



• **Board of Directors**
Engineering and Operations Committee

10/10/2017 Board Meeting

8-1

Subject

Adopt CEQA determination and appropriate \$4.41 million; and authorize: (1) agreement with Project Partners, LLC in an amount not to exceed \$2,722,000 for deployment of Metropolitan's Project Controls and Reporting System; and (2) agreement with Oracle Corporation in an amount not to exceed \$600,000 for procurement of application licenses; and authorize the General Manager to amend the agreement with Project Partners by up to \$250,000 (Appropriation No. 15490)

Executive Summary

This action authorizes deployment of a new Project Controls and Reporting System (PCRS) to replace Metropolitan's existing project control system that is now functionally obsolete. The new PCRS will enable the planning, management, and reporting for capital projects to be standardized and consolidated into a single, enterprise-wide application. The PCRS will integrate data from multiple components of Metropolitan's General Ledger and Project Accounting applications, along with project schedules from over 300 projects, and store the information within a new data warehouse. This data warehouse will be an enterprise-wide tool that will also support other future corporate applications. The PCRS will produce standardized reports and dashboards that can be generated automatically for review by staff and managers. This system will provide important data that will enable project managers to make timely, effective decisions for their projects. It will also improve forecasting of Capital Investment Plan (CIP) expenditures and resource requirements.

Timing and Urgency

Metropolitan's existing project reporting system, the Project Management Information System (PMIS), was created in the early 1990s to provide summary-level reports on capital project budgets and expenditures. The performance of this custom-designed system has diminished over time and the application is now obsolete as a result of major upgrades to Metropolitan's financial system, including the recent Oracle upgrade. While Metropolitan has developed other tools to assist with managing and planning of capital projects, most of those systems are not linked together. Data must be manually processed in offline spreadsheets and then re-entered in order to create routine progress reports. A modern industry-standard PCRS, which extracts data from an enterprise-wide data warehouse, will provide the necessary information for project managers to quickly identify project trends in cost or resource utilization, enabling them to make timely decisions regarding project direction, schedules, funding, and resource requirements. Due to the loss of capability of the existing reporting system, and the need to wisely manage long-term capital programs in the most cost-effective manner possible, staff recommends moving forward at this time with deployment of the new PCRS. In order to accommodate future corporate software upgrades, the PCRS will employ commercially available software and will require minimal customization.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and is included in the Cost Efficiency and Productivity Program. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2017/18.

Details

Background

Access to timely and accurate cost data and progress information is essential for the effective management of projects. Until recently, staff relied on a 23-year-old Metropolitan-designed reporting system, known as PMIS, to control projects. This system is no longer functional due to a recent major upgrade to Metropolitan's enterprise financial application, Oracle E-Business Suite (Oracle EBS). Further, PMIS utilized software and custom programming that is no longer supportable. An interim reporting solution has recently been developed by Metropolitan's Information Technology (IT) staff utilizing the IBM Cognos software suite that was originally installed in 2006 for the Integrated Budget Management System (IBMS). While this interim solution does maintain some reporting capability, it does not provide standard project control tools that allow forecasting, planning, and generation of earned-value types of reports. These tools are considered standard within the construction and engineering/program management industries, and are extremely important for cost-effective management of projects.

Each fiscal year, Metropolitan manages and executes over 300 capital projects with budgets ranging from \$100,000 to more than \$200 million. Over the next five years, annual Capital Investment Plan expenditures are projected to range from \$200 million to \$250 million. In order to plan capital projects, monitor their progress, and control expenditures, staff relies on various software applications as shown below:

Application	Scope
Microsoft Project, Excel, Primavera	Project schedules
IBMS	Project budgets (Total and fiscal year)
Oracle EBS	Project funds/Accounting
Oracle EBS, WorkTech	Staff labor reports
Accounts Payable	Professional services charges
PeopleSoft	Organization level reports
IBM Cognos (Interim solution)	Budget vs. Cost (Project/Appropriation)

Due to the number of existing software applications that would need to interface with a corporate project control system, staff undertook a staged process to define, design, and deploy the PCRS. During the definition phase, staff assessed other agencies' project control procedures and systems. In addition, Metropolitan's user requirements were defined based on the needs of managers and staff involved with delivery of capital projects. In September 2014, Metropolitan's Board authorized design of the new system. The design phase included development of functional designs of standard scheduling templates, software and data integration processes, user interfaces, and standardized reports. Based on these results, the projected cost for deployment was evaluated and optimized, and the key system applications, including the scheduling software and reporting application, were selected.

The PCRS will provide Metropolitan managers and staff with regular updates of project plans and progress, actual and projected costs, and resource requirements in a single integrated, easy-to-use reporting system. Updated

project schedules to be developed under the new templates will include personnel budgets based on discipline, i.e., project manager, structural engineer, inspector, and support roles for others such as Water System Operations staff. Managers will have the ability to review capital project delivery trends, including trends in costs and resource requirements, which will give them the tools needed to make timely decisions based on real-time data.

The PCRS will employ an enterprise-wide data warehouse to efficiently organize project data for reporting purposes. The availability of consolidated, timely reporting from a data warehouse will permit staff from throughout Metropolitan to access reports from a single, integrated source without manually extracting data from the individual applications listed in the table above. This new web-based system will also provide automatic delivery of routine reports by email to managers and project managers, as well as the ability to access the system directly at any time and drill down into more discrete detail. This arrangement will enable project managers to:

- Generate dashboards and standard, detailed project reports
- Improve expenditure forecasts
- Improve management of available resources and development of personnel projections

In addition, the PCRS will:

- Enhance development of Metropolitan's biennial and long-term capital budget
- Reduce manual manipulation of data and/or duplicate data entry
- Create an expandable reporting system that will support current and future reporting needs throughout Metropolitan
- Simplify the after-the-fact identification and correction of mischarges

The data warehouse to be deployed as part of this project will be an enterprise-wide tool that is planned to support other upcoming reporting needs. While the PCRS will be the initial application to take advantage of the data warehouse, the warehouse will be expandable and will include the necessary hardware to accommodate other corporate databases, enabling the development of future enterprise reporting requirements.

The design phase of the PCRS project is now complete, and staff recommends proceeding with deployment of the new system. The PCRS will support several major capital programs that will soon be ramping up, including the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program, the Right of Way and Infrastructure Protection Program, and the Colorado River Aqueduct Main Pump Rehabilitation Project. The PCRS will initially be piloted on select major programs in order to: (1) finalize the new project control procedures for project managers and support staff, and (2) ensure that all project data and schedule information is properly coded and the integration process is working as intended. Remaining programs will be sequentially incorporated based on current status, criticality, and size.

Project Controls and Reporting System – Deployment (\$4,410,000)

The planned PCRS will include a web-based reporting system with standardized reports and dashboards; an upgraded scheduling application and standardized schedules; an application to integrate the schedules with multiple components of Metropolitan's financial system; and new hardware to support the reporting system and planned corporate applications.

Key steps in deployment of the PCRS will include upgrading Metropolitan's scheduling software, Primavera P6, from Version 6.2.1 to the latest release; creating project schedules and schedule templates in the new PCRS formats; integrating P6 with Oracle EBS; procurement and installation of two new 8-core database servers and software; creating the PCRS data library and building the enterprise data warehouse; upgrading the IBM Cognos application from Version 8.3 to the latest release; and creating the PCRS software application, which includes the user interface, dashboards, and reports.

Deployment of the PCRS is recommended to be performed by Project Partners, LLC under a new professional services agreement, which is discussed below. Project Partners will perform all necessary installation and configuration of new software, and the P6 schedule updates. Metropolitan staff will procure and install the application servers, and will modify WorkTech, PeopleSoft, and Oracle EBS, which will enable the PCRS to collect data on capital projects by discipline, organization (Group, Section, or Unit) and individual staff. Planned

activities to be conducted jointly by Metropolitan staff and Project Partners will include setting up software environments for development and testing of the PCRS prior to rollout. Finally, the upgrade of the IBM Cognos application will be performed by a specialty firm through an agreement awarded under the General Manager's Administrative Code authority. This agreement is also discussed below.

This action appropriates \$4.41 million and authorizes deployment of the new PCRS. The requested funds include \$600,000 for procurement of Oracle application licenses; \$197,000 for procurement of the new servers; \$2,722,000 for procurement of the P6/Oracle EBS integration application and the deployment activities to be performed by Project Partners; \$200,000 for the IBM Cognos upgrades; \$606,000 for the Metropolitan deployment activities described above; and, \$85,000 for project management by Metropolitan staff.

Agreement for PCRS Deployment (Project Partners, LLC) – New Agreement

The planned scope of work for Project Partners includes: (1) installing, configuring, and testing the P6/Oracle EBS integration software; (2) creating the PCRS data warehouse; (3) upgrading P6; (4) creating new standard schedules for all ongoing capital projects; (5) furnishing system-specific user manuals and technical documentation; and (6) creating the system's web-based user interface, dashboards, and reports.

A competitive selection process was employed for this agreement. Metropolitan issued a Request for Proposals, and following review of the submittals from three firms, Project Partners was selected due to its extensive experience in the development of reporting systems, upgrading of P6, and installation and use of the P6/Oracle EBS integration application. The estimated cost for Project Partners to deploy the PCRS is \$2,722,000. Project Partners is a Small Business Enterprise (SBE) firm, and thus achieves 100 percent SBE participation on this work.

This action authorizes an agreement with Project Partners in an amount not to exceed \$2,722,000 for deployment of the new PCRS. In addition, this action delegates authority to the General Manager to amend the agreement by up to \$250,000 above this amount if needed, in order to address unforeseen events under the contract quickly and efficiently. Metropolitan Water District Act Section 67 permits the Board to delegate to the General Manager any of its executive or administrative powers, which includes by this action delegating the authority to increase the agreement by up to \$250,000. Any additional increase in the amount payable under this agreement would require board approval. Notwithstanding, the staff's intent is to aggressively manage the scope of work and complete the PCRS within the specified \$2,722,000 amount absent unforeseen events.

Agreement for Application Licenses (Oracle Corporation) – New Agreement

Metropolitan presently utilizes Oracle database applications for its corporate financial processes. Additional licenses will be required to operate the new database servers that will host the PCRS. Oracle Corporation was originally selected through a competitive bidding process to provide application and database software for Metropolitan's enterprise applications. It is impracticable for Metropolitan to obtain the needed database licenses to support the PCRS through a new competitive procurement from a different vendor, because this could result in new databases that are incompatible with existing ones. Metropolitan Administrative Code Section 8140(1)(d) provides that competitive procurement is not required if the unique nature of the work makes such procurement impracticable. In accordance with Section 8140(1)(d), Metropolitan established Oracle Corporation as the sole brand for database licenses. Staff therefore recommends that an agreement be authorized with Oracle Corporation to provide database application licenses for the new PCRS data warehouse servers.

This action authorizes an agreement with Oracle Corporation in an amount not to exceed \$600,000 to provide database licenses for applications that will support the new PCRS. The scope of this agreement is included within the capital project to deploy the new PCRS, and will be funded under that project's appropriation. Future annual maintenance fees for the licenses will be included within Metropolitan's biennial Operations and Maintenance budget.

Agreement for Specialized Services for the IBM Cognos Upgrade – No Action Required

The IBM Cognos upgrade will migrate the existing software from Version 8 to Version 11. This work is highly specialized, and Metropolitan does not maintain the expertise in-house. The estimated cost for these services is \$200,000.

This work will be performed under a new professional services agreement by a firm that will be competitively selected. The agreement is planned to be awarded by the General Manager under his Administrative Code authority to award agreements of \$250,000 or less. No board action is required for this agreement.

Summary

This action appropriates \$4.41 million; authorizes a \$2,722,000 agreement with Project Partners for deployment of the PCRS; authorizes the General Manager to amend that agreement by up to \$250,000; and authorizes an agreement with Oracle Corporation to provide application licenses. This work is included within capital Appropriation No. 15490, the Project Controls and Reporting System Appropriation, which was initiated in fiscal year 2014/15.

The initial deployment of the PCRS will be for Metropolitan's PCCP Rehabilitation Program (Appropriation No. 15471). This long-term program will feature multiple construction and procurement contracts, multiple design packages prepared by both staff and consultants, and numerous permit and environmental requirements. The program is planned to be adaptable to shifting priorities and schedules. As part of a board action in January 2015 that authorized final design to rehabilitate PCCP within the Second Lower Feeder, the amount of \$700,000 was included for project controls and reporting on that program over several years. In order to consolidate efforts on project controls for capital programs and thereby reduce overall costs, following the approval of this action, \$700,000 will be transferred from Appropriation No. 15471 into the Remaining Budget category of Appropriation No. 15490.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2017/18 capital expenditure plan. See **Attachment 1** for the Financial Statement.

Project Milestone

December 2019 – Completion of deployment of the PCRS

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

Metropolitan Water District Administrative Code Section 8140: Competitive Procurement

Metropolitan Water District Act Section 67: Delegation of Board Power

By Minute Item 49887, dated September 9, 2014, the Board authorized design of a Project Controls and Reporting System

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA (Public Resources Code Section 21065, State CEQA Guidelines Section 15378) because the proposed action will not cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and involves continuing administrative activities, such as general policy and procedure making (Section 15378(b)(2) of the State CEQA Guidelines). In addition, where it can be seen with certainty that there is no possibility that the proposed action in question may have a significant effect on the environment, the proposed action is not subject to CEQA (Section 15061(b)(3) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not defined as a project under Public Resources Code Section 21065 and Section 15378(b)(2) of the State CEQA Guidelines, and is not subject to CEQA pursuant to Section 15061(b)(3) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

Board Options**Option #1**

Adopt the CEQA determination that the proposed action is not defined as a project and is not subject to CEQA, and

- a. Appropriate \$4.41 million;
- b. Authorize agreement with Project Partners, LLC in an amount not to exceed \$2,722,000 for deployment of the Project Controls and Reporting System;
- c. Authorize the General Manager to amend the agreement with Project Partners by up to \$250,000; and
- d. Authorize agreement with Oracle Corporation in an amount not to exceed \$600,000 for procurement of application licenses.

Fiscal Impact: \$4.41 million of capital funds under Appropriation No. 15490. Future annual maintenance fees for Oracle and Project Partners licenses related to the PCRS, estimated to be approximately \$137,000, will be included within Metropolitan's biennial Operation and Maintenance budget.

Business Analysis: This project will deploy a modern project management and reporting system that will support Metropolitan's CIP and provide management and staff with timely project status and forecast reports, along with a data warehouse and hardware that will support future enterprise-wide applications.

Option #2

Do not proceed with the PCRS at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to replace the existing obsolete project management system with a modern, industry-standard, and enterprise-wide project control and reporting system. Staff would instead rely on consulting firms to perform the project controls function for major programs, as was previously practiced on several capital programs. Under this approach, costs would likely be higher and reporting would not be standardized. Forecasting for the development and management of Metropolitan's biennial and long-term capital budget would not be precise, and the reporting capability would be diminished.

Staff Recommendation

Option #1



9/29/2017
Gordon Johnson
Manager/Chief Engineer,
Engineering Services
Date



10/2/2017
Jeffrey Nightlinger
General Manager
Date

Attachment 1 – Financial Statement

Financial Statement for Project Controls and Reporting System Appropriation

A breakdown of Board Action No. 2 for Appropriation No. 15490 for the Project Controls and Reporting System¹ is as follows:

	Previous Total Appropriated Amount (Sep. 2014)	Current Board Action No. 2 (Oct. 2017)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ -	\$ -	\$ -
Final Design	154,000	-	154,000
Owner Costs (Program mgmt., technical review)	170,000	83,000	253,000
Submittals Review & Record Drwgs.	-	-	-
Metropolitan Deployment Activities	-	606,000	606,000
Materials & Supplies	-	-	-
Database servers	-	197,000	197,000
Oracle application licenses	-	600,000	600,000
Incidental Expenses	1,000	2,000	3,000
Professional/Technical Services	890,000	-	890,000
Project Partners	-	2,722,000	2,722,000
Firm for IBM Cognos upgrades	-	200,000	200,000
Equipment Use	-	-	-
Contracts	-	-	-
Remaining Budget ²	115,000	-	115,000
Total	\$ 1,330,000	\$ 4,410,000	\$ 5,740,000

Funding Request

Appropriation Name:	Project Controls and Reporting System		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15490	Board Action No.:	2
Requested Amount:	\$ 4,410,000	Budget Page No.:	250
Total Appropriated Amount:	\$ 5,740,000	Total Appropriation Estimate:	\$ 5,740,000²

¹ The total amount expended to date on the Project Controls and Reporting System is approximately \$1.15 million. The total estimated cost to complete the system, including the enterprise data warehouse that will support other corporate applications, is approximately \$5.74 million.

² Upon approval of this action, (1) \$700,000 will be transferred from Appropriation No. 15471, the PCCP Rehabilitation Program, into this appropriation; and (2) the Total Appropriation Estimate will be revised.