easily adjust or modify the decision factors for each step of this process. This allows Metropolitan the flexibility to change the refunding decision factors should management objectives, management philosophy, or market conditions change. The first step in incorporating this methodology for Metropolitan is to determine the decision factors for each of the decision-making steps, and the percentage savings adjustment for each decision factor.

**Metropolitan’s New Bond Refunding Guidelines**

The following is a step-by-step description of Metropolitan’s new bond refunding guidelines that were approved by the Board of Directors in April 2003:

Percentage Savings with Adjustment Factors: Determination of decision factors for each of the decision-making steps:

Step One: As previously noted, Metropolitan’s weighted average cost of debt is as low any municipality or utility in the United States. As such, due to the already low cost of Metropolitan debt, future refunding opportunities are limited unless municipal interest rates approach levels never before realized. Therefore, considering Metropolitan’s already low cost of debt and historical interest rates in the municipal market, step one of this methodology should reflect the urgency to Metropolitan for debt service relief given Metropolitan’s current debt portfolio. As such, a base savings target of 3 percent appears reasonable for Metropolitan at this time before adjustments.

Step Two: Since 1992 the Bond Buyer Revenue Bond Index (RBI) has fluctuated between 5.02 percent and 7.37 percent. Although Metropolitan’s long-term debt trades below the RBI, the RBI is the best indicator of municipal interest rate levels at any given time. Step two of this methodology requires Metropolitan to adjust the percentage savings target by a percentage that is based on the level of municipal rates reflected in the RBI. The following table determines the adjustment factors given current interest rate levels in relation to historical interest rate levels.

**Table 8. Adjustment Factors**

<b>RBI Index Compared to Historical Levels (a)</b>	<b>Adjustment Factor</b>
Lowest 10 <sup>th</sup> percentile	minus 2.0%
Between 10 <sup>th</sup> and 20 <sup>th</sup> percentile	minus 1.5%
Between 20 <sup>th</sup> and 30 <sup>th</sup> percentile	minus 1.0%
Between 30 <sup>th</sup> and 40 <sup>th</sup> percentile	minus 0.5%
Between 40 <sup>th</sup> and 60 <sup>th</sup> percentile	no adjustment
Between 60 <sup>th</sup> and 70 <sup>th</sup> percentile	Plus 0.5%
Between 70 <sup>th</sup> and 80 <sup>th</sup> percentile	Plus 1.0%
Between 80 <sup>th</sup> and 90 <sup>th</sup> percentile	Plus 1.5%
Greater than 90 <sup>th</sup> percentile	Plus 2.0%

(a) Assumes RBI data over the prior (rolling) ten-year period.

By recognizing the relationship between current interest rate levels and historical interest rate levels in the municipal market, Metropolitan can justify more aggressive refunding

targets in historically low interest rate periods, and conversely more conservative refunding targets during periods of higher interest rate levels.

Step Three: Synthetic financial products (such as interest rate swaps) offer Metropolitan the opportunity to lower the overall costs of financing. However, there are a number of risks to Metropolitan associated with the use of synthetic financial products. Those risks need to be recognized when determining refunding targets using this refunding methodology. For purposes of quantifying the impact on the refunding savings target of synthetic financial products, step three entails adding three percent to the refunding savings target when tax risk to Metropolitan is associated with the transaction or if an option product is used in the transaction. Option products include, but are not limited to swaptions, knock-in options, knockout options, cancellation options, conversion options, etc. Should tax risk or an option product not be included during the term of an interest rate swap agreement, then two percent is added to the refunding savings target. The one percent addition to the refunding savings target represents additional savings required by Metropolitan due to the other risks associated with synthetic financial products such as basis risk, counterparty risk, and termination risk. The following table summarizes the additional savings required for step three:

**Table 9. Additional Savings**

<b>Risks Associated with Synthetic Financial Products</b>	<b>Adjustment Factor</b>
The interest rate swap agreement does <b><u>not include tax risk or an option product</u></b>	Plus 2%
The interest rate swap agreement <b><u>includes tax risk or an option product</u></b>	Plus 3%

Step Four: The duration of the refunding candidate impacts the overall level of savings associated with a bond refunding, since savings from refunding a bond are realized during the period from the call date to the maturity of the bond. Therefore, refunding candidates with shorter time periods between the call date of the bond and the maturity date of the bond will have comparatively lower savings potential than maturities with longer time periods from the call date to the maturity of the bond. Therefore, due to limited savings potential, refunding candidates with shorter time periods between the call date of the bond and the maturity date of the bond should reduce the refunding savings target by subtracting a percentage from the savings target. Conversely, refunding candidates with relatively longer time periods between the call date of the bond and the maturity date of the bond should contribute to an increase in the refunding savings target by adding a percentage to the savings target. A graduated adjustment factor may be used under this methodology to recognize the savings disparity between shorter and longer

time periods between the call date and the maturity date of a bond. The following table lists the adjustment factors required under step four of this methodology:

**Table 10. Adjustment factors**

<b>Period of Time Between Call Date and Maturity Date of a Bond</b>	<b>Adjustment Factor</b>
less than six months	minus 0.50%
greater than six months / less than one year	minus 0.25%
greater than one year / less than two years	- zero -
greater than two years / less than three years	Plus 0.25%
greater than three years / less than four years	Plus 0.50%
greater than four years / less than five years	Plus 0.75%
greater than five years / less than ten years	Plus 1.00%
greater than ten years / less than fifteen years	Plus 1.25%
greater than fifteen years	Plus 1.50%

Step Five: In a bond refunding transaction proceeds from the refunding bonds are placed in an escrow account and used to purchase direct obligations of the United States Government. The principal amount of the escrow plus interest earnings ensures debt service payments on the refunded bonds. The escrow account is an irrevocable pledge by Metropolitan to secure payments to the bondholders of the refunded bonds. Metropolitan realizes savings by refunding “high coupon” bonds (the “refunded bonds”) with lower coupon “refunding bonds.” By law, the escrow can only earn the interest rate associated with the “new” refunding bonds, that is the lower rate. Therefore, since the higher coupon on the refunded bonds must be paid, the escrow account typically requires more funds, which results in a greater issue size and conversely a lower savings level. Savings from a bond refunding are impacted by not only the absolute level of interest rates, but also by changes in the shape of the yield curve. As such, the opportunity to realize savings from a refunding are impacted not only by the interest rate on the refunded bonds and the interest rate on the refunding bonds, but by the interest rate in the escrow account.

Since the yield in an escrow account cannot be higher than the yield on the refunding bonds, the structuring of the escrow has a significant impact on the savings associated with each refunding candidate. Arbitrage exists when the yield in the escrow account is higher than the yield on the refunding bonds (positive arbitrage), and when the yield in the escrow account is lower than the yield on the refunding bonds (negative arbitrage). Escrow accounts may also experience inefficiencies when the maturity and interest payment dates of the refunded bonds do not exactly match the escrow receipts. Therefore, since negative arbitrage and escrow inefficiencies impact the savings in a refunding transaction, the impact of the economics of the escrow account must be included in the calculation of the percentage savings target.

In order to include the impact of the economics of an escrow account on the percentage savings target, the calculated percentage savings target for each refunding candidate must be **net** of the impact of the escrow account. A simplified method of determining the

impact of the escrow on the refunding candidate will be incorporated in the process by assuming a separate escrow account for each bond. The impact of the escrow account on the refunding candidate can then be isolated on a bond-by-bond basis. If the analysis results in an economic impact to the savings associated with the refunding candidate, then the impact will be netted off the percentage savings target to determine the “net refunding savings target” for each bond, and to determine if the bond is an eligible refunding candidate.

### **Summary**

The percentage savings methodology with adjustments incorporates a number of important decision-making factors (adjustments) that were considered when determining potential refunding candidates. By using these factors (adjustments to the base percentage savings target) to identify potential refunding candidates, Metropolitan can be assured that the refunding guidelines take into consideration all relevant factors required to make a refunding decision. In this way, Metropolitan can eliminate the inefficiencies and limitations with its previous refunding guidelines, and utilize every financial opportunity available to lower the cost of servicing its debt obligations. Bond refundings have been an integral part of Metropolitan’s ability to lower the costs of its debt obligations. As the overall cost of Metropolitan’s debt obligations have decreased, so have the opportunities to further reduce the cost of Metropolitan’s debt given previous refunding guidelines. The previous refunding policy limited the opportunities available to Metropolitan to lower the cost of its debt. Therefore, in order for Metropolitan to take advantage of future interest rate reductions in the municipal bond market, and to continue to lower its cost of debt, Metropolitan’s bond refunding guidelines were modified by Metropolitan’s Board in April 2003.



## **Section 4. Risk Management**

### ***Introduction***

Risk Management is a dynamic process requiring identification and analysis of risk, mitigation and containment of the consequences of risk, and operational and financial management of risk. More broadly, the process can be categorized into three areas: risk prevention, risk control and risk finance. Risk prevention is the process of identifying potential, known and currently unidentified risks, and providing solutions to alleviate or minimize those risks. Risk control is the process of mitigating known risks and current exposures (including claims and litigation). Finally, risk finance is the process of financing these exposures to ensure that the consequences of potential loss are not a significant burden to business operations.

This section will describe Metropolitan's risk management responsibility as performed by the Risk Management Unit within the Office of the Chief Financial Officer, in addition to those risk management related functions performed by MWD business units. This section will include discussion of the Administrative Code authority for the risk management program, Metropolitan's risk and liability profile illustrated by recent claims trends, and a description of the risk finance conditions during the last few years. It will conclude with a brief discussion of the trends and forecasts depicted by those trends in risk control and risk finance, and a narrative roughly outlining Metropolitan's future risk prevention program.

### ***Risk Management Responsibilities***

Historically Metropolitan's risk management responsibility has focused on the risk control and risk finance components. Risk prevention has been primarily a formal function of the Workplace Health & Safety Unit, and practiced informally throughout Metropolitan's various business units. Metropolitan finances risk through a combination of self-insurance and excess general liability and workers' compensation coverages, in addition to specialty coverages when financially advantageous, and through contractual transfer of risk. The Risk Management Unit manages the self-insured retention, currently \$25 million, for general liability and property. The Workplace Health & Safety Unit manages the \$1 million self-insured retention for workers' compensation.

The Risk Management Unit annually collects and analyzes exposure data to obtain excess and specialty coverages with the assistance of its current broker, Aon Risk Services, to complete the core of the risk finance component. Metropolitan performs risk control by managing liability, property and workers' compensation claims with the assistance of third party claims administrators (TPAs) and Metropolitan's Legal Department. The Risk Management Unit manages the liability and property claims program with the assistance of Carl Warren & Co., the current TPA for liability and property. The Workplace Health & Safety Unit of the Water Systems Operations Group manages the Workers'

Compensation program with the assistance of another TPA. As for risk prevention, the Risk Management Unit is taking a more formal and aggressive role in the risk prevention process along with the Workplace Health & Safety Unit. This responsibility will involve the education of all Metropolitan employees to create a more risk aware business culture. A brief description of this evolving process is included later in this section.

### **Authority**

The authority for Metropolitan's risk management program is described in Division IX, Section 9100 of the Administrative Code, "Risk Management." The objectives as described in this section include the following:

- a. "The establishment and maintenance of a suitable work and service environment in which District personnel and the public can enjoy safety and security in the course of their daily pursuits."
- b. "The security and preservation of District assets and service capabilities from loss, destruction, or depletion."

Administrative Code Section 9101 describes the authority for Metropolitan to self-insure and purchase excess insurance in the following:

- a. "To the extent risks of loss involving a combination of District property and third party claims exceed the reserves for emergency repairs and claims prescribed by Section 5202 of this Code, the District policy shall be to procure insurance for such losses to the extent it determines insurance is available at a reasonable cost."
- b. "With respect to other risks of loss, the District's policy shall be to self-insure in whole or in part as the best interests of the District warrant."
- c. "To the extent practicable and financially feasible, the District shall transfer risks to third parties through contractual provisions."

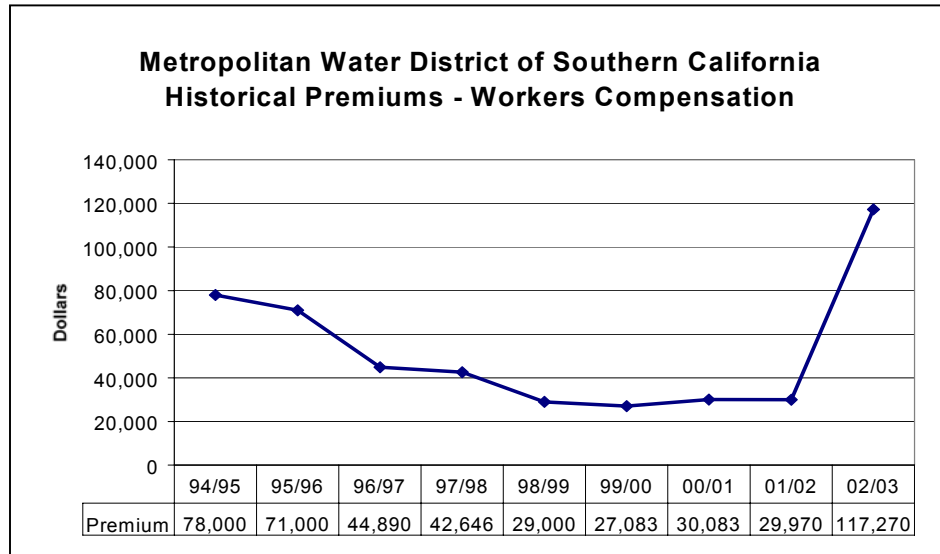
### **Risk Finance**

Based upon its authority and reinforced by its strong financial condition, Metropolitan self-insures the first \$25 million for general liability and property, and \$1 million for workers' compensation liability. For workers' compensation, comparisons made to a first dollar program indicate that the self-insured route continues to be financially advantageous at this time. While the typically cyclical insurance markets began hardening during fiscal year 1999-2000, the stock market condition and especially the 9/11 terror event significantly exacerbated that condition. Since 9/11, the insurance and

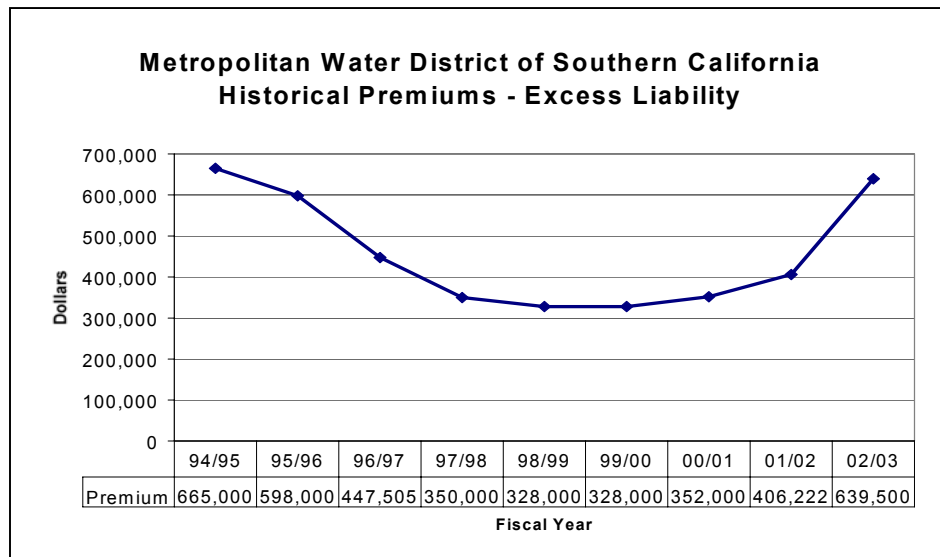
reinsurance markets have been extraordinarily restrictive. Coverage availability has dramatically decreased while premium rates have spiked at exponential rates.

In response to this challenge, Metropolitan increased its self-insured retention for workers' compensation from \$500,000 to \$1,000,000 for fiscal year 2002-2003. No longer enjoying the previous California State mandated unlimited excess coverage, Metropolitan's coverage for excess workers' compensation is now limited to \$35 million. Yet, the cost for this decreased coverage with a higher SIR increased dramatically from previous years even with Metropolitan's good claims experience. Charts 25 and 26 illustrate the excess workers' compensation and liability premium costs for recent years.

**Figure 25. Historical Excess Workers Compensation Premiums**



**Figure 26. Historical Excess Liability Premiums**



The excess liability coverage premium costs also increased during the current period, however far less dramatically than that for workers' compensation. Metropolitan's specialty coverages also experienced moderate premium increases as a result of a restrictive market. Table 1 on the following page depicts Metropolitan's complete coverage profile. The SIRs for excess liability and workers' compensation lines and the deductibles for the specialty lines are listed, along with the coverage limits and premium rates.

The final piece of the risk finance function at Metropolitan is contractual risk transfer. In this process, the Risk Management Unit works with the Legal Department and the various business units to create and update indemnification and insurance language to effectively transfer or limit the exposure in professional services and construction contracts as well as, conjunctive use, easement, and permit agreements. The Legal Department, Risk Management Unit, and Agreement Administrator collectively negotiate the language with the third parties to ensure minimal exposure from these activities.

**Table 11. Coverage Profile  
Insurance Premiums for 2002 – 2003**

<b>Coverage</b>	<b>Carrier</b>	<b>SIR Or Deductible</b>	<b>Coverage Limits of Liability</b>	<b>Premium Costs 2002-2003</b>
Crime	National Union Fire Insurance Company of Pittsburgh, Pa.	\$100,000	\$5,000,000	\$17,015
Excess Liability	Associated Electric & Gas Insurance Company	\$25,000,000 SIR	\$35,000,000	\$305,338
Public Officials Liability	Associated Electric & Gas Insurance Company	\$25,000,000 SIR	\$35,000,000	\$56,420
Fiduciary & Employee Benefit Liability	Associated Electric & Gas Insurance Company	\$25,000,000 SIR	\$35,000,000	\$7,227
Following Form Excess General Aircraft	Energy Insurance Mutual  Westchester Fire Insurance Company	\$25,000,000 SIR \$1,000 (In motion) \$250 (Not in motion)	\$40,000,000  \$25,000,000	\$206,500  \$47,048
Excess Workers Compensation & Employers Liability	Midwest Employers' Casualty Co.	\$25,000,000 SIR	\$25,000,000	\$117,270
Travel Accident	Life Insurance Company of North America	N/A	\$5,000,000	\$36,500 <sup>1</sup>
Special Contingency	National Union Fire	N/A	\$5,000,000	\$7,625 <sup>2</sup>

<sup>1</sup> Travel Accident premium paid for coverage during July 1, 2002 through June 30, 2004.

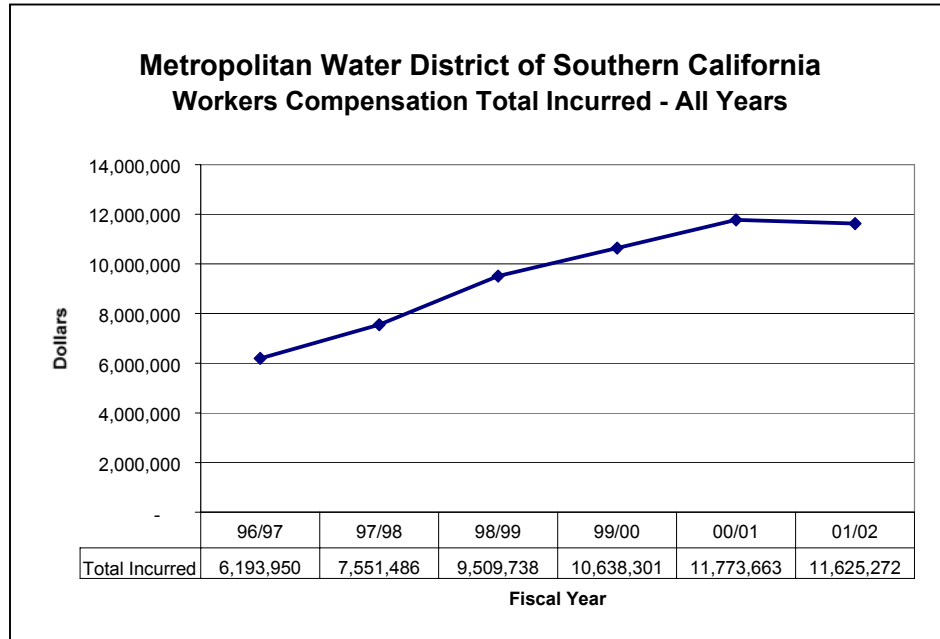
<sup>2</sup> Special Contingency premium paid for coverage during July 1, 2002 through June 30, 2004.

***Risk Control and Claims Exposure***

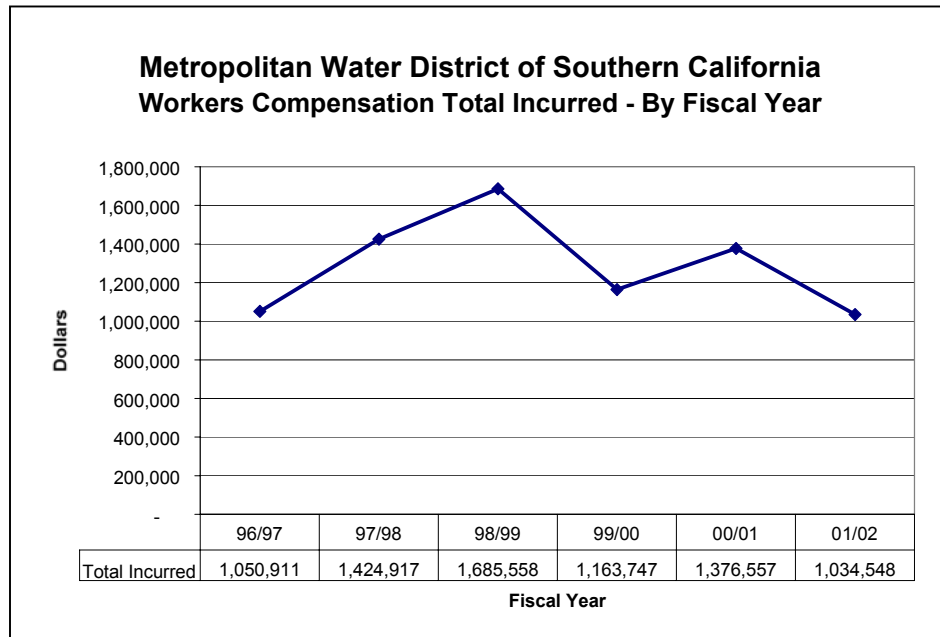
The Risk Management Unit manages the liability and property claims program, and with the assistance of the Legal Department has settlement authority up to \$125,000. Risk Management staff, TPA Carl Warren & Co., and Metropolitan Security staff conduct claims investigations. Since 1996, the combination of liability and workers' compensation exposures has increased substantially. Charts 27 through 30 illustrate this condition. The increases in workers' compensation liability have been incremental and moderate. For liability claims, the total annual number of claims filings has not increased substantially, but the total incurred has dramatically increased. Beginning with the 1997-1998 fiscal year, employment practice liability claims began to take up a disproportionately large percentage of the total incurred for liability.

While this trend is somewhat consistent with other government organizations during the period, it may be particularly prevalent at Metropolitan at least in part as a result of organizational changes that began during fiscal year 1999-2000, and which continue today. These types of claims, in addition to an increase in workers' compensation claims filings, can be linked to employee uncertainty and morale issues, an unfortunate consequence of dramatic organizational changes. Also, this type of trend is often observed on a national level during comparatively weaker economic periods, as is the case today. In the future, we expect further increases in workers' compensation exposures due to legislated increases in workers' compensation benefits and increases in medical treatment costs. Mitigating this trend, a decrease in both employment practices liability and workers' compensation claims filings should be enjoyed as the bulk of the organizational change eases into the past, and as the economy cyclically strengthens in future years.

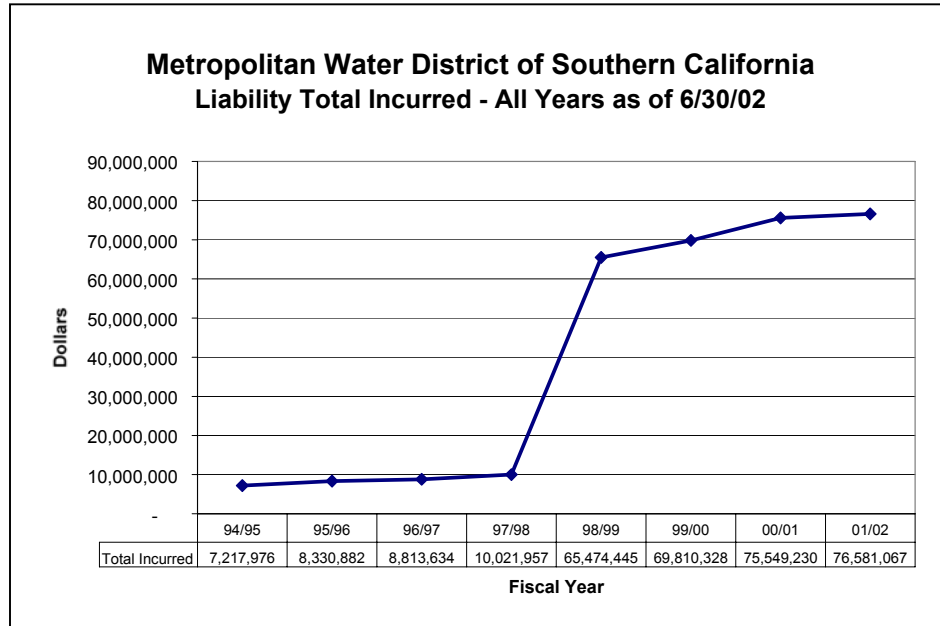
**Figure 27. Workers Compensation, Open Claims Total Incurred – All Years**  
 Paid and reserved cumulative total of all years, open files only



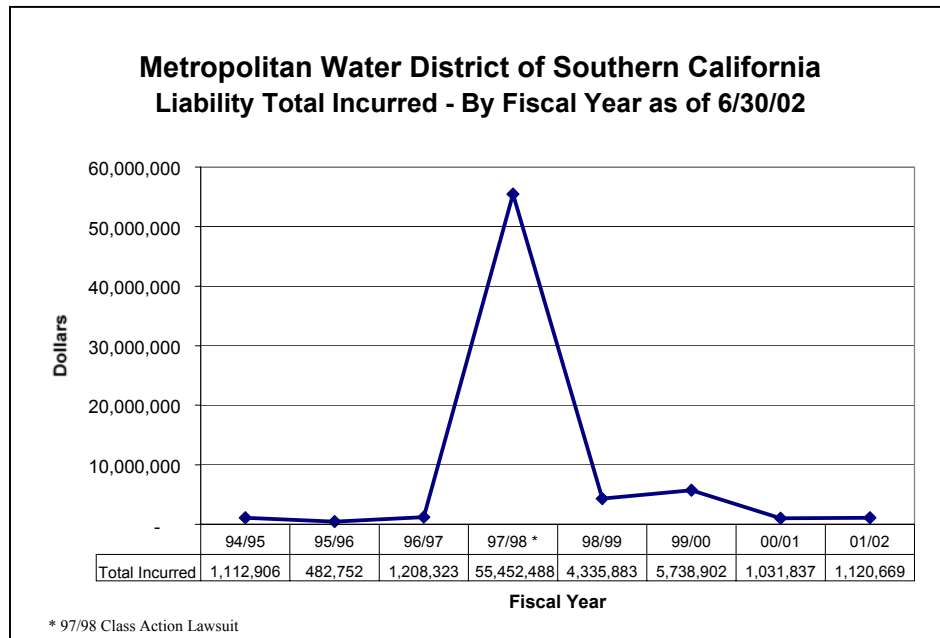
**Figure 28. Workers Compensation, First Year Policy Year Total Incurred**  
 All claims open and closed, (paid and reserved) as of the end of each fiscal year, for injuries occurring only during that fiscal year



**Figure 29. Liability Claims, Cumulative Total Incurred**  
 (Paid and reserved) for all years as of 06/30/02



**Figure 30. Liability Claims, Policy Year Total Incurred**  
 (Paid and reserved) for each fiscal year as of 06/30/02



### ***Risk Prevention***

The risk prevention component of Metropolitan's risk management program is a work in progress, and will continue to evolve to meet the challenges ahead. The current program has commenced by partnering with various organizations within Metropolitan in order to better identify possible risks, and to recommend and implement business solutions to avoid or minimize those risks. The program will require increased education of all employees and agents of Metropolitan to heighten awareness of potential risks, and to prevent exposures within their business units.

Numerous business risks have already been identified and the Risk Management Unit has begun to partner with Metropolitan organizations to assist in preventing or minimizing exposures. The security function within Water System Operations will be increasing in both scope and sophistication to meet current and future challenges. This program will defend Metropolitan against potential threats. The Workplace Health & Safety Unit along with the Human Resources Section is completing a wellness management program. The program is designed to increase collective employee health, reduce the number of days lost to sickness and injury, and create productivity gains. In addition, the Risk Management Unit will be working with Workplace Health & Safety to better educate the Bargaining Units on the workers' compensation process to improve employee satisfaction, and reduce the number of litigated claims and resulting costs.

Employee education will be designed to increase safety and security awareness. The objective is to decrease the number of accidents, speed up the incident reporting time, and decrease the incidents of theft or other activities resulting in property loss or damage to Metropolitan.

### ***Conclusion***

In summation, Metropolitan practices a conservative risk management approach. Because of its financial position and the adverse insurance market conditions, Metropolitan will continue to self-insure the majority of its casualty exposures. As there will be continued challenges ahead in identifying exposures, managing claims costs and financing risks, Metropolitan will aggressively seek the most efficient and effective ways to protect itself from the effects of risks which could disrupt operations.



## **Appendix 1 - THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA MASTER SWAP POLICY**

### Authority

A Master Swap Resolution (“Master Resolution”) of the Board of Directors of the Metropolitan Water District of Southern California (“Metropolitan”) authorizing the execution and delivery of interest rate swap transactions and related agreements was approved on September 11, 2001. The Master Resolution authorizes Metropolitan to enter into swap transactions from time to time to better manage assets and liabilities and take advantage of market conditions to lower overall costs and reduce interest rate risk.

The Master Resolution authorizes the execution of swaps and related agreements, provides for security and payment provisions, and sets forth certain other provisions related to swap agreements between Metropolitan and qualified swap counterparties. In the event of a conflict between the terms of the Master Resolution and the terms of the Master Swap Policy, the terms and conditions of the Master Resolution shall control.

### Purpose

The incurring or carrying of obligations and management of investments by Metropolitan involves a variety of interest rate payments and other risks that a variety of financial instruments are available to offset, hedge, or reduce. It is the policy of Metropolitan to utilize such financial instruments to better manage its assets and liabilities. Metropolitan may execute interest rate swaps if the transaction can be expected to result in the following:

- Reduce exposure to changes in interest rates on a particular financial transaction or in the context of the management of interest rate risk derived from Metropolitan’s overall asset / liability balance.
- Result in a lower net cost of borrowing with respect to Metropolitan’s debt or achieve a higher net rate of return on investments made in connection with, or incidental to the issuance, incurring, or carrying of Metropolitan’s obligations or other Metropolitan investments.
- Manage variable interest rate exposure consistent with prudent debt practices and guidelines approved by the Board.

Metropolitan shall not enter into interest rate swaps for speculative purposes.

### **Form of Swap Agreements**

Each interest rate swap executed by Metropolitan shall contain terms and conditions as

set forth in the International Swap and Derivatives Association, Inc. (“ISDA”) Master Agreement, including any schedules and confirmations as approved in accordance with Article II, Section 2.01 (a) (ii) and (iii) of the Master Resolution. The swap agreements between Metropolitan and each qualified swap counterparty shall include payment, term, security, collateral, default, remedy, termination, and other terms, conditions and provisions as the Chief Financial Officer, in consultation with the General Counsel, deems necessary or desirable.

**Transaction Approval**

The approval guidelines for each authorized swap transaction shall be as set forth in Article II, Section 2.01 (a) (iii) of the Master Resolution and in this Section 4. The required approval of any swap transaction will be based upon the notional amount of the swap and the average life of the swap. The following table sets forth the approval requirements for each swap transaction:

**Table 11. Swap Approval Requirement**

----- Approval Requirements -----			
<u>Average Life of Swap Approval</u>	<u>Board Approval</u>	<u>Ad Hoc Committee</u>	<u>CFO</u>
5 years or less or less	greater than \$300M	>\$ 50M, up to \$300M	\$ 50M
>5 years <10 years or less	greater than \$250M	>\$ 50M, up to \$250M	\$ 50M
10 years or greater or less	greater than \$200M	>\$ 50M, up to \$200M	\$ 50M

In addition, if multiple swap transactions with one or more counterparties are contemplated over a three-month period, which would exceed the approval limits as described above, then the additional transaction approvals would be required. The total notional amount of swap transactions including the average life of the swap agreements over a consecutive three-month period shall be considered to determine if approval is required from the Board or the Ad Hoc Committee (comprised of the Chairman of the Board, the Chairman of the Audit, Budget and Finance Committee, and the President and Chief Executive Officer).

For example, if Metropolitan enters into a \$50 million swap agreement for 15 years, approval for this transaction would be required from the Chief Financial Officer only. However, if within the same three month period Metropolitan proposes to enter into a second 15 year swap agreement for \$50 million, then approval for the second swap transaction would be required by the Ad Hoc Committee of the Board.

## Qualified Swap Counterparties

Metropolitan shall be authorized to enter into interest rate swap transactions only with qualified swap counterparties. Qualified swap counterparties are identified in Metropolitan's Board approved investment banking team. The composition of the approved swap counterparties will change from time to time as changes are made to Metropolitan's investment banking team. Qualified swap counterparties must be rated at least "Aa3" or "AA-", or equivalent by any two of the nationally recognized rating agencies (i.e. Moody's, Standard and Poor's, or Fitch); or have a "AAA" subsidiary as rated by at least one nationally recognized credit rating agency. In addition, the counterparty must have a demonstrated record of successfully executing swap transactions as well as creating and implementing innovative ideas in the swap market. Each counterparty shall have minimum capitalization of at least \$150 million.

Metropolitan may negotiate or competitively bid an interest rate swap transaction based on a review of the market impact to Metropolitan of such competitive bid.

## Termination Provisions

All swap transactions shall contain provisions granting Metropolitan the right to optionally terminate a swap agreement at anytime over the term of the agreement. In general, exercising the right to optionally terminate an agreement produces a benefit to Metropolitan, either through receipt of a payment from a termination, or if a termination payment is made by Metropolitan, in conjunction with a conversion to a more beneficial (desirable) debt obligation of Metropolitan as determined by Metropolitan. The Chief Financial Officer or the Ad Hoc Committee, as appropriate, in consultation with the General Counsel, shall determine if it is financially advantageous for Metropolitan to terminate a swap agreement.

**Mandatory Termination:** A termination payment to or from Metropolitan may be required in the event of termination of a swap agreement due to a default or a decrease in credit rating of either Metropolitan or the counterparty. *It is the intent of Metropolitan not to make a termination payment to a counterparty that does not meet its contractual obligations. Prior to making any such termination payment, the Chief Financial Officer shall evaluate whether it is financially advantageous for Metropolitan to obtain a replacement counterparty to avoid making such termination payment.*

In the event of default by a counterparty whereby Metropolitan would be required to make a termination payment, Metropolitan will proceed as follows:

- In order to mitigate the financial impact of making such payment at the time such payment is due, Metropolitan will seek to replace the terms of the terminated transaction with a replacement counterparty. The new or replacement counterparty

will make an upfront payment to Metropolitan in an amount that would offset the payment obligation of Metropolitan to the original counterparty.

- If a satisfactory agreement with a replacement counterparty is not reached, Metropolitan will be required to make a swap termination payment to the original defaulting counterparty. Funds for such payment shall be made from available monies. The Chief Financial Officer shall report any such termination payments to the Board at the next board meeting.

**Term and Notional Amount of Swap Agreement**

Metropolitan shall determine the appropriate term for an interest rate swap agreement on a case-by-case basis. The slope of the swap curve, the marginal change in swap rates from year to year along the swap curve, and the impact that the term of the swap has on the overall exposure of Metropolitan shall be considered in determining the appropriate term of any swap agreement. In connection with the issuance or carrying of bonds, the term of a swap agreement between Metropolitan and a qualified swap counterparty shall not extend beyond the final maturity date of existing debt of Metropolitan, or in the case of a refunding transaction, beyond the final maturity date of the refunding bonds. At no time shall the total notional amount of all swaps exceed the total amount of outstanding water revenue bonds.

**Swap Counterparty Exposure Limits**

In order to diversify Metropolitan’s counterparty risk, and to limit Metropolitan’s credit exposure to any one counterparty, limits will be established for each counterparty based upon both the credit rating of the counterparty as well as the relative level of risk associated with each existing swap transaction. The risk measure will be calculated based upon the mark-to-market sensitivity of each transaction to an assumed shift in interest rates. Assuming a 25 basis point movement in the swap rate, the maximum net exposure (termination payment) per counterparty shall not exceed the following amounts:

<u>Credit Rating</u>	<u>Maximum Net Sensitivity to a 25 Basis Point Shift in the Yield Curve</u>
Fully Collateralized	\$10,000,000
AAA	\$10,000,000
AA	\$ 8,000,000

"The maximum net exposure limitations establish guidelines with respect to whether Metropolitan should enter into an additional swap agreement with an existing counterparty. For example, assume Metropolitan executed a fifteen-year \$400 million notional amount swap with an "AAA" rated counterparty. If the yield curve moved 25 basis points, Metropolitan could have a significant market exposure to that swap counterparty (i.e. in order to terminate the swap Metropolitan would have to make a payment of up to \$10 million dollars). The same scenario would apply to a fully

collateralized counterparty. If such event occurred, the Chief Financial Officer would evaluate whether it is prudent and advisable to enter into additional swap transactions with such counterparties in order to mitigate the exposure to such counterparty. For "AA" rated counterparties the maximum net exposure limitation is reduced to \$8 million given its lower credit rating."

The calculation of net interest rate sensitivity per counterparty will take into consideration multiple transactions, some of which may offset market interest rate risk thereby reducing overall exposure to Metropolitan. In addition, additional exposure provisions are as follows:

- The sum total notional amount per swap counterparty may not exceed 25 percent of Metropolitan's total revenue bond indebtedness.
- The appropriate collateral amount will be determined on a case-by-case basis, and approved by the Chief Financial Officer in consultation with the General Counsel.

If the sensitivity limit is exceeded by a counterparty, Metropolitan shall conduct a review of the exposure sensitivity limit calculation of the counterparty. The Chief Financial Officer shall evaluate appropriate strategies in consultation with the Office of the General Counsel to mitigate this exposure.

### Collateral Requirements

As part of any swap agreement, Metropolitan shall require collateralization or other credit enhancement to secure any or all swap payment obligations. As appropriate, the Chief Financial Officer, in consultation with the General Counsel may require collateral or other credit enhancement to be posted by each swap counterparty under the following circumstances:

- Each counterparty to Metropolitan may be required to post collateral if the credit rating of the counterparty or parent falls below the "AA" category. Additional collateral for further decreases in credit ratings of each counterparty shall be posted by each counterparty in accordance with the provisions contained in the collateral support agreement to each swap agreement with Metropolitan.
- Collateral shall consist of cash, U.S. Treasury securities and Agencies.
- Collateral shall be deposited with a third party trustee, or as mutually agreed upon between Metropolitan and each counterparty.
- A list of acceptable securities that may be posted as collateral and the valuation of such collateral will be determined and mutually agreed upon during negotiation of the swap agreement with each swap counterparty.
- The market value of the collateral shall be determined on at least a monthly basis.
- Metropolitan will determine reasonable threshold limits for the initial deposit and for increments of collateral posting thereafter.

- The Chief Financial Officer shall determine on a case-by-case basis whether other forms of credit enhancement are more beneficial to Metropolitan.

## Reporting Requirements

A written report providing the status of all interest rate swap agreements will be provided to the Board of Directors at least on a quarterly basis and shall include the following information:

- Highlights of all material changes to swap agreements or new swap agreements entered into by Metropolitan since the last report.
- Market value of each of Metropolitan's interest rate swap agreements.
- The net impact to Metropolitan of a 25 basis point movement (up or down) with the appropriate swap index or curve.
- For each counterparty, Metropolitan shall provide the total notional amount position, the average life of each swap agreement, the available capacity to enter into a swap transaction, and the remaining term of each swap agreement.
- The credit rating of each swap counterparty and credit enhancer insuring swap payments, if any.
- Actual collateral posting by swap counterparty, if any, per swap agreement and in total by swap counterparty.
- A summary of each swap agreement, including but not limited to the type of swap, the rates paid by Metropolitan and received by Metropolitan, and other terms.
- Information concerning any default by a swap counterparty to Metropolitan, and the results of the default, including but not limited to the financial impact to Metropolitan, if any.
- A summary of any planned swap transactions and the impact of such swap transactions on Metropolitan.
- A summary of any swap agreements that were terminated.

The Chief Financial Officer together with the General Counsel shall review Metropolitan's swap policy on an annual basis and recommend appropriate changes to the Board.