



Board Report

File #: 2020-0127, File Type: Contract

Agenda Number: 28.

CONSTRUCTION COMMITTEE APRIL 16, 2020

SUBJECT: SUSTAINABILITY ENGINEERING SERVICES FOR SOLID WASTE, RECYCLING AND HAZARDOUS WASTE COMPLIANCE

ACTION: AWARD CONTRACT FOR SOLID WASTE, RECYCLING AND HAZARDOUS MATERIALS AND WASTE COMPLIANCE

RECOMMENDATION

CONSIDER:

- A. AUTHORIZING the Chief Executive Officer (CEO) to award a Cost Plus Fixed Fee Contract for a base period of performance of three (3) years, Contract No. AE61890, to Jacobs Engineering Group, Inc., for **Sustainability Engineering Services for Solid Waste, Recycling and Hazardous Materials and Waste Compliance**, for total Contract amount not-to-exceed \$11,047,603 for the 3 year baseline term and to exercise two one (1) year options, year one option not-to-exceed \$3,825,715 and year two option not-to-exceed \$3,954,885; and
- B. AUTHORIZING the Chief Executive Officer (CEO) to execute changes and modifications within the Board approved not-to-exceed contract amount.

ISSUE

Metro's sustainability program is nationally recognized as one of the leading programs in the transit industry. Sustainability principles such as climate, energy, water, resource conservation and management are integrated into Metro's transportation infrastructure and facilities activities. As a result, Metro has effectively reduced resource consumption, decreased air pollutant emissions, including greenhouse gas emissions, improved efficiency, reduced solid and liquid waste generation, and increased recycling and diversion from landfill.

To ensure the continued success of Metro's sustainability program and further achieve operational sustainability, we have solicited and recommend the award of a professional services contract for solid waste, recycling and hazardous waste compliance consulting services.

The scope of this contract is designed to reduce generated waste, increase capacity for recycling, and ensure that hazardous waste compliance is both effective and consistent with current regulations and ahead of emerging statutes and regulatory requirements.

Over the long-term, the services used through this contract will ensure the protection of human health and the environment, addresses challenge of operational sustainability, and reduces the impacts of our activities to shrinking landfill resources. This recommended contract was also solicited to increase participation of firms that work in the sustainability industry in Metro's programs, especially those which are involved in the fields of solid waste, recycling and hazardous materials and waste compliance.

DISCUSSION

As Metro's sustainability program has matured, the Environmental Compliance and Sustainability Department (ECSD) has a need for several specialty contracts to provide technical expertise and support to advance agency-wide sustainability initiatives and projects.

To advance Metro's sustainability and environmental stewardship commitment, the following four separate consultant contracts have been implemented to assist Metro with its sustainability program:

- A. Sustainability Engineering Services for Solid Waste, Recycling and Hazardous Waste Compliance (this procurement);
- B. Sustainability Engineering Services for Water Resources, Conservation and Compliance (awarded in Fall 2019);
- C. Sustainability Engineering Services for Energy, Renewable Energy, and Climate Change and Adaptation and Climate (currently being procured); and
- D. Sustainability Program Assistance Services (currently being procured).

The current Metro Sustainability Implementation Plan (MSIP, 2008) together with *GEN51: Construction and Demolition Debris Recycling and Reuse Policy* provides a framework of how our agency can reduce our impacts to the environment resulting from activities that produce waste that are destined for landfills. In the current effort to update the MSIP, staff proposes to meet specific waste metrics, including activities that will reduce or divert such wastes that currently use traditional disposal methods. This contract will assist staff in developing those alternative means to:

- 1. Reduce the amount of waste generated from Metro activities;
- 2. Increase the diversion of waste that are inevitably generated;
- 3. Immobilizing the impacts of hazardous materials and hazardous waste; and
- 4. Determine new ways to influence the practices of our vendors to reduce generated waste as they supply goods and services to Metro.

Additional strategies have been developed and continue to be developed as part of the Board approved Sustainable Acquisition Program (SAP). Through several SAP pilots, staff is developing new tactics and best practices consistent with the MSIP update efforts.

The services that will be provided by the Sustainability Engineering Services for Solid Waste, Recycling and Hazardous Materials and Waste Compliance contract include the preparation of analyses, studies, surveys, investigations, modeling, predictions, recommendations and/or reports

related to solid waste, recycling and hazardous waste and compliance related to the operation and maintenance of Metro's transportation system, facilities and support activities. The consultant is expected to support a wide range of solid waste initiatives, including, but not limited to, solid waste reduction, reuse, and recycling programs; solid waste regulatory compliance and reporting; waste management; environmental management system (EMS); and emerging sustainability-related and cleantech technologies. These services will support Metro with identifying, designing and implementing the next phase of waste disposal reduction and diversion measures, while fulfilling all compliance obligations.

To accomplish the assigned tasks, the consultant will provide necessary staff, sub-consultants, equipment, software, supplies and services. The consultant shall employ or subcontract as necessary with diverse professionals such as Professional Engineers, Sustainability Engineers, Solid Waste Specialists, and other such professional practitioners as may be needed to support the required solid waste, recycling and hazardous waste compliance projects and initiatives.

DETERMINATION OF SAFETY IMPACT

This Board action will help ensure the long-term safety and security of Metro's operations by improving the management and efficiency of our use of non-renewable resources, reducing generated waste, while advancing agency resiliency and contributing to state of good repair.

FINANCIAL IMPACT

Contract No. AE61890 will be Cost Reimbursable (i.e., Cost Plus Fixed Fee (CPFF)) contract. No Metro funds are obligated until a Contract Work Order (CWO) is issued by a Metro authorized Contracting Officer against a valid project budget. No expenditures are authorized until a Task Order is awarded by a Metro authorized Contracting Officer for a specific package of work within the CWO. All Task Orders are to be individually negotiated for a not-to-exceed amount and level of effort fully defined prior to the authorization of any project specific funds. Execution of work under those Task Orders within those CWO awards can continue beyond the contract end date.

Obligations and authorizations made within the total Contract Amount will be against specific capital or operations budgets, which make up the Board-approved Metro budget for any fiscal year. Specific funding for the CWO's using this contract will draw from the project funding approved by Board under separate actions. The Chief Sustainability Officer, Chief Program Manager, and Project Managers of each of the business units overseeing these projects will be responsible for providing appropriate budgets.

Impact to Budget

The initial source of funds for this contract is included in the FY20 budget under Project Number 450002, 1.01 - Sustainability Design, Cost Center 8420 Environmental Compliance and Sustainability, Account 50316 Professional and Technical Services. Future task orders are to be individually negotiated and level of effort fully defined prior to the authorization of any project specific funds from the projects that would use these services.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

This Architect Engineer Contract will provide services to support the implementation of Metro's Strategic Plan Goals, with specific alignment to Initiative 5.2 - Exercise good public policy judgement and sound fiscal stewardship; and Initiative 5.4 - Apply prudent commercial business practices to create a more effective agency.

ALTERNATIVES CONSIDERED

Contract AE61890 is designed to strategically advance Metro's existing solid waste, recycling and hazardous compliance efforts, while establishing the next generation of initiatives and best practices.

The Board may reject the recommended action and direct staff to do all solid waste, recycling and hazardous waste compliance services work in-house. To support the large volume of technical tasks associated with this program, Metro would have to hire additional staff with specific technical expertise, which staff currently do not have. These would include Professional Engineers, Sustainability Engineers, Solid Waste Specialists, and such other professional practitioners as may be needed to support the required solid waste, recycling and hazardous waste compliance programs, projects and initiatives.

While cost efficiencies may be achieved by having these credentialed and highly skilled staff hired full-time, this alternative is not recommended as it would be financially challenging to *consistently* support these specialized, highly skilled resources in-house in the foreseeable future. The tasks associated with this contract are currently projected to be needed only for short-term defined assignments. Staff will, however, need to revisit the need for augmenting in-house sustainability-related skills every three years as our portfolio of these types of programs increase, alongside the expansion of our transit system.

As another alternative, staff could also solicit and award individual contracts for each solid waste, recycling and hazardous compliance expert consulting services task, as the need arises. This alternative is not recommended. Individually procuring these CWO's and Task Orders result in inconsistencies across the program and cumulatively higher administrative and execution costs. As many of these projects overlap with one another, having multiple consultants will cause delays and administrative inefficiencies.

NEXT STEPS

After the recommended Board Action is approved, staff will execute the conformed contract and proceed with issuing Task Orders and Contract Work Orders.

ATTACHMENTS

Attachment A - Procurement Summary

Attachment B - DEOD Report

Attachment C - Anticipated Projects and Tasks

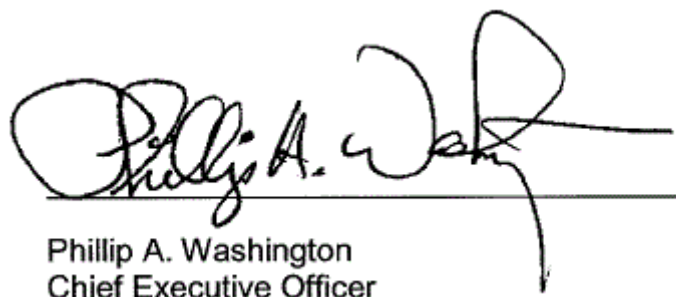
Prepared by:

Cris B. Liban, Chief Sustainability Officer, (213) 922- 2471

Reviewed by:

Richard Clarke, Chief Program Management Officer (213) 922-7557

Debra Avila, Chief Vendor/Contract Management Officer (213) 418-3051



Phillip A. Washington
Chief Executive Officer

PROCUREMENT SUMMARY

**SUSTAINABILITY ENGINEERING SERVICES FOR SOLID WASTE, RECYCLING
AND HAZARDOUS WASTE COMPLIANCE
CONTRACT NO. AE61890**

1.	Contract Number: AE61890	
2.	Recommended Vendor:	
3.	Type of Procurement (check one): <input type="checkbox"/> IFB <input type="checkbox"/> RFP <input checked="" type="checkbox"/> RFP–A&E <input type="checkbox"/> Non-Competitive <input type="checkbox"/> Modification <input type="checkbox"/> Task Order	
4.	Procurement Dates:	
	A. Issued: August 5, 2019	
	B. Advertised/Publicized: August 5, 2019 (Vendor Portal) / August 9, 2019 (Periodicals of General Circulation)	
	C. Pre-Proposal Conference: August 16, 2019	
	D. Proposals Due: October 16, 2019	
	E. Pre-Qualification Completed: March 2, 2020	
	F. Conflict of Interest Form Submitted to Ethics: January 15, 2020	
	G. Protest Period End Date: April 20, 2020	
5.	Solicitations Picked up/Downloaded: 79	Proposals Received: 5
6.	Contract Administrator: Diana Sogomonyan	Telephone Number: 213.922.7243
7.	Project Manager: Cris B. Liban	Telephone Number: 213.922.2471

A. Procurement Background

This Board Action is to approve the award of Contract No. AE61890, Sustainability Engineering Services for Solid Waste, Recycling and Hazardous Waste Compliance, to provide consulting services for a wide range of projects, as well as provide services related to compliance with sustainability and environmental policies, in support of Metro's Environmental Compliance and Sustainability Department (ECSD). Efforts would include projects that fall under the following general categories: waste management, environmental management system (EMS), and emerging sustainability related and cleantech technologies. Board approval of contract awards are subject to resolution of any properly submitted protest.

The recommended consultant will furnish all labor, materials, services, and other related items required to perform the services on a Contract Work Order basis for a project, under which specific Task Orders will be issued for specific Scopes of Services and Period of Performance.

The Request for Proposals (RFP) was an Architecture Engineer (AE), qualifications based procurement process performed in accordance with Los Angeles County Metropolitan Transportation Authority (Metro) Procurement Policies and Procedures, and California Government Code §4525-4529.5 for Architectural and Engineering

services. The contract type is a Cost Plus Fixed Fee (CPFF). The Contract is for a term of three (3) years plus 2 one-year options.

Two (2) Amendments were issued during the solicitation phase of this RFP:

- Amendment No. 1, issued on September 3, 2019, with revisions clarifying Contract estimated value, Insurance Requirements, Scope of Services, SBE/DVBE/DBE Instruction to Bidders/Proposers and Forms, Submittal Requirements, Evaluation Criteria, and Required Certifications (updated footer only).
- Amendment No. 2, issued on September 17, 2019, with revisions clarifying Scope of Services, DBE Instructions to Bidders/Proposers (Federal), and Submittal Requirements, as well as amended the Letter of Invitation to extend the Proposal due date.

A total of five (5) proposals were received on October 16, 2019.

B. Evaluation of Proposals

The Proposal Evaluation Team (PET) was comprised of representatives from the following departments: Environmental Compliance and Sustainability, Community Relations, and Quality Assurance. and the PET conducted a comprehensive evaluation of the proposals received.

The proposals were evaluated based on the following evaluation criteria and weights:

Experience, Qualifications, and Capabilities of Firms on the Team and Key Personnel.....	(40%)
Effectiveness of Management Plan.....	(30%)
Understanding of Work and Appropriateness of Approach for Implementation.....	(20%)
Innovative Sustainable Solid Waste/Recycling Practices and Experience.....	(10%)

The evaluation criteria are appropriate and consistent with criteria developed for other, similar Architect Engineer procurements. Several factors were considered when developing the criteria weightings, giving the greatest importance to the Experience, Qualifications and Capabilities of the Firms and Key Personnel, and Effectiveness of Management Plan.

This is an AE, qualifications based procurement; therefore, price cannot be used as an evaluation factor pursuant to state and federal law.

All five (5) proposals received are listed below in alphabetical order:

1. Arcadis U.S., Inc.
2. Burns & McDonnell Engineering Co., Inc.
3. Jacobs Engineering Group, Inc.
4. Kleinfelder, Inc.
5. Tetra Tech, Inc.

During the week(s) of October 17, 2019 thru December 20, 2019, the PET reviewed the five written qualification proposals. From December 9, 2019 through December 10, 2019, Metro held Oral Presentations with all five (5) proposing firms. The proposing firms had the opportunity to present their key personnel as well as respond to the PET's questions. In general, each proposer's presentation addressed the requirements of the RFP, experience with all aspects of the required and anticipated tasks and stressed each proposer's commitment to the success of the contract. Each proposing team was asked questions relative to each firm's previous experience performing work of a similar nature to the Scope of Services presented in the RFP. Sealed cost proposals were received at the time of oral presentations.

Qualifications Summary of Recommended Firm:

The evaluation performed by the PET determined Jacobs Engineering Group, Inc. (Jacobs) as the most qualified firm and team to provide Sustainability Engineering Services for Solid Waste, Recycling and Hazardous Waste Compliance, as provided in the RFP Scope of Services.

What distinguished Jacobs was they demonstrated, through their written proposal and oral presentation extensive technical experience and significant expertise in each of the specialty areas identified in the Scope of Services. Jacobs demonstrated high quality of technical expertise and years of experience, along with a thorough, complete and comprehensive understanding of project goals, methods and objectives.

Jacobs proposal directly addressed Metro's sustainability goals, knowledge of Metro's work done to date, and the services required under this contract Scope of Services. In addition, Jacobs demonstrated innovative tools and processes to help Metro identify innovations. They demonstrated innovative sustainable solid waste/recycling practices and experience, and a solid understanding of resources/tools used by Metro, that substantially met the RFP minimum requirements and exceeded in some major areas.

Jacobs also identified pertinent real-world examples that are applicable to Metro and demonstrated past project experience in providing the identified professional

services. Their demonstrated applicability of strategies and techniques based on past projects, shows lessons learned, which have potential to be adopted for this contract.

Their team consists of numerous highly qualified team members with extensive experience in solid and hazardous waste, including well qualified subconsultants, which substantially met the RFP minimum requirements and exceeded in some major areas. Furthermore, Jacobs demonstrated an effective Management Plan that significantly exceeded the RFP minimum requirements.

The Proposal Evaluation Team (PET) ranked the proposals, and assessed major strengths, weaknesses and associated risks of each of the Proposers to determine the most qualified firm. The final scoring was based on evaluation of the written proposals as supported by oral presentations and clarifications received from the Proposers. The results of the scoring and ranking are shown below:

1	Firm	Average Score	Factor Weight	Weighted Average Score	Rank
2	Jacobs Engineering Group, Inc.				
3	Experience, Qualifications, and Capabilities of Firms on the Team and Key Personnel	87.98	40%	35.19	
4	Effectiveness of Management Plan	85.67	30%	25.70	
5	Understanding of Work and Appropriateness of Approach for Implementation	89.45	20%	17.89	
6	Innovative Sustainable Solid Waste/Recycling Practices and Experience	88.80	10%	8.88	
7	Total		100.00%	87.66	1
8	Kleinfelder, Inc.				
9	Experience, Qualifications, and Capabilities of Firms on the Team and Key Personnel	85.90	40%	34.36	
10	Effectiveness of Management Plan	83.73	30%	25.12	
11	Understanding of Work and Appropriateness of Approach for Implementation	75.70	20%	15.14	
12	Innovative Sustainable Solid Waste/Recycling Practices and Experience	85.00	10%	8.50	
13	Total		100.00%	83.12	2
14	Arcadis U.S., Inc.				

15	Experience, Qualifications, and Capabilities of Firms on the Team and Key Personnel	81.28	40%	32.51	
16	Effectiveness of Management Plan	81.33	30%	24.40	
17	Understanding of Work and Appropriateness of Approach for Implementation	83.60	20%	16.72	
18	Innovative Sustainable Solid Waste/Recycling Practices and Experience	80.70	10%	8.07	
19	Total		100.00%	81.70	3
20	Burns & McDonnell Engineering Co., Inc.				
21	Experience, Qualifications, and Capabilities of Firms on the Team and Key Personnel	80.22	40%	32.09	
22	Effectiveness of Management Plan	78.80	30%	23.64	
23	Understanding of Work and Appropriateness of Approach for Implementation	83.95	20%	16.79	
24	Innovative Sustainable Solid Waste/Recycling Practices and Experience	76.10	10%	7.61	
25	Total		100.00%	80.13	4
26	Tetra Tech, Inc.				
27	Experience, Qualifications, and Capabilities of Firms on the Team and Key Personnel	82.52	40%	33.01	
28	Effectiveness of Management Plan	77.33	30%	23.20	
29	Understanding of Work and Appropriateness of Approach for Implementation	76.90	20%	15.38	
30	Innovative Sustainable Solid Waste/Recycling Practices and Experience	78.90	10%	7.89	
31	Total		100.00%	79.48	5

C. Cost Analysis

The recommended total estimated cost has been determined to be fair and reasonable based upon a cost analysis of labor rates, indirect rates and other direct costs completed in accordance with Metro's Procurement Policies and Procedures. Metro negotiated and established indirect cost rates and as appropriate provisional indirect (overhead) rates, plus a fixed fee factor to establish a fixed fee amount based on the total estimated cost for task orders, during the contract term to compensate the consultant.

Audits will be completed, where required, for those firms without a current applicable audit of their indirect cost rates, other factors, and exclusion of unallowable costs, in accordance with Federal Acquisition Regulation (FAR) Part 31. In order to prevent any unnecessary delay in contract award, provisional overhead rates have been established subject to Contract adjustments. In accordance with FTA Circular 4220.1.f, if an audit has been performed by any other cognizant agency within the last twelve-month period, Metro will receive and accept that audit report for the above purposes rather than perform another audit.

Proposer:			
Contract Duration	Proposal Amount	Metro ICE	NTE Funding Amount
Base Period – 3 Years	N/A ⁽¹⁾	\$11,047,603 ⁽²⁾	\$11,047,603 ⁽²⁾
Option Year 1	N/A ⁽¹⁾	\$3,825,715 ⁽³⁾	\$3,825,715 ⁽³⁾
Option Year 2	N/A ⁽¹⁾	\$3,954,885 ⁽⁴⁾	\$3,954,885 ⁽⁴⁾

- (1) A proposal amount was not applicable. This is a Cost Plus Fixed Fee (CPFF) Task Order Contract with no definable level of effort for the Scope of Services. Hourly labor rates, overhead and fee were negotiated and determined to be fair and reasonable.
- (2) The amount \$11,047,603 is the Independent Cost Estimate (ICE) for 3-year base Period of the Contract.
- (3) The amount \$3,825,715 is the Independent Cost Estimate (ICE) for Option Year 1 Period of the Contract.
- (4) The amount \$3,954,885 is the Independent Cost Estimate (ICE) for Option Year 2 Period of the Contract.

The Sustainability Engineering Services Independent Cost Estimate (ICE) was established based on the Scope of Services developed for the Contract. The probable costs are based on the anticipated level of effort estimated for each year that will be required to perform the Scope of Services by the Consultant and sub-consultants.

D. Background on Recommended Contractor

Jacobs Engineering Group, Inc. (Jacobs) has offices located at various locations throughout United States and abroad, with local offices located in Los Angeles, Long Beach, Riverside, Ontario, San Bernardino, Irvine, and San Diego. Jacobs has been in business for over 70 years. They work with private and public sector clients and provide professional services, including engineers, scientists, and related technical and project support personnel.

Jacobs is a leader in the consulting and engineering services involving solid waste, recycling, and hazardous waste compliance. Jacobs and their proposed team worked on various local and global projects, including various Metro projects, and have expertise and knowledge of Metro systems and facilities. They have previously provided hazardous waste engineering on the construction of the Metro Red Line to North Hollywood and Orange Line BRT, and currently provide engineering services on Metro's Twenty-Eight by '28 Initiative projects, including Purple Line Phase 1, I-5 North HOV Lanes, LA River Path, West Santa Ana Branch, North San Fernando Valley BRT, and SR-57/SR-60 Interchange. Jacobs' current Metro Programs/on-Call projects include: Program Management Support Services, Highway Program

Project Delivery Support Services, Highway Program Management & QA/QC Support Services, Regional Rail On-Call, Countywide Planning Bench, and Light Rail Vehicle Overhaul Program Support Services

Furthermore, Jacobs worked on the recycLA Program and several other major programs and projects related to solid waste, recycling, and hazardous waste, such as: Atlanta's Solid Waste Master Plan, Calgary's Solid Waste Program, Zero Waste Scotland, Portland's Metro Waste Transportation and Disposal System Analysis, Union Pacific Railroad's (UPRR's) Hazardous Waste Engineering Support Services, the SoundTransit Sustainability On-Call, and Los Angeles County's Sustainable Waste Management and Recycling Program.

DEOD SUMMARY

**SUSTAINABILITY ENGINEERING SERVICES FOR SOLID WASTE, RECYCLING
AND HAZARDOUS WASTE COMPLIANCE
CONTRACT NO. AE61890**

A. Small Business Participation

The Diversity and Economic Opportunity Department (DEOD) will determine a Disadvantaged Business Enterprise (DBE) contract-specific participation goal based upon review of each task order prior to issuance for solid waste, recycling and hazardous waste compliance services. Proposers were encouraged to form teams that include DBE, SBE, and DVBE firms to perform the scopes of work identified without schedules or specific dollar commitments prior to establishment of this contract.

For each task order, DBE or SBE/DVBE goals will be recommended based on scopes of work and estimated dollar value for task orders that are federally and/or state/locally funded. Jacobs Engineering Group will be required to meet or exceed the DBE contract-specific goal or demonstrate good faith efforts to do so. Jacobs Engineering will be required to meet or exceed the SBE/DVBE contract-specific goal to be eligible for task order award.

Prime: Jacobs Engineering Group

	Subcontractors	SBE	DVBE	DBE
1.	Akima Consulting LLC	X		X
2.	A-Tech Consulting	X		X
3.	Belshire Environmental Services, Inc.			
4.	Casamar Group, LLC	X	X	X
5.	Cascadia Consulting Group	X		
6.	CivilEarth Engineering	X		X
7.	Communications Lab	X		X
8.	Coto Consulting, Inc.	X		X
9.	E. Tseng and Associates			
10.	El Capitan			
11.	Effect Strategies LLC	X		X
12.	Go2Zero Strategies	X		X
13.	Innovative Construction Solutions			
14.	Chief's Engineering			
15.	ECTI			
16.	Martin Trucking			
17.	Nieto & Son's Trucking			
18.	Rust & Son's Trucking			
19.	Indian Energy, LLC	X		X
20.	LA Conservation Corps			
21.	MSW Consultants			
22.	ReGen Consulting	X		X
23.	SCS Engineers			

24.	SunWest Engineering Constructors	X		
25.	Test America			

B. Prevailing Wage Applicability

Prevailing wage is not applicable to this contract.

C. Living Wage / Service Contract Worker Retention Policy Applicability

The Living Wage / Service Contract Worker Retention Policy 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.

Attachment C: Anticipated Projects and Tasks

Tasks	Type of Project	FY21-FY24	FY25	FY26	Value to Metro
Waste Action and Implementation Plan Development, Studies and Annual Updates	Study	\$800,000	\$200,000	\$300,000	<ul style="list-style-type: none"> • Compliance with Local, State and Federal Regulations • Reducing waste and diversion from landfills
On-going Waste Characterization for solid waste and organics	Field Analysis / Implementation	\$700,000	\$250,000	\$300,000	<ul style="list-style-type: none"> • Clear understanding of waste streams and opportunities for reduction • Compliance with solid waste and organics • Avoided fines of up to \$10,000 per day for SB 1383 compliance. Annual reduction in waste hauling and processing/disposal costs at an estimated savings of \$90.16 per ton. Reduction in AB 939 disposal fees - currently 10% of total tipping cost - estimated as \$60,000 per year. • Identification of materials for source reduction and/or diversion. Identification of training needs and compliance issues. • Potential cost saving measures associated with avoidance of fines from non-compliance <ul style="list-style-type: none"> ◦ \$200k per year
System-wide Recycling and Organics Program Management and Training – Reduce landfill diversion – Compliance with AB939, AB 341, AB 1826 and AB 1383	Implementation	\$700,000	\$250,000	\$300,000	<ul style="list-style-type: none"> • Development of a system-wide program that reduces waste • Reduction in AB 939 disposal fees - currently 10% of total tipping cost - estimated as \$60,000 per year. • Reduction in regional GHG

					emissions resulting from landfilling of organic waste. <ul style="list-style-type: none"> • Cost saving measures associated with reducing, re-using and recycling <ul style="list-style-type: none"> ○ ~ \$200k per year
Research and develop a Circular Economy opportunities and solutions for re-use	Study / Design / Implementation	\$1,000,000	\$300,000	\$300,000	<ul style="list-style-type: none"> • In conjunction with the Sustainable Acquisition Program, continue to pilot, test and design products that produce less waste and can be re-used or re-purposed throughout the Metro system • Design systems and procedures for adhering to a circular economy • Potential cost savings associated with reducing inventory and repurchasing <ul style="list-style-type: none"> ○ ~\$1M - \$5M per year
Develop conservation strategies and on-going organizational training – Reduce operational waste. Integrate best management practices agency-wide	Implementation / Training	\$500,000	\$100,000	\$100,000	<ul style="list-style-type: none"> • Design new strategies and operating procedures for waste reduction • Develop a training program to reducing waste during operations for the full lifecycle of the product or service • Quarterly audits to the program for continual improvement • Annual reduction in waste hauling and processing/disposal costs at an estimated savings of \$90.16 per ton. Per MBS goal, if Metro reduces annual waste generation 24%, • Potential cost savings associated with waste reduction <ul style="list-style-type: none"> ○ ~\$ 250k per year

Develop waste-to-energy strategies	Studies/Pilots	\$1,500,000	\$400,000	\$300,000	<ul style="list-style-type: none"> • Develop strategies for converting waste into energy (Digesters/Incineration) to be stored and used to power buses or rail • Pilot strategy to test effectiveness • Reduction in annual VMTs for trash trucks. Estimated annual VMT reduction for Division 18 is 5,109. • Potential cost savings associated with generating power and diverting waste <ul style="list-style-type: none"> ○ ~\$800k per year
Develop a conceptual end-to-end design for waste management at Metro	Design / Implementation	\$700,000	\$200,000	\$100,000	<ul style="list-style-type: none"> • Design a conceptual strategy to transport waste via rail cars to incineration locations to avoid transportation of waste • Test models and create business case for waste management • Potential cost savings associated managing waste <ul style="list-style-type: none"> ○ ~1M per year
On-going updates to Metro's GIS / EAMS database, CAD Drawings and other documentation/studies/reports	Analysis / Reporting	\$100,000	\$50,000	\$50,000	<ul style="list-style-type: none"> • Database for tracking and monitoring systems and mapping • Potential cost savings associated with delays and re-work <ul style="list-style-type: none"> ○ Nominal
Identify and submit for incentives, grants, rebates, and other inducements related to Waste	Analysis / Reporting	\$200,000	\$50,000	\$50,000	<ul style="list-style-type: none"> • Find alternative funding sources to saving money on projects and initiatives <ul style="list-style-type: none"> ○ ~1M per year
Develop solutions for Sustainable Acquisition Program (SAP)	Design / Implementation	\$450,000	\$300,000	\$300,000	<ul style="list-style-type: none"> • Work directly with end-users and Vendor/Contract Management to identify, test and approve the most sustainable products and

					<p>services that meet Metro's performance and quality standards</p> <ul style="list-style-type: none"> Potential cost savings associated with developing SAP solutions <ul style="list-style-type: none"> Unknown until program is implemented
Study and Engineer Solutions for Capital Projects – Waste Prevention and Landfill Diversion	Design / Implementation	\$800,000	\$200,000	\$200,000	<ul style="list-style-type: none"> Identify, study and implement waste diversion solutions and innovations for capital projects Potential cost savings associated with engineered solutions <ul style="list-style-type: none"> ~\$500k per project
Support Capital Project with waste management and hazardous waste	Field Analysis / Reporting	\$1,000,000	\$450,000	\$450,000	<ul style="list-style-type: none"> Conduct study, documentations, reporting and testing Compliance with CALGreen waste diversion requirements Potential cost savings associated with compliance and no fines <ul style="list-style-type: none"> ~\$300k per year
Perform on-going hazardous waste characterization studies (monitoring well installations, soil and groundwater assessment and monitoring and geotechnical engineering analysis) on capital projects	Field Analysis / Reporting	\$1,000,000	\$400,000	\$400,000	<ul style="list-style-type: none"> Conduct study, documentations, reporting and testing Avoided violation fines of up to \$70,000 per day. Potential cost savings associated with compliance and no fines <ul style="list-style-type: none"> ~\$300k per year
Sampling of suspect hazardous waste and materials; technical analysis of sampling results; reporting and interpretation of data on capital projects	Field Analysis / Reporting	\$1,150,000	\$450,000	\$550,000	<ul style="list-style-type: none"> Conduct study, documentations, reporting and testing Avoided violation fines of up to \$70,000 per day. Potential cost savings associated with compliance

					and no fines ~\$300k per year
Support of unforeseen initiatives, projects and programs driven by regulatory compliance requirements	Design / Implementation	\$400,000	\$200,000	\$200,000	<ul style="list-style-type: none"> • On an as-needed basis, develop solutions and innovations to support waste management and reduction goals • Cost savings associated with solutions <ul style="list-style-type: none"> ○ Unknown but assumed 10% reduction
Sub-Totals:		\$11,000,000	\$3,800,000	\$3,900,000	
Total:		\$18,700,000.00			