Office of Research and Development
2023-2026 Strategic Research Action Plans

Tribal Consultation National Call

Homeland Security Research Program

March 2022

EPA's Office of Research and Development (ORD) is conducting a consultation and coordination process with federally recognized tribes on its six National Research Programs.

- **Timeline:** March 1, 2022 – May 31, 2022
- **Focus:** Proposed Draft Research Products

Homeland Security Research Program

Areas of new or increasing emphasis:

o Incorporation of resilience equity and environmental justice throughout all Research Areas.

o Increased focus on cumulative risk factors.

o Increased focus on effects of climate change.

Topic 1: Contaminant Characterization and Risk Assessment

Research Area 2:
Contaminant Characterization and Risk Assessment

Topic 2: Environmental Cleanup and Infrastructure Remediation

Research Area 3:
Wide-Area Decontamination

Research Area 4:
Water Systems Incident Response Support

Research Area 5:
Oil Spill Response Support

Research Area 6:
Waste Management

Topic 3: Community Engagement & Systems-Based Tools Supporting Resilience Equity

Research Area 7:
Systems-Based Decision Making

Research Area 8:
Communities, Resilience, and Remediation

EPA

Vision

Through its scientific research, the HS Research Program's vision is that
    1. federal, state, tribal, and local decision makers and stakeholders have timely access to information and tools they need to ensure equitable community resilience to catastrophes involving environmental contamination that threatens public health and welfare, and
    2. decision makers have capabilities to assess and address community needs and vulnerabilities to ensure equitable incident management.

Program Objectives

Advance EPA's capabilities and those of our state, tribal, and local partners to respond to and recover from wide-area contamination incidents

Improve the ability of water utilities to prevent, prepare for, respond to and recover from water contamination incidents that threaten public health

Tribal Science and Research Needs to Inform EPA ORD StRAP4

Themes We Heard

Emergency Management

Tribes need development of tools to bolster resilience to and recovery from wildfire threats, and to quantify flood hazards and risks.

Solid Waste

Tribes need a compilation of research results to inform better strategies for handling solid waste, and research to support waste minimization, waste diversion, and source reduction strategies that reduce the costs associated with handling solid waste.

Tribal Waste and Response Steering Committee 2021 Priorities

National Tribal Air Association Status of Tribal Air Report 2021, The Status of Tribes and Climate Change Report (August 2021), Tribal Research Input Listening Sessions, National Tribal Water Council letter to EPA ORD (Nov. 4, 2021)

Research Product Proposals

Product proposals are currently being considered for ORD's HS StRAP4 (2023-2026)

The draft, proposed research products in this presentation have **not** completed internal EPA review or approval—they are presented as potential product concepts for which we are seeking tribal input.

Final decisions about which projects will be included in StRAP4 depend on several factors, including tribal interest, EPA quality review, management review of research capacity, and funding availability. This means that some of the proposed products may not appear in the final StRAP.

Product Title: Tools to inform, support, and enhance the Environmental Sampling and Analysis Methods (ESAM) Program for the environmental characterization process for CBRN contaminants.
https://www.epa.gov/esam

- ESAM is a website that provides single, best-available sample collection, handling, processing and analysis method to improve data evaluation and validation

- ESAM provides responders and laboratories with the single best available sample collection and analysis method for CBRN contaminants.

- When using ESAM, decision-makers have confidence in the integrity of the data, can quickly interpret the data, and can readily communicate its meaning to the public and towards addressing environmental justice concerns.

Sample Collection & Handling
Sample Collection Protocols & Procedures
Sample Collection Information Document (SCID)

Sample Processing & Analysis
Selected Analytical Methods (SAM)
Sample Processing & Analytical Protocols and Methods

Sample Results & Interpretaion

Data Management

Supports Environmental Remediation & Recovery

Product Title: Testing mobile water treatment technologies in the field

- Mobile, modular, inexpensive and versatile water treatment cart
- Ready with alternative power sources
- Easy to load on a truck to ship

- Small mobile systems can be located between fire hydrants to assist in the decontamination of pipes and appurtenances as part of a flushing, disinfection, pipe scouring protocol.

- In wide-area decontamination activities, wash water may need to be treated on-site prior to discharge to a separate or combined sewer system.

- Vehicle decontamination wash water and PPE rinsing locations could also utilize mobile water treatment systems.

- Can be used to provide water for basic sanitation (e.g. during boil water advisories)

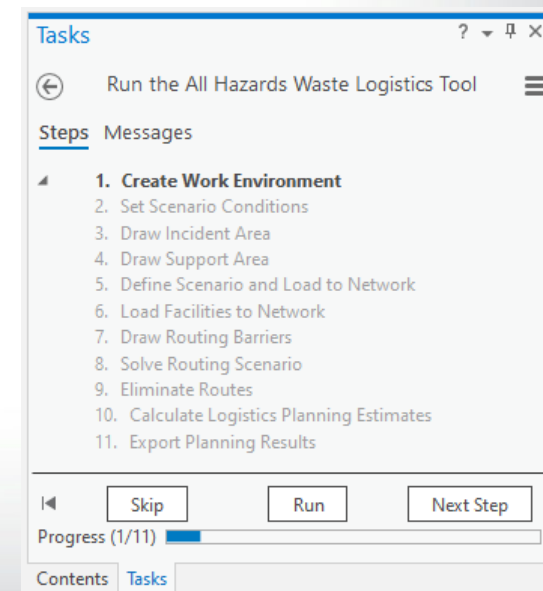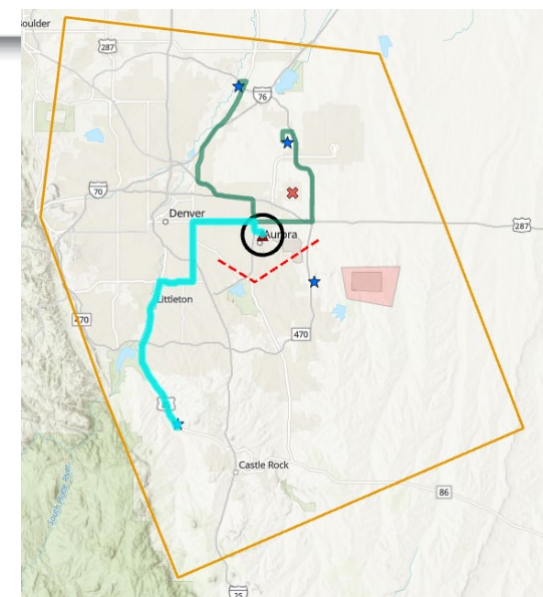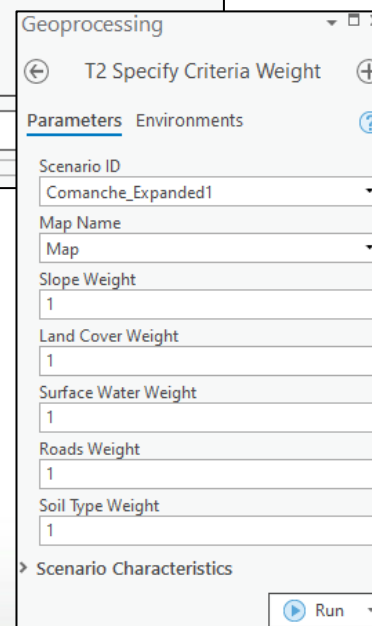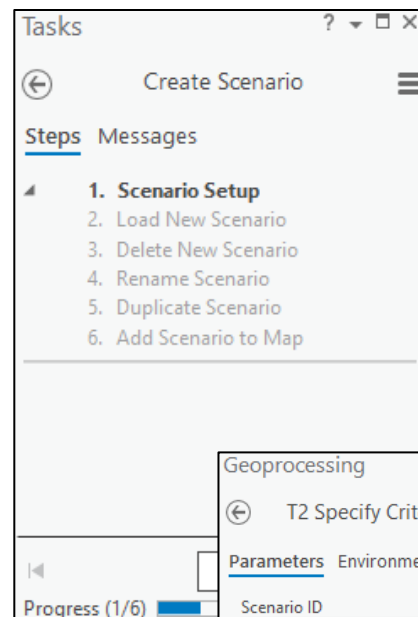**Water-On-Wheels (WOW) Emergency Water Treatment Cart**
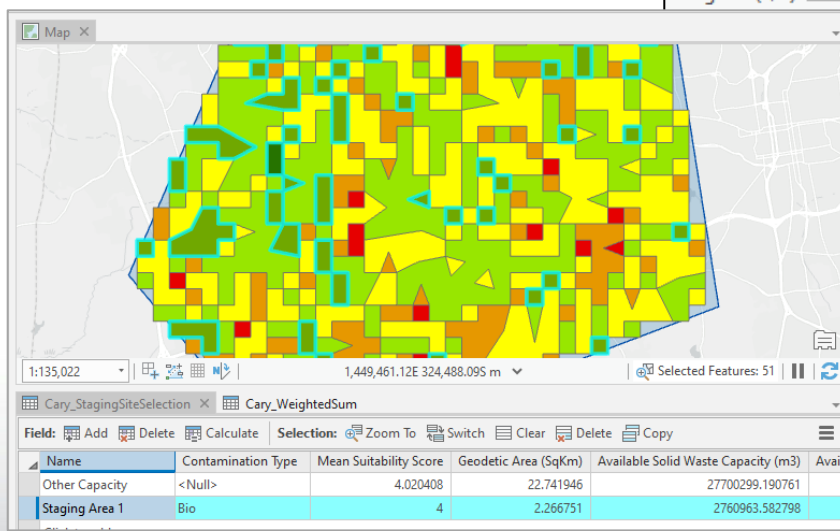
Product Title: Advancements in Waste Management Tools - Improving Usability and Accessibility

- This product will integrate existing waste staging and logistics tools into a single tool for improving usability and reducing maintenance costs.

- The results of these runs would be made available via the Geoplatform for ease of access. These online maps could be accessed by decision makers without having to directly interact with the tool.
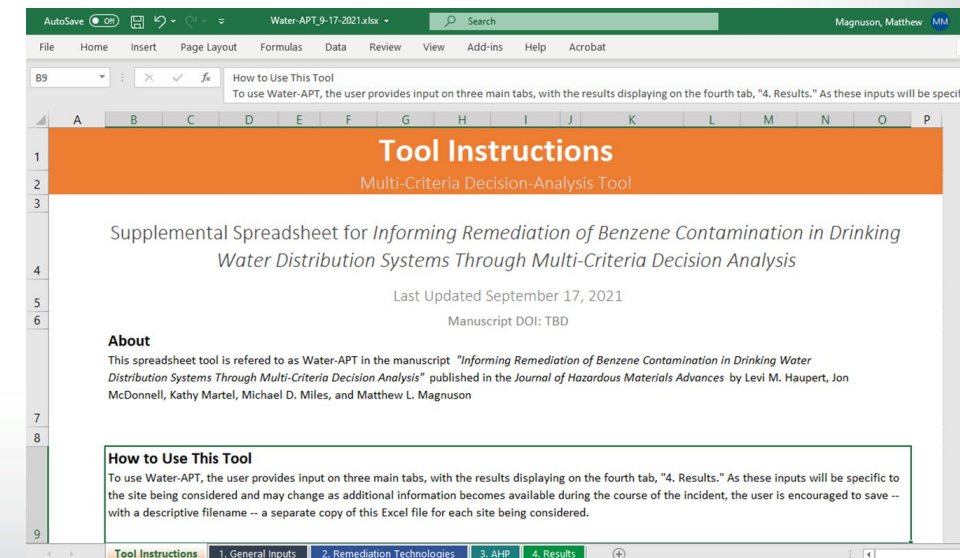
Waste Staging Tool **Waste Logistics Tool**

Product Title: Apply decision-support tools in case studies to increase equitable community resilience

- Case study applications and training for state, local, tribal, and territories of these tools are needed to communicate and demonstrate the use of the available tools.

- Within this proposed product, HS will partner with communities, including their critical infrastructure systems, to identify possible consequences of a site-specific disaster, evaluate the effectiveness of response and recovery actions, and examine actions to improve system resilience.
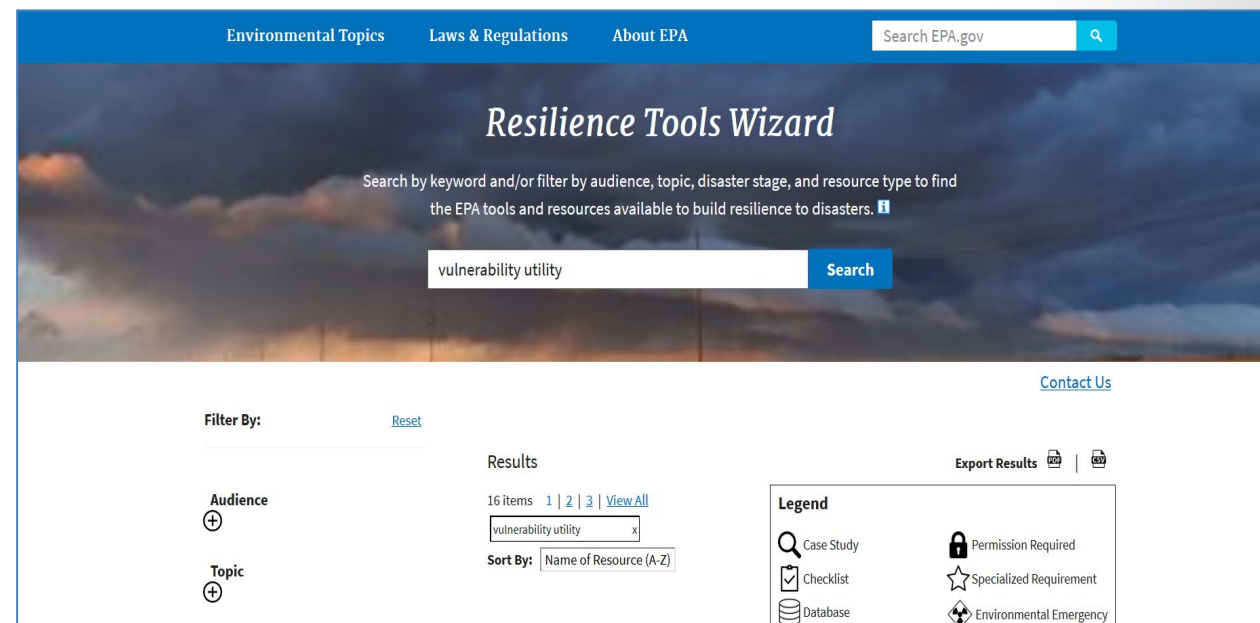
Product Title: Enhance and test resilience tools

- This proposed product includes the continued testing and enhancement of resilience tools like the Equitable Resilience Builder (ERB) and the Environmental Resilience Tools Wizard (ERTW).

  - ERB: A tool to help city or county agencies tasked with resilience planning self-assess their communities' vulnerabilities and resilience to disasters and climate change. https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=351611&Lab=CESER

  - ERTW: An online 'wizard' that contains tools produced by EPA that address environmental concerns in disaster mitigation, preparedness, response and recovery. The wizard helps you find the right EPA resource to meet your needs. https://www.epa.gov/emergency-response-research/environmental-resilience-tools-wizard

Next Steps:
Product Discussion Questions

- Will these proposed products support critical tribal science needs in this research program?

- Do you have input that ORD could consider for making these products more useful to tribes?

- Do you have input on how ORD could best engage tribal partners in the development of these products and delivery of final research results?

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https://intranet.ord.epa.gov/homeland-security
https://www.epa.gov/emergency-response-research

Useful Videos of HSRP

- Water Security Testbed
- Underground Transportation Restoration Project
- Toolbox of technologies – rad demo
- Bio-Response Operational Testing and Evaluation (BOTE) Project
- Incident Waste Management Support Tool (I-Waste)
- Environmental Sampling & Analytical Methods (ESAM) Instructional Video