Integrating Emergency Management and Public Health for Local Hazard Risk and Vulnerability Assessment

Presenters:
Kathleen Moloney
University of Washington

Evan Mix
University of Washington

Additional Project Leads:
Nicole Errett (UW)
Claire Grant (DOH)
Amber McPherson (DOH)
Heleen Dewey (DOH)

CENTER FOR DISASTER RESILIENT COMMUNITIES
UNIVERSITY of WASHINGTON

How should local public health officials prioritize preparedness efforts for future disasters?

- Local health jurisdictions (LHJs) face **multiple potential hazards**, and have **limited resources**
- Most existing approaches to hazard and vulnerability assessment are **developed by emergency management agencies**
- **LHJs lack a standardized process** for assessing public health risk from disasters

DEVELOPING THE H²azaRDS TOOL

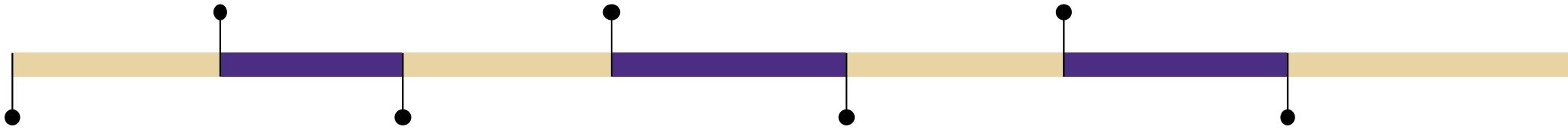
CENTER FOR DISASTER RESILIENT COMMUNITIES
UNIVERSITY of WASHINGTON

UW & DOH Public Health Risk Assessment Project (the H²azaRDS Tool)

- Develop a **web-based tool** that LHJs can use to assess public health risk from disasters & identify risk drivers

- LHJs throughout the state should be able to conduct **locally tailored risk assessments** using a consistent methodology and the best data available

Project Timeline



Step 1 (complete):
Environmental scan of existing tools from other states

Step 2 (complete):
Partner focus groups to discuss needs/priorities

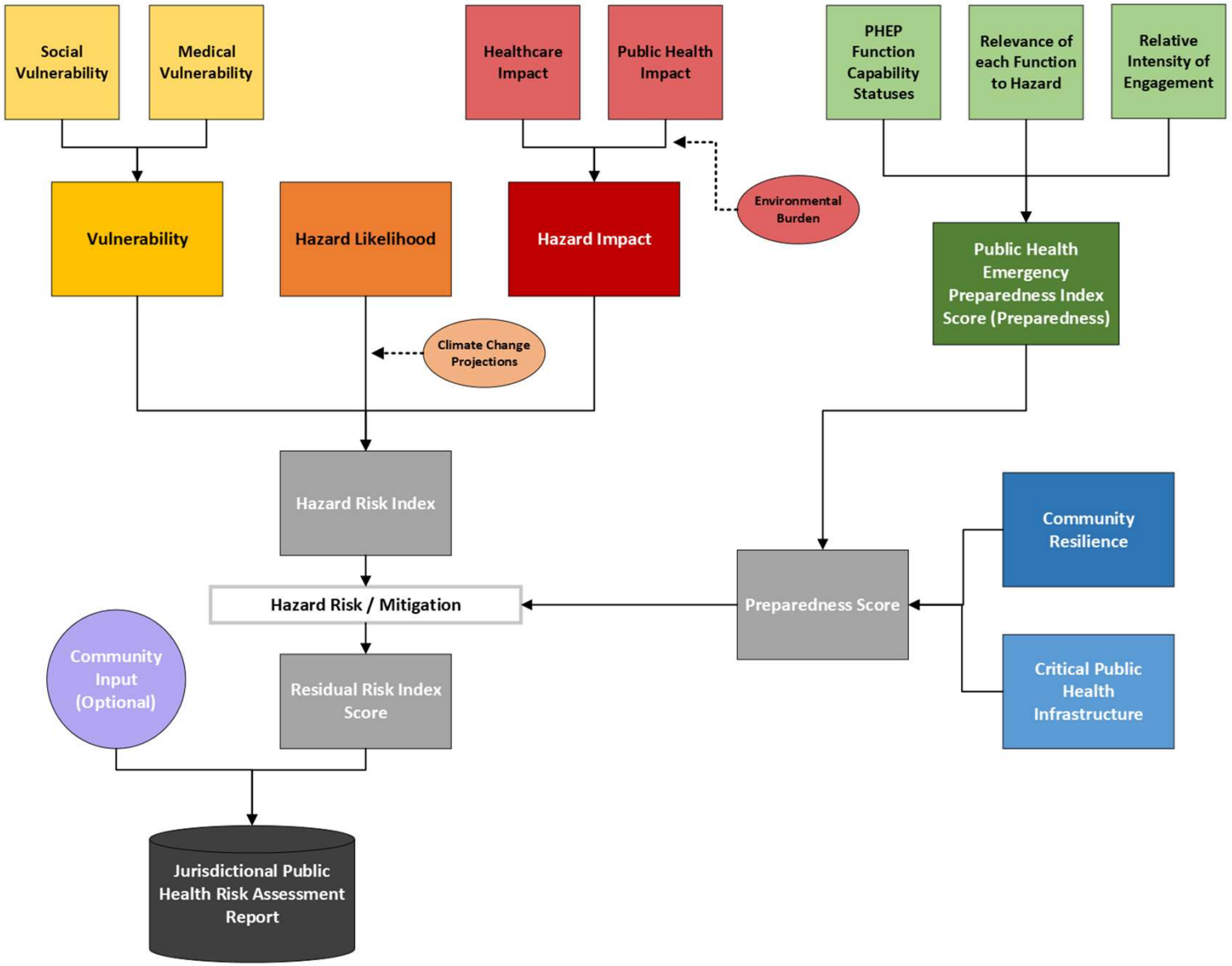
Step 3 (complete):
Develop conceptual framework and identify data sources

Step 4 (in progress):
Interdisciplinary advisory committee workshops tool construction

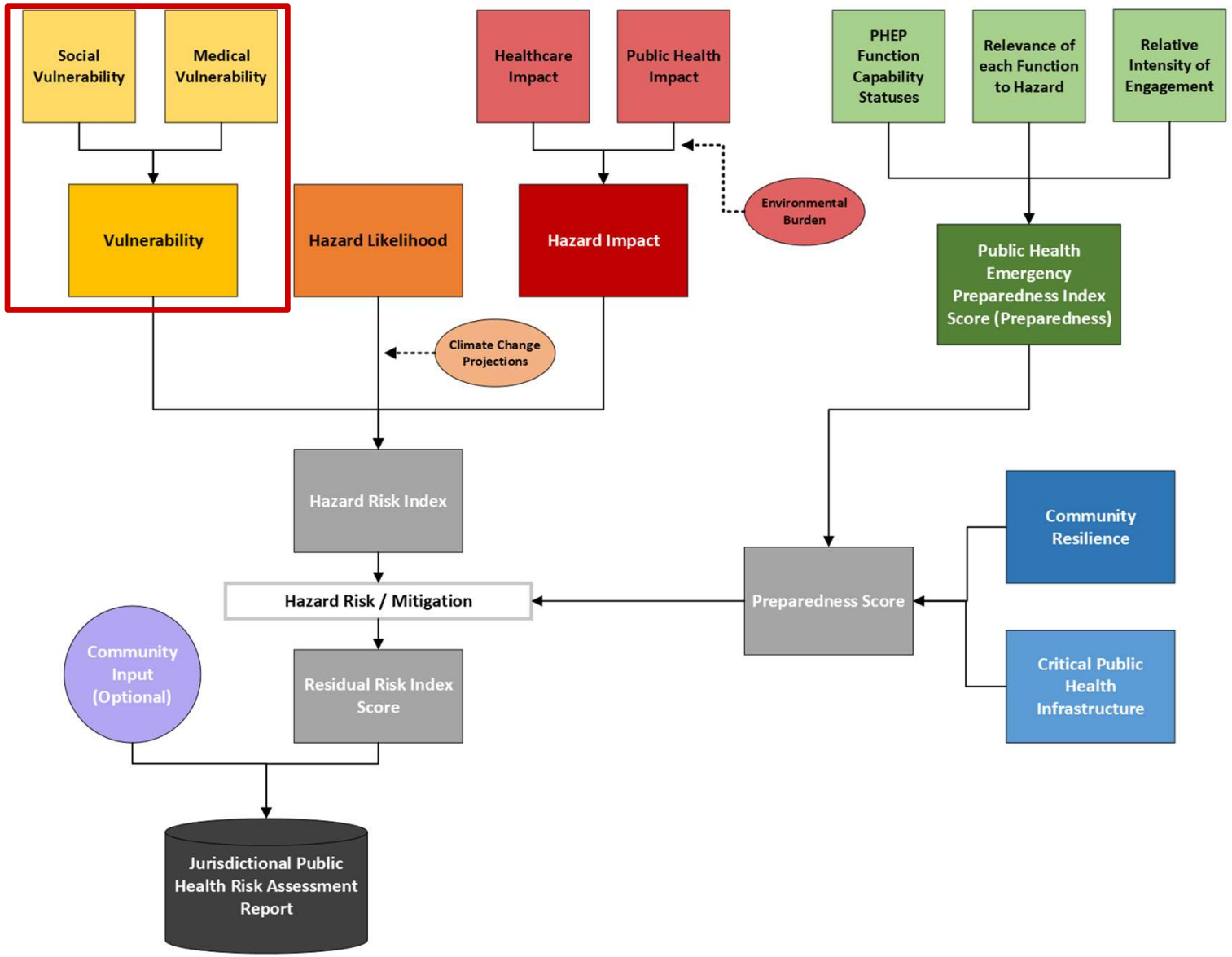
Step 5 (in progress):
Create tool user guide

Step 6 (mid- to late 2024):
Build and test tool prototype

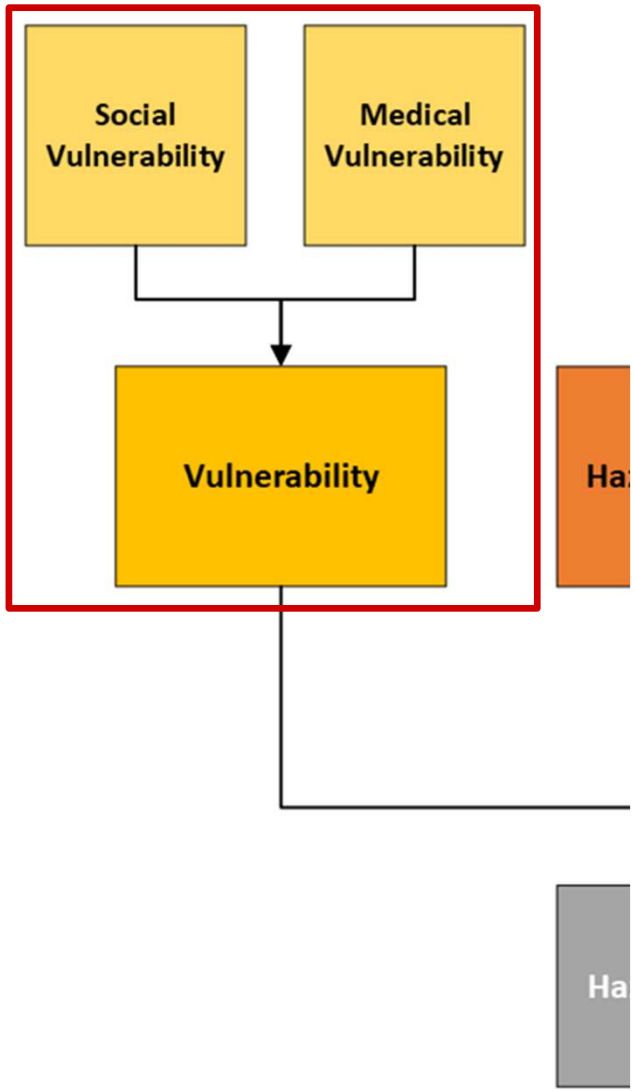
Step 7 (early 2025):
Plan tool rollout



H²azaRDS Tool Conceptual Framework

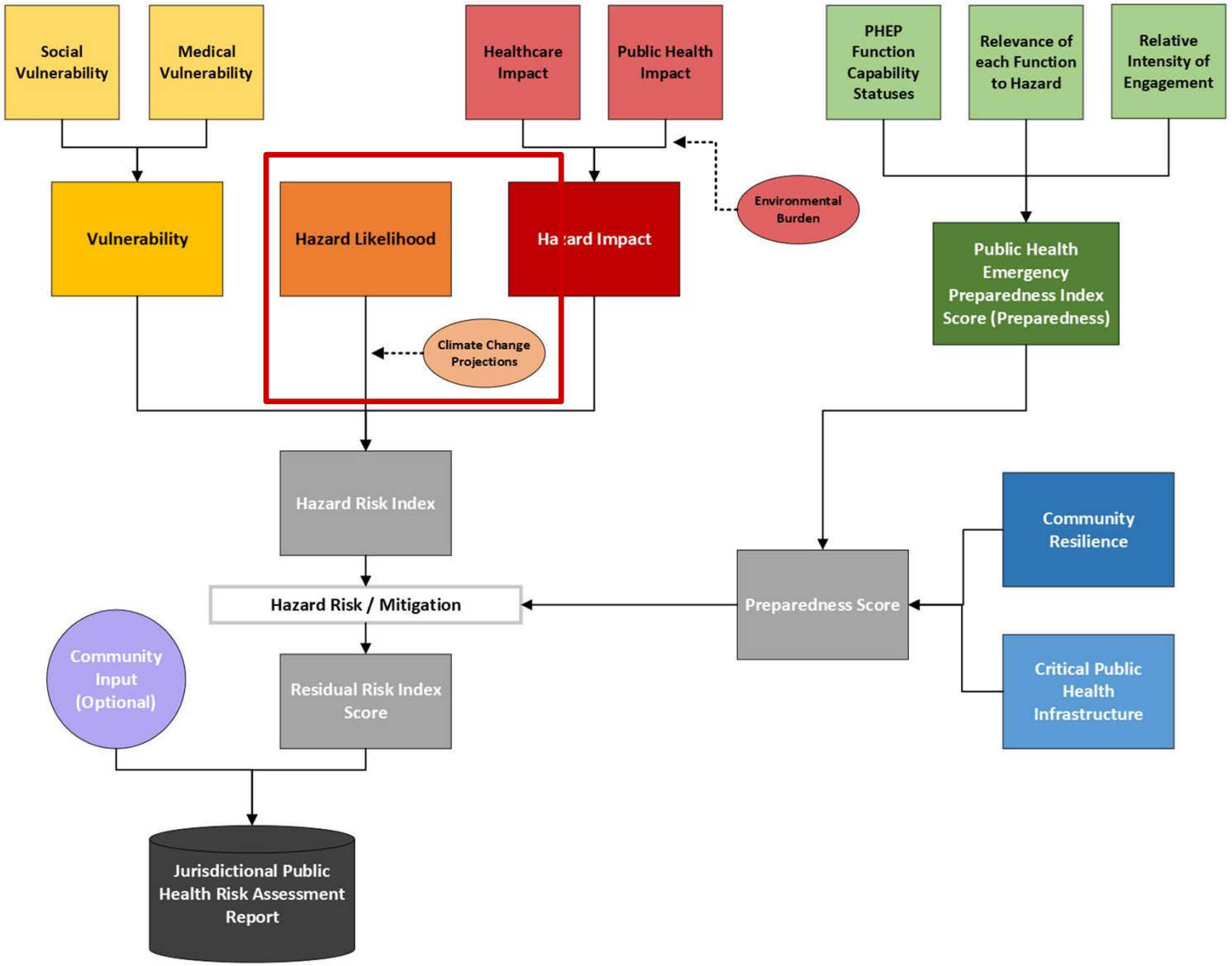


Summary of Data Sources: Vulnerability

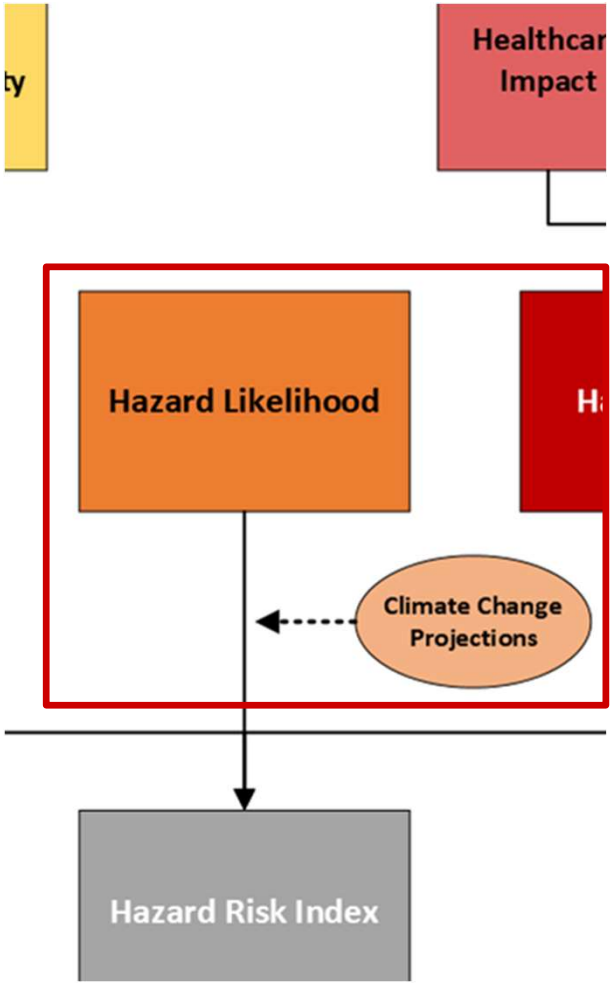


Summary of Data Sources: Vulnerability

- **Social vulnerability:**
  - CDC/ATSDR Social Vulnerability Index
- **Medical vulnerability:**
  - CDC/ATSDR Environmental Justice Index (Health Vulnerability)
  - HHS emPOWER Database

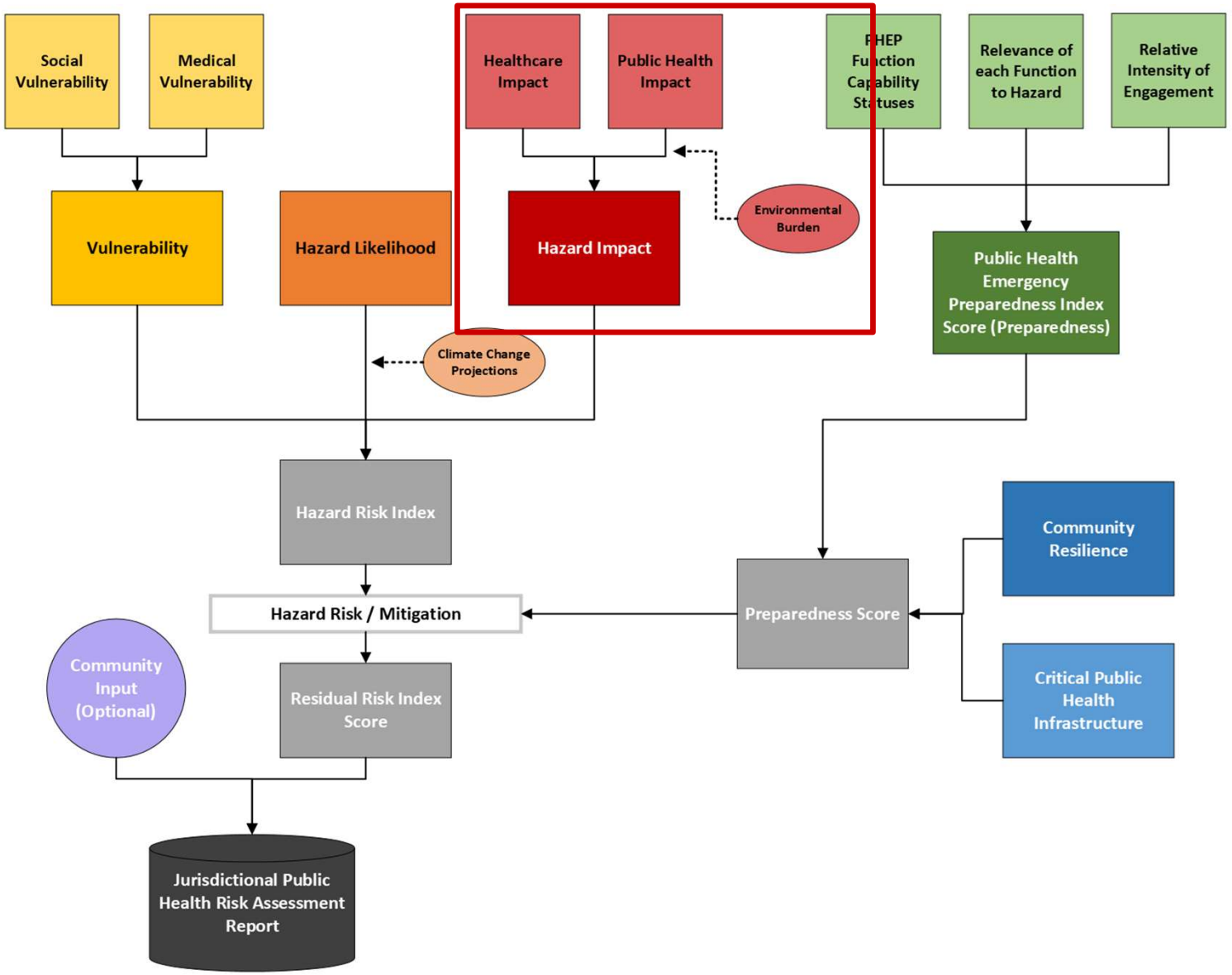


Summary of Data Sources: Hazard Likelihood

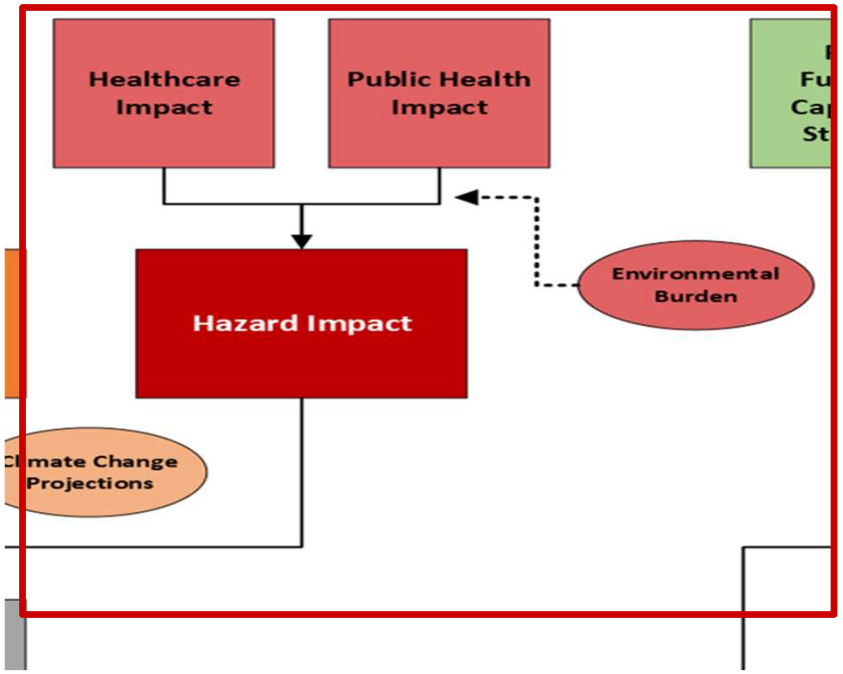


Summary of Data Sources: Hazard Likelihood

- **Hazard likelihood:** User ranked
  - Climate burden modifier: UW Climate Impacts Group Biophysical Climate Risks and Economic Impacts

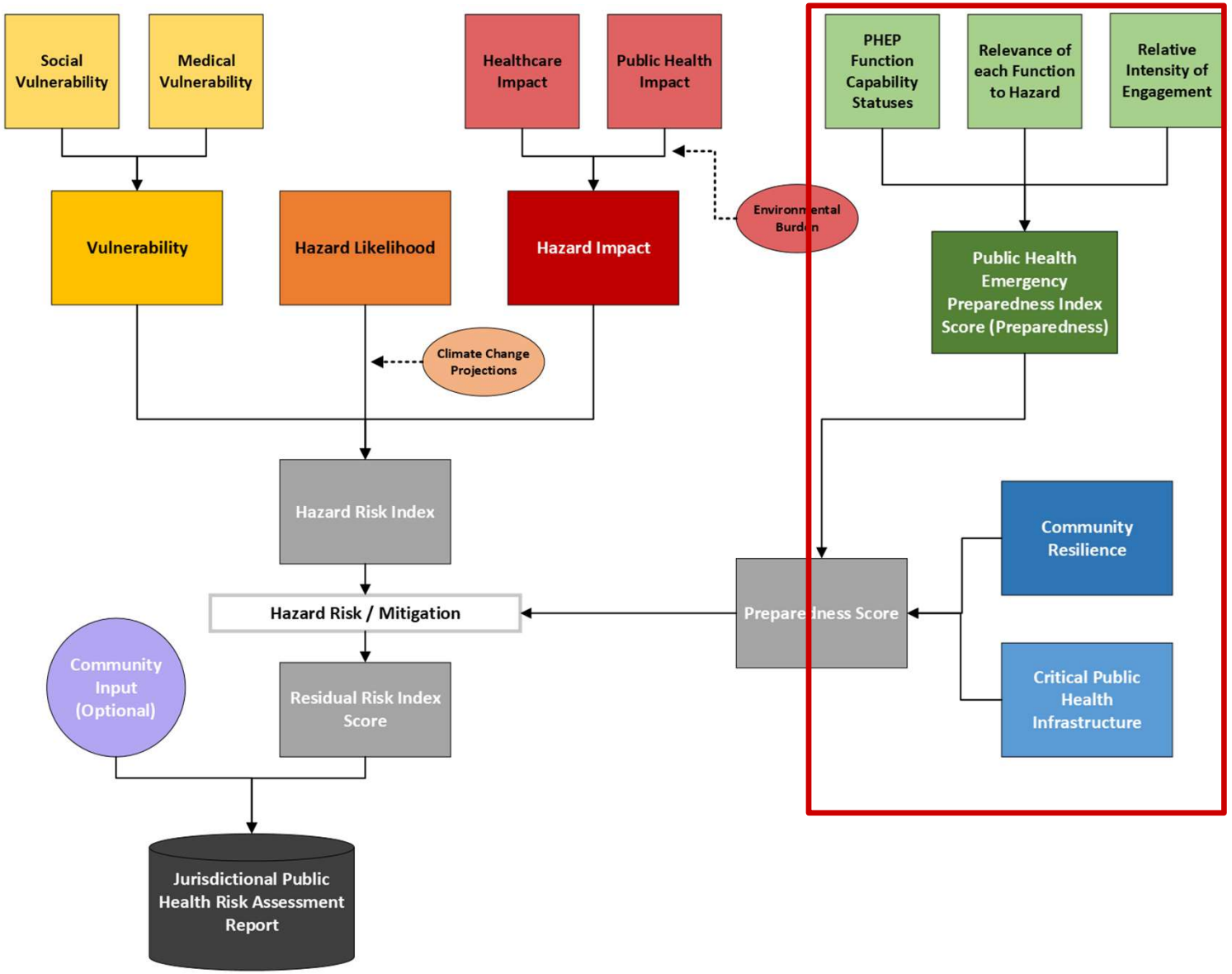


Summary of Data Sources: Hazard Impact

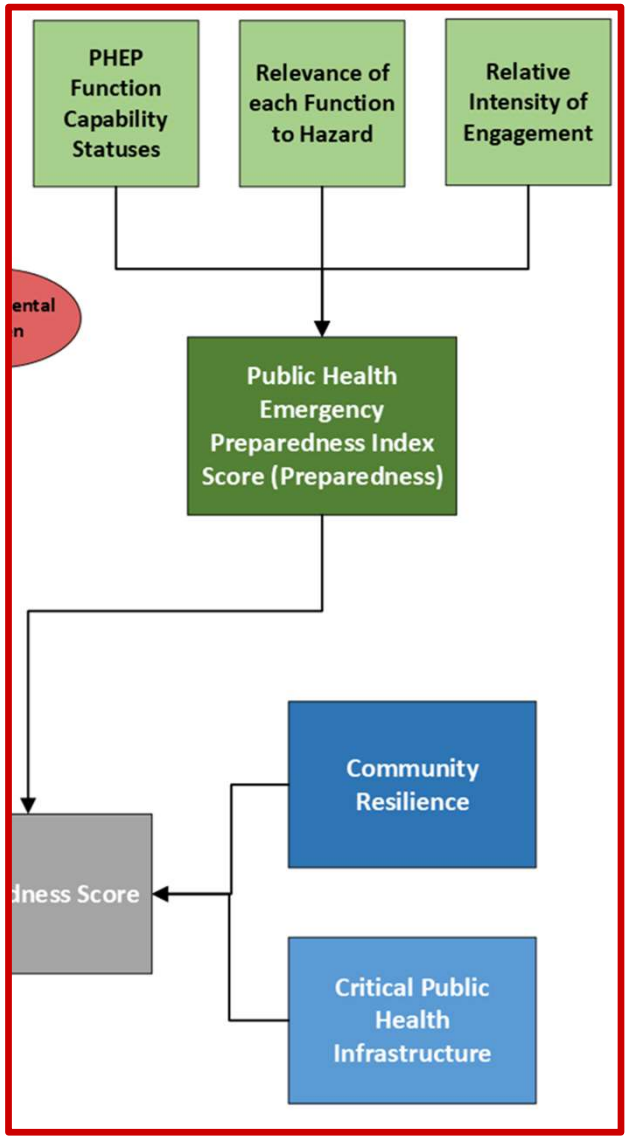


Summary of Data Sources: Hazard Impact

- **Public health impact:** Custom modeling
    - Environmental burden modifier: CDC/ATSDR Environmental Justice Index
- **Healthcare impact:** Custom modeling



Summary of Data Sources: Preparedness & Resilience



Summary of Data Sources: Preparedness & Resilience

- **Community resilience:**
  - Hazards Vulnerability & Resilience Institute BRIC Index
- **Critical infrastructure:**
  - Washington Tracking Network
  - CDC/ATSDR Minority Health Social Vulnerability Index
- **PHEP capabilities:**
  - PHEP function capabilities: IPPW worksheets
  - Function relevance: Binary indicator
  - Engagement intensity: User ranked

Limitations of the Tool

User-ranked inputs

- Increases user workload
- Ranking hazard likelihood measures only perceived relative likelihood, not actual likelihood of occurrence

Climate modeling uncertainty

- Complexity and range of possible outcomes make this very difficult to predict over time

Resolution versus accuracy

- Inherent tension between geographical resolution and measurement accuracy

HOW H²azaRDS INTEGRATES PUBLIC HEALTH AND EMERGENCY MANAGEMENT

CENTER FOR DISASTER RESILIENT COMMUNITIES
UNIVERSITY of WASHINGTON

What We Learned at WSEMA 2023

How can LHJs collaborate with EMs to build on existing risk assessments?

- While some jurisdictions have formal systems in place, **many rely on informal discussion and/or personal relationships**; some have no history of collaboration

- In many cases, **information flows primarily from public health officials to EMs**, not the other way

What We Learned at WSEMA 2023

How might public health risk assessment findings be incorporated into EM plans?

- Can help identify, locate, and communicate with **populations with specific needs**
- Can **inform decisions to prioritize** different mitigation and response actions

Promoting Collaboration Between Local Health Officials and Emergency Managers

- The development and use of the H^2azaRDS tool are **organized around collaboration** between LHJs and emergency managers

- This is an opportunity for LHJs and EMs to **understand** each other's responsibilities, **contribute expertise** to each other's processes, and **work more closely together**

Promoting Collaboration

Design & Development

The tool **merges data measurements** normally associated with **public health** with those normally associated with **emergency management**

Modeling, interface, & tool outputs are all being iterated with **input from an interdisciplinary committee**

Implementation & Use

User-ranked hazard likelihood **encourages LHJs to consult EMs when using the tool**, promoting formal collaboration, relationship-building, and communication

Integration of domains **encourages interdisciplinary thinking** about hazard vulnerability and preparedness

DISCUSSION QUESTIONS

Discussion Question 1

How are you willing/able to help your LHJ in hazard ranking?

Discussion Question 2

What resources does your agency offer and/or use in your own planning processes that your LHJ could use itself?

Discussion Question 3

Are there other ways the tool could promote integration between EMs and LHJs?

QUESTIONS OR COMMENTS?

Kathleen Moloney (kmoloney@uw.edu)
Evan Mix (emix@uw.edu)

CENTER FOR DISASTER RESILIENT COMMUNITIES
UNIVERSITY of WASHINGTON