

**Request for Approval under the “Generic Clearance for Citizen Science and Crowdsourcing Projects” (OMB Control Number: 2080-0083; EPA ICR Number: 2521.42)**

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**TITLE OF INFORMATION COLLECTION:** Odor Reporting Tool Project

**PURPOSE:** Many communities are impacted by unpleasant odors that result from a variety of outdoor sources (e.g., chemical plants, industrial facilities, oil and gas operations, landfills, wastewater treatment plants, animal rendering plants). Persistent odors can be a nuisance and can cause health concerns. Many compounds can cause odors including hazardous air pollutants (HAPs), volatile organic compounds (VOCS), and sulfur compounds (e.g., mercaptans, hydrogen sulfide). While not all odor compounds are considered hazardous to human health, they can impact community well-being and contribute to anxiety, stress, aggravation, confusion, and concerns about exposure. Odors are challenging to understand because they can persist indefinitely and can be unpredictable with respect to frequency and duration. State and local agencies that handle odor complaints face challenges responding to those complaints as odors are unpredictable (often dissipating after someone arrives to investigate), there are limited resources to immediately respond to complaints, and there is a lack of tools to report odors.

EPA’s Office of Research and Development (ORD) partnered with EPA Region 4 and the Louisville Metro Air Pollution Control District (LMAPCD) to develop a beta version of an odor reporting tool called the “Odor Explore” mobile application (app). This app allows users to easily report odors in their community and view odor reports submitted by others. The information from the app can be captured in real-time to facilitate response to odor complaints. Participatory science and crowdsourcing are advantageous for understanding odors as community members can provide information promptly on the characteristics of odors when they occur. Additionally, agencies can be more quickly notified of odor complaints and facilitate a response or monitor for patterns to more efficiently address odors.

**NEED AND AUTHORITY FOR COLLECTION:** This effort will be implemented under the authority of the Crowdsourcing and Citizen Science Act of 2017 (15 U.S. Code §3724) and Executive Order 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government).

**USES OF RESULTING DATA:** The data generated from the app is anticipated to be used by many groups including, but not limited to, environmental agencies, EPA Regional Offices, the general public, community groups, and industry and facilities. State/local/Tribal (SLT) agencies can use the data to understand what specific odors are impacting communities and when those odors occur. Agencies can also use the information to facilitate a response to an odor complaint, inform any follow-up measurement activities, prompt further exploration into odor issues, or identify potential sources of the odors. The general public and/or community groups can use the data to bring odor concerns to state and local officials. Alternatively, they could use the data to inform their daily activities (e.g., they can look at odor reports within the app and

decide whether to conduct an outdoor activity, to avoid potential exposures to unpleasant odors). EPA Regional Offices can use the data to understand what communities are impacted by odors and the types of odors impacting those communities. Industries or facilities can use the data to understand if their operations may have contributed to an odor event in a community. The data can also be used by SLT, industries, and facilities to inform odor mitigation and control strategies.

**DATA COLLECTION METHODS:** Data collection approaches will use an EPA-approved beta mobile phone app called “Odor Explore” – version Odor Explore-NS. This app collects information on odors, called an ‘odor report’, by walking users through 4 simple questions that will provide important details on odors. While odors can be subjective, the questions are designed to provide consistency in the information reported as well as key information needed by entities that handle odor complaints. The questions are as follows:

1. **What are you smelling?** – users can select odors from an interactive ‘odor wheel’ that contains major categories of odors and more specific types of odors for each of those categories. The odor wheel facilitates collection of specific types of odors.
2. **How strong is the smell?** – users can select the options slight (weak), moderate, strong, or very strong to describe the strength of the odors.
3. **How long has the smell been happening?** – users can select a number of options (to indicate the duration of the odor).
4. **Would you like to add any more information about the odor? All answers are optional.** – users can optionally share any other information to accompany the odor report (e.g., contact information if a follow-up is requested, observations during an odor event, retroactive reports, information if odors occurred at a different location such as while driving).

The odor reports submitted by users are then shared on a map for other users to view.

The data collected by the app will be stored and managed on a secure server. The data contains the date and time of the odor report, approximate location (latitude and longitude coordinates), type of odor, duration of odor, intensity, and any optional information included by the user (contact info, reporting in a different location, or other optional comments). The data can be queried from the server in a variety of formats (e.g., csv, txt, xlsx).

**PARTICIPANT UNIVERSE:**

Category of Respondent	No. of Respondents	Number of responses per respondent	Participation Time per response	Burden Hours
Public participatory science data	2,500	4	2 minutes	333 hours

collectors				
Totals	2,500	4	2 minutes	333 hours

**AGENCY COST:** The estimated annual cost to the Federal government is \$27,237.

The estimated annual cost is based on the OPM 2024 General Schedule (base) Pay Table for 5 EPA staff spending approximately 80 hours/year each processing the ICR data based, on average, a GS-13 pay grade (\$88,520/year), multiplied by 1.6 to account for benefits. [(80 hours/2080 hours)\*\$88,520]\* 5 staff \*1.6 = \$27,237 (Source: <https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2024/general-schedule>).

**STATISTICAL ANALYSIS:** We will analyze the quantity, temporal variations (e.g., hourly, daily, weekly, monthly, seasonal), and spatial variations of the odor complaints submitted to the Odor Explore app. Descriptive statistics will be evaluated including, but not limited to, mean, median, mode, maximum, minimum, and standard deviation. Where feasible, odor complaints will be paired with nearby air monitoring measurements using statistical methods (to be determined) to understand the potential sources of odors. The results from this project will help collect timely odor complaints and provide needed information on frequency, number and types of odor complaints, where the complaints are coming from in a given area, and any patterns in the odor complaints. The results will also help inform further measurements, as needed, to monitor and control odors.

A Contractor will support the development of the Odor Explore app and statistical analysis of the data collected from the app. The Contractor's information is as follows: University of North Carolina at Chapel Hill - Institute for the Environment, 123 W. Franklin Street, Suite #330B, Chapel Hill, NC 27516. The Contract number is 68HERD21A0002, and the Task Order number is 68HERH23F0403.

**DATA QUALITY ASSESSMENT PROCEDURES:**

Data quality assessment is built into the Odor Explore app to ensure consistency through use of an odor wheel to capture odor descriptions, and options for odor intensity and duration. The options for odor intensity are defined to promote consistency. The app collects location information to help assess similar reports in neighboring locations. The user reported data will be reviewed frequently for data quality. Protocols and methods are described in the EPA approved Quality Assurance Project Plan (QAPP ID: J-AMCD-0031916).

**ADMINISTRATION OF THE INSTRUMENT:** (Check all that apply)

- Web-based or Social Media
- Mail
- Telephone
- Other, Explain
- In-person

**INSTRUMENT:** Append a copy of the questionnaire or a screen shot of the website or app that includes the information collection. *See attached screenshots.*

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