

FOURTH AMENDMENT TO AGREEMENT

THIS FOURTH AMENDMENT TO AGREEMENT (Amendment) made and entered into as of this 6th day of November 2024, amends the Consultant Services Agreement entered into between the CITY OF FRESNO, a California municipal corporation (hereinafter referred to as CITY), and CDM Smith, Inc., a Massachusetts Corporation (hereinafter referred to as CONSULTANT).

RECITALS

WHEREAS, the CITY and CONSULTANT entered into a Consultant Services Agreement on February 1, 2022 (Agreement), as amended on December 20, 2022 (First Amendment) to provide professional consulting services for Environmental Groundwater Remedial Action and Regrading Design for the Fresno Sanitary Landfill Superfund Site for a total fee of \$660,450; and

WHEREAS, the CITY and CONSULTANT entered into a Second Amendment to the Agreement on March 31, 2023 (Second Amendment) to expand the scope of services for a total fee of \$745,650; and

WHEREAS, the CITY and CONSULTANT entered into a Third Amendment to the Agreement on October 19, 2023 (Third Amendment) to expand the scope of services for a total fee of \$1,390,403; and

WHEREAS, due to the need for additional services, the parties desire to increase the total compensation by an additional \$526,490 to complete the expanded Scope of Services; and

WHEREAS, with entry into this Amendment, CONSULTANT agrees that it has no claim, demands, or disputes against the CITY.

AGREEMENT

NOW, THEREFORE, the CITY and the CONSULTANT agree that the aforesaid Agreement be amended as follows:

1. Exhibit A of the Agreement is amended to expand the scope of services as indicated in **Exhibit A**, attached hereto, and incorporated herein by reference.

2. Section 3(a) of the Agreement is amended in its entirety to read as follows:
“(a) CONSULTANT'S sole compensation for satisfactory performance of all services required or rendered pursuant to this Agreement shall be a total fee of One Million, Nine Hundred Sixteen Thousand and Eight Hundred Ninety-Three Dollars (\$1,916,893). Such fee includes all expenses incurred by CONSULTANT in performance of the services.”

3. Except as otherwise provided herein, the Agreement, First Amendment, Second Amendment, and Third Amendment entered into by the City and Consultant, remain in full force and effect.

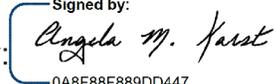
[SIGNATURES FOLLOW ON THE NEXT PAGE.]

IN WITNESS WHEREOF, the CITY and the CONSULTANT have executed this Third Amendment at Fresno, California, the day, and year first above written.

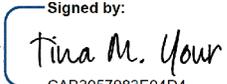
CITY OF FRESNO,
a California municipal corporation

By:  Signed by: _____ Date: 11/6/2024
BROCK D. BUCITE, PE, PLS
Director of Public Utilities

APPROVED AS TO FORM:
ANDREW JANZ
City Attorney

By:  Signed by: _____ Date: 10/8/2024
ANGELA M. KARST
Senior Deputy City Attorney

ATTEST:
TODD STERMER, CMC
City Clerk

By:  Signed by: _____ Date: 11/6/2024
Tina M. Your

CDM Smith, Inc.,
a Massachusetts corporation

By:  Signed by: _____ Date: 10/7/2024
Name: Servando Molina
Senior Vice President

Title: _____
(If corporation or LLC., Board Chair,
Pres. Or Vice Pres.)

By:  Signed by: _____ Date: 10/8/2024
Name: Paul Milligan
Secretary

Title: _____
(If corporation or LLC., CFO, Treasurer,
Secretary or Assistant Secretary)

Attachment: Exhibit A – Scope of Services

Exhibit A

SCOPE OF SERVICES

**Consultant Services Agreement between City of Fresno (“City”)
And CDM Smith Inc. (“Consultant”)
Fresno Sanitary Landfill Groundwater and Landfill Remediation Services**

Fresno Sanitary Landfill

Scope of Work and Budget for Year 2024 (Supplemental) through June 2025

Introduction

Provided below are descriptions of work tasks to be performed by CDM Smith Inc. (Consultant) on behalf of the City of Fresno (City) as part of ongoing operations at the Fresno Sanitary Landfill Superfund Site (“FSL” or “Site”). Ongoing activities are being performed as part of Operable Unit No. 1 (OU-1 – landfill control system operations, maintenance, and reporting) and OU-2 (groundwater remediation system operations, maintenance, and reporting). The ultimate objective of the continued work is to achieve formal regulatory closure of the FSL Superfund Site. The U.S. Environmental Protection Agency (EPA) is the lead regulatory agency on the FSL project.

This scope of work presented below describes work to be performed during the third and fourth quarters of 2024 and through June 2025. The description also outlines supplemental activities during the past eight months that arose from requirements from the U.S. Environmental Protection Agency and unanticipated complications in landfill operations. The Consultant is currently performing work for the City under Amendments No. 1, No. 2, and No. 3 to the existing agreement (dated February 1, 2022). Amendment No. 1 reflected 2023 work activities to support the monitoring program, system operations assistance, and ongoing reporting required for the FSL and the ongoing groundwater remediation. Amendment No. 2 covered work activities for planning and implementation of the second round of the vapor intrusion (VI) investigation, which was performed in March 2023. Amendment No. 3 included planning and field work for round 3 of VI investigation activities, quarterly groundwater sampling activities starting in October 2023, and bid period and construction period services in support of the Landfill Regrading Design #1.

This Amendment No. 4 includes supplemental budget to address the following scope changes over the past eight months:

- The Groundwater Technical Memorandum (Groundwater TM) is a new report required by the EPA in Fall 2023 that includes groundwater modeling and an updated conceptual site model. During a conference call with the City on December 21, 2023, CDM Smith informed the City that this Groundwater TM was not included in the budget and to complete it within the existing budget, other project tasks (e.g., routine reports for early 2025) would need to be descope. The City concurred with this approach noting that additional contract funding could be requested when Design #1 was issued for bid. The Groundwater TM activity

started being tracked as an as-needed task in December 2023 (under Task 2 described below).

- Surface Emissions Monitoring (SEM) was originally assumed to require 3 quarterly reports during the 21-month period of performance because Federal guidelines allow a reduction in frequency of annual monitoring if methane is not detected above 500 ppm for three consecutive quarters. In addition, it was anticipated that preparation of the reports would require minimal effort (i.e., a cover letter transmitting a data table). However, the quarterly SEM results have been greater than 500 ppm requiring resurveys during each quarterly reporting period. Correspondingly, the quarterly reports are more complex with discussions and figure presentations of the resurveys. In addition, it is anticipated that surveys and reports will need to be conducted every quarter through the contracting period due to the past SEM exceedances, requiring an additional 5 reports. (Under Task 4.)
- The Landfill Regrading Design #1 plans and specifications and the Design #1 bid schedule (design documents) were originally finalized in 2022 so the current contract (Am. 3 2023 through Jan 2025) did not include scope/budget to revise these design documents. Before issuing the request-for-bid in July 2024, the City's Capital Projects Department - Construction Management requested revisions to the Design #1 design documents. and requested an updated opinion of probable construction cost (OPCC). Several iterations of these documents were prepared by CDM Smith in response to reviews conducted separately by multiple Fresno departments. (Under Subtask 6.1.)
- Groundwater sampling event costs were higher due to site issues encountered during the monitoring events performed in October 2023, January 2024, and April 2024 [e.g., wells being not found or unable to be sampled, extraction well pump failure, and extended oversight (April event required two mobilizations)]. (Under Task 1.)
- Monitoring assistance costs were higher due to maintenance issues and additional EPA requests [e.g., pump replacement support for PW-6B2 and PW-1C, analytical reporting letters for residential wells, support for issues regarding the incorrect construction of private water supply wells at 2429 North Avenue and 3165 Hughes Avenue, and discussions with vendors (e.g., Calgon) to research possible implementation of activated carbon to provide groundwater treatment during bypass events]. (Under Task 1.)
- Responses to comments costs are higher due to increased number of deliverables [e.g., additional quarterly SEM reports, EPA comments, and EPA requests for information during monthly technical informational exchange (TIE) meetings]. (Under Task 1.)
- Soil gas field investigation costs are higher due to the delay in execution of the field event to June 2024. Budget was originally estimated for September 2023. (Under Task 4.)
- Project management costs (under Task 5) are higher due to:
 - increased EPA meetings (e.g., EPA added monthly groundwater remedial action meetings in October 2023).

- preparation of EPA notifications (e.g., emission calculations for notifications of modified LFG flare by-pass mode, grass fires, vandalism, and calculations for PW-6B2 extraction well downtime).
- landfill gas flare maintenance support. In October 2023, issues with the landfill gas flare operation arose when EPA required all of the landfill gas wells to be operated under negative pressure per landfill regulations. CDM Smith conducted a site visit in December 2023 and assisted the City with contract review and onboarding of Tetra Tech to resolve operational issues and conduct maintenance of the landfill gas flare system. The LFG system was previously maintained by City staff, who are no longer available to support this effort, and current City staff were not equipped to troubleshoot the problems with the system.

This Amendment No. 4 also includes added scope/budget for the following new activities:

- Groundwater Model Recalibration – During groundwater modeling in support of the Groundwater Technical Memorandum, it was determined that model results are highly sensitive to the pumping rates of the surrounding Cities' systems. The model was last calibrated in 2018. During a call on June 10, 2024, the Fresno City Water Department revealed significant changes to the City water supply system with transition to surface water in place of groundwater. The transition to surface water use is a regional change, thus the pumping rates of the other nearby cities likely also have changed. This boundary condition change will require the groundwater model to be recalibrated. (Under Task 2.)
- VI Investigation - Scope/budget for preparation of the gas report documenting the 2024 sampling event. Scope/budget for this report had not been included in the previous budget. (Under Task 4.)

These scope of work activities are a continuation of work performed under the existing contract with the City (dated 2022) and under Amendment No. 1 (for work performed in 2023), Amendment No. 2 (for the Spring 2023 VI investigation), and Amendment No. 3 (for the June 2024 VI investigation and October 2023 - October 2024 groundwater monitoring). Work described below is defined in terms of the five project tasks listed below:

Task 1 – Performance Monitoring Program

Task 2 – Remedial Action Systems Operations Assistance

Task 3 – Site Delisting Discussions (*no work is planned under this Task 3 during 2023 through 2025*)

Task 4 – Field Investigation Activities (OU-1)

Task 5 – Project Management/Project Meetings

Task 6 – Landfill Regrading Program – Bid Period and Construction Period Services

Table A-1 consists of a summary of the estimated costs for this scope of work. The total cost for this work is \$526,490 for the remaining 12-month period of performance (July 2024 through June 2025).

Task 1 – Performance Monitoring Program

Objectives

- Perform groundwater monitoring activities for the annual performance monitoring program, including 2024 (Q3-July, and Q4- October) and 2025 (Q1-January and Q2-April) as part of the Groundwater Remedial Action at the FSL.
- Monitor and evaluate progress of groundwater remediation.
- Document the performance monitoring activities and laboratory analytical results in an annual report (July 31, 2024) and an interim data transmittal (February 28, 2025) to the EPA.
- Prepare responses to review comments from EPA (and other State regulatory agencies).

Activities

- **Groundwater Monitoring Activities** - The Groundwater Monitoring Program at the FSL has been ongoing for many years. The City requested that Consultant perform groundwater monitoring activities (quarterly, semi-annual, and annual monitoring events). Consultant has enlisted a subcontractor to assist with sampling services. Task activities will include coordinating with analytical laboratories (e.g., analyses to be performed, numbers and types of sampling containers, delivery of sampling containers to the Site), and sample collection from the groundwater monitoring wells, groundwater extraction wells, residential water supply wells, and the groundwater treatment plant (GTP) influent and effluent sampling ports. Consultant will coordinate with the City in the ongoing implementation of this program.

Field activities to be performed, laboratory analysis, and regulatory agency reporting are described below:

- *Field Activities.* CDM Smith will perform groundwater monitoring, utilizing Blaine Tech Services, Inc (Blaine Tech), with assistance from City staff. The plan for sampling and analysis (**Table 4-1** of the *Spring 2023 Annual Performance Monitoring Program Report*) defines the sampling schedule, number of samples and analytical methods for this quarterly sampling event.
- *Schedule.* Monitoring events will be performed during 2024 (July and October), and during 2025 (January and April). Listing of the sampling locations are defined in Table 4-1 of the Annual Performance Monitoring Program Report (July 2023 submittal to EPA).
- *Laboratory Analysis.* Analysis of water samples will be performed by two laboratories, including Fresno Wastewater Management Division Analytical Laboratory (WMD; analysis for inorganic compounds) and BSK Associates Engineers & Laboratories (BSK-Fresno) under direct bill contract with the City (analysis for volatile organic compounds).

- *Reporting*. On an annual basis, CDM Smith will prepare two deliverables associated with the Groundwater Monitoring Program, including Interim Data Transmittal (January 2025) and the Annual Performance Monitoring Program Report (July 2024). These deliverables are described below (under ***Deliverables***).
- *Coordinate with Laboratories*. Identify and work to resolve issues that arise regarding laboratory analytical results (e.g., apparent mislabeling between 2 sample locations, investigate what appears to be anomalous analytical data, etc.).
- **Environmental Database** – Maintain the environmental database, including upload of analytical data upon receipt from the analytical laboratory following each quarterly sampling round. Database management will include performing data queries and preparing data summary tables that will be included in the interim data transmittal (electronic transmittal) and the annual performance monitoring program report (electronic transmittal).
- **Responses to Regulatory Agency Review Comments (RTCs)** – EPA and the State regulatory agencies typically submit review comments on a range of project submittals. This task will involve preparing RTCs (electronic submittals) for technical deliverables scheduled for submittal to EPA including the OU-1 Annual Report, OU-2 Interim Data Transmittal, OU-2 Annual Performance Monitoring Program Report, quarterly landfill progress reports and quarterly SEM reports.
- **OU-2 Operations Assistance** – CDM Smith provides miscellaneous support activities to assist the City in the operations and maintenance of the groundwater monitoring wells, groundwater extraction wells, residential water supply wells, and the groundwater treatment plant (GTP). In the past year, support activities have included: groundwater extraction well pump replacement support for PW-6B2 and PW-1C, analytical reporting letters for residential wells, support for issues regarding the incorrect construction of private wells at 2429 North Avenue and 3165 Hughes Avenue, and discussions with vendors (e.g., Calgon) to research possible implementation of activated carbon to provide groundwater treatment during LFG flare bypass mode events. The effort for these activities were previously tracked under Monitoring Assistance with the groundwater monitoring activities. However, given the recent need for these activities, we recommend tracking these efforts under this subtask with its own budget. The monitoring assistance task will be closed and replaced with this subtask.

Under this subtask, Consultant staff will be available to address questions raised by City staff in optimizing operations of the groundwater collection and treatment system (including extraction pump operations, GTP operations, and monitoring of instrumentation and controls). Consultant staff will also be available to respond to requests for assistance from the City to address GTP operational problems or to respond to questions regarding technical or regulatory issues or to develop an estimate of future costs associated with GTP operations under various operational scenarios. Consultant staff will also be available to review and evaluate analytical data from supplemental samples collected from the groundwater monitoring wells or the GTP. The City will request in writing that Consultant

perform these tasks prior to initiating work. It is assumed that this as-needed task is limited to 50 hours through June 2025.

Assumptions

- Consultant will utilize a subcontractor (Blaine Tech) to assist in the groundwater monitoring rounds (July and October 2024; and January and April 2025).
- City staff will assist in several groundwater monitoring activities, including:
 - Assist in locating on-site and off-site groundwater monitoring well locations, as requested.
 - Ensure access agreements are in-place for off-site monitoring wells and residential wells.
 - Coordinate with off-site property owners to allow access to groundwater monitoring wells and residential water supply wells included in the monitoring program.
- City staff will be responsible for ensuring access agreements are in-place for off-site monitoring wells and residential wells.
- Analysis of organic constituents is currently being performed by BSK Associates Engineers & Laboratories (BSK) in Fresno, CA under direct bill contract with the City. The analytical laboratory may be changed at the discretion of the City.
- Analysis of inorganic constituents is currently being performed by the City of Fresno Wastewater Management Division Analytical Laboratory (WMD) in Fresno, CA, under direct bill arrangements with the City.
- Under the OU-2 Operations Assistance subtask, CDM Smith is currently assisting the City in discussions with the County regarding the incorrect construction of wells at 2429 North Avenue and 3165 Hughes Avenue. EPA has indicated that these wells should be decommissioned and replaced.

Deliverables

1. **OU-2 Interim Data Transmittal (Annual Submittal)** – The Interim Data Transmittal will consist of data summary tables and figures for the July and October groundwater monitoring events. The Interim Data Transmittal will be submitted directly to EPA via e-mail in January 2025.
2. **OU-2 Annual Performance Monitoring Program Report (Annual Report)** – The Annual Report will cover the July and October 2023 and the January and April 2024 groundwater monitoring events. A draft document will be submitted to City staff for review. Consultant will incorporate revisions from City staff and prepare final report for submittal to the EPA. The Annual Report will be submitted to EPA in July 2024. Work activities for the Annual Report will include the following elements:

- Compilation of quarterly monitoring data (field and analytical laboratory data) and GTP operational data.
- Preparation of data summary tables and graphics. Data summary tables will include groundwater extraction well operational data, groundwater treatment unit performance monitoring data, volatile organic compound (VOC) mass removal, groundwater level measurements, head differential measurements (well clusters), VOC analytical data, inorganic constituent data, and quality control data. Graphics will include groundwater elevation contours for 2 of the quarterly monitoring events and VOC concentration trend plots.
- Based on the Long-Term Monitoring Optimization Plan (Plan) (CDM Smith, 2007), Consultant will perform an evaluation of the groundwater monitoring wells included in the monitoring program and will propose changes to the monitoring program in accordance with the criteria defined in the Plan. This evaluation will be completed following each April groundwater monitoring event. The results of this evaluation will be documented in the July Annual Report.

Task 2 – Remedial Action Systems Operations Assistance

Objectives

- Support the City's high-quality performance of the landfill environmental control systems, including the landfill cover, landfill gas (LFG) control, and stormwater management systems.
- Assist City staff in the ongoing operations, monitoring, and maintenance of the groundwater remediation system and the landfill control systems at the FSL.

Activities

Under this task, Consultant will assist the City in ongoing operations and maintenance activities associated with the groundwater treatment system and the landfill control systems. This task will consist of on-site and office activities necessary to maintain effective operation of the groundwater collection and treatment system, the LFG control system, and the function of the final landfill cover/stormwater management systems. This task includes the following activities:

- **Operable Unit 1 Annual Report (*Annual Activity*)** – Consultant will prepare a report, which is intended to document operations and maintenance activities associated with the landfill (LFG) control elements, including the landfill cover, stormwater management, and LFG control systems. The OU-1 Annual Report, to be submitted to EPA in February 2025, will address operations during the prior year. The OU-1 Annual Report will consist of the following elements:
 - Summary of LFG flare operating data. This summary would include a listing of the LFG flare downtimes, including downtimes resulting in operation of the GTP in LFG flare bypass mode.
 - Compilation of perimeter LFG monitoring probe data.

- Assessment of the condition of the landfill cover system and the stormwater management system. The assessment would rely on information generated during inspections of the landfill cover and stormwater management system performed by Consultant and/or City staff. Of particular importance is the inspection scheduled early fall, prior to onset of rainy weather.
- Overview of maintenance activities performed on the landfill control systems and description of repairs or equipment replacements.
- **OU-1 Operations Assistance** – This subtask will be used for the Consultant to assist the City with activities such as the landfill gas flare operation issue that arose in October 2023 with maintaining methane concentrations high enough to keep the flare operating. On an as-needed basis, Consultant will assist the City with landfill-related operations activities that cannot specifically be identified at this time. Currently, the Consultant is supporting the City with addressing the perimeter probe exceedance that was detected in June 2024. For budgeting purposes, this task is estimated at 100 labor hours.
- **Landfill Inspection and Maintenance Assistance** – Activities to be performed under this subtask will be focused on assisting the City in planning and performing landfill inspection and maintenance activities.
 - Annual Landfill Inspection (Annual Activity) – The annual landfill inspection will be performed during the Fall of 2024. At the request of the City, additional inspections may be performed by CDM Smith following heavy precipitation events that could impact landfill control systems function. However, City staff are responsible for conducting the monthly and wet weather (considered to be October through March) inspections and completing the inspection forms that will be attached to the quarterly progress reports for submittal to EPA.
 - A description of landfill inspection activities/procedures is provided below:
 - Focus of the inspections will be on the landfill control system elements, including landfill cover system, surface water management system, and LFG control system.
 - Highlight the need for performing routine maintenance activities related to the landfill control systems.
 - Highlight the need for performing corrective action activities to address damage, inoperable conditions, or failure of the landfill control systems. The descriptions will be specific to each of the landfill control system elements.
 - Prepare report to document inspection and to describe maintenance, repair, and corrective actions.
 - Identify landfill regrading needs identified as part of the landfill inspections.
 - Due to the extensive subsidence on the landfill, the City currently are not completing monthly inspection forms. After construction of Design #1, CDM Smith will assist the City in developing updated inspection forms to be used during monthly inspections. The draft inspection forms will be submitted to the EPA for review and comment before finalization and implementation.

- **Annual Evaluation of Extraction Well Performance (*Annual Activity*)** – Consultant will perform an evaluation of the performance of each extraction well on an annual basis. Performance factors to be considered during the performance evaluation will include specific capacity (pumping rate per foot of drawdown) and changes in pumping rate and drawdown over time, with comparison to historical data. The last report submitted in February 2024 covered operations up through the First Quarter 2023. With the recent replacements of PW-6B2 (December 2023) and PW-1C (June 2024), an evaluation of the extraction well system performance is not needed in 2024. The next extraction well performance assessment will be submitted in 2025.
- **New Well Evaluations (*Periodic Activity*)** – Consultant will perform groundwater modeling evaluations of proposed new water supply wells (agricultural and residential) in the vicinity of the FSL. The purpose of the new well evaluations is to assess the potential for impact to the existing groundwater remediation system at the FSL from operation of proposed new wells. Under the current arrangement, the County of Fresno, Department of Public Health, Environmental Health Division (Fresno County) notifies the City when a permit application for a new or replacement water supply well is submitted in a location within the well assessment zone. Based on groundwater modeling results, Consultant will either recommend that the well not be installed or recommend design modifications for the proposed well (e.g., depth of well, depth of annular seal, and length of screen zone). It is assumed that Consultant will perform two evaluations per year for the duration of the period of performance. This task is dependent on whether well permit requests within the well assessment zone are submitted to the County. Support for currently identified issues regarding the incorrect construction of residential wells at 2429 North Avenue and 3165 Hughes Avenue will be provided under Task 1 Monitoring Assistance.
- **Groundwater Modeling** – Based on discussions during a series of OU-2 Phase 3 Remedial Action Performance Evaluation technical meetings with EPA (starting in August 23, 2023), the EPA requested that the City submit a Groundwater Technical Memorandum that would provide an evaluation of the performance of the remedial action using a groundwater model calibrated with the groundwater sampling data collected since implementation of the remedy. The TM should also include an updated conceptual site model. With the City’s approval in December 2023 to commence work on this TM, CDM Smith began work on this TM, with efforts on this new activity tracked as an as-needed task.

In Addendum No. 3, it was assumed that this task would be 100 labor hours during the period October 2023 through June 2025. However, as of May 2024, the as-needed task has logged over 400 hours and additional work is still required to complete this task to produce a draft report that addresses the EPA’s requests. This Addendum No. 4 budget includes funding to complete a draft groundwater TM for submittal to the EPA. Budget for completing further versions of the TM (e.g., draft finals and final reports) cannot be estimated at this time and are not included in this amendment.

In addition, a sensitivity analysis of the groundwater model revealed that the model results are highly sensitive to the pumping rates of the water supply wells operated by the City and other public agencies. Since the model was last calibrated in 2018, CDM Smith contacted

the City of Fresno Water Department on June 10, 2024, to determine if updated pumping rates were available. The City Water Department revealed significant changes to the City water supply system with transition to surface water supplies in place of groundwater. Since the transition to surface water use is a regional change, the pumping rates of other surrounding cities likely also have changed. This boundary condition change will require the groundwater model to be recalibrated. The recalibration budget is listed under the Groundwater Modeling task, separate from the draft groundwater TM.

Assumptions

- With monthly requests from Consultant, City staff will provide Consultant with information listed below in a timely manner. The requested information constitutes critical information for reporting to EPA (e.g., Quarterly Progress Reports, OU-2 Annual Performance Monitoring Report, OU-1 Annual Report).
 - Downloads of the SCADA system in Excel with operations data for the groundwater remediation system (data from extraction well operations and groundwater treatment plant operations) and for the landfill gas (LFG) flare system (LFG flare operations). Consultant will compile these data and make necessary assumptions and calculations for filling data gaps.
 - Weekly maintenance summaries for the groundwater remediation system and the LFG flare.
- City staff will provide Consultant with information required for completion of the Groundwater TM in a timely manner.

Deliverables

1. **OU-1 Annual Report (Annual Deliverable)** - A draft report will be submitted to the City for review. The report will be revised based on review comments from the City and finalized for submittal to EPA. One OU-1 Annual Reports will be prepared under this scope of work, with a submittal date of February 2025.
2. **Annual Extraction Well Performance Evaluation Technical Memorandum (Annual Deliverable)** - The technical memorandum, which will document the performance evaluation on each of the groundwater extraction wells, will be submitted to the City. This technical memorandum is not intended as a formal submittal to EPA. One Extraction Well Performance Evaluation will be prepared under this scope of work, with a submittal date of June 2025.
3. **New Well Evaluations (Periodic Deliverables)** - At the conclusion of each new well evaluation that is performed, a letter to the City will be prepared for submittal to the City which documents groundwater modeling results and provides well construction recommendations. This deliverable is only required if the County receives new well requests within the well assessment zone during the contract period.

Task 3 – Superfund Site Delisting Pathway – Planning and Implementation

There will be no Task 3 services performed during 2023, 2024, or 2025.

Task 4 – Vapor Intrusion Investigation – Round 3 (OU-1)

The two subtasks included under Task 4 are briefly described below.

- Subtask 4.1 – Soil Gas Sampling Program. During 2021, EPA directed the City to perform soil gas sampling from selected LFG perimeter monitoring probes (located along the perimeter of the landfill). Three rounds of vapor intrusion (VI) sampling have been conducted: Round 1 (Fall 2022) and Round 2 (Spring 2023), as defined in the VI Investigation Work Plan (approved by EPA in October 2022) and Round 3 (Summer 2024) as defined in the Vapor Intrusion Investigation Work Plan Addendum for the Fresno Municipal Sanitary Landfill Superfund Site, dated September 15, 2023 (approved by EPA on September 21, 2023).
- Subtask 4.2 – Landfill Surface Emissions (SEM) Testing. Consultant prepared the SEM Work Plan in October 2022, and the City started performing SEM in May 2023. SEM results collected over the past year indicate that SEM monitoring will be required quarterly. Consultant will assist the City in preparing quarterly reports summarizing surface emissions monitoring activities and presenting the results of the emissions testing. City staff will be responsible for performing the SEM on a quarterly basis.

Subtask 4.1 – Soil Gas Sampling Program

Objective

- Prepare a Vapor Intrusion Evaluation Report documenting the third round of vapor intrusion (VI) sampling to further assess the risk to human health from migrating LFG at locations in the areas of concern near the landfill identified in the July 2023 VI report.

Activities

The Consultant will prepare a Vapor Intrusion Evaluation Report describing the investigation activities performed during Round 3 (in June 2024) and presenting data generated during the investigation activities. The analytical results will be compared to ESLs and RSLs, and an evaluation of the potential risk to human health.

Assumptions

- EPA will not require additional indoor air or soil gas sampling beyond the third round of sampling conducted in June 2024.
- EPA will have one round of review comments in response to the VI Evaluation Report. These comments will include a compilation of comments from the State regulatory agencies.
- Technical calls/meetings with EPA. Consultant will participate in calls with EPA to discuss the evaluation of data and responses to EPA review comments on the VI Evaluation Report, under Task 5. Formal written responses to EPA comments (RTCs) on the VI Evaluation Report will be prepared under Task 1.
- Based on the results of Round 3 sampling activities, EPA is expected to direct the City to plan and implement additional soil gas investigation. However, the level of effort for future investigation cannot be estimated at this time. The VI report needs to be completed and the results discussed with the EPA before the scope for Round 4 can be determined. For

budgeting purposes, it is assumed that additional VI consulting for planning of a future VI investigation and discussions with the EPA will be limited to 50 labor hours.

Deliverables

- **Vapor Intrusion Evaluation Report (*One-Time deliverable*)**. A draft report will be submitted to EPA. If requested from EPA, a final report that incorporates EPA's input will be prepared for submittal to EPA.

Subtask 4.2 – Landfill Surface Emissions Testing

Objective

- Prepare quarterly report to EPA documenting the field activities and presenting the results of the emissions testing.

Activities

Federal guidelines allow a reduction in frequency of SEM to annual monitoring if methane is not detected above 500 ppm for three consecutive quarters. However, past SEM results (Q2 2023, Q4 2023, and Q1 2024) consistently recorded detections above 500 ppm indicating that SEM monitoring will be required quarterly. Consultant will prepare quarterly reports for the period March 2024 through June 2025 (Q Q2, Q3, and Q4 2024; and Q1 2025). The objectives of the technical memorandum are to document the SEM program activities and to present the monitoring data. Each technical memorandum will be submitted to EPA, following draft document submittal to City staff for review and Consultant incorporation of revisions from City staff. City staff will be responsible for performing the SEM on a quarterly basis.

Assumptions

- City staff will perform quarterly field methane surface emissions monitoring activities. Monitoring data will be provided to Consultant following each quarterly monitoring event.

Deliverables

- **SEM Technical Memorandum (*Periodic Deliverables*)** – A technical memorandum will be prepared to document each quarterly monitoring event. Three technical memoranda have already been prepared (Q2 2023, Q4 2023, and Q1 2024). It is expected that four more SEM technical memoranda will be prepared (Q2, Q3, and Q4 2024 and Q1 2025). Since quarterly reports are being prepared, an annual report is no longer needed.

Task 5 –Project Management/Project Meetings

Objectives

- Meet project scope, schedule, and budget requirements.
- Maintain effective communication with the City, EPA, and other regulatory agency staff on key project issues.

Activities

The activities described below are to be performed during 2023 through June 2025.

- Perform routine project management activities, which will include staff oversight, budget management, invoicing, and coordination with the City on budget and scope of work development.
- Prepare schedule updates, as needed.
- Participate in project meetings and project conference calls, including prepare meeting presentation materials and other handouts responding to EPA requests.
- Prepare quarterly reports providing status updates regarding remedial actions implemented at the FSL. Consultant will submit draft quarterly reports to the City.
- Prepare contracting documents for multiple subcontractors.
- Interact with EPA in preparation for and during implementation of the field activities.

Assumptions

- The City will finalize the quarterly reports with transmittal of the reports to EPA.
- The budget reflects participation in only one monthly project conference call during 2024 and 2025. In addition, there will be one project status meeting at the FSL Site during 2024.

Deliverables

1. **Monthly invoices and Email Progress Reports (*Periodic Deliverables*)** - to the City documenting Consultant work performed.
2. **Presentation materials and handouts (*As-needed Deliverables*)** - responding to EPA requests for periodic project meetings or teleconferences.
3. **Quarterly Project Reports (*Periodic Deliverables*)** - prepared during 2024 (July, and October), and 2025 (January and April).

Task 6 – Landfill Regrading/Landfill Control Systems Repair – Design, Bid Period, and Construction Period Services (OU-1)

The City began implementation of a Landfill Regrading Program to address differential settlement that has occurred on the landfill. The Landfill Regrading Program was developed as two design projects described below:

- Landfill Regrading Design #1 – The Design #1 addresses settlement along the eastern side slopes, eastern perimeter drainage channel and eastern access road. Repairs of the landfill gas control system are also included.
- Landfill Regrading Design #2 – Design #2 addresses settlement of the remaining portions of the FSL, including the southern, northern, and western side slopes and the top deck of the landfill. Design #2 activities are not included in this current scope and budget for 2024.

Subtask 6.1 – Landfill Regrading Program – Design #1: Drainage Channel Regrading and Gas Control System Maintenance

Subtask 6.1 – Landfill Regrading Program Design #1– Design for the project titled *East Slope Drainage Regrading and Gas System Upgrades Project* was initiated in 2021 and completed in 2022 with submittal of the 100% design documents in June 2022.

Objectives

- Provide revised design documents of the original submittal in June 2022 to address City comments before issuing the contract out for bid in July 2024.
- Provide bid period and construction period support services associated with construction of Design #1.

Activities

Pre-Bid Period Services

The City's Capital Improvements Department requested modifications to the Design #1 plans and specifications and an updated OPCC before issuing the contract out for bid in July 2024. Several iterations of these documents were prepared by CDM Smith (in March, April, May, June, and July 2024) in response to reviews conducted separately by different Fresno department entities.

Bid Period Services

Bid Period Services for Design #1 is expected to be performed during August 2024. This subtask will include participation in the City's pre-bid conference and preparation of responses to Bid Period requests-for-information (RFIs). It is assumed that this task will be limited to 50 labor hours.

Construction Period Services

Construction Period Services are expected to be performed beginning in Fall 2024. This subtask will consist of Contractor submittal review, preparing responses to construction RFIs, and periodic construction oversight. Construction oversight can include specialty inspection, targeted participation in construction meetings, assistance in change order preparation, assistance in claims support, and assistance in preparation of a project punch list. It is assumed that this task is limited to 100 labor hours.

Reporting

This subtask will consist of preparing a Tech Memo to document the Task 6 construction efforts. The Tech Memo is intended for submittal to the EPA. Given that this construction project is a maintenance project, the report will be less detailed than the Interim Remedial Action Report that had been prepared to document past remedial action construction activities performed at the FSL.

Assumptions

- No additional revisions of the Design #1 documents will be required.
- Up to two visits to the FSL by CDM Smith staff during the Bid Period.

- Up to five visits to the FSL by CDM Smith staff during the Construction Period.

Deliverables

- Prepare responses to Contractor RFIs during and following the bid period.
- Prepare a tech memo to document the Design #1 construction activities.

Schedule

The scope of work and budget presented above reflects project duration from August 2024 through June 2025. All deliverables will be electronic deliverables; no print copies will be produced. The schedule for project deliverables is provided below:

Annual and or Periodic Deliverables

1. Landfill Quarterly Progress Reports (Q2, Q3, and Q4 2024; and Q1 2025) – **July and October 2024; and January and April 2025.**
2. SEM Quarterly Reports (Q2, Q3, and Q4 2024; and Q1, Q2, and Q3 2025) – **July and October 2024; and January and April 2025.**
3. OU-2 Regulatory Interim Data Transmittal – **January 31, 2025**
4. OU-1 Annual Report –**February 28, 2025.**
5. Technical Memorandum to document the annual well performance evaluation – **September 2025.**
6. OU-2 Annual Performance Monitoring Program Report – **July 31, 2024.**
7. New Well Evaluations – The results of groundwater modeling to evaluate proposed new agricultural or domestic water supply wells will be documented in a brief letter report to the City. This work will be performed on an as-needed basis throughout the contract period. – **As needed.**
8. Responses to Comments from EPA on technical deliverables – **As needed.**
9. Monthly invoices and progress reports.

One-time Deliverables

1. Vapor Intrusion Evaluation Report of Findings – **Within 3 months following receipt of all analytical data.**
2. Task 6.1 Design Deliverables:
 - Responses to Construction Contractor Requests for Information (RFIs) during pre-construction activities – **As needed.**

- Design #1 Construction Completion Tech Memo Budget – **2 months following construction completion.**

The cost for the work described above is \$526,490. A cost breakdown is shown on Table 1 – Proposed Adjustment for Amendment #4, Revision 1 (August 2024), Groundwater and Landfill Remediation Services, Fresno Sanitary Landfill (OU-1 and OU-2). This estimate constitutes the budget for services during Year 2024 (Supplemental) through June 2025.

Table 1

Landfill Remediation Services - Amendment #4, Revision 1 (August 2024)
Budget for Year 2024 (Supplemental) through June 2025
Fresno Sanitary Landfill (Operable Unit-1 and Operable Unit-2)

Task Description		Labor \$	ODCs \$	Ops \$	Total \$
Task 1	Performance Monitoring Program	\$139,885	\$1,365	\$5,250	\$146,500
	GW Monitoring Activities	\$19,750	\$0	\$5,000	\$25,000
	OU-2 Operations Assistance	\$11,265	\$700	\$0	\$12,000
	Monitoring Assistance	\$0	\$0	\$0	\$0
	Environmental Database Management	\$10,000	\$0	\$0	\$10,000
	Responses to Comments	\$52,000	\$0	\$0	\$52,000
	OU-2 Annual Report (submittal date: July)	\$36,370	\$600	\$0	\$37,000
	OU-2 Regulatory Data Transfer (submittal date: January)	\$10,500	\$0	\$0	\$10,500
Task 2	Remedial Action Systems Operations Assistance	\$188,905	\$1,785	\$0	\$190,690
	Annual Evaluation of Extraction Well Performance	\$6,400	\$0	\$0	\$6,400
	OU-1 Annual Report (February 2025)	\$2,290	\$200	\$0	\$2,500
	New Water Supply Well Evaluations	-\$18,360	\$0	\$0	-\$18,360
	As-Needed Activities Groundwater Tech Memo	\$150,000	\$0	\$0	\$150,000
	OU-1 Operations Assistance	\$25,265	\$700	\$0	\$26,000
	Landfill Inspection and Maintenance Assistance	\$3,760	\$800	\$0	\$4,600
	Groundwater Modeling	\$9,800	\$0	\$0	\$9,800
	SEM Report (remaining reports will be under Task 4.2)	\$9,750	\$0	\$0	\$9,750
Task 3	Superfund Site Delisting Pathway -- Planning	\$0	\$0	\$0	\$0
Task 4	Field Investigation Activities	\$74,700	\$0	\$2,100	\$76,800
Subtask 4.1	Vapor Intrusion Investigation - Round 3				
	Soil Gas Investigation - Work Plan	\$3,000	\$0	\$0	\$3,000
	Pre-field Planning Activities	\$0	\$0	\$0	\$0
	Soil Gas Investigation - Field Activities	\$7,900	\$0	\$2,000	\$10,000
	Soil Gas Investigation - Report of Findings	\$35,000	\$0	\$0	\$35,000
Subtask 4.2	SEM Program				
	SEM Consulting	-\$4,200	\$0	\$0	-\$4,200
	SEM Reporting	\$33,000	\$0	\$0	\$33,000
Task 5	Project Management/Project Meetings	\$63,950	\$1,050	\$0	\$65,000
	Project Management	\$41,950	\$1,000	\$0	\$43,000
	Project Meetings	\$20,000	\$0	\$0	\$20,000
	Quarterly Progress Reports	\$2,000	\$0	\$0	\$2,000
Task 6	Landfill Regrading/Control Systems Repair Design	\$47,080	\$420	\$0	\$47,500
Subtask 6.1	Design #1				
	Pre-Construction Services	\$27,000	\$0	\$0	\$27,000
	Bid Period Services	\$0	\$0	\$0	\$0
	Construction Period Services	\$0	\$0	\$0	\$0
	East OPCC (for 100% design)	\$3,500	\$0	\$0	\$3,500
	East Field Visits	\$1,580	\$400	\$0	\$2,000
	East Reporting (construction completion report for EPA)	\$15,000	\$0	\$0	\$15,000
TOTALS		\$514,520	\$4,620	\$7,350	\$526,490

Notes:

1. CDM Smith will complete the tasks listed in the table on a time and materials basis, not to exceed a total of \$526,490.
2. Labor costs will be billed at actual salary rates times a 3.05 multiplier.
3. 'Other Direct Costs' (ODCs) and 'Outside Professional' (OPs) charges will be billed with a 5% mark-up.