

**FIRST AMENDMENT
TO PROFESSIONAL CONSULTANT SERVICES AGREEMENT**

**(Engineering Services for Riverside Regional Water Quality Control Plant Update of the
Integrated Master Plan for the Wastewater Collection and Treatment Facilities)**

CAROLLO ENGINEERS, INC.

THIS FIRST AMENDMENT TO PROFESSIONAL CONSULTANT SERVICES AGREEMENT ("First Amendment") is made and entered into this _____ day of _____, 2018, by and between the CITY OF RIVERSIDE, a California charter city and municipal corporation ("City"), and CAROLLO ENGINEERS, INC., a Delaware corporation authorized to do business in California ("Consultant"), with respect to the following:

RECITALS

WHEREAS, on or about December 20, 2016, City and Consultant entered into that certain Professional Consultant Services Agreement for Engineering Services for Riverside Regional Water Quality Control Plant Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities ("Agreement"); and

WHEREAS, City is satisfied with the performance of Consultant; and

WHEREAS, City and Consultant desire to extend the term of the Agreement by one more year, to June 30, 2020, and increase compensation in the amount of Five Hundred Ninety Five Thousand, Three Hundred Fifty Four Dollars (\$595,354), so that Consultant can provide additional services.

NOW, THEREFORE, in consideration of the foregoing recitals which are incorporated herein by this reference, City and Consultant agree as follows:

1. Section 1, Scope of Services, is amended to add the services described in Exhibit "A-1" attached hereto and incorporated herein.
2. Section 2, Term, is amended to extend the term by one (1) year to expire on June 30, 2020.
3. Section 3, Compensation/Payment, is amended to increase the compensation by Five Hundred Ninety Five Thousand, Three Hundred Fifty Four Dollars (\$595,354.00), for a contract total of Two Million, Three Hundred Sixty Five Thousand, Three Hundred Eighteen Dollars (\$2,365,318.00).
4. All other terms and conditions of the Agreement between the parties which are not inconsistent with the terms of this First Amendment, shall remain in full force and effect as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have caused this First Amendment to Professional Consultant Services Agreement to be duly executed the day and year first above written.

CITY OF RIVERSIDE, a charter city
and municipal corporation,

CAROLLO ENGINEERS, INC., a Delaware
corporation authorized to do business in
California

By: _____
City Manager

By: Toby Weissert 5/9/18

Printed Name: Toby Weissert

Title: Associate Vice President

ATTEST:

By: _____
City Clerk

By: Graham Tuby

Printed Name: Graham Tuby

Title: Vice President 5/10/18

Certified as to funds availability:

By: [Signature]
Chief Financial Officer

APPROVED AS TO FORM:

By: [Signature]
Ruthann M. Salera
Deputy City Attorney

EXHIBIT A-1

**Contract Amendment No. 1 Scope of
Work for the 2016 Integrated Master Plan
for Wastewater Collection and Treatment
Facilities**

**Regional Water Quality Control Plant
City of Riverside
May 3, 2018**

Background

The City of Riverside Public Works Department operates a comprehensive wastewater treatment and disposal system that serves most of the City of Riverside (City), as well as the Community Service Districts (CSDs) of Jurupa, Rubidoux, and Edgemont, and the community of Highgrove. The City's wastewater collection system includes approximately 800 miles of gravity sewers and 20 wastewater lift stations. Treatment of the wastewater occurs at the hydraulically rated 46 million gallons per day (mgd) Regional Water Quality Control Plant (RWQCP), where influent flows undergo preliminary, primary, secondary, and tertiary treatment, followed by disinfection using sodium hypochlorite, and dechlorination using sodium bisulfite. A limited amount of the final effluent is reclaimed for non-potable reuse and the remainder is discharged to Reach 3 of the Santa Ana River.

The City is in the process of developing the 2016 Integrated Master Plan for Wastewater Collection and Treatment Facilities. One of the main goals of the Master Plan is to determine what collection system and RWQCP projects are necessary to rehabilitate and/or replace the existing facilities (those facilities that have not be updated by the recent RWQCP and collection system projects), meet future regulatory standards, and meet future capacity requirements. Part of that work includes determining the cost and timing of those projects and related financial impacts to the City's ratepayers. In order to finalize the Master Plan work that is currently being completed, the City has requested that the following items be added to the scope of the Master Plan.

- Development of a Treatment Performance Budget Model to evaluate overall O & M expenses in general and in particular allocate them by facility unit treatment processes that are in operation.
- Develop potential user fees for storm water, septage & organics receiving, and tree maintenance, which impact the RWQCP.
- Integrate the conditions of the River Watch Settlement into the Master Plan.
- Evaluate the impacts of drought on the collection system and the RWQCP.
- Incorporate the terms of the Highgrove Development Agreement into the City's wastewater service charges and connection fees.
- Perform some supplemental analyses of the Wood Road Pump Station.

The following section provides a more detailed description of the tasks and deliverables to be completed as part of these evaluations.

Scope of Work

Financial Analysis

Task 1.1. Treatment Performance Budget Model

As part of the Update to the Integrated Master Plan for the Wastewater Collection and Treatment Facilities, Carollo Engineers, Inc., will be developing sewer service rates and connection fees. These rates and fees will be based on the updated Master Plan Capital Improvement Plan (CIP) and the wastewater treatment and disposal system Operation & Maintenance (O & M) costs. In order to properly allocate the CIP and O & M costs for the rate and fee calculations it is necessary to have the CIP and O & M costs allocated to their respective unit process areas. The City currently allocates their CIP projects on a unit process basis. However, the City does not currently allocate O & M costs by unit process. Instead, the costs are allocated to broader cost centers (e.g., treatment, compliance). The purpose of this task is to outline a scope and fee for Carollo to allocate the O & M costs by unit process. The intent is to allocate the costs into the following ten unit process areas and one "Other Costs" category.

1. Preliminary Treatment
2. Primary Treatment
3. Secondary Treatment
4. Tertiary Treatment
5. Disinfection, Recycled Water and Effluent Disposal
6. WAS Thickening
7. Digestion and Organics Receiving
8. Solids Dewatering
9. Solids Disposal
10. Odor Control
11. Power Generation
12. Other Costs

Once these allocations are completed then the allocated CIP and O & M costs can be used to develop a treatment performance budget model. The model can be used on a year to year basis to compare historical versus current costs, to determine plant performance and efficiency. The budget model and cost allocations can also be used as input to the evaluation for the updated sewer service charges and connection fees.

Task 1.1.1 Develop O & M Costs for Unit Process Areas

O & M costs for each of the unit process areas that are listed above will be developed by compiling estimated expenditures in four categories as follows:

- Power
- Chemicals

- Labor
- Equipment Replacement
- Miscellaneous Costs

Carollo's Principal Operating Specialist will be on-site for three days to gather information for the O & M cost allocations into the four categories.

Power Costs: Power costs will be developed by preparing a load list of the major power demands for each unit process. These demands will then be converted to an assumed kilowatt-hour draw. The load list developed demand will be compared to the power draw at various load centers throughout the RWQCP in order to benchmark the actual power usage at the various unit processes. The power draw will then be converted to a cost by using a current average cost per kilowatt-hour as provided by the City.

Chemical Costs: Chemical costs will be developed by estimating major chemical usage for each unit process area based on monthly or annual chemical purchases. The usage will be converted to a cost by using a current unit cost for these chemicals as provided by the City.

Labor Costs: Labor costs will be developed by estimating manpower requirements for Operations and Maintenance staff for each unit process area. Carollo will prepare the initial estimates for these manpower needs using the expertise of our Principal Operations Specialist. A series of meetings will be held with City staff from maintenance and operations in order to develop these manpower estimates. We are assuming that these meetings will take place on the three days following the kickoff meeting, so that they can be completed in one trip for our Principal Operations Specialist. In addition, we will review maintenance logs to supplement the information gained in the meetings for the RWQCP maintenance costs. We will undertake a similar task in reviewing the Operations' charge sheets to help further solidify the operations costs. These estimates will be converted to a cost by using a current average labor unit cost as provided by the City.

Equipment Replacement: This category will include costs for replacement of major equipment, equipment maintenance replacement items, and other consumables that have a lifetime of 20 years or less (e.g., membranes, pumps, diffusers). These costs will be based on estimates from recent design cost estimates, review of City maintenance plans, and contacts with vendors. The level of effort assumes that the City has a documented plan of replacement for maintenance replacement items that they will provide to us. These costs will be compiled and annualized.

Miscellaneous Costs: Costs for the "Other Costs" category (e.g., laboratory, administrative, and compliance costs) will be developed by compiling costs that do not fit into one of the other ten categories. These costs will be compiled by using the City's current budget. No additional evaluations will be undertaken to estimate or compile these costs.

Task 1.1.2. - Compare Current Costs to Historical Costs

The City would like to better understand how the O & M costs for the existing RWQCP compare to historical costs before the Phase I Rehabilitation and Expansion improvements and MBR system were placed in service. For that effort, we will evaluate the same categories of costs that are described above for the same unit processes. This will include a look at the power, chemical, labor, equipment replacement, and miscellaneous costs for the 2015/16 Fiscal Year, before the MBR system was placed in service. Miscellaneous costs will only be evaluated from the standpoint of consumables that were used/upgraded during that time. No projections will be made, and we will not look at long life asset replacement costs for the "Miscellaneous Costs" category. The result will be a budget model that the City can use to track treatment system costs over time.

Task 1.1.3. Draft and Final Technical Memorandum

A draft and final technical memorandum (TM) will be prepared that will summarize the methodology and results of the work from Tasks 1.1.2 and 1.1.3. The TM will be submitted to the City electronically. In addition, an electronic copy of the budget model will be provided to the City along with a 1 day staff training session on the model's function and use.

Participation in several meetings will be required in order to complete this task. These meetings are listed in Task 7 below. More detail on the information that must be covered in these meetings in relation to this task follows:

1. During the kickoff meeting that is described in Task 7 below we will go over the scope for this task and get initial input from City staff members on the cost allocation methodology. We will also discuss the requirements of the data that will be provided by City staff (e.g., average hourly labor costs, unit electrical costs, and unit chemical costs). On the three days following the kickoff meeting, subsequent meetings with maintenance and operations staff will be required in order to gather information for the labor cost evaluation, as described in the labor cost section above. It will be important to schedule these meetings on the three days following the kickoff meeting, in order to save on having a second or third trip for our Principal Operating Specialist, who will be coming from out of town.
2. At approximately halfway through the project (Meeting No. 2 as listed in Task 7 below), we will present initial findings of our analysis. The meeting will be a collaborative effort between City staff and Carollo. The intent is to achieve two goals in the meeting:
 - a Present the results of the cost allocations.
 - b Refine the initial cost allocations based on input from City staff.
 - c Receive input on the comparison of current to historical O & M costs and the initial performance budget model.
3. After the cost allocations, cost comparisons, and budget model are completed, we will present the findings in a project meeting (Meeting No. 4 as listed in Task 7 below).

Deliverables: A draft and final TM and Treatment Performance Budget Model in electronic format. Carollo will also provide staff training on the use and function of the model.

Task 1.2. Stormwater Program Fee Analysis

Carollo will survey and evaluate other City programs to determine possible storm water fee structures that may be considered by the City of Riverside. This includes the application of SB

231. The results of the survey and evaluation will be presented in one of the project meetings (Meeting No. 3 as listed in Task 7 below) and a draft and final TM will be developed to summarize the findings.

Deliverables: A draft and final TM

Task 1.3. Tree Maintenance Fee Analysis

Carollo will evaluate the City of Orange tree maintenance fee that is collected through sewer utility billing. We will also determine the basis for the fee and if this approach may be considered at the City of Riverside. The results of the evaluation will be presented in one of the project meetings (Meeting No. 3 as listed in Task 7 below) and a draft and final TM will be developed to summarize the findings.

Deliverables: A draft and final TM

Task 1.4 – Septage and Organics Receiving Rates

Carollo will evaluate the cost basis and determine a rate and fee schedule for City acceptance from permitted or contract haulers for septage and organics. This would cover the City's septage receiving station and the organics receiving station. At the organics receiving station it could be one rate or may be based on the material delivered (e.g., Blended organics under contract and/or individual rates for FOG, Food Waste diverted from refuse or food processing waste from industrial facilities). The results of the evaluation will be presented in one of the project meetings (Meeting No. 3 as listed in Task 7 below) and a draft and final TM will be developed to summarize the findings.

Deliverables: A draft and final TM

Task 2. City Settlement with River Watch

Carollo will evaluate and integrate the River Watch settlement terms and provisions into the Master Plan project. The settlement is specific to the Collections system only and does not include the sewer rate financial plan. This may include new work or revisions to existing work that is currently being done. The objective would be to address all of the needed actions as part of the final Master Plan document, excluding the financial sewer rate plan. The final Master Plan document will be provided to Riverwatch upon completion and City approval. The following subtasks are anticipated for this task.

Task 2.1. Identify Sewers and Manholes in Close Proximity to Waters of the United States

Carollo will work with the City, County and other agencies to identify the existing waters of the United States (Blue line streams) as published by the USGS that are sufficiently proximate to City Sewer lines and manholes. The definition of "sufficiently proximate" will be determined by the City and other stakeholders before the identification of sewers will commence. Once the proximity limits have been defined, Carollo will identify sewers and manholes within that threshold. Based on a preliminary analysis of Geographic Information System (GIS) data, there

may be as many as 220 miles of sewers in close proximity to waters of the United States. Of those sewers, only a small amount has previously been inspected by CCTV.

Task 2.1.1 Review Existing CCTV Videos

Once the sewers and manholes within the sufficient proximity are identified, Carollo will work with the City to determine if CCTV inspection videos exist. Once existing videos have been obtained, Carollo will review existing inspection scores or use PACP certified staff to review the videos to determine defect ratings. Sewers and manholes with defects ratings of 4 or 5 will be flagged for repair or replacement. For other sewer lines and manholes a longer-term replacement schedule will be developed.

Task 2.1.2. Conduct CCTV Inspection of Identified Sewers

For sewers and manholes that have been identified as in close proximity to waters of the United States without existing inspection videos, new inspections will be conducted. The City will perform these inspections through the use of a subconsultant. Sewers and manholes conditions will be scored according to PACP standards. Sewers and manholes with ratings of 4 or 5 will be identified for repair or replacement. Sewers and manholes with ratings of 1, 2, or 3 will be identified for longer term repair or replacement. Based on a preliminary investigation an estimate of approximately 220 miles of sewers needs to be inspected by CCTV.

Deliverables:

- Carollo - List and GIS map of identified sewers and manholes within the defined proximity to waters of the United States
- City - Summary of existing inspection scores and findings from existing and new inspections.

Task 2.2. Develop Replacement Projects

Based on the findings in Task 2.1, Carollo will develop the required repair and replacement project recommendations. The recommendations will be based on inspection findings and will be planning level recommendations similar to what is included in the Master Plan. Carollo will develop planning level cost estimates for the recommended projects. Project prioritization will be based on CCTV score and the estimate of the consequence of failure. Sewers and manholes with a score of 4 and 5 will be higher priority, where sewers with a score of 3 will be targeted for replacement within ten (10) years. According to the River watch settlement, the sewers with a score of three or more will fall into the 10-year CIP based on a number of criteria (see Section 2.1.d.ii of the settlement). Carollo will review each segment to determine if it should fall in the 10-year plan.

Deliverables:

- Prioritized list and GIS map of sewers and manholes identified for repair and replacement.

Task 2.3 Update Capital Improvement Program

Carollo will use the findings from Tasks 2.1 and 2.2 and integrate the projects into the current master planned CIP. The cost estimates will be coordinated with the master planning cost assumptions as well as the prioritization related to short term spending. Text associated with the

River Watch settlement will be included in the Master Plan Report chapters. To complete this effort, Volume 3, Chapter 9 (Sewer Pipeline R&R Program), Volume 3, Chapter 10 (Capital Improvement Program), Volume 7 (Capital Improvement Plan and Overall Implementation), and Volume 1 (Executive Summary) will be revised and resubmitted to the City.

Deliverables: Updated Master Plan Chapters

Task 2.4 SSO Reporting and Response

Carollo will review the City's existing SSO Response Procedure and update the procedure as described in the River watch settlement section 2.2.

Deliverables: A draft and final SSO Response Procedure

Task 2.5 Laboratory Compliance Audit

Complete a RWQCP "Laboratory Quality Compliance Audit" to ensure that the laboratory has quality systems in place, follows good laboratory practices and generates data of integrity and quality.

The assessment of the laboratory will include an initial pre-onsite review of all quality system documents including the laboratory Quality Assurance Manual as required by Title 22 CCR section 64815 and all analytical SOPs. This will be followed by an onsite assessment of laboratory operations against both the documents provided above and against regulatory requirements stated in Title 22 section 64801 et al.

The onsite assessment will begin with an entrance meeting establishing the schedule and staff to be interviewed. The onsite assessment is expected to last no more than three days. At the end of the onsite work there will be an exit meeting to discuss preliminary findings.

Deliverables: A laboratory compliance audit report

Task 2.6 Chemical Root Control SOP

Develop an SOP for application of chemical root control for the sewer system in compliance with manufacturer and CalOSHA requirements.

Deliverables: A draft and final Chemical Root Control SOP

Task 2.7 SSMP Update

Based on the Master Plan Collection System work and other Task 2 work, make recommendations to amend the City's SSMP.

Task 3. Highgrove Development

Include the Highgrove Development agreement terms and provisions in the Master Plan cost of service analysis and sewer rate plan. The goal is to have the basis for automatic application of existing and future City Council approved sewer service charges and connection fees to

Highgrove development. A summary of the work to complete this effort will be included in a section of the Financial Plan and User Rates and Fees chapter of the Master Plan.

Deliverables: A draft and final TM

Task 4 Analyses of the Wood Road Pump Station

This task consists of several analyses of the Wood Road pump station system, including evaluating the existing pressure pipe network, examination of the existing pumps, a redundancy evaluation, and exploration of options to extend the service life of the pump station equipment.

Deliverables: Presentation of the analyses in a series of project meetings

Task 5 Evaluation of Drought Impacts on the Collection System and RWQCP

Because of water conservation, the California drought has caused a decrease in flows and increase in loadings to the collection system and the RWQCP. These flow and load changes have resulted in reduced flow velocity in the collection system and additional H₂S and odor generation, to name a couple of the issues that City staff are dealing with. This task is intended to evaluate these issues and develop potential solutions to mitigate the impacts. The focus of the evaluation will be on the collection system and for the RWQCP, limited to non-rigorous solutions like the addition of chemicals to help mitigate the increased H₂S concentrations. The intended work to perform this evaluation is outlined below:

- Run the collection system hydraulic model to evaluate the locations of potential velocity and related H₂S and odor issues.
- Overlay the City supplied historical odor complaints information on the model outputs.
- Meet with EMWD and OCSD to discuss how they have addressed these types of issues (e.g., by adding chemicals to the collection system and other solutions).
- Perform supporting calculations related to potential septicity/degree of treatment that may be occurring in the collection system.
- Develop some potential alternatives to solve the problem.
 - Do nothing alternative (how much does it cost to deal with these issues at the RWQCP, instead of in the collection system - e.g., sealing manholes and adding Ferric at the RWQCP).
 - Chlorine feed in the collection system.
 - Bioxide feed in the collection system.
 - Oxygenation in the collection system.
 - Others.
- Evaluate the alternatives using a life-cycle and non-economic analysis.
- Present the results in a meeting.
- Prepare a draft and final TM.

Deliverables: A draft and final TM

Task 6. Project Management

In addition to general project management for the duration of the study, a monthly report will be developed to summarize scope, schedule and budget progress. This report will accompany the monthly project invoice.

Deliverables: Monthly progress reports and invoices

Task 7. Meetings

Several meetings as described below will be required to implement the tasks that are described below. The proposed meetings are as follows:

1. A kickoff meeting to solidify the scope and goals of all the tasks.
2. Meeting No. 2, to cover the initial findings of the Treatment Performance Budget Model evaluation (Task 1.1).
3. Meeting No. 3, to go over the results of the following tasks.
 - a Stormwater Program Review
 - b Tree Maintenance Evaluation
 - c Identification of Sewers in Close Proximity to Waters of the United States
 - d Septage and Organics Receiving Fees
4. Meeting No. 4, to present the cost allocations, cost comparisons and budget model, as described for the Treatment Performance Budget Model task (Task 1.1).
5. Meeting No. 5, to review the results of the Evaluation of Drought Impacts on the Collection System and RWQCP. In addition, we will go over the results of the SSO Response Review, Chemical Root Control SOP, and SSMP Update tasks (Tasks 2.4, 2.6, & 2.7).
6. Meeting No. 6, to present the results of the updated CIP related to the CCTV analysis that is performed as part of the Riverwatch Settlement task (Tasks 2. through 2.3).
7. Meetings as necessary to present the results of the Wood Road Pump Station Analyses (not shown on schedule).

Deliverables: Meeting agendas and minutes submitted electronically

Schedule

A detailed schedule that includes an update of the tasks still remaining to be completed for the Master Plan and the new tasks that are added as part of this amendment is attached below. The work will commence immediately after receiving Notice to Proceed from the City.

The timeline for Tasks 2.1 through 2.3 is reliant on the schedule for completing the CCTV of the sewers that are identified within close proximity to waters of the United States. Based on the scope as written, the City will perform the CCTV. The schedule as shown for these tasks (2.1 through 2.3) includes 12 months for the City to perform the CCTV and 3 months for Carollo to evaluate the information. If it takes longer than 12 months for the City to complete the CCTV, the schedule will be extended accordingly.

Due to the delay in implementation of the financial plan and user rates from July 1, 2019 until July 1, 2020, the timeline for the analyses related to the financial plan and user rates has been changed and is reflected as the highlighted item in the schedule.

Budget Estimate

The estimated work effort for the above scope of work is shown in Exhibit B.

2016 Riverside RWQCP Master Plan Update - Amendment Schedule

Task Name	Task Review	12/20	1/20	2/20	3/20	4/20	5/20	6/20	7/20	8/20	9/20	10/20	11/20	12/20	1/21	2/21	3/21	4/21	5/21	6/21	7/21	8/21	9/21	10/21	11/21	12/21	1/22	2/22	3/22	4/22	5/22	6/22	7/22	8/22	9/22	10/22	11/22	12/22	1/23	2/23	3/23	4/23	5/23	6/23	7/23	8/23	9/23	10/23	11/23	12/23	1/24	2/24	3/24	4/24	5/24	6/24	7/24	8/24	9/24	10/24	11/24	12/24	1/25	2/25	3/25	4/25	5/25	6/25	7/25	8/25	9/25	10/25	11/25	12/25	1/26	2/26	3/26	4/26	5/26	6/26	7/26	8/26	9/26	10/26	11/26	12/26	1/27	2/27	3/27	4/27	5/27	6/27	7/27	8/27	9/27	10/27	11/27	12/27	1/28	2/28	3/28	4/28	5/28	6/28	7/28	8/28	9/28	10/28	11/28	12/28	1/29	2/29	3/29	4/29	5/29	6/29	7/29	8/29	9/29	10/29	11/29	12/29	1/30	2/30	3/30	4/30	5/30	6/30	7/30	8/30	9/30	10/30	11/30	12/30	1/31	2/31	3/31	4/31	5/31	6/31	7/31	8/31	9/31	10/31	11/31	12/31	1/32	2/32	3/32	4/32	5/32	6/32	7/32	8/32	9/32	10/32	11/32	12/32	1/33	2/33	3/33	4/33	5/33	6/33	7/33	8/33	9/33	10/33	11/33	12/33	1/34	2/34	3/34	4/34	5/34	6/34	7/34	8/34	9/34	10/34	11/34	12/34	1/35	2/35	3/35	4/35	5/35	6/35	7/35	8/35	9/35	10/35	11/35	12/35	1/36	2/36	3/36	4/36	5/36	6/36	7/36	8/36	9/36	10/36	11/36	12/36	1/37	2/37	3/37	4/37	5/37	6/37	7/37	8/37	9/37	10/37	11/37	12/37	1/38	2/38	3/38	4/38	5/38	6/38	7/38	8/38	9/38	10/38	11/38	12/38	1/39	2/39	3/39	4/39	5/39	6/39	7/39	8/39	9/39	10/39	11/39	12/39	1/40	2/40	3/40	4/40	5/40	6/40	7/40	8/40	9/40	10/40	11/40	12/40	1/41	2/41	3/41	4/41	5/41	6/41	7/41	8/41	9/41	10/41	11/41	12/41	1/42	2/42	3/42	4/42	5/42	6/42	7/42	8/42	9/42	10/42	11/42	12/42	1/43	2/43	3/43	4/43	5/43	6/43	7/43	8/43	9/43	10/43	11/43	12/43	1/44	2/44	3/44	4/44	5/44	6/44	7/44	8/44	9/44	10/44	11/44	12/44	1/45	2/45	3/45	4/45	5/45	6/45	7/45	8/45	9/45	10/45	11/45	12/45	1/46	2/46	3/46	4/46	5/46	6/46	7/46	8/46	9/46	10/46	11/46	12/46	1/47	2/47	3/47	4/47	5/47	6/47	7/47	8/47	9/47	10/47	11/47	12/47	1/48	2/48	3/48	4/48	5/48	6/48	7/48	8/48	9/48	10/48	11/48	12/48	1/49	2/49	3/49	4/49	5/49	6/49	7/49	8/49	9/49	10/49	11/49	12/49	1/50	2/50	3/50	4/50	5/50	6/50	7/50	8/50	9/50	10/50	11/50	12/50	1/51	2/51	3/51	4/51	5/51	6/51	7/51	8/51	9/51	10/51	11/51	12/51	1/52	2/52	3/52	4/52	5/52	6/52	7/52	8/52	9/52	10/52	11/52	12/52	1/53	2/53	3/53	4/53	5/53	6/53	7/53	8/53	9/53	10/53	11/53	12/53	1/54	2/54	3/54	4/54	5/54	6/54	7/54	8/54	9/54	10/54	11/54	12/54	1/55	2/55	3/55	4/55	5/55	6/55	7/55	8/55	9/55	10/55	11/55	12/55	1/56	2/56	3/56	4/56	5/56	6/56	7/56	8/56	9/56	10/56	11/56	12/56	1/57	2/57	3/57	4/57	5/57	6/57	7/57	8/57	9/57	10/57	11/57	12/57	1/58	2/58	3/58	4/58	5/58	6/58	7/58	8/58	9/58	10/58	11/58	12/58	1/59	2/59	3/59	4/59	5/59	6/59	7/59	8/59	9/59	10/59	11/59	12/59	1/60	2/60	3/60	4/60	5/60	6/60	7/60	8/60	9/60	10/60	11/60	12/60	1/61	2/61	3/61	4/61	5/61	6/61	7/61	8/61	9/61	10/61	11/61	12/61	1/62	2/62	3/62	4/62	5/62	6/62	7/62	8/62	9/62	10/62	11/62	12/62	1/63	2/63	3/63	4/63	5/63	6/63	7/63	8/63	9/63	10/63	11/63	12/63	1/64	2/64	3/64	4/64	5/64	6/64	7/64	8/64	9/64	10/64	11/64	12/64	1/65	2/65	3/65	4/65	5/65	6/65	7/65	8/65	9/65	10/65	11/65	12/65	1/66	2/66	3/66	4/66	5/66	6/66	7/66	8/66	9/66	10/66	11/66	12/66	1/67	2/67	3/67	4/67	5/67	6/67	7/67	8/67	9/67	10/67	11/67	12/67	1/68	2/68	3/68	4/68	5/68	6/68	7/68	8/68	9/68	10/68	11/68	12/68	1/69	2/69	3/69	4/69	5/69	6/69	7/69	8/69	9/69	10/69	11/69	12/69	1/70	2/70	3/70	4/70	5/70	6/70	7/70	8/70	9/70	10/70	11/70	12/70	1/71	2/71	3/71	4/71	5/71	6/71	7/71	8/71	9/71	10/71	11/71	12/71	1/72	2/72	3/72	4/72	5/72	6/72	7/72	8/72	9/72	10/72	11/72	12/72	1/73	2/73	3/73	4/73	5/73	6/73	7/73	8/73	9/73	10/73	11/73	12/73	1/74	2/74	3/74	4/74	5/74	6/74	7/74	8/74	9/74	10/74	11/74	12/74	1/75	2/75	3/75	4/75	5/75	6/75	7/75	8/75	9/75	10/75	11/75	12/75	1/76	2/76	3/76	4/76	5/76	6/76	7/76	8/76	9/76	10/76	11/76	12/76	1/77	2/77	3/77	4/77	5/77	6/77	7/77	8/77	9/77	10/77	11/77	12/77	1/78	2/78	3/78	4/78	5/78	6/78	7/78	8/78	9/78	10/78	11/78	12/78	1/79	2/79	3/79	4/79	5/79	6/79	7/79	8/79	9/79	10/79	11/79	12/79	1/80	2/80	3/80	4/80	5/80	6/80	7/80	8/80	9/80	10/80	11/80	12/80	1/81	2/81	3/81	4/81	5/81	6/81	7/81	8/81	9/81	10/81	11/81	12/81	1/82	2/82	3/82	4/82	5/82	6/82	7/82	8/82	9/82	10/82	11/82	12/82	1/83	2/83	3/83	4/83	5/83	6/83	7/83	8/83	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	9/85	10/85	11/85	12/85	1/86	2/86	3/86	4/86	5/86	6/86	7/86	8/86	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	9/87	10/87	11/87	12/87	1/88	2/88	3/88	4/88	5/88	6/88	7/88	8/88	9/88	10/88	11/88	12/88	1/89	2/89	3/89	4/89	5/89	6/89	7/89	8/89	9/89	10/89	11/89	12/89	1/90	2/90	3/90	4/90	5/90	6/90	7/90	8/90	9/90	10/90	11/90	12/90	1/91	2/91	3/91	4/91	5/91	6/91	7/91	8/91	9/91	10/91	11/91	12/91	1/92	2/92	3/92	4/92	5/92	6/92	7/92	8/92	9/92	10/92	11/92	12/92	1/93	2/93	3/93	4/93	5/93	6/93	7/93	8/93	9/93	10/93	11/93	12/93	1/94	2/94	3/94	4/94	5/94	6/94	7/94	8/94	9/94	10/94	11/94	12/94	1/95	2/95	3/95	4/95	5/95	6/95	7/95	8/95	9/95	10/95	11/95	12/95	1/96	2/96	3/96	4/96	5/96	6/96	7/96	8/96	9/96	10/96	11/96	12/96	1/97	2/97	3/97	4/97	5/97	6/97	7/97	8/97	9/97	10/97	11/97	12/97	1/98	2/98	3/98	4/98	5/98	6/98	7/98	8/98	9/98	10/98	11/98	12/98	1/99	2/99	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Exhibit B
Estimated Work Effort

Contract Amendment No. 1 for 2016 Integrated Master Plan for Wastewater Collection and Treatment Facilities
Regional Water Quality Control Plant
City of Riverside

Estimated Effort, Hours																	
Task No.	Description	Project Lead		Project Manager		Lead Engineers		Professional Engineers		Staff Engineers		Techs & Eng Aides		Support Staff	Total	ODC by Task	Total Fee by Task
		\$278		\$254		\$240		\$202		\$166		\$121					
1	Financial Analysis																
1.1	Treatment Performance Budget Model																
1.1.1	Develop O & M Costs																
1.1.1.1	Power Costs			3		6		15		15		0		0	39	0	7,722
1.1.1.2	Chemical Costs			2		6		11		11		0		0	30	0	5,996
1.1.1.3	Labor Costs			3		24		13		13		0		0	53	0	11,306
1.1.1.4	Equipment Replacement & Miscellaneous Costs			10		32		28		28		0		0	98	0	20,524
1.1.2	Compare Current Costs to Historical Costs	2		8		46		41		41		0		0	138	0	28,716
1.1.3	Draft and Final TM. Electronic Model & Training	4		16		68		1		1		4		8	102	0	23,316
1.1.4	Meetings (see task below)																
1.2	Stormwater Program	4		12		24		40		40		4		8	132	0	26,092
1.3	Tree Maintenance	4		12		24		28		28		4		8	108	0	21,676
1.4	Septage & Organics Receiving Rates	8		24		48		56		56		6		12	210	0	42,626
2	City Settlement with Riverwatch																
2.1	Identify Sewers	4		8		12		8		8		4		0	44	0	9,452
2.1.1	Review Existing CCTV Videos	4		8		12		40		96		32		0	192	0	33,912
2.1.2	Conduct CCTV Inspection	0		0		0		0		0		0		0	0	0	-
2.2	Develop Replacement Projects	4		8		12		60		60		32		8	184	0	32,944
2.3	Update Capital Improvement Program	12		40		56		40		40		16		32	236	0	47,464
2.4	SSO Reporting and Response	2		12		12		30		40		16		8	120	0	22,088
2.5	Laboratory Compliance Audit	0		16		0		0		0		0		0	16	7,370	11,434
2.6	Chemical Root Control SOP	2		12		24		32		40		0		8	118	0	23,436
2.7	SSMP Update	2		8		8		12		48		12		8	98	0	17,320
3	Highgrove Development	2		6		0		14		14		1		3	40	0	7,716
4	Wood Road Pump Station Analyses	49		0		0		178		178		0		0	405	1,214	80,340
5	Evaluation of Drought Impacts on the Collection System and RWQCP	16		44		48		67		67		7		8	257	0	53,615
6	Project Management	0		36		12		8		8		0		0	64	0	14,968
7	Meetings	30		54		54		54		0		0		0	192	6,767	52,691
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CERTIFICATION

This is to certify that the undersigned, Michael W. Barnes, as Corporate Secretary and General Counsel for **Carollo Engineers, Inc.**, is authorized to state and certify: That by corporate policy approved by the Board of Directors on 02/07/2011, Graham Juby, Vice President, and Toby Weissert, Associate Vice President, are authorized to execute engineering service agreements for the usual and customary engineering business of the company.

Dated: May 9, 2018



Michael W. Barnes
Corporate Secretary & General Counsel

