



# EPA's Smart City Air Challenge: The Basics

Webinar of September 12, 2016



# Format and housekeeping

- 20 minutes presentation
- 25 minutes question and answer at the end
  
- Type questions into the Message section during the webinar

- Introduce speakers
- Background about the challenge
- How to submit an application
- Resource pages and webinars
- Questions and answers

- Robin Thottungal, Chief Data Scientist and Director of the Information Access & Analytic Services Division, Office of Environmental Information, EPA
- Kristen Benedict, OAQPS Air Sensors Team Lead, Office of Air Quality Planning and Standards, Office of Air and Radiation, EPA
- Ethan McMahon (moderator), Senior Innovation Advisor, Office of Digital Services & Technical Architecture, Office of Environmental Information, EPA



# What is the Smart City Air Challenge?

- A challenge that encourages communities to deploy hundreds of air quality sensors and make the data open.
- Local governments will partner with sensor manufacturers, data management companies and others to create strategies for collecting and using the data.



## Why is EPA conducting the challenge?

- Sensor prices are decreasing and people can connect sensors to the Internet very easily.
- EPA expects a lot of data to be collected in the coming years.
- The challenge lets EPA learn how communities manage data from multiple sensors.
- Make open data the default.



## What are the prizes?

- EPA will award prizes of up to \$40,000 to two communities based on their strategies, including their plans to share their data management methods so others can benefit.
  - The prizes are intended to be seed money, so partnerships are essential.
- After a year, EPA will evaluate the accomplishments and collaboration of the two communities and award up to an additional \$10,000 to each community.



## Who is eligible to apply?

- Governmental, non-profit and for profit organizations.
- Must include a governmental party (state, local or Tribal) as part of the application team.
- Applicants must be an individual or team comprised of members each of whom are 15 years of age or over.
- May not be a Federal entity or Federal employee acting within the scope of their employment.
- The geographical extent can range from neighborhoods to counties and Tribes in the U.S.





# What are the evaluation criteria?

- Constraints:
  - Deploy 250-500 sensors in a community
  - Community involvement in purchasing and using the sensors
  - Identification of partners and project sustainability
  - Transparency regarding data management
- Judging criteria (weighted at 25% each):
  - Sensor procurement and deployment
  - Data use
  - Data management
  - Project sustainability



# What your application needs to include

- Submissions for the Challenge should include:
  - Written strategy
  - Background information
  - A description of the methods and technologies needed to implement the project
  - Commitments from parties that will partner with communities, including contact information for the partners
  - Address questions about the criteria
- Entrants must submit applications on the Challenge.gov website
- The submission must not use EPA's logo or official seal in the submission or in the project itself, and must not claim EPA endorsement.



# How to submit an application

- Go to the challenge website:  
<https://www.challenge.gov/challenge/smart-city-air-challenge>
- Read the Challenge Details
- Read the Rules
- Click on Submit Solution
  - Attach file
  - Read and accept the Terms and Conditions
  - Click on Submit Solution



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## Smart City Air Challenge

 Environmental Protection Agency



- Challenge Details**
- Discussions 14
- Solutions** 0
- Rules**
- Submit Solution
- Challenge Followers 6

### About the Challenge

Communities, show us how you manage lots of air quality data.

Posted By: Environmental Protection Agency  
Category: Designs  
Skill: Planning  
Interest:  
Submission Deadline: 2016

Here's a challenge about managing

EPA is challenging communities across the country to collect data using hundreds of air quality sensors as part of the Smart City Air Challenge. The agency is offering up to \$40,000 apiece to two communities to help them develop and implement plans for collecting and sharing data from air quality sensors.

To qualify for the challenge, communities will need to submit plans for deploying hundreds of air quality sensors and managing the data they collect. EPA will award up to \$40,000 apiece to up to two communities that have the best data collection strategies, including their plans to

**Thank you for following us!**

### Prizes

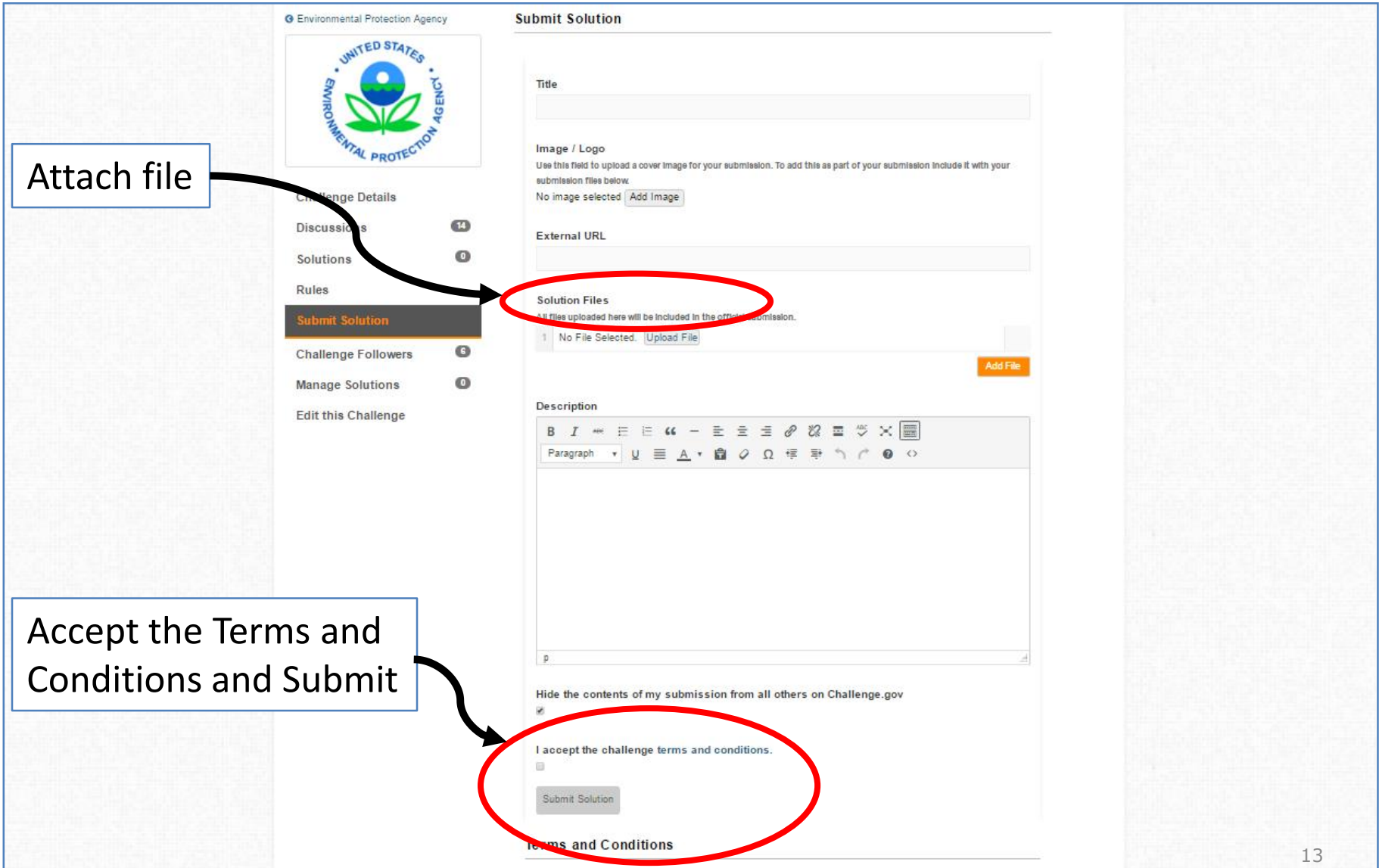
 **Winners**  
\$80,000.00

*The Challenge will award up to two cash prizes a maximum of \$40,000 each, for a total potential value of \$80,000.*

 **Implementation Winners**  
\$20,000.00

*After a year, EPA will evaluate the two Winners' projects and award up to an additional \$10,000 to the Winners based on their accomplishments and collaboration for a total potential value of*

Read the Challenge Details and Rules, then click on Solutions



The screenshot shows the 'Submit Solution' page for an EPA challenge. The left sidebar contains navigation options: Challenge Details, Discussions (14), Solutions (0), Rules, **Submit Solution**, Challenge Followers (5), Manage Solutions (0), and Edit this Challenge. The main content area includes a 'Submit Solution' header, a 'Title' field, an 'Image / Logo' section with an 'Add Image' button, an 'External URL' field, and a 'Solution Files' section with an 'Add File' button. Below these is a rich text editor for the 'Description'. At the bottom, there is a checkbox for 'Hide the contents of my submission from all others on Challenge.gov' and a checkbox for 'I accept the challenge terms and conditions.' with a 'Submit Solution' button below it. Two callout boxes with arrows point to the 'Submit Solution' sidebar item and the 'I accept the challenge terms and conditions.' checkbox. The 'Solution Files' and 'I accept the challenge terms and conditions.' sections are also circled in red.

Attach file

Accept the Terms and Conditions and Submit



# Resource pages and webinars

- Resource pages
  - Air Pollution
  - Air Quality Sensors
  - Data Management
  - Community Case Studies
  - Webinars
  - Frequently Asked Questions
- Webinars on several of these topics
  - Next webinar is planned for the week of September 19 about air sensors
  - Webinars will be posted on <https://developer.epa.gov/smart-city-air-challenge-webinar-series/>



# Resource Page: Air Quality Sensors

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## Smart City Air Challenge Resource Pages: Air Quality Sensors

Low cost air quality sensors are an emerging technology and are now commercially available in a wide variety of designs and capabilities. While they're not yet suitable for regulatory use, these new sensors offer communities several benefits. People can use these sensors – which generally cost less than \$2,000 — to easily collect highly localized, real-time data. With this technology available on smartphones and tablets, citizen scientists can easily use these sensors to collect highly localized, real-time data on air pollution. Communities that are interested in harnessing this technology and engaging citizen scientists can take advantage of many resources about sensors. EPA recommends that communities carefully evaluate the quality of sensors and the associated data. Please refer to the sensor evaluation reports below to learn more about independent sensor testing by EPA and the South Coast Air Quality Management District. EPA will evaluate the submissions and award prizes to the communities only if they have adequate data quality practices.

As you consider your air quality sensors, please keep these questions in mind:

1. What sensors will you procure and how will you select them?
2. How will you procure the sensors?
3. On what basis will you deploy the sensors?
4. How will you track the sensors in order to know if they are operational?
5. How will you ensure the accuracy and precision of the sensors both initially and over time?
6. How quickly can you get the project into operation (faster is better)?

EPA's Office of Air and Radiation and the Office of Research and Development has produced many resources about sensors.

[Air Sensor Guidebook](#)

This Air Sensor Guidebook has been developed by EPA to assist those interested in potentially using lower cost air quality sensor



## Important Dates

- October 28: Applications are due
- Early December: Winners announced
- Following year: Winners implement projects and share approaches with other communities
  - Other communities are encouraged to deploy sensors too





# Questions and Answers

Please type questions into the Chat section on your screen.



Thank you!

Please apply to the challenge!

- Challenge website:

<https://www.challenge.gov/challenge/smart-city-air-challenge>

- Resource pages:

<https://developer.epa.gov/smart-city-air-challenge-resource-pages/>

- Webinar page:

<https://developer.epa.gov/smart-city-air-challenge-webinar-series/>

- Email: [smartcityairchallenge@epa.gov](mailto:smartcityairchallenge@epa.gov)