Capital Area Council of Governments FY 2022-2023 Rider 7 Statement of Work, Revision 2

August 3, 2022

GRANT NUMBER AND NAME

Contract Number 582-20-11982
Capital Area Council of Governments Rider 7 Local Air Quality Planning Grant

PERFORMING PARTY'S PROJECT MANAGER

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Amendment 2 to Statement of Work

CAPCOG submitted a signed Statement of Work to the Texas Commission on Environmental Quality (TCEQ) on February 1, 2022. TCEQ issued a partial notice proceed (NTP) for this statement of work on February 10, 2022, enabling CAPCOG proceed with Task 3.2 (Monitoring) and Tasks 1, 2, and 4 to the extent that they related to Task 3.2. CAPCOG submitted Amendment 1 to the Statement of Work to TCEQ on April 18, 2022, and TCEQ issued a full NTP on April 20, 2022. This Amendment 2 seeks to update the statement of work in a number of ways:

1. Updates to references to subgrantees and contractors to reflect work under Task 3;
2. Updates due dates and the corresponding timeline milestones;
3. Updates to the installation of new monitoring stations based on the selection of actual sites; and
4. Addition of details of the components of the "other" budget category.

SUBGRANTEES OR CONTRACTORS TO BE USED UNDER THIS CONTRACT

~~CAPCOG does not intend to make any "subgrants."~~ CAPCOG has contracted with Weston Solutions (WESTON) as its monitoring contractor for 2022 with an option to renew for 2023. Following approval of this statement of work by TCEQ, CAPCOG will procure one or more vendors to carry out portions of the emissions inventory development projects. CAPCOG plans to issue subgrants through interlocal agreements for fleet emissions monitoring devices under Task 3.1.2 to the following entities:

- City of Austin;
- City of Buda;
- City of Kyle;
- City of San Marcos; and
- Travis County.

QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

CAPCOG intends to submit a Quality Assurance Project Plan (QAPP) that covers its monitoring activities in 2022 and 2023 by February 15, 2022. CAPCOG will provide QAPPs for emissions inventory projects 3.1.1, 3.1.2, 3.1.3, 3.1.4, and 3.1.5 prior to commencing substantive work on those projects.

TIMELINE

The following timeline reflects planned grant activities.

- December 21, 2021: Amendment 1 to Grant Agreement for 2022-2023 Funding is Executed
- January 1, 2022: Effective start date of 2022-2023 funding
- February 1: Signed Statement of Work for 2022-2023 Submitted to TCEQ
- February 10, 2022: TCEQ issues partial NTP for Monitoring
- February 15, 2022: Submission of Monitoring QAPP to TCEQ
- March 1, 2022: Start of 2022 O_3 monitoring season (Tasks 3.2.1 and 3.2.2)
- March 30, 2022: Submission of FSR and Quarterly Activity Report to TCEQ
- April 18, 2022: CAPCOG submits Amendment 1 to Statement of Work to TCEQ
- April 20, 2022: TCEQ issues full NTP for Monitoring
- June 30, 2022: Submission of FSR and Quarterly Activity Report to TCEQ, ~~CAPCOG completes review of 2020 NEI emissions and activity data submitted by TCEQ to EPA~~
- ~~July 31, 2022: Review of 2021 EGU data and 2020 EIQs completed~~
- ~~August 31, 2022: Selected point source emissions inventory refinements completed~~
- September 30, 2022: Submission of FSR and Quarterly Activity Report to TCEQ

- October 31, 2022: CAPCOG completes review of 2020 NEI emissions and activity data submitted by TCEQ to EPA (Task 3.1.1), Review of 2021 Point Source Emissions Inventory Data (Task 3.1.3), and Selected point source emissions inventory refinements (Task 3.1.4)
- November 30, 2022: All monitoring stations shut down (Task 3.2.1)
- December 30, 2022: Submission of FSR and Quarterly Activity Report to TCEQ
- March 1, 2023: Start of 2023 O_3 monitoring season, target start date for two new O_3 monitoring stations (Tasks 3.2.1, 3.2.2, and 3.2.3).
- March 30, 2023: Submission of FSR and Quarterly Activity Report to TCEQ
- June 30, 2023: Submission of FSR and Quarterly Activity Report to TCEQ
- July 31, 2023: Review of 2022 EGU data and 2021 EIQs completed (Task 3.1.3)
- August 31, 2022: Selected point source emissions inventory refinements completed, review of 2020 NEI public release completed (Task 3.1.4)
- September 30, 2023: Submission of FSR and Quarterly Activity Report to TCEQ
- October 31, 2023: On-road, non-road, and nonpoint source emissions inventory projects completed (Task 3.1.2)
- November 30, 2023: Final reports associated with on-road, non-road, and nonpoint inventories submitted to TCEQ (Task 3.1.2)
- December 30, 2023: Submission of FSR and Final Report to TCEQ
- January 30, 2024: Submission of final FSR to TCEQ

BUDGET

This section provides a completed cost budget.

Cost Budget

The Cost Budget form for this grant is shown below.

Table 1. Overall Cost Budget for 2022-2023 Funding

Budget Category	Total Cost for Work to be Performed	Portion that is Administrative Costs
Salary/Wages	$95,000.00	31.58%
Fringe Benefits	$48,849.00	31.58%
Travel	$3,300.00	0.00%
Supplies	$15,400.00	0.00%
Equipment	$40,000.00	0.00%
Contractual	$736,039.42	0.00%
Construction	$0.00	0.00%
Other	$57,748.01	23.92%
Indirect Costs	$12,682.50	31.58%
TOTAL	**$1,009,018.93**	**6.27%**

CAPCOG is requesting that TCEQ consider authorizing this statement of work in two stages: one for monitoring projects and related administrative work and one for emissions inventory projects and related administrative work if the monitoring projects are able to be approved even if the emissions inventory projects are not yet able to be approved. Ideally, TCEQ would provide approval for monitoring projects to proceed by February 15, 2022, so that CAPCOG could issue its notice to proceed to its contractors to start monitoring site set-up and have all current sites operational by February 28, 2022.

In order to facilitate this request, CAPCOG is offering a separate, more limited budget specific to monitoring, along with associated work in Tasks 1, 2, and 4. For this purpose, CAPCOG is allocating ½ of the budgeted costs for Tasks 1, 2, and 4 to Task 3.1 (Emissions Inventory) and the other ½ to Task 3.2 (Monitoring).

Table 2. Limited Monitoring-Related Budget for 2022-2023

Budget Category	Total Cost for Work to be Performed	Portion that is Administrative Costs
Salary/Wages	$40,000.00	37.50%
Fringe Benefits	$20,568.00	37.50%
Travel	$300.00	0.00%
Supplies	$15,400.00	0.00%
Equipment	$40,000.00	0.00%
Contractual	$232,595.00	0.00%
Construction	$0.00	0.00%
Other	$32,420.22	21.31%
Indirect Costs	$5,340.00	37.50%
TOTAL	**$386,623.22**	**8.18%**

Cost by Task

The cost of each task is shown in the table below.

Table 3. Overall Cost Budget by Task for 2022-2023 Funding by Task

Budget Category	Task 1 (Program Admin)	Task 2 (QAPP)	Task 3.1 (Emissions Inventory)	Task 3.2 (Monitoring)	Task 4 (Final Report)	Total
Salary / Wages	$20,000.00	$5,000.00	$40,000.00	$25,000.00	$5,000.00	**$95,000.00**
Fringe Benefits	$10,284.00	$2,571.00	$20,568.00	$12,855.00	$2,571.00	**$48,849.00**
Travel [1]	$0.00	$0.00	$3,000.00	$300.00	$0.00	**$3,300.00**
Supplies	$0.00	$0.00	$0.00	$15,400.00	$0.00	**$15,400.00**
Equipment	$0.00	$0.00	$0.00	$40,000.00	$0.00	**$40,000.00**
Contractual	$0.00	$0.00	$503,444.42	$232,595.00	$0.00	**$736,039.42**
Construction	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**

[1] Travel includes $300 for site visits for monitoring throughout the grant period. This will definitely be required for siting new stations in order to scout locations, meet with site owners, etc. $3,000 budgeted for potential 2023 EI conference is described further under Task 3.1.

Budget Category	Task 1 (Program Admin)	Task 2 (QAPP)	Task 3.1 (Emissions Inventory)	Task 3.2 (Monitoring)	Task 4 (Final Report)	Total
Other	$9,210.10	$2,302.53	$18,420.21	$25,512.64	$2,302.53	**$57,748.01**
Indirect Costs	$2,670.00	$667.50	$5,340.00	$3,337.50	$667.50	**$12,682.50**
TOTAL	**$42,164.10**	**$10,541.03**	**$590,772.63**	**$355,000.14**	**$10,541.03**	**$1,009,018.93**

The cost of each task for a limited monitoring-only notice to proceed is shown below.

Table 4. Overall Cost Budget by Task for 2022-2023 Funding by Task

Budget Category	Task 1 (Program Admin)	Task 2 (QAPP)	Task 3.1 (Emissions Inventory)	Task 3.2 (Monitoring)	Task 4 (Final Report)	Total
Salary / Wages	$10,000.00	$2,500.00	$0.00	$25,000.00	$2,500.00	**$40,000.00**
Fringe Benefits	$5,142.00	$1,285.50	$0.00	$12,855.00	$1,285.50	**$20,568.00**
Travel [2]	$0.00	$0.00	$0.00	$300.00	$0.00	**$300.00**
Supplies	$0.00	$0.00	$0.00	$15,400.00	$0.00	**$15,400.00**
Equipment	$0.00	$0.00	$0.00	$40,000.00	$0.00	**$40,000.00**
Contractual	$0.00	$0.00	$0.00	$232,595.00	$0.00	**$232,595.00**
Construction	$0.00	$0.00	$0.00	$0.00	$0.00	**$0.00**
Other	$4,605.05	$1,151.27	$0.00	$25,512.64	$1,151.27	**$32,420.22**
Indirect Costs	$1,335.00	$333.75	$0.00	$3,337.50	$333.75	**$5,340.00**
TOTAL	**$21,082.05**	**$5,270.52**	**$0.00**	**$355,000.14**	**$5,270.52**	**$386,623.22**

Indirect Rate

Indirect Cost Reimbursable Rate. The indirect rate in effect at the time this statement of work has been prepared is 13.35% of (check one):[3]

☐ salary and fringe benefits

☐ modified total direct costs

☒ other direct costs base

If other direct cost base, identify: salary and wages

Performing Party's indirect cost rate is equal to or less than (check one):

[2] Travel includes $300 for site visits for monitoring throughout the grant period. This will definitely be required for siting new stations in order to scout locations, meet with site owners, etc. $3,000 budgeted for potential 2023 EI conference is described further under Task 3.1.

[3] https://www.capcog.org/wp-content/uploads/2021/10/CAPCOG-State-and-Local-Governments-NICRA-2021_09_01.pdf

☒ Predetermined Rate – an audited rate that is not subject to adjustment.

☐ Negotiated Predetermined Rate – an experienced-based predetermined rate agreed to by Performing Party and TCEQ. This rate is not subject to adjustment.

☐ Default rate - a standard rate of ten percent of salary/wages may be used in lieu of determining the actual indirect costs of the service.

If CAPCOG's indirect rate changes prior to 12/31/2023, CAPCOG will provide documentation to TCEQ of this change along with any related FSR.

Fringe Rate

Fringe Rate. The FY 2022 fringe rate calculated for this cost budget is 51.42% of (check one):[4]

☐ salary and fringe benefits

☐ modified total direct costs

☒ other direct costs base

If other direct cost base, identify: salary and wages

"Other" Cost Category

The "Other" budget cost category includes the following elements:

- Office Space allocation $15,905.01
- Utilities (electric and phone service at monitoring stations): $13,500.00
- Accounting services: $10,174.50
- Information services: $9,546.00
- Payroll/Personnel services: $7,077.50
- Telecommunications allocation (for CAPCOG phones, not monitoring sites): $1,045.00
- Advertising (for procurements): $500.00

If there are other expenses incurred that are classified as "Other" in accordance with federal and state grand management standards, they will be identified in CAPCOG's FSRs.

Future Changes to Fringe and Indirect Rates

Note that as allowed by, and required by, the Uniform Grant Management Standards (UGMS) and the Texas Grant Management Standards (TxGMS), CAPCOG's applicable fringe rate is updated annually and applied consistently across all grants. During the period of performance of this contract, CAPCOG expects the rates listed above to apply to activity completed through September 30, 2022, new rates to be in effect October 1, 2022 – September 30, 2023, and another set of rates to be in effect October 1, 2023 – December 31, 2023. CAPCOG will provide TCEQ with copies of the applicable cost allocation

[4] CAPCOG's approved FY 2022 fringe rate of 51.42% is documented on page 2 of 3 on the memo to CAPCOG's Executive Committee from its August 2021 meeting, https://www.capcog.org/wp-content/uploads/2021/08/EC-Agenda-Packet-8-11-21_updated-OV.pdf (page 25 of 43, and also on page 31 of 43 of the PDF). This budget was approved by CAPCOG's General Assembly on September

plans once adopted by CAPCOG. CAPCOG applies for a Negotiated Indirect Cost Rate Agreement (NICRA) to determine its indirect costs. The NICRA is negotiated annually with our federal cognizant agency, the EDA, and the timing of the change to our indirect cost rate is based on the completion date of the negotiations. CAPCOG will provide any updated rate to TCEQ when it is received as final through the NICRA.

Staff-Related Costs

CAPCOG staff identified in the PEL will be charging time to all tasks under this grant. In addition to salaries and wages, fringe costs, indirect costs, and a portion of the "other" budget category are also allocated to this grant as a result of the time that will be charged to this grant. Fringe and indirect costs are allocated based on salary expenses, while accounting and payroll costs are allocated based on labor-hours. Staff time and related costs charged to tasks 1, 2, and 4 will count towards the 10% limit on "administration of the program". CAPCOG classifies work spent on these tasks as "administration of the program" in that they represent staff time spent specifically to administer this grant, as opposed to performing work that is necessary for completing the technical work in tasks 3.1 and 3.2 that would need to be completed regardless of funding source or grant requirements. So, for example, supervising the work of a contractor for emissions inventory projects or a monitoring contractor would be classified as a direct expense for tasks 3.1 or 3.2, respectively, rather than Task 1 ("Project Management"), because such work is inherently technical in nature. There will also be work that CAPCOG staff will directly carry out for Tasks 3.1 and 3.2, such as conducting emissions inventory reviews, securing monitoring site leases, and preparing monitoring reports. Additional detail on the role of staff and contractors is provided in descriptions of each task and subtask below.

CAPCOG has established a dedicated fund code (785) to track 2022-2023 expenses and revenue separate from 2020-2021 funding (779). CAPCOG will be using distinct program codes to track expenses charged to each task (785, 786, 787, 788, and 789 to track tasks 1, 2, 3.1, 3.2, and 4, respectively).

Direct Emissions Inventory Cost Details

For Task 3.1 – Emissions Inventory, in addition to the staff time spent, there will also be contractual costs associated with this task. There may also be costs associated with acquiring various data sets to improve on-road, non-road, or non-point emissions inventories developed under this grant. Examples of datasets that might be purchased under this task would be equipment sales or registration data that could be used to improve targeted emissions inventory categories. CAPCOG is also budgeting $3,000.00 for two staff members to attend EPA's next International Emissions Inventory Conference, if an in-person conference should be held in 2023. Additional explanation on these costs are provided under Task 3.1 below.

Direct Monitoring Cost Details

For Task 3.2 – Monitoring, in addition to the staff time spent, there also will be the following costs charged to this grant:

1. Contractual expenses including:
    a. Monthly maintenance and calibrations costs;
    b. Data validation;
    c. Site shut-downs in November 2022 and November 2023

d. Site start-ups at the beginning of the 2022 and 2023 monitoring season;

e. Set-up of new sites;

f. Other contractual work required for upgrading data reporting at CAMS 1605;

g. Monthly reports;

h. Other contingencies;

2. Travel:

    a. Mileage for staff to visit monitoring stations periodically;

3. Supplies

    a. Software maintenance and equipment needed for reporting monitoring data to LEADS and EPA's AirNow system;

    b. Meteorological sensors;

    c. Modems;

4. Equipment:

    a. Trailers;

    b. O_3 analyzers;

    c. Other equipment needed to operate a monitoring station such as AC replacements, space heaters, and uninterruptible power supply (UPS) units.

5. Other:

    a. Electric utilities for monitoring stations; and

    b. Cellular data service for monitoring stations.

TECHNICAL APPROACH/METHOD

Task 3.1: Emissions Inventory Work

Under Task 3.1, CAPCOG will inventory on-road, non-road, non-point, and point emissions for Bastrop, Caldwell, Hays, Travis, and Williamson Counties. Emissions inventories are beneficial to the State Implementation Plan (SIP) in a number of ways, including:

- Air quality planners can use emissions inventories to determine significant sources of air pollution to target actions to attain or maintain the National Ambient Air Quality Standards (NAAQS);
- Planners can review emissions inventories to evaluate whether efforts to reduce emissions have been successful;
- They can be used to raise public awareness regarding sources of pollution and the NAAQS; and
- They are used as inputs in air pollution modeling.

For this statement of work, CAPCOG's priorities are to develop emissions inventory data that is useful for understanding the relative contribution of different sources of emissions to overall emissions of nitrogen oxides (NO_X) across the five-county area, since prior source apportionment conducted in 2017 indicates that NO_X emissions account for more than 95% of the local contributions to peak O_3 measured in the Austin-Round Rock-Georgetown MSA. Emissions data about these sources is useful for CAPCOG's ongoing air quality planning efforts with the Clean Air Coalition (CAC), and is a key part of the region's voluntary air quality plans and annual air quality reports prepared by CAPCOG.

Task 3.1 will consist of six sub-tasks:

1. A comprehensive emissions inventory review, conducted by CAPCOG staff;
2. On-road, non-road, and non-point emissions inventory enhancement projects, conducted by one or more contractors supervised by CAPCOG staff;
3. Detailed reviews of 2021 and 2022 point source emissions inventory data by CAPCOG staff;
4. Refinements of point source emissions inventories at two facilities in the region conducted by CAPCOG staff;
5. Participation in and review of the conference proceedings for EPA's anticipated International Emissions Inventory Conference in 2023;
6. A review of the public release of EPA's 2020 National Emissions Inventory (NEI) for the region in 2023.

NOTE: Work will not commence on any of these projects until TCEQ approves the relevant QAPP/QAPPs.

3.1.1: Emissions Inventory Review

Task 3.1.1 will involve CAPCOG conducting a comprehensive review existing on-road, non-road, non-point, point, event, and biogenic O_3 precursor emissions inventories, activity data, and model inputs for the region from TCEQ and EPA, and TCEQ's and EPA's plans for emissions inventory development over the next two years. The purpose of the review will be to:

- Improve understanding of emissions relevant to the Texas State Implementation Plan (SIP) for O_3;
- Identify potential emissions inventory improvements that could benefit the SIP (including improvements that could be beneficial for local efforts to maintain the O_3 NAAQS); and
- Make recommendations for carrying out those improvements.

CAPCOG will identify sources of emissions that may be under- or over-estimated, accompanied by high levels of uncertainty, or for which details emissions inventory input at the sub-county level can be provided. The purpose of this review will be to better understand the completeness and accuracy of the on-road, non-road, non-point, point, event, and biogenic emissions inventories in the Austin-Round Rock-Georgetown MSA and allow for prioritization of emissions inventory updates to support SIP planning.

This will also allow CAPCOG to avoid duplication of work being conducted by other agencies and the ability to identify opportunities to provide updated data that may be useful to either agency's ongoing

planning efforts. As a result, CAPCOG can determine which emissions inventory projects to propose for analysis under Task 3.1.

EPA's development of the 2020 National Emissions Inventory (NEI) and the required submission of data from Texas to EPA by 1/15/2022 for source categories other than non-point and by 3/31/2022 for non-point source categories provide the most comprehensive opportunity for such a review. Assuming availability of these data and related documentation, CAPCOG will complete its review by August 31, 2022. CAPCOG expects to use $1,000 in contractual costs to peer-review this report before submission to TCEQ.

This project will be useful to the SIP in that it will help provide a comprehensive summary of the latest scientific understanding of the sources of O_3-forming emissions from within the Austin metro area. This will in turn help TCEQ and local officials maintain compliance with the O_3 NAAQS within the Austin metro area as part of the region's ongoing voluntary air quality planning efforts.

Deliverable: Emissions Inventory Review Report

Due Date: ~~August 31, 2022~~ October 31, 2022

Cost: $17,866

3.1.2: On-Road, Non-Road, and Non-point Projects

Task 3.1.2 involves developing improved on-road, non-road, and non-point emissions inventories for the region. CAPCOG will hire one or more qualified contractors to carry out this work. These projects will be beneficial to the SIP in that they will help improve understanding of significant sources of ozone-forming emissions (past modeling has shown the region's ozone is NO_X-limited, so CAPCOG will focus on sources of NO_X emissions) and can provide improved emissions or photochemical modeling inputs. Additionally, results from these analyses can inform future emissions reductions activities in the region. Based on past emissions inventory reviews, CAPCOG has developed a preliminary list of potential projects based on input from stakeholders. CAPCOG will submit project deliverables as they are completed and ready for review, with all inventories and reports completed by November 30, 2023. The projects would be informed by the aforementioned review (Task 3.1.1) to select specific source categories and methods for updating data.

These include:

- 2020 – 2030 On-Road Emissions Inventories broken down by model year, using CAMPO's Travel Demand Model (TDM), MOVES3 runs, and updates to the region's transportation network that are expected to be implemented within that time frame. These inventories may also include refinements to source use types that TCEQ has previously used defaults for, such as transit buses, school buses, and refuse trucks. Any original research, especially idling and source use types, that leads to updated activity inputs could be used by TCEQ as the basis for updated County Databases (CDBs) for the 2023 NEI submission that TCEQ will need to send to EPA in a few years.
    - It is important to note that TCEQ relies on emissions rate mode CDB's for SIP quality inventory development and inventory mode CDB's for the development of Air Emissions Reporting Requirements. Any comparison to the EPA NEI defaults and the 2020 AERR inventory developed by TCEQ will be based on annualized inventory mode CDB's.

    - Any applicable MOVES3 results will be compared to TTI's non-link on-road inventories for 2023 and 2026[5].

- Another on-road emissions inventory project will involve direct collection of vehicle activity and emissions data by purchasing fleet monitoring software that will be available to Central Texas Clean Air Coalition (CAC) members.
    - For example, the City of Cedar Park currently already uses such a system to monitor approximately ½ of its vehicles. The information gathered from Cedar Park's system and cost per unit is presented below. This is presented as informational purposes only, and it does not reflect final costs or the full spectrum of collected data.
        - The purchase price per vehicle module is about $200 with a monthly fee of $16.33.
        - Data collected includes:
            - Fleet distance
            - Fleet utilization
            - Aggressive driving
            - Seatbelt violations
            - Speeding and speed profiles
            - Max speeds
            - Idling and Idling cost
            - Engine faults
            - Average MPG
            - Geofencing
            - Fuel consumption and savings potential
            - Run time
            - Emissions
            - Collision reconstruction
            - Driver congregation
            - Location mapping and current speed
            - Trip mapping
- 2020 – 2030 Non-Road Emissions Inventories broken down by model year, using TexN2.2 (or whatever the most recent non-road model available from TCEQ is at the time inventories are developed) and potentially updated activity data for selected source categories. Updated activity inputs may include equipment counts, annual activity, or other inputs as determined by CAPCOG, its contractor, and TCEQ. Any original research that leads to updated activity inputs could be used by TCEQ as the basis for updated CDBs for the 2023 NEI submission that TCEQ will need to send to EPA in a few years.
- 2020 – 2030 Nonpoint Emissions Inventories for major sources of NO_X. These include industrial, commercial, and residential fuel combustion, and oil and gas. Special attention will be paid to review of emissions factors for small external combustion sources covered by statewide rules affecting small combustion sources and sources covered by New Source Performance Standards (NSPS).
- Updated spatial allocation factors for on-road, non-road, and nonpoint emissions inventories.

[5] TCEQ, Statewide Non-Link On-Road Emissions Inventories, June 2021, https://www.tceq.texas.gov/airquality/airmod/project/pj_report_mob.html

These projects will be useful to the SIP in that they will provide more accurate, representative emissions estimates for key sources that are either significantly contributing to local O_3 concentrations or are good candidates for emissions control efforts. The updated emissions inventory data can also be incorporated into future photochemical modeling conducted by TCEQ, EPA, or others. This information will therefore improve the ability of TCEQ and local officials to maintain the O_3 NAAQS in the Austin metro area.

Deliverable: On-Road, Non-Road, and Non-Point Emissions Inventories and Reports

Due Date: November 30, 2023

Cost: $521,743

3.1.3: Review of 2021 and 2022 Point Source Emissions Inventory Data

TCEQ will release the 2021 point source emissions inventory data in January 2023, and EPA will release the 2021 and 2022 electric generating unit (EGU) emissions inventory data in the quarter following the end of each year. Following these TCEQ and EPA releases, CAPCOG will review the relevant data and prepare a summary of annual and ozone season day (OSD) data for each facility and a comparison to the prior year's data. For EGUs, CAPCOG will also prepare a summary of the emissions on the highest-ozone (O_3) days for the relevant year and compare those figures to the OSD average. This is expected to be completed by July 31 of each year for the prior year.

These projects will be useful to the SIP in that they will provide the latest information available on point source emissions, thereby enhancing the understanding of the relative contribution of point sources to other types of sources to all O_3-forming emissions from the region. CAPCOG will incorporate these data into its annual air quality report, which it distributes to Clean Air Coalition organization.

Deliverable: 2021 and 2022 Point Source Emissions Inventories and Reports

Due Date: ~~July 31, 2022~~ October 31, 2022, and July 31, 2023

Cost: $10,433

3.1.4: Refinements to Select Point Source Emissions Inventories

Based on prior research conducted by CAPCOG on the point source emissions inventories from the region used by TCEQ and EPA for photochemical modeling, CAPCOG believes that it has access to data that could improve the accuracy of modeling results, including:

- More accurate hourly NO_X emissions estimates at the eight turbine units at Decker Creek Power Plant that are not equipped with Continuous Emissions Monitoring Systems (CEMS) based on the facility's TCEQ emissions inventory questionnaire (EIQ) to replace the hourly emissions data from EPA's Air Markets Program Data (AMPD) known to be about 4-5 times higher than actual emissions due to EPA's program reporting rules that require default, worst-case scenario NO_X emissions rates be used for these units. CAPCOG will convert the data into the format TCEQ uses for point source input files so that they can be used for modeling.
- More accurate day-specific hourly NO_X emissions estimates at Texas Lehigh Cement Company based on monitored NO_X emissions using its Continuous Emission Monitoring System (CEMS), rather than relying on its reported average OSD emissions and applying a standard diurnal profile to the data. This is especially important because Texas Lehigh implements a voluntary NO_X control measure on predicted high O_3 days that significantly reduces NO_X emissions on

these days. The use of a single profile for both types of days would tend to obscure this detail and over-predict NO_X emissions from the facility during key hours for O_3 formation on high O_3 days. Texas Lehigh reports its hourly emissions during the O_3 season to CAPCOG each year as part of CAPCOG's regular data collection efforts for its annual report. CAPCOG will convert the data into the format TCEQ uses for point source input files so that they can be used for modeling.

These projects will be useful to the SIP in that they will enable entities that perform photochemical modeling to improve the representation of the emissions from these two facilities in the models. This should in turn improve the accuracy of photochemical modeling outputs.

CAPCOG will provide the two sets of point source data to TCEQ by August 31 each year for data from the prior year.

Deliverables: Point Source Emissions Inventory Refinement Report and Data

Due Date: ~~August 31, 2022~~ October 31, 2022, and August 31, 2023

Cost: $10,433

3.1.5: 2023 Emissions Inventory Conference Report

CAPCOG will attend and participate in EPA's next Emissions Inventory Conference, which would likely be held in 2023. This conference will provide CAPCOG with updates on the latest research, tools, and techniques for emissions inventory improvement projects. CAPCOG may submit papers to the conference. These papers may be based upon recent emissions inventory projects completed under this grant. CAPCOG will provide TCEQ with a copy of any paper and abstracts selected by CAPCOG for submission to the conference, in order for TCEQ to provide review and comment. All papers shall be submitted to the TCEQ at least seven days prior to submission, and a final copy of the paper or papers submitted to the conference will be sent to TCEQ at the time they are submitted to EPA.

Regardless of whether CAPCOG submits any conference paper of its own, CAPCOG will submit a conference report summarizing the knowledge and insights gained from attendance at the conference within 30 days of the end of the conference. Attendance at the conference will benefit the SIP by improving emissions inventory data developed by CAPCOG and the ability of CAPCOG to communicate technical details about emissions inventories to local stakeholders, thereby enhancing the ability of the region to maintain compliance with the O_3 NAAQS.

Deliverables: 2023 EPA Emissions Inventory Conference Report; Conference Papers (if applicable)

Due Date: 30 days from end of the 2023 Emissions Inventory Conference for the Conference Report, within 1 business day of submission to EPA for any conference paper

Cost: $7,216

3.1.6: Review of 2020 National Emissions Inventory Public Release

Following the release of the 2020 NEI, which EPA is targeting for release in February and March 2023, CAPCOG will review those data and compare them to data submitted by TCEQ for the Austin-Round Rock-Georgetown MSA. This will be particularly important for mobile sources due to differences in the processes that TCEQ and EPA use for their mobile source emissions data. CAPCOG will plan to complete its review by August 2023.

This project will be useful to the SIP in that it will provide a comprehensive summary of emissions from all sources, including wildfires and biogenic emissions, and could be used by EPA for a future regulatory purpose. EPA also uses different classification schemes for certain sources (for example, inclusion of aircraft emissions in the point source emissions inventory rather than non-road inventory), so analysis of the differences in the final NEI inventories from estimates that TCEQ may have previously made using the same activity data is helpful to understand which data to use for which purpose.

Deliverables: 2020 NEI Report

Due Date: November 30, 2023

Cost: $23,082

Task 3.2: Monitoring

For years, CAPCOG has operated a network of non-regulatory research O_3 monitors. CAPCOG intends to use grant funding to continue these efforts in 2022 and 2023.

3.2.1: Ongoing Monitoring at Existing CAPCOG Stations

Under Task 3.2, CAPCOG will collect continuous O_3 and meteorological data from eight existing non-regulatory continuous air monitoring stations (CAMS) located in Bastrop, Caldwell, Hays, Travis, and Williamson Counties during the 2022 and 2023 O_3 seasons. CAPCOG has selected WESTON Solutions as its contractor operate and maintain these monitors for CAPCOG throughout the 2022 O_3 season, and CAPCOG has an option to renew this contract for the 2023 O_3 season. Collecting these data are helpful for the SIP in that the data improves the understanding of O_3 formation within the region, and thereby improves the ability of TCEQ and local officials to ensure that the region maintains compliance with the O_3 NAAQS. The following table provides the CAMS number, air quality system (AQS) number, and other relevant information about CAPCOG's monitors listed below.

Table 5. Existing CAPCOG Monitoring Stations

CAMS Number	AQS Number	Site Name	County	City	Latitude	Longitude
614	482090614	Dripping Springs School	Hays	Dripping Springs	30.2146162	-98.0833473
690	484910690	CAPCOG Lake Georgetown	Williamson	Georgetown	30.6664421	-97.7345790
1604	480551604	Lockhart	Caldwell	Lockhart	29.8649170	-97.6649360
1612	480211612	CAPCOG Bastrop	Bastrop	Bastrop	30.1082220	-97.2937410
1613	480211613	CAPCOG Elgin	Bastrop	Elgin	30.3478080	-97.3785080
1619	482091619	CAPCOG East Austin	Travis	Austin	30.2508450	-97.7212770
1620	484911620	CAPCOG Round Rock Brushy Creek West	Williamson	Round Rock	30.5138540	-97.6667030

CAMS Number	AQS Number	Site Name	County	City	Latitude	Longitude
1675	482091675	CAPCOG San Marcos Staples Road	Hays	San Marcos	29.8622810	-97.9288560

Each monitoring station is equipped (or will be equipped) with the following equipment:

- An O_3 analyzer;
- A wind direction/wind speed (WD/WS) sensor;
- An outdoor temperature/relative humidity (RH) sensor;
- A datalogger;
- A serial interface for meteorological data reporting; and
- A modem.

At each CAMS, data are collected continuously from the O_3 analyzer, WS/WD sensor, and temperature/RH sensor, and the data is reported to TCEQ's LEADS system.

The five counties in the Austin-Round Rock-Georgetown Metropolitan Statistical Area (MSA) where CAPCOG owns monitors are all located in Air Quality Control Region (AQCR) 212.[6] The official O_3 season for AQCR 212 is March 1 – November 30, based on an analysis EPA conducted for the 2015 O_3 NAAQS showing 8-hour O_3 measurements in the northern part of Texas of 60 ppb or above occurring as early as March and as late as November between 2010 and 2013.[7] Since the promulgation of the 2015 O_3 NAAQS expanded the region's official O_3 monitoring season, CAPCOG has used this time frame as the basis for its own monitoring.[8] CAPCOG had seen elevated O_3 levels as early as early March and as late as early November, so CAPCOG set November 15 as the date our contractors could start shutting down monitoring stations. However, in 2019, three CAPCOG monitors recorded 8-hour O_3 levels of 55-56 ppb as late as November 18. CAPCOG's current contract still calls for monitoring stations to be shut down between November 15 and November 30, but CAPCOG may postpone shut-downs if there are elevated (i.e., moderate or above) O_3 forecasts for November 16 – 20. At a minimum, CAPCOG expects to collect O_3 and meteorological data each year between March 1 and November 15, but not later than November 30th of each year. Actual start dates will precede March 1, based on the actual dates CAPCOG's monitoring contractor initiate sites (targeted for February 15 – February 28). CAPCOG's monitoring stations will cease operations between November 16 – November 30 each year as CAPCOG's contractor shuts each of the sites down.

Start-up activities for each O_3 season include:

[6] 40 CFR. 81.134

[7] Memorandum from Joann Rice to O_3 NAAQS Review Docket, EPA-HQ-OAR-2008-0699. Subject: O_3 Monitoring Season Analysis. November 19, 2014. Available online at: https://www.regulations.gov/document?D=EPA-HQ-OAR-2008-0699-0383

[8] See Table D-3 in Appendix D to 40 CFR Part 58

- Powering on all equipment;
- Verifying modem connections;
- Changing sample lines and filters;
- Measuring line voltages and amperages to verify steady operation;
- Verifying that heating and air conditioning systems are working;
- Performing an initial five-point calibration using an O_3 transfer standard at 0 parts per billion (ppb), 70 ppb, 200 ppb, 300 ppb, and 400 ppb;
- Meteorological equipment will be calibrated as described in EPA's Quality Assurance Handbook;
- Ensuring that all data is transmitting correctly to TCEQ's LEADS system;
- Ensuring that the data is being reported on TCEQ's website; and
- Conducting a start-of-year equipment inventory.

Between March 1 and November 15 each year, CAPCOG's monitoring contractor is responsible for carrying out the following work:

- Checking air quality reporting software and websites daily to ensure that data is being accurately collected and identifying any potential problems;[9]
- Coordinating any repairs needed to ensure that equipment operates as intended;
- Performing preventative maintenance according to TCEQ's Standard Operating Procedures (SOPs) for O_3 stations, including any general site maintenance such as periodic mowing, weeding, etc.
- Performing five-point calibrations of O_3 analyzers each month;
- Validating that data that is collected and reporting to TCEQ's LEADS system;
- Notifying CAPCOG of any problems that arise; and
- Rectifying problems as they arise.

WESTON has been instructed to avoid conducting calibrations at times that would interfere with measurement of peak O_3 levels on days forecast by TCEQ to be "moderate" or worse for O_3.

Between November 16 and November 30 each year, WESTON will shut down each monitoring station, including a final calibration and year-end inventory. Expenses needed for continued functioning of the sites into the following year, and into 2024 may also be eligible expenses for 2022-2023 funding. This includes, but is not necessarily limited to, funding that may be needed between site shut-downs and the end of this grant period in 2023 to enable monitoring to resume in early 2024. These include, but are not necessarily limited to: ongoing electricity and cell phone service at the sites after the monitoring instruments are shut down for the winter, and a newspaper notice to advertise for a request for proposals (RFP) for monitoring services in 2024 if the notice runs before December 31, 2023. Shutting the electricity and cell service down at the time the instruments are shut down and then re-initiating

[9] Only activity occurring on or after April 9, 2020, is included

service at site start-up in February would be both disruptive and inefficient, and it could lead to delays in site start-ups and additional contractor costs. Any additional similar expenses may be approved by TCEQ's project representative on a case-by-case basis.

Deliverables: Hourly O_3, Wind Speed (WS), Wind Direction (WD), Relative Humidity (RH), and Outdoor Temperature data at CAMS 614, 690, 1604, 1612, 1613, 1619, 1620, and 1675 reported to LEADS and AirNow; 2022 and 2023 monitoring reports

Due Date: March 1, 2022 – November 15, 2022 and March 1, 2023 – November 15, 2023 for hourly data; December 15, 2022, and December 15, 2023 for monitoring reports

Cost: $218,889

3.2.2: Upgrades at St. Edwards University's CAMS 1605

Aside from CAPCOG's existing 8 monitoring stations, there is one additional non-regulatory monitoring station equipped with an O_3 analyzer in the region: St. Edward's University's CAMS 1605. This monitoring station is owned by St. Edward's University, but CAPCOG has previously used Rider 7 funding to support data collection at this site to ensure comparable data quality to CAPCOG's eight exiting monitoring stations. As part of this statement of work, CAPCOG will either directly pay for similar work at CAMS 1605 in 2022 and 2023 or reimburse St. Edwards for such work. These costs are included in CAPCOG's contractual budget. Supporting documentation will be included in any related FSR. This will include:

- Working with St. Edward's staff to re-initiate reporting of data to TCEQ's LEADS system through the FTP protocol that CAPCOG now uses, including purchasing software license keys, necessary equipment for FTP reporting, and initiating cell service (if necessary);
- Perform monthly equipment calibrations during the 2022 and 2023 O_3 seasons;
- Perform daily data checks to ensure data is being reported; and
- Trouble-shoot to repair equipment in a timely manner if issues arise.

CAPCOG may also pay for preventative maintenance to be performed at this site.

These upgrades will be helpful to the SIP in that they will ensure comparable data quality from St. Edwards' site to the eight existing CAPCOG sites that are also reporting to TCEQ's LEADS system, and therefore will improve the understanding of O_3 formation within the region.

Deliverables: Hourly O_3 data and any meteorological data available at CAMS 1605 reported to LEADS; inclusion of data from CAMS 1605 in 2022 and 2023 monitoring reports being submitted under Task 3.1.1

Due Date: March 1, 2022 – November 15, 2022 and March 1, 2023 – November 15, 2023 for hourly data; December 15, 2022, and December 15, 2023 for monitoring reports

Cost: $22,098

3.2.3: Installation and Operation of Two New CAMS

CAPCOG will ~~work with local governments in Hays, Travis, and Williamson Counties~~ to install and operate two new CAMS equipped with an O_3 analyzer, WS/WD sensor, RH/Temp. sensor, and

communications equipment to transmit data in Kyle and Taylor. ~~Likely sites include one in the Kyle/Buda area in Hays County, and one additional site in either the Leander/Liberty Hill area or in Taylor in Williamson County. One other potential area would be the Lakeway/Bee Cave area in Travis County.~~ CAPCOG expects ~~to have a site selected and equipment obtained by the end of 2022 and~~ operations to commence in the 2023 O_3 season. However, it is possible that sites could start operations at some point towards the end of the 2022 O_3 season. Both sites will be operated in accordance with the same protocols used for CAPCOG's existing eight stations. CAPCOG staff will perform work necessary to secure approval of the sites and coordinate site visits with CAPCOG's contractor. CAPCOG staff will also procure the equipment and supplies that will be needed for each site. CAPCOG's contractor will perform the physical installation of the equipment at each site. In addition, initial set-up work required for these sites will include:

- Scouting potential sites in consultation with local officials;
- Negotiating and executing site lease agreements;
- Purchase and registration of trailers to be used to house monitoring equipment;
- Purchase of two each of the following: O_3 analyzers, WS/WD sensors, RH/Temp. sensors, and modems, serial interfaces (if applicable), data reporting software license keys, and battery backup systems;
- Transportation to site and physical installation of equipment;
- Work with TCEQ to register site for reporting purposes; and
- Configure site reporting to integrate into CAPCOG's existing monitoring data management system.

Deliverables: Installation of two new O_3 monitoring stations within the Austin-Round Rock-Georgetown MSA; hourly O_3, Wind Speed (WS), Wind Direction (WD), Relative Humidity (RH), and Outdoor Temperature data at CAMS at two new sites; inclusion of data from these sites into 2022 (if initiated prior to end of 2022 O_3 monitoring season) and 2023 monitoring reports

Due Date: February 28, 2023 for completion of installations, and March 1, 2023 – November 15, 2023 for hourly data; December 15, 2022 (if applicable), and December 15, 2023 for monitoring reports

Cost: $92,131

Work on Development a Statement of Work for 2024-2025

If funding for this grant program is approved by the Legislature and Governor for 2024-2025 in the 2023 regular session, CAPCOG may use grant funding from 2022-2023 to prepare a statement of work for 2024-2025 under either Task 1 or Task 4. Any such work will be documented in the final report prepared under Task 4 and included in the FSR and QPRs for the 2022-2023 grant period.

MODELS AND SOFTWARE TO BE USED BY PERFORMING PARTY

Emissions Inventory

CAPCOG will use EPA's MOVES3 or emissions factors derived from MOVES3 or any subsequently released on-road emissions model approved by EPA for use in State Implementation Plans (SIPs) for on-

road emissions inventories and any non-road emissions inventory source categories modeled in MOVES3. CAPCOG may also use TexN2.2 for non-road sources, depending on the project and source type.

If CAPCOG develops any aircraft emissions inventories, CAPCOG will use FAA's Aviation Environmental Design Tool (AEDT).

For non-point industrial or commercial (ICI) combustion or oil and gas sources, CAPCOG will use EPA's latest versions of its ICI and oil and gas tools.

Monitoring

CAPCOG will be using the Envidas Ultimate software from DR DAS to collect and report O_3 and meteorological data to LEADS. These data will also be available on EPA's AirNow system.

MISCELLANEOUS INFORMATION OR ELEMENTS

An amendment to the underlying grant agreement for this funding was executed on December 16, 2021, adding the FY 2022-2023 funding to the contract effective as of that date. CAPCOG began charging time to FY 2022-2023 funding under Task 1 as of December 20, 2021.

SIGNATURE BY PERFORMING PARTY

Betty Voights

Betty Voights, CAPCOG Executive Director

Date: 8-4-22