



Artificial Intelligence for Emergency Management: Challenges and Opportunities of Next-Generation Solutions

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Panelists:

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Russell Strickland, National Emergency Management Association (NEMA)

Jon Barr, PNNL

Carrie Speranza, International Association of Emergency Managers (IAEM)



Panelists





Today's Agenda

- Challenge
- Objectives
- Panel Discussion
- Open Q&A
- Concluding Remarks





Challenge

Artificial intelligence (AI) poses both **promise and perils** to emergency management (EM).

Powerful AI tools have proliferated industry and **are transforming the workplace.**

Now is the time to understand how to leverage AI to **support the rapidly changing concerns of EM.**





Panel Objectives

Discuss how new science and technologies can support emergency managers' responsibilities, including:

- Emerging **applications**
- Policy, privacy, and other **barriers** to implementation
- Next steps for next-generation **solutions**





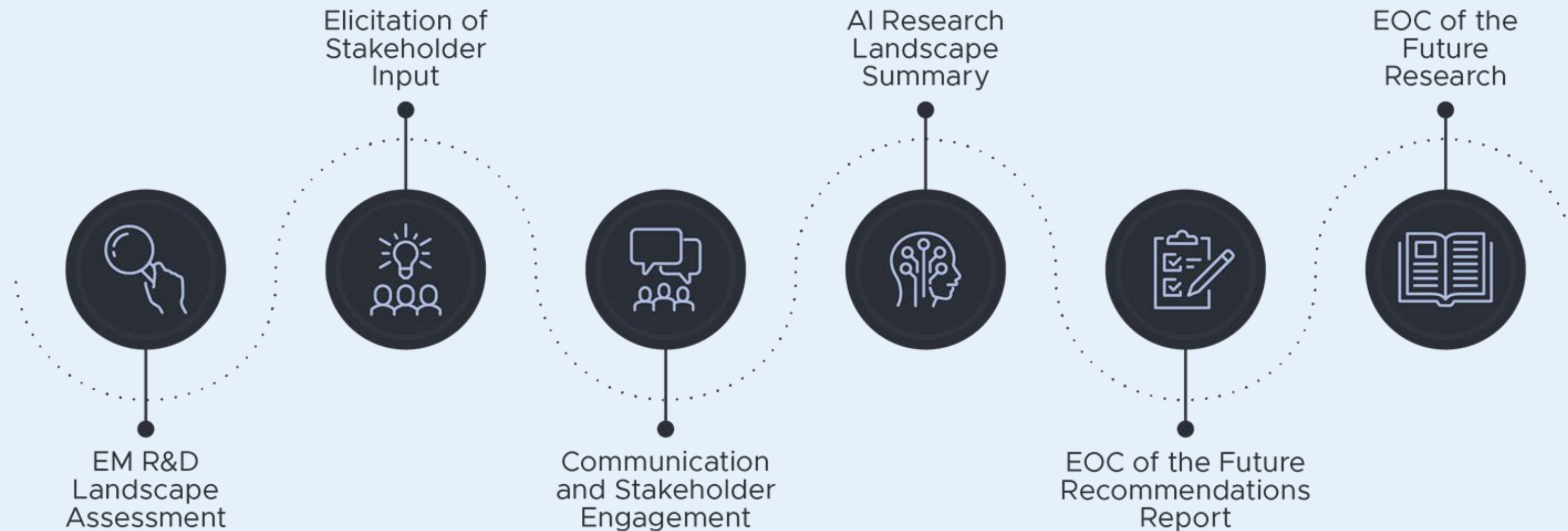
Emergency Management of Tomorrow Research Program (EMOTR)

With support from the DHS S&T, EMOTR is harnessing Pacific Northwest National Laboratory's technical expertise, research capabilities, and emergency management connections to develop an effective research agenda into advanced technologies that support emergency managers and emergency operations center (EOC) activities.





Our **research-** and **user-driven methodology** explored the AI and EM landscape



*R&D – research and development



EMOTR's AI Landscape Assessment for EM

- Reviewed 210 documents
- Validated topics through:
 - Task alignment
 - Use case alignment
 - Subject matter expert 1:1 sessions
 - SUNY Albany Working Sessions
- Result: 13 AI Research Areas

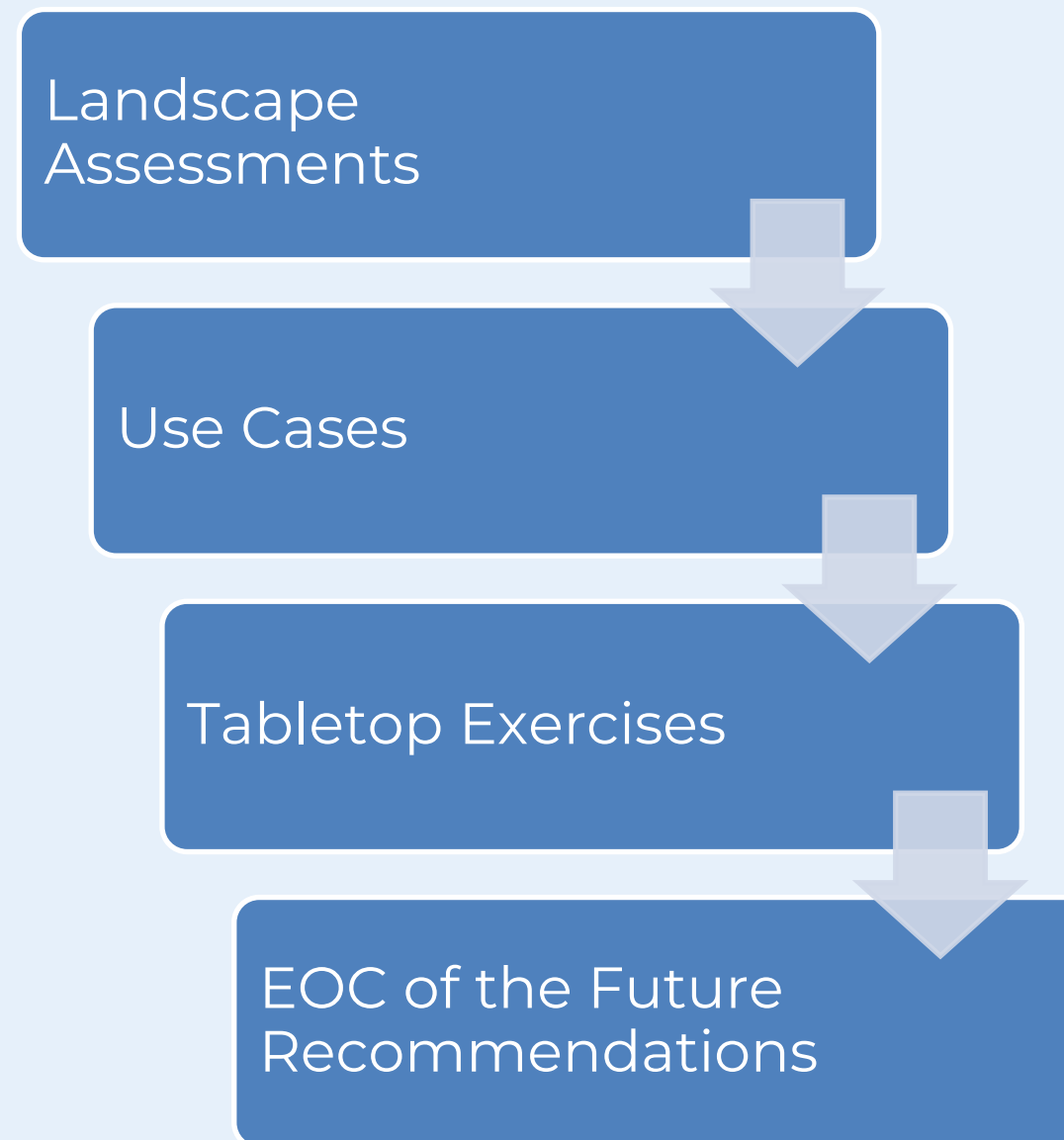
1. AI-Enabled Productivity Applications
2. Public Facing AI Communication
3. AI-Filtered Domain Awareness
4. AI-Enabled Planning
5. AI-Enabled Disaster Prediction and Detection
6. AI-Enabled Recovery and Prediction
7. Risk Models for Optimal Asset Deployment
8. AI Embedding for Alternative Data Streams
9. Modern Optimization for Asset Deployment
10. Security of AI Assets and Data
11. Modeling, Simulation, and Digital Twins
12. Information Technology Infrastructure for AI
13. Governance and Public Perception of AI



EMOTR's EOC of the Future

We are developing **concepts** and **recommendations** for EOCs of the future, taking into special consideration:

- AI/Machine Learning (ML)-assisted and automated decision-making
- Enhanced situational awareness tools
- Information sharing and interoperability
- Urban versus rural capacity scaling





AI in Operational Environments: Emerging Applications

PANEL DISCUSSION

The background features a pair of hands holding a globe, with various icons representing financial and technological concepts. These icons include a wallet with money, a bar chart, a globe with a cursor, a credit card, a shopping cart, a shield with a padlock, a bank building, a person silhouette, a computer monitor, a magnifying glass, a list, a document, and a server rack. The icons are connected by lines, suggesting a network or interconnected system.

Opportunities and Challenges for Implementation

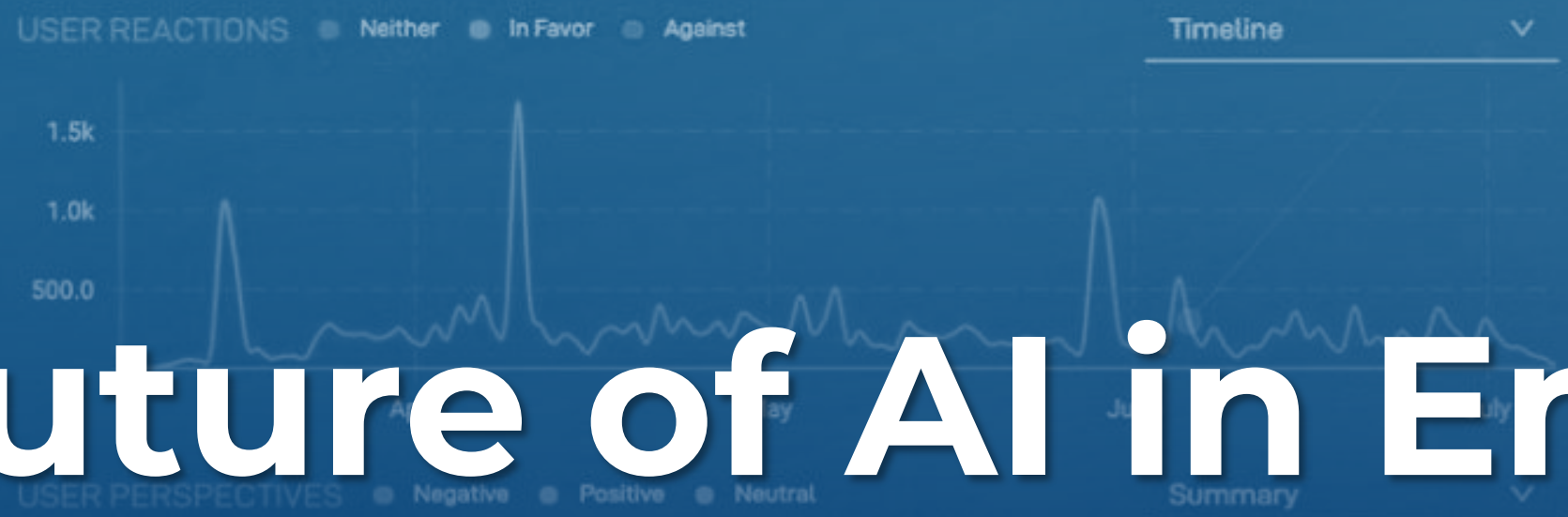
PANEL DISCUSSION



- Communications (87.9k)
- Containment Measures (28.9k)
- Movement Restrictions (81.8k)
- Social Distancing (29.2k)



- User Reactions
- In favor (29.2k)
 - Against (0.0)
 - Neither (0.0)



- USERS
- Summary
- Census Data
 - Male
 - Female
 - \$35k +
 - Under \$35k
 - 25+
 - <25
 - > High School
 - High School

The Future of AI in Emergency Management Operations

RTI - 675.8965 - 874.8374
 SH - 456.9583 - 472.8921
 G - 8943 - 6754

Z - 786
 7843 - 8954 - 9854
 3101 - 8943.6743

PANEL DISCUSSION



Audience Questions





Concluding Remarks





Thank you!

Learn More:

