



Board Report

File #: 2015-0955, **File Type:** Contract

Agenda Number: 34.

REVISED
CONSTRUCTION COMMITTEE
JULY 16, 2015

SUBJECT: STAFFING REQUEST FOR ENGINEERING & CONSTRUCTION DEPARTMENT'S TRANSIT PROJECTS

ACTION: APPROVE RECOMMENDATIONS

RECOMMENDATION

CONSTRUCTION COMMITTEE RECOMMENDED (5-0) authorizing the Chief Executive Officer to amend the **FY16 budget to add 33 non-contract full-time equivalent (FTE) positions:**

- A. 18 non-contract FTE positions (with 7 non-contract FTE positions already accounted in the FY 16 budget) by converting new Construction Management Support Services(CMSS)/consultant positions to support Measure R transit projects for Engineering & Construction (E&C) Department;
- B. 2 non-contract FTE positions by converting consultant positions to support Environmental Compliance and Sustainability projects for E&C Department (Refer to Appendix 1);
- C. 3 non-contract FTE positions to support capital transit projects for E&C Department (refer to Appendix 2);
- D. 4 non-contract FTE positions by converting new CMSS/consultant positions to support Measure R transit projects for Program Management Office (Refer to Appendix 3);
- E. 4 non-contract FTE positions by converting new CMSS/consultant positions to support Measure R transit projects for Vendor/Contract Management Department (Refer to Appendix 4); and
- F. 2 non-contract FTE positions to support Measure R transit projects for Countywide Planning and Development Department (Refer to Appendix 6).

It should be noted that the positions A through F are project related positions that can be terminated upon completion of the projects.

ISSUE

In recent quarterly meetings with the Federal Transit Authority (FTA), FTA has expressed repeated concerns over Metro's staffing levels. There were also discussions over Metro's succession planning. With the on-going construction of the three main transit projects, Crenshaw/LAX, Regional Connector and Westside Purple Line Extension Section 1 and initiating preliminary engineering design for Westside Purple Line Extension Section 2 in addition to numerous smaller transit capital and state of repair projects, FY 16 represents a year of tremendous growth for E&C department and all the other supporting departments such as Program Management Office, Vendor/Contract Management, Communications and Countywide Planning and Development who provide critical support to these projects. The total capital budget for these four main transit projects alone in FY 15 is approximately \$710 million with a total current staffing of 201 Metro and CMSS/consultant positions. With a proposed capital budget of \$1.150 billion for the four major transit projects in FY 16 (an increase of approximately 25 percent) the total Metro FTE and CMSS/consultant positions will need to increase from 201 positions to approximately 276 positions as the projects ramp up and come on stream.

For the FY 16 budget process, it was agreed to include 10 non-contract Metro positions as seed positions in order to allow staff to commence recruitment by advertising these positions. It was further agreed that the remaining request for 33 positions will go through a separate process via the Board as a direct response to previous Board motions. Last month, as part of the FY16 Budget, the Board approved 7 out of the 10 non-contract Metro positions for E&C. These Board approved positions are highlighted in Table A.

In order to support the main transit projects currently under construction, E&C and supporting departments are requesting a total of 33 non-contract FTE positions. These new non-contract FTE positions may be terminated upon completion of the projects.

- 23 positions for Engineering & Construction (Refer to Table A).
- 4 non-contract Metro FTEs for Program Management Office.
- 4 non-contract Metro FTEs for Vendor/Contract Management.
- 2 non-contract Metro FTEs for Countywide Planning and Development.

Based on the results of the pilot project and cost benefit analysis performed by E&C on the CMSS/consultant model to determine which functions should be brought in-house, staff has determined that partial conversion of the approximately 28 (of the 33) new staffing positions from private to public sector will save up to \$21 million through the life of project for the main transit projects:

- 18 non-contract Metro FTEs (with 7 non-contract FTE positions already accounted in the FY 16 budget) for Engineering & Construction for the main transit projects.

- 2 non-contract Metro FTEs for Engineering & Construction for Environmental Compliance and Sustainability.
- 4 non-contract Metro FTEs for Program Management Office.
- 4 non-contract Metro FTEs for Vendor/Contract Management.

INTRODUCTION

Metro's construction management and consulting services commonly referred to as construction management support services (CMSS) is a concept that began in the mid 1990's in response to a Board-directed investigation to research more effective and innovative approaches to project delivery. At the same time, the Metro Board approved the adoption of a Joint Project Office now called the Integrated Project Management Office (IPMO). The CMSS concept under the IPMO supplements Metro staff with consultants in managing Metro projects. The consultant staff members are an extension of Metro staff and under the direction of Metro.

The scope of the CMSS contract includes a variety of project management and construction management staffing disciplines that may be required during the course of construction. The consultants provide an extension of staff to various Metro Departments represented in the project team or supported by the project team - example Departments are Engineering and Construction, Program Management Office, Vendor/Contract Management, Communications, Enterprise Risk and Safety, and Countywide Planning and Development.

The vast majority of CMSS/consultant staff (used as an extension of Metro staff) are utilized on the main transit projects presently underway - Crenshaw/LAX, Regional Connector, Westside Section 1, with Westside Section 2 imminent. However, consultants are used to a lesser extent to supplement Metro staff for other project areas - Highways, Regional Rail, Capital and Environmental. The need for, and the pattern of usage, varies by project type and is dependent upon the specific needs of the various projects. On a typical transit project, the CMSS/consultant staff comprises of approximately 50 percent of the total staffing with the remaining 50 percent staffed by Metro personnel.

DISCUSSION

In response to several board motions, staff examined the cost of outsourcing construction management and consulting services and completed a pilot project study and a preliminary cost benefit analysis. The key goals and objectives of the pilot project study and preliminary cost benefit analysis were to:

- a. Deliver transportation infrastructure projects safely, on time, and within budget;

- b. Manage resources effectively and efficiently resulting in tangible cost savings;
- c. Build bench strength in the Metro work force and create a succession plan for the future; and
- d. Support Metro's commitment to Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)

Due to the voter-approved Measure R program, Metro is undertaking one of the largest capital improvement programs in the nation which is an unprecedented challenge for project delivery. The successful project delivery of these transit projects is highly dependent on providing sufficient staffing resources in order to lower cost, exercise fiscal responsibility, enhance our safety-conscious culture and increase quality and efficiency.

Staffing Assumptions

The staffing assumptions used in the staffing analysis, pilot project study and cost benefit analysis consisted of the following:

1. All existing CMSS/consultant and Disadvantage Business Enterprise (DBE) and Small Business Enterprise (SBE) positions in FY 15 shall remain.
2. Highly specialized technical areas of expertise (tunneling resident engineer, noise/vibration engineer, land surveyor, etc.) shall remain as consultants.
3. In order to address peak fluctuations in the work including construction work that requires swing and night shifts, staff shall continue to use CMSS/consultant positions on an as-needed basis.
4. To honor Metro's commitment to DBE and SBE, existing CMSS/consultant positions in these categories shall remain as consultants.
5. The new non-contract Metro positions may be terminated upon completion of the projects.

Staffing Analysis

In preparation for the Metro FY16 budget process that establishes the Metro headcount for each subsequent fiscal year, staff assessed the project work for the coming year and, based on the projected annual capital expenditure per project, the project team established the overall staffing requirements consistent with the overall project management plans submitted to the Federal Transit Administration (FTA) for each project. From this capital budget information, the overall total monthly staffing requirements are estimated for each project using a variety of scenarios dependent on assumed levels of future capital funding. The staffing is broken down by Metro department(s) and divided between the public and private sector. The monthly staffing requirements are reviewed to ascertain the optimal split between public sector and private sector which is typically a 50/50 ratio. Additionally, staff considered a number of potential funding scenarios for potential longer term

projects to assist in providing an understanding of what the staffing requirements might be over an extended period of time.

In order to adequately staff the main transit projects for the first six months of FY16 and effectuate a cost savings of at least 25 percent, staff is requesting a total of 33 new non-contract Metro positions for the first six month of FY 16 to support Measure R transit and capital projects of which 28 CMSS/consultant positions will be converted to new Metro non-contract positions:

1. 23 non-contract positions for Engineering & Construction of which 20 non-contract positions are CMSS/consultant conversions.
 - a. 18 non-contract positions are CMSS/consultant conversions for the main transit projects.
 - b. 2 non-contract positions are consultant conversions for Environmental Compliance and Sustainability.
2. 4 non-contract positions for Program Management Office; all 4 positions are CMSS/consultant conversions.
3. 2 non-contract positions for Countywide Planning and Development.
4. 4 non-contract positions for Vendor/Contract Management; all 4 positions are CMSS/consultant conversions.

Most of the new staffing proposed for E&C for the first six months of FY16 to support two of the main transit projects, Crenshaw/LAX and Regional Connector, approximately 82 percent which is equivalent to 23 of the 28 positions. Approximately 18 percent of new staffing (equivalent to 5 positions of the 28 positions) proposed for E&C for the first 5 months of FY16 support Westside Purple Line Extension Section 1.

The intent is to fully staff the Crenshaw/LAX and Regional Connector Transit Corridor projects so that these new non-contract Metro positions will gradually phase into staffing for Westside Purple Line Extension Sections 1 and 2 by the end of 2017 once the Crenshaw/LAX and Regional Connector Transit Corridor projects start to ramp down. This will mean that Westside Purple Line Section 1 will have a heavier reliance on CMSS/consultant staff for FY 16 and FY17 compared with Crenshaw/LAX and Regional Connector Transit Corridor projects. Staff carefully and conscientiously determined the appropriate staffing levels to ensure that all these new non-contract Metro positions will have work for the next 10 years or more.

Furthermore, attrition plays a significant influence in the staffing analysis of 23 new non-contract E&C positions in FY16. Currently, there are a total of 127 existing staffing positions for Transit in E&C. In the next five to ten years, it is estimated that approximately 44 percent (56 out of 127) of the existing E&C staff in Transit are expected to retire.

There are significant tangible benefits in converting CMSS/consultant functions to new Metro positions such as:

- Providing a cost savings for the life of the project as the average cost of consultants is significantly more than the average cost of Metro positions.
- Preserving the intellectual, political and commercial capital of the organization by maintaining a trained and experienced work force.
- Creating flexibility, career advancement and build a succession plan for the organization.

As for the five (out of 33) new non-contract Metro positions that are not CMSS/consultant conversions, there is a strong business case to use in-house Metro personnel versus consultant positions to support the four main transit corridor projects and the capital improvement projects.

Based on our preliminary calculations, the potential annual cost savings of using five in-house Metro personnel in lieu of CMSS/consultant positions is approximately \$447,000 with up to \$3.1 million in potential savings for the life of projects as outlined in Table A-1.

Pilot Project Study

The pilot project study was initiated in November 2014 for the Crenshaw/LAX Transit Corridor project. For the pilot project study, staff transitioned certain new CMSS/consultant positions with non-contract Metro positions by either using existing “vacant” and/or “borrowed” Metro positions. A total of seven new CMSS/consultant positions were converted to non-contract Metro positions with annual cost savings of approximately \$1.27 million (with a 10 percent discount factor applied to account for market conditions). Two of the seven positions, specifically the Sr. Community Relations Officer and Community Relations Officers, were “borrowed” positions provided by Human Resources Department on a temporary basis only. Therefore, in order to make these two “borrowed” positions permanent, they are included as part of the seven non-contract positions CMSS/consultant conversions under Communications.

As shown in Table B, the total annual cost for these seven positions under the CMSS/consultant contract is approximately \$3.2 million. By converting these seven CMSS/consultant positions to new Metro positions, the total cost for these seven new Metro functions was reduced to \$1.8 million. Since these seven positions were recruited within the mid-point salary ranges of Metro’s pay scale, a 10 percent (in lieu of 30 percent) discount was applied against the cost savings of \$1.4 million to account for current market conditions and salary variations which yielded a total potential cost savings of approximately \$1.27 million.

Cost Benefit Analysis

Due to the successful results of the pilot project study, staff performed a cost benefit analysis that

identified the capital budget, monthly costs and staffing needs of all individual projects underway, including those that may be undertaken in the next five to ten years. In addition, total costs and total staffing needs were compiled over that period. The projected staffing numbers and costs were compared against industry norms and compared to the details provided to and approved by the FTA as part of Full Funding Grant Agreement related submittals for the respective projects.

The cost benefit analysis focused on the four main transit corridor projects such as Crenshaw/LAX, Regional Connector, and Westside Purple Line Extension Sections 1 and 2 and Environmental Compliance and Sustainability division. Based on the staffing assumptions described above, the results of the analysis indicate that a potential cost savings of \$21 million can be achieved by converting 28 new CMSS/consultant positions to new non-contract Metro positions. Refer to Table C and Table C-1.

- 18 positions for Engineering & Construction for the main transit projects.
- 2 positions for Engineering & Construction for Environmental Compliance & Sustainability.
- 4 non-contract Metro FTEs for Program Management Office.
- 4 non-contract Metro FTEs for Vendor/Contract Management.

The total projected budgeted value of the CMSS/consultant contracts for the main transit projects and Environmental Compliance and Sustainability is approximately \$282 million. Refer to the Table D below. The total cost for approximately 28 CMSS/consultant positions for the life of projects for the four main transit projects including Environmental Compliance & Sustainability is approximately \$73 million. By converting these 28 CMSS/consultant positions to non-contract Metro positions, the total cost for these Metro functions is reduced to approximately \$43 million. This results in a potential cost savings of \$30 million. However, by applying a 30 percent discount against \$30 million to account for market conditions, salary variations, and other staffing considerations, the total potential cost savings is approximately \$21 million.

The cost benefit analysis has to be tempered by a number of staffing considerations including but not be limited to, actual market conditions (and associated salaries) for professional staff, availability of staff with approximate qualifications and experience, staffing procurement lead-in times, SBE/DBE, flexibility of using consultant staff on as-needed basis, long term human resource costs related to Metro staff benefits such as pension, obligations, etc.

| TABLE E- PROJECT NAME | CMSS/CONSULTANTS | ESTIMATED CONTRACT VALUE (Life of Project) |
|---------------------------------------|---|---|
| Crenshaw/LAX Transit Corridor Project | Stantec, PMA, CRSS & Hill International | \$67 million |

| | | |
|---|--|--------------|
| Regional Connector Transit Corridor Project | Arcadis, CPVJ, Hill International | \$45 million |
| Westside Purple Line Extension Section 1 | Westside Extension Support team, J.V. & Hill International | \$69 million |
| Westside Purple Line Extension Section 2 | TBD* | \$63 million |
| Environmental Compliance and Sustainability | Arcadis | \$38 million |
| TOTAL | \$282 million | |

*CMSS contracts have not yet been awarded to Westside Purple Line Extension Section2.

DETERMINATION OF SAFETY IMPACT

This Board action will not have an impact on established safety standards.

FINANCIAL IMPACTS

The following funds are included in the FY 16 budget for this action:

- Project no. 865512 and 860003 Crenshaw/LAX Transit Corridor Project in Cost Centers 6810, 6940, 7160, 8110, 8410, 8420, 8510 and 8610.
- Project no. 860228 Regional Connector Transit Corridor Project in Cost Centers 6810, 6940, 7160, 8110, 8410, 8420, 8510 and 8610.
- Project no. 865518 Westside Purple Line Extension Section 1 in Cost Centers 8010 and 8510.

The conversion of the CMSS/Consultant positions to new Metro non-contract positions effectuates a cost savings of up to \$21 million throughout the life of project for the main transit projects including Environmental Compliance and Sustainability. This potential cost savings incurred will be reallocated to project contingency. Since this is a multi-year project, the Executive Director of Engineering and Construction will be responsible for allocating the costs in future years.

ALTERNATIVES CONSIDERED

The Board may choose not to authorize the conversion of CMSS/Consultant positions to non-contract FTEs. This is not recommended since the impacts of insufficient staffing at appropriate levels include:

- Heavier reliance on CMSS/consultant positions.
- Loss of potential cost savings of up to \$21 million for these positions for life of project.
- Inability to preserve the intellectual and commercial capital of the organization.
- Inability to cross-train in the most effective and efficient manner to provide a wider diversity of

skills and create flexibility in the workforce.

- Inability to create a succession plan for the future.

Furthermore, if the five non-contract Metro positions listed in Table A-1 are not approved by the Board, staff will have to outsource and use CMSS/consultant positions with a loss of potential cost savings of up to \$3.1 million for life of projects.

NEXT STEPS

1. Staff will submit their FY 16 CMSS Contract budget to the Board for approval in July 2015.
2. Staff will report back by December 2015 on the actual number of non-contract Metro positions hired and placed on the projects. This report will include the cost impacts effectuated by the conversion of positions affecting the CMSS, Metro Admin and Contingency line items by project.

ATTACHMENTS

- A. Table A Engineering & Construction FY16 Staffing
- A-1 Table A-1 Potential Cost Savings of 9 Metro FTEs
- B. Table B - Pilot Project Study
- C. Table C - Cost Benefit Analysis
- D. Table C-1 -FY16 CMSS/Consultant Conversion Cost Savings
- E. Appendix 1 - Environmental Compliance & Sustainability
- F. Appendix 2 - Transit Capital Projects
- G. Appendix 3 - Program Management Office
- H. Appendix 4 - Vendor/Contract Management
- I. Appendix 6 - Countywide Planning and Development

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Phillip A. Washington
Chief Executive Officer

| TABLE A-1 Potential Cost Savings of 9.5 Metro FTEs | Annual CMSS Burdened Rate | CMSS Hourly | Metro Annual Burdened Rate | Metro Hourly | Difference in Salary | Cost Savings | Potential Savings |
|---|----------------------------------|--------------------|-----------------------------------|---------------------|-------------------------------------|---------------------|--------------------------|
| Director, Construction Management | \$ 462,560 | \$ 245 | \$ 280,218 | \$ 148 | 61% | 39% | \$ 182,342 |
| Sr. Engineering Manager | \$ 462,560 | \$ 245 | \$ 252,213 | \$ 134 | 55% | 45% | \$ 210,347 |
| Sr. Engineer | \$ 262,432 | \$ 139 | \$ 207,680 | \$ 110 | 79% | 21% | \$ 54,752 |
| Signage Design Manager | \$ 294,528 | \$ 156 | \$ 207,680 | \$ 110 | 70% | 30% | \$ 86,848 |
| Sr. Graphic Designer | \$ 262,432 | \$ 139 | \$ 158,592 | \$ 84 | 60% | 40% | \$ 103,840 |
| | | | | | TOTAL POTENTIAL COST SAVINGS | | \$ 638,139 |
| | | | | | 30% Discount | | \$ 446,690 |
| | | | | | LIFE OF PROJECTS (7 years) | | \$ 3,126,832 |

ATTACHMENT A-1

Table A
Engineering & Construction
FY16 FTE Request for Consultant Conversion Positions

| No. FTE | Cost Center | Project No. | Position Title | Job Description | Justification | QTR Needed |
|-------------------|-------------|--------------|---|--|--|------------|
| 3 | 8410 | 860228 -- RC | Construction Inspector | To inspect each stage of construction of Regional Connector; track, tunnel and stations as well as all contractors activities, to be in accordance with plans and specs. Prepares non-conformance reports; maintains daily logs; monitor contractor testing activities; support construction safety functions; coordinates Metro test lab activities; and oversee DB inspection activities. | Construction Management Department does not have the personnel to assign to these activities at this point in time. | Q1 |
| 1 | 8410 | 860228 -- RC | * Senior Construction Manager | Senior Construction Manager: This position oversees and manages rail facilities Regional Rail construction project, ensures work is accomplished according to specification and plans, and is on schedule and within budget. Sets priorities for staff and ensures that staff are accomplishing assigned tasks. | Construction Management Department does not have the personnel to assign to these activities at this point in time. Metro does not want to use consultants at this time due to the higher cost of consultants. | Q1 |
| 1 | 8320 | 860228 -- RC | Sr. Engineer (Geotechnical) | To supervise geotechnical activities on the Regional Connector project. | The Regional Connector has several geotechnical elements that would require geotechnical engineering reviews. Metro Engineering is expecting to receive a very large number of submittals that require our review. With the Design Builder already on board on two of these projects and their his aggressive schedule to start construction in the summer, a new position is needed in order to assist the project in review of the geotechnical items on these projects. | Q1 |
| 1 | 8330 | 860228 -- RC | Sr. Engineer (Systems) | Supervise and manage all activities related to Systems Integration on the Regional Connector project. | An experienced Systems Integration Engineer is needed to support the Regional Connector project during design & construction. The Sr. Systems Integration Engineer is vital to ensure a seamless integration from existing systems to New Systems, New Systems to Facilities and Integrated Testing (Test Plans, Field Testing etc.). An integrated Rail System is vital for Metro's Operational needs. | Q1 |
| 1 | 8110 | 860228 -- RC | Quality Assurance Manager | Performs quality audits, surveillances, field inspection and monitoring of design, new construction modifications, as required, including monitoring of laboratory and manufacturers audits, surveillance and data analysis as directed. Coordinate with Director of Quality Management in the establishment, implementation and maintenance of Project Quality related goals; and determination and management of budgetary and staffing requirements; implementation of Quality Program requirements for assigned projects, and supervision of subordinate Quality Management staff assigned to the project. | The Quality Management Group is responsible for the establishment, auditing and surveillance of quality programs and inspection and testing of in-place construction by constructors for all Major Capital construction projects, smaller capital projects, and Measure R Projects during the design, construction, testing and startup activities prior to eventual turnover of systems and structures to Metro Operations. The large amount of QA/QC activities (establishment, auditing and surveillance of quality programs and inspection and testing of in-place construction by constructors for all our 3 Major rail projects, plus Regional Rail and several smaller Capital projects is such that our quality management resources need to be augmented. The resources we have at this time are insufficient to handle all the activities in FY' 16. | Q1 |
| 1 | 8420 | 860228 -- RC | * Sr. Environmental Specialist Principal Environmental Specialist | Assist in the execution of environmental compliance and sustainability-related project of the Regional Connector Project. | Currently using consultant staff full-time for Measure R project, environmental compliance, and the sustainability-related program. This is a conversion of full-time seconded staff to regular Metro staff to reduce overall project delivery cost. Loaded per unit labor cost difference between seconded consulting staff and equivalent Metro position is up to 350%, depending on position. | Q1 |
| 8 Subtotal | | | | | | |

Table A
Engineering & Construction
FY16 FTE Request for Consultant Conversion Positions

| No. FTE | Cost Center | Project No. | Position Title | Job Description | Justification | QTR Needed |
|---------|-------------|-----------------|---|--|---|------------|
| 3 | 8410 | 865512 -- C/LAX | Sr. Construction Inspector | Sr. Inspector, Southwest Yard (1): This position is for Southwestern Yard Project. The Inspector will support the R.E. and be required to inspect and monitor installation of the work; review and prepare reports; review and interpret plans and specifications; ensure compliance with codes, standards and contract documents; assist in resolving problems in the field; coordinate work with other agencies. Sr. Inspector, Systems : This position is for Crenshaw/LAX Transit Project. The Systems Inspector will support the project R.E. and be required to inspect and monitor installation of the systems work; review and prepare reports; review and interpret plans and specifications; ensure compliance with codes, standards and contract documents; assist in resolving problems in the field; coordinate work with other agencies. Sr. Inspector, MEP: This position is for Crenshaw/LAX Transit Project. The MEP Inspector will support the project R.E. and be required to inspect and monitor installation of the mechanical, electrical and plumbing work; review and prepare reports; review and interpret plans and specifications; ensure compliance with codes, standards and contract documents; assist in resolving problems in the field; coordinate work with other agencies. | Construction Management Department does not have the personnel to assign to these activities at this point in time. | Q1 |
| 1 | 8410 | 865512 -- C/LAX | Director of Construction Management | Dir. Construction Management: This position is for Crenshaw/LAX Transit Project, Segment B. This individual will oversee and manage construction, development of workplans, schedules and estimates; administer and monitor work for compliance with contract documents; coordinate with Metro staff and outside agencies; review change requests and prepare change notice justifications. | Construction Management Department does not have the personnel to assign to these activities at this point in time. | Q1 |
| 1 | 8410 | 865512 -- C/LAX | Sr Construction Manager (SPECIALIST: SYSTEMS) | <u>This position is for Crenshaw/LAX Transit Project. The Senior Construction Manager will act as Systems Resident Engineer and be required to oversee and manage construction, development of workplans, schedules, estimates and specifications; administer and monitor work for compliance with contract documents; coordinate with Metro staff and outside agencies; review change requests and prepare change notice justifications. This position reports to the Director Construction Management through a matrix organization.</u> | <u>This position requires a Systems specialist to support the Resident Engineers for the Mainline Crenshaw/LAX Project.</u> | Q1 |
| 1 | 8410 | 865512 -- C/LAX | Construction Manager | The Construction Manager will analyze data, specifications, and drawings; assist in monitoring work for compliance with schedule, budget, technical and legal requirements; prepare technical reports and correspondence; assist in coordination with outside agencies; maintain projects records; monitor status of submittal and design reviews. This position reports to the Director Construction Management. | The position is required to support the Office Engineer role for Crenshaw/LAX project. | Q2 |
| 1 | 8420 | 865512 -- C/LAX | * Sr. Environmental Specialist Principal Environmental Specialist | Assist in the execution of environmental compliance and sustainability for the Crenshaw/LAX Project. | Current staff is a full-time consultant supporting Measure R project, environmental, and the sustainability-related program. This request is for a conversion of full-time secunded staff to regular Metro staff to reduce overall project delivery cost. Loaded per unit labor cost difference between secunded consulting staff and equivalent Metro position is up to 350%, depending on position. | Q1 |
| 1 | 8110 | 865512 -- C/LAX | * Sr. Quality Engineer Quality Assurance Manager | The <u>Sr. Quality Engineer Quality Assurance Manager</u> is required to coordinate with construction inspectors and monitor field construction activities; coordinate verification testing; evaluate quality performance. | Performs design document review, construction contract review, design and construction quality audits and surveillances, field inspection for the project as required, including laboratory and manufacturer audits and surveillances. Arranges for Metro's verification test laboratory and coordinates the tests with Inspection and Construction Management. | Q1 |

Table A
Engineering & Construction
FY16 FTE Request for Consultant Conversion Positions

| No. FTE | Cost Center | Project No. | Position Title | Job Description | Justification | QTR Needed |
|-----------------------|-------------|-----------------------------------|--------------------------------------|--|---|------------|
| 8 Subtotal | | | | | | |
| 1 | 8420 | 865518 -- WPL1, 865522 -- WPL2 | * Principal Environmental Specialist | Assist in the execution of environmental compliance and sustainability-related projects of the Purple Line Extension. | Current staff is a full-time consultant supporting Measure R project, environmental, and the sustainability-related program. This request is for a conversion of full-time secunded staff to regular Metro staff to reduce overall project delivery cost. Loaded per unit labor cost difference between secunded consulting staff and equivalent Metro position is up to 350%, depending on position. | Q1 |
| 1 | 8110 | 865518 -- WPL1 | Sr. Construction Inspector | Perform quality audits, surveillances, field inspection and monitoring of design, new construction, modifications, as required, including monitoring of laboratory and manufacturer audits, surveillance and data analysis as directed. | The large amount of quality activities (establishment, auditing and surveillance of quality programs and inspection and testing of in-place construction by constructors for all our 3 Major rail projects, plus several smaller capital projects is such that our QA/ QC resources need to be augmented. The resources we have at this time are insufficient to handle all the activities in FY' 16. | Q1 |
| 1 | 8410 | 865518 -- WPL1 | * Senior Construction Manager | This position oversees and manages rail facilities Westside Purple Line Section 1 construction project, ensures work is accomplished according to specification, plans and is on schedule and within budget. Sets priorities for staff and ensures that staff are accomplishing assigned tasks. | Construction Management Department does not have the personnel to assign to these activities at this point in time. | Q1 |
| 1 | 8010 | 865522 -- WPL2 | *Sr. Engineering Manager | This position is for Section 2 of the Westside Purple Line Extension Project. The position is required to provide direction for the engineering of the Project. The Senior Engineering Manager will provide day-to-day management and interaction with the Engineering Management Services Consultant. This position reports directly to the Director Engineering. | This position is required to deliver quality capital projects on-time and within budget. On December 31, 2014, The Federal Transit Administration (FTA) approved Metro's request for Section 2 of the Westside Purple Line Extension Project to enter the New Starts Engineering Phase of the FTA Capital Investment Grant Program. This is one of the major steps towards obtaining a Fund Funding Grant Agreement (FFGA) for the Project, which is planned for mid-2016. Another major step in obtaining an FFGA is to provide adequate staff to meet FTA's expectations on technical capacity and capabilities to bring the Project on-time and within budget. It is expected that the Advanced Preliminary Engineering will complete in FY16 to support the issuance of the Design/Build RFP procurement. | Q1 |
| 2 Subtotal | | | | | | |
| 18 Grand Total | | | | | | |

* Positions approved by the Board at the May 28, 2015 Special Board Meeting - FY 16 Budget .

| TABLE B- PILOT PROJECT STUDY | Annual CMSS Burdened Rate | CMSS Hourly | Metro Annual Burdened Rate | Metro Hourly | Difference in Salary | Cost Savings | Difference |
|-------------------------------------|----------------------------------|--------------------|-----------------------------------|---------------------|-----------------------------|---------------------|--------------------|
| DEO, Project Mmgt | \$617,376 | \$327 | \$335,996 | \$178 | 54% | 46% | \$281,380 |
| Director, Construction Management | \$462,560 | \$245 | \$280,218 | \$148 | 61% | 39% | \$182,342 |
| Director, Construction Management | \$462,560 | \$245 | \$280,218 | \$148 | 61% | 39% | \$182,342 |
| Director, Construction Management | \$462,560 | \$245 | \$280,218 | \$148 | 61% | 39% | \$182,342 |
| Director, Construction Management | \$462,560 | \$245 | \$280,218 | \$148 | 61% | 39% | \$182,342 |
| Sr. Construction Relations Officer | \$396,480 | \$210 | \$158,592 | \$84 | 40% | 60% | \$237,888 |
| Community Relations Officer | \$319,072 | \$169 | \$158,592 | \$84 | 50% | 50% | \$160,480 |
| TOTAL | \$3,183,168 | | \$1,774,052 | | | 45% | \$1,409,116 |
| | | | | | With 10% DISCOUNT | 41% | \$1,268,204 |

| TABLE C- COST BENEFIT ANALYSIS | FY 16 | | | TOTAL | | |
|--------------------------------|--------------------|---------------------|---------------------|------------------------|----------------------|----------------------|
| | BURDENED COST | CMSS/Consultant | Metro | Potential Cost Savings | CMSS/Consultant | Metro |
| Crenshaw/LAX | \$ 3,795,441 | \$ 2,355,379 | \$ 1,440,084 | \$14,139,945 | \$ 8,603,616 | \$ 5,536,329 |
| Regional Connector | \$ 3,376,713 | \$ 2,133,057 | \$1,243,656 | \$ 13,035,390 | \$ 7,736,037 | \$ 5,299,353 |
| Westside PLE 1 | \$ 1,561,529 | \$ 945,272 | \$ 616,258 | \$ 19,563,375 | \$ 12,394,266 | \$ 7,169,109 |
| Westside PLE 2 | \$ - | \$ - | \$ - | \$ 22,309,702 | \$ 12,428,160 | \$ 9,881,542 |
| Environmental & Sustainability | \$ 627,382 | \$ 345,526 | \$ 281,856 | \$ 4,517,155 | \$ 2,239,008 | \$ 2,278,147 |
| TOTAL | \$9,361,065 | \$ 5,779,234 | \$ 3,581,854 | \$ 73,565,567 | \$ 43,401,087 | \$ 30,164,480 |
| | | 30% Discount | \$ 4,958,916 | | 30% Discount | \$ 21,115,136 |

TABLE C-1
CMSS/Consultant Conversion Cost Savings for FY2016

| WESTSIDE PURPLE LINE EXTENSION SECTION 1 PROJECT | | | | | | |
|--|-----------------------------|------------------------|-------------------------------------|----------------------|------------------------|--------------------------|
| PROJECTED COST OF CMSS/CONSULTANT | | | METRO | | | YEARLY COST SAVINGS FY16 |
| POSITION | HOURLY BURDENED RATE CY2016 | YEARLY BURDENED SALARY | EQUIVALENT POSITION | HOURLY BURDENED RATE | YEARLY BURDENED SALARY | |
| Sr. Configuration Management Analyst | \$87 | \$163,368 | Sr Configuration Management Analyst | \$84 | \$158,858 | \$4,510 |
| Lead Inspector | \$199 | \$375,302 | Sr Construction Inspector (Quality) | \$92 | \$172,764 | \$202,538 |
| Sr. Environmental Specialist | \$128 | \$241,664 | Principal Environmental | \$92 | \$172,763 | \$68,901 |
| Construction Claims Analyst | \$240 | \$453,646 | Sr. Construction Claims Analyst | \$134 | \$252,225 | \$201,421 |
| Sr. Contract Administrator | \$173 | \$327,550 | Sr Contract Administrator | \$100 | \$188,661 | \$138,888 |

| REGIONAL CONNECTOR PROJECT | | | | | | |
|--|-----------------------------|------------------------|-------------------------------------|----------------------|------------------------|--------------------------|
| PROJECTED COST OF CMSS/CONSULTANT | | | METRO | | | YEARLY COST SAVINGS FY16 |
| POSITION | HOURLY BURDENED RATE CY2016 | YEARLY BURDENED SALARY | EQUIVALENT POSITION | HOURLY BURDENED RATE | YEARLY BURDENED SALARY | |
| Inspector (Senior) Structural | \$157 | \$297,150 | Construction Inspector | \$84 | \$158,858 | \$138,292 |
| Inspector (Senior) Mechanical | \$166 | \$314,017 | Construction Inspector | \$84 | \$158,858 | \$155,159 |
| Inspector (Senior) Trackwork | \$197 | \$371,487 | Construction Inspector | \$84 | \$158,858 | \$212,629 |
| Construction Manager (Sr.) | \$303 | \$571,420 | Quality Assurance Manager | \$110 | \$206,981 | \$364,440 |
| Rail Activation Engineer | \$189 | \$356,214 | Sr. Construction Manager | \$134 | \$252,212 | \$104,001 |
| Lead Tunnel/Geotechnical Engineer | \$154 | \$290,701 | Sr. Geotechnical Engineers | \$143 | \$269,456 | \$21,245 |
| Systems Engineer | \$152 | \$287,514 | Sr. Systems Engineers | \$143 | \$269,456 | \$18,058 |
| Environmental Compliance | \$143 | \$270,851 | Sr. Environmental Specialist | \$84 | \$158,859 | \$111,992 |
| Deputy Director Project Controls | \$230 | \$433,988 | DEO Project Controls | \$173 | \$326,755 | \$107,233 |
| Configuration Management/Document Control Supervisor | \$97 | \$183,370 | Configuration Management Supervisor | \$92 | \$172,763 | \$10,607 |

| CRENSHAW/LAX & SOUTHWESTERN YARD PROJECT | | | | | | |
|--|-----------------------------|------------------------|---------------------------|----------------------|------------------------|--------------------------|
| PROJECTED COST OF CMSS/CONSULTANT | | | METRO | | | YEARLY COST SAVINGS FY16 |
| POSITION | HOURLY BURDENED RATE CY2016 | YEARLY BURDENED SALARY | EQUIVALENT POSITION | HOURLY BURDENED RATE | YEARLY BURDENED SALARY | |
| Systems RE | \$245 | \$462,560 | Sr Construction Mgr | \$135 | \$254,090 | \$208,472 |
| Sr Environmtl Spclst | \$171 | \$322,414 | Sr Env Specialist | \$84 | \$158,858 | \$163,557 |
| Sr Quality Engr | \$141 | \$266,208 | Sr Quality Engineer | \$92 | \$172,764 | \$93,446 |
| Inspector | \$141 | \$266,208 | Sr Construction Inspector | \$92 | \$172,764 | \$93,446 |
| Inspector | \$141 | \$266,208 | Sr Construction Inspector | \$92 | \$172,764 | \$93,446 |
| Inspector | \$141 | \$266,208 | Sr Construction Inspector | \$92 | \$172,764 | \$93,446 |
| Dir, Construction Mgmt | \$245 | \$462,560 | Dir Construction Mgmt | \$148 | \$280,219 | \$182,344 |
| Office Engineer | \$133 | \$251,104 | Construction Mgr | \$110 | \$206,981 | \$44,125 |
| Sr Contract Admnstr | \$209 | \$394,781 | Sr Contract Administrator | \$100 | \$188,661 | \$206,121 |
| DEO Claims Avoidance | \$287 | \$541,856 | Deputy Exec Officer | \$171 | \$323,302 | \$218,557 |
| Sr Project Control Manager | \$156 | \$295,335 | Sr Project Control Mgr | \$134 | \$252,212 | \$43,124 |

| ENVIRONMENTAL COMPLIANCE & SUSTAINABILITY | | | | | | |
|---|-----------------------------|------------------------|-------------------------|----------------------|------------------------|--------------------------|
| PROJECTED COST OF CMSS/CONSULTANT | | | METRO | | | YEARLY COST SAVINGS FY16 |
| POSITION | HOURLY BURDENED RATE CY2016 | YEARLY BURDENED SALARY | EQUIVALENT POSITION | HOURLY BURDENED RATE | YEARLY BURDENED SALARY | |
| Principal Environmental Specialist | \$166 | \$313,691 | Principal Environmental | \$92 | \$172,763 | \$140,928 |
| Principal Environmental Specialist | \$166 | \$313,691 | Principal Environmental | \$92 | \$172,763 | \$140,928 |

Note: Total may not add due to rounding.

TABLE C-1
 CMSS/Consulting Conversion Cost Savings for FY2016

| Summary | Westside Purple Line | Regional Connector | Crenshaw LAX & | Environmental | Total |
|--|-----------------------|-------------------------|--------------------|------------------|--------------------|
| Total CMSS/Consulting | 6 <u>5</u> | 13 <u>10</u> | 11 | 2 | 32 |
| <i>in Engineering & Construction</i> | 2 | 8 | 8 | 2 | 20 |
| <i>in Support Departments</i> | 4 <u>3</u> | 5 <u>2</u> | 3 | 0 | 12 |
| TOTAL CMSS/Consultant | \$616,258 | \$1, 243,656 | \$1,440,084 | \$281,856 | \$3,581,853 |

APPENDIX 1: STAFFING REQUEST FOR ENVIRONMENTAL COMPLIANCE AND SUSTAINABILITY SERVICES

BACKGROUND

The Environmental Compliance & Sustainability division (ECSD) provides cross functional environmental, sustainability, and technological support to all of Metro's core business units. ECSD consists of staff credentialed and professionally licensed to oversee environmental clearance, environmental compliance and remediation, energy management, resource conservation, environmental management system, climate change management, and environmental liabilities reduction. The department uses internal staff to manage and oversee services and construction contracts; and requires complementary expertise from consulting firms. This cross functional effort aligns with an integrated approach to producing cost-effective, cost-saving, and technologically advanced and most efficient solutions to environmental regulatory compliance and resource management to achieve procedural and process efficiencies and deliver successful support to accomplish Metro's mission, goals and objectives.

ISSUE

LA Metro has formally incorporated sustainable principles, specifically climate, energy, water and resource conservation and management, into its organizational values and core business goals. These principles express the agency's commitment to "reduce, re-use, and recycle all internal resources and reduce greenhouse gas emissions." Operational and construction-related sustainability principles have been formally implemented throughout our agency since 2007, and have been extensively incorporated into major capital projects as early as 2003. Over the past few years, the number of initiatives and projects related to these themes have significantly increased resulting from new statutes, regulations, and ordinances at all levels of government as well as the increasing mandate from our Board to look for cost-effective ways to plan, construct, operate infrastructure and procure for goods and services. These efforts have resulted in significant cost savings and operational efficiencies (up to \$3M per year), while simultaneously providing fresh sources of potential revenue (from the generation of environmental commodities resulting from these efforts) and increasing the health and welfare of our employees and the people we serve through a safe working and customer focused environment.

As we increase our transit and transportation infrastructure, staff's internal ability to oversee these sustainability-related operational and capital projects become more challenging on two fronts: our ability to properly manage the implementation of the cost-saving and environmentally protective projects as well as our ability to ensure that we develop and implement new ideas to ensure continual improvement.

The number of ECSD staff supporting all of these activities has not grown at a pace required to adequately support and oversee these projects. In the past few years, consultants were used to supplement efforts through environmental and sustainability related professional services contracts. The existing number of staff is insufficient to address the increasing number of requirements that need to be implemented for the Crenshaw/LAX, Regional Connector, Westside Purple Line Extension Segments 1/2 projects based on current workload factors. As these projects go into full construction, ECSD must meet all current and construction projects needs to reduce our environmental liabilities over the whole life cycle of an asset: that is from planning, design, construction, and operations and maintenance of the project.

While we can continue to use specialized seconded staff through our consultants to execute these time sensitive and board mandated projects, ECSD proposes to instead procure for two new permanent staff to ensure the consistency of project implementation and reduce risk of losing institutional knowledge as Metro continues to implement its growing environmental and sustainability initiatives to ensure statutory and regulatory compliance, organizational resiliency to evolving extreme weather conditions and climate change, and reduce business continuity risk. These positions will be assisting in the implementation of our agency-wide Environmental Management System, water and resource conservation projects, as well as our climate change and energy programs. Staff will also be assigned to oversee our agency's transition to more stringent requirements as a result of recent industrial wastewater and stormwater regulatory changes as well as new climate change-related statutes and directives (at the Federal, State, and Local levels). Specifically on the climate change-related efforts, the FTA expects climate change related issues and solutions to be incorporated into an agency's Transit Asset Management Program to ensure a continual state of good repair. These two new positions will take on this additional responsibility, related to their climate change functions in our agency.

DISCUSSION

Through a series of Board actions since 2007, Metro's environmental and sustainability function is now fully incorporated into the fabric of all of our planning, construction, operations, and procurement business units and significantly positively affects Metro's bottom line. The programs and initiatives have been proven to lower operational costs (currently up to \$3M per year), improve safety, increase quality and efficiency, and enhance our system's overall reputation among our customers, elected officials, and the public. In fact, Metro's environmental and sustainability program has been recognized as the highest environmental and programmatic standard by the American Public Transportation Association and has been cited several times by the Federal Transit Administration as an example program for other transit agencies in the country.

By transitioning consultant support to FTEs, Metro will generate continuing benefits of consistency of project implementation and reduce risk of losing institutional knowledge as Metro continues to implement its growing environmental and sustainability initiatives to ensure statutory and regulatory compliance, organizational resiliency to evolving extreme weather

conditions and climate change, and reduce business continuity risk. Procuring for permanent staff increases the pool of skilled staff to build a succession plan for the future.

ALTERNATIVE

The Board may decide not to approve the transition of consultant functions to Metro staff for ECSD. This is not recommended because it would perpetuate heavy reliance on consultants, where specialized staff is necessary to execute these time sensitive and board mandated projects, to fulfill critical needs in the areas of environmental compliance and sustainability. The number of staff requested for ECSD is a compromise to ensuring that we achieve both environmental and sustainability goals, reduce our liabilities, and remain sound in achieving our efficiency and cost-savings goals.

**ATTACHMENT A - TRANSITION FROM CMSS/CONSULTANT TO METRO STAFF
ENVIRONMENTAL COMPLIANCE/SERVICES DEPARTMENT**

| Priority | Funding | Position Title | Job Description (currently performed by consultant) | Justification | Required By |
|-----------------|---|--|---|--|--------------------|
| 1 | 860228 -- RC, 202211 -- FUEL STORAGE TANK | Principal Environmental Specialist | Assist in the execution of environmental compliance and sustainability-related projects . Assist in the oversight of the Underground Storage Program. | This is a conversion of full-time secured staff to regular Metro staff to reduce overall project delivery cost. Staff will be required (part time) to assist in the implementation of backlogged compliance efforts associated with most recent underground and aboveground storage tank regulations. Loaded per unit labor cost difference between secured consulting staff and equivalent Metro position is up to 350%, depending on position. | 1st Q FY16 |
| 1 | 300012 -- SOIL REMEDICATION and various projects overseen by ECSD | Principal Environmental Specialist | Assist in the execution of environmental compliance and sustainability-related projects. Assist in the oversight of the Hazardous Waste Program. | This is a conversion of full-time secured staff to regular Metro staff to reduce overall project delivery cost. Staff will be required (part time) to assist in the oversight of hazardous waste program associated with current and new (currently or about to be built) operating facilities programmed to reduce agency environmental liabilities. Loaded per unit labor cost difference between secured consulting staff and equivalent Metro position is up to 350%, depending on position. | 1st Q FY16 |

APPENDIX 2: REQUEST FOR ENGINEERING & CONSTRUCTION CAPITAL PROJECTS STAFFING

BACKGROUND

In addition to the design, engineering, and construction of the major Measure R rail projects, Engineering and Construction manages a capital program in excess of \$1.0 Billion which is comprised of more than 25 different capital projects, many of which are broken into several separate design and construction contracts. Example projects currently in various stages of design and construction development include the Division 13 Bus Operations and Maintenance (O & M) facility, the Expo Santa Monica O & M facility, the Southwestern Yard O & M facility, the Rosa Parks Station improvements, Patsaouras Plaza Busway Station, the Emergency Security Operations Center (ESOC), and soundwall projects. Additionally, the capital support departments provide management and coordination of all joint development projects at Metro stations, engineering support and design work for Facilities Maintenance and General Services at our facilities and headquarters, and technical support for sustainability projects, highway projects, and regional rail.

ISSUE

The work effort for the capital projects which includes design, engineering, and construction management is done primarily by in-house staff. For larger and more complicated design projects, the services of design consultants are retained. When engineering assistance is needed to supplement staff or specific engineering capabilities are required, a task order contract with Maintenance Design Group is initiated. This contract is used for engineering task orders that are project-based, and may not be used to supplement or second Metro engineering staff.

For construction management (CM) Marris, Inc. and Jackie Patterson Engineering (both SBE's) provide CM services when required. Currently, Marris and JL Patterson are used to support the Division 13, Patsaouras Plaza, the North Hollywood Pedestrian Underpass, and the Universal City Pedestrian Bridge. These contracts are set to expire this year, and will be re-procured competitively to have on-call CM assistance when required.

Due to the expanding workload, new FY16 capital projects, and the number of new building projects such as the Rosa Parks Station and the AMC, the departments supporting the capital projects are currently short on resources and new resources are required to meet the goals and objectives of the departments. Also, interdepartmental resources have been reallocated from the capital projects resources to make sure the major rail projects have adequate management oversight. Therefore, existing staff is not sufficient based on the current workload to efficiently and effectively implement the work effort.

The resource allocation of staff for Capital Projects has not grown at a pace required to adequately support and oversee the engineering and construction of the dynamic and expanding capital program. This situation has created an over dependency on costly consultants to provide technical support.

DISCUSSION

Engineering and Construction is requesting three (3) additional positions to support the Capital Projects Program. These new non-contract positions may be terminated upon completion of the projects. Additional support staff is integral to the success of the Capital Program and new resources are required to meet the goals and objectives of the Division. In order to meet the challenges of the work effort, continue providing high-level and accurate construction and engineering support, and complete work within the schedules required, it is imperative that we increase our Capital Projects support staff as follows:

| No. | Position Title |
|------------|-----------------------------------|
| 1 | Director, Construction Management |
| 1 | Sr. Engineering Manager |
| 1 | Sr. Engineer |
| 3 | Total |

ALTERNATIVE

The Board may decide not to approve the request for additional resources to support the Capital Projects Program. This is not recommended since history has proven that not having proper oversight on any project causes disruptions in the project development with a loss of potential cost savings of \$3.1 million. It is critical that additional resources be added to facilitate the effective and efficient engineering and construction of the projects.

**APPENDIX 2 – ENGINEERING & CONSTRUCTION
FY16 FTE Request for Capital Projects Support Staff**

| No. FTE | Cost Center | Project No. | Position Title | Job Description | Justification | QTR Needed |
|---------|-------------|--|--|--|--|---------------|
| 1 | 8410 | 204071 -- MBL_REFUR, 205063 -- MBL PEDESTRIAN , 211005 -- MBL Signal System, 460323&460324 -- Soundwall | Director of Construction Management | Director of Construction Managers: This position develops and Implement polices and procedures for planning. Organizing, coordinating and controlling major Capital construction projects as well as large number of smaller projects. Plans and assigns work to subordinates, ensures that assignments are being accomplished and that Metro and Contractor staffs are following appropriate policies, plans and specifications. One (1) position is requested. The position will support Minor Capital Projects in support of the Rail Facilities Improvements, Rail Rehabilitation Projects, and Wayside Systems Projects, specifically Metro Blue Line Refurbishments, Blue Line Signal System Rehabilitation, and Pedestrian Swing Gates projects. | Construction Management Department does not have the personnel to assign to these activities at this point in time. Metro does not want to use consultants at this time due to the higher cost of consultants. | Q1 |
| 2 | 8410 | 204071 -- MBL_REFUR, 205063 -- MBL PEDESTRIAN , 211005 -- MBL Signal System, 460323&460324 -- Soundwall | Senior Construction Manager | Senior Construction Managers: This position oversees and manages rail facilities construction projects and ensures work is done according to specifications, within schedule and within budget. One position is requested. The position will support Minor Capital Projects in support of the Rail Facilities Improvements, Rail Rehabilitation Projects and Wayside Systems Projects, specifically Metro Blue Line Refurbishments, Blue Line Signal System Rehabilitation, and Pedestrian Swing Gates projects. | Construction Management Department does not have the personnel to assign to these activities at this point in time. Metro does not want to use consultants at this time due to the higher cost of consultants. | Q1 |
| 1 | 8380 | 202317 -- PATSAOURAS, 202324 -- Div 1, 460303 -- Green Line, 405555 --ROSA PARKS | Sr Engineer Manager (Structural)) | This is an engineering position required to provide design and construction support services for the Rail and Bus Facilities Capital Program. The specific engineering discipline required is a Senior Structural Engineer. The senior engineer duties will include design and engineering of structures for bus and rail facility projects, including all building projects. In addition, the position will manage design and engineering work conducted by outside design professionals, and will also support active construction projects with structural engineering requirements. The position will also support the design of the Rosa Parks and Airport Metro Connector (AMC) projects for the Planning Department, which was not previously budgeted. | There is currently no position available in the department to support the structural building projects and upcoming work related to the Airport Metro Connector (AMC) and Rosa Parks Station projects. This position is required to provide efficient, timely, and high quality engineering services for the \$550 million facilities program portfolio. | Q1 |

**APPENDIX 2 – ENGINEERING & CONSTRUCTION
FY16 FTE Request for Capital Projects Support Staff**

| No. FTE | Cost Center | Project No. | Position Title | Job Description | Justification | QTR Needed |
|---------|-------------|---|--|--|---|------------|
| 1 | 8320 | 860228 -- RC, 865518 -- WPL1, 865522 -- WPL2 | Supervising Engineer (Mechanical ventilation) | To supervise structural items on the Regional and Purple Line Extension Sections 1 and 3 Projects and support upper management on miscellaneous Metro Operation tasks. | The Regional Connector and Purple Line Extension Section 1 and 2 projects have several structural elements that would require structural engineering reviews. Metro Engineering is expecting to receives a very large number of submittals that require our review. With the Design Builder already on board on two of these projects and their aggressive schedule to start construction in the summer, a new position is needed in order to assist the project in review of the structural items on these projects. | Q1 |
| 1 | 8010 | 212121 -- EOC/ROC/BOC | SR. ENGINEER | Project Management support for major capital projects for the Operations Control Center and others, as required. Duties include performing project management support and technical and administrative functions such as overseeing & administering design, procurement, construction and installation of rail and bus facilities and systems; Development of scope of work; Administers and monitors work and contract for compliance with schedule and budget; Evaluation of design proposals, bids & change orders; Conducting field & technical investigations; Manage engineering activities to ensure compliance with design criteria and applicable codes; Interface and coordinates with various Metro depts. and other agencies; and facilitates resolution of design, construction and operational issues. | The OCC Project estimated at over \$125 million is a significant and very complex project entailing integration of the Rail Operations Center (ROC), Bus Operations Center (BOC) and Emergency Operations Center (EOC) functions into a single facility to facilitate a more efficient and coordinated response to normal traffic activities and special events, as well as unexpected emergencies. | Q2 |

APPENDIX 3: STAFFING REQUEST FOR THE PROGRAM MANAGEMENT OFFICE (PMO)

BACKGROUND

The Program Management Office (PMO), created by the Board in September 2010, primarily in response to voter-approved Measure R, provides oversight on Measure R and other on-going projects agency-wide. The PMO is responsible for project controls and oversight, cost estimating, configuration management, and program control management agency-wide. These functions are critical to the successful delivery of the Measure R program. When managed successfully, PMO can help lower project cost, prevent and mitigate project budget cost overrun and schedule delays.

ISSUE

Since 2010 the number of Metro staff in the PMO has not grown at a pace that is required to adequately support and oversee the fast-growing transit construction and capital program at Metro. In effort to meet project needs, consultants have been brought in to supplement PMO staff to fulfill project controls and oversight, cost estimation, and configuration management functions. To increase greater project controls and to maintain continuous oversight of the Measure R program, staff recommends transitioning four (4) positions (1 Crenshaw/LAX, 2 Regional Connector, and 1 Westside Purple Line Extension Section 1) to Metro equivalent staff positions. See Attachment 3-A for job description and justification detailed for each proposed Metro staffing position. These positions may be terminated upon completion of the transit projects.

DISCUSSION

In addition to effecting cost savings, staff has determined by transitioning certain consultant functions in-house to new Metro staff may generate other potential benefits, including, 1) decrease reliance on consultants will increase Metro's control of its project; and 2) increase a pool of skilled work force to build a succession plan for the future. Transition to Metro staff positions on the Regional Connector and Westside Purple Line Extension Section 2 Project will directly address the FTA and their Project Management Oversight Contractor's (PMOC) concerns of Metro not having adequate staff for the effort required for Regional Connector and Westside Purple Line Extension Section 1 projects. Also, approval of staffing request will allow Metro to add developed human capital to the Metro's work force to maintain continuity of technical expertise and knowledge on the project.

ALTERNATIVE

The Board may decide not to approve the transition of consultant functions to Metro staff for the Program Management Office (PMO). This is not recommended because it would perpetuate heavy reliance on consultants to fulfill critical project controls and oversight, cost estimating, and configuration management required to support the major transit construction program. Positions continued to be filled by existing consultants instead of Metro staff positions will present a greater cost to the projects, Metro, and public tax payers.

**ATTACHMENT 3A – DESCRIPTION & JUSTIFICATION BY METRO STAFF POSITION
PROGRAM MANAGEMENT OFFICE (PMO) DEPARTMENT**

| Priority | Funding | Position Title | Job Description | Justification | Required by |
|----------|--|--|--|--|----------------|
| 1 | 860228 Regional Connector | Deputy Executive Officer, Program Management | Deputy Executive Officer, Program Management provides direction for managing project budgets, schedules and project risks on the Regional Connector Project. This position ensures that the project management team interfaces effectively with Countywide Planning and Development (including Real Estate), Procurement, Operations and various departments with Engineering and Construction to establish and adhere to project budget and schedule. | Deputy Executive Officer, Program Management position is critical delivering the Regional Connector project on-time and within budget. Approval of a FTE position will allow elimination and transition of this function from a consultant to a Metro FTE assigned to the project. If this position is not approved, Metro must continue to retain a consultant to fulfill the responsibilities at greater cost. Creation of this position addresses the FTA and their PMOC's concerns of Metro not having adequate staff for the effort required for the Regional Connector project. | July 2015 |
| 2 | 860228 Regional Connector | Configuration Management Supervisor | Configuration Management Supervisor oversees, supervises, trains Configuration Management Analysts, supports related database systems and technical system support, and coordinates document and change control activities required on the Regional Connector Project. This position manages the processing of contractual documentation regarding request for information, change notices, contract modifications, submittals, drawings, claims, and project correspondence for compliance with laws, regulations and requirements. | Configuration Management Supervisor is critical to ensure the document control role and change control function is fulfilled on the Regional Connector Project. Approval of a FTE position will allow elimination and transition of this function from a consultant to a Metro FTE assigned to the project. If this FTE position is not approved, Metro must retain a consultant to perform this work at a greater cost. Creation of this position addresses the FTA and their PMOC's concerns of Metro not having adequate staff for the effort required for the Regional Connector project. | July 2015 |
| 3 | 865518 Westside Purple Line Section 1 | Senior Configuration Management Analyst | Senior Configuration Management Analyst supports related database systems and technical system support, and coordinates document and change control activities required on the Westside Purple Line Extension Section 1 Project. This position manages the processing of contractual documentation regarding request for information, change notices, contract modifications, submittals, drawings, claims, and project correspondence for compliance with laws, regulations and requirements. | Senior Configuration Management Analyst is critical to ensure document control and change control functions are fulfilled on the Westside Purple Line Extension Section 1 Project. Approval of a FTE position will allow elimination and transition of this function from a consultant to a Metro FTE assigned to the project. If this position is not approved, Metro must retain a consultant to perform this work at a greater cost to the project. Creation of this position addresses the FTA and their PMOC's concerns of Metro not having adequate staff for the effort required for the project. | July 2015 |
| 4 | 865512 Crenshaw/ LAX | Senior Project Control Manager | Senior Project Control Manager develops and oversees all budgeting, schedule development and performance measurement, cost management and control, and reporting activities required on the Crenshaw/LAX Transit Project. This position is required to maintain the life-of-project budget and manage the master schedule. | Senior Project Control Manager is critical to the project control and oversight responsibilities on the Crenshaw/LAX project. Approval of a FTE position will allow for elimination and transition of this function from a consultant to a Metro FTE assigned to the project. If this position is not approved, Metro must retain a consultant to perform this work at a greater cost. | August 2015 |

APPENDIX 4: STAFFING REQUEST FOR VENDOR/CONTRACT MANAGEMENT

BACKGROUND

The Vendor/Contract Management (V/CM) Department provides cross functional administrative and technological support to Metro's core business units. V/CM is comprised of the Diversity and Economic Opportunity, Procurement, Supply Chain Management, Administration and Policy and Project Management organized as functional units with integrated processes to achieve procedural and process efficiencies and deliver successful support to accomplish Metro's mission, goals and objectives.

ISSUE

The successful delivery of the voter approved Measure R program is highly dependent on a strong V/CM team that utilizes industry-best practices to fulfill Metro's Mission as the agency responsible for the continuous improvement of an efficient and effective transportation system for Los Angeles County.

The number of V/CM staff supporting Engineering and Construction has not grown at a pace required to adequately support and oversee the rapidly developing transit construction and capital program. Therefore, existing staff is not sufficient for the Crenshaw/LAX, Regional Connector and Westside Purple Line Extension Section 1 projects based on current workload factors. To meet project needs, the Projects have utilized consultants to supplement V/CM in the areas of contract administration management and senior contract administration. However, specialized staff is necessary to execute these time sensitive and board mandated project in order to increase continuity of the process and prevent risk. In an effort to remedy the current shortage of V/CM staff support, four Senior Contract Administrator positions, with the possibility of reclassifying any of these positions to create Claims Avoidance Specialists for Crenshaw/LAX, Regional Connector and Westside Purple Line Extension Section 1 were submitted and discussed with the Engineering and Construction department. They have acknowledged their need of this support and included the positions in their staffing plans for FY16. These positions may be terminated upon completion of the transit projects.

DISCUSSION

The procurement function and contract management is an important factor for Metro's bottom line. When managed successfully, it can lower costs, improve safety, increase quality and efficiency, and enhance our system's overall reputation among our customers, elected officials, and the public. In addition, by transitioning consultant to FTEs Metro may generate other potential benefits such as continuity within the process, prevention of risk of disruption for our customer and an increase in the pool of skilled staff to build a succession plan for the future.

ALTERNATIVE

The Board may decide not to approve the transition of consultant functions to Metro staff for V/CM. This is not recommended because it would perpetuate heavy reliance on consultants, where specialized staff is necessary to execute these time sensitive and board mandated projects, to fulfill critical needs in the areas of acquisition planning, coordination of pre-award actions to produce executable contracts, price and cost analysis, value engineering review, contract price negotiations and claims management, change order processing, post-award contract administration, and contract close-out.

**ATTACHMENT 4A - TRANSITION FROM CMSS/CONSULTANT TO METRO STAFF
VENDOR/CONTRACT MANAGEMENT (V/CM) DEPARTMENT**

| Priority | Funding | Position Title | Job Description (currently performed by consultant) | Justification | Required By |
|----------|---|----------------------------|---|--|---------------|
| 1 | Crenshaw/LAX (2 FTEs) Westside PLE section 2 (2 FTE) | Sr. Contract Administrator | The Sr. CA is responsible for the efficient and effective acquisition of goods and services in support of assigned clients. The Sr. CA leads a Contract Administration Team that supports assigned client departments, and performs senior level, complex procurements for major projects and services to ensure timely, efficient support in compliance with Authority, local, state, and federal laws, rules and regulations. Prepares and reviews solicitation documents, evaluates bid results, chairs source selection committees, establishes and enforces evaluation criteria, sets schedules, and makes award recommendation on contract procurements. Selects vendors, obtains and compares price quotations, completes cost/price analysis process, negotiates price, terms and conditions. Evaluates contractor performance to determine compliance with contract obligations. SR CA works with contractor and client department to ensure timely contract completion and/or renewal; timely submission of scopes, technical descriptions, Board reports, and the submission of work product specified in the contract. Responds to award protests and holds debriefings with unsuccessful proposers. Completes final draft of contract documents, negotiates change orders and amendments. Prepares Board reports for contract approval. Prepares status reports, summaries and correspondence. | Positions will support projects in the areas of Crenshaw/LAX, and Westside/Purple Line Extension 1. These positions were submitted and discussed with the Engineering and Construction Dept. and they have acknowledged their need of this support and included in their staffing plans for FY16. Specialized staff is needed to execute these time sensitive and board mandated projects. Existing staff is not sufficient for these types of projects based on current workload factors. | 1st Q FY16 |

APPENDIX 6: STAFFING REQUEST FOR SIGNAGE AND GRAPHIC DESIGN TO SUPPORT CRENSHAW/LAX, REGIONAL CONNECTOR, AND PURPLE LINE EXTENSION CONSTRUCTION PROJECTS

BACKGROUND

The Signage and Graphic Design unit improves customer navigation and environmental graphic design consistency through the development of essential system-wide signage and way-finding design standards and guidelines. The unit staff is at capacity responding to day to day requests for new signage and backlog of required modifications at the existing 100 plus operating stations (including the 13 new stations opening next year) and multiple vehicle types resulting from new safety, security, gating, fare enforcement, code of conduct, Civil Rights/ADA updates and other growing and ongoing operational needs.

The 2010 Measure R Strategic Advisor Report cited “one of the largest capital improvement programs ever undertaken by a single transportation agency in the US [and] an unprecedented challenge for project delivery” and called for the agency “to significantly increase the capacity and improve skill sets throughout construction functions...and allocate resources to improving wayfinding/signage.”

In order to adequately meet the demands of the Crenshaw/LAX, Regional Connector, and Purple Line Extension, while also meeting increasing agency operational needs not related to the construction program, it is necessary to increase staffing resources. Each of these corridor projects includes multiple stations, facilities, parking areas, and vehicles which will require significant signage, wayfinding and overall environmental graphic design support, reviews, unique design solutions, and site visits in order to ensure the safety and movement of future riders. The Regional Connector alone will have a major impact on existing signage throughout the system.

ISSUE

Signage and way-finding are core elements of project delivery. Without functional signage in place the project will not meet safety, accessibility or operational requirements for Revenue Operations. The incorporation of functional signage into the project requires numerous submittals, reviews, and appropriate management and oversight.

Funds for Construction Management Support Services (CMSS) to provide signage and wayfinding support have been included in life-of-project budgets and the FY16 budget and are forecasted for inclusion in individual project-based Contract Work Orders (CWO) within the overall Board approved CMSS Contract Values. There are no impacts to the current CMSS contracts as the consultant positions have not been included in current CWOs pending Board approval of the new Metro positions.

Because these positions are core to the agency, and there is an ongoing need to improve signage and maintain consistency across projects, as well as the desire to build in-house

capacity, the recommendation make these Metro positions rather than multiple CMSS consultant positions. These positions may also be terminated upon completion of the projects. See Attachment 6-A for job descriptions and justifications.

DISCUSSION

The new staff positions will ensure that 1) over 4,000 signs and related Design/Builder submittals for the three corridor projects are reviewed and coordinated; 2) requests for information, over the shoulder reviews, approval of samples/finishes/mock-ups, fabrication shop drawings are fulfilled; 3) construction site visits and punch listing for quality control and compliance through resolution are conducted; and 4) signage needs during corridor start-up phase operations are accomplished. The positions being requested are not short term. While signage and wayfinding is installed prior to line opening, Metro has historically experienced an average “break-in” period of 18 months when actual customer usage generates modification requests from various departments to address operations, safety and accessibility concerns. It is envisioned that these FTEs will move to new Measure R projects including Purple Line Extension Section 2 and other corridor projects.

In addition to effective cost savings, staff determined that by not having multiple consultants do this work on a project by project basis, but rather with Metro staff, it will support the agency’s strategy to: 1) build-in house capacity; 2) decrease reliance on consultants; 3) maintain a trained and experienced workforce; and 4) maintain institutional knowledge and continuity across projects. Signage requests are growing, not diminishing and it is increasingly important to develop and maintain the continuity of our signage system.

ALTERNATIVE

The Board may decide not to approve new Metro staff positions in which case the work will be completed by individual corridor consultants through CWO requests to the CMSS contracts for each project utilizing the hourly rates set forth in these Contracts. This is not recommended because: 1) it would require multiple consultants for each project rather than consolidated in-house staff; 2) signage is a core ongoing agency function which should be done by in-house Metro staff in order to ensure continuity across projects; 3) consultant dependency results in loss of institutional knowledge; and 4) application of lessons learned and long term success and effectiveness will be compromised.

ATTACHMENT 6-A – SIGNAGE & GRAPHIC DESIGN (Cost Center 7121)

| Funding | Position Title | Job Description | Justification | Required by |
|---|---|--|---|--------------|
| 865512 Crenshaw/ LAX, 860228 Regional Connector, 865518 Purple Line Section 1 | Signage & Graphic Design Manager | Position will provide signage and graphic design management for Crenshaw/LAX, the highly complex Regional Connector project (which will impact dozens of stations throughout the Metro system) as well as support the Purple Line Extension project. The position will ensure that the latest signage standards, drawings and specifications are included in contract documents and will review and respond to contractor RFIs, signage criteria clarifications, review and approve all contractor signage submittals and shop drawings, and develop and resolve punch lists. This position will participate in design resolution processes and address new station architectural design conditions requiring unique signage design solutions. It will also develop and implement lessons learned and update the design criteria for corridors. The position will coordinate with ADA, engineers, safety personnel and others to ensure uniformity and consistency of customer signage and wayfinding. | 2/18/15 Board Box on construction project delivery and consultant services included this FTE to support the FY16 corridor construction projects and outlined the need for staffing as projects enter into active construction. The 2010 Measure R Strategic Advisor Report called the Measure R program “one of the largest capital improvement programs ever undertaken by a single transportation agency in the US” and recommended “increasing the capacity and improving skill sets...and allocating resources to improving wayfinding/signage.” Currently, there are no in-house agency staff reviewing contractor signage submittals, RFIs, etc for the 3 major corridor projects. This position is required to provide day-to-day management, coordination, reviews, site visits & support to the projects as well as coordinate with Operations and others on the many station signs in the existing system that will be impacted by these projects, especially the Regional Connector. There is an immediate need for signage management on these projects as without adequate in-house oversight, criteria updates & design reviews, costly corrections & retrofits will be necessary & signage will not be consistent across projects. Upon completion of these corridor projects, the FTE will be transitioned to address Section 2 and other future construction projects requiring new and/or modified signage management and coordination. | July 2015 |
| 865512 Crenshaw/ LAX, 860228 Regional Connector, 865518 Purple Line Section 1 | Senior Signage & Graphic Designer | Position will develop conceptual signage and graphic design solutions from concept to final design for Crenshaw/LAX, Regional Connector and Purple Line Extension; they will provide ADA, safety and signage design support to addresses issues that arise during construction. They will also ensure that the latest standards and requirements for gating, fare enforcement, and other signs are used to design signage correctly. Signs often require specialized in-house designs for a range of unique station configurations or needs. This position will investigate and resolve signage design problems to arrive at best technical solutions in a wide range of mediums including static and digital signage. This position will also prepare visual presentations of proposed signage solutions for management level staff using variety of software, mockups and samples. | 2/18/15 Board Box on construction project delivery and consultant services included this FTE to support the FY16 corridor construction projects and outlined the need for staffing in core agency functions as projects enter into active construction. The 2010 Measure R Strategic Advisor Report called the Measure R program “one of the largest capital improvement programs ever undertaken by a single transportation agency in the US” and recommended “increasing the capacity and improving skill sets...and allocating resources to improving wayfinding/signage.” Currently, there are no in-house agency staff providing design support for the Crenshaw/LAX, Regional Connector or Purple Line Extension corridor construction projects. The Crenshaw/LAX stations have multiple configurations (underground, above ground, split platform, side platform) which require unique signage design solutions and the Regional Connector will impact stations throughout the system. Upon completion of these corridor projects, the FTE will be transitioned to address Section 2 and other future construction projects requiring signage design solutions. | July 2015 |

