

# AQRP Monthly Technical Report

<b>PROJECT TITLE</b>	Improving WRF representation of coastal, marine, and residual boundary layers and quantifying the effects on ozone prediction	<b>PROJECT #</b>	24-021
<b>PROJECT PARTICIPANTS</b>	Yuxuan Wang, James Flynn	<b>DATE SUBMITTED</b>	08/08/2025
<b>REPORTING PERIOD</b>	<b>From:</b> 07/01/2025 <b>To:</b> 07/31/2025	<b>REPORT #</b>	11

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 15<sup>th</sup> of the month following the reporting period shown above.

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## Detailed Accomplishments by Task for reporting period

### Task 6:

- Submitted Draft Final Report on August 1.
- Continued to work on the remaining part from Task 6, including:
  - Running Comprehensive Air Quality Model with Extensions (CAMx) simulations by implementing the residual layer (RL) in CAMx for selected days from 2021 to 2023.

### Final report:

- Working on the final report

We continued working on the remaining parts of Task 6, including the implementation of the residual layer (RL) in CAMx for selected days in 2021-2023. These simulations will be conducted using the meteorological input from the Weather Research and Forecasting (WRF) Base configuration as well as the best-performing perturbation cases identified in Task 4. In addition, we are working on completing the draft final report.

### Data Collected

None

### **Identify Any Problems or Issues Encountered and Proposed Solutions or Adjustments**

- In January 2025, Travis Griggs accepted a staff lecturer position within the University of Houston's Earth & Atmospheric Sciences Department. Although this is a 12-month appointment, he continued to participate in project 24-021, supporting the role for which he was originally proposed as much as reasonably possible, without interfering with his new responsibilities.

### **Goals and Anticipated Issues for the Succeeding Reporting Period**

Goals: Continue working on the remaining part of Task 6 and begin drafting the final report.

Anticipated Issues: None.

### **Detailed Analysis of the Progress of the Task Order to Date**

None.

**Do you have any publications related to this project currently under development? If so, please provide a working title, and the journals you plan to submit to.**

Yes       No

Working title: Evaluation of WRF-Simulated Offshore Planetary Boundary Layer Height During the TRACER-AQ Field Campaigns (2021–2023)

Intended Journal: Atmospheric Chemistry and Physics or Journal of Geophysical Research - Atmospheres

**Do you have any publications related to this project currently under review by a journal? If so, what is the working title and the journal name? Have you sent a copy of the article to your AQRP Project Manager and your TCEQ Liaison?**

Yes       No

**Do you have any bibliographic publications (ie: publications that cite the project) related to this project that have been published? If so, please list the reference information. List all items for the lifetime of the project.**

Yes       No

**Do you have any presentations related to this project currently under development? If so, please provide working title, and the conference you plan to present it (this does not include presentations for the AQRP Workshop).**

Yes       No

Yuxuan Wang (PI) attended the American Geophysical Union (AGU) Fall Meetings in Dec 2024. She did not make any formal presentation of the project but attended several scientific sessions related to boundary layer dynamics and regional air quality and discussed project approaches with the presenters and attendees. Her travel costs were provided by the project.

**Do you have any presentations related to this project that have been published? If so, please list reference information. List all items for the lifetime of the project.**

Yes       No

**Have any personnel changes occurred that were not listed in the original proposal? If so, please include a detailed description of the personnel change(s) below.**

Yes       No

**Are any delays expected in the progress of the research? If so, please include a detailed description of the potential delay below.**

Yes       No

**Describe any possible concerns/issues (technical or non-technical) that AQRP should be made aware of.**

**Are you anticipating using all the available funds allocated to this project by the end date? If not, why and approximately what is the amount to be returned?**

Yes       No

We estimated \$9000 might be returned as a release of claims at the end of the project. The reason why this fund would be not utilized as budgeted is because one of the team members, Shailaja Wasti (graduate student research assistant), unexpectedly lost her F-1 student visa status in early July after she returned from an oversea trip due to a family emergency. As a result, she cannot be paid from the project for the period of July and August.

Submitted to AQRP by  
Yuxuan Wang