



Board Report

File #: 2021-0119, File Type: Program

Agenda Number: 33.

CONSTRUCTION COMMITTEE MAY 20, 2021

SUBJECT: QUALITY MANAGEMENT CONSULTANT

ACTION: APPROVE RECOMMENDATIONS

RECOMMENDATION

AUTHORIZE:

- A. An increase to the total authorized funding for Contract No. PS54007 with PQM, Inc, for pending and future Task Orders to provide Quality Management Consulting services in the amount of \$19,947,286 increasing the authorized funding limit from \$5,378,518 to \$25,325,804 through FY22 and FY23; and
- B. The Chief Executive Officer or their designee to execute individual Task Orders and Contract Modifications changes within the Board approved funding limit.

ISSUE

In 2019, the Board approved awarding a seven-year (plus three (3) one-year options), cost plus fixed fee Contract No. PS54007 to PQM, Inc, to provide Quality Management Consultant Services that assist Metro in the delivery of voter approved Measures R, M, and other Board approved Capital Improvement projects.

The primary objective of the Quality Management Consultant is to implement Metro's Quality Management Oversight (QMO) Program which is a risk-based management oversight program to monitor Metro's consultants' and contractors' activities and performance throughout project delivery. Monitoring activities include the implementation of management plans as well as design and construction work products. The QMO program provides Metro with a more consistent, effective way for project teams to oversee and manage their Capital Improvement projects. The QMO Program is a key component to Metro's improved Quality Management System which is in the process of seeking ISO 9001: 2015 registration.

The QMO Program approach can be utilized by Metro in areas in addition to quality, it can be used in any business area that has requirements, processes, and deliverables, both for internal and external stakeholders. This initiative is part of Metro's Best Practices report, please see Attachment D.

The recommended action will provide funding authority for Task Orders (TO) during the next 24 months, FYs 2022 and 2023. This funding request is in anticipation of continued support of Westside Purple Line Extension Sections 2 & 3 and an additional 9 projects during FY22 and FY23. Life of Project budgets currently include funding for quality oversight, this request is to allow those funds to be utilized within Contract No. PS54007.

Staff intends to return to the Board in two years to request necessary funding authorization as the implemented Quality Management Oversight program matures and is applied to future projects.

BACKGROUND

Over the past 24 months, the Program Management Department, with the support and expertise of the Quality Management Consultant, has begun to implement an improved Quality Management System to support the delivery of Measures R & M projects more effectively. The improvements include a Quality Management Oversight (QMO) Program which has documented processes and procedures to assist Metro with overseeing the work of contractors delivering projects. The QMO Program is a systemized, risk-based approach that verifies that contractors are meeting contract requirements. Westside Purple Line Extension Sections 2 & 3 began implementing the QMO Program 14 months ago. Currently 60% of the QMO Program procedures are being utilized on these projects, and the results of the program have been favorable for Metro and well received by the contractors.

The Quality Management Department has completed a gap analysis which identifies the gaps in the current Quality Management System as compared to the ISO 9001: 2015 standard. The results from this report have been the topics of Quality Management Committee Meetings which focus on the best options for closing these gaps. The Program Management Department, based on the results of the committee meetings, has determined that the most effective way for Metro to oversee projects is by implementing the QMO Program on all capital improvement projects, excluding small, low risk projects.

The Quality Management Department has also completed a thorough review and revision of all quality related contract documents to ensure consistency in language and references within the procurement documents. This exercise was done to ensure that potential contractors are clear on Metro's policy for managing quality and that the results of their performance will be transparent to all project stakeholders.

DISCUSSION

Metro is currently undertaking the largest transportation construction program in the nation. Recognizing that a consistent application of oversight is key to effective project delivery, Metro has implemented a systemized approach to project oversight. The Quality Management Oversight (QMO) Program, currently implemented on Westside Purple Line Extension Sections 2 & 3, has proven to provide the following benefits to Metro:

- Improved confidence and accountability to project stake holders through the transparent

results of performance on key design and construction activities throughout the life of the project

- Improved communications to project participants through monthly QMO Program reports and Quarterly reviews
- Improved productivity of staff resources, through training on the revised approach and reallocation of resources within both the quality department and project teams
- Improved quality of contract requirements because of the review and analysis of Metro policy's, plans, procedures, and procurement documents

Scope of the QMO Program

To support the aggressive project implementation schedule for delivering Metro's Capital Program, Metro has implemented the QMO Program that follows the ISO 9001:2015 standard for quality management systems, and measures the contractor's performance during design and construction of both end-products and management processes against the contract and project specific requirements, using risk-based priority planned assessments that provide evidence of conformance or non-conformance for corrective actions, and ultimately for Metro's project teams to have the confidence to accept the work.

The process leverages integrated database technology with workflow capability for all project oversight participants to complete their tasks of the oversight processes. The data is collected and analyzed for identifying trends and key performance outcomes reviewed by the project teams and included in the QMO Program monthly reports. Quarterly quality management reviews are also conducted on each project and the program to review the contractor performance status and trends, identify lessons learned, and determine actions. The QMO Database also has a Lessons Learned module that provides increased effectiveness and efficiency to Metro's lessons learned program, to formally capture, report, and disseminate lessons, and implement improvement actions to the benefit of future projects.

The Quality Management Department is working toward the ISO 9001: 2015 registration for the capital program projects. This effort follows a plan, schedule, and progress tracking. An ISO Steering Committee has been established to lead this effort through to registration.

Continued implementation of the QMO Program on current and newly added projects is the primary focus over the next two years. Metro plans to award multiple major capital improvement projects in FY22 and FY23, most of which will utilize the QMO Program. Contract funds are authorized by issuing separate TOs for various projects using labor classifications and rates set forth in the contract, with funding solely supported through the Life of Project budgets. This method of contracting results in more efficient cost and schedule management, since TOs and modifications to existing TOs are negotiated and issued as additional work is identified. For each TO or modification, Metro prepares a scope of work and an estimate of hours, and PQM subsequently provides a proposal.

Results of this scope of work are expected to include tangible and intangible savings such as:

- Fewer resources are required to perform construction inspection activities (construction assessments) as a result of using risk-based sampling and priority planning that is effective by

focusing more on higher risk activities

- The implementation of Final Acceptance and use of the Acceptance Dashboard of the QMO Database, enables a very efficient means of progressive closeout as the work is completed. This results in fewer FTEs required for project closeout
- Efficiencies in the execution of oversight activities are realized through the implementation of the user-based workflow of QMO Database. This provides a systemized way of retrieving and extracting data, communicating with project stakeholders, and tracking project issues
- A pro-active method is used to use the collected performance measurement data and perform data analysis to identify trends in performance and systemic issues. This, and the resulting feedback to the contractors, facilitates a greater focus on continuous improvement and preventative actions, leading to less rework (Research in 2005 by the Construction Industry Institute reveals that direct costs caused by rework average 5% of total construction costs)
- The assessments are based on requirements, and include the objective evidence of the work either conforming or nonconforming to the requirements. This provides a fair, objective, and defensible means of oversight, which can result in less conflict and potential claims.

Consultant Services

The scope of services being provided by the PQM includes, but is not limited to, the continued development and implementation of an ISO 9001: 2015 based QMO Program which is led by quality management subject matter experts with decades of experience in applying this proven oversight approach to transportation capital programs and mega-projects. Consultant team members are integrated into Metro's Quality Management Department and work with senior management and executive staff from Metro's capital program and project teams to implement the QMO Program. They provide expertise, guidance, and training, and are transferring knowledge to Metro. They participate and are often responsible for QMO Program activities at the project level. The consultant is responsible for supporting the Metro project teams in the implementation of the QMO Program and conducts internal audits of that effort to identify opportunities to implement improvements. Other activities include:

- Project level management system audits and process assessments of the project contractors
- Coordination of design and construction assessments performed by the project team's engineering and field staff
- Quality improvement methodologies to support continuous improvement of Metro's Quality Management System
- Reviews of technical documents for upcoming projects; partnering with project teams in the planning phase to ensure technical documents have consistent language reflecting Metro's quality management requirements
- Preparation for registering Metro's quality management system to the ISO 9001: 2015 standard; this includes a program registration plan, ISO 9001: 2015 and leading an active steering committee

- Implementing the QMO Program training and communications plan, developing content for both live training (virtual now and later resuming in-person), and web-based training modules.

DETERMINATION OF SAFETY IMPACT

The Board action will not have any adverse safety impacts on Metro's Construction projects, Operations, our employees, and/or patrons.

FINANCIAL IMPACT

The recommended amount of \$19,947,286 is based on the anticipated level of services for the term. A scope of work for each fiscal year is developed for overall QMO Program project level activities. Fiscal year 2022 portion for these services are included within the impacted projects' proposed budget for FY22. Since this is a multiyear program, the program manager, respective project managers and Chief Program Management Officer are responsible for budgeting in future year. The issued project level TOs are funded by the life-of-project (LOP) budgets that are approved by the Board.

A portion of the contract scope of services will require an annual budget allotment for program-wide quality oversight elements and activities to be funded through an annual overhead fund. A scope of services for each fiscal year is developed for overall QMO Program level activities, for which a TO is issued.

It is anticipated that the overhead allotment for the QMO Program will be offset by cost savings resulting from a reduction of engineering and construction management consultant staff resources on the projects. This is due to the implementation of the risk-based priority planning and sampling methods, progressive acceptance and related accelerated project closeout, and the efficiencies of executing the oversight activities through the integrated QMO database that all project participants use to execute their role in the processes. These savings are augmented with mitigations of potential claims, rework, and scope creep, that is achieved through the defensible requirements-based approach to oversight that places a greater focus on activities with higher risk and overall continuous improvements on the projects.

Aside from the annual overhead allotment, the recommendations for this item have no financial impacts beyond what the Board authorizes through the life-of-project (LOP) budgets.

Impact to Budget

Funding for QMO Program project specific TOs issued under this action will be provided by the specific project benefiting from the services. The sources for these funds are from the respective projects' funding plans and may consist of federal and/or state grants as well as local funds. Many state-of-good-repair and capital improvement projects are funded with local funding sources that are eligible for rail and bus operations.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

Recommendation supports Strategic Plan Goals #1 and #5 and is also a Metro Best Practice Initiative.

Goal # 1 - Provide high-quality mobility options that enable people to spend less time traveling.

Goal # 5 - Provide responsive, accountable, and trustworthy governance within the Metro organization. Specifically, 5.4 which states "Metro will apply prudent commercial business practices to create a more effective agency."

This will be accomplished through the implementation of a consistent, ISO 9001: 2015 compliant approach to quality management across projects which creates transparency of oversight efforts, accountability of the contractor's responsibilities, efficiencies, and increased effectiveness of project teams in the delivery of Measures R & M projects.

ALTERNATIVES CONSIDERED

The Board may reject the funding authorization. Staff does not recommend this alternative. Due to the length of time needed to deliver major capital improvement projects, it is very inefficient and disruptive to change the consultant during project delivery. The authorization of approved contract funds will allow for PQM to continue the work that has progressed over the past 26 months without disruption. The use of PQM has allowed the agency to secure highly technical expertise without increases in Metro long term labor costs. By limiting funding to two years, greater accuracy of project scope and cost requirements can be provided to the Board every two years

NEXT STEPS

Upon Board approval, staff will extend the TOs for Program Level QMC Support Services, Westside PLE 2&3 and execute TOs as needed for AMC, LINK US, Sepulveda PDA, East San Fernando Valley, and other projects that may fall within the approved timeframe.

ATTACHMENTS

Attachment A - Procurement Summary
Attachment B - Task Order Summary
Attachment C - DEOD Summary
Attachment D - QMO Best Practice Initiative

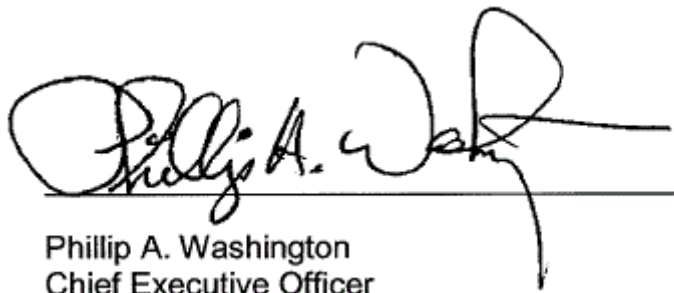
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Phillip A. Washington
Chief Executive Officer

PROCUREMENT SUMMARY

QUALITY MANAGEMENT CONSULTANT (QMC)

1.	Contract Number: PS54007		
2.	Contractor: PQM, Inc.		
3.	Work Description: Provide Quality Management Consultant services to develop, improve and implement a Quality Management Oversight (QMO) Program for implementation on select Metro Transportation projects.		
4.	Contract Work Description: development and implementation of an ISO 9001:2015, Quality Management System ; development and implemenation of an QMO Training Program ; manage Project Database Requirements ; internal quality audits of Project Management processes ; trend analysis and feedback ; Materials Verification Testing & Inspection program (OVT) Database tool ; support for Project Closeout and acceptance ; implement Quality improvement Methodologies for overall program and project continuos improvement.		
5.	The following data is current as of: 3/17/21		
6.	Contract Completion Status		Financial Status
	Contract Awarded: 3/28/19		Contract Award Amount: \$5,378,518
	Notice to Proceed (NTP): 4/16/19 (Contract Execution)	Total of Task Orders Plus Modifications Approved:	\$5,263,571.72
	Original Complete Date: 4/14/26	Pending Future Task Orders and Modifications (including this action):	\$19,947,286
	Current Est. Complete Date: 4/14/26	Current Contract Value (with this action):	\$25,325,804
7.	Contract Administrator: Rafael Vasquez		Telephone Number: (213) 418-3036
8.	Project Manager: Herman Gallardo		Telephone Number: (213) 922-1385

A. Procurement Background

On March 28, 2019, the Board of Directors approved award of Contract No. PS54007 to PQM, Inc. to provide Quality Management Consultant Services. The consultant services will develop, implement, and manage a Quality Management Oversight System, training, development of supporting tools. The Purple Line Extensions 2 & 3 have been selected in addition to other major projects to implement this system.

Eight (8) Contract Task Orders (TOs) and six (6) Contract Modifications (MOD) have been approved and issued to date. This action is to authorize an increase to the total authorized funding for Contract No. PS54007 with PQM, Inc., for pending future

Task Orders in the amount of \$19,947,286 increasing the authorized limit from \$5,378,518 to \$25,325,804; and authorize the CEO to execute individual Task Orders and Contract Modifications changes within the Board approved contract authority.

The Contract Task Orders and Modifications will be processed in accordance with Metro's Acquisition Policy. Contract No. PS54007 is a Cost Reimbursable Fixed Fee Contract (CPFF).

(Refer to Attachment B – Contract Task Order/Modification Log)

CONTRACT TASK ORDER /MODIFICATION LOG

QUALITY MANAGEMENT CONSULTANT (QMC)

TO/ Mod. No.	Description	Status (approved or pending)	Date	\$ Amount	Board Approved CMA
N/A	Initial Authorized Funding		3/28/19	\$5,378,518	\$537,852
TO 1	Project Initiation	Approved	5/17/19	\$209,266.13	
TO 2	General Program Development and Execution	Approved	9/6/19	\$1,347,823.95	
TO 2 - MOD 1	General Program Development and Execution- Period of Performance Extension (POP) from 7/1/20 to 7/30/20	Approved	9/6/20	\$0.00	
TO 2 MOD 2	General Program Development and Execution- Period of POP to 9-30-2020	Approved	9/6/20	\$0.00	
TO 3	Quality Management Consulting Services for WPLE2	Approved	10/23/19	\$422,614.40	
TO 3- MOD 1	Quality Management Consulting Services for WPLE2 -POP	Approved		\$0.00	
TO 3 MOD 2	Quality Management Consulting Services for WPLE2	Approved	12/3/20	\$578,006.93	
TO 4	Quality Management Consulting Services for WPLE3 (Tunnels) Project	Approved	10/23/20	\$244,042.81	
TO 4 MOD 1	Quality Management Consulting Services for WPLE3 (Tunnels) Project – POP from 7/1/20 to 6/30/21	Approved	6/26/20	\$0.00	
TO 5	Quality Management Consulting Services for WPLE3 (Stations) Project	Approved	10/23/19	\$244,042.81	
TO 5 MOD 1	Quality Management Consulting Services for WPLE3 (Stations) Project POP from 7/1/20 to 6/30/21	Approved	6/26/20	\$0.00	
TO 6	Quality Management Support Services for Highway Projects	Approved	3/17/20	\$20,156.44	
TO 7	Metro Quality Management Consultant (QMC) General Program Development and Execution	Approved	9/4/20	\$1,421,959.73	

TO 8	Metro Quality Management Consultant (QMC) General Program Development and Execution- WPLE3 (Stations and Tunnels)	Approved	12/22/20	\$775,658.52	
	Subtotal Pending Changes:				
	CMA Authorized by the Board and Remaining				\$537,852
	Approved Task Orders (TO 1 - TO 8)			\$4,685,564.79	
	Approved Changes (TO 3 MOD 2)			\$ 578,006.93	
	Pending Modifications:			\$0.00	
	Total Task Orders and Modifications Issued:			\$5,263,571.72	
	Original Contract Funding:			\$5,378,518	
	This Board Action:			\$19,947,286	
	New Total (Includes this Board Action):			\$25,325,804	

DEOD SUMMARY

**QUALITY MANAGEMENT CONSULTANT (QMC)
CONTRACT NO PS54007**

A. Small Business Participation

PQM, Inc. (PQM), a DBE Prime, made a 32% DBE commitment for this contract. The overall DBE participation for this contract is based on the cumulative value of all Task Orders awarded.

To date, eight (8) Task Orders have been awarded. Based on payments reported, the contract is 47.94% complete and the cumulative DBE participation of all Task Orders awarded is 33.15%. PQM is exceeding the DBE commitment by 1.15%.

SMALL BUSINESS COMMITMENT	32% DBE	SMALL BUSINESS PARTICIPATION	32.85% DBE
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	DBE Contractors	Scope of Work	Ethnicity	Current Participation
1.	PQM, Inc. / DBE Prime)	Quality Management Consulting	Caucasian Female	27.83%
2.	NSI Engineering, Inc.	Quality Management Consulting	Caucasian Female	1.47%
3.	System Consulting, LLC.	QMO Support	African American	3.85%
Total DBE Participation				33.15%

B. Living Wage and Service Contract Worker Retention Policy Applicability

The Living Wage and Service Contract Worker Retention Policy is not applicable to this contract.

C. Prevailing Wage Applicability

Prevailing wage is not applicable to this contract.

D. Project Labor Agreement/Construction Careers Policy

Project Labor Agreement/Construction Careers Policy is not applicable to this Contract. Project Labor Agreement/Construction Careers Policy is applicable only to

construction contracts that have a construction contract value in excess of \$2.5 million.

BEST PRACTICE INITIATIVE
QUALITY MANAGEMENT OVERSIGHT (QMO)

Goal

The goal of Metro's Quality Management Oversight Program Management was to develop and implement a systemized approach to project oversight for all Program Management department projects. This initiative falls under the Metro Vision 2028 Strategic Plan goal number 5.4 which states: "Metro will apply prudent commercial business practices to create a more effective agency."

Background

Issue:

The idea of Metro considering improvements to its contractor oversight approach was described in a peer review conducted by Kevin Diviness of Denver's RTD transit agency. RTD has had success with a similar approach to program and project oversight, that prompted Metro's Program Management department to explore the possible implementation of similar oversight techniques and best practices on Metro's capital program. It's important because Metro, like most agencies, understands that it doesn't have all the answers related to best practices and sometimes looks to the successes achieved by other agencies that have deployed proven best practices that may be different than some of Metro's. The above noted peer review was initiated as a result and became the catalyst in the development of the QMO Program best practices related to project oversight to help us achieve our goals.

How the issue was brought to the department's attention:

Metro's Chief Program Management Officer, Rick Clarke experienced this oversight approach as a best practice prior to coming to Metro. In addition, the Quality Management department had previously identified that our Quality Management System needed to be updated. These factors combined with the ideas from the peer review prompted a more serious discussion about improving our overall quality management oversight approach.

Best Practice

Overview on best practice:

Implement a risk-based quality management oversight (QMO) program and requirements management database tool to monitor Metro's consultants' and

contractors' activities and performance throughout project delivery. Monitoring activities include the implementation of management systems as well as design and construction work products. The QMO program will provide a consistent and more effective way for all project teams at Metro to oversee quality and management of their capital program projects.

Partnerships:

Quality Management department has formed strong relationships with the project teams and senior executives of the Program Management and other supporting departments during this initiative.

Funding:

It is anticipated that the costs for the QMO Program will be more than offset by savings resulting from a reduction of engineering and construction management consultant staff resources on the projects. This is due to the implementation of the risk-based priority planning and sampling methods, progressive acceptance and related accelerated project closeout, and the efficiencies of executing the oversight activities through the integrated QMO database that all project participants use to execute their role in the processes. These savings are augmented with mitigations of potential claims, rework, and scope creep, that are achieved through the defensible requirements-based approach to oversight, and a greater focus on activities with higher risk activities of the contractors, and overall continuous improvements on the projects.

For the Quality Management department's role in implementing the QMO Program, aside from the minimal annual QMO Program wide management resources, there are no financial impacts beyond what the Board authorizes through the life-of-project (LOP) budgets.

Project costs:

The costs associated with this initiative include consultant fees, Metro has contracted with a Quality Management Consultant team of quality management experts to assist with the development and implementation of the QMO Program.

Process

The deployment of the best practices of the QMO Program are in progress. The proposed QMO Plan and Procedures will apply to all Metro groups supporting the Program Management department, including engineering and construction consultants performing oversight on the capital projects. This requires replacing or

updating the current policies and procedures. This will result in a standardized, consistent, and integrated oversight approach to measure contractor performance of both end-products and processes to control the work. The approach uses a risk-based prioritization and sampling to focus on activities having higher risk. Performance data is leveraged for data analytics, identification of trends, and reporting to provide constructive performance feedback for continuous improvements.

The Program Management Department, with the support and expertise of the Quality Management Consultant, has begun to implement the QMO Program on the first two pilot projects. The Westside Purple Line Extension Sections 2 & 3 began implementing the QMO Program 14 months ago, currently 80% of the QMO Program procedures are being utilized on these projects, and the results of the program have been favorable for Metro and well received by the contractors.

The Quality Management Department completed a thorough review and revision of all quality related sections of the design-build and design-bid-build contracts, and construction management support services contracts to ensure consistency in language and approach. This exercise was done to ensure that potential bidders are clear on Metro's policy for managing quality and that the results of their performance will be transparent to all project stakeholders.

Results

Metro is currently undertaking the largest transportation construction program in the nation. Recognizing that a consistent application of oversight is key to effective project delivery, Metro has implemented a systemized approach to project oversight. The QMO Program, currently implemented on Westside Purple Line Extension Sections 2 & 3, has proven to provide the following benefits to Metro:

- Improved confidence and accountability to project stakeholders through the transparent results of performance on key design and construction activities.
- Improved communications to project participants through monthly QMO Program reports and Quarterly reviews of performance and improvement actions.
- Improved effectiveness of project oversight staff resources, through training on the revised approach and reallocation of resources focus and efforts within and the project teams.
- Improved quality of contract requirements and Metro procedures because of the review and analysis of Metro policy's, plans, procedures, and procurement documents.

How the agency utilized this best practice:

The QMO Program deployment on the Westside Purple Line Extensions Sections 2 and 3. In addition, the Quality Management Department is working toward the ISO 9001: 2015 registration for the capital program projects. This effort follows a plan, schedule, and progress tracking. An ISO Steering Committee has been established to lead this effort through to registration. Continued implementation of the QMO Program on current and newly added projects is the primary focus over the next two years. Metro plans to award multiple major capital improvement projects in FY22 and FY23, most of which will utilize the QMO Program.

Top three initiative achievements:

1. Buy-in on the approach from Metro leadership and project stakeholders.
2. Program and project level quarterly reviews of contractor performance supported by performance data and resulting trend analysis.
3. 80% of the QMO Program Processes and Procedures have been implemented on the pilot projects.

Additional Resources

1. [Gap analysis report](#)
2. [Kevin Diviness report](#)
3. [QMO plan and procedures](#)
4. Quarterly review presentations
 - a. [Program Level](#)
 - b. [PLE 2](#)
 - c. [PLE 3](#)
5. [QMO awareness training](#)