



**Audit of the
Canal Street Project**

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City Comptroller
City of Milwaukee, Wisconsin

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Office of the Comptroller

March 2, 2007

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To the Honorable
the Common Council
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Dear Council Members:

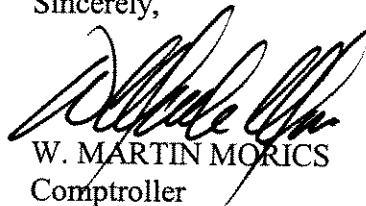
The attached report summarizes the results of our Audit of the Canal Street Project to reconstruct and improve Canal Street between 6th and 25th Streets and extend it to the Miller Park Stadium.

The audit concluded that with minor exception, costs allocated to the Canal Street Project were reasonable. However, the audit also disclosed significant weaknesses in City capital estimation, budgeting, and project management practices.

Audit findings and recommendations are discussed in the Audit Conclusions and Recommendations section of the report, which is followed by responses from the Department of Public Works and Department of Administration.

Appreciation is expressed to the Department of Public Works for the full cooperation extended to the auditors.

Sincerely,



W. MARTIN MORICS
Comptroller

I Audit Scope and Objectives

This is an audit of the Canal Street Project as requested by 10th District Alderman Michael J. Murphy. This project involves the reconstruction and improvement to the existing Canal Street from 6th to 25th Streets as well as the construction of new roadway from 25th Street to the Miller Park Baseball Stadium.

The audit covered the planning, budgeting, accounting, reporting, project management and controls of the Canal Street Project. The audit utilized the engineering consulting firm Sage Consulting Group to review the Project plans, design and implementation. The audit did not examine the books and records of the Project contractors. Also, the audit did not review Department of Public Works bidding procedures, which were previously audited by the Office of the Comptroller in 2006. The objectives of the audit were to:

- Document the scope of work for the entire Project, including all change orders.
- Determine whether Project costs are appropriate.
- Evaluate budgetary and accounting controls.
- Assess overall Project management.

II Project Background

The Canal Street Project is a complex project consisting of multiple infrastructure types, including, streets, sewers, water mains, street lighting, traffic controls, sidewalks, and conduit. The audit determined that the Project will cost \$53 million, pending final construction close-out procedures with the State. There are other major public improvements underway that are related to and made possible by the Canal Street Project. Together, these projects represent an \$87.5 million public investment in the Menomonee Valley as shown in Figure 1 below.

Figure 1: Menomonee Valley Public Improvements

Project	City Funds	State Grants	Other Grants	Assessments	Total
Canal Street Project	\$34,300,113	\$15,637,456	\$682,500	\$2,373,000	\$52,993,069
Other Projects					
Bio Retention Facility 2	50,000			1,000,000	1,050,000
RACM Land Acquisition			6,800,000		6,800,000
TID 53 – Shops Site		8,924,061	60,061	16,200,000	25,184,122
TID 64 – Falk Corp				1,500,000	1,500,000
Total Other Projects	50,000	8,924,061	6,860,061	18,700,000	34,534,122
Total Improvements	\$34,350,113	\$24,561,517	\$7,542,561	\$21,073,000	\$87,527,191

While construction of the Project occurred primarily during 2004 through 2006, planning for the Project had its origin in the early 1990s. Although there were a number of studies conducted, there never was an adequate cost estimate for the Project in its current form, and as a result the Project was never accurately budgeted.

In 1993, the Department of Public Works commissioned BRW, Inc. to conduct a study of constructing a portion of Canal Street from 2nd Street to Miller Park. It was determined that the cost would be approximately \$34.8 million in 1993 dollars. As the study conceived Canal Street connecting to 2nd Street, this estimate included a bridge segment through the current Harley Davidson museum site that was not included as part of the final Canal Street Project.

While the BRW study's cost estimate was based on conceptual engineering, it provided a realistic starting point for determining whether the costs of the Project would fit into the overall priorities of the City. From 1998 to 2001 several additional studies and estimates essentially concurred with the BRW cost findings. These studies and estimates were high level conceptual estimates that excluded major anticipated cost elements. In 2004, DPW prepared a preconstruction cost estimate of \$39.6 million. However, the timing of this estimate was too late for either planning or budgeting purposes and it failed to serve as a realistic project budget against which to monitor the Project's expenditures.

Aside from these estimates, and further complicating matters, in early 2001 the City and the State reached a funding agreement for the reconstruction of Canal Street from 6th to 25th Streets (it excluded the extension of the roadway from 25th Street to Miller Park). This funding agreement called for both the City and State to each contribute \$10 million toward the Project. Thereafter, the City's 2003 capital budget erroneously indicated that the required \$10 million funding share was the City's total cost in the Project. In addition, press reports published in March and November of 2003 cited the erroneous \$20

million figure. DPW staff allowed this misrepresentation to persist, providing no clarification or correction that the \$20 million figure was a gross underestimation of what it would actually cost to construct the Project. In 2005, Alderman Murphy requested the audit in a letter stating: *"When the project was planned, it was estimated to cost \$20 million."*

III Audit Conclusions and Recommendations

A. Summary Conclusions

The Canal Street Project was ultimately successful and its improvements will serve the needs of citizens for many years to come. The City now has "State of the Art" roadway, bridges and environmental infrastructure. This new infrastructure is the result of DPW guidance and management of the construction work to assure that the City received value for the work performed. **An independent review by the Sage Consulting Group confirms that \$53 million is reasonable, given the nature and extent of the infrastructure placed in service. In addition, the audit concludes that the Project's engineering and construction is of a high degree of quality.**

While the Project was ultimately successful, the audit found deficiencies throughout the capital project lifecycle, including capital project estimation, planning, budgeting, monitoring and reporting.

The cost overruns of the Canal Street Project were in large part due to inaccurate cost estimation. Despite numerous studies and estimates, there was never a complete engineering cost estimate of the Project that allowed for appropriate planning and budgeting. Further complicating matters, capital planning and budgeting focused on the funding agreement between the City and State, which included figures lower than those previously estimated. **As a result of these inaccurate and incomplete estimates, capital planning and budgeting did not take into consideration the true cost the Project, nor did they provide an appropriate budget basis against which to track the Project's expenditures. "Cost overruns" resulted as actual costs quickly rose above available resources.**

Without a sound estimate of the Project's costs, subsequent phases of the capital project lifecycle were affected. The capital planning process did not take into account the actual increased demand for City funding. Likewise, capital budgets quickly became "overspent" as budgets were set unrealistically low. The Canal Street Project suffered from the same budgeting deficiency reported in the 2003 audit of the Milwaukee Police Department 3rd District Capital Project, in as much as: ***"the Project was budgeted incrementally, providing the Common Council little if any opportunity to make informed 'go-no-go' decisions. A kind of 'foot-in-the-door' approach to project budgeting was followed with vaguely defined components and increasing budgets as the Project progressed"***.

Unlike the 3rd District Police Station Project, which was budgeted as a discrete capital project with all components funded through one project account; the Canal Street Project was budgeted piecemeal with its components funded through numerous DPW program accounts. **By providing funding through DPW's existing capital programs, the Project was allowed to proceed without an identifiable budget. DPW assumed that the ongoing funding in its capital program accounts would be sufficient to support the Canal Street Project to its completion.**

The purpose of budgeting by major capital programs is to ensure that replacement cycles for specific infrastructure types are being met. Use of these program accounts for the Canal Street Project resulted in funds for this unique Project being commingled with funds budgeted for all other infrastructure work. As the Project expenditures exceeded the Project's budgeted amounts, funding for the Canal Street Project "squeezed out" funding for other capital projects. Alderman Murphy raised this issue in his letter requesting the audit: *"I am concerned that major change orders and cost over-runs related to the Canal Street project not negatively impact the City's ability to invest in other worthy projects."* **Due to the capital program account structure, it is difficult to ascertain precisely which capital projects may have been deferred. The audit disclosed that at least nine capital street projects were delayed due to the Canal Street Project.**

The lack of a sound project estimate also impacted capital project administration functions such as monitoring and reporting. The costs incurred by the City through private contractors should be continually monitored against budgeted amounts that are based on realistic project cost estimates. This was not done for the Canal Street Project.

As with DPW's capital program account structure, DPW's organizational structure does not lend itself to active monitoring and management of large capital projects. As engineers are assigned to the various DPW programs, management of the Canal Street Project was distributed among the DPW divisions responsible for administering the various capital programs. **DPW identified personnel within the Transportation Section, Environmental Section, Water Works and Construction Section, who were responsible for separate components of the Project. DPW did not identify personnel assigned to the Project to carry out ongoing "project manager" responsibilities of actively tracking Project costs, projecting physical Project completion status, providing "roll-up" reporting on Project status to senior management and elected officials, and generally acting on behalf of the City as its "owner's rep."**

The lack of monitoring and reporting of the Canal Street Project was also identified in previous audits of large capital projects, including Tax Incremental District 48 and the Milwaukee Police Department 3rd District Capital Project. Until DPW implements a system to track and communicate this information, the City will not be able to actively manage or provide financial control over its capital projects.

B. Project Cost and Completion Status

The earliest feasibility study for the Canal Street Project was the West Canal Street Improvement & Extension Study prepared for the City by BRW, Inc., commissioned in 1993 and completed in early 1995. The study investigated three conceptual alternative routes for Canal Street from 2nd Street to the Miller Park Stadium, with the recommended alternative estimated at \$34.8 million in 1993 dollars.

Two subsequent studies conducted in 1998 and 2000 essentially confirmed the BRW estimate. In each case, no formal design engineering was performed as the Project was still in the conceptual stage. The 1998 study titled Market Study, Engineering, and Land Use Plan for the Menomonee Valley was issued by the Department of City Development and adopted by the City Plan Commission. This study provided no project cost estimate, but referred to the earlier BRW study. In 2000, the Forest County Potawatomi issued its Menomonee River West Canal Street Expansion Study, with a conceptual cost estimate of \$38.7 million. Both of these studies were utilized by DPW for planning the Canal Street Project.

The 1995 BRW study recommended a southern Menomonee Valley alignment for the new Canal Street extension. However, late in 2000 the Department of City Development requested reconsideration of the alternative northern Canal Street alignment, to better facilitate its development plans.

DPW prepared its own conceptual cost estimate of \$29.3 million in January 2001, based on this northern alignment and elimination of the roadway east of 6th Street. However, this cost estimate was incomplete, as it did not include some major anticipated cost components such as land acquisition, environmental remediation, sewer and water-main replacement and railroad yard reconfiguration.

The Project was further refined, particularly after the design consultant Milwaukee Transportation Partners (MTP) began formal design engineering in 2003. These refinements primarily involved land bridges or viaducts for what was previously planned as an “at-grade” roadbed. DPW updated its cost estimate to \$39.6 million in March 2004, based on the MTP design engineering.

Figure 2: Canal Street Project Studies and Estimates

Year	Study	Sponsor	Conceptual (C) Engineering (E)	All Inclusive Estimate Y/N	Estimate (Millions)
1995	BRW	DPW	C	N	\$34.8
1998	Lockwood	DCD	C	N	None
2000	STS	Potawatomi	C	N	38.7
2001	DPW	DPW/DCD	C	N	29.3
2004	MTP	DPW	E	Y	39.6
2005	DPW	Common Council	E	Y	\$52.3

Construction began in 2004, with the majority of work completed by April 2006 when the new Canal Street was opened to traffic. The major elements of the final Project are listed in Appendix I.

Eight major construction contracts were let for the Canal Street Project totaling \$37.6 million. There were 91 subsequent change orders on these contracts totaling \$3.3 million, including \$2.7 million for unanticipated work during construction and another \$0.6 million due to further changes to the Project scope. In addition, the engineering design contract with MTP nearly doubled from \$2.5 million to \$4.7 million (MTP also received \$1.5 million for work on TID 53, not a part of the Canal Street Project). Smaller contracts and other charges, including DPW “force-work” totaled \$7.4 million. The City

paid \$34.3 million of the overall \$53 million Project cost, as indicated in Figure 1 on page three of this report. Limited contract and DPW force-work will continue on the Project in 2007. DPW anticipates completing the project account close-out process with the State in 2009.

C. Project Planning and Budgeting

Studies and Design

The numerous studies of the Canal Street Project show that the City and other affected parties went great lengths during the planning and design phase to ensure that the Project would have the greatest positive impact for the City. Many considerations were taken into account in determining the final route, such as the Project's impact on economic development and the type of infrastructure needed to serve the Menomonee Valley. Much of DPW's success in engineering and constructing the high quality infrastructure of the Canal Street Project is due to the numerous project planning and design efforts that took place over a number of years. The consulting engineer for the audit determined that \$53 million was fair and reasonable, given the units and type of infrastructure installed.

Cost Estimation

While the Canal Street Project was well studied from a project planning and design standpoint, estimation of the Project's costs was inadequate. The primary emphasis of the Project's numerous studies was to determine the best possible route for Canal Street so as to maximize its benefits for citizens and enterprises using the Menomonee Valley. The secondary concern of these studies was estimation of the Project's costs. DPW prepared both an early conceptual cost estimate and a later preconstruction estimate. These estimates appear to be informal, for use within the department. In any case, DPW significantly underestimated the cost of the Canal Street Project.

The early cost estimates of \$34.8 million (in 1993 dollars) by BRW in 1995, \$38.7 million in 2000 by consultants for the Potawatomi, and \$29.3 million in 2001 by DPW, were high level conceptual estimates that excluded several major cost elements like land acquisition and environmental remediation, and were not based on detailed engineering.

According to DPW, its 2001 cost estimate was not intended to be an all-inclusive estimate.

In March 2004, DPW prepared a preconstruction cost estimate, about which it informed the auditors that,

"The cost estimate was updated to \$39,611,000...to reflect the preferred alignment, right-of-way acquisition, extensive 'land bridges' necessary to address poor soils discovered during engineering, 25th Street Bioretention/Lift Station added during engineering, sewer work necessary to comply with MMSD requirements, compensable private utility relocations, and other items."

This \$39.6 million estimate underestimated costs by \$13.4 million or 25 percent. Even after adding all \$5.6 million in major contract change orders to this \$39.6 million estimate, the result is still an underestimate of \$7.8 million, or more than 14 percent.

The Sage Consulting Group found that the one-page cost estimate summaries provided by DPW were not sufficiently detailed for audit analysis. These estimates were not the type of formal cost estimates that Sage would expect for a project of this size and complexity.

The lack of sufficient project cost estimation impacted the capital planning and capital budgeting processes. The capital planning process did not take into account the actual increased demand for city funding. For initial capital planning and budgeting purposes, high level conceptual cost estimates may be sufficient. However, these estimates must relate the actual project under consideration. Erroneous infrastructure segments and missing cost elements result in poor initial estimates and thereby erode the effectiveness of the City's capital planning and capital budgeting processes. Ideally, these initial high level conceptual cost estimates must be formally conveyed to the Budget Office, which is responsible for establishing the City's six-year capital plan and annual capital budget.

Recommendation 1: Improve capital project cost estimation as previously recommended

As previously recommended in 2003 Police 3rd District Capital Project audit "DOA-Budget should develop standards and guidelines for use by City departments in the preparation of capital project plan documents, including...An adequately detailed and supported cost estimate for the entire project, including a description of how the cost

estimate was developed...A well supported estimate of the project duration in weeks, or months...A statement of major assumptions used to prepare the project plan...A statement of major risks to the timely and 'on-budget' completion of the project."

"Improve cost estimation. DPW should implement procedures to monitor, evaluate, and improve the reliability of its cost estimates. This should include routine analysis of estimates in relation to actual costs."

Budgeting

The \$20 million City budget for the Canal Street Project appears to have evolved from a State budget with an unrealistically low estimate. DPW knew the Project would cost significantly more, but did not disclose its true cost by budget request, resolution, Common Council communication file, or any other public means.

The Milwaukee Journal Sentinel newspaper reported,

"The city is not at the point where we can say when Canal St. will be rebuilt" said Julie Penman, [former] city development commissioner... 'We need to find the funding sources to do it, and this has to be a coordinated discussion with the state and feds and others' ...But finding the money for a \$38 million project [\$38.7 million Potawatomi estimate] poses some difficulty." (November 16, 2000).

"[Former] Gov. Scott McCallum proposed spending \$10 million to help extend Canal St...But McCallum's 2001-'03 budget also demands that the city chip in another \$15 million...a spokesman for [former] Mayor John O. Norquist's office labeled the financing plan 'not feasible'...McCallum's budget calls for rebuilding the street and extending it west to Miller Park Way and east to S, 2nd St. Earlier city estimates said the project could cost \$38 million [Potawatomi estimate]." (February 21, 2001).

At DPW's request, the Common Council adopted the first funding resolution 010651 for the Canal Street Project on September 25, 2001, authorizing DPW to execute an agreement with the Wisconsin Department of Transportation on preliminary engineering for the Canal Street extension. A September 7, 2001 DPW transmittal letter to the Public Improvements Committee on this resolution states that the Canal Street Project had *"...a total estimated cost of \$26,950,000..."*

The second funding resolution 011360 was adopted on February 12, 2002, committing the City to match a \$10 million State grant for the Project, as a prerequisite for preliminary engineering by the State. This resolution drafted by DPW further provides,

"That any costs beyond those already committed for the project to fund the City's share of costs will be included in the City 2003 Capital budget."

The 2003 City Plan and Budget Summary document dated September 24, 2002 states,

"The improvement and extension of West Canal Street from North Sixth Street to the Miller Park Baseball Stadium is scheduled to begin construction in 2003...The total city cost of the two year project will be approximately \$10 million [matching the \$10 million State grant]."

From this point in time forward, the Project was a "go". However, contrary to the budget numbers, DPW knew the total Project would cost more than \$29.3 million. In addition, this \$29.3 million conceptual estimate was not adequate for several reasons. The estimate should have been significantly more conservative to allow for construction inflation given the timing of the estimate versus the actual timing of the construction. Also, this estimate should have included all anticipated cost components in the conceptual plan, with a conservative contingency. Estimates that exclude major cost components are not meaningful for planning and budgeting purposes.

The newspaper reported,

"A \$20 million plan to extend W. Canal St. west to Miller Park also would raise more than 100 acres of the Menomonee Valley 6 to 8 feet higher, boosting the land out of the floodplain...funded by \$10 million each from the state and city..." (March 27, 2003).

"Soil problems in the Menomonee Valley will force a one-year delay and a \$5 million price increase in plans to extend W. Canal St...Originally, the work was expected to cost \$23 million...But engineers discovered serious soil deficiencies...said [former Public Works Commissioner] Schifalacqua...Because of the street's role in handling traffic during the interchange project, [Alderman] Murphy said the state should pay most of what will now be a \$28 million price tag." (November 20, 2003).

"The extension is running about \$5 million over budget because poor soil conditions in the valley have increased the number of bridges needed for the street, public works officials have said." (March 25, 2004).

Serious soil problems were anticipated in the early development studies, which indicated further assessments would be needed. The 1995 BRW study did not estimate the cost associated with poor soil conditions, but stated that soil borings would need to be done to assess contamination and that,

"The low lying areas in the floodplain west of 35th Street will require flood protection before development can occur...A complete hydraulic analysis, typically part of the bridge and highway design process, will provide a more complete description of the impact of the roadway and bridges on the flood area."

Contrary to the public belief in March 2004 that the Canal Street Project would cost \$28 million, at that time, DPW had actually estimated that it would cost \$39.6 million (see Figure 2 above on Project Studies and Cost Estimates).

The newspaper reported,

"State officials have agreed to put up \$5 million in federal money to cover higher-than-expected costs for rebuilding W. Canal St. and extending it to Miller Park, Gov. Jim Doyle and Mayor Tom Barrett announced...When the project was planned, it was supposed to cost \$20 million, with the city and state paying \$10 million. But soil conditions in the valley required more bridges and pushed the cost up another \$8 million. City officials previously had said they would cover \$3 million of the additional cost, and Barrett said that amount would be in his 2005 budget." (August 27, 2004).

The convoluted manner in which the Canal Street Project was actually budgeted made it impossible for anyone to quickly determine the cumulative Project budget and expenditures at any point in time. Budget authorizations were distributed to numerous DPW program accounts for major streets, sewer, water, forestry and street lighting, etc. Each DPW division performed and tracked its work separately using different project numbers, different funding sources and in some cases different project names. Over thirty Common Council resolutions were used to move funds between accounts. At the insistence of the Common Council, DPW finally reconstructed all authorizations and related expenditures, and informed the Common Council for the first time in November

2005 that over \$52 million had been approved and expended at that time for the Canal Street Project (now \$53 million).

The purpose of budgeting by major capital program accounts is to ensure that replacement cycles for capital infrastructure assets are being met. The use of these accounts for projects such as the Canal Street Project is a misapplication of this program account concept, because the Canal Street Project actually resulted in an addition to, not the replacement of, infrastructure assets. As the Canal Street Project expenditures exceeded budgeted authorizations, the Project "squeezed out" funding for other capital projects in these capital program accounts. A review of the 2004 City Capital Improvement Plan disclosed that at least nine City street projects may have been delayed because their funding was transferred to the Canal Street Project. Also, at least one major Grant and Aid project may have been delayed or reduced due to funding shortages caused by the Canal Street Project.

Also, the MTP detailed design study was too late in the Project cycle to allow for appropriate planning and budgeting. Even if Project costs were truly \$39.6 million, determining this in March 2004 could only have an impact on budget years 2005 or 2006, well after the 2004 construction start date. Furthermore, the lateness of this project cost estimate precluded its inclusion in the City's Capital Improvements Plans for 1999 through 2004. As a result, there was no way by which the City's capital planning process could have benefited from this estimate.

As a result of these inaccurate and incomplete cost estimates, capital planning and budgeting did not take into consideration the true cost of the Project, nor did they provide an appropriate budget basis against which to track the Project's expenditures. Large capital projects should be budgeted based on sound conceptual engineering estimates of the costs, covering the entire scope of the project with all anticipated components, an amount for cost increases due to timing and a contingency for unknown items. Such a budget will provide a measure to judge project performance. Actual costs should be tracked and reported against the budgets. Such estimates for the allocation of budget authorization should be supported by worksheets that are laid out using the AIA or similar chart of accounts, then "rolled up" for reporting purposes. There should be timely projections of the cost to complete each contract.

Recommendation 2: Formalize project budgets using sound engineering estimates

Large capital projects should be budgeted based on sound engineering estimates of the costs, covering the entire scope of the project with all anticipated components, an amount for cost increases due to timing and a contingency for unknown items. Such a budget will provide a measure to judge project performance.

Upon completion of preliminary engineering and prior to contract letting, DPW should formalize a preconstruction budget against which project expenditures should be tracked in total and by project component. Any variance between the early conceptual estimate and later preconstruction estimate can be addressed in subsequent City budgets.

As previously recommended in the 2003 Police 3rd District Capital Project audit, estimates for the allocation of budget authorization should be supported by worksheets that are laid out using the American Institute of Architect (AIA) or similar chart of accounts, then “rolled up” for summary reporting purposes. There should be timely projections of the cost to complete each contract.

DOA-Budget should amend the City Capital Guidelines to require use of the industry standard AIA chart of accounts.

Recommendation 3: Budget large capital projects with clearly identifiable project accounts

The City should eliminate the use of capital program accounts for all major projects and instead establish specific project accounts for each major project and report each project separately.

Large capital projects (exceeding \$1 million in City expenditures) should be budgeted as an identifiable line item project in the budget using a unique project number that can identify the project across all DPW divisions. Funds should not be distributed to the usual public works program accounts such as the major streets, major bridges and sewer accounts. All work should be aggregated in the budget. This will facilitate project tracking and reporting and will enhance accountability.

Discrete budgets for large capital projects will establish expectations for improved cost estimation and will better inform City officials and the public about the major projects funded by the City. Furthermore, discrete project budgets will reduce transfers between projects, which has been the measure used when project budgeted estimates were insufficient to fund expenditures for specific projects.

D. Project Administration and Management

Project Monitoring and Reporting

DPW provided good oversight on design and construction activities. DPW was extensively involved in the detailed design of the Project, documented design issues and decisions in minutes of the meetings with MTP design engineers, and approved the design plans and change orders. DPW conducted rigorous field inspections on all construction work. The high quality of the infrastructure improvements, as verified by the Sage Consulting Group, demonstrates DPW's thorough and diligent construction oversight on this unique and complex Project.

Although DPW performed well on its engineering and construction responsibilities, its financial management and project reporting were clearly inadequate for the Canal Street Project. As noted above, the Common Council was not informed until late 2005 that this Project, which had been announced at \$20 million and later updated to \$28 million, would actually cost \$53 million that had been obtained with over thirty Common Council resolutions. In addition to what has already been recommended for improving cost estimation and budgeting, the audit makes the following recommendations to improve financial management and project reporting.

Recommendation 4: Establish project reporting standards as previously recommended

As previously recommended in 2003 Police 3rd District Capital Project audit, "DOA-Budget should develop [and enforce] standards and guidelines for use by City departments for effective capital project financial and completion status reporting, including at least...Formal periodic reports...'Critical path' scheduling techniques...An executive summary project status report...'Roll-up' reporting...Frequent comparisons of

project budget apportioned 'to date' versus actual expenditures 'to date' and total project budget versus estimated cost at completion...A direct tie to the project cost accounting and progress billing system...Directly reconcilable to capital budget line items."

Recommendation 5: Assign an overall project manager

DPW should assign an overall project manager to coordinate all financial management and project reporting for large capital projects.

Just as the funding for the Canal Street Project was distributed to the many capital project accounts administered throughout DPW, operational responsibilities were also handled by the different managers and engineers in the water, sewer, bridge, street lighting and forestry sections of DPW. An overall project manager is needed to provide proper coordination of the estimating, budgeting, scheduling and reporting for these large projects.

The project manager should utilize an industry standard project management application such as PRIMAVERA for contract and cost information and to facilitate project reporting.

Contracting

A review of the Canal Street Project contracts disclosed the following:

- DPW administered nine major contracts for this project, with two stipulation agreements.
- Five contracts were not countersigned by the City Attorney. Any contract over \$25,000 is required by the City Charter to have the countersignature of the City Attorney. These contracts were drafted by vendors, not the City Attorney. City Attorney staff indicated that these contracts had not been reviewed by them.
- Five of these contracts were not countersigned by the Comptroller. Any contract that expends City funds requires the Comptroller's countersignature.
- Two of the contracts were "open-ended" without a "not-to-exceed clause." Such open-ended contracts leave the City at risk of unspecified liabilities.

- Other contracts were unit price contracts. This type of contract, by City Project Grant guidelines (Chapter 304-81-7 d-2), is allowed to exceed its stated contract amount by \$5,000 or 10 percent, whichever is greater without Council approval.
- Some contract modifications though encumbered against a capital project account, did not have properly authorized funding since they exceeded the 10 percent guideline. Further, these contract modifications did not have the Comptroller's countersignature.
- Work by utility companies was performed without contracts. However, utilities provide estimates of specified cost in some cases. After review of such cost estimates a verbal approval is given to the utility by DPW engineers. In some cases the amount of work performed was in excess of \$100,000 without a countersignature of the Comptroller (WE Energies, below) for the availability of funds. DPW asserts that the City is at the mercy of the utility companies when having this kind of work performed. The City is put at risk for unknown liabilities through this practice.
- An invoice in the negotiated amount of \$700,000 was paid to WE Energies. The utility provided an estimate of cost, but a contract was not executed. SBC attempted to bill the City for \$100,000, but this charge was denied by DPW.

The lack of countersignatures on public works contracts was reported in the 2005 Audit of City Tax Incremental District 48. DPW did obtain the necessary Comptroller countersignatures on Canal Street Project contract amendments and change orders after the August 2005 issuance of the TID 48 audit. Future audits will confirm continued compliance with countersignature requirements.

Recommendation 6: Tighten capital project guidelines

DOA-Budget should reduce the maximum amount that public works contracts can be increased without Common Council authorization.

Currently, the Capital Project Guidelines in Milwaukee Code of Ordinances Chapter 304-81 allow DPW to increase contracts by up to \$5,000 or 10 percent, whichever is greater. These guidelines would have allowed a \$1.4 million increase to one of the Canal Street Project contracts let for \$14.5 million, without further Common Council approval. DOA should consider a lower threshold limit such as \$150,000 and amend the Capital Project Guidelines accordingly.

Recommendation 7: Specify a maximum dollar amount in all contracts as previously recommended

As previously recommended in the 2005 Tax Incremental District 48 audit, DPW should not enter into contracts with open-ended liability. *"All City contractual commitments should be limited as to a maximum dollar amount...Without this limit, the Comptroller cannot countersign the proposed contract as to availability of funds."*

Recommendation 8: Review costs of two project change orders

DPW should determine whether Canal Street Project contractors were paid excessive amounts on the following change orders.

- United Sewer and Water was paid \$178,082 on contract change order number 2 for installation of a 12 inch water line under the Menomonee River. Sage determined that a significant savings would likely have been realized had this work been out for bid in one of the numerous bid packages.
- Super Excavators was paid \$25,644 on contract change order 27, primarily for rental and service of a generator. This cost appears excessive for the equipment and services provided.

Appendix I: Canal Street Project Scope

The Canal Street Project consists of:

1. Two miles of rebuilt roadway and two miles of new roadway with extensive “land bridges” to address poor soil conditions in the Menomonee River Valley.
2. Construction of three bridges, one over the Menomonee River and two over the CP main railroad line.
3. Dismantling of a bridge at the Falk Corporation property.
4. Construction of new roadway access to the Falk property (1/4 mile) and to Palermo Pizza.
5. Relocation of three railroad-spurs for cement companies.
6. Acquisition costs for streets, easements, and railroad rights of way for the newly relocated rail spurs.
7. Relocation of sewer and water mains.
8. Construction of one bio-retention facility and pumping station at 25th Street.
9. Construction of four miles of Henry Aaron State Park Trail.
10. Road/traffic flow design for a ring-road at the Miller Park Baseball Stadium.
11. Closing and reconstruction of a portion of Greves Street.
12. Landscaping, streetscaping and street lighting.

Appendix II: Canal Street Project Time line

Date	Description
1992	Menomonee Valley Business Association (MVBA) formed.
1993	RACM and MVBA sponsored an engineering study on opening the Menomonee Valley for development. DCD hired BRW Engineering to conduct the study.
1995	BRW report released, calls for new Canal Street from 2nd Street to 43rd Street (Miller Park), at an estimated cost of \$34.8 million.
1996	State approved new Henry Aaron State Trail through the valley.
1998	New feasibility study prepared for DCD, MMSD and MVBA for Menomonee Valley land-use plan. This study utilized the BRW study and estimates. Menomonee Valley Partners is formed by the Menomonee Valley land owners, including RACM and the City.
1999	The Potawatomi contracted for another study on the Menomonee Valley in conjunction with their new casino. STS, Inc. conducted the study. Common Council voted to condemn CMC Shops Property. State, City and County negotiated the use of Federal ICE grant funds for the High-Rise bridge, Park East Corridor and Canal Street projects.
2000	STS, Inc. study is released, estimating costs at \$38.7 million. The study indicates poor soil conditions throughout the valley and lists a series of tests to be performed prior to construction (11/16).

2000 DPW performed its own feasibility analysis of Canal Street construction (12/1). This analysis estimated a cost of \$29.3 million, but does not include soil/environmental work, Henry Aaron Trail, bio-retention facilities and relocation costs.

DCD received \$1.3 million grant from HUD to develop the Shops Site.

2001 Gov. McCallum announced \$10 million funding for Canal Street (2/21 MJS).

State budget passed, with \$10 million for Canal Street (4/7).

A \$1.5 million grant was approved for brown-field (environmental clean-up in Valley) (5/25).

New \$1.2 million jobs grant for Menomonee Valley (7/20).

State and City approved \$3.2 million funding for preliminary engineering (7/30 MJS).

2002 MTP received preliminary engineering contract to develop the route and design for Canal Street.

2003 City Budget document indicated total Canal Street costs would be \$20 million, \$10 million State and \$10 million City.

2003 Canal Street Project reported at a cost of \$20 million, including the Henry Aaron State Trail (3/27 MJS).

RACM condemned CMC Shops Site for \$3.6 million.

Environmental clean-up costs reported at \$2.4 million (6/11 MJS).

Mayor announced grants equaling \$4 million will help pay for environmental clean up around Canal Street (7/31 MJS).

TID 53 created. Shops Site estimate at \$19.6 million, \$3.6 million in grants and \$16 million in TID funding (10/14 MJS).

Work commenced on east Canal Street, sewer and water relocation on west end.

- 2003 City announced one year delay due to soil conditions and a \$5 million increase in cost. DPW stated costs will be \$28 million (11/20 MJS).
- 2004 DPW updated its cost estimate to \$39.6 million (3/21).
- DPW continued to report the Project at \$28 million (3/25 MJS).
- Work stopped on sewer relocation; contractor is bankrupt.
- DPW announced State agreement to fund additional \$5 million of Canal Street. City Share indicated at \$13 million.
- City announced environmental clean-up of CMC Shops Site is complete. Work on \$20 million industrial park continues (11/29 MJS).
- Palermo's announced intent to build in new business park.
- West end work resumed.
- 2005 Additional bio-retention facilities are designed.
- Court settlement of CMC condemnation proceedings increased the cost of RACM acquisition to \$6.8 million.
- 2006 Canal Street opened to traffic (4/6).
- Inspection showed Canal Street basically landscaped, additional lighting needed. Minor work continued (11/6).

MICHAEL J. MURPHY
ALDERMAN, 10TH DISTRICT

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Milwaukee, WI 53202-9570
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e-mail: mmurph@milwaukee.gov



Appendix III: Audit Request

CHAIR:
Finance & Personnel Committee
Milwaukee Arts Board

MEMBER:
Judiciary & Legislation Committee
Steering & Rules Committee
Zoning, Neighborhoods & Development

July 7, 2005

Comptroller Wally Morics
City of Milwaukee
Room 404 - City Hall

Re: AUDIT OF CANAL STREET PROJECT

Dear Comptroller Morics:

As you are aware, the City of Milwaukee's Canal Street project involves rebuilding the existing portion of the street from South 6th Street to South 25th Street, upgrading it and moving railroad tracks out of the middle of the street, as well as extending the street west to the Brewers' baseball stadium. In addition, the project includes raising about 100 acres of valley land by 6 to 8 feet, boosting land out of the floodplain to encourage industrial development. The project is supposed to be completed by 2006, when the Marquette interchange project starts closing lanes on I-94.

When the project was planned, it was estimated to cost \$20 million, with the city and state each paying \$10 million. But soil conditions in the valley complicated construction matters and pushed up the cost another \$8 million. State officials agreed to put up \$5 million in federal money to cover the higher-than-expected costs, with the city covering \$3 million.

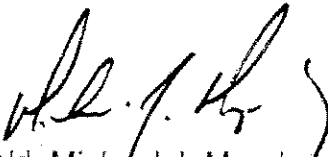
While a major capital project of this nature may incur additional costs related to previously unknown conditions affecting construction, I am concerned that major change orders and cost over-runs related to the Canal Street project not negatively impact the city's ability to invest in other worthy projects. Hence, I am herewith requesting that your office conduct an audit of the Canal Street project.

2005 JUL -7 PM 3:00
COMPTROLLER

Please contact me if you wish to discuss this audit request in greater detail.

Thank you for your cooperation in this matter.

Sincerely,



Ald. Michael J. Murphy
10th Aldermanic District

cc: All Common Council Members
Mayor Tom Barrett
Patrick Curley
Mark Nicolini
Jeff Mantes



Department of Public Works
Infrastructure Services Division

Jeffrey J. Mantes
Commissioner of Public Works

James P. Purko
Director of Operations

Jeffrey S. Polenske
City Engineer

February 19, 2007

Mr. W. Martin Morics
City Comptroller
Office of the Comptroller
Room 404, City Hall

Subject: Audit of the Canal Street Project
DPW Response

Dear Mr. Morics:

The following is DPW's response to the Canal Street audit as it impacts DPW although the audit was larger in scope. The audit conducted by the Comptroller's office had four objectives:

- A. Document the scope of work for the entire Project, including all change orders.
- B. Determine whether Project costs are appropriate.
- C. Evaluate budgetary and accounting controls.
- D. Assess overall Project Management.

DPW has historically been given the task of constructing projects within our own budget, as well as projects for outside agencies. In 2005, with the audit of the Police Administration Building and the Park East Development, several recommendations were made relative to improvements DPW could make regarding the reporting of project costs and status. From those audits, DPW took a proactive role in providing a detailed summary of the Canal Street Project costs at the Public Works Committee meeting on November 1, 2005. This summary indicated the Common Council had authorized \$52.885 million for work to date for DPW's portion of the project. Today, the estimated total cost for this work is \$52.9 million.

We are pleased but not surprised by the conclusion of the audit that states:

"An independent review by the Sage Consulting Group confirms that \$53 million is reasonable, given the nature and extent of the infrastructure

Mr. W. Martin Morics
February 19, 2007
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placed in service. In addition, the audit concludes that the Project's engineering and construction is of a high degree of quality."

What you will find in the audit by the Comptroller is reference to the lack of reporting by DPW of the project's overall impact. We would bring pieces of a project to the Council for approval, but we never provided the overall project scope. As stated above, prior to 2005, this was the way in which DPW operated. Cost figures at various times of the project were reported but did not provide details of what was included in the estimate, yet each time referencing total costs. This resulted in confusion over the project's total estimated cost because the items in each estimate were not all inclusive.

We are pleased to report that DPW is changing the way in which projects are administered. Resolutions have been changed to reflect past estimates along with timing and new cost estimates. In addition, we have developed a project data base system over the past two years that will allow the review of all aspects of a paving project's history, costs and construction status on the City's web site through Map Connect. The data will include information about all aspects of the project, including other work such as utilities, to get a true overall estimate of costs for all paving projects. We expect to release this by the end of February, 2007 for paving and will follow with a similar system for sewer and water projects.

One thing the audit did not mention is that DPW worked to procure grant funding for various portions of the project. In the case of paving costs alone, \$15 million dollars in grants (a total of about \$16.5 million in grant funds for the entire project) were received to offset what would have been City costs to construct. The audit also did not address the fact that the portion of West Canal Street from North 6th Street to North 25th Street was in poor condition and in need of replacement with or without development of the valley.

Please be assured that this DPW Administration will continue to provide a high degree of quality with our engineering and construction activities while keeping elected officials and the public informed about all aspects of a project. The following is a detailed response to the primary issues addressed in the audit.

Project Development Process

A primary conclusion contained in the audit report is that DPW performed deficient cost estimates and, as a result, did not provide City decision makers the necessary information to make an informed assessment of whether or not the project could fit into budget priorities. The audit report cites a 2003 Budget Summary statement that indicated that

Mr. W. Martin Morics
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the total project cost will be approximately \$20 million and suggests that the project was approved based on this figure.

It should be noted at the onset that DPW staff never estimated the project cost at \$20 million for any alternative investigated during the project planning phase. This is a critical misconception that should be clarified at the onset, as it appears to be the primary impetus for the audit. The basis for this confusion appears to have originated with the 2003 Budget Summary statement that indicated that the total project cost will be approximately \$20 million (\$10 million grant, \$10 million City). These amounts were referenced in the budget summary to satisfy a condition of the WISDOT grant agreement and secure grant funding but were never meant to represent the full project cost. DPW's intent was to make budget allocations within the appropriate DPW capital programs as more detailed estimates became available and in subsequent years to more closely correlate the budget for the years funding would be needed. In fact, DPW's estimate at the time of the 2003 capital budget was \$29.3 million. It should be noted that the \$29.3 million estimate was prepared in January of 2001 was not intended to represent an all-inclusive estimate as it explicitly did not include major necessary project components such as real estate acquisition, environmental remediation, railroad yard reconfiguration for which cost estimates were not available, nor did it include future scope changes that would ultimately be realized during evolution of the project. Unfortunately, this confusion was not adequately clarified and the \$20 million figure was cited additional times during the life of the project. This confusion was compounded when WISDOT provided an additional \$5 million in grant funding to address poor soil conditions discovered during detailed engineering contingent upon a \$3 million local match. This \$8 million figure was added to the original \$20 million figure and a \$28 million total cost was reported. Again, this figure did not represent a total cost estimate.

In response to the claim that the project was approved based on the \$20 million figure contained in the 2003 Budget Summary, DPW does not consider the project to be approved during early conceptual engineering phases of project development. DPW employed an extensive process to allow incremental advancement into each phase of project development as information was developed with the final approval requested prior to construction. DPW commissioned the 1995 BRW feasibility study to provide an "order of magnitude" cost estimate to allow a general assessment of whether or not the project could fit into budget priorities and determine if the project warrants further consideration. This report was provided in a communication to the Common Council dated July 17, 1995 with the statement that "It is our intention to utilize the West Canal Street study as another tool to provide guidance for decision making...". It should be noted that the BRW report provided a cost estimate of \$34.8 million (which explicitly did

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not include a number of necessary project components). After the report was released, it was determined that the project would be problematic to fit into budget priorities and, as such, efforts were made to reduce project costs including elimination of the costly Third Ward connection over the South Menomonee Canal. Based on the information contained in the feasibility study as well as subsequent conceptual analysis, it was determined that the project warranted advancement into the detailed engineering phase. Common Council file 020228 authorized to DPW to perform detailed design engineering. At this point in the project development process, only funding to perform engineering is authorized.

DPW recognizes that necessary information may not be available at the conceptual engineering phase of project development and that projects can, and typically do, evolve during detailed design engineering. As such, DPW's established and accepted project development process seeks final Common Council approval after public and stakeholder input is solicited, geotechnical information is collected, right-of-way needs and corresponding costs are determined, and detailed engineering has been completed. After detailed engineering has been performed, the project has been comprehensively defined and more confident cost estimates are available. Under this process, the project is not approved at the first mention in the Budget Summary, but upon Common Council approval of the preconstruction cost estimate and authority to let construction contracts. This process allows the Common Council to assess project costs and direct project modifications if so desired. Given the magnitude of the Canal Street Reconstruction/Extension project, Common Council approval was secured for a number of individual project components.

All intermediate cost estimates were developed for DPW's internal use in grant management and budgeting within the various DPW capital programs. Because the project development process affords the Common Council an opportunity to make an informed evaluation of project details and anticipated costs prior to construction, DPW did not provide intermediate cost estimates (beyond the BRW feasibility study) to the Common Council or other City agencies or make an effort to correct the misinformation documented by the media.

Capital Costing

After years of extensive project planning to ensure the design best achieved transportation and economic development goals that evaluated a wide range of alternative alignment and project limit options (as well as corresponding cost estimates for comparison), DPW developed a conceptual cost estimate for the preferred alignment alternative between 6th Street and Miller Park. This cost estimate, prepared primarily for internal DPW program budget management and grant management, utilized all

Mr. W. Martin Morics

February 19, 2007

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information generated by previous feasibility studies including the 1995 BRW report but adjusted as necessary to reflect the preferred alignment option and project limits (in addition to a significantly different alignment, the BRW alternative and corresponding cost estimate included an extension from 6th Street to the Third Ward requiring a long moveable bridge over the South Menomonee Canal as well an additional bridge over the Menomonee River that was subsequently constructed in conjunction with Miller Park). This cost estimate was developed prior to the commencement of detailed design engineering and formed the basis for initial DPW capital budget allocations.

The audit report claims that DPW utilized deficient cost estimates. DPW performed an analysis of the 2001 conceptual cost estimate of \$29.3 million dollars against actual costs \$53.0 million. It should be noted that the \$29.3 million estimate prepared in January of 2001 was not intended to represent an all-inclusive estimate as it explicitly did not include major necessary project components such as real estate acquisition, environmental remediation, railroad yard reconfiguration for which cost estimates were not available at the time, nor did it include future scope changes that would ultimately be realized during evolution of the project, utility system upgrades performed in conjunction with the project, and unanticipated items. While the 2001 cost estimate was explicitly not comprehensive, analysis revealed that the estimate, which included a 20% contingency, was fundamentally accurate when the aforementioned items are considered (Exhibit 1)

Items explicitly not included in the 2001 estimate include right-of-way acquisition, environmental remediation/hazardous soil disposal, and CP Rail Adams Yard Reconfiguration. Costs associated with these items account for 18% of the cost increase.

Unanticipated items are items that could not have been predicted during conceptual engineering and, as such, were not included in the conceptual cost estimate. These include underground WE Energies utility relocation and a minor storm sewer relay. The WE Energies utility relocation necessitated by the project was assumed to be noncompensable. However, an obscure railroad agreement from the 1800's was produced by WE Energies during detailed engineering that suggested that WE Energies had prescriptive rights to occupy the public way. As such partial compensation in the amount of \$700,000 was negotiated with WE Energies. It should be noted that all costs were documented and reviewed prior to settlement. Furthermore, a segment of storm sewer was discovered to be in poor condition after the conceptual estimate was developed. Unanticipated items account for 4% of the cost increase.

Project scope changes were realized during detailed engineering that redefined the project from the conceptual design and, as such, added project costs. These scope changes

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included the bioretention facility/lift station, a storm diversion sewer necessary to facilitate the innovative stormwater treatment measures, extensive "land bridges" (roadways supported with deep foundations), Miller Park Reversible Lane ITS equipment, the Hank Aaron State Trail, and additional design engineering associated with the scope changes. Scope changes account for 57% of the cost increase.

A utility system upgrade was performed in conjunction with the project that was not included in the conceptual cost estimate and, while it is included in the DPW cost summary, is not necessarily considered a project cost. This involved construction of a new sanitary sewer to comply with current MMSD rules to disconnect building services from MMSD facilities. It was not necessary to construct the sewer to accomplish the Canal Street project and could have been performed at any time under the sewer capacity and expansion capital program. However, DPW took the opportunity afforded by the Canal Street project to accomplish this work in the most efficient manner possible. As such, installation of the sanitary sewer can be considered a system upgrade done in conjunction with the project rather than a project cost. System upgrades account for 21% of the cost increase.

In total, these items account for the entire difference between the conceptual cost estimate and actual costs. However, a contingency factor of \$3.3 million was included in the conceptual cost estimate. While this factor is not intended to compensate for items like scope changes that are realized during project development, it is logically included to address some of the aforementioned cost increases including unanticipated items. If it is assumed that the unanticipated items are included in the contingency factor, the conceptual cost estimate could be considered marginally low.

During the detailed engineering phase in March 2004 and prior to the development of the first preconstruction estimate for the first construction contract, the overall project cost estimate was updated to \$39,611,000 to reflect minor alignment refinements, right-of-way acquisition, extensive "land bridges" necessary to address poor soils discovered during engineering, the 25th Street Bioretention/Lift Station added during engineering, sewer work necessary to comply with MMSD requirements, compensable private utility relocations, and other items. Costs for reconfiguration of the CP Rail Adams Yard were not available at this time and were not included in the updated cost estimate. This estimate, which did not include a contingency factor, was also evaluated against final costs. In total, this estimate was approximately 24% low. A variety of factors contributed to increased costs as follows:

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Sewer construction bid costs exceeded estimates and account for approximately 20% of the cost increase. While comparatively high unit cost estimates were employed in the development of the cost estimate for the 6th to 25th reconstruction contract (unit cost estimates did reflect the most extensive "Class A" bedding to maintain sewer integrity under the poor soil conditions), the low bid price exceeded estimates due to the following:

- Poor soils in the Valley necessitated tight sheeting and bracing in the trench to maintain trench integrity. The low bid contractor elected to bid steel sheet piling, rather than wood, at a time of unusually high steel prices. It is assumed that this method was employed to comply with the aggressive schedule required under the contract. Furthermore, contract documents required that tight sheeting be left in place after construction. As a result, the contractor could not reflect the salvage value in the bid price.
- The Valley has an extremely high groundwater level which requires extensive dewatering during sewer installation. Furthermore, given the soil contamination, water removed requires special treatment prior to being discharged.
- The intent of the storm diversion sewer was to collect stormwater runoff from a large area to be treated in the centrally located bioretention facility. Given the flat topography of the Valley, providing a minimal pitch to allow gravity flow resulted in a comparatively deep sewer. This design further exacerbated cost increases associated with tight sheeting and dewatering.

Unforeseen conditions resulted in contract change orders and quantity increases that account for approximately 50% of the total cost increase. These items include additional design engineering associated with project scope changes, additional contaminated material disposal, increased bridge piling depths, cold weather protection costs to facilitate project schedule, increased duration of temporary cement trucking during spur track relocation, additional rail spur construction costs, plan discrepancies, additional sewer work resulting from MMSD Menomonee Valley Special delay, water service repairs, and other items.

The CP Rail Adams Yard reconfiguration accounts for approximately 4% of the increase.

The Miller Park Reversible Lane ITS project added after the development of the revised cost estimate accounts for approximately 2% of the cost increase.

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A variety of items made up the remaining difference including underestimated soil classification costs under the City's master services agreement, underestimated private utility relocation costs, CP Rail signal relocation, cable relocation and switch cover costs, underestimated force account work, WISDOT contract administration costs bridge girder inspection costs, and other items.

Miscellaneous

DPW has prepared a version of the draft audit report with embedded comments to provide explanations with respect to specific miscellaneous statements contained in the Audit Report. This document is available for review if so desired.

Recommendations

For future projects, DPW will develop and distribute comprehensive cost estimates with contingency factors appropriate to the uncertainty level, inflation factors, and cost ranges where necessary at the onset of the project development process to establish a reasonable starting point for budgeting purposes. Efforts will be made to employ conservative assumptions which are intended to result in a maximum total potential cost exposure and account for a reasonable level of unforeseen conditions. It must be understood, however, detailed engineering may reveal conditions that could not have been predicted during conceptual project development that add to project cost. Furthermore, it must be recognized that detailed engineering may, and often does, result in project scope changes. If these scope changes are approved by City decision makers, they too will add to project costs. As such, detailed engineering must be performed before a more confident cost estimate can be developed. Last, while diligence in performing detailed engineering is expected to minimize unforeseen conditions, they are occasionally experienced during the construction process. In the event project costs are anticipated to exceed budgeted and/or authorized funding levels, every effort will be made to inform City decision makers and secure additional funding in a manner that is appropriate and minimizes impacts to other funding priorities.

Admittedly, the established DPW project development process has not allowed for easy overall project budget monitoring. This became especially evident with the Canal Street Reconstruction / Extension project due to its scale and the multi-contract, multi-year approach combined with multiple grant sources and multiple DPW program funding sources. DPW recognizes that improvements can be made and, as such, is in the process of and is committed to working with the Comptroller's Office and Budget Office to develop Project Status Reports and take other actions currently under development in

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February 19, 2007
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conjunction with the AIM initiative in an effort to allow for more efficient project oversight.

While DPW believes the existing internal management of capital funding programs allows for adequate monitoring and oversight (especially when combined with the planned AIM improvements) while affording the necessary flexibility to make the most efficient use of resources, DPW recognizes that limited large scale projects may warrant separate budgeting and outside of DPW's existing capital programs. DPW is committed to exploring this concept with the Comptroller's Office and Budget Office and establishing criteria and accounting procedures to accomplish this.

The draft audit report recommends that an overall project manager be assigned to coordinate estimating, budgeting, scheduling, and reporting for large capital projects. It should be noted that DPW does assign a project engineer to perform overall design oversight and project coordination activities. However, multiple areas of expertise are required to successfully implement major public works projects. As such, DPW's long standing procedures incorporate a division of responsibilities for specific project components under the general authority of the City Engineer and Commissioner of Public Works. While projects of this magnitude that incorporate multiple contracts and over one dozen funding sources are rare, a project engineer within the Transportation Section was in place during the life of the project to coordinate design activities, provide information to necessary to facilitate capital budget allocations within the various DPW capital programs, monitor general progress and track overall project costs. Project engineers within the Environmental Section and Water Works performed detailed design and/or oversaw design for utilities. The Construction Section administered individual construction contracts and tracked progress and payment of each pay item within each contract. Significant contract change orders were discussed within DPW prior to approval. Upon the change in City policy during the project, all contract change orders were also approved by the Comptroller's Office prior to approval. Upper management within the Transportation Section, Environmental Section, and Water Works managed capital programs under their administration and upper management with the Transportation Section, the City Engineer, and the Commissioner of Public Works functioned as the liaison to the Common Council for Council files. While DPW believes this organizational structure is generally adequate to manage large-scale capital projects, DPW is committed to exploring ways to improve project management and will continue with ongoing efforts under development in conjunction with the AIM initiative to allow for more efficient project oversight.

Mr. W. Martin Morics
February 19, 2007
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The draft audit report recommends that capital project policy be revised to require Common Council approval to exceed budget authority by more than \$150,000. Under current policy, Common Council authority is required to exceed budget authority by 10%. DPW is not necessarily opposed to this recommendation and will secure Common Council authority any time cost are expected to exceed budget authority by \$150,000.

The draft audit report recommends that a maximum dollar amount be specified in all contracts. Rest assured that DPW does specify a maximum dollar amount in virtually all contracts. It appears that the Comptroller is referring to 2 extremely unique contracts with Bulk Logistics to provide cement delivery to two cement companies while utilities were being installed in Canal Street and the existing spur track was not available. In this case, DPW was obligated to provide replacement transportation services for these companies and exact forecasted quantities were not available. However, the amounts delivered were limited by the amount of storage at the cement companies and the duration was limited to the time railroad service was restored. As such, there was little risk in funding this service beyond what DPW was directly responsible for.

The draft audit report recommends that a review of two project change orders. A change order written to United Sewer and Water (Change Order #2) for installation of a 12" water line under the Menomonee River, in the amount of \$178,082. Based on the size of this change order, The audit report suggests that significant cost savings could have been achieved had this work been put out to bid in one of the numerous bid packages that followed this work. While DPW makes every attempt competitively bid all work, analysis by DPW revealed that the change order was justified. The original bid package included the river crossing with all work to be completed by March 30, 2006. Per the State of Wisconsin Department of Natural Resources Dredging Permit (IP-SE-2005-41-N8146), all work in the Menomonee River bed limits must be done during low water periods between December 1st and March 1st. The original DNR permit did not allow any construction equipment in the Menomonee river area and required the contractor to install the water main using a crane stationed on the bridge deck above the river. At the pre-bid meeting on September 19, 2005, the potential bidders informed the Milwaukee Water Works that the DNR construction method specified was impractical and cost prohibitive. They also emphasized that there were alternative methods of river installation that the DNR would approve. On September 19, 2005 an addendum was issued which removed the segment of water main beneath the Menomonee River from the contract. The WIDNR was contacted to modify the permit requirements. On November 23, 2005, the revised WIDNR permit was received by the MWW. Due to the lead time required by the contractor to obtain the materials necessary to divert the river flow during construction and the 25 working day estimate to perform the work, formally

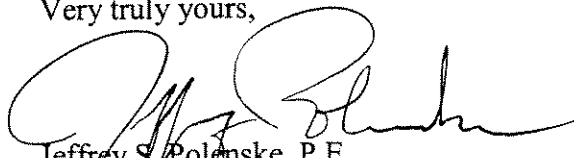
Mr. W. Martin Morics
February 19, 2007
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bidding the river crossing (6-8 weeks) would have precluded meeting the March 1, 2006 deadline imposed by the DNR permit and thus would have delayed completion of the water main crossing until the following year. Obviously this would have had significant repercussions to the schedule of the Canal Street extension project. As such, a change order was issued with United Sewer and Water. It should be noted that negotiations with the contractor resulted in a reasonable price for the change order that was similar to our cost estimate. It should also be noted that this water main provided a very valuable second source of supply to the Valley area during the Falk tragedy. Had this work been delayed one year, the fire department's response would have been significantly less effective.


A change order was written to Super Excavators, Inc. (Change Order #27) in the amount of \$25,644 for rental and service of a generator. The draft audit report suggests that the cost is excessive for the equipment and services provided. The change order documentation provided a clear break down of costs and documents including an invoice from Ingersoll-Rand. The comptroller was sent the entire documents. Although the bulk of the 25,000 was the generator rental, \$14,000 cost also included hooking up the generator to Bulk Logistics building by an electrician, maintenance of the generator, fuel costs, etc. The generator was in service for a period between January 21 and March 8th. DPW analysis concluded that these costs were not unreasonable.

Additionally, for future large-scale capital improvement projects, DPW will be available to provide regularly scheduled Common Council status reports if so desired, much like is being done in conjunction with the City Hall Restoration project.

Very truly yours,



Jeffrey S. Polonske, P.E.
City Engineer



Jeffrey J. Mantes
Commissioner of Public Works

MDL:dld
Attachment

Canal Street Reconstruction/Extension Project

2001 DPW Cost Estimate (2000 Dollars) (includes 20% contingency):	\$29,298,880
Final Cost:	\$52,993,069
Cost Increase:	\$23,694,189

The cost increase is accounted for as follows:

ITEMS EXPLICITLY NOT INCLUDED IN 2001 COST ESTIMATE

Right-of-Way	\$2,161,952	
Environmental Remediation/Hazardous Soil Disposal	\$1,500,000	
Adams Yard/Transload Reconfiguration	\$582,775	
Subtotal	\$4,244,727	18%

UNANTICIPATED ITEMS

WE Energies Electric Relocation	\$700,000	
Storm Sewer Relay (6th-25th)	\$269,535	
Subtotal	\$969,535	4%

SCOPE CHANGES

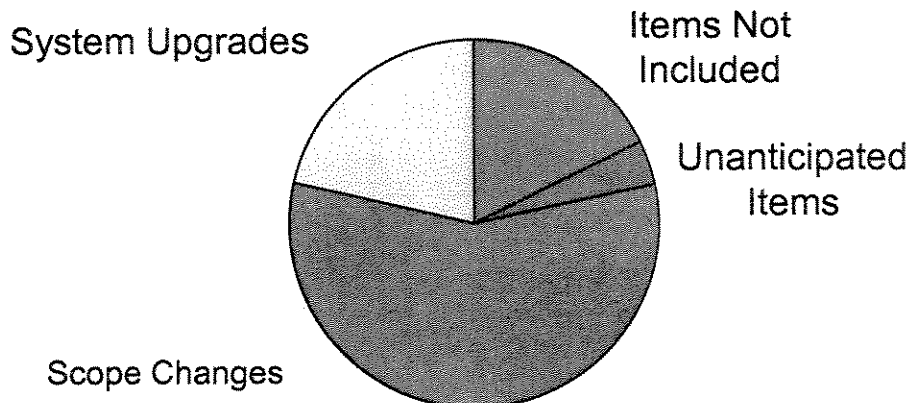
Bioretention Facility/Lift Station	\$2,138,573	
Storm Diversion Sewer w/ tight sheeting	\$3,670,000	
"Land Bridges"	\$5,000,000	
Miller Park Reversible Lanes	\$382,374	
Hank Aaron State Trail	\$1,200,000	
Design Engineering For Scope Changes	\$1,239,095	
Subtotal	\$13,630,042	57%

SYSTEM UPGRADES NOT NECESSARY FOR PROJECT

Sanitary Sewer to comply with MMSD rqmts. w/tight sheeting	\$5,118,976	21%
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TOTAL	\$23,963,280	100%
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Canal Street Reconstruction/Extension Project: Cost Increase





Department of Administration
Budget and Policy Division

February 20, 2007

Tom Barrett
Mayor

Sharon Robinson
Administration Director

Mark Nicolini
Budget and Management Director

File Ref: 07002

Mr. W. Martin Morics
City Comptroller
City Hall Room 401

Re: Canal Street Audit Recommendations

Dear Mr. Morics:

Thank you for the opportunity to comment on the recommendations of the Canal Street Audit as they affect the Department of Administration Budget and Management Division.

Recommendation 1: Improve Capital Project Cost Estimation

DOA believes that it is appropriate and feasible to apply the Third District Capital Audit recommendations to several capital programs, as well as to atypical, non-recurring capital projects. These capital programs and projects include:

- The Major [State/Federal-Aided] Street Program;
- The Major Bridge Program;
- The Facilities Systems Program;
- Major facilities construction or remodeling projects in any department. This will include the City Hall Hollow Walk Structural Repair Project.

DOA will collaborate with DPW to identify the projected funding from recurring infrastructure programs such as Street Lighting, Conduit, and Sewer that are needed to accomplish the objectives of a Major Street or Major Bridge project. DOA will also collaborate with DPW to identify the basis of a cost estimate that appears in a budget document, e.g., conceptual, preliminary engineering, final design, etc. It should be noted that the final design cost estimate may vary significantly from an estimate that is made for budgeting purposes.

DOA has delayed the inclusion of requested projects in the budget because of the need for additional cost documentation. We will make these expectations explicit through capital budget instructions and follow-up.

Recommendation 3: "Project" Budgeting

DOA is open to implementing a "project" budgeting approach for certain capital projects, but believes we need to collaborate with the Common Council, Comptroller, and city departments to establish the criteria for projects to be budgeted on this basis. We believe that considerations such

as a project having multiple components; a project's scope being atypical from the city's past experience; and multiplicity of funding sources are as important as the dollar value of a project in determining the importance of project budgeting to accountability.

It will be essential to determine how contingencies for unforeseen conditions should be budgeted and funded. DOA believes that transfers from program accounts under such circumstances may be appropriate, although the conditions necessitating the transfer and impacts of such transfers on "regular" program accomplishments should be made apparent to the Common Council prior to their execution.

DOA is willing to comment on these considerations and recommend specific projects for "project budgeting". The city has used the project budget concept successfully for such DPW projects as City Hall Restoration and the Menomonee Valley Facilities Relocation.

Recommendation 4: Establish Project Reporting Standards

DOA has implemented this recommendation through the Mayor's Accountability in Management Program (AIM), and via the reporting process DOA has initiated with the Public Works Committee. Through AIM, DOA has developed Project Status Reports for major capital projects to monitor whether they are on budget and on schedule. The reports identify and track three fundamental components: completing projects on time, maintaining expenditures within budget, and ensuring that the project scope (technical objectives) is clear and completed to specifications. We will share these reports with the Common Council after each bi-monthly AIM meeting with DPW Infrastructure.

The Department of Administration and the Department of Public Works have collaborated in the development of new applications that will enable more accurate and timely project monitoring during 2007. Council members will have access to these monitoring applications.

Recommendation 6: Tighten Capital Project Guidelines

DOA does not object to a capital guideline that limits increases to DPW contracts to not more than \$150,000, unless a larger increase is approved by the Common Council.

Please contact me if you wish to discuss these comments.

Sincerely,



Mark Nicolini
Budget and Management Director

MN:dmr
Common/comptroller/responsetocanalstreetaudit2

Cc: Jeff Mantes, Commissioner of Public Works
Sharon Robinson, Director of Administration
Patrick Curley, Mayor's Chief of Staff

