



10. FINANCIAL CAPABILITY ASSESSMENT

10.1 Introduction

In addition to its role as an environmental steward, the Metropolitan St. Louis Sewer District (MSD) also has an important economic role in the St. Louis region. With assets whose book value exceeds \$2.7 billion and a \$270 million per annum revenue stream, MSD is a significant economic actor whose rates and charges, capital projects and programs have profound impacts on the community. MSD's rates and charges therefore reflect a balancing of its economic and environmental performance objectives – as contemplated in the Clean Water Act and the CSO Control Policy.

Over the last 12 years, this balancing has manifested itself in substantial financial commitment to water quality, resulting in a cumulative rate increase of 146 percent for typical single-family residential users, and approximately \$1.6 billion in all capital improvement project expenditures. These improvements have resulted in significant reduction in sewer overflow volumes including those described in Section 3.

In determining the components and baseline schedule¹ for the District's forthcoming Capital Improvement and Replacement Program (CIRP), including the CSO controls as outlined in Section 11, the District has continued to balance its environmental stewardship and financial responsibilities through a comprehensive evaluation of its financial capabilities. This evaluation employs principles highlighted in the USEPA's guidance document², and employs enhancements to the workbook calculations provided therein. The District's financial capability assessment (FCA) recognizes key imperatives of its prospective program financing that effectively define what may be financed "as expeditiously as practicable." In particular:

- MSD's baseline schedule has been developed in consideration of the total costs of wastewater and stormwater management services to be imposed on District ratepayers. The assessment does not parse the relative rate impacts of individual components of the District's program but rather considers total claims on ratepayer income as an appropriate measure of burden.
- Limitations on the pace and magnitude of potential service rate increases and other revenue generation measures, in combination with District capital financing practices, impose project financing constraints that may supersede project delivery constraints in scheduling projects "as expeditiously as possible."
- Given its constraints on program financing, MSD's baseline schedule attempts to appropriately prioritize water quality investments such that those projects yielding greatest benefit per dollar of expenditure are scheduled first while lower return investments are deferred.
- Recognizing the dynamic nature of factors impacting the financial capability of the District over a multi-decade implementation period, the District's capital investment schedule is presented as a "baseline" subject to adjustment.

As noted, the District's financial capability assessment employs general principles articulated in the CSO Control Policy and EPA Guidance – perhaps most notably that program scheduling may be determined in a manner that mitigates economic burden. It also relies on claims against household incomes as the most significant metric of economic burden. The assessment also incorporates financing

¹ Specific years for completion of projects per the baseline schedule to be based on the date of approval of the District's LTCP, and may be adjusted based on changing economic conditions as discussed herein.

² United States Environmental Protection Agency, *Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development* (1997) – hereinafter generally referred to as "the Guidance."



assumptions designed to preserve the District’s financial health – as suggested by the Guidance’s references to Financial Indicators.

However, the District’s financial capability assessment modifies and extends the analyses contemplated in the Guidance through an “Open Book Portfolio Management” approach. This approach is responsive to two imperatives for the District’s prospective permits and assent to a Consent Decree consistent with its financial responsibilities:

- The District must know the scope and estimated costs of the environmental investments it commits to implementing, and have the flexibility to manage the financial impacts and uncertainties thereof.
- The District can commit only to program implementation schedules that recognize limitations on its evolving financial capabilities and that prioritize investments within prevailing financial and logistical constraints.

The District is prepared to demonstrate how alternative assumptions and CIRP configurations impact program financing and associated projections of rate impacts and burden.

10.2 Legislative and Regulatory Intent

The District’s financial responsibilities are consistent with the legislative and regulatory intent of the Clean Water Act and subsequent CSO Control Policy. The act calls for support of:

“system[s] which constitutes the most economical and cost-effective combination of devices and systems ... at the most economical cost over the estimated life of the works ... to meet the requirements of this Act”

(PL 92-500, Title II, Sec. 218(a))

The District’s baseline schedule is intended to preserve its financial health and ensure that program financing may be carried out on favorable credit terms so as to ensure implementation “at the most economical cost over the estimated life of the works.” Similarly, the District’s focus on prioritization within financial capabilities is consistent with concepts of cost-effectiveness that suggest allocation of resources to those investments yielding the highest returns per dollar of expenditure.

The District’s approach is also consistent with principles of the CSO Control Policy promulgated in 1994, particularly the 3rd principle which specifically contemplates scheduling in recognition of community financial capabilities.

*Four key principles of the Policy ensure that CSO controls are **cost-effective** and meet the objectives of the CWA. The key principles are: (1) providing clear levels of control that would be presumed to meet appropriate health and environmental objectives; (2) providing sufficient flexibility to municipalities, especially **financially disadvantaged communities** to consider the site-specific nature of CSOs and to determine the most **cost-effective** means of reducing pollutants and meeting CWA objectives and requirements; (3) **allowing a phased approach to implementation of CSO controls considering a community’s financial capability**; and (4) review and revision, as appropriate of water quality standards and their implementation procedures when developing CSO control plans to reflect the site-specific wet weather impacts of CSOs. [emphasis added].*

(Federal Register / Vol. 59, No.75, April 19, 1994 / Notices p. 18689)

Neither the Act nor the CSO Control Policy articulate specific limitations on the phasing of implementation schedules, or define how annual costs per household, as a percent of Median Household Income, are to be considered in developing a baseline schedule that appropriately balances



environmental stewardship and financial responsibilities. No legal or specific policy mandates prevail with regard to these considerations, except that compliance be “as expeditious as practicable.” Accordingly, the District’s approach³ is fully compliant with the legislative and regulatory intent of the Act and subsequent CSO Control Policy.

Finally, the District advances a practical, transparent and flexible approach to financial capability assessment that incorporates principles articulated in the CSO Control Policy (and extends and enhances analyses called for in the EPA Guidance) in that it:

- incorporates the imperatives for, and local constraints on, the District’s capital financing capacity by mirroring the procedures by which the District demonstrates financial feasibility to support bonded indebtedness,
- directly assesses claims on household incomes based on projected service billings,
- provides for regular review and adjustment of project implementation schedules based on changes in economic conditions that impact financial capabilities over time, and
- provides a framework addressing “*the specific circumstances of each permittee’s environmental and financial situation*” in defining program scope and schedule.

10.3 Open Book Portfolio Management

10.3.1 Introduction

The District’s approach to financial capability is not only consistent with at least the principles (if not the procedures) of EPA’s guidance, but also the common sense connotation of the term “financial capability.” Individuals and business units define their financial capabilities in terms of the volume of resources that may be committed within their constraints to finance projects. Similarly, the District’s assessment of its financial capabilities is grounded in a determination of net revenues that may be generated under feasible rate and fee increase scenarios. The feasibility of these scenarios is in part a reflection of current and projected burden of wastewater and stormwater service costs, and in part a reflection of the unique socio-economic attributes of MSD’s service area.

The District’s “Open Book Portfolio Management” (OBPM) approach to financial capability assessment and program schedule development focuses on projections of future cash-flows and the associated burden on the full spectrum of District ratepayers.

Specifically, the District employed its cash flow forecasting model⁴ to determine the capital project financing capacity under a range of wastewater and stormwater rate slope scenarios and alternative configurations of the CIRP. Procedurally the analyses are akin to that which is required to demonstrate the feasibility of debt issues in credit markets (arguably enhancing the Guidance’s static references to financial indicators). These forecasts employ well documented and publicly available information on the

³ The District’s approach also overcomes several issues on which EPA’s Guidance remains silent or is inoperable. For example, the Guidance identifies “general scheduling boundaries” and notes that the schedule “*should be a time period that is negotiated between the permittee, EPA and State NPDES authorities based on the specific circumstances of each permittee’s environmental and financial situation, plus the specific nature of any engineering and construction requirements*” (p.51). Yet, the Guidance is silent as to how these specific circumstances may be considered or how changes in these situations over time may be addressed. In contrast, the District’s approach facilitates the definition of program schedules and their adjustment over time. Similarly, the Guidance does not address how site specific factors may be incorporated into program development, while the District’s project prioritization processes incorporate site-specific factors in its prioritization and scheduling criteria.

⁴ Most public wastewater agencies develop cash-flow analyses for purposes of establishing annual budgets, developing rate forecasts, and general utility system financial planning.



District's financial position and a number of critical assumptions. The forecast model also shows how changes in these assumptions impact the forecasts.

Cash-flow projections based on alternative assumptions about the pace and magnitude of potential District rate and fee increases effectively enabled the District to determine a relevant range of potential CIRP spending that could be financed within the District's capabilities. These scenarios were developed to recognize and account for St. Louis specific environmental and financial circumstances that constrain the District's revenue generation potential. In particular, the disparity of household income levels across the District service area is pronounced. For example, St. Louis City residents' Median Household Incomes (MHI) are considerably lower than those in St. Louis County— \$33,087 vs. \$55,774, respectively . For 2009, while the weighted average MHI across these entities was estimated to be \$50,578⁵, MHI among low-income residents⁶, representing over 20% of the St. Louis City population, was estimated to fall under 50% of the weighted average level at \$22,616.

These disparities, and the constraints on the District's ability to redistribute revenue responsibilities across user populations, occasioned the District to develop a system rate increase scenario that limited burden to St. Louis City residents to 2.6 percent of MHI over the financial forecast period, which is 30 percent higher than the 2.0 percent threshold value associated with High Burden in the EPA Guidance. While the resulting claim⁷ on Median Household Income of the combined St. Louis County and St. Louis City population in this financial capability-defining scenario peaks at 1.7 percent, this scenario would also result in wastewater and stormwater services consuming as much as 3.8 percent of low-income ratepayers' MHI. Though these adverse impacts will impose acute burdens, they appropriately balance the District's environmental and financial stewardship responsibilities.

Prospective wastewater and stormwater rate increases of this baseline scenario effectively define the capital project financing capacity available within the limits of the District's financial capabilities – for all intents and purposes the available capital project budget. The District's LTCP schedule reflects the use of this capacity to achieve water quality improvement where expenditures are prioritized based on their contribution to water quality goals, environmental justice considerations, and project delivery imperatives.

10.3.2 Local Considerations

Fundamentally, the District's capital project financing capacity is a function of the slope of rate increases deemed to be tenable within the context of MSD's operating environment. The District's baseline rate increase forecast represents a financial commitment to water quality that is unprecedented in the St. Louis region. From 2009 to 2019, user charge revenues are projected to triple, financing \$2.9 billion in capital improvements. Wastewater system rate increases are projected to exceed 12 percent per annum in 8 consecutive years toward the end of this period. These service rate increases represent steeply increasing claims on ratepayers' income, yet are contemplated to deliver project financing capacity as expeditiously as possible.

⁵ Data based on U.S. Census data, American Fact Finder, American Community Survey. 2006 Median Household Income data adjusted to 2008 values by 4 % for St. Louis City and 2% for St. Louis County. These adjustment factors were based on downward adjustments of 7 year annual average inflation rates for St. Louis City and St. Louis County respectively. For 2009 and thereafter, a 2.8% annual MHI adjustment factor is applied uniformly.

⁶ Defined as residents with incomes at or below federal poverty thresholds.

⁷ Based on a weighted average of the projected residential bill as a percentage of MHI with weighting based on the number of District accounts in the City and County respectively.



They also reflect a careful navigation of local legal constraints that restrict the magnitude and structure of District rate and tax increases in any given year or rate-setting period. In particular, MSD obtains rate increase approvals through a rate commission process established through a charter amendment vote in November 2000. With respect to rate adjustments, the MSD Board and Rate Commission, which represents 15 stakeholder organizations, are to adhere to five charter defined rate criteria (§7.270):

- (1) Is consistent with constitutional, statutory or common law as amended from time to time;*
- (2) Enhances the District's ability to provide adequate sewer and drainage systems and facilities, or related services;*
- (3) Is consistent with and not in violation of any covenant or provision relating to any outstanding bonds or indebtedness of the District;*
- (4) Does not impair the ability of the District to comply with applicable Federal or State laws or regulations as amended from time to time; and*
- (5) Imposes a fair and reasonable burden on all classes of ratepayers.*

In general, “fairness” of rates has been accomplished through adherence to cost-of-service ratemaking procedures which allocate costs to ratepayer classes based on cost causation. As a result, the extent to which revenue responsibility for District capital financing may be shifted based on ratepayer income levels (e.g., City to County residents) is constrained. In addition, District rate increases must secure approval of a diverse set of stakeholders, many of whom may reasonably assert that service bills that exceed the 2% of MHI standard reflected in the EPA Guidance, de facto, do not satisfy the “reasonable burden” criteria.

Additional constraints relate to the capital financing which prospective rate increases will support. While the District, through a charter change election in November 2000, obtained the ability to issue District-wide revenue bonds, voter approval is required. In 2004, MSD received voter approval for \$500 million in revenue bonds and obtained additional authorization for \$275 million in 2008. CIRP financing will require still further authorizations.

Further complicating the legal landscape is the Hancock Amendment to the Missouri state constitution enacted in 1980 which imposes limits on state and local government spending and taxation. In particular, Section 22 of the amendment requires voter approval of any tax or levy increases⁸ such as might be employed to supplement District service rate increases for purposes of more progressively financing CIRP investments.

The limited potential availability of tax supported financing, imposed by the legal framework within which the District operates, must be recognized in any assessment of the District's financial capabilities. In so doing, the District's baseline scenario contemplates financing the entirety of the prospective CIRP through wastewater and stormwater user charge adjustments. While this assumes unprecedented rate increases and voter approval of requisite revenue bond issues, the resultant capital financing plan does not rely on tenuous tax approvals. For purposes of financial capability assessment, it enables a direct representation and balancing of associated burden. These assumed rate increases directly impact calculations of net revenues available for capital financing.

⁸ “Section 22 (a) Counties and other political subdivisions are hereby prohibited from levying any tax, license or fees, not authorized by law, charter or self-enforcing provisions of the constitution when this section is adopted or from increasing the current levy of an existing tax, license or fees, above that current levy authorized by law or charter when this section is adopted without the approval of the required majority of the qualified voters of that county or other political subdivision voting thereon. “ (Mo. Const. Art. X, §§ 16-24)



This direct evaluation of prospective burden under a viable plan of finance is viewed as preferable to indirect calculations and references to historical financial indicators for the MSD service area. This is, in part, because the structure for financing local government in the St. Louis region, and generally in Missouri, is more complex and fractured than other regions (or which seem assumed by the Guidance⁹). In addition, direct evaluation of burden and adjustment of program schedules in response to changing conditions will enable the flexibility called for in the CSO Control Policy.¹⁰ This is particularly important in the St. Louis region where disturbing economic trends are indicative of evolving financial capabilities. For example, between 2000 and 2006, the percentage of households below U.S. Census poverty thresholds increased in St. Louis City from 24.6% to 26.8%, in St. Louis County from 6.9% to 9.4% and across the entire MSD service area, from 11.4% to 13.8%.¹¹ Throughout 2009, unemployment in the St. Louis Metropolitan Statistical Area exceeded 9.0 percent, reaching 9.9 percent in June, 2009.¹²

In response to these trends, and more generally its concern for the economically disadvantaged, the District maintains a Low Income Assistance program for low-income, elderly, and disabled single-family homeowners who receive sewer and storm service from MSD. Income-qualified program participants receive a rate reduction equal to 50% of their current charges for wastewater and/or stormwater services. While the District anticipates increased participation in the program with prospective rate adjustments and further District outreach, the program will not mitigate the significant burden imposed by future rate increases for the vast majority of economically disadvantaged households in the District service area.¹³ The District's baseline schedule and associated rate increase plans reflect its sensitivity to the disproportionate impacts of program financing on the significant low-income populations within the MSD service area.

⁹ Of 6 financial measures referenced in the Guidance, two rely on some aspect of property taxation: (1) property tax revenues as a percent of full market property value and (2) property tax collection rate. However, unlike the more traditional pattern for local finance in other states in the U.S, property taxes play a much smaller role in Missouri. For example, St. Louis City government operations property taxes accounted for only 14.5% of general revenue with 71.1% coming from sales, earnings, and gross receipts taxes. For county government operations, the property tax raised 34.8% with sales and gross receipts bringing in 61.8%. (Source: *Financing Local Jurisdictions In The Metropolitan St. Louis Sewer District Service Area*, Don Phares, Ph.D., Economic Research, St. Louis, MO. 63114, (DRAFT – July, 2007)

¹⁰ Flexibility which is precluded by the Guidance's static references to historical financial indicators.

¹¹ *The Metropolitan St. Louis Sewer District Service Area: Median Household Income And Poverty Status By Sub-Areas*, Donald Phares, Ph.D., Economic Research, St. Louis, MO. 63114, (April 19, 2009)

¹² U.S. Bureau of Labor Statistics, Economy at a Glance, http://www.bls.gov/eag/eag.mo_stlouis_msa.htm

¹³ In FY 2009, approximately 2,500 customers participated in the District's Low Income Assistance Program while, as noted, over 20% of the St. Louis City population alone have incomes below federal poverty thresholds.



10.3.3 MSD Financial Planning

The LTCP schedule presented in Section 11 was developed based on an iterative evaluation of CIRP configurations and associated rate adjustments. In doing so, the District employed its Long-Range Financial Planning model. The basic model structure is highlighted in Table 10-1 below:

Line No.*	Forecast Component	Description
18-21	Revenues	Provide basis for projections of revenues at existing rates (incorporate assumptions of account growth in District) Also includes Interest Income and Other Revenue Sources
17 & 22	Capital funding sources	Provides projections of net proceeds to be available for program implementation from revenue bonds, SRF loans, grants and contributions, and prior period fund balances
14	O&M expenses	Provide sum of baseline projections of "current wastewater and stormwater costs" and incremental annual O&M associated with program implementation ¹⁴
18-21	Recurring capital financing	Provides projections of routine (non-CIRP), cash financed capital outlays, annual debt service and additions to Operating Reserves
1 - 12	CIRP expenses by component	Provides projections of CIRP expenses in nominal dollars applying inflation assumptions related to capital expenses
18, 27 & 28	Revenue increases	Provides the rate increase percentages and revenues associated with required wastewater and stormwater rates
24-26	Monthly residential bills	Provides projections of monthly residential bills with forecasted rate increases for water and stormwater services
29-33	MHI and bills as Percent of MHI	Provides projections of MHI based on inflation assumptions for St. Louis City, St. Louis County, combined and low-income ratepayers, and of these forecasted bills as a percent of forecasted MHI for wastewater, stormwater, & combined.

* MSD Spreadsheet: EPA Financial Capability Overview – Working Draft, August 10th, 2009, 35-Year CIRP Program, Scenario 1: Front Loaded SSO & 25-Year CSO - 1.7% Combined MHI, 15% Max Rev Inc, 4.5% CIRP Inflation, \$1.8b Bonds

Table 10-1 Long-Range Financial Projection Model – Forecast Components

Fundamentally, the resultant cash flow projections are in a format similar to that employed to demonstrate the feasibility of bonded indebtedness. Additional outputs include projections of debt service coverage and fund balances and, consistent with this application, the District has generally employed conservative assumptions to develop its forecasts. Selected key assumptions used to develop the baseline program and schedule are provided in Table 10-2.

¹⁴ These values are similar to that called for in the Guidance though long-term forecast enables representation of impacts of inflation and timing of incremental impacts.



Assumptions		Basis
Inflation		
Capital Program	4.5%	Conservatively set equal to that for general operations despite higher rates experienced under more robust global economic conditions
General Operations	3.5%	Consistent with long-term trends in inflation rates in region and nationally
Median Household Income		
MHI Range	\$50,578 - \$129,344	2006 census data for low-income, city, and county residents
MHI growth rate	2.8%	Reflects exhibited trend (2000s) of growth marginally below inflation trends
Capital Financing		
Bond Interest rate	5.5%	Consistent with recent MSD issues
Bond Term	30 year	
Bond Issuance Costs	1.40%	
Indebtedness limitation	\$1.8 Billion	Targeted to ensure strong credit ratings ¹⁵
Minimum debt service coverage	2.0x	Rate Commission approved financial policy; targeted to ensure strong ratings
Timing of Approvals		
Long-Term Control Plan	End of 2010	Approval by all parties
Rate Increase Plan	End of 2011	Rate Commission approval process
Revenue Bonds	2012	Bond election process requirements

Table 10-2 Long-Range Financial Projection Model – Selected Key Assumptions

Application of the capital program inflation assumption of 4.5 percent per annum to the capital program schedule yields the projected capital project spending contemplated in the baseline scenario. Pursuant to the timing assumptions whereby the District's LTCP obtains approval by the end of calendar year 2010, and related Rate Commission and revenue bond elections occur without unanticipated delays thereafter, over \$15 billion¹⁶ of capital spending is anticipated over the long-range financial projection period 2009-2043, as illustrated in Figure 10-1.

¹⁵ MSD's senior parity debt is currently rated Aa2 by Moody's, AA+ by Standard & Poor's, and AA+ by Fitch. All three rating agencies have recognized MSD's strong financial performance and moderate current debt burden as the basis for their favorable ratings.

¹⁶ This dollar expenditure value is in nominal dollars, reflecting the application of inflation rates. While prior cost estimates reflect base year dollar cost estimates, \$15 billion in cash outlays are forecast for project construction over the program implementation period. User rate and program financing projections reflect projected cash flow requirements over the forecast period.

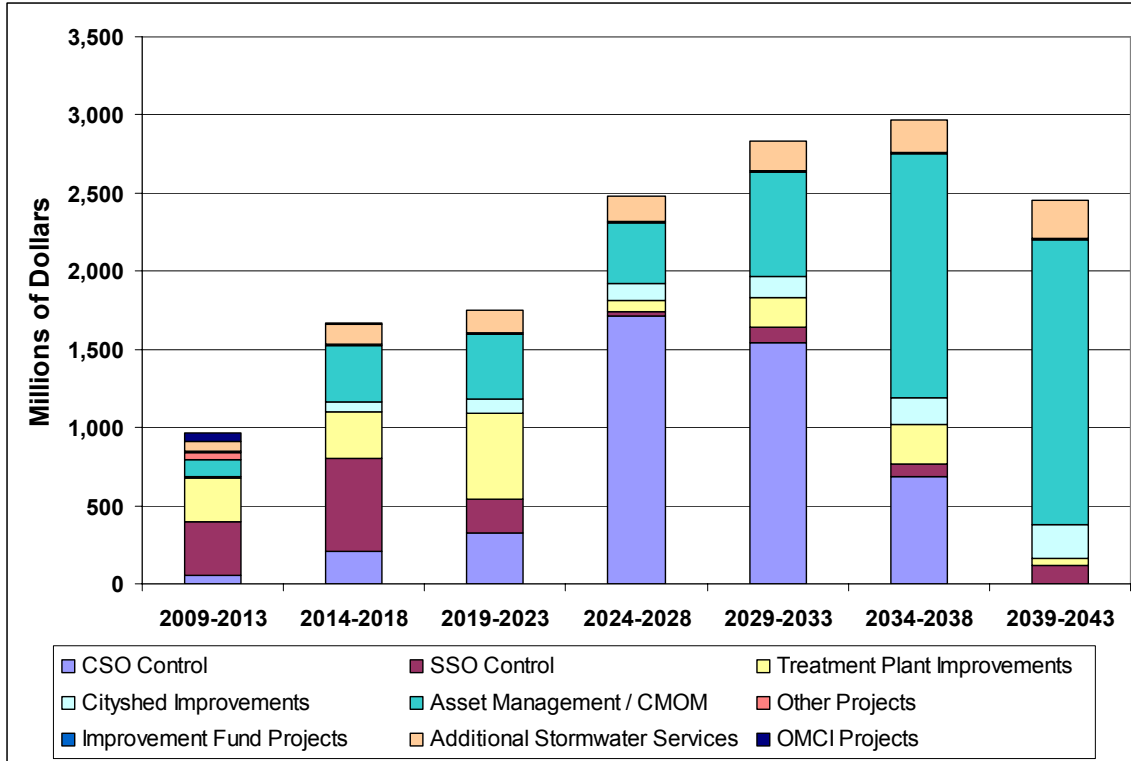


Figure 10-1 Baseline CIRP – Projected Expenditures by Project Category in Nominal Dollars

Financing this unprecedented capital investment will require substantial rate increases, particularly in the period from 2013 to 2020. These rate increases build requisite revenue generation capacity for the District to aggressively address CSO and SSO issues, but at the same time will elevate claims on ratepayer income already strained by economic decline as shown in Figure 10-2 below.

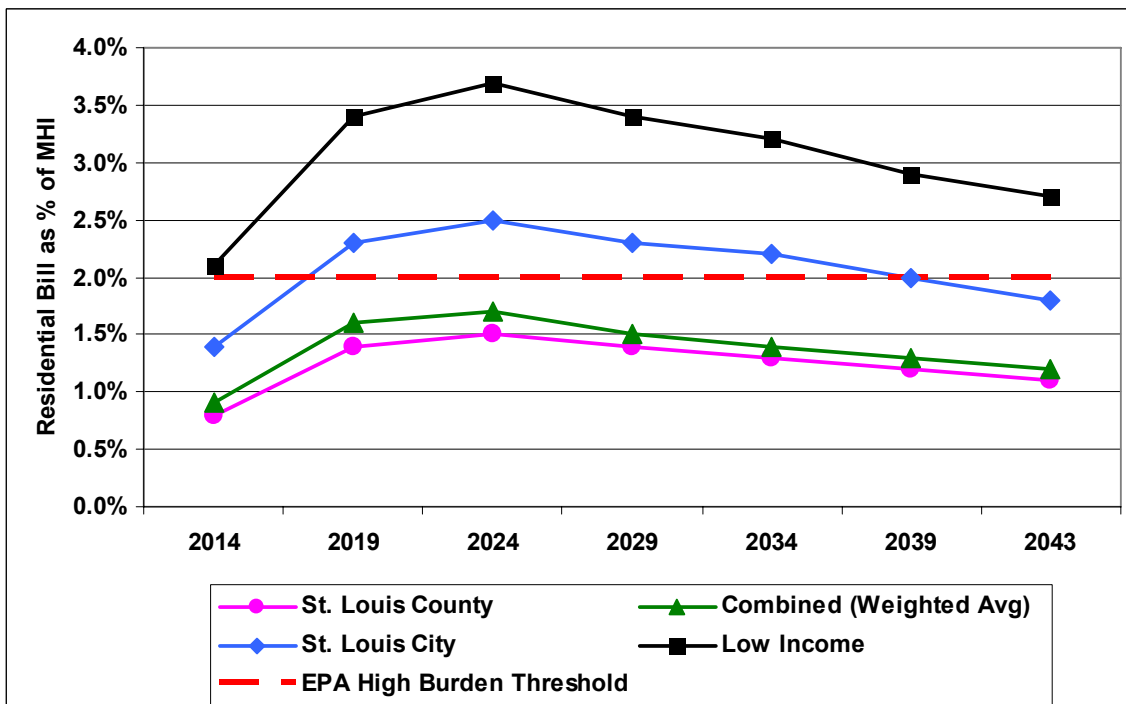


Figure 10-2 Baseline Scenario: Projected Typical Residential Bills as Percent of MHI by Ratepayer Group



To the extent that 2 percent of Median Household Income may be viewed as representing a “High Burden,” as indicated by the matrix evaluation of the Guidance, the projected rate increases require the District ratepayer population collectively to approach this threshold while imposing potentially problematic burdens on St. Louis City ratepayers, and on low-income ratepayers throughout the District’s service area.

10.3.4 Holistic Evaluation of Program Costs

Though the determination of remedial measures for the District’s systems may focus on individual system components (e.g., CSOs, SSOs), the District’s assessment of financial capability and associated development of its baseline scenario reflect a holistic evaluation of program costs. Ratepayer burden is defined by the bills to be imposed to finance water quality improvements, which also must pay for the District to effectively manage operations, renew and replace system assets, upgrade treatment facilities, and secure outstanding indebtedness. Accordingly, the District has developed projections of revenue requirements that will enable it to continue to exhibit the attributes of an “effective utility”¹⁷, including prospective compliance with current and certain anticipated future regulatory requirements.¹⁸

Similarly, the District’s financial capability assessment considers the total costs to be imposed on District ratepayers, including taxes, wastewater service charges, and stormwater service charges, because the burden on ratepayers results from all such billings.¹⁹

The District has employed conservative, industry standard practices in its estimation of capital project costs. These cost estimates were updated based on 2009 cost parameters, reflect regional cost indices, and employ industry accepted cost contingencies. However, as noted above, in conducting its financial planning, the District elected to employ a capital cost inflation assumption (4.5 percent) even though this assumption is lower than recent experience suggests. A rapid escalation in commodity and energy prices such as that experienced from 2004 to 2008 would render the 4.5 percent assumption insufficient and could require the District to alter its implementation schedule for financing and project completion. In general, uncertainties like future construction cost escalation, which directly impacts the amount of project work that may be completed within the District’s financial capabilities, suggest the efficacy of a portfolio management approach that facilitates project and schedule adjustments.

10.3.5 Portfolio Management

The dynamic nature of the market conditions in which the District operates, suggested by this recent volatility of construction cost pricing, and underscored by the profound effects of current economic downturn, reinforce the importance of the flexibility called for in the CSO Control Policy. Risks involved in program implementation, in combination with constraints on the District’s capital financing capacity, mean that an assessment of financial capability is essentially a portfolio management problem. The District must, over its program implementation period, allocate substantial but ultimately limited

¹⁷ *Recommendations for a Water Utility Sector Management Strategy: A Final Report Submitted by the Effective Utility Management Steering Committee to the Collaborating Organizations*, March 30, 2007, American Public Works Association, American Water Works Association, Association of Metropolitan Water Agencies, National Association of Clean Water Agencies, National Association of Water Companies, U.S. Environmental Protection Agency, Water Environment Federation

¹⁸ However, the District’s projected capital expenditures may underestimate costs from prospective requirements related to nutrient removal and do not provide for improvements to address, for example, potential Total Maximum Daily Load limitations or requirements to address constituents of emerging concern.

¹⁹ The District’s long-range projections of revenue requirements, which reflect capital financing through a combination of debt and equity, provide for full financing of the LTCP (e.g., absent alternative revenue sources). As such, the District’s long-range financial projections facilitate evaluation of prospective burden, in that projected District service rates enable direct calculation of typical residential bills impacts.



resources to those investments that yield the highest returns (generally defined in terms of water quality benefits) while managing prevailing risks.

The District's "Open Book Portfolio Management" approach to financial capability assessment (which builds on and extends procedures articulated in the Guidance) involves two fundamental activities: (1) Prioritization and (2) Risk Management. As a public agency committed to stakeholder engagement, and recognizing the monitoring and enforcement requirements of effective regulation, the District's approach is also characterized by transparency. The District's financial plans are based on publicly available budgets, financial statements, and credit ratings. Its project prioritization criteria reflect extensive stakeholder engagement.

10.3.5.1 Project Prioritization

As discussed above, the District's long-range financial projection model was used to effectively define the District's capital financing capacity. Staged increases in service rates to (and for some key populations beyond) levels that will impose high burdens effectively established program budgets over defined time periods. In aggregate, the District may finance approximately²⁰ the total levels of expenditure depicted in Figure 10-1 above.

Within these boundaries of financing capacity, the District's LTCP schedule reflects the allocation of project expenditure based on established prioritization criteria. In general, classes of projects were prioritized based on environmental benefit (e.g., CSO volume reduction), impact on receiving water quality, and necessary construction sequencing, as described in Section 11.4. However, additional considerations were taken into account in defining the District's overall capital program scope and sequencing including:

- **Environmental Justice** – Within the District, both historic system deficiencies and mandated remediation measures will impose disproportionate impacts on economically disadvantaged communities as demonstrated in part by the projected bills relative to MHI shown in Figure 10-2. Accordingly, the District has attempted to structure its overall capital program implementation to mitigate these environmental injustices. The District's program specifically allocates and maintains funding levels to address localized flooding and service level issues for sewer systems within the City of St. Louis (though it should be known that this level of funding will not alleviate the entire service level issue). In addition the District has allocated and maintained specific levels of Asset Management renewal funding for the existing system, which is aged and deteriorating. The older and more critical sewers requiring this added maintenance are also located in the City of St. Louis. These program allocations are critical and must be maintained.
- **Project Delivery Constraints** – The extensive infrastructure renewal and rehabilitation contemplated by the projects comprising the District's CIRP must be tempered by realistic assessments of the extent to which these capital projects can be cost-effectively delivered. The District faces tangible limitations on the pace by which capital projects may be procured, permitted, designed, and constructed. Moreover, it is incumbent on the District to promote competitive bidding, limit incidence of undue price escalation, and foster local economic development. Accordingly, the District has scheduled projects to enable orderly construction, promote local contractor competition and ensure cost-effective program delivery.

²⁰ Alternative program configurations may be accommodated within these total expenditure levels and some shifting of expenditure between 5-year period increments is tenable, to the extent that such changes do not significantly impact rate revenue requirements.



The District anticipates that it will work collaboratively with regulators and community stakeholders to refine the prioritization and associated scheduling of program components. This collaboration will be required to continue over the program implementation period as scheduling flexibility is required to ensure that the program remains within the District's financial capabilities while, at the same time, effects implementation as expeditiously as possible.

10.3.5.2 Risk Management - Project and Schedule Adjustment

“Open Book Portfolio Management” also contemplates mechanisms to assess and manage risks through reallocations of resources as conditions impacting financial capabilities change over the program implementation period. As individuals realign their asset allocations as relevant changes in prices, income, investment options, and risks change their financial capabilities, the District's approach recognizes that its financial capability is a function of market dynamics that, by definition, will change over its program implementation period. Risk management, in this context²¹, is addressed through project and scheduling adjustments and facilitates an “adaptive management” approach, similar in principle to that advocated by EPA with respect to watershed management.²²

- **Project Adjustments** – The District's preliminary assessments of the condition of wastewater collection systems, hydraulic flow characteristics, sewer reconstruction requirements, and other factors that define program requirements are by no means precise or certain. To preserve the requisite flexibility to most efficiently and effectively install required system improvements given these uncertainties, the District has defined projects broadly as project “classes” or project “groups” – wherein the defining characteristics of these projects are the anticipated water quality benefits. In addition, the District's project prioritization process enables selection of some projects that are anticipated to yield lower “returns” (in terms of water quality benefit per dollar of expenditure) in preference to other higher-yield but higher-risk projects. These types of changes in the composition of programs is contemplated in the CSO Control Policy which, for example, noted that “[t]he selected controls should be designed to allow cost-effective expansion or cost effective retrofitting if additional controls are subsequently determined to be necessary to meet WQS, including existing and designated uses.”²³
- **Schedule Adjustments** – The District's baseline schedule is advanced subject to (automatic) adjustment of program implementation schedules by reference to exhibited variances between projected and actual conditions impacting the District's financial capabilities.²⁴ At agreed-upon intervals in program implementation (e.g., every 3-5 years), the District will update projected cash flows developed to define its baseline scenario. Updating will include, at least, (1) current information on system revenues (reflecting negotiated slopes of rate increases and system growth), (2) actual expenses and experienced cost inflation, (3) updated capital financing terms, and (4)

²¹ Relating to the overall composition and scheduling of program components as opposed to risk management techniques employed in relation to individual project delivery.

²² See, for example, USEPA's *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* (March 2008), “EPA recognizes that the processes involved in watershed assessment, planning, and management are iterative and that targeted actions might not result in complete success during the first or second cycle. It is expected, however, that through adjustments made during the management cycles, water quality improvements can be documented and continuous progress toward attaining water quality standards can be achieved.” - Chapter 2. Overview of Watershed Planning Process , Section 2.2.1 Watershed Planning Is an Iterative and Adaptive Process.

²³ Federal Register / Vol. 59, No.75, April 19, 1994 / Notices p. 18691, paragraph C. Long-Term CSO Control Plan.

²⁴ Baseline scheduling based on project financing constraints may remedy the EPA guidance's disconnection between capability arithmetic and actual program financing. However, perhaps the most fundamental problem with the EPA guidance is that it fails, through its “snapshot” approach, to provide for changes in economic and program conditions over time. Permittees are essentially (and untenably) asked to commit to program implementation schedules without adequate allowances for potential changes in program scopes, project costs, financing conditions, or community financial wherewithal.



current Median Household Income statistics. The resultant updated cash-flow forecasts will redefine the funds available for program financing. In the event that the funding level is greater than anticipated, projects will be accelerated to the extent practicable to employ available resources. To the extent that the funding level is less than anticipated, or project costs are higher than anticipated, deferrals will be occasioned to conform to resource limitations. Similarly, project prioritizations may be adjusted at the designated review interval to reflect current information on water quality impacts and facilitate adaptive watershed management.

While this regular review of program financing constraints represents a more involved and ongoing set of calculations than contemplated by the current EPA Guidance, it is no more complex than that which is required for demonstration of the financial feasibility of credit issues. As such, it is a set of reporting requirements that permittees will be required to compile in any event to implement their programs. For regulators, it will involve well established and readily understood review procedures appropriate in the context of regulation of multi-billion dollar investments.

10.3.6 CSO Control Policy Compliance / Enhancements to Current Guidance

The District's Open Book Portfolio Management approach to financial capability assessment builds upon and enhances the EPA guidance, while addressing several limitations that have proven problematic in practice. The two-step workbook approach employed in the Guidance defines burden by reference to a Residential Indicator and Permittee Financial Capability Indicators. The District's approach employs the elements of these indicators within a framework consistent with utility capital financing practices:

- **Residential Indicator Calculation** – this calculation determines the claim of current and projected utility costs on Median Household Income. Rather than indirectly calculating this claim by allocating a point-in-time estimate of costs based on the residential share of flow, the District's approach simply calculates typical residential bills given projected rate increases over the cash-flow forecast period. The resultant residential bills relative to MHI not only directly measures the “financial impact on the District's residential users” but also enables monitoring of these impacts over the program implementation period.
- **Permittee Financial Capability Indicators** – this calculation attempts to evaluate the District's financial capability by reference to debt burden, socioeconomic conditions, and financial operations indicators. However, in the case of a sanitary district like MSD, the indicators related to property values and tax revenues may not be applicable. Rather than assigning scores and calculating an index of relative financial strength divorced from the District's capital financing imperatives, the District's approach considers these factors in defining limits on indebtedness and prospective rate adjustments that ultimately define capital project financing capacity.

10.4 Conclusions

MSD has conducted an assessment of its financial capabilities consistent with the legislative and regulatory intent of the Clean Water Act and CSO Control Policy. Its baseline schedule reflects an appropriate balancing of its environmental stewardship and financial responsibilities – providing for cost-effective program implementation as expeditiously as practicable within its financial capabilities. In so doing, MSD recognizes that cost effectiveness is not only a matter of defining lowest cost solutions but also ensuring program financing on favorable terms; it recognizes that implementation as expeditiously as practicable is not only a matter of engineering, construction and other project delivery constraints but also a question of financing capacity.

MSD's financial capability assessment builds upon the procedures employed in the Guidance and delineates a transparent, tractable, and flexible approach to program scheduling responsive to the realities of dynamic market conditions. Open Book Portfolio Management defines an approach to



financial capability assessment (and review) that is consistent with the common sense meaning of the term – “financial capability.” Using readily available information, it examines capital financing capacity within bounds defined by (tenuously) acceptable rate increases that will impose significant financial burden on the District’s ratepayer populations. It contemplates a holistic view of the District’s financial capabilities recognizing that all capital project investments, whether CSOs, SSOs, or treatment plant upgrades, place financial claims on District ratepayers. Moreover, it facilitates the balancing of unique, local considerations as called for in the CSO Control Policy and the Guidance. MSD’s baseline schedule and associated program financing plan considers the income disparities between St. Louis City and St. Louis County, the prevailing economic hardships signaled by acute unemployment, and the constraints on rate and fee increases and re-structuring. Yet, at the same time, MSD’s baseline schedule aggressively pursues the water quality improvements called for by the Clean Water Act and CSO Control Policy – contemplating total expenditures in excess of \$15 billion over the full program implementation period.