EPA's Partnership with FEMA on Planning for Disaster Resilience

Abby Hall

U.S. EPA

Office of Sustainable Communities

Memorandum of Agreement

- Coordination of activities between EPA's smart growth and community technical assistance programs & FEMA's disaster recovery planning and hazard mitigation programs. Link to MOA.

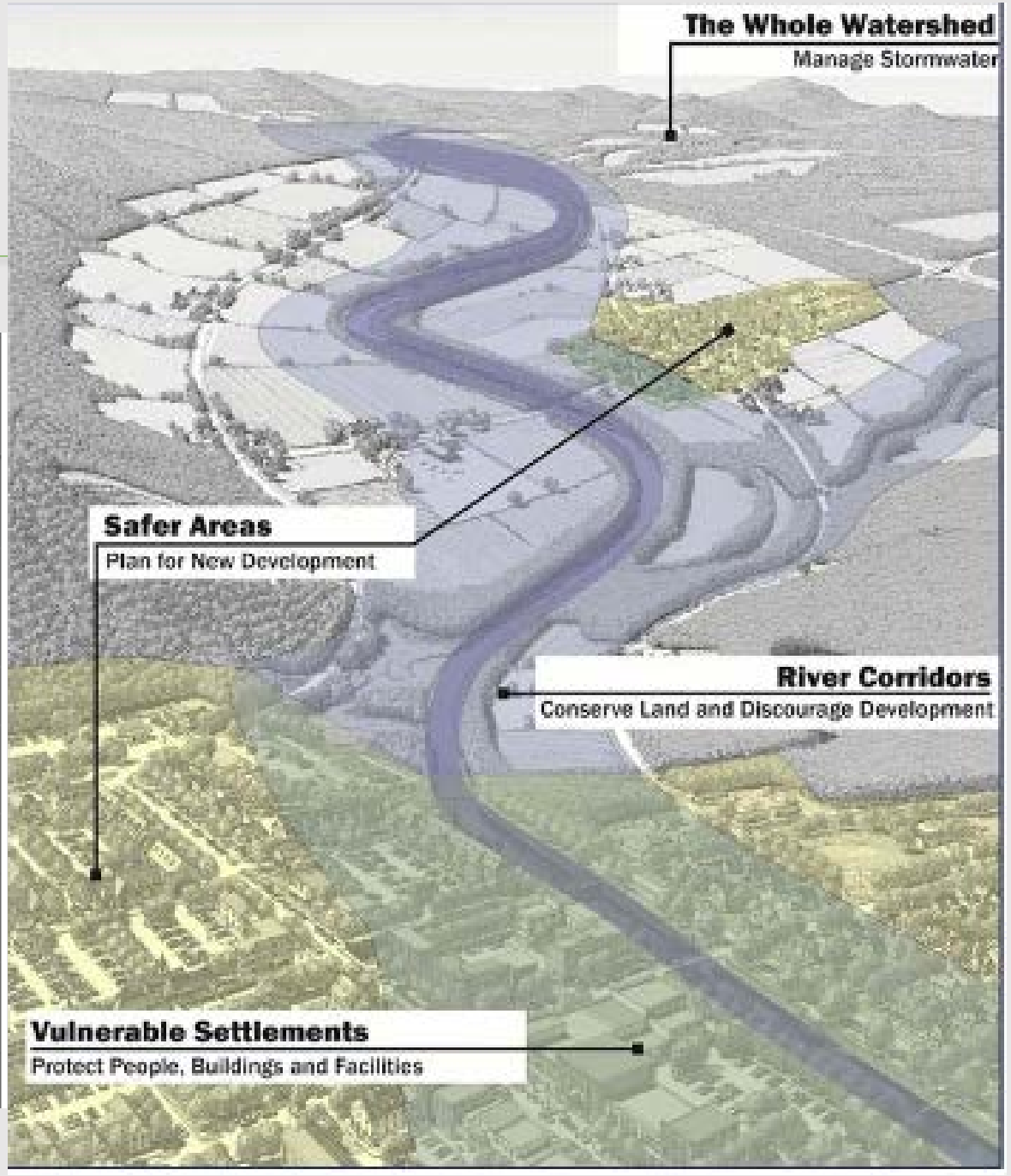
- What does EPA bring to hazard mitigation and disaster recovery?
  - Technical assistance for states, tribes, regions, and locals
  - Connect disaster planning to other community goals and link mitigation and recovery over time

EPA Resources

- Building Blocks for Sustainable Communities
  - Flood Resilience Checklist
- Green infrastructure in hazard mitigation plans
  - Ashland, Oregon
- Regional-scale disaster resilience
  - California Regional Resilience Framework

Flood Resilience Checklist

Conserve Land and Discourage Development in River Corridors (Learn more in Section 3.A, pp. 14-19 of *Planning for Flood Recovery and Long-Term Resilience in Vermont*)		
1. Has the community implemented non-regulatory strategies to conserve land in river corridors, such as:		
a. Acquisition of land (or conservation easements on land) to allow for stormwater absorption, river channel adjustment, or other flood resilience benefits?	☐ Yes	☐ No
b. Buyouts of properties that are frequently flooded?	☐ Yes	☐ No
c. Transfer of development rights program that targets flood-prone areas as sending areas and safer areas as receiving areas?	☐ Yes	☐ No
d. Tax incentives for conserving vulnerable land?	☐ Yes	☐ No
e. Incentives for restoring riparian and wetland vegetation in areas subject to erosion and flooding?	☐ Yes	☐ No
2. Has the community encouraged agricultural and other landowners to implement pre-disaster mitigation measures, such as:		
a. Storing hay bales and equipment in areas less likely to be flooded?	☐ Yes	☐ No



Credit: Vermont Agency of Commerce and Community Development.

Ashland, Oregon:
Green Infrastructure and Hazard Mitigation

- GIS mapping
- Ecosystem services evaluation
- Ordinance review
- Recommendations
  - Specific floodwater storage projects
  - Green streets program
  - Retrofit program for private landowners

GI and LID Example Best Management Practices	Natural Hazard Mitigation			Co-Benefits		
	Flood	Wildfire	Landslide	Water Quality	Community Benefits	Habitat
Minimize Impervious Area:						
Share parking spaces	●		●	●	●	◡
Minimize pavement widths	●		●	●	●	◡
Minimize front yard setbacks	●		●	●	●	◡
Share driveway	●		●	●	●	◡
Minimize building footprint(s)	●		●	●	●	◡
Minimize roadway cross section(s)	●		●	●	●	◡
Limit Disturbance of Undeveloped Land:						
Sequence construction schedule	◡		●	◡	●	◡
Conserve fast(er) draining soils	◡		●	◡	●	◡
Cluster development	◡		●	◡	●	◡
Preserve/protect trees	◡		●	◡	●	◡
Minimize foundation(s)	◡		●	◡	●	◡
Minimize grading	◡		●	◡	●	◡
Prevent Runoff from Landscape and Hardscape Areas:						
Rain garden(s)	●	◡	●	●	●	◡
Bioswale(s)	●	◡	●	●	●	◡
Bio-retention (infiltration) basin	●	◡	●	●	●	◡
(Dry) Detention basin	●	◡	●	●	●	◡
Tree and landscape planting(s)	●	◡	●	●	●	◡
Remove existing pavement	●	◡	●	●	●	◡
Contained planters	●	◡	●	●	●	◡
Vegetated roofs (green roofs)	●	◡	●	●	●	◡
Porous Pavement	●	◡	●	●	●	◡
Protect Land and Ecosystems:						
Conserve open space	●	●	◡	●	●	●
Protect/preserve wetlands	●	●	◡	●	●	●
Construct wetlands	●	●	◡	●	●	●
Protect/preserve riparian areas	●	●	◡	●	●	●
Maintain/enhance urban forest (forest parks)	●	●	◡	●	●	●

Source: *Low Impact Development in Western Oregon: A Practical Guide for Watershed Health*, with additions from the University of Oregon Service Center.

California Regional Resilience Framework

- Lessons from Bay Area project. Piloting tool with Mt. Shasta and Central Coast region now.
- Works for earthquakes, landslides, wildfires, drought, extreme heat, flooding, and sea level rise, etc.

Abby Hall
U.S. EPA
Office of Sustainable Communities
Hall.Abby@epa.gov