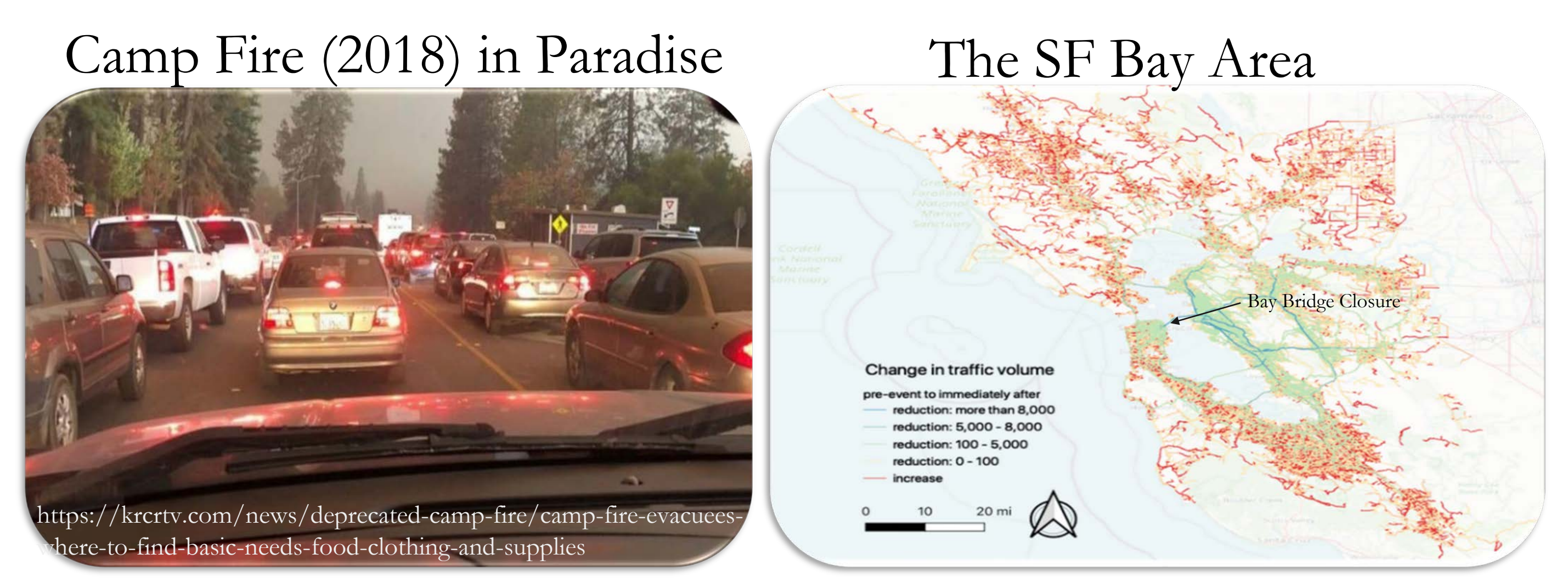


Designing Smart, Sustainable Risk Reduction in Hazard-Prone Communities: Modeling Risk Across Scales of Time and Space

Kenichi Soga, University of California Berkeley
Award Type: IRG

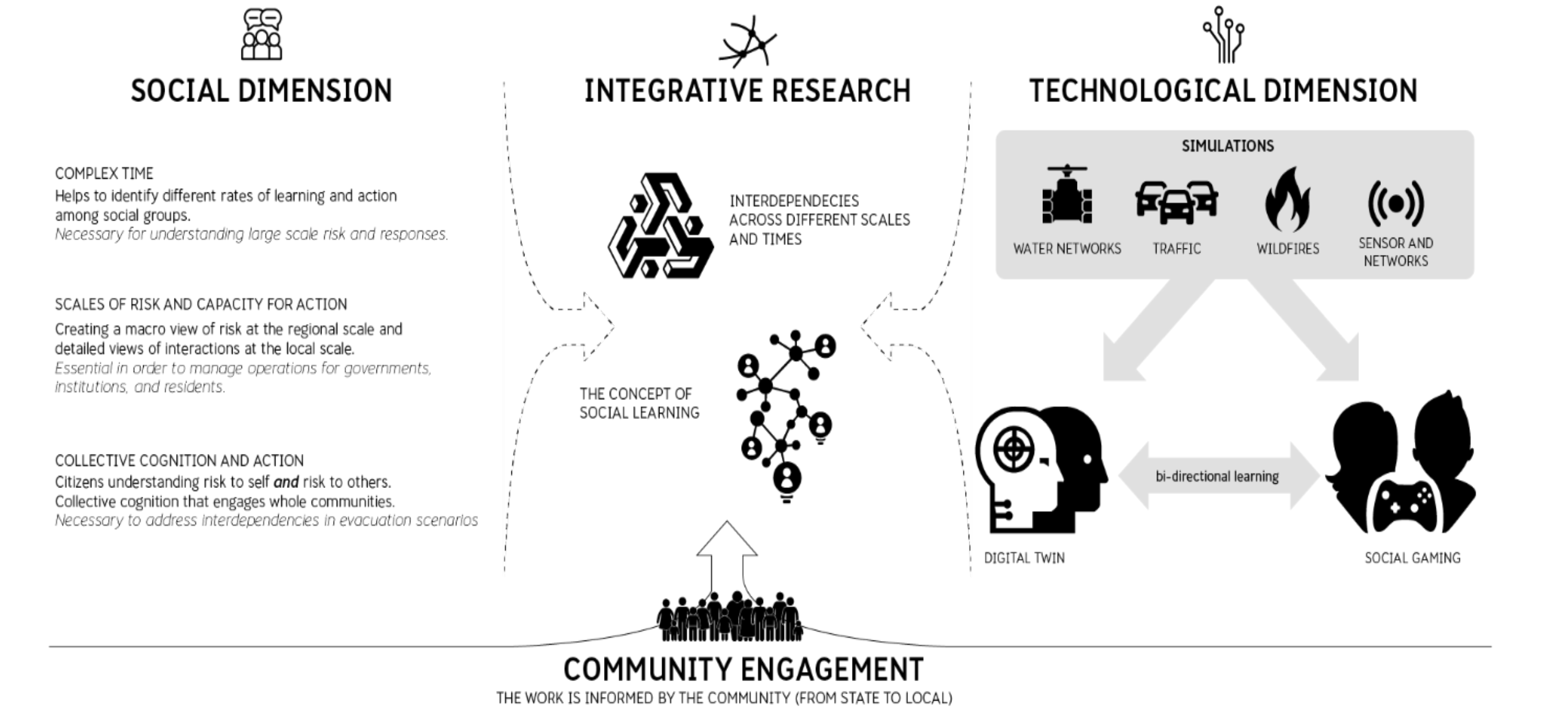


Project Challenge



- Escalating surge in extreme events strains capacity for risk management
- Traditional plans for hazard reduction are insufficient
- Communities need sustainable risk reduction approaches
- Project empowers community action with digital twin tech and social games

Intellectual Merit



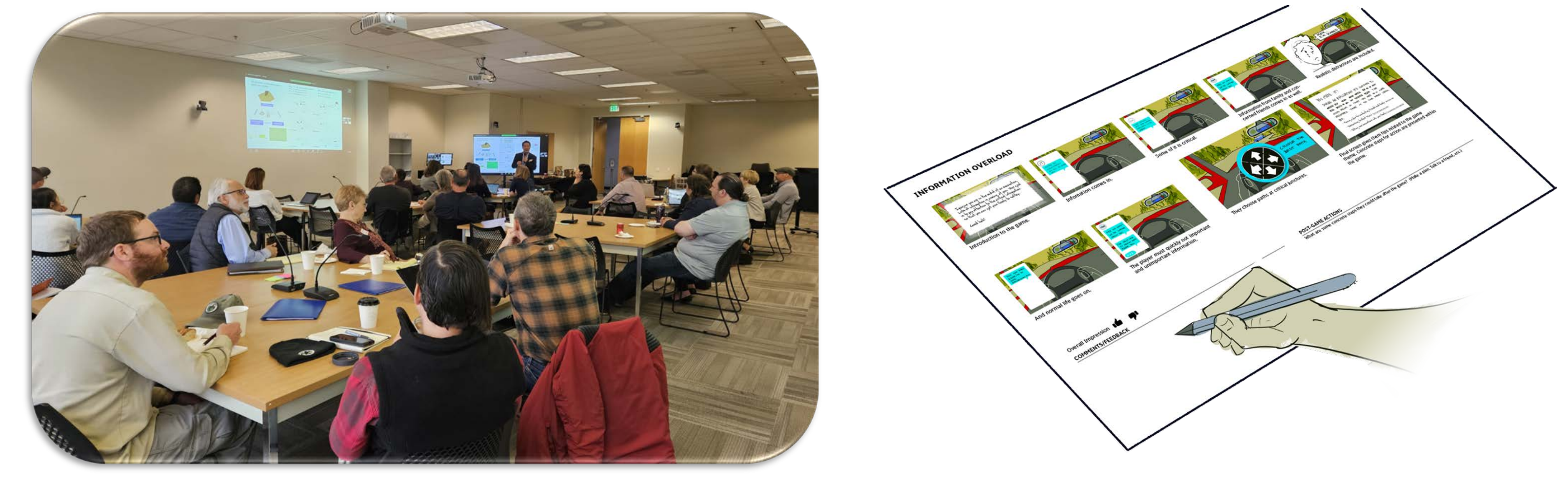
- Complex systems approach for hazard reduction
- Development of a socio-technical digital twin
- Integration of social games for community engagement
- Design, implementation of community learning processes
- Translation of risk information for diverse groups

Community Partners

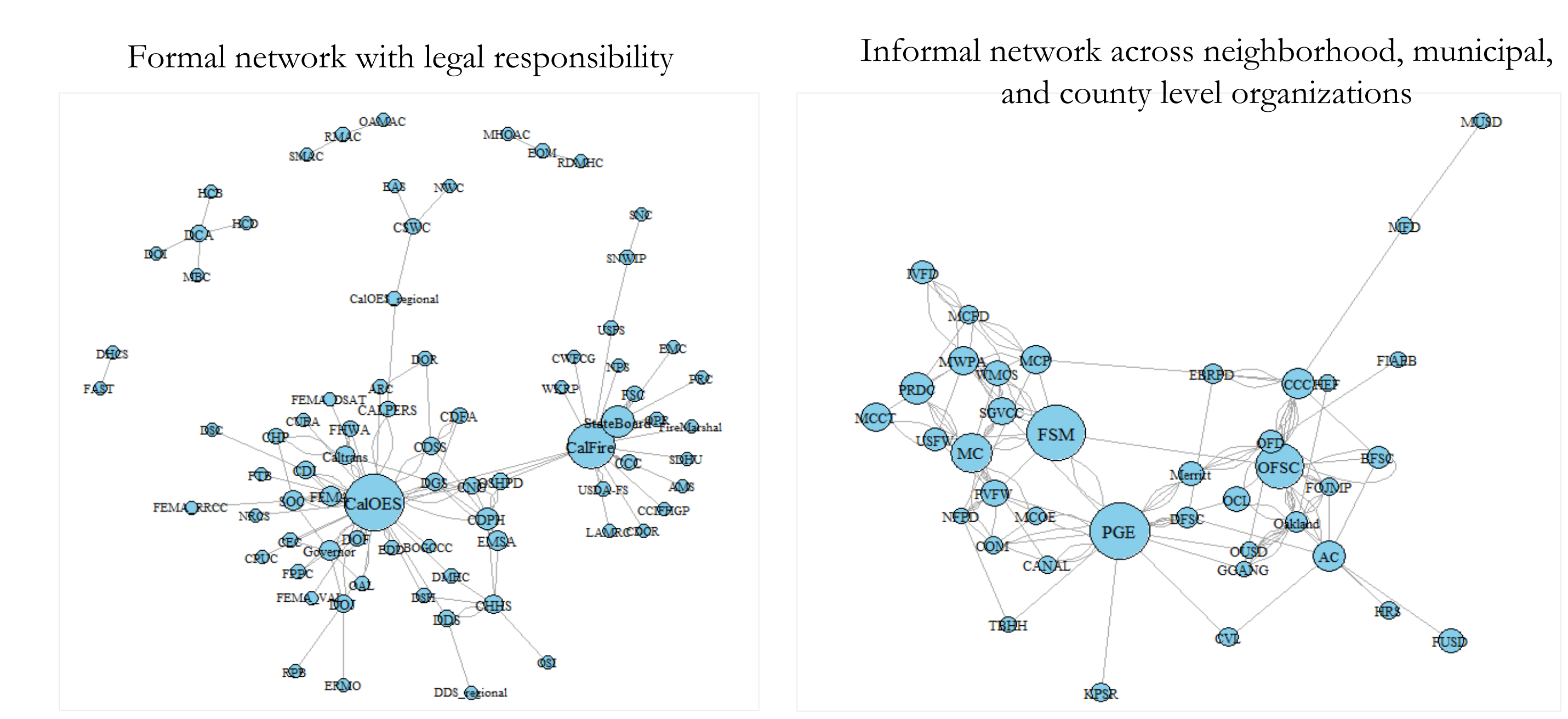


Major Outcomes/Progress

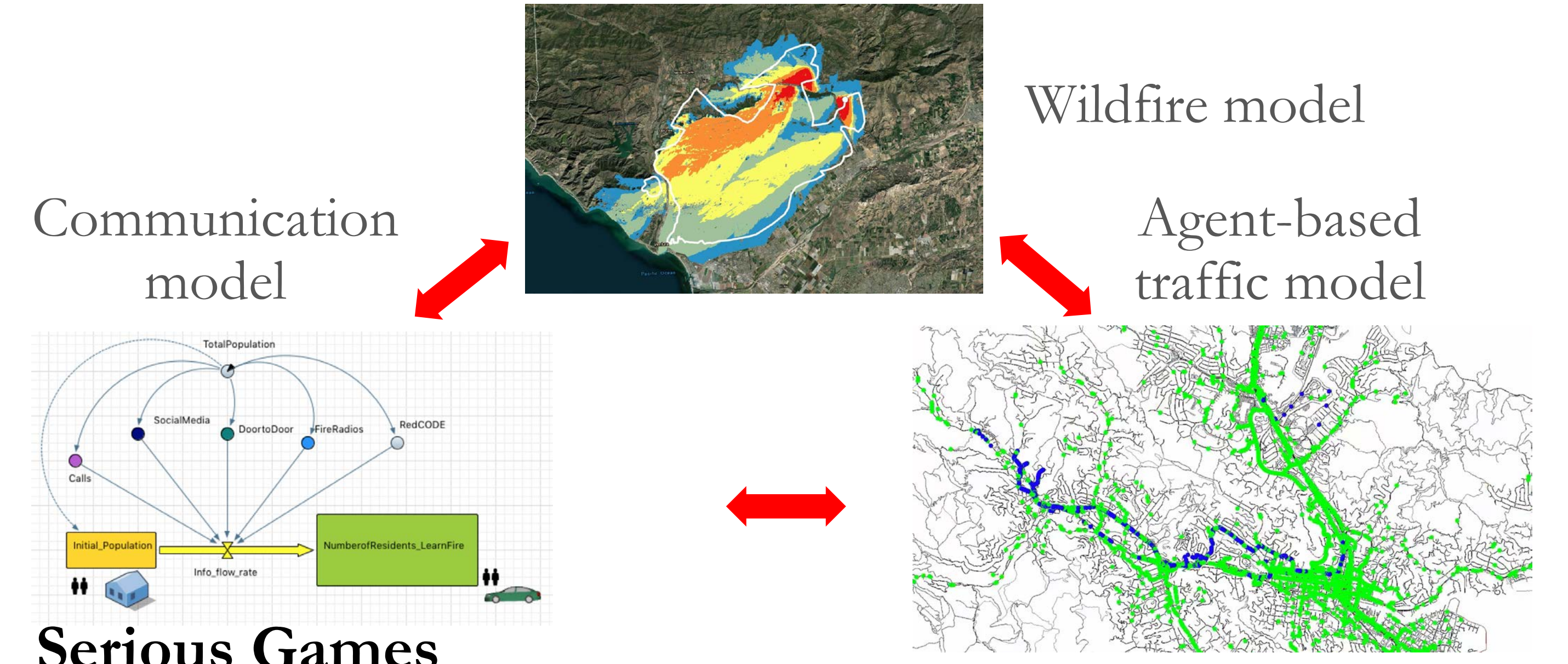
Community Engagement



Document Review, 55+ Interviews, and Network Analysis



Digital Twin Models



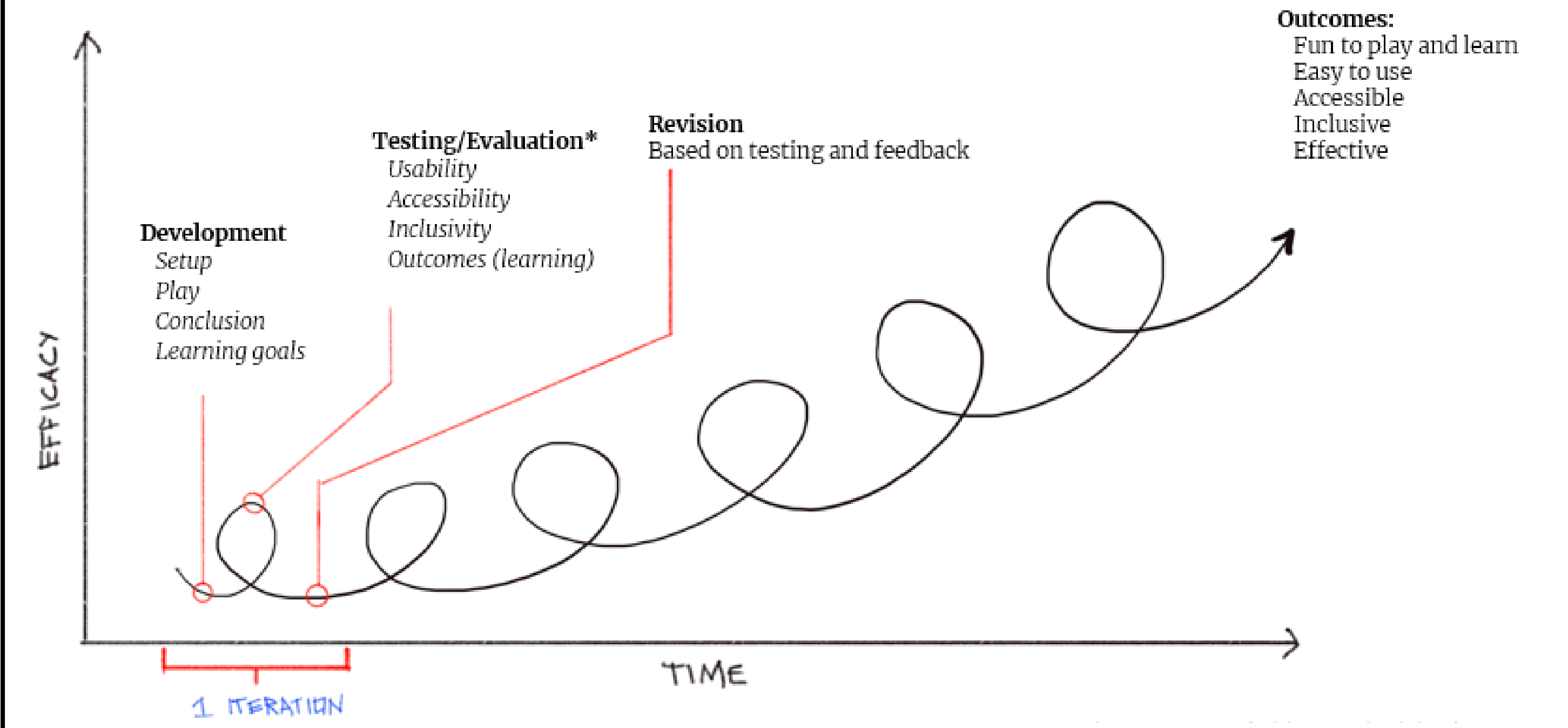
Serious Games



Broader Impact

- Promotes proactive risk management through serious games
- Benefits decision makers, community members, and under-represented minorities by enhancing understanding of risk and promoting capacity for change
- Shares findings in active dialogue with diverse communities
- Aligns practice of risk reduction across scales of time & space

Future Goals



- Interview team: Collect data via interviews to reflect network back to community
- Digital Twin team: Gather community input on digital twin of traffic/wildfire/communication
- Serious Game team: Playtest/iterate minigames and develop assessment strategy, community test in Spring

Community Workshops

- Early Summer in Marin County
- Early Fall in Alameda County

Conference Presentations/Papers

- ACM (Association of Computing Machinery) Conference on Human Factors in Computing Systems (CHI), May, Honolulu
- Natural Hazards Center Workshop, July, University of Colorado-Boulder
- American Political Science Association Annual Meeting, September, Philadelphia, PA