

The Mitigation Action Plan

The City of Portland's 2021 Natural Hazard Mitigation Plan Update

Appendix



PORTLAND BUREAU OF EMERGENCY MANAGEMENT

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Regulation Crosswalk

Regulation Crosswalk

The following table explains how this document meets requirements of a FEMA Local Natural Hazard Mitigation Plan.

Required Element	Location in Plan
A. Planning Process	
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))	The section titled “Plan Update Approach” in Chapter 2 details the planning process and who was involved in it (p.31).
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))	Neighboring communities and local and regional agencies involved in hazard mitigation and in regulating development were involved with the Steering Committee and in the Planning Team outreach activities. See Table 2.5 in Chapter 2 (p.32) and the table titled “Planning Team Outreach Activities” in the Appendix (Appendix pp.71-71).
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))	Public involvement is described in the sections titled “Plan Update Approach” in Chapter 2 (p.31), in “Community Voices in Mitigation Planning” in Chapter 4 (starting p.161), and in “Community Voices Detailed Reports” in the Appendix (Appendix pp.82-98).
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))	The Plan describes existing plans, studies, reports, and technical information throughout the document. The process we used is described in Chapter 2 (pp.10-37). The existing plans, data, sources, etc. are explicitly discussed in relevant sections throughout the Plan (see all Sources pp.199-212).
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii))	Continued public participation in the Plan is described in some of the Actions in Chapter 5, “Mitigation Action Strategy” (pp.16-194) and in Chapter 6, “Plan Maintenance Strategy” (pp.195-8).
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5 year cycle)? (Requirement §201.6(c)(4)(i))	A schedule for monitoring and updating the Plan is described in the “Plan Maintenance Strategy and Schedule” in Chapter 6 (pp.196-8).
B. Hazard Identification and Risk Assessment	
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i))	The type, location and extent of hazards affecting Portland are described in Chapter 3, “Risk Assessment” (pp.38-160).

Required Element	Location in Plan
<p>B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i))</p>	<p>Each hazard described in Chapter 3, "Risk Assessment" (pp.38-158), includes a history of previous occurrences, except for drought, as Portland has not experienced this hazard in the past. Additionally, a complete list of Federal Disaster Declarations is included in the appendix (Appendix p.31). The likelihood of future occurrences and potential impacts are described for each hazard in Chapter 3 (pp.38-158).</p>
<p>B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii))</p>	<p>Chapter 3, "Risk Assessment" (pp.38-158), describes each hazard and Portland's vulnerability to that hazard.</p>
<p>B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii))</p>	<p>Detailed information about Portland's vulnerability to floods is in the "Flood" section of Chapter 3 (pp.71-94). NFIP-insured structures and repetitive damage are detailed in the Appendix (Appendix pp.23-5).</p>
<p>C. Mitigation Strategy</p>	
<p>C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))</p>	<p>Portland's planning capabilities and authorities are described in Chapter 2 (pp.29-30) and the "Community Capabilities" section of the Appendix (Appendix pp.33-39). Chapter 5, "The Mitigation Action Strategy", also describes related plans (pp.191-193).</p>
<p>C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii))</p>	<p>Detailed information about Portland's vulnerability to floods is in the "Flood" section of Chapter 3 (pp.70-93); more information about the NFIP is in the Appendix (Appendix pp.21-2).</p>
<p>C3. Does the Plan include goals to reduce/avoid longterm vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i))</p>	<p>Long term goals to reduce vulnerabilities are described in the "Vision, Mission, and Goals" for this Plan which are recorded in in Chapters 2 (p.35) and 5 (p.170). Some longer-term planning projects are referenced in Chapter 5, "The Mitigation Action Strategy" (pp.168-193), but the strategy mostly focuses on how we can respond to those long-term goals within the five-year timeframe of this Plan. Some community-oriented goals that may not fit within a Natural Hazard Mitigation Plan structure, but will support the same larger "Vision, Mission, and Goals" described in this plan, are described in Chapter 4 (pp.160-167).</p>
<p>C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement §201.6(c)(3)(ii))</p>	<p>Thousands of mitigation actions were discussed and hundreds of mitigation actions were analyzed as part of this Plan. The process for identifying those actions to include in the Plan is described in the section titled "Mitigation Action Strategy Development" in Chapter 5 (pp.170-172). The tools for identifying possible mitigation actions are included in the appendix (pp.99-104). A list of project ideas that were developed as part of the Mitigation Action Strategy Workshop are included (pp 110-112).</p>

Required Element	Location in Plan
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))	Actions in the Plan were prioritized using first a “Good to Great” rating with criteria that reflects the Plan goals and with a cost-benefit score assigned by the Steering Committee. These are represented in the Plan as Tier 3,2,1 actions in the “Map Action Strategy” in Chapter 5 (See Figure 5.1 and 5.2 on p.172).
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))	Chapter 5, “Mitigation Action Strategy,” references and describes other relevant plans and programs in individual actions (see pp.190-3). Chapter 6, “Plan Maintenance Strategy,” aims to integrate Plan monitoring and updating into other already established processes in the City that do this (see pp.196-197). The Plan will be overseen by practitioners who can integrate the information and actions described in the MAP into other City activities.
D. Plan Review, Evaluation, and Implementation	
D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))	The section titled “What’s new in 2021” in Chapter 1 explains new development that has taken place since 2016 (Starting page 5). New development data was used in our vulnerability analysis described in Chapter 3.
D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))	Review of the accomplishments of the 2016 MAP was one of the first steps in the planning process described in Chapter 2 (page 299-33) and noted in detail in the Appendix “2016 MAP Status Reports” and “Map Strategy Review”. Descriptions of the extensive work that the City of Portland has done to further the overarching goals of the plan are also described throughout in relevant sections. This information was incorporated into all pieces of the MAP.
D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))	The 2021 MAP revision reflect changes in the increased importance of equity and frontline communities, emphasizes an increased focus on collaboration and reflects an updated prioritization of natural hazards. Which are described throughout the document and detailed in Chapters 1 and 2.
Plan Review, Evaluation, and Implementation	
E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))	Section to be updated open adoption
E2. For multijurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))	Not relevant

2016 Status Reports

Number	Action Description	Lead Agency	Hazards Addressed	Reporting Contact	Status - 2/2021	What was accomplished since the last status report (10/2018)?	What obstacles or problems did the action encounter?	If uncompleted (in progress, stalled, what were the barriers to implementation?) (e.g. lack of funding or support, staff availability, etc.)	If uncompleted, should the action be included in the updated mitigation plan? Why or why not?	If completed, did the action have intended results? Did it achieve its goals? What factors contributed to its success?
PBEM-1	Continue to engage and inform the public about hazards, including through a "disaster survivor" storytelling event and through postcard mailers sent to every household in Portland with easy-to-understand and graphic-heavy information about hazards and actionable instructions on how to be prepared. Include information about how to register for Public Alerts with all outreach efforts.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaethimiou	Project discontinued	Content was completed in partnership with community groups, but we decided it was a better use of resources to distribute in partnership with community groups rather than mail to everyone.	We just got smarter about equity - reaching "everyone" is no longer the goal.	See previous	No	It would not have and that's why we didn't do it.
PBEM-2	Expand the Neighborhood Emergency Team (NET) program into every neighborhood in Portland and expand beyond the neighborhood structure to non-geographic and cultural communities (e.g. immigrant and refugee communities, disability community organizations), and work with Community Engagement Liaisons to provide trainings in languages other than English.	Portland Bureau of Emergency Management	All Hazards	Jeremy Van Keuren	Ongoing	In 2020 we graduated the first Spanish-speaking NET class, in partnership with Verde. The class included 20 trainees. We're preparing to enter a partnership with Rosewood Initiative to set up a class of 50 in historically underserved neighborhoods of East Portland.	Language translation is, naturally, an obstacle. With the immigrant community, we've had obstacles around being able to complete criminal background checks (which is customarily a requirement of our program). As we are a government program, it's important for us to consider that some of the folks we want to serve don't trust the government generally. So, it's been absolutely necessary for us to take the time and attention required to cultivate genuine working relationships and trust with community based organizations we wish to work with.	This is a project that will never reach "completion"...these are goals we'll work on for as long as the program exists.	Yes for PBEM-2. The reason is that it is an ongoing goal and program of NET; it is not a project (a project, by definition, has a beginning and an end).	It's just a little too soon to say what the outcomes will be (or if we'll meet our intended outcome). This is a "long game", after all. We're hoping to mobilize the Spanish-speaking team to assist with vaccine distribution, but that's not yet confirmed.
PBEM-3	Expand PBEM's capacity to provide community trainings and partner with the Office of Neighborhood Involvement (ONI). Diversity in Civic Leadership (DCL) program, Community Engagement Liaisons, and Multnomah County programs, as well as Non-Governmental Organizations and community-based programs to connect under-resourced and underserved communities with disaster preparedness, home safety, emergency response, and other training opportunities.	Portland Bureau of Emergency Management	All Hazards	Regina Ingabire	Ongoing	I can say that we have created a Community Resilience Workbook in consultation with Community Based Organizations and this workbook has been used to training our partners including the staff at the Civic Life, Multnomah County community advocates and several community based organizations that served historically underserved communities.	So far, the COVID-19 pandemic has slowed or stalled our community engagement plans.	the COVID-19 pandemic continue to be a challenge to fully achieve these goals.	Why or why not? Yes, the action should be included in the updated mitigation plan to continue building relationships with partners post the pandemic period.	
PBEM-4	Advocate in regional debris planning process for consideration of equity and environmental justice implications of temporary debris storage sites.	Portland Bureau of Emergency Management	Earthquake	Jonna Papaethimiou	Stalled	Regional debris planning stalled	None from City side; unknown on regional side.	See previous	No	
PBEM-5	Support Multnomah County in developing a robust, inclusive, and equitable sheltering plan.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaethimiou	Completed	Multnomah County completed high quality plan.	None			Yes
PBEM-6	Support public school districts in developing a prioritization strategy for seismic strengthening of existing schools to facilitate rapid re-opening of schools.	Portland Bureau of Emergency Management	Earthquake	Jonna Papaethimiou	Project discontinued	PPS is not working on this any more. City abandoned URM project.	Lack of resources on PPS side, lack of political will on City side.	See previous	No	
PBEM-7	Remain informed about inter-agency volcano coordination planning to communicate and understand agency roles and capabilities and potential sheltering needs for evacuees.	Portland Bureau of Emergency Management	Volcano	Dan Douthit	Ongoing	Nothing accomplished since 10/2018.	No obstacles or problems. I continue to monitor this issue as new information becomes available.		Keep PBEM-7. It's easy to participate in coordination meetings if any movement occurs on this item. (Dan)	
PBEM-8	Coordinate with owners and operators of key communications infrastructure (i.e. internet and telecom) located in unreinforced masonry (URM) buildings or buildings not designed for the purpose of housing this infrastructure. Assess risks to these assets, and develop a strategy that identifies alternatives and funding sources for implementing seismic strengthening projects.	Portland Bureau of Emergency Management	Earthquake	Jonna Papaethimiou	Stalled	Zero	Owner/operators not interested	Lack of political will / not a priority.	No	
PBEM-9	Update risk assessment information about landslides and develop new NHMP action items based on updated 2017-2018 Department of Geology and Mineral Industries (DOGAMI) landslide data and recommendations.	Portland Bureau of Emergency Management	Landslide	Jonna Papaethimiou	No progress	Zero	Lack of time / resources	See previous	Yes	
PBEM-10	Work with Office of Neighborhood Involvement (ONI) Disability Program Coordinator to promote participation in the Additional Needs Registry through the Public Alerts system.	Portland Bureau of Emergency Management	All Hazards	Dan Douthit	Ongoing/Stalled	The Additional Needs Registry (ANR) is fully integrated into the PublicAlerts.org sign-up process for Multnomah County/Portland. Overall PublicAlerts promotion has occurred over the past two years, but not specific to the ANR.	It is unclear whether or not the ANR will be continued. Discussions are underway on the alert and warning systems used by the City and the best way to reach the community in an emergency.	The Office of Neighborhood Involvement (now known as the Office of Community and Civic Life) is not necessarily in a position to provide leadership to the ANR. This could impact the future of the program.	Consider dropping PBEM-10. I'm not certain the Civic Life office is in a position to continue leading this item, and PBEM does not necessarily have the capacity to take it on. I recommend the stakeholders involved convene a meeting and consider the future of the capability. There are other options to explore other than maintaining the registry.	
PBEM-11	Support Bureau of Development Services (BDS) in implementing recommendations from the City's Unreinforced Masonry (URM) Seismic Retrofit Project, including promoting and supporting policies for mandatory retrofits of URM buildings. This action needs high-level support from City Council and Office of Government Relations (OGR).	Portland Bureau of Emergency Management	Earthquake	Jonna Papaethimiou	Project discontinued	Zero	Massive opposition from building owners; lack of political will	See previous	No. Nobody wants to touch this.	
PBEM-12	Audit PBEM's suite of plans to evaluate whether plans meet the needs of people with disabilities, people with language barriers, and other access and functional needs populations. Develop a transition plan to update all plans.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaethimiou	In progress (incremental)	Haven't updated any plans since Sarah left	Lack of time / resources	See previous	Yes; still needed	
PBEM-13	Expand ATC-20 damage assessment trainings and certifications to non-city employees to increase pool of qualified post-earthquake building inspectors, including through advertisements to registered Minority, Women-Owned, and Emerging Small Business (MWESB) architecture and structural engineering firms.	Portland Bureau of Emergency Management	All Hazards	Katy Wolf	Stalled	We trained 109 non-City students since 10/2018, offering 2 courses in Nov 2018, and 1 course in Dec 2019.	Did not share widely due to the lack of state program guidance providing inspector deputization authority to non-jurisdictional staff. Ran out of federal UASI grant funds to offer courses. Lack of certified local teachers that can teach the course for free.	Lack of state damage assessment program guidance. COVID-19 interruptions to City and emergency management priorities.	I would say no, because it's a lower priority than meeting more basic goals for damage assessment, which they're already a good plan for - Anne Castleton's grant project.	PBEM passed this responsibility over to the Bureau of Development Services emergency manager Anne Castleton, in 2019. However, as of yesterday her position has been laid off. Those responsibilities have been absorbed by her manager. It is likely that until they rehire the emergency manager position, this program will not make progress. I would recommend that we close this item out, if possible. Its not likely we'll achieve this goal in the next 2-3 years.
PBEM-14	Support Multnomah County Levee District (MLLD) and Levee District Authority in risk assessment and flood response planning. Continue to involve the public in updating the MAP, including by establishing a standing committee with community representation to oversee progress reporting and implementation of MAP action items, and oversee annual updates to the MAP. Perform outreach consistent with the MAP Community Engagement Strategy, and ensure reports are written in plain, accessible language.	Portland Bureau of Emergency Management	Flood	Jonna Papaethimiou	No progress	Not engaged	None - just not needed		No	
PBEM-15	Expand ATC-20 damage assessment trainings and certifications to non-city employees to increase pool of qualified post-earthquake building inspectors, including through advertisements to registered Minority, Women-Owned, and Emerging Small Business (MWESB) architecture and structural engineering firms.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaethimiou	Stalled	Zero	Staff person left; resolution 37328 made it harder to form advisory groups; unclear whether this is still a good strategy from equity standpoint.	See previous	Uncertain. Seek public feedback.	
PBEM-16	Maintain and promote registration in Public Alerts system, including registration in languages other than English, and improve accessibility of the online interface for languages other than English. Integrate into other public outreach activities.	Portland Bureau of Emergency Management	All Hazards	Dan Douthit	Ongoing	PublicAlerts registration in languages other than English exists as a capability. Some outreach has occurred through local media and community connectors to promote registration by non-English speakers.	Ongoing discussions about how the City and County use alert and warning systems could impact how urgent messages reach non-English speakers.	The COVID-19 pandemic has limited PBEM's ability to make progress on this initiative.	Keep PBEM-16 with caveats and/or potential changes. The City and County need to have a conversation on the best way to issue alerts. Emerging technologies have the potential to shift how we do this.	
PBEM-17	Hire a permanent Continuity of Operations (COOP) Planner to support city bureaus with COOP plan updates and set aside a percentage of time to work with key social services organizations such as food banks and homeless shelters to develop Continuity of Operations Plans.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaethimiou	Completed	Position filled and functioning	Zero			We are still struggling to "self" COOP planning to non-profits, but we're in it for the long term so we have time.

PBEM-18	Expand Neighborhood Emergency Team (NET) trainings to include teachers and principals and include information about non-structural retrofits in classrooms.	Portland Bureau of Emergency Management	All Hazards	Jeremy Van Keuren	Project discontinued	We have dropped actively pursuing PBEM-18.			
PBEM-19	Advocate for implementation of Critical Energy Infrastructure (CEI) Hub Risk Assessment recommendations, including establishment of Critical Energy Infrastructure (CEI) Hub Disaster Resilience Workgroup.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaefthimiou	Project discontinued (in favor of new strategies)	Initiated study on CEI hub in partnership with MultiCo; working on legislative strategies to address risks.	Owner-operators totally disengaged.	See previous	Adopt new strategies instead.
PBEM-20	Develop a post-disaster recovery plan to guide post-disaster redevelopment that considers hazard exposure and relocation of critical infrastructure outside of high-hazard areas, prioritizes the restoration of natural systems to limit future hazard impacts, and includes whole-community recovery strategies to reduce the potential for involuntary displacement.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaefthimiou	In progress (incremental)	DRRAG continues to meet; little progress on plan.	Lack of time / resources	Also unclear about who should lead this and what the scope should be... made it hard to get going.	DRRAG needs to decide.
PBEM-21	Increase the City's capacity to establish post-earthquake communication nodes throughout the city after a major earthquake, including through expansion of training and additional communications equipment cache placements for the Basic Earthquake Emergency Communication Nodes (BEECN) program.	Portland Bureau of Emergency Management	All Hazards	Ernest Jones	In progress/ongoing	101 volunteers added to the BEECN roster, 6 BEECN caches deployed (storage spots found), and over 15 BEECN trainings conducted	Finding suitable storage places for BEECN remains a significant challenge, but progress continues to be made. Achieving the goal of 500+ volunteers continues to progress; getting the attention of potential volunteers is difficult, especially in historically underserved neighborhoods.	Suitable storage space for BEECN caches is a complicated conundrum that will continue to be a challenge (when two spots are found for BEECN caches, a different spot becomes unavailable and the cache has to find another spot). Finding new ways to reach potential volunteers also takes significant time, especially in historically underserved neighborhoods	I believe the objectives are still sound and worthy of continuing in order to help make Portland a disaster resilient community
PBEM-22	Develop a Transportation Recovery Plan.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaefthimiou	Completed				
PBEM-23	Develop an emergency communications plan to distribute emergency messages to immigrant and refugee communities in language-appropriate and culturally appropriate ways.	Portland Bureau of Emergency Management	All Hazards	Regina Ingabire	Ongoing	we have developed an intentional and authentic relationships with Community Based Organizations (CBOs) who are embedded in communities, know their culture and language. Through these relationships, we will be able to share and distribute emergency messages to refugee and immigrants' communities. Also, recently, we created a partnership with the Portland Public Schools (PPS) which will allow us to share any emergency or life threatening information to multi-cultural and multilingual communities at least in 7 languages.	the pandemic has slowed and stalled our ongoing community building efforts.	the pandemic has slowed and stalled our ongoing community building efforts.	Its ongoing effort and should be included in the updated mitigation plan.
PBEM-24	Through a public process with key stakeholders, create an inventory of fossil fuel facilities and infrastructure in Portland that includes characteristics related to seismic safety such as date of construction, construction type, and whether seismic upgrades have been made. This action requires high-level support from City Council.	Portland Bureau of Emergency Management	All Hazards	Jonna Papaefthimiou	Completed (mostly)	We have a report that was developed but without participation of owner-operators... so, mostly complete.	See previous		
PP&R-1	Consider known natural hazards on Portland Parks & Recreation (PP&R) owned or managed properties when developing future plans for these properties, to ensure future plans do not adversely alter or modify these hazards.	Portland Parks & Recreation	All Hazards	Katie Dunham	Ongoing	Parks Master Plans include an assessment of known natural hazards as applicable. This is something we do whenever we develop a site Master Plan	N/A	N/A	Yes, this action should continue to be included as an ongoing goal
PP&R-2	Consistent with PP&R management practices and standard operating procedures, allocate funding for management of vegetated natural areas with high wildfire danger, including public and private properties.	Portland Parks & Recreation	Wildfire	Katie Dunham	Ongoing	We allocate funding as available and apply for grants as necessary to assist with management of vegetated natural areas with high wildfire danger. We have a need for additional funding and support for this work.			Yes, this is something we continue to strive to do and would like to use the NHMAP to assist us in getting additional funding and resources to do this work.
PP&R-3	Conduct systematic reviews of Portland's large, publicly owned, wildland tracts regarding fire safety and ecological health to ensure informed land management decisions.	Portland Parks & Recreation	Wildfire		Not reporting				
PF&R-1	Adopt the national "Fire Danger Rating System" and install the signs at key points in the City.	Portland Fire & Rescue	Wildfire	Louisa Jones, Steve Bregman	In Progress	PF&R and Portland Parks have identified the number and best locations for these signs to be placed. After last year's wildfire season, there is significant public interest in these signs being provided.	COVID 19 and a significant wildfire season drew time and personnel away from this project.	Barrier to implementation was primarily a complete change of chief officer staffing on C shift. Administrative duties are being reassigned and this is included and should be moving forward again shortly. The public education team is now also participating in this project.	
PF&R-2	Convene a standing wildland interface fire technical group to plan for and address wildland urban interface (WUI) hazards.	Portland Fire & Rescue	Wildfire	Louisa Jones, Steve Bregman	Ongoing	This group last met in the fall of 2020 and recognized significant work that needed to be addressed and undertaken in the near term (short to midterm). The significant Oregon wildfire season of 2020 elevated public interest and 3 WUI neighborhoods are going through the Firewise process now with the Fire Marshal's office Public Education team.	COVID 19 and a significant wildfire season drew time and personnel away from this project.	Barrier to implementation was primarily a complete change of chief officer staffing on C shift. Administrative duties are being reassigned and this is included and should be moving forward again shortly. The public education team is now also participating in this project.	
PF&R-3	Act upon all Mitigation Actions outlined in the Wildfire Gap Analysis Report.	Portland Fire & Rescue	Wildfire	Louisa Jones, Steve Bregman	In progress	Significant progress has been made in the WUI Firewise community education. The 2020 Oregon wildfire season elevated the public's awareness of this risk and willingness to embrace the program. The Fuels Mitigation grant and the Firewise program in Linton were both positive outcomes of the initial efforts.	COVID 19 and a significant wildfire season drew time and personnel away from the project.	COVID 19 significantly impacted progress. This will gain more traction once again through the coming year.	
PF&R-4	Inventory critical PF&R assets and review critical PF&R infrastructure vulnerability and identify a 50-year plan to strengthen, retrofit, relocate or otherwise increase resiliency.	Portland Fire & Rescue	Earthquake	Louisa Jones, Steve Bregman	Ongoing	The solar and battery storage systems have been installed at the identified locations.	Logistics efforts had to be re-directed to COVID supply, cleaning, and maintenance of all front-line facilities in 2020 which drew significant time and resources away from planning and evaluation for a 50-year facility strengthening program.	While just now being recognized, funding will be a significant barrier going forward after the economic impact of COVID.	
PF&R-5	Require defensible spaces and water turrets around structures in wildfire risk areas	Portland Fire & Rescue	Wildfire	Louisa Jones, Steve Bregman	Ongoing	These systems are tested inspected and serviced on an annual basis.	Occasionally maintenance issues arise, but otherwise these systems are an integral and important part of wildfire protection for forested interface locations.	None	
PF&R-6	Partner with the Forest Park Conservancy and individual land owners to develop a fire risk reduction plan for Forest Park.	Portland Fire & Rescue	Wildfire	Louisa Jones, Steve Bregman	Ongoing	Despite COVID, the Fire Marshal's Public Education Team has worked to progress the Linton community towards their neighborhood firewise certification. They have enrolled and initiated efforts in multiple additional communities.	The biggest limitations at this point are time and personnel. This program has quickly gained community support and interest.	This is a time-intensive and recurring process that will continually require maintenance and on-going education.	
PF&R-7	Continue to engage and train Neighborhood Emergency Team (NET) volunteers to assist with mitigation, response and recovery efforts post disaster. Ensure training takes place in ADA-accessible fire stations. Neighborhood Emergency Teams (NETs) perform outreach activities to underrepresented groups.	Portland Fire & Rescue	All Hazards	Louisa Jones, Steve Bregman	Ongoing	PF&R is extremely supportive of this program and intends to remain active as adjunct training and event coordinators.	COVID 19 and a significant wildfire season drew time and personnel away from the project.	PF&R will be working with PBEM staff to identify specific needs moving forward for PF&R to support.	
PF&R-8	Ensure that Additional Needs Registry Data is appropriately utilized and ensure that emergency responders are aware of locations of disabled Portlanders.	Portland Fire & Rescue	All Hazards		Not reporting				
PF&R-9	Perform non-structural assessments and mitigation activities (e.g. anchor bookcases to the wall).	Portland Fire & Rescue	Earthquake		Not reporting				
BPS-1	Promote and fund energy independence projects in low-income neighborhoods and communities.	Bureau of Planning and Sustainability	All Hazards / Earthquake	Andria Jacob	Stalled	The R2P2 group came up with a prioritization of sites for solar + storage based on the BEECN program and well as the mass shelter program from Mult Co. Several options were investigated with little success. There is a lack of funding and no real understanding of how important battery back up storage could be. Lots of education needed.	The obstacles are largely resource-related. BPS staff time is less available to coordinate R2P2. Leadership has not prioritized this and for real progress to be made, it needs to become more than just my personal passion project. We also were not able to cultivate champions at the facilities where these would be installed (i.e. the mass shelters) and the installations themselves are expensive, with no clear funding source.	For updated plan, we should have one action related to energy resilience (solar + storage.) I think it's really important work, but it should not be 3 separate items. I'd be happy to workshop those into a single action for the update.	

BPS-2	Plan for solar + battery storage systems, which can serve as mini power-supply stations or provide residents the ability to shelter in place after any electricity supply-disrupting event, at varying scales (project, neighborhood and district) and locations (critical City facilities, low-income housing, community gathering spots).	Bureau of Planning and Sustainability	All Hazards / Earthquake	Andria Jacob	Stalled				
BPS-3	Encourage solar + battery storage demonstration projects at critical City facilities, in low-income neighborhoods and in other strategic locations.	Bureau of Planning and Sustainability	All hazards / Earthquake	Andria Jacob	In progress	Fire Station 1 solar + storage went live at the end of 2019! The big success story is Fire Station 1. PF&R has some great drone footage and story-telling about this project.			
BPS-4	Explore ability to waive System Development Charge (SDC) for change of use if money will be spent on seismic retrofit.	Bureau of Planning and Sustainability	Earthquake	Troy Doss	No progress		Action is a political decision that the City Council would need to taken on and be the lead on		
BPS-5	Adopt Portland's Comprehensive Plan to address Citywide policies, land use improvements and mapping changes related to natural hazards. This action needs high-level support from City Council.	Bureau of Planning and Sustainability	All hazards	Kathryn Hartinger	Completed				
BPS-6	Support Comprehensive Plan policies and projects that relate to resilience, climate change and natural hazard mitigation, response, adaptation and recovery. This action needs high-level support from City Council.	Bureau of Planning and Sustainability	All hazards	Kathryn Hartinger	Completed				
BPS-7	Support 2015 Climate Action Plan and Climate Change Preparedness Strategy actions that relate to adaptation planning and natural hazard mitigation actions.	Bureau of Planning and Sustainability	All hazards	Sallie Edmunds	Completed	South Reach JEFF: Developed and adopted the River Plan/South Reach, which established a new vision for the area, applied new regulations that respond to climate change, better protect natural resources and reduce flood risk, and included an action plan that identified a number of actions by the City and community partners needed to achieve the 20-year vision. Tree Code JEFF: The City recently completed a minor update of the Tree Code. Removed three of the four existing industrial and commercial zone exemptions. This will increase the number of properties in the city that must meet Tree Code requirements for tree preservation and planting.	South Reach JEFF: No significant obstacles (other than COVID-19 delaying the process a bit). Tree Code JEFF: The need to ensure adequate land capacity for industrial land did not allow for the removal of the exemption for the Heavy Industrial (IH) zone.		South Reach JEFF: The River Plan/South Reach achieved its goals through addressing a variety of issues within the planning area, including climate change preparation, environmental protection and restoration, expanding access to water- and land-based recreation access and improving neighborhood connections to the river. Generally, there was broad support from the community for the proposed changes. Tree Code JEFF: The amendments will result in increased tree canopy in commercial and industrial zones. There was huge public support for the amendments but legal constraints resulted in adoption of a narrower set of amendments.
BPS-8	Consider natural hazard mitigation in the development of the River Plan.	Bureau of Planning and Sustainability	All hazards / Flood		Not Reporting				
BPS-9	Develop an emergency resumption of service plan for solid waste removal after a disaster event.	Bureau of Planning and Sustainability	All hazards / Earthquake	Peter Chiam-Winfield	Stalled	BPS COOP was updated in 2019 with contact information for staff involved.	Not sure, was unable to recover this information because of staff turnover.	Stalled, staff turnover and no reallocation of resources.	Yes
BPS-10	Develop an emergency service plan for solid waste removal in multifamily properties after a disaster event.	Bureau of Planning and Sustainability	All hazards / Earthquake	Peter Chiam-Winfield	Stalled	No formal plan submitted since 2014. BPS provided feedback to PBEM plan listed on website.	Not sure, was unable to recover this information because of staff turnover.	Stalled, staff turnover and no reallocation of resources.	Yes
BPS-11	Develop recommended policies, regulations and/or landscape options for areas at risk from wildfires.	Bureau of Planning and Sustainability	Wildfire	Peter Chiam-Winfield	In progress	The report back for BPS-19 is adequate for BPS-11 as its focus is the same project. The Exone Map Correction Project is currently at the Planning and Sustainability Commission with anticipate recommendation in spring 2021. City Council hearings are planned for fall 2021, with a desired implementation in early 2022.	COVID-19 postponed wetland determinations for one year. This stalled the entire project.	The bulk of the work is staff being on private properties to verify the location of natural resource features. All site visit work was delayed with none occurring March – June 2020 due to COVID-19. While site visits could resume in June 2020, the season had passed for perform wetland determinations. Wetland determinations require water to be present and are only performed in the wet season. Thus wetland determinations were postponed for a full year.	
BPS-12	When possible, build mitigation and resiliency education into bureau public events and outreach (e.g., neighborhood meetings, Fix-It Fairs).	Bureau of Planning and Sustainability	All hazards	Kathryn Hartinger, Sallie Edmunds	Completed (but work is ongoing)	Through a partnership with PBEM and the NET program, staff and NET volunteers table and present a workshop at each of three Fix-It Fairs every year. Since October 2018, we have tabled six events, gave six in-person presentations, and about 3,500 people have attended each fair. PBEM and NET has a large and visible presence, and as a popular exhibitor. We have also continued this effort through the pandemic, combined with a personal/community resilience element care of Civic Life.	Just needed to establish and institutionalize the relationship.	Yes. There's obviously a desire for hazard resilience-related information and resources in the community. The more avenues people have to access these things, the more successful they will be. The Fix-It Fair provides kind of a one-stop shop for information and resources on City programs, so it captures Portlanders interested in all sorts of things – many of whom don't COME for the resilience resources, but are happy to have them when they're there.	
BPS-13	Develop incentives and regulations that promote, encourage and/or require seismic retrofits of private property (such as multi-family, masonry structures). This action needs high-level support from City Council and Office of Government Relations (OGR).	Bureau of Planning and Sustainability	Earthquake	Troy Doss	Completed				
BPS-14	Identify ways to encourage, promote or require U.S. Resiliency Council Certification for new public buildings. This action needs high-level support from City Council and Office of Government Relations (OGR).	Bureau of Planning and Sustainability	Earthquake	Troy Doss	No progress			Should not be a BPS item as they involve political decisions that the City Council would need to take on and be a lead on.	
BPS-15	Prioritize retrofitting of structures along emergency transportation routes.	Bureau of Planning and Sustainability	Earthquake	Troy Doss	No progress			Should not be a BPS item as they involve political decisions that the City Council would need to take on and be a lead on.	
BPS-16	Use updated floodplain data and maps, including potential climate change scenarios, to inform City and County land use, transportation, and other infrastructure planning processes.	Bureau of Planning and Sustainability	Flood, Severe Weather	Jeff Caudill	In progress	This is something that will be completed as a part of a multi-year effort to update floodplain regulations and incorporate new flood maps as they become available. BPS updated floodplain regulations for the southern portion of the Willamette River as a part of the River Plan / South Reach, which was adopted in December 2020. This effort incorporated guidance from the FEMA National Flood Insurance Program (NFIP) Biological Opinion for Oregon. Similar updates are currently underway for other portions of the city.	Updated mapping of floodplains by Federal agencies, including FEMA and the Army Corps of Engineers, to incorporate climate change has taken longer than expected but efforts are underway. As those updated maps are made available, the City will incorporate them into its regulatory maps and regulations will be updated to address newly-identified floodplain areas.	The City has been expecting to take an approximately 5-year, phased approach to the update of floodplain regulations. Individual phases take time to address. BPS is in the middle of this work now.	This action should remain in the updated mitigation action plan. This is important work for reducing flood risk for those that live and work in the city's floodplains and will contribute significantly to the City's ongoing efforts to restore habitat for the endangered and threatened salmon and steelhead species that utilize Portland's rivers and streams.
BPS-17	Encourage or require private property owners and developers to limit or reduce impervious area at citywide, watershed, site-specific and district scales.	Bureau of Planning and Sustainability	Flood / Severe weather	Mindy Brooks	No progress	There was no specific progress made. However, the Residential Infill Project did retain limits on development area while allowing additional units. Morgan Tracy (BPS) is the project lead on RIP and could provide more specifics about how they increased allow housing units without increasing impervious surface.		I have long wanted to do a project that put impervious surface limits in the hills where there is landslide hazard and stormwater management constraints. This would be a specific project. However, it is not in our work plan or in our future work plan. We are tapped out for many years in terms of upcoming projects resources and funding. We could change BPS-17 to read "Adopt impervious surface limits in areas of Portland that are subject to landslide hazards and where there are stormwater management constraints." That is more actionable.	

BPS-18	Provide safety training for day laborers, protect workers' rights, and collaborate with Voz to provide a safe place to locate day laborer services to encourage employment of local day laborers for post-disaster reconstruction and recovery. This action needs high-level support from City Council.	Bureau of Planning and Sustainability	All Hazards	Alisa Kane, Jonna Papaethimou	Stalled	No progress has been made	A difficult project due to lack of resources, time, and the inability to build a cohesive curriculum	The language in the plan below is for more than just a training. The conversation was about the City creating more formal connections with Voz so that when disaster hit they were ready to mobilize. As it says below, it would take a good deal of Council support for it to move forward. My guess is that it was determined that it was not enough of a BPS related topic to press in Council	Yes as we could potentially broaden the scope of the project to more than just training/education	
BPS-19	Update the environmental overlay zone, codes and maps to reflect best available science and the location and extent of risks associated with natural hazards in Portland	Bureau of Planning and Sustainability	All Hazards	Mindy Brooks	In progress	The Ezone Map Correction Project is currently at the Planning and Sustainability Commission with anticipate recommendation in spring 2021. City Council hearings are planned for fall 2021, with a desired implementation in early 2022.	COVID-19 postponed wetland determinations for one year.	The bulk of the work is staff being on private properties to verify the location of natural resource features. All site visit work was delayed with none occurring March - June 2020 due to COVID-19. While site visits could resume in June 2020, the season had passed for perform wetland determinations. Wetland determinations require water to be present and are only performed in the wet season. Thus wetland determinations were postponed for a full year.		
PWB-1	Continue to assess the vulnerability of the water system to seismic events and work toward hardening the backbone system.	Portland Water Bureau	Earthquake	Kim Anderson	Ongoing	Seismic Implementation Plan completed in June 2018, Backbone Isolation Plan completed 2019.	Seismic Implementation Plan completed in June 2018, Backbone Isolation Plan completed 2018/19.	Planning is ongoing and comprehensive	N/A	Yes, planning continues
PWB-2	Install remote operating valves to isolate existing river crossings.	Portland Water Bureau	Earthquake	Kim Anderson	In planning	Planned for FY 2024-2029 in the PWB Seismic Implementation Plan	Planned for FY 2024-2029 in the PWB Seismic Implementation Plan	Planned for future	N/A	Yes, planning will occur in the future
PWB-3	Install isolation valves where distribution system is tied in to backbone.	Portland Water Bureau	All Hazards	Kim Anderson	In planning	No Known Action Currently Planned 1/21	Planned for FY 2024-2029 in the PWB Seismic Implementation Plan. Planning a project identified to complete a long-term plan for isolating the backbone water system. The work that has been completed is an emergency plan that gives a starting point, but does not get into the details of looking at all the backbone valve connections to the distribution system. There is not currently a schedule for this work.	Planned for future	N/A	Yes, planning will occur in the future
PWB-4	Seismically upgrade water pump stations.	Portland Water Bureau	Earthquake	Kim Anderson	In planning	Planned for FY 2030-2036 in the PWB Seismic Implementation Plan	Planned for FY 2030-2036 in the PWB Seismic Implementation Plan	Planned for future	Not yet planned	Yes, planning will occur in the future
PWB-5	Continue to monitor dam safety at Mt. Tabor and Washington Park reservoirs.	Portland Water Bureau	Dam Failure	Kim Anderson	Ongoing	Monitored regularly, 2018 and ongoing	Monitored regularly, ongoing	None	Ongoing	Yes, this remains important for safety
PWB-6	Seismically upgrade water storage tanks.	Portland Water Bureau	Earthquake	Kim Anderson	Ongoing	Planned for FY 2036-2055 in the PWB Seismic Implementation Plan	Planned for FY 2036-2055 in the PWB Seismic Implementation Plan, however Greenleaf Tank 3 Design has started.	Planned for future	One has been started, others planned	Yes, continues to be a need
PWB-7	Plan, design and construct new Willamette River Crossing.	Portland Water Bureau	Earthquake	Kim Anderson	In progress	Design currently underway, planned completion in FY 22/23	Design being advanced, construction anticipated to start by end of 2021.	Design phase takes time	This is under way	Yes, important project
PWB-8	Plan, design and construct second new Willamette River Crossing.	Portland Water Bureau	Earthquake	Kim Anderson	In planning	Planned for FY 2037-2038 in the PWB Seismic Implementation Plan	Planned for FY 2037-2038 in the PWB Seismic Implementation Plan	Planned for future	Not yet planned	Yes, still relevant
PWB-9	Plan, design and construct replacement for St. John's River Crossing.	Portland Water Bureau	Earthquake	Kim Anderson	In planning	Planned for FY 2022-2028 in the PWB Seismic Implementation Plan	Planned for FY 2022-2028 in the PWB Seismic Implementation Plan; this schedule may move out 2 years or more	Planned for future	Not yet planned	Yes, still relevant
PWB-10	Partner with University of Washington to participate in the testing of the Earthquake Early Warning System.	Portland Water Bureau	Earthquake	Kim Anderson	In planning	Currently planning installation of sensors at Washington Park; sensors installed in Watershed 7/2018.	Currently planning installation of sensors at Washington Park and Groundwater; sensors installed in Watershed 7/2018.	Lack of time or follow-up	Dedicated staff with time and decision making capability	Yes, but establish deadlines and potentially assign intern
PWB-11	Coordinate with electrical utilities on tree fall mitigation measures to prevent impacts to Bull Run watershed supply. Continue to work in a co-management role with the Oregon Department of Forestry, US Forest Service and local fire departments to respond to and recover from fires in and near the Bull Run watershed.	Portland Water Bureau	Severe Weather	Kim Anderson	Ongoing	ResPro working with PGE, USFS to identify danger limbs/trees for removal or trimming.	ResPro working with PGE, USFS to identify danger limbs/trees for removal or trimming.	This is ongoing	N/A	Yes, ongoing and necessary
PWB-12		Portland Water Bureau	Wildfire	Kim Anderson	Ongoing	ResPro works with these agencies	ResPro works with these agencies regularly; this is ongoing	This is ongoing	N/A	Yes, ongoing and necessary
PWB-13	Continue to assess the potential impacts of climate change on wildfire in the Bull Run watershed.	Portland Water Bureau	Wildfire	Kim Anderson	Ongoing	Engaged in collaborative research with regional research institutions on the FireEarth project to assess post-fire erosion and climate change fire risks.	We have a dedicated analyst continuing to study and make recommendations of climate change on the Watershed. Included as part of the Supply System Master Plan, and ongoing.	This is ongoing	Yes, the need is ongoing	Yes, recommendations in progress
PWB-14	Continue to monitor forest health surveys completed by federal and state agency partners for the Bull Run watershed.	Portland Water Bureau	Wildfire	Kim Anderson	Ongoing	No Known Action Currently Planned 1/21	ResPro monitors forest health ongoing, including review of USFS reports	Ongoing	N/A	Yes, this is ongoing and necessary
PWB-15	Update the Bull Run wildfire evacuation plan.	Portland Water Bureau	Wildfire	Kim Anderson	Ongoing	Draft still in review as of 1/21	Draft still in review as of 9/11/18	Regularly reviewed	This is updated regularly; 2020 fire season was extreme, need to plan for climate change impacts	Yes, critical
PWB-16	Identify and prioritize culvert improvements in the Bull Run watershed to manage streamflow and stormwater runoff and reduce risks to water quality and infrastructure.	Portland Water Bureau	Flood	Kim Anderson	Ongoing	Hamilton Creek currently in Design. Culverts in the watershed are inspected and evaluated for risk and are incorporated into the Bull Run Roads Plan.	In-town culvert replacements occur with BES. FY 2018-19 Planning for culvert replacement at Hamilton Creek, work scheduled for summer 2021/2022. SW 45th at Fanno Creek culvert replacement scheduled for fall 2021. Forest Park and Leaf Erickson Dr culvert expected replacement in 2021. 2 culverts removed at Carlton Marsh in 2017. Culvert cleaning and maintenance in the watershed is ongoing.	Ongoing	Future projects planned	Yes, ongoing and future plans
PWB-17	Continue to assess the potential impacts of climate change on flooding in the Bull Run watershed.	Portland Water Bureau	Flood	Kim Anderson	Ongoing	Included as part of the Supply System Master Plan, and ongoing. Included as part of ongoing climate resiliency program work. Engaged in collaborative research with Portland State University to assess climate model projections for extreme storm events over Bull Run and potential impacts on flooding and turbidity.	Included as part of the Supply System Master Plan, and ongoing	Ongoing	Yes, this need is ongoing and developing	Yes, this need is ongoing and developing
PWB-18	Continue to assess the potential impacts of climate change associated with drought in the Bull Run watershed.	Portland Water Bureau	Drought	Kim Anderson	Ongoing	Included as part of the Supply System Master Plan, and ongoing climate resiliency program work. Completed an analysis for the Supply System Master Plan on future water supply availability that incorporated climate model projections of future drought and water supply stress.	Included as part of the Supply System Master Plan, and ongoing	Ongoing	N/A	Yes, this need is ongoing and developing
PWB-19	Perform seismic/dynamic analysis of Bull Run watershed bridges.	Portland Water Bureau	Earthquake	Kim Anderson	In planning	Planning to begin in FY 2022-23 (PWB Seismic Implementation Plan)	Planning to begin in FY 2022-23 (PWB Seismic Implementation Plan)	Future Planning	N/A	Yes, for future
PWB-20	Continue to implement with the USFS the Portland Water Bureau (PWB) transportation system management plan for emergency and fire access in Bull Run Watershed.	Portland Water Bureau	Wildfire	Kim Anderson	In progress	Reviewed as part of annual Bull Run Roads Plan.	Reviewed as part of annual Bull Run Roads Plan.	None	Reviewed	Yes, with regional partners
PWB-21	Continue to partner with electrical utilities to ensure continuity of electrical service to the City and the Columbia South Shore Well field during power outages	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Discussion with PGE occurred 11/20; more specific needs should be communicated	Exercised 11/12/2020 with PGE and local partners, "Black Sky" Workshop. Collaborated with PGE and had guest speakers. Discussions will continue on electric service expectations and needs.	None	In progress, not stalled	Yes, prioritizing GW is essential
PWB-22	Collaborate with Multnomah County Drainage District and Port of Portland to assess flooding impacts from levee failure, quantify risks, and identify potential mitigation strategies.	Portland Water Bureau	Flood	Kim Anderson	In progress	Coordination meeting with MCDD July 2018; participation in MCDD full-scale exercise 9/25/18	Coordination meeting with MCDD July 2018; participation in MCDD full-scale exercise 9/25/18; need to coordinate/contact MCDD in 2021.	None	Need to establish regular check-ins with MCDD	Yes, still relevant
PWB-23	Make seismic improvements to Columbia South Shore well field and groundwater pump station	Portland Water Bureau	Earthquake	Kim Anderson	In planning	Planned for FY 2029-2043 in the PWB Seismic Implementation Plan	Planned for FY 2029-2043 in the PWB Seismic Implementation Plan	Future Planning	N/A	Yes, planned for future implementation
PWB-24	Install backup transformer(s) at Groundwater Pump Stations to reduce vulnerability to power outage.	Portland Water Bureau	All Hazards	Kim Anderson	stalled	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	This recommendation is not the right solution, need to consider other options	This recommendation is not the right solution, need to consider other options	No, this recommendation will not work for this.
PWB-25	Investigate well treatment options to increase existing well capacity.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning study completed July 2018, no action planned at this time.	Follow-up study completed 2020, implementation memo for recommendation currently in progress.	None	Implementation recommendations being developed	Yes, planning in development

PWB-26	Investigate hypochlorite generation at ground water pump station to reduce or eliminate the need for out of area deliveries.	Portland Water Bureau	All Hazards	Kim Anderson	In planning	Planning in FY 20/21	Future planning project, projected schedule for study to be developed Spring 2021.	None	N/A	Yes, currently in planning
PWB-27	Continue to research ways to balance the needs between fire flow requirements and water quality requirements.	Portland Water Bureau	Wildfire	Kim Anderson	In progress	No Known Action Currently Planned 1/21	Planning memo completed 9/20	None	Planning memo completed in the Fall 2020	Yes, still needed
PWB-28	Coordinate with Fleet and PBOT Maintenance Operations to ensure adequate reserves of diesel fuel and gasoline to support extended operations.	Portland Water Bureau	All Hazards	Kim Anderson	stalled	No Known Action Currently Planned 1/21	No Known Action Currently Planned 2/21	Not sure this is correct solution for fuel	Fuel planning needs to be done region wide	No, not sure this is the right solution for fuel planning. Need to consult with Fleet and PBOT.
PWB-29	Work with other City bureaus to investigate potential for pre-disaster agreements to provide fuel, shelter, food, water, and sanitary facilities, materials, supplies, equipment, and specialty contractors for City response.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning in FY 2023-2024	Planning in FY 2023-2024. Completed one Mutual Aid Agreement in 2020 - PNEMA - with PBOT taking lead.	Future Planning	N/A	Yes, plans for future
PWB-30	Partner with Multnomah County, Metro, Portland Public Schools (PPS), adjacent school districts, and Portland Parks and Recreation (PP&R) to develop a sheltering plan for city responders and their families.	Portland Water Bureau	All Hazards	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21; Multnomah County has a sheltering plan for public. Suggest EMSC and PBEM assist to start this process.	None	Agreement with PBOT to house staff at Interstate. Need to explore this more, have a champion to spearhead this. EMSC PBEM?	Yes, need more planning help; recommend PBEM and EMSC discuss this.
PWB-31	Investigate availability, capacity, contracting and delivery of portable water treatment plants	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Regional planning study on Emergency Water Distribution underway - completion TBD	Planning study on Emergency Water Distribution underway - completion planned for FY 21/22 - UASI Consortium. Planning memo completed 3/19. Ops group working to implement.	N/A	Regional study needed for regional effort	Yes, regional need
PWB-32	Investigate availability and use of food-grade quality tank trucks for distribution of water following emergencies.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning study on Emergency Water Distribution underway - completion TBD; plans for alternate tank trucks will be considered.	Planning study on Emergency Water Distribution underway - completion planned for FY 20/21; Planning memo completed 3/19. Ops group working to implement.	N/A	Regional study needed for regional effort	Yes, regional need
PWB-33	Determine number, locations and types of Emergency Water Distribution Systems, and provide location information to the public.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning study on Emergency Water Distribution underway - completion TBD; plans for alternate tank trucks will be considered.	Planning study on Emergency Water Distribution underway - completion planned for FY 20/21; Planning memo completed 3/19. Ops group working to implement.	N/A	Regional study needed for regional effort	Yes, regional need
PWB-34	Investigate and implement use of Integrated Public Alert and Warning System (IPAWS) / Wireless Emergency Alerts (WEA) systems to send alerts from specific cell towers to cell phones for those in specific locations affected by an event.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	No Known Action Currently Planned 1/21	PBEM has WEA and IPAWS capabilities	None	N/A	Yes, could use more training, and more people willing to train.
PWB-35	Develop measures to rapidly isolate damaged portions of the water conveyance system (most of Vernon 270, Washington Park 229 and Tabor 270) to minimize water loss and preserve storage	Portland Water Bureau	All Hazards	Kim Anderson	no progress	Planning to begin in FY 20/21 (PWB Seismic Implementation Plan)	On the list of future Planning projects, projected schedule for study to be developed Spring, 21.	N/A	Future planning, Spring 2021	Yes, in planning this year
PWB-36	Further study the feasibility of seismic valve installation at strategic locations to protect water supply & storage.	Portland Water Bureau	Earthquake	Kim Anderson	no progress	Planning to begin in FY 2020-21	On the list of future Planning projects, projected schedule for study to be developed Spring, 21.	N/A	Future planning, Spring 2021	Yes, in planning this year
PWB-37	Participate with PBOT, Multnomah County, Oregon Department of Transportation (ODOT), Metro, Clackamas County and USFS in an in depth risk assessment of the bridges to develop and prioritize mitigation projects to ensure connectivity after an event.	Portland Water Bureau	Earthquake	Kim Anderson	In progress	No Known Action Currently Planned 1/21	Transportation study underway - RDPO and PBOT	N/A	Regional emergency transportation routes project currently underway.	Yes, if regional study does not reveal bridge detail needed.
PWB-38	Coordinate with Multnomah County, Clackamas County, Metro, Oregon Department of Transportation (ODOT) and PBOT to ensure road system access to critical facilities including Interstate, Lusted Hill, Headworks, Sandy River Station, pump stations, and tank/reservoir sites.	Portland Water Bureau	All Hazards	Kim Anderson	no progress	No Known Action Currently Planned 1/21	Transportation study underway - RDPO and PBOT; however PWB was not consulted or included in study participation. Have requested PWB be included 1/28/21.	N/A	Need to ask that WB locations be included in emergency routes, in the current regional planning study.	Yes, and ensure that WB locations are included in emergency routes, in the current regional planning study.
PWB-39	Revise current emergency response plans based on recommendations from the Water Bureau Seismic Study. Continue to support research of best available science and data for space weather and potential impacts to the City of Portland, and where possible take steps to increase resilience of city infrastructure to space weather events.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning to begin in FY 26/27 (PWB Seismic Implementation Plan)	Planning to begin in FY 26/27 (PWB Seismic Implementation Plan)	Future Planning	N/A	Yes, needed
PWB-40		Portland Water Bureau	Space Weather	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Need more scientific data on this topic, and consult with Water Quality on impacts.	Yes, this is developing science
PWB-41	Develop main replacement program with earthquake resistant pipe (Kubota ERDIP or US-Pipe TR-EXTREME) in areas of high permanent ground deformation	Portland Water Bureau	Earthquake	Kim Anderson	In progress	Planning currently underway to be complete in FY 18/19	Planning FY 19/20 and 20/21. - 2019 - finalized guidelines that can be used to determine if a pipe should be replaced with ERDIP based on GIS map layers for predicted ground deformation and movement. - 2020 and on-going, developing Seismic Design Standards and Specifications for PWB, as well as developer and inter-agency projects. - First Developer installation of ERDIP completed in late 2020 at the Amazon site. - Additional ERDIP projects in early design including PWB frontage improvements for Amazon, new waterline as part of the NW Broadway (old downtown USPS site) project, as well as 12" main replacement on Hayden Island. - Anticipate including ERDIP as part of regular crew replacement starting in potentially 2022/23.	N/A	N/A	N/A
PWB-42	Support the creation of a City of Portland Seismic Resiliency Officer position under PBEM to drive citywide resiliency efforts. This action needs high-level support from City Council.	Portland Water Bureau	Earthquake	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21; we do support this position but have not heard that it was created.	N/A	Support this but have not heard that position has been created.	N/A
PWB-43	Coordinate with Commissioner's Office and Office of Government Relations (OGR) to elevate seismic retrofit funding for water infrastructure to a high priority on the City's legislative agenda. This action needs high-level support from City Council and Office of Government Relations (OGR).	Portland Water Bureau	Earthquake	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Need to assign policy group to pursue this.	N/A
PWB-44	Collaborate with other city bureaus to encourage and expand personal, family and business preparedness plans and programs.	Portland Water Bureau	Earthquake	Kim Anderson	Ongoing	PBEM offering Personal/Home Preparedness courses to City employees. No Other Known Action Currently Planned 1/21	Collaborated with BDS, BES, PBOT to provide Steve Eberlein preparedness webinar. PBEM offering Personal/Home Preparedness courses to City employees. We supplied each employee with an emergency kit in 2018.	Ongoing	N/A	Ongoing
PWB-45	Develop a West-side emergency operations and staging facility for field crews.	Portland Water Bureau	All Hazards	Kim Anderson	no progress	Planning begins in FY 2026-27 (PWB Seismic Implementation Plan)	Planning begins in FY 2026-27 (PWB Seismic Implementation Plan) Current EM Scoping Team is considering this. 1/21.	N/A	N/A	N/A
PWB-46	Develop a staging plan for stockpiling water system repair materials in strategic locations.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning begins in FY 2025-26 (PWB Seismic Implementation Plan)	Planning begins in FY 2025-26 (PWB Seismic Implementation Plan); this is also being considered during 2019-2024 Strategic Planning; EM Scoping 1/21	N/A	N/A	N/A
PWB-47	Continue to conduct ongoing emergency response training for all Portland Water Bureau (PWB) employees.	Portland Water Bureau	All Hazards	Kim Anderson	Ongoing	Courses offered in 2018. Personal Employee Emergency Kits deployed 9/2018.	Courses offered in 2018; EOC Orientation and DAT training. Currently planning virtual learning curriculum for 2021/22	Ongoing	N/A	N/A
PWB-48	Purchase additional vacuum excavator to facilitate access to water system for maintenance and repairs.	Portland Water Bureau	All Hazards	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	N/A	N/A
PWB-49	Establish relationships with out-of-state utilities for future Emergency Management Assistance Compact (EMAC) agreements.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning to begin in FY 19/20 (PWB Seismic Implementation Plan)	Planning to begin in FY 20/21 (PWB Seismic Implementation Plan); developed close working relationship with Seattle Public Utilities, Tacoma, Yakima and Bend OR water utilities. Currently on the ORWARN Board.	None	Some in place with WA utilities; need to plan for more.	N/A
PWB-50	Establish and document PWB reporting standards for both temporary protective measures and permanent repairs in compliance with Federal Emergency Management Agency (FEMA) guidelines.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Planning to begin in FY 20/21 (PWB Seismic Implementation Plan)	Planning to begin in FY 20/21 (PWB Seismic Implementation Plan) FEMA reimbursement analysis currently underway as of 1/20/21.	N/A	Current memo for FEMA reimbursement forms and process under way 2/21	N/A
PWB-51	Train PWB responders to understand and follow protocols for Federal Emergency Management Agency (FEMA) reporting.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	No Known Action Currently Planned 1/21	FEMA reimbursement study/analysis currently underway as of 1/20/21. Training will follow.	N/A	Training will follow completed memo and forms	N/A
PWB-52	Upgrade trestles that carry Conduits 2 and 3 of the water delivery system.	Portland Water Bureau	All Hazards	Kim Anderson	In progress	Additional projects on Conduit 3 in S-yr CIP - 2 Trestles on Conduit 2 to be completed FY 2019-20.	Additional projects on Conduit 3 in S-yr CIP - 2 Trestles on Conduit 2 completed FY 2019-20.	Future Planning	Planning in progress	N/A

PWB-53	Create redundancy in the water delivery system by burying Conduit 3 under the Sandy River.	Portland Water Bureau	All Hazards	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	N/A	N/A
PWB-54	Continue to mitigate Portland's water supply infrastructure and the Bull Run Watershed from landslide hazards; incorporate landslide hazard reduction techniques into infrastructure projects.	Portland Water Bureau	Landslide	Kim Anderson	In progress	No Known Action Currently Planned 1/21	Washington Park Reservoir Improvement Project includes landslide mitigation and slope stabilization. Construction currently under way, 1/2021.	N/A	Some landslide mitigation occurring at WA Park	N/A
PWB-55	Seismically harden Groundwater Transmission Main.	Portland Water Bureau	Earthquake	Kim Anderson	In progress	Planned for FY 2033-2038 in the PWB Seismic Implementation Plan	Planned for FY 2033-2038 in the PWB Seismic Implementation Plan	Future Planning	Planned for future	N/A
PWB-56	Seismically harden conduits from Headworks to Powell Butte.	Portland Water Bureau	Earthquake	Kim Anderson	In progress	Planning to begin in FY 2018/19 (PWB Seismic Implementation Plan)	Planning to be completed 3/21	Current Planning	Planning occurring 3/21	Yes, planning occurring 2021
PWB-57	Mitigate landslide hazards for the conduits within the Bull Run watershed.	Portland Water Bureau	Landslide	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Unknown at this time.	Yes, future planning
PWB-58	Make seismic improvements at Headworks.	Portland Water Bureau	Earthquake	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Unknown at this time.	Yes, future planning
PWB-59	Make seismic improvements at Lusted Hill Treatment Facility.	Portland Water Bureau	Earthquake	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Unknown at this time.	Yes, future planning
PWB-60	Install remote monitoring sensors and alarms at Bull Run dams to provide an early detection of dam movement or change.	Portland Water Bureau	Dam Failure	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Unknown at this time.	Yes, future planning
PWB-61	Continue to monitor Bull Run Dams 1 and 2 for seismic risk, floods and landslides	Portland Water Bureau	All Hazards	Kim Anderson	Ongoing	Dams are monitored and inspected regularly; this is ongoing	Dams are monitored and inspected regularly; this is ongoing	Ongoing	Dams are monitored regularly, no issues.	Yes, ongoing need
PWB-62	Replace Cast Iron piping with seismically resilient pipe material.	Portland Water Bureau	Earthquake	Kim Anderson	Ongoing	As pipes are repaired, they are replaced with seismically resilient pipe; this is ongoing.	As pipes are repaired, they are replaced with seismically resilient pipe; this is ongoing.	Ongoing	N/A	Yes, ongoing need
PWB-63	Establish a pre-disaster inter-bureau agreement with Office of Management and Finance (OMF) - Fleet and PBOT Maintenance Operations to assign personnel, equipment, and resources to work in coordination with Portland Water Bureau (PWB) response.	Portland Water Bureau	All Hazards	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Suggest this agreement coincide with staff sheltering planning. PBEIM and EMSC could assist.	Yes, future planning
PWB-64	Coordinate with FEMA on results of updated flood-plain mapping on Willamette River for impacts to Portland Water Bureau (PWB) facilities.	Portland Water Bureau	Flood	Kim Anderson	no progress	No Known Action Currently Planned 1/21	No Known Action Currently Planned 1/21	N/A	Need a point person for this; recent flood planning improved city insurance rates.	Yes, still needed
OMF-1	Participate in Oregon Solutions project to retrofit Multnomah County Drainage District (MCDD) levees.	Office of Management and Finance	Flood	Nancy Hendrickson	Completed	The OS project is over and was completed as written in the plan. It is now called Levee ready columbia-15 partners (Cites, County Metro Port). A regional partnership. This partnership has contributed money and worked with the legislature to get money to get an IFA (infrastructure loan)- The city backed one and a county another to do an assessment of the levees that needed to be done for re-certification-this looked at hazard mitigation climate change etc. This is an active partnership. This team managed to get legislation passed at the state level to consolidate the four drainage districts into one. It happened quickly, there is now a 3-5 year process that is				
OMF-2	Partner with agencies to develop an emergency operations center on the west side of the Willamette River. This action needs high-level support from City Council.	Office of Management and Finance	All Hazards	Aaron Beck	Stalled	Development of the Sears site into a west side emergency operations center is temporarily paused pending continued work on a citywide Long-Range Facilities Master Plan. No work has been accomplished since the last report.	Continued work on developing a master plan were also stalled pending site assessment for use by Fire Bureau.	Barriers are primarily the lack of funding to complete the next phases of a Long-Range Facilities Master Plan.		N/A
PBOT-1	Perform risk assessment of bridges; use findings to develop and prioritize mitigation projects. Ensure equity tools are used in project prioritization.	Portland Bureau of Transportation	Earthquake	Steve Townsen, Cameron Glasgow	Completed	Seismic assessment and prioritization of bridge inventory was completed.	None	N/A	The action should continue to be included in the plan because the City must use the site consistent with the deed where the federal government transferred the property to the City for primarily emergency preparedness and response use, otherwise the property will revert back to the federal government. There is definitely bureau interest in the property - but not enough to commi scarce bureau resources.	N/A
PBOT-2	Identify transportation routes likely to be impacted by landslides and identify potential alternate routes based on most likely scenarios. Communicate potential alternate routes with the public, highlighting the fact that routes may change during actual events. Ensure access to this information to those with limited English proficiency, and including seniors and those with disabilities.	Portland Bureau of Transportation	Landslide	Steve Townsen, Cameron Glasgow	Stalled	No progress.	There appear to be too many variables and possible outcomes to complete this task in a meaningful way. When a landslide occurs, traffic control will be placed and site-specific detours will be put in place.	N/A	No	N/A
PBOT-3	Design and build facility for PBOT Maintenance Operations that can operate as a Bureau Incident Command Post following a large earthquake. Move existing road clearing equipment to a facility that is not subject to freeway ramp collapse. Engage local community groups, especially communities of color, in design phase and ensure Minority, Women Owned Emerging Small Business (MWESB) contracting meets or exceeds aspirational goals.	Portland Bureau of Transportation	Earthquake	Corey Maculewicz	Stalled	An initial Master Site Plan was completed (costs identified to be too high).	Costs too high. The City then put a freeze on all Master City Plan work across all bureaus to ensure a citywide review before any single bureau moved forward with plans.	Cost too high. Lack of City approval to move forward doing any more work to lower costs in a modified design.	No, although we still need to look at moving vehicles and equipment out from underneath earthquake-susceptible bridges. This is a difficult one to solve without a new facility, but we can potentially parse out some of our operations to other facilities as they become available.	N/A
PBOT-4	Perform drainage assessment and mitigate problem areas of right of way where frequent washouts occur during heavy rains.	Portland Bureau of Transportation	Severe weather	Rich Grant	In Progress	BES engineering staff have evaluated a few areas of concern.	Staffing time to evaluate all areas.	N/A	yes	N/A
PBOT-5	Continue to convene city landslide group after each major landslide occurrence (including large single landslides or multiple concurrent landslides) to evaluate the city's response and develop lessons learned.	Portland Bureau of Transportation	Landslide	Cameron Glasgow	Ongoing	City continues to convene Landslide Committee during rainy season.	None	N/A	yes	
PBOT-6	Complete PBOT Transportation Resiliency Plan to identify and prioritize vulnerabilities in the transportation system.	Portland Bureau of Transportation	All Hazards	Courtney Duke	In Progress	Director's Team has ok'd developing a Resiliency plan this calendar year	None.		Yes - this one is in progress for completion by 30 June by a designated team within PBOT and actively being worked March - June 2021.	
BES-1	Continue to implement actions in the 2005 Portland Watershed Management Plan.	Bureau of Environmental Services	Erosion, Landslide, Flood	Nishant Panulekar, Kate Carone	Ongoing	This plan describes the approach the city uses to evaluate watershed conditions and implement projects to improve watershed health. It continues to provide the framework for many bureau programs and projects.	No major obstacles.	This is an ongoing action as the plan provides a framework for the bureau's watershed work. COVID-19 and other emergencies temporarily slowed some of the work in mid-2020.	As written, this is an ongoing action that is hard to measure. Recommend the action be reformed or removed in the plan update.	N/A
BES-2	Engage with the electric utilities to negotiate prioritizing the return of power to treatment plants (Tyon Creek and Columbia Boulevard), collection system active controls and pump stations.	Bureau of Environmental Services	Earthquake	Nishant Panulekar, Kate Carone	Complete	The action was completed prior to the previous status report.	N/A	N/A	N/A	Yes
BES-3	Complete the BES Resiliency Plan to identify vulnerabilities in the sanitary and combined sewer collection system.	Bureau of Environmental Services	Earthquake	Nishant Panulekar, Kate Carone	Completed	The BES Resiliency Master Plan was completed in March 2019. In March 2020 a Resiliency Team was staffed and began implementing plan recommendations	The plan took longer than expected to complete due to staffing changes.	N/A	N/A	The plan was completed as intended and is serving as a roadmap for building bureau resiliency to seismic and climate change risks. Partnerships were integral to successfully completing the plan.
BES-4	Continue BES' land acquisition program to protect or enhance water quality, hydrology and habitat. Consider the presence of floodplain and steep slopes in the program's criteria. When properties are purchased, remove structures and place deed restrictions to limit to open space uses, to protect them as natural resource areas or other green infrastructure in perpetuity.	Bureau of Environmental Services	All Hazards	Nishant Panulekar, Kate Carone	Ongoing	Approximately 34 acres have been purchased under BES' land acquisition program since the last report.	Property owners in areas of interest not always interested in selling and/or BES can't get to agreement on purchase price.	This is an ongoing activity.	This is an ongoing action and should be included but reformed in the updated plan. Recommend combining it with action item BES-6.	N/A

BES-5	Develop permitting and policy tools to offset impacts of floodplain development with mitigation on sites that increase flood storage and enhance ecological functions, consistent with new floodplain regulations.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	In progress	City adopted South Reach Plan, which for the first time allows offsite mitigation banking for development in the floodplain in one section of the city, and increased the mitigation requirements. A citywide approach will be codified by 2023 as part of FEMA BICP compliance and approval for initial mitigation bank will be tied to it.	Coordinating with other mitigation drivers including Portland Harbor Superfund cleanup effort, and negotiating with private property owners over mitigation sites.	The City is making good progress on this action, it just isn't yet complete.	Yes, it should be included, and is expected to be complete in 2023.	N/A
BES-6	Continue to fund the Johnson Creek Willing Seller Program to reduce the risks of flooding, while improving natural floodplain conditions in the watershed.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	Ongoing	The Johnson Creek Willing Seller Program has continued to be funded to purchase properties in the floodplain, over \$1.4M in this reporting period.	Property owners in areas of interest not always interested in selling and/or BES can't get to agreement on purchase price.	This is an ongoing activity.	This is an ongoing action and should be included but reframed in the updated plan. Recommend combining it with action item BES-4.	N/A
BES-7	Continue to partner with United States Geological Survey (USGS) to maintain and improve river and stream gauges in the Portland metropolitan area.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	Ongoing	We finalized a new 5-year contract (2019-2024) with USGS and others to continue to co-fund gages on the Willamette, Johnson Creek, Tryon Creek, Fanno Creek, and even added a gage on Crystal Springs Creek	No major obstacles.	N/A	This is an ongoing action and should be included but rewritten to have a discrete ending/goal.	N/A
BES-8	Continue to provide publicly accessible information on landscaping techniques that reduce water run-off.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	Ongoing	This work continues to be ongoing through signage at project sites throughout the city. BES website, printed materials, events, grants, and especially through partnerships with watershed councils and soil and water conservation districts.	Physical distancing during 2020 in response to COVID-19 drastically reduced in-person outreach and information sharing by BES and partners who help deliver these messages.	This is an ongoing action. The cancelling of in-person events in 2020 was a barrier to sharing these messages with some populations, but other forms of outreach did continue.	This is an onling action and should be included but reframed in the updated plan to have concrete goals.	N/A
BES-9	Design and conduct a study to determine the effectiveness of maintenance agreements that require homeowners associations to manage vegetation in open space tracts when new land divisions are approved.	Bureau of Environmental Services	Wildfire	Nishant Panulekar, Kate Carone	Stalled	A group was convened to discuss feasibility of this project. There was general interest, but the project was set aside primarily due to lack of staff capacity. There is potential for this to move forward in the future, but not in the immediate term.	There were several challenges. First, the impacts of the problem are dispersed among several city entities and external partners, and didn't feel as urgent as other work. Second, solutions would need to be very collaborative, and logistics of organizing and staffing was beyond anyone's ability to take on.	Staff availability was primary barrier, with funding for consultant and partner work a secondary factor.	Recommend omitting this from the updated plan. There isn't capacity at this time and the problem is more of an O&M issue than a hazard-centered issue.	N/A
BES-10	Update the Stormwater Management Manual on a regular basis to incorporate best management practices, address development-related issues and work effectively with natural hydrologic conditions.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	Complete	The SWMM is updated on a regular basis. Completed the most recent SWMM update in 12/2020.	No major obstacles.	N/A	The most recent version of the manual, published in December 2020, is complete. BES updates this manual regularly. The action could continue to be included in the plan, but the utility of that inclusion should be considered during the NIMP update.	The stormwater management manual provides standards for development so it will be months to years before we will be able to observe facilities designed to these standards in operation. So far, the manual has been received well by users because of improvements to language clarity and technical guidance.
BES-11	Investigate design approaches for effectively managing stormwater in landslide-prone areas.	Bureau of Environmental Services	Landslide	Nishant Panulekar, Kate Carone	In progress	Through Risk Assessment work, BES collaborated closely with landslide experts from OR DOGAMI, PSU and BDS. We were able to identify areas where landslide risks exist and where those risks overlap with areas where BES' stormwater systems are deficient, or where we lack service, system or runoff if not otherwise managed. As part of the Resiliency Master Plan, BES identified pipe materials that are more resilient to landslides.	No major obstacles.	BES has identified where there is greater risk, and mitigation options for piped stormwater systems. Bureau staff are still struggling with integration across systems and understanding how to incorporate mitigating landslides into their work. We tend to remain in a narrow focus of 'system' still with little understanding of how to deal with or acknowledge risks either being imposed on our system of focus or unintended risks created by our work in our system. We may need more education and better understanding of these issues for staff that are making these decisions to move forward with looking at the broader view of integration.	Consider reframing action to address underlying issues of education, standards and integration of thinking across systems to be better prepared for infrastructure rehab and development in landslide prone areas.	N/A
BES-12	Continue the City's vegetation management, public education programs, and partnerships with watershed councils and the soil and water conservation districts to prevent erosion along streams and rivers.	Bureau of Environmental Services	Flood, Landslide	Nishant Panulekar, Kate Carone	Ongoing	Ongoing. BES has continued to restore and manage riparian zones on BES-owned property. BES has continued to fund all local watershed councils, which work with private property owners to restore riparian areas. BES Clean River Rewards education program did field programs with more than 4,000 students.	The COVID-19 emergency briefly slowed down field work in mid-2020 and halted in-person education programs.	This is an ongoing activity that could always benefit from additional staff capacity.	This is a collection of ongoing activities. Framing of this action should be reconsidered to make it more measurable and material to hazard mitigation.	N/A
BES-13	Continue to implement projects that retain native vegetation, increase vegetation diversity and increase the complexity of the vegetation strata (having at least three vegetation strata: herbs, shrubs, trees).	Bureau of Environmental Services	Flood, Landslide	Nishant Panulekar, Kate Carone	Ongoing	Planting of 56,403 native tree and shrub seedlings in BES-owned natural areas, and initiation of habitat enhancement work on 57 new acres of natural area in 2019 and 2020.	No major obstacles.	This is an ongoing action.	This is an ongoing action that should be reframed to make discrete from BES-19.	N/A
BES-14	Continue to implement City restoration projects that increase large wood and root wads, which soften the effect of wave action on shorelines as well as provide habitat for migrating salmonids.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	Ongoing	The Oaks Bottom restoration project was completed, reopening and restoring 75 acres of wetland habitat for migrating salmon and other wildlife. The Luther Road Phase II project was also completed, adding large wood and root wads along 2,000 feet of Johnson Creek.	These floodplain restoration projects were complex, expensive, and required extensive partnerships to accomplish. Both projects had significant logistical construction challenges and disrupted transportation on a major transportation link.	This is an ongoing activity.	The two projects completed during the reporting period are being monitored closely and are exceeding design expectations.	N/A
BES-15	Support Early Detection and Rapid Response to control invasive plant and insect populations that threaten forest infrastructure.	Bureau of Environmental Services	Landslide, Wildfire	Nishant Panulekar, Kate Carone	Ongoing	The city is managing 13 species for eradication, one species for containment, and closely watching five additional species.	No major obstacles.	This is an ongoing action. Additional funding would expand the extent of this work, but work is proceeding as planned.	Recommend retention of this action. Consider expanding to include control of invasive species populations.	N/A
BES-16	Explore options to acquire rights of first refusal (ROFR) for properties that become non-conforming uses in the floodplain due to changing regulations. Right of first refusal would be exercised when properties are substantially damaged by a flood event. Consider establishing an acquisition fund for these properties that amortizes the cost of acquisition over decades.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	Stalled	Have done some initial analysis and identified a residential area that would be a good candidate for this tool if it were developed. Acquisition would be good fit for BRIC funding.	Lacks momentum due to competing priorities within the organization.	The project lacks a champion in our organization.	Yes, consider including some version of this action in the next plan update.	N/A
BES-17	Complete the Stormwater System Plan, including strategies to reduce risks related to runoff in areas at risk of natural hazards.	Bureau of Environmental Services	Landslide, Flood	Nishant Panulekar, Kate Carone	Ongoing	This effort is described as completion of the plan but this is a long term, ongoing, continuous planning process, in which we will identify high risk areas and prioritize them for further detailed study to develop appropriate projects, programs, and policies to reduce risk related to stormwater. The first version of the SWSP Risk Assessment identified areas of risk where stormwater is not likely being managed effectively in landslide prone areas that could affect natural systems. While there were no definitive policies to come out of that work, we have been using that data to inform planning processes. As our program continues to mature, more detailed risk data will be developed based on field collected data and more advanced remote sensing processes. As the risk data informs the planning process in IP, policies will likely begin to be formed around mitigation practices and potential new or enhanced regulatory policy for new and redevelopment.	Through the planning process, we shifted approach from producing a standalone plan to a set of tools and criteria for categorizing and prioritizing risk. Additional action beyond the risk assessment didn't happen. Our next priorities are to develop and refine our risk assessment process to better define risks.	Policy will likely come out of the process of examining solutions to the risks identified. Implementation or development of risk mitigation strategies has also stalled due to lack of resources, COVID and recent bureau reorganization.	Something related to this action should be considered for inclusion in the updated plan. It will require a conversation within the Bureau to agree on where the policies should be identified and where policy could/should be developed or generated.	N/A
BES-18	Continue to implement green infrastructure projects and natural area restoration projects identified in BES' watershed management plans and system plans.	Bureau of Environmental Services	Landslide, Flood	Nishant Panulekar, Kate Carone	Ongoing	This is ongoing work. Many projects under various programs have been completed including green street construction, tree planting, culvert replacements and floodplain restoration.	Building equity considerations into green infrastructure planning and implementation is underway.	This is ongoing work. The COVID-19 temporarily slowed work in mid-2020.	This is a collection of ongoing activities. Framing of this action should be reconsidered to make it more measurable and material to hazard mitigation.	N/A
BES-19	Partner with community groups and residents to plant trees and revegetate natural areas and open spaces to improve local hydrology and stormwater management and to promote resiliency of and equitable benefits provided by the urban forest.	Bureau of Environmental Services	Flood, Landslide	Nishant Panulekar, Kate Carone	Ongoing	The BES Tree Program worked with community groups and property owners to plant 3,409 street trees and 1,966 private property trees in 2019 and 2020.	COVID has resulted in some changes to work schedules and management practices, but has not generally impeded progress on projects. No other significant obstacles.	N/A	This is an ongoing action that should be reframed to make discrete from BES-13.	N/A
BES-20	Support Multnomah County Drainage District (MCCD) in their continued calibration and update of hydraulic models for conveyance and internal flood impacts to the four floodplains managed by MCCD #1.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	In progress	Completed 75% of the work as part of Master Drainage Plan development.	N/A	The drainage districts have dramatically modernized their processes over the last five years. Building that capacity and securing funding has taken time.	It is expected that this action will be complete before the next NIMP update is finalized, so recommend not to include.	N/A

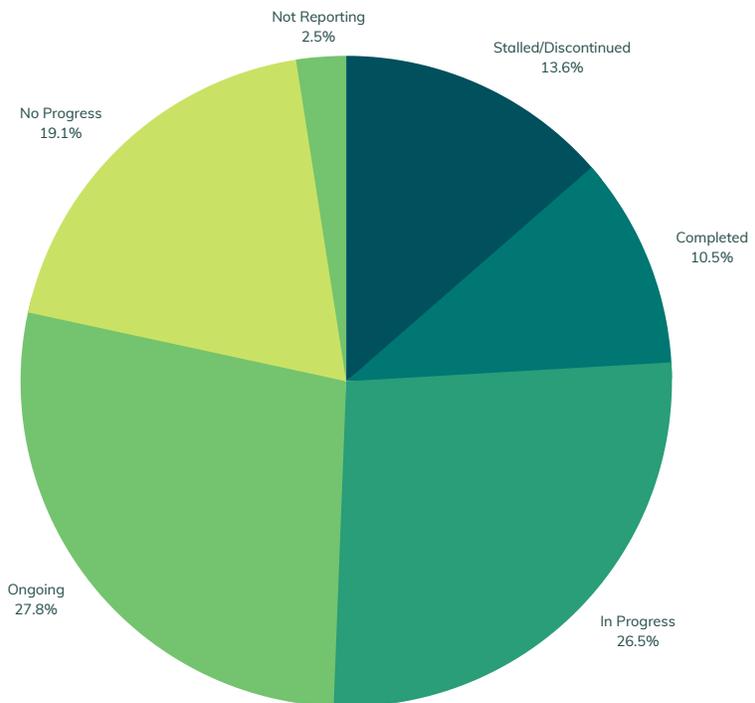
BES-21	Provide technical assistance to support Multnomah County Drainage District in conducting flooding impact studies from levee failure and develop a risk assessment using the updated general building stock, critical facility and demographic information developed for the hazard mitigation plan.	Bureau of Environmental Services	Flood, Dam Failure	Nishant Panulekar, Kate Carone	Complete	This was done as part of the broader Levee Ready Columbia effort. DOGAMI was contracted to do the work and it was completed by 2019.	The project required creative funding through partnerships.	N/A	N/A	The results of this project went above and beyond expectations. As a result, a strong regional coalition was formed that is carrying this work forward.
BES-22	Work with the Federal Emergency Management Agency (FEMA) to remap all City of Portland streams to identify changes in peak flows and flood extents due to climate change.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	In progress	We are currently working with USACE for Willamette and Columbia River remapping of flood risk. Initial analysis of Johnson Creek flood risk was stalled but is restarting.	Other higher priority areas within the country that have greater risk or less accurate existing mapping stalled our ability to begin Willamette and Columbia remapping.	Funding and staff capacity	The action should be included in the updated plan.	N/A
BES-23	Where feasible, cost effective and supported both publicly and politically, restore the natural and beneficial floodplain functions of appropriate floodplains within the City. For this action, appropriate means a floodplain that has been identified through a master plan or study certified by a qualified agency.	Bureau of Environmental Services	Flood	Nishant Panulekar, Kate Carone	Ongoing	The Oaks Bottom restoration project was completed, reopening and restoring 75 acres of wetland habitat for migrating salmon and other wildlife. The Luther Road Phase II project was also completed, adding large wood and root weids along 2,000 feet of Johnson Creek.	This floodplain restoration project was complex, expensive, and required extensive partnerships to accomplish. There were significant logistical construction challenges and construction disrupted transportation on a major transportation trail.	This is an ongoing activity.	Consideration should be given to whether individual projects should be listed as opposed to lumped in one action item.	The project completed during the reporting period is being monitored closely and is functioning even better than expected.
BDS-1	Increase the responsiveness of the emergency permitting procedures for post-hazard event periods through development of procedural plan that considers equity implications.	Bureau of Development Services	All Hazards	Anne Castleton	ongoing/stalled	BDS has made progress on the equity side (there is a team who work with specific vulnerable populations. We've also interviewed 4+ EQ-prone cities to determine that none of them have an expedited, post-emergency permitting plan.	bandwidth of staff, no examples to learn from	bandwidth of staff, no examples to learn from, no funding to hire dedicated emergency planner	Yes - is will be critical for resiliency and recovery from a catastrophic event that compromises bldgs.	
BDS-2	Enforce codes relating to wildfire, earthquake, flood, and landslide, including Portland City Code (PCC) 24.51 (fire-safe materials), PCC 24.85 (seismic upgrades), PCC 24.50 (local flood hazard mitigation), and develop a publicly accessible landslide code guide in plain language to assist developers in complying with landslide-related building codes.	Bureau of Development Services	Wildfire, Earthquake, Flood, Landslide	Anne Castleton	In progress	Application form for roofing labels was changed to prevent roofing URM's. A slope stability guide was finalized, published, and made available on the BDS website				
BDS-3	Develop an ordinance requiring a covenant to be recorded on the deed for new development in the FEMA special flood hazard area to ensure that space below the base flood elevation (BFE) is not converted to habitable space.	Bureau of Development Services	Flood	Anne Castleton	In progress	We are discussing changes to Title 24.50 with BPS as part of the FEMA Biop. Plan to meet with Ross Canon to start process w/ BDS Code and Policy Team.				
BDS-4	Encourage and expand personal, family, and business preparedness plans and programs.	Bureau of Development Services	All Hazards	Anne Castleton	Ongoing/in progress	Active Shooter training, personal preparedness competition, presentations.				
BDS-5	Make information about floodplain zones available to residents when applying for permits.	Bureau of Development Services	Flood	Anne Castleton	complete	Public can do a property search on Portland Maps, BDS has FEMA maps loaded in				
BDS-6	Implement recommendations from the City's Unreinforced Masonry (URM) Work Group.	Bureau of Development Services	Earthquake	Anne Castleton	stalled	more community outreach, new committees, no political will to move this forward				
BDS-7	Continue to coordinate with Multnomah County Drainage District (MCDD) to review permit applications for development near levees; if a permit is requested for development within the "levee review area", submit the application to MCDD to review and if necessary work with developer to revise plans to meet United States Army Corps of Engineers (USACE) requirements for development on or near federal levees.	Bureau of Development Services	Dam Failure, Flood	Anne Castleton	In progress	a process was established with MCDD and it was working. Need to check in with MCDD / Mandy Weiner to see if things continued well after Amanda 7 update.				
BDS-8	Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.	Bureau of Development Services	Flood	Anne Castleton	Ongoing	BDS continues its support of this program				
CAMG-1	Advocate for bureaus to consider seismic and landslide risk when developing capital improvement plans, including plans to replace water and sewer infrastructure.	City Asset Managers Group	Earthquake, Landslide	Jonna Papaefthimiou	In progress (almost completed)	Policy completed and intended to be presented to Council this spring - almost done.				
CAMG-2	Use NHMP critical facilities risk assessment data to establish mitigation priorities for city assets.	City Asset Managers Group	All Hazards	Jonna Papaefthimiou	See previous.					
CAMG-3	Ensure that every Bureau has inventoried critical assets and reviewed critical infrastructure vulnerability and has identified a 50-year plan to strengthen, retrofit, relocate or otherwise increase resiliency. Consider ways to promote city-wide collaboration.	City Asset Managers Group	Earthquake	Jonna Papaefthimiou	In progress... slowly	CAMG and DRRAG are both moving in this direction but its a group process and progress is incremental.				
OEHR-1	Prior to and during implementation, review all actions for negative externalities and to ensure vulnerable populations are protected from displacement or other disproportionate burdens.	Office of Equity and Human Rights	All Hazards	Nickole Cheron	Completed	This action was to review the plan and did not include follow-up reviews of any subsequent updates.	None		This action was to review the initial plan to endure it was compliant with Civil Rights Laws and inclusive of the communities those laws protect. To my knowledge there have been no complaints on the plan or the actions from the plan.	

2016 MAP Strategy Review

MAP Steering Committee

Meeting 4
April 19, 2021

Action Status Breakdown



Progress So Far

- Substantial progress for actions related to flooding: South Reach Plan, Johnson Creek Program, Oaks Bottom Restoration Project, BES Tree Program, Levee Ready Columbia (MCDD).
- Some progress in community building/engagement actions: distribution of emergency messaging, community resilience workbook, public education, NET, Fix-It Fairs.
- Several PWB actions are in planning for the Seismic Implementation Plan.
- Stalled progress for Portland Public Schools, URM Projects, Voz, solar + storage battery.

Takeaways & Suggestions

Stakeholder opposition, lack of political will, or low staff capacity/resources have caused projects to stall or be discontinued.



Create criteria to determine priority projects and consider implementation plan for actions.

Multiple cross-bureau projects with unstandardized language/terms and overlap.



Consolidate similar or overlapping projects.

Actions are grouped by lead agency.



Convey the actions differently by grouping them under an overarching goal or by hazard.

Actions are worded with passive language.



Exclude passive language by reframing actions to be more active and measurable.

Community Engagement is progressing incrementally. There is interest in education/training but a lack of trust from non-white communities.



Reassess equity standpoint to determine culturally appropriate outreach and trust building strategies.

Irregular equity evaluations of actions.



Consider how we can ensure these actions still meet those standards of equity and produce equitable outcomes.

Questions to Consider

- How do we develop actions that can get community/stakeholder support, can obtain political backing, and can receive adequate funding?
- How do we reframe actions in a way that gives them meaning but does not disqualify them from receiving funding (distinct yet broad)?
- How do we ensure actions produce equitable outcomes?

Information on the National Flood Insurance Program, the Community Rating System and Portland's participation

National Flood Insurance Program (NFIP)

The NFIP makes federally-backed flood insurance available to homeowners, renters, and business owners in participating communities. For most participating communities, FEMA has prepared a detailed Flood Insurance Study that presents water surface elevations for floods of various magnitudes, including the 1-percent annual chance flood and the 0.2-percent annual chance flood. Base flood elevations and the boundaries of the floodplains are shown on Flood Insurance Rate Maps (FIRMs), which are the principal tool for identifying the extent and location of the flood hazard. FIRMs are the most detailed and consistent data source available, and for many communities they represent the minimum area of oversight for the local floodplain management program.

Participants in the NFIP must, at a minimum, regulate development in floodplain areas in accordance with NFIP criteria. Before issuing a permit to build in a floodplain, participating jurisdictions must ensure that three criteria are met:

New buildings and those undergoing substantial improvements must, at a minimum, be elevated to protect against damage by the 1-percent annual chance flood.

New floodplain development must not worsen existing flood problems or damage to other properties.

New floodplain development must exercise a reasonable and prudent effort to reduce its adverse impacts on threatened salmonid species.

Since the NFIP's inception, additional legislation has been enacted to strengthen the program, ensure its fiscal soundness and inform its mapping and insurance rate-setting through expert consultation, reports and studies. Most recently, the Biggert-Waters Flood Insurance Reform Act of 2012 (Public Law 141, Title II) and the Homeowner Flood Insurance Affordability Act of 2014 (Public Law 113-89) directed FEMA to make substantial changes to the NFIP by October 1, 2017. Administration, rating and application of key functional components of the NFIP could be directed by this legislation.

Portland's Participation in NFIP

Portland entered the NFIP on October 15, 1980, and a flood insurance rate map (FIRM) was created for the city. This map provides the community with detailed flood hazard data and is updated yearly. Structures permitted or built before it was implemented are called "pre-FIRM" structures, and structures built afterwards are called "post-FIRM". The insurance rate is different for the two types of structures. However, these rating rules may be subject to change due to flood insurance reform discussed below. The effective date for the current FIRM is November 26, 2010 (source). This map is a DFIRM (digital flood insurance rate map).

The City of Portland is currently in good standing with the provisions of the NFIP. Compliance is monitored by FEMA regional staff, and by the Oregon Department of Land Conservation and Development (DLCD) under a contract with FEMA. The table below summarizes the City's current compliance with NFIP requirements. Maintaining compliance under the NFIP is an important component of flood risk reduction. The City of Portland has identified actions to maintain its compliance and good standing.

Criteria	Response
When did Portland enter the NFIP?	10/15/80
When did the current Flood Insurance Rate maps become effective?	11/26/10
What local department is responsible for floodplain management?	Bureau of Environmental Services (BES)
Who is the City's floodplain administrator? (department/position)	Bureau of Development Services (BDS)
Is this a primary or auxiliary role?	Primary
Are any certified floodplain managers on staff in Portland?	Yes
What is the date of adoption of the flood damage prevention ordinance?	Last amended in part on November 26, 2010
Does the floodplain management program meet or exceed minimum requirements?	Yes
If so, in what ways?	See CRS Classification status
When was the most recent Community Assistance Visit or Community Assistance Contact?	June 25, 2015
Does Portland have any outstanding NFIP compliance violations that need to be addressed?	No
Do the flood hazard maps adequately address the flood risk within the city?	No
If no, please state why.	BES is constantly in the state of revision of the City's currently effective FIRM based on flood mitigation efforts being deployed by BES.
Does Portland's floodplain management staff need any assistance or training to support its floodplain management program?	Not at this time
If so, what type of assistance/training is needed?	
Does Portland participate in the Community Rating System (CRS)?	Yes
Is Portland seeking to improve its CRS Classification?	BES is always seeking ways to improve its CRS classification within the City's current capabilities and resources
How many Flood Insurance policies are in force in Portland?	1,942 (9/8/2020)
What is the insurance in force?	\$463,499,700 (05/31/2018)
What is the premium in force?	\$1,399,532 (9/8/2020)
Average Premium	\$721 (9/8/2020)
% of Policies outside SFHA	63.2% (9/8/2020)
How many total loss claims have been filed in Portland?	235 (5/31/2018)
How many claims were closed without payment or are still open?	72 (5/31/2018)
What were the total payments for losses?	\$2,975,423.16 (5/31/2018)

Community Rating System

The Community Rating System (CRS) is a voluntary program within the NFIP that encourages floodplain management activities beyond the scope of the minimum NFIP requirements. Flood insurance premiums are discounted to reflect the reduced flood risk resulting from community actions which meet the following three goals of the CRS:

- Reduce flood losses.
- Facilitate accurate insurance rating.
- Promote awareness of flood insurance.

For participating communities, flood insurance premium rates are discounted in increments of 5%. For example, a Class 1 community would receive a 45% premium discount, and a Class 9 community would receive a 5% discount. (Class 10 communities are those that do not participate in the CRS; they receive no discount.) The CRS classes for local communities are based on 18 creditable activities, grouped into the following categories:

- Public information
- Mapping and regulations
- Flood damage reduction
- Flood preparedness

The City of Portland is currently participating in the CRS program. Its CRS status is as follows:

- NFIP Community #—410183
- CRS Entry Date—10/1/2001
- Current CRS Classification—5
- % Premium Discount, SFHA/non-SFHA—25%/10%
- Total Annual Premium Savings—\$272,386

Many of the mitigation actions identified in this plan are creditable activities under the CRS program. Therefore, successful implementation of this plan offers the potential to enhance the CRS classification.

Repetitive Loss

A repetitive loss property is defined by FEMA as an NFIP-insured property that has experienced any of the following since 1978, regardless of any changes in ownership:

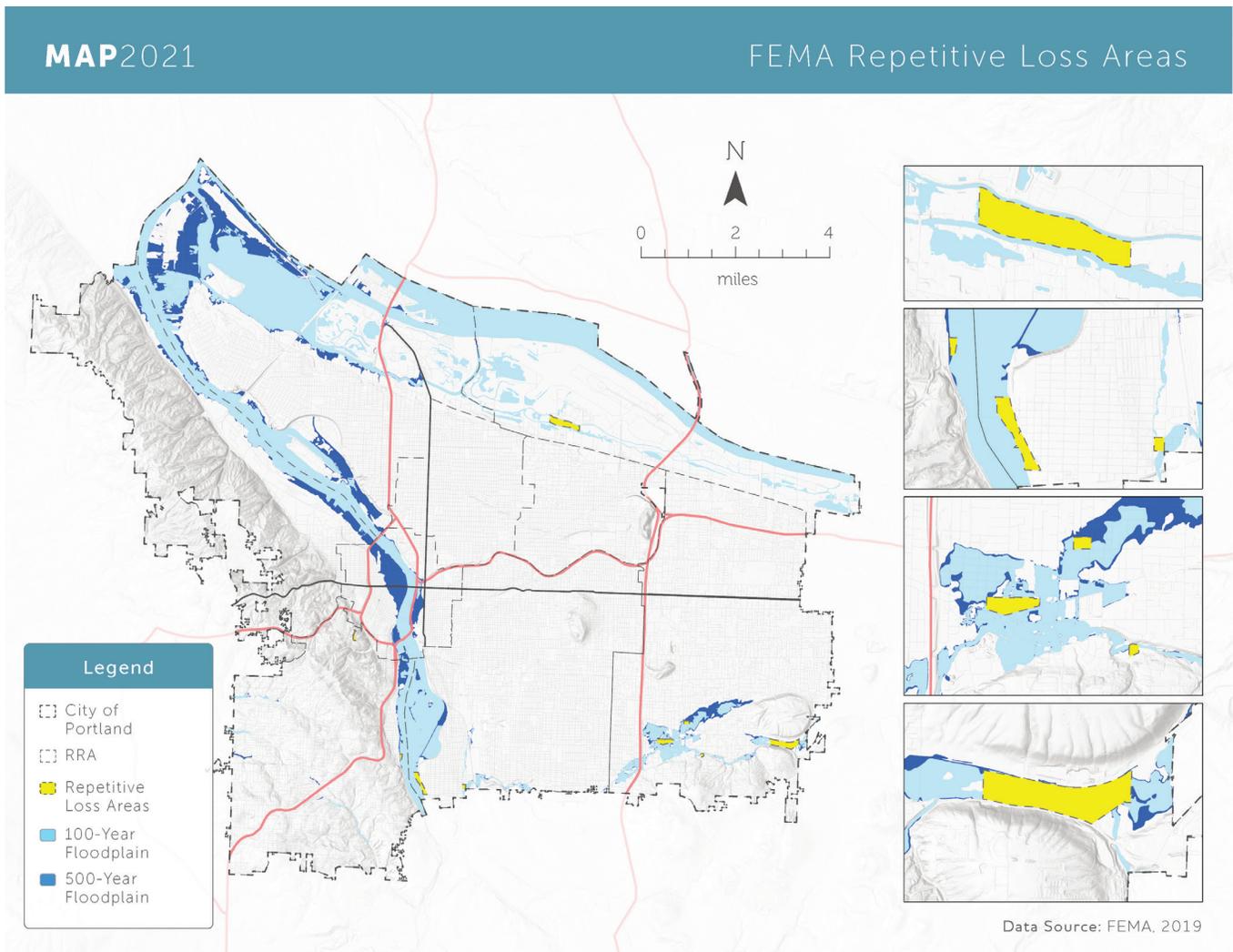
- Four or more paid losses in excess of \$1,000
- Two paid losses in excess of \$1,000 within any rolling 10-year period
- Three or more paid losses that cumulatively equal or exceed the current value of the property.

FEMA-sponsored programs, such as the CRS, require participating communities to identify repetitive loss areas. A repetitive loss area is the portion of a floodplain holding structures that FEMA has identified as meeting the definition of repetitive loss. Identifying repetitive loss areas helps to pinpoint structures that are at risk but are not on FEMA's list of repetitive loss structures because no flood insurance policy was in force at the time of loss.

Following this protocol in adherence with the CRS, the City of Portland has identified 83 properties subject to repetitive flooding within 7 geographical areas of the City. Disclosure of these properties is not provided in the plan due to protection under the Privacy Act. All of these properties are residential and are in or immediately adjacent to the FEMA-mapped Special Flood Hazard Area (SFHA). Nine repetitive loss properties in Portland were identified after the 2009 floods—four of them in the Johnson Creek watershed. BES disseminates an outreach project to all repetitive loss area properties annually.

Figure A.1 below shows the repetitive loss areas in the City of Portland. FEMA's list of repetitive loss properties identifies nine such properties in Portland as of September 2019, none of which have been mitigated.

Figure A.1 Repetitive Loss



Repetitive loss properties make up only one to two percent of flood insurance policies in force nationally, yet they account for 40 percent of the nation's flood insurance claim payments. In 1998, FEMA reported that the NFIP's 75,000 repetitive loss structures have already cost \$2.8 billion in flood insurance payments and that numerous other flood-prone structures remain in the floodplain at high risk. The government has instituted programs encouraging communities to identify and mitigate the causes of repetitive losses. A report on repetitive losses by the National Wildlife Federation (2006) found that 20 percent of these properties are outside any mapped 1-percent annual chance flood hazard area. The key identifiers for repetitive loss properties are the existence of flood insurance policies and claims paid by the policies.

Natural Beneficial Functions

Flooding is a natural event, and floodplains provide many natural and beneficial functions. Riparian areas—the zones along the edge of a river or stream that are influenced by or are an influence upon the water body—generally have a greater diversity and structure of vegetation than upland areas. Shelter, space, food and water available in these areas determine the health of wildlife populations. Riparian communities are of special importance for many animals since water supply is a major limiting factor to the animals' population. Animals depend upon a supply of water for their existence.

CRS Credit for Protecting Natural Floodplain Functions

Wildlife and fisheries are impacted when plant communities are eliminated or fundamentally altered to reduce habitat. Human disturbance to riparian areas can limit wildlife's access to water, remove breeding or nesting sites, and eliminate suitable areas for rearing young. Changes in hydrologic conditions also can alter the plant community. FEMA's Community Rating System provides credits for adopting plans that protect one or more natural functions within a community's floodplain (Activity 510), such as the following (FEMA, 2013):

- A habitat conservation plan that explains and recommends actions to protect rare, threatened, or endangered aquatic or riparian species
- A habitat protection or restoration plan that identifies critical habitat within the floodplain, actions to protect remaining habitat, or actions to restore fully functioning habitat
- A green infrastructure plan that identifies open space corridors or connected networks of wetlands, woodlands, wildlife habitats, wilderness, and other areas that support native species, maintain natural ecological processes, or sustain air and water resources (the corridors or networks must include some floodplains)
- All or part of a comprehensive or other community plan that includes an inventory of the ecological attributes of a watershed or floodplain and recommends actions for protecting them through a mechanism such as a development regulation, development order, grant program, or capital improvement plan.

The credit requires that the following criteria be met:

- The plan may cover more than one community, but it must have an impact on natural floodplain functions within the community seeking credit.
- The plan must be adopted. If the plan is not a community plan adopted by the community's governing body, it must be adopted by an appropriate regional agency.
- The plan must be updated at least once every 10 years. The update must include a review of any changes to conditions as well as progress made since the original plan was prepared. Any changes to the adopted plan must be approved by the original adopting agency.
- The plan must include action items for protecting one or more identified species of interest and natural floodplain functions. The action items must describe who is responsible for implementing the action, how it will be funded, and when it will be done. General policy statements with no means of implementation are not considered action items.
- The plan must include a comprehensive inventory of the natural floodplain habitat within the community. It must identify areas that warrant protection or preservation in order to maintain fully functioning habitat for the species of interest. Where threatened or endangered species are present, each species must be addressed and a restoration plan must be included.

A community can get credit for other plans that meet these credit criteria. These could be single-issue or single-species plans or plans that cover only one area of the community's floodplain.

There is no credit under CRS Activity 510 for a plan that addresses water quality issues as a requirement for a permit under the National Pollution Discharge Elimination System (credit for such plans may be available under other CRS activities). The following sections describe eight City of Portland documents that meet these requirements.

Balch Creek Watershed Protection Plan

The Balch Creek Watershed Protection Plan (Portland Bureau of Planning, 1991a), adopted by the City of Portland on February 8, 1991, protects the natural resources of the Balch Creek Watershed. The purpose for this plan was to identify and protect fish and wildlife habitat, ecologically and scientifically significant natural areas, open spaces, water bodies, wetlands and the functions and values of the watershed as a whole. This document is one of several natural resource plans completed by the City of Portland to comply with the State's Land Conservation and Development Commission (LCDC) Statewide Planning Goal 5, which requires all jurisdictions in Oregon to conserve open space and protect natural and scenic resources, using the following steps:

- Inventory—Identify, describe and evaluate the location, quality, and quantity of each natural resource within the city
- Analysis—Evaluate the economic, social, environmental and energy consequences of allowing, limiting and prohibiting uses that conflict with each identified resource
- Decision—Chose to protect or not to protect each identified resource.

The plan inventoried 15 sites, 13 of which were within the City of Portland. Resources identified within the watershed include: a full-year stream with associated floodplain, an isolated population of cutthroat trout and old conifer forest. The plan identifies protection and implementation measures for each of the 15 inventory areas. These protection and implementation measures are still being enforced today.

Columbia Corridor Industrial/Environmental Mapping Project

The Portland Bureau of Planning (now the Bureau of Planning and Sustainability) studied the Columbia River Corridor to make recommendations to the City of Portland Planning Commission for updating city Comprehensive Plan map designations and zones in the Columbia Corridor:

Recommended Industrial and Annexation Rezoning for the Columbia Corridor (Portland Bureau of Planning, 1989a)—This document contains the Planning Commission recommendations for converting old city industrial Comprehensive Plan map designations and zones to new city industrial plan designations and zones and applying city plan designations and zones to certain annexed properties.

Inventory and Analysis of Wetlands, Water Bodies and Wildlife Habitat Areas (Portland Bureau of Planning, 1989b)—This document provides the inventory, analysis, and proposal for protection of significant natural resources.

Recommended Mapping for the Columbia Corridor (Portland Bureau of Planning, 1989c)—This document provides detailed existing and recommended zoning for Phases 1 and 2. The zoning designations appear on the quarter section and full section Multnomah County Assessor's Maps.

Appendix to the Inventory and Analysis of Wetlands, Waterbodies and Wildlife Habitat Areas (Portland Bureau of Planning, 1989d)—This phase provided additional information that may be of benefit to understand the purpose and process of the natural resources portion of the project more clearly. The findings and recommendations of this project are still valid and being implemented by the city.

East Buttes, Terraces and Wetlands Conservation Plan (Portland Bureau of Planning, 1993)— This plan provides the inventory, analysis, and recommendations for protection of significant East Portland natural, scenic, and open space resources. Portland is made up of 10 resource sites in East Portland: Mt. Tabor, Kelly Butte, Rocky Butte and seven additional upland sites. This plan complies with Statewide Planning Goal 5 and was adopted by the City on June 25, 1993. It identified four implementation measures that that are currently in effect:

- Amend the Portland Comprehensive Plan goals and policies to refer to the East Buttes, Terraces and Wetlands Conservation Plan.
- Adopt the East Buttes, Terraces and Wetlands Conservation Plan policies and objectives as the policy document for the area.
- Amend Title 33, Planning and Zoning to implement the conservation plan.
- Amend the official zoning maps to apply the "environmental zone" designation to identified resource areas, apply the open space (OS) zone to certain publicly owned lands and remove the Significant Environment Concern (SEC) zone from Rocky Butte.

Fanno Creek and Tributaries Conservation Plan (Portland Bureau of Planning, 1994a)—This plan provides the inventory, analysis and recommendations for protection of significant natural, scenic, and open space resources in the watershed of Fanno Creek and its tributaries. The planning effort identified the following objectives:

- Bring the City's comprehensive plan, zoning code and zoning maps into compliance with Oregon Statewide Planning Goal 5

- Reduce the threat to public health, safety and welfare from erosion, landslides, earthquakes and flooding
- Help the City comply with state and federal water quality regulations
- Facilitate development that maintains and enhances natural values provided by Fanno Creek and its tributaries.
- The plan inventories and analyzes eight resource sites. Implementation measures were identified for each site. Each of these implementation measures are still in effect.

Johnson Creek Basin Protection Plan (Portland Bureau of Planning, 1991b)—This plan identifies, evaluates and protects significant fish and wildlife habitats, ecologically and scientifically significant natural areas, open spaces, water bodies, wetlands and the functions and values of the Johnson Creek basin as a whole. It adopts management recommendations on specific ways to retain and restore the natural habitat areas and values. The plan was designed to comply with Oregon Statewide Planning Goal 5. It identifies three natural resource protection measures that are still relevant and being implemented by the city:

- Limit housing density in areas that are difficult or hazardous to build on due to physical constraints such as floodways, steep slopes, floodplains or wetlands.
- Expand plan district requirements to include natural resource and neighborhood values.
- Protect or restore habitat within the resource area as an approval criterion for new development.

Floodplain property purchases also contribute to the City's rating under the Community Rating System (CRS) program. BES (Bureau of Environmental Services) is currently developing a city-wide Stormwater System Plan that will complement the Johnson Creek Restoration Plan, which is focused on mitigating nuisance flooding. The Stormwater System Plan will identify a comprehensive set of actions focused on uplands, tributaries, and drainage patterns to minimize the impacts of stormwater runoff on flooding. Implementation of such actions can help improve the City's CRS ranking with FEMA.

Northwest Hills Natural Areas Protection Plan (Portland Bureau of Planning, 1991c)—This plan provides the inventory, analysis, and recommendations for protection of significant natural resources on the eastern slope of Portland's Northwest Hills. The study area covers 6,000 acres from NW St. Helens Road and the Willamette Greenway up to NW Skyline Boulevard, and from the Willamette Heights area to the Portland city limits near NW Newberry Road. This plan was written to comply with Statewide Planning Goal 5. It identified five implementation measures that are currently in effect:

- Amend Portland's Comprehensive Plan goals and policies to refer to the protection plan.
- Adopt the protection plan policies and objectives as the policy document for the area.
- Amend Title 33, Planning and Zoning, and Title 34, Subdivisions and Partitioning Regulations, to implement the plan.
- Amend the Comprehensive Plan map designations and official zoning maps to apply the environmental zones, change base zones and correct open space mapping

errors.

- Adopt an exception to Statewide Planning Goal 4, Forest Lands, to meet Federal Clean Water Act requirements and comply with Statewide Planning Goal 6, Air, Water and Land Resources Quality.

Skyline West Conservation Plan (Portland Bureau of Planning, 1994b)—This plan provides the inventory, analysis, and recommendations for protection of significant natural resources along the west slope of Tualatin Mountain ridge in northwest Portland. This plan was written to comply with Statewide Planning Goal 5. It inventories and analyzes three resource areas and identifies four implementation measures that are currently in effect:

Amend the Portland Comprehensive Plan goals and policies to refer to the conservation plan.

Adoption of the conservation plan policies and objectives as the policy document for the area.

Amend Title 33, Planning and Zoning, to implement the conservation plan.

Amend the official zoning maps to apply the “environmental zone” designation to identified resource areas, apply the OS zone to certain public lands and remove the interim resource protection zone.

Southwest Hills Resource Protection Plan (Portland Bureau of Planning, 1992)—This plan provides the inventory, analysis and recommendations for protection of significant natural resources in southwest Portland. The study area covers 7,000 acres south of the Balch Creek basin and downtown Portland, including areas that drain directly into the Willamette River. This plan was written to comply with Statewide Planning Goal 5. The plan authorizes the following actions:

- Amend Portland’s Comprehensive Plan goals and policies to refer to the protection plan.
- Adopt the protection plan policies and objectives as the policy document for the area.
- Amend Title 33, Planning and Zoning, to implement the protection plan.
- Amend the official zoning maps to apply the environmental zones to designated resources.
- Adopt a resolution directing the Bureau of Planning to study and prepare a recommendation on the concept of establishing a land bank for parks and natural areas acquisition.
- Repeal water features designations from the Southwest Hills Resource Protection Plan area.

Plan Integration

To ensure full integration of the above referenced natural beneficial functions plans, the City has identified mitigation actions that involve coordination of actions identified in the plans. There is a significant overlap in the goals and objectives of these plans and coordinating their implementation will help ensure the success of all as well as the MAP. The maintenance strategy for the MAP will enhance the City’s abilities to coordinate these plans. Each natural resource plan will be reviewed for its relevance to hazard mitigation and community resilience upon each future update to this plan.

Federal Disaster Declarations for Portland

Federal Disaster Declerations

The following is a list of FEMA disaster declerations for Natural Hazards impacting Portland, OR. Sourced from: <https://www.fema.gov/api/open/v1/DisasterDeclarationsSummaries>

Declaration #	Date	Title	Event Type
49	12/29/55	FLOOD	Flood
60	7/20/56	STORM & FLOOD	Flood
69	3/1/57	FLOOD	Flood
136	10/16/62	SEVERE STORMS	Severe Storm(s)
144	2/25/63	FLOODS	Flood
184	12/24/64	HEAVY RAINS & FLOODING	Flood
319	1/21/72	SEVERE STORMS & FLOODING	Flood
1099	2/9/96	HIGH WINDS, SEVERE STORMS AND FLOODING	Flood
2380	8/17/01	OR MONUMENT COMPLEX 2380	Fire
1510	2/19/04	SEVERE WINTER STORMS	Severe Storm(s)
1824	3/2/09	SEVERE WINTER STORM, RECORD AND NEAR RECORD SNOW	Severe Storm(s)
4258	2/17/16	SEVERE WINTER STORMS, STRAIGHT-LINE WINDS, FLOODING, LANDSLIDES, AND MUDSLIDES	Severe Storm(s)
5203	9/3/17	EAGLE CREEK FIRE	Fire
4562	9/15/20	WILDFIRES AND STRAIGHT-LINE WINDS	Fire

Community Capabilities

Community Capabilities Appendix

The following community capabilities worksheets were updated from the 2016 Mitigation Action Plan. These worksheets capture many of our state and local community capabilities. The most notable planning and mitigation assets we have are called out specifically within the plan--in particular in the "Mitigation Planning in Portland" and "Mitigation Action Strategy" chapters. These worksheets are meant to provide additional information to what is included in the plan.

Capabilities at the State Level

The following table shows the identified policies relevant for the City of Portland. Policies Related to Specific Natural Hazards in Oregon.

Hazard	Oregon Statewide Planning Goals and Policies	Publications/Studies
Multi-Hazard	<ul style="list-style-type: none"> · Local Comprehensive Plans · Goal 2: Land use Planning · Goal 7: Natural Hazards · Oregon Building Codes 	<ul style="list-style-type: none"> · Energy Assurance Plan · Natural Hazards Mitigation in Oregon: An Evaluation of Natural Hazards Mitigation Planning and Implementation in Oregon · Oregon Climate Adaptation Framework · Oregon Climate Assessment Report · Oregon Highway Plan · Oregon Resilience Plan · Oregon Transportation Plan · Planning for Natural hazards: Oregon Technical Resource Guide, 2000 · State Emergency Management Plan
Flood	<ul style="list-style-type: none"> · Goal 5: Natural Resources, Scenic and Historic Areas, and Open Space · Division of State Lands Fill and Removal Permit Program · The Oregon Plan for Salmon and Watersheds · Oregon's Wetlands Protection Program 	<ul style="list-style-type: none"> · Department of Land Conservation and Development Water Quality Model Code and Guidebook
Landslide	<ul style="list-style-type: none"> · Goal 17: Coastal Shorelands · The Oregon Plan for Salmon and Watersheds · 1997 Senate Bill 12: Rapidly Moving Landslides 	

Hazard	Oregon Statewide Planning Goals and Policies	Publications/Studies
Earthquake	<ul style="list-style-type: none"> · 2005 Senate Bill 2: Statewide seismic needs assessment for schools and emergency facilities · 2005 Senate Bill 3: Seismic earthquake rehabilitation grant program · 2005 Senate Bill 4 and 5: State bond authorization · 2001 Senate Bill 13: Seismic Event Preparation · 2001 Senate Bill 14: Seismic Surveys for School Buildings · 2001 Senate Bill 15: Seismic Surveys for Hospital Buildings · 1991 Senate Bill 96: Seismic Hazard Investigation 	<ul style="list-style-type: none"> • Seismic Vulnerability of Oregon State Highway Bridges, Mitigation Strategies to Reduce Major Mobility Risks • Earthquake Regional Impact Analysis for Clackamas, Multnomah and Washington Counties (DOGAMI) • Impacts of a Cascadia Subduction Zone Earthquake on the CEI Hub (Multnomah County Office of Sustainability and Portland Bureau of Emergency Management)
Wildfire	<ul style="list-style-type: none"> · 1997 Senate Bill 360: Wild-land-Urban Interface · Additional Criteria for Forestland Dwellings—ORS 215.730 · Urban Interface Fire Protection—ORS 477.015- 061 	<ul style="list-style-type: none"> · Oregon’s Communities at Risk Assessment · State Fire Services Mobilization Plan
Volcano		<ul style="list-style-type: none"> · Mount Hood Coordination Plan

Source: Reproduced in part and enhanced from 2020 Oregon Natural Hazards Mitigation Plan

Capabilities at the Local level

The planning team updated the inventory and analysis of existing authorities and capabilities called a “capability assessment” that was completed in 2016. The following is an update to that list. A capability assessment creates an inventory of an agency’s mission, programs and policies, and evaluates its capacity to carry them out.

Legal and Regulatory Capability

	Local Authority	Other Jurisdiction Authority	State Mandated
Building Code (Bureau of Development Services (BDS))	Yes	No	Yes
Comment: Portland City Code, Title 24: Building Regulations; last amended December 4, 2015			
Zoning Code (Bureau of Planning and Sustainability (BPS))	Yes	No	Yes
Comment: Portland City Code, Title 33: Planning and Zoning; effective January 1, 1991, last amended March 1, 2021			
Subdivisions (BDS, BPS)	Yes	No	Yes
Comment: Portland City Code, Title 33 Section 600s: Land Divisions and Planned Developments; last amended August 1, 2021			

	Local Authority	Other Jurisdiction Authority	State Mandated
Stormwater Management (BDS (enforcement), BES (development and update))	Yes	No	Yes
Comment: Portland City Code, Title 17 Sections 32 through 39: last amended Jul 30, 2021			
Post-Disaster Recovery Ordinance (PBEM)	No	No	No
Real Estate Disclosure	No	No	Yes
Comment: Oregon Revised Statutes, Chapter 105 Section 464: Form of seller's property disclosure statement; disclosure is limited to information known by the seller			
Growth Management (BPS)	Yes	Yes	Yes
Comment: Metropolitan Service District: Urban Growth Boundary; last expanded in 2011			
Site Plan Review (BDS/BES)	Yes	No	No
Comment: Portland City Code, Title 33 Section 800s: Land Use Reviews; last amended Apr 30, 2021			
Environmental Protection	Yes	Yes	Yes
Comment: Portland City Code, Title 33 Chapter 440: Greenway Overlay Zones; last amended Mar 1, 2021 Portland City Code, Title 33 Chapter 430 Environmental Zones; last amended Mar 1, 2021			
Flood Damage Prevention (BDS, BPS)	Yes	No	Yes
Comment: Portland City Code, Title 24: Building Regulations–Flood Hazard Areas; last amended November 26, 2010			
Emergency Management (PBEM)	Yes	No	Yes
Comment: Portland City Code, Title 15: Emergency Code; last amended October 7, 2015			
Climate Change (BPS)	Yes	Yes	No
Comment: Resolution 37121 Exhibit A: 2015 Sustainable City Principles and 2030 Environmental Performance Objectives ENN-5.04 Implementation by City Bureaus of Policies and Programs; adopted June 24, 2015; ENN-5.03 City of Portland and Multnomah County 2015 Climate Action Plan; adopted June 24, 2015; Last progress report 2020			
Other	Yes	No	No
Comment: Portland City Code, Title 10: Erosion and Sediment Control Regulations Portland City Code, Title 11: Trees Portland City Code, Title 12: Air Pollution Emergency Response Portland City Code, Title 21: Water			
Comprehensive Plan (BPS)	Yes	Yes	Yes
Is the plan equipped to provide linkage to this mitigation plan?			
Comment: The draft Comprehensive Plan includes policies related to hazard-resilient design			

	Local Authority	Other Jurisdiction Authority	State Mandated
Capital Improvement Plan	Yes	No	Yes
What types of capital facilities does the plan address?	Parks, sewer, transportation, water		
How often is the plan updated?	Reviewed annually during budget process		
Comment: Bureau of Development Services, Bureau of Environmental Services, Portland Fire & Rescue, Bureau of Fire & Police Disability & Retirement, Office of Management & Finance, Portland Parks & Recreation, Portland Bureau of Transportation, Portland Water Bureau—all have capital improvement plan summaries listed in the adopted budget			
Floodplain or Watershed Plan	No	No	No
Stormwater Plan	Yes	No	Yes
Comment: Environmental Services Systems Plan (March 2012)			
Habitat Conservation Plan	No	Yes	Yes
Habitat Conservation Plan for Streaked Horned Lark (<i>Eremophila alpestris strigata</i>) on Port of Portland Properties			
Economic Development Plan (Prosper Portland, Greater Portland Inc)	Yes	No	No
Comment: Prosper Portland 2015-2020 Strategic Plan final report (August 2021) replaced by an interim stabilization strategy			
Shoreline Management Plan	No	No	No
Community Wildfire Protection Plan	Yes	Yes	No
Comment: Multnomah County Community Wildfire Protection Plan Currently under update for 2022			
Forest Management Plan (Portland Parks & Recreation)	Yes	No	No
Comment: Portland Urban Forestry Action Plan progress report published March 2021			
Climate Action Plan (BPS)	Yes	Yes	No
Comment: Climate Action Plan: Local Strategies to Address Climate Change; June 2015 (in conjunction with Multnomah County). Last Progress report published in 2020			
Comprehensive Emergency Management Plan (PBEM)	Yes	No	Yes
Comment: City of Portland Basic Emergency Operations Plan; February 2016			
Threat & Hazard Identification & Risk Assessment	Yes	Yes	No
Comment: Portland Urban Area THIRA currently under update			
Post-Disaster Recovery Plan	No	No	No
Continuity of Operations Plan	Yes	No	No
Comment: All City bureaus have continuity of operations plans, except the Central Budget Office. Several are currently being updated. PBEM has hired a planner to assist bureaus with updating their continuity of operations plans.			

	Local Authority	Other Jurisdiction Authority	State Mandated
Water System Master Plan	Yes	No	Yes
Seismic Study	Yes	No	Yes
Comment: Water System Seismic Study Recommended by State Seismic Resilience Plan			
Water System Security and Vulnerability Assessment	Yes	No	Yes
Comment: Federally mandated; Completed in 2003 and 2001, respectively			
Bull Run Watershed Fire Management Plan	Yes	Yes	Yes
Headworks Facilities Plan	Yes	No	No
Comment: PWB report; completed in 2014			
Water Management & Conservation Plan	Yes	No	Yes
Comment: Completed in 2010; update underway			
Public Health Plan	No	Yes	No

Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use?
General Funds	Yes
Community Development Block Grants	Yes –Entitlement City
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes, with voter approval
User Fees for Water, Sewer, Gas or Electric Service	Yes—water, sewer, stormwater
Incur Debt through General Obligation Bonds	Yes, with voter approval
Incur Debt with Revenue Bonds	Yes, with voter approval
Incur Debt through Special Tax Bonds	Yes, with voter approval
Incur Debt through Private Activity Bonds	Yes, with voter approval or Board of County Commissioners Approval
Withhold Public Expenditures in Hazard-Prone Areas	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes—System Development Charges
Other	Possibly—National Fire Plan; Riparian Lands Tax Incentive; Fisheries Restoration and Enhancement Program

Administrative and Technical Capability

Staff/Personnel Resources	Available?	Department/Agency/Position
Planners or engineers with knowledge of land development and land management practices	Yes	Bureau of Planning and Sustainability (BPS) - Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	BPS—Planner; Portland Bureau of Transportation (PBOT)—City Engineer, PWB – Chief Engineer, BES – Chief Engineer
Planners or engineers with an understanding of natural hazards	Yes	PBEM – Planner, PWB, PBOT & BES
Staff with training in benefit/cost analysis	Yes	Business Services/Watershed Services/Engineering Services, PWB – Engineering Planning
Surveyors (Not certified)	Yes	Watershed Services/Engineering Services, PWB – Engineering
Staff capable of making substantial damage estimates	Yes	BDS—ACT-20 Certified Engineers/Architects, PWB – Engineering
Personnel skilled or trained in GIS applications	Yes	CGIS; BPS; other bureaus with GIS experts
Scientist familiar with natural hazards in local area	Yes	DOGAMI; USGS; PSU Geology Department; NWS
Emergency manager	Yes	PBEM – Director, PWB Emergency Manager
Grant writers	Yes	PWB-Engineering; BES—Program Manager; PBEM—Planner; BPS - Planner
Other	Yes	Building Codes Division (BCD) Post-Earthquake Inspection Program
		Cascadia Regional Earthquake Workgroup
		Community Rating System Users Group
		DEQ Emergency Response Program
		Drought Council
		Energy Facility Siting Council
		Hazard Mitigation Grant Review Board
		Oregon Board of Geologist Examiners
		Oregon Emergency Management Association
		Oregon Lidar Consortium
		Oregon Seismic Safety Policy Advisory Committee
		Pacific Northwest Seismograph Network
		Pacific Northwest Wildfire Coordinating Group
		State Interagency Hazard Mitigation Team
		Water Resources Dam Safety Program
		Metropolitan Services District
Regional Emergency Management Group		
Multnomah County Emergency Management		
Multnomah County Drainage District		

Criterion		Response
Do you have a Public Information Officer or Communications Office?		Yes – PBEM Public Information Officer and Senior Community Outreach & Information Representative
Do you have personnel skilled or trained in website development?		Yes- Bureau of Technology Services (BTS), Business Solutions/ eGovernment
Do you have hazard mitigation information available on your website?		Yes
If yes, please briefly describe:	Resources and links to hazard information Mitigation Action Plan website and related information	
Do you utilize social media for hazard mitigation education and outreach?		Yes
If yes, please briefly describe:	PBEM uses Twitter, Facebook, and NextDoor to communicate with the public about hazard mitigation topics.	
Do you have any citizen boards or commissions that address issues related to hazard mitigation?		Yes
Do you have any other programs already in place that could be used to communicate hazard-related information?		Yes
If yes, please briefly describe:	Neighborhood Emergency Teams (NETs) Community Engagement Liaisons (CELs) Mutual Assistance Associations	
Do you have any established warning systems for hazard events?		Yes
If yes, please briefly describe:	Portland and Multnomah County PublicAlerts system	

Steering Committee Meeting Summaries



STEERING COMMITTEE MEETING- Notes
Portland Mitigation Action Plan 2021

Date of Meeting: February 8, 2021

Subject: Steering Committee Meeting 1

Attendees: **Steering Committee:** : Jay Wilson, Chris Silkie, Dave Lentzner, Edina Na-Songkhla, Kim Kosmas, Kim Anderson, Steve Bregman, Anne Castleton, Disability Division, Sallie Edmunds, Nishant Parulekar, Mindy Brooks, Ericka Koss, Kate Carone, Nate Takara, Louisa Jones, Courtney Duke, and Nickole Cheron

Planning Team: Beth Gilden, Jonna Papaefthimiou, Rica Perez

- Agenda Overview**
- Introductions (15 minutes)
 - What is mitigation, the MAP, context and strategy (15 minutes)
 - Planning team commitment and expectations (10 minutes)
 - Vision, mission goals (15 minutes)
 - Review work for next time (5 minutes)

Agenda Item	Notes
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<p>1:00 Introductions</p>	<p>Round Table Introductions and Ice Breaker</p> <p>Intro from Jonna</p> <ul style="list-style-type: none"> • Thank you for everyone for being here • Portland has the opportunity to be leaders in hazard mitigation and equity within this work <p>Brief Introduction of ISS</p> <p>ISS is a center at PSU that focus on interdisciplinary work for applied projects with the goal of building a more sustainable and just region. Previous projects include the BPS Climate Action Plan and the Resilient Portland Project which encourages collaboration between infrastructure bureaus</p> <ul style="list-style-type: none"> • Given our experience working in the resilience space with the City of Portland, work for the NHMP can be applied to a broader context and can build on much of what has been done. • We’ve already started work—Rica Perez is collecting Status Reports on 2016 MAP actions <p>Actions:</p> <ul style="list-style-type: none"> • Planning team to consider if there we can look more carefully at the 2016 actions for what was successfully funded
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<p>1:15 What is mitigation, the MAP, context and strategy:</p>	<p>What is Mitigation:</p> <p><i>“Hazard mitigation reduces disaster damages and is defined as sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards. Outreach programs that increase risk awareness, projects to protect critical facilities,</i></p>
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and the removal of structures from flood hazard areas are all examples of mitigation actions.¹

- Mitigation are the actions we take before a disaster to reduce the negative things that happen during a disaster—see attached graphic
- FEMA does not consider regular maintenance as mitigation
- Mitigation has differing definition between climate change and natural hazards
 - Mitigation for climate change refers to reducing greenhouse gas emission
 - Mitigation for natural hazards and disasters refers most often to hardening infrastructure

Question: will MAP group be able to leverage FEMA funds that are coming to the state as part of wildfire relief? This requires pre-application for projects in advance and use available resources to generate a list of appropriate projects

Example mitigation projects

- Community engagement
- Protection to critical facilities
- Removing structures from floodplains
- Vegetation maintenance
- Fire road maintenance
- Community education project
- Includes big and small projects
- Building code changes (fire wise)

What is the Mitigation Action Plan (MAP)

The MAP is Portland's Natural Hazard Mitigation Plan required by the Federal Emergency Management Agency (FEMA).

- Must meet hazard mitigation planning requirements for funding eligibility under FEMA
- Must meet requirements and be consistent with floodplain management planning for the Community Rating System (CRS).

Context

- The 2016 MAP passed FEMA requirements and is considered an above average plan
- Portland and PBEM have developed a deeper understanding of resilience and we have engaged in significant capacity building for resilience through planning at individual bureaus and increasing collaboration and

¹ Local Mitigation Planning Handbook - FEMA.gov. (n.d.). Retrieved February 2, 2021, from https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf

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coordination

- Portland and PBEM have advanced equity goals and understanding since 2016, and have committed to prioritizing frontline communities
- We are working with unprecedented time constraint
- We are taking a different approach—working with ISS: this will provide us with greater flexibility, ISS is mission oriented toward a shared goal of a resilient region. We are also novices and will need to continually rely on the expertise in this group.
- Covid-19 Pandemic: this means we will be working virtually and we need to consider the limitations that can mean for individual participation in the project.

Strategy

- Achieve FEMA requirements—incorporating any feedback from the 2016 plan
- Center community, by including the equity considerations in the 2016 plan, engaging more deeply with underrepresented groups than we have in past versions of the plan, and focusing our energy on improving our vulnerability considerations within the risk assessments
- Develop a mitigation strategy that can further PBEM and the City of Portland's broader resilience goals

The formalized groups moving the plan forward are the steering committee, the planning team (Jonna, Beth and Rica), PSU faculty and students focused on Risk Assessments (Peter Dusicka , Yu Xiao, Zachary Boyce) and a community engagement team of PBEM staff and Dr. Amy Lubito from PSU

Questions and feedback on this section

Will we hear a review on lessons learned?

- How much money did we get from FEMA and what were the successful projects? Important to consider when recalibrating our level of effort
- Lessons learned from operation decision frameworks used in 2020 (good and bad)?
- 1st month is to read and reflect on the 2016 plan

CRS, make sure this process meets CRS (another FEMA program called the Community Rating System – communities enrolled for the flooding insurance program)

- The more you show you are mitigation risk, the more discounts residents receive for the insurance
- MAP will be used to achieve this program and it is important that it is consistent with requirements
- Public participation is required

What are the drivers for this planning process—just to develop projects to qualify for FEMA funding? Is there a larger charge to build resilience? Should each bureau have their own internal governance structure to ensure we are making progress on these

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actions?

- Conceptualize this plan to meet FEMA but the work here will not be reserved for this plan—it will carry over to other projects in Portland

Since this is a 9 mos timeline, what has changed in the approach for the process of completing this? Have things condensed?

- We have put a lot of work up front on the planning team—rather than working in phases we will start work on different parts of the plan simultaneously and be more targeted in our outreach.
-

1:30 Planning Team

Commitment and Expectations

Commitment

- One 1-2 hour meeting/month through September. In March we will have two meetings due to missing the January meeting.
- Homework—reviewing and providing comments
- Goal: a representative from each bureau will be present at every meeting

Expectations of Steering Committee:

- Be responsive → please notify if responses will be delayed
- Facilitate connection to others in your bureau/professional network
- Provide feedback that reflects your expertise, our planning goals, and the planning context → provide insights so we can adjust throughout the process
- Raise questions and concerns quickly and respectfully

DRAFT Group Norms

- Use time efficiently, start and end on time, everyone helps us stay on track
- Consensus + Informed Leader fall back decision making
- Accept past decisions to keep moving forward
- Missed meetings—follow up outside of meeting time with Beth or others
- Make time for fun and humor → goal: a positive experience

Questions and feedback on this section

Steve: How does MAP tie into the operational plan for other bureaus?

- Consider a way to strengthen bureau connections in response to natural and man made emergencies
- Solidify decision making structures through MAP

Edina: Is covid a natural hazard or a man made emergency? People not following the rules and exacerbating the problem?

- No, it is not a natural disaster but it is considered a disaster. But there are things we can learn to inform the NHMP which comes back to governance and equity considerations. Covid is a good opportunity for engaging community.

Beth: How do we make the steering committee/NHMP process a good experience?

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1:40 Vision Mission and Goals We did not have time to get to the vision mission and goals. This will be moved to our agenda for the next meeting.

1:55 Next steps Read through Chapter 4 (City of Portland Profile) and Part 2 (Risk assessment) of 2016 MAP. Questions to keep in mind: (1) What new data and studies are available to update each section? (2) Consider the social vulnerability and vulnerability section. Do we have a better way of conceptualizing vulnerability? (3) Consider the risk assessment methodology. Should we make changes?

- [Link to the MAP](#)—pages for review 75-312
- Send notes responding to question 1 in e-mail (will follow up on e-mail)
- Questions 2 and 3 for discussion in March

*****We will follow up with links and an e-mail to provide feedback*****



STEERING COMMITTEE MEETING- AGENDA
Portland Mitigation Action Plan 2021

Date of Meeting: March 9, 2021

Subject: Steering Committee Meeting 2

Attendees: **Steering Committee:** Beth Gilden, Rica Perez, Jonna Papaefthimiou, , Anne Castleton, Kate Carone, Nishant Parulekar, Aaron Fox, Kim Anderson, Chris Silkie, Dave Lentzner, Steve Bregman, Paul Belton, Edina Na-Songkhla, Mindy Brooks, Nate Takara, Kim Kosmas, Emily Tritsch, Jay Wilson, Sallie Edmunds, Nickole Cheron

Planning Team: Beth Gilden, Jonna Papaefthimiou, Rica Perez

Risk Assessment Team: Dr. Peter Dusicka, Dr. Yu Xiao

- Agenda Overview**
- Introductions (15 minutes)
 - Vision Mission Goals (20 minutes)
 - Key Decisions for Risk Assessments (25 minutes)
 - Community Profile—basis for analysis (25 minutes)
 - Review work for next time (5 minutes)

Agenda Item	Notes
9:00 Introductions	<p>Dr. Yu Xiao and Dr. Peter Dusicka are leading the Risk Assessment analysis from Portland State University .</p> <p>About Peter: My research focuses on seismic resilience of our infrastructure such as bridges, buildings and utilities. My recent activities include assessment of the anticipated Cascadia Subduction Zone earthquakes on fuel storage tanks, evaluation of seismic repair methods for bridges, and development of low earthquake damage mass timber buildings.</p> <p>About Yu: Dr. Xiao is an Associate Professor in the Toulan School of Urban Studies and Planning at Portland State University (PSU). Before moving to PSU, she worked for Texas A&M University for nine years. The main area of her research deals with community resilience with a focus on local and regional economic sustainability and resiliency.</p>
9:15 Vision Mission Goals	<p>The below is from 2016. The planning team is proposing to keep the vision and mission from 2016, and update the goals to reflect our current context.</p> <p>Vision: Portland is a prosperous, healthy, equitable and resilient city where everyone has access to opportunity and is engaged in shaping decisions that affect their lives. (City of Portland 2035 Comprehensive Plan).</p> <p>Mission: To equitably reduce risk and the adverse impacts of natural hazards by building community resilience through collaborative, cost-effective actions and strategies.</p>

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Goals

- ☑ Protect life and reduce injuries.
- ☑ Engage and build capacity for the whole community.
- ☑ Minimize public and private property damage.
- ☑ Protect, restore, and sustain natural systems.
- ☑ Minimize the disruption of essential infrastructure and services.
- ☑ Integrate mitigation strategies into existing plans and programs.
- ☑ Prioritize multi-objective actions that reduce risk to vulnerable communities.

Additional considerations

Include community voice—especially those frontline communities
 Prioritize projects that reflect what we’ve learned through collaborative work around infrastructure resilience (RIPE/DRRAG)
 Update language around vulnerability

We are proposing to keep the mission and vision from the 2016 plan.

Overall there was support for this proposal, a few comments about wording and how the goals should be updated which are captured on the padlet. Other comments included:

- There are benefits to mitigation actions during “peacetime” and these projects (short term and long term) should still be prioritized. An example would be protecting our existing natural systems.
- Acknowledge multigenerational planning due to constant changes of environmental and social conditions (demographics)

9:35 Key Decisions for Risk Assessment

What is required by FEMA

- Include a description of natural hazards that affect the jurisdiction
- Provide an explanation for any omitted hazards which are “commonly recognized” to impact an area
- Conduct a risk analysis as described below

Natural Hazard: source of harm or difficulty created by a meteorological, environmental, or geological event.

What we do in the analysis:

- Describe the hazard: location, extent, previous occurrences, probability of future events
- Identify community assets: people, economy, built environment, natural environment
- Analyze risk: What are the potential impacts? We will use: exposure analysis, historical analysis, scenario analysis.
- Summarize vulnerability: create problem statements

Hazards from 2016 Plan

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- Flood
- Dam Failure
- Earthquake
- Landslide
- Severe Weather
- Volcanoes
- Wildfire
- Drought
- Space Weather

Hazards from 2020 Oregon Natural Hazard Mitigation Plan (for our region)

- Drought
- Earthquake
- Extreme Heat
- Floods
- Landslide
- Volcanoes
- Wildfire
- Wind Storms
- Winter Storms

Key Questions and Decisions:

- What set of hazards do we want to include for the 2021 Plan?
- What is important to consider in the methodology of these sections?
- Is there anything that we think will dramatically impact these assessments? from 2016?

There was general support for keeping the same list of hazards, but disaggregating some of the severe weather types, elevating wildfire and adding smoke. There were some questions about the importance of this list—in general we need to discuss the hazards in our area, we also need to provide a sufficient discussion of hazards that will be linked to our mitigation work.

Considerations for severe weather:

- **what mitigation actions can we take in the face of severe weather?**
- Multnomah County: multijurisdictional plan uses a catch-all approach to addressing severe weather, not disaggregated
- Disconnect between public perception of severe weather and the reality/experiences of people with disabilities—what is the level of service needed/different impacts for different communities when considering severe weather like a snow storm?

Considerations for smoke and wildfire

- Wildfire smoke is included in the county Wildfire protection plan
- People with disabilities were heavily impacted by the smoke: need to

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include representatives who can represent disability issues as they will be disproportionately affected

- *Are there available wildfire studies?* (for Dave): not yet but will involve state and county level air quality studies. We will rely on public health representatives to relay this information.
- Air quality can be an encompassing term but may not align with FEMA standards
-

In addition to the comments above, Compounding effects will need to be built into assessment in the hazard description as a means to create a cohesive story there were conversations about risk, climate change and compounding hazards.

- Perception of severity of risks and frequency of risks have changed. Risk characterizations do not capture new reality under climate change.
- We need to do a better job in the plan of discussing compounding factors/looking at risks in a wholistic way

10:00 Community Profile—the basis for our analysis

The community profile section describes the City of Portland and sets the basis for the risk assessment and MAP strategy. It describes the physical geography, environmental, political, cultural and planning assets development characteristics etc.

The 2016 plan provides a lot of detail about the City of Portland that is important to FEMA, but a comprehensive “story” about the City of Portland. To improve on the 2016 plan, we will try to help tell the story of Portland.

Key decisions that will influence the risk assessment:

- Geography used for analysis
- Social “vulnerability” inputs

The 2016 plan divided the city in 9 areas based on City budget areas. The areas also correlate roughly to neighborhood groups.

Key questions:

How do these smaller geographies help us in analysis?

Are these the right geographies?—sharing characteristics that help us plan for disasters?

The group had mixed feelings about the geography used in the 2016 plan. There seemed to be consensus that there is value in showing risk at a smaller scale than just the City, but no one perfect geography for analysis and presentation.

- It provides a bit more detail—maybe people can better relate to the plan, but it doesn’t add much.
 - For the purpose of completing a plan quickly we may choose to keep this geography (it works fine), but we as a city need to think about this question
-

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for other planning efforts. Beyond the MAP.

- A GIS person could provide more perspective on this
- From BPS perspective—BPS is always trying to find data that can tell a story for planning. They tend to fall back on traditional neighborhoods, watershed, areas between ridgeline; land use can be another way to do this. It ends up being context dependent.
- Geography can also be important to consider in terms of connectivity and explaining life for people in different parts of Portland
- Can Portland maps link back to this geography and make something more relevant to people?--Unsure
- Do we need to make this decision now? Yes and no, we are starting the risk analysis and some geography is needed. It's not a closed door, but we need a basis to start from.
- The PBOT Resilience plan will be using a "resilient islands" concept braking up geography by transportation routes.

Vulnerability:

We didn't get to start our discussion of "social vulnerability" which will be moved to the next meeting. We did discuss Metro's creation of a "social vulnerability tool".

Social Vulnerability Tool: A project to create a regional index that can be used in this type of planning. This project has a community-based advisory group and an technical advisory group.

We hope to collaborate with metro to put this tool to use in the plan. We will have more discussion on this topic at the next meeting.

10:25 Next steps

Read through Chapter 4 (City of Portland Profile) and Part 2 (Risk assessment) of 2016 MAP. Questions to keep in mind: (1) What new data and studies are available to update each section? (2) Consider the social vulnerability and vulnerability section. Do we have a better way of conceptualizing vulnerability?

*****We will follow up with links and an e-mail to provide feedback*****



STEERING COMMITTEE MEETING- AGENDA

Portland Mitigation Action Plan 2021

Date of Meeting: March 25, 2021

Subject: Steering Committee Meeting 3

Invited: **Steering Committee:** Nishant Parulekar, Chris Lower, Sallie Edmunds, Dave Lentzner, Louisa Jones, Laura Lehman, Edina Na-Songka, Anne Castleton, Kim Anderson,

Planning Team: Beth Gilden, Jonna Papaefthimiou, Rica Perez

Community Engagement Lead: Dr. Amy Lubitow

Agenda Overview

- Introductions (15 minutes)
- Questions and Follow up on Homework (5 minutes)
- Updates on discussion items from last meeting (20 minutes)
- Social Inputs and vulnerability assessment (10 minutes)
- Community Engagement Plan (30 minutes)
- Review work for next time (5 minutes)

Agenda Item	Notes
9:00 Introductions	<p>Introductions</p> <p>Welcome: Dr. Amy Lubitow: is an assistant professor of sociology at Portland State University. Her research interests are environmental sociology, sustainability, environmental justice, social movements, gender and environmental health. She earned her Ph.D. in sociology from Northeastern University.</p>
9:15 Follow Up From Homework	<p>For the past two meetings, we have asked you all to consider what updated data sources we should use for the community profile and risk assessment updates. We have collected that information via e-mail.</p> <p>Those who have not responded please do so on email.</p> <p>There is a current FEMA funding opportunity: Hazard Mitigation Grant Program: Comes after a disaster which is 5% of the costs. Due to the severity of the wildfires, we have \$60 million to spend on non-maintenance projects. Jonna will initialte a meeting to talk over existeing project ideas. Anne has been assembling a list of projects that BDS would like to submit. We will need to include these proejects in the MAP strategy.</p>
9:20 Update on discussion items from last meeting	<p>Updated vision mission goals</p> <p>Vision: Portland is a prosperous, healthy, equitable and resilient city where everyone has access to opportunity and is engaged in shaping decisions that affect their lives. (City of Portland 2035 Comprehensive Plan).</p> <p>Mission: To equitably reduce risk and the adverse impacts of natural hazards by building community resilience through collaborative, cost-effective actions and</p>

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strategies.

Goals

- ☑ Protect life and reduce injuries.
- ☑ Engage and build capacity for the whole community.
- ☑ Minimize public and private property damage.
- ☑ Protect, restore, and sustain natural systems.
- ☑ Minimize the disruption of essential infrastructure and services.
- ☑ Integrate mitigation strategies into existing plan and programs.
- ☑ Prioritize multi-objective actions that can further sustainability and equity goals during “ordinary times”
- ☑ Build on collaborations and lessons learned from resilience work that has occurred since 2016
- ☑ Incorporate community voice and reflect the priorities of frontline and underserved communities

Updated list of hazards for analysis

Earthquake--Deep Analysis
 Flooding and Dam Failure--Deep Analysis to meet CRS requirements
 Wildfires and Smoke--Medium Analysis, working with Multnomah County and RDPO
 Landslides--Medium Analysis, working closely with BDS
 Extreme Heat--Medium Analysis, focusing on PSU and RDPO resources
 Winterstorms (Snow, Ice, Cold)--Medium Analysis (focusing on historical and climate change impacts)
 Drought--Light analysis
 Volcanoes--Light analysis
 Windstorms--Light analysis

Proposed geography for analysis

Start with the basic 9 neighborhood geography that was used in 2016; and more localized/different mapping on a case/case basis.

There was consensus to move forward with the details described above. We can revisit these details if something comes up during analysis.

9:35 Social Inputs

Foundation for social considerations in the plan

Exposed/impacted populations are only one dimension of vulnerability described by the risk assessment. To improve the plan and support our goal of centering frontline communities, we want to include social/demographic information that can help us plan better and develop a mitigation strategy that reflects our goals around prioritizing frontline communities and furthering equity now.

Some ways we plan to improve on the 2016 plan

- Change how we talk about exposure to risk: use people first language; move away from internalizing potential harm to the populations we care about.

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(using language other than vulnerability)

- Disaggregate important data so that we can address how best to serve certain populations more specifically
- Improve our “index”

Social Vulnerability Indicators used in 2016 Plan

- Population under 15
- Population over 65
- Renter Occupied Housing
- People of Color
- Families below poverty line
- Limited English speaking households
- People with Disabilities

Social Vulnerability Tool: A project to create a regional index that can be used in this type of planning. This project has a community-based advisory group and a technical advisory group.

We discussed why this work is important:

- **community preference for not being referred to as vulnerable**
- **traditional data doesn’t always accurately reflect community**
- **be as specific as possible about the communities we are referring to**

9:45 Community Engagement

What FEMA requires:

- Outreach to stakeholders
- Opportunity for the public to provide comment on the plan

Dr. Amy Lubitow’s Work:

- Build on established relationships
- Focus on frontline and underserved communities—identify priorities for these communities to be included in the plan
- Building on the foundation for deeper and long term engagement

Goals:

- **Highlight in our plan the priorities of communities most impacted by natural hazards**
- **Set the foundation for effective community engagement work—especially receiving community input in future planning and policy decisions regarding resilience**

Opportunities:

- **The Coalition of Organizations Active in Disasters (COAD) is a group of community-based organizations who serve the communities we are concerned about. PBEM has been working with the COAD since COVID-19 started by providing needed supplies etc. This coalition could set a foundation for reaching into the community effectively in future crises.**
-

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- There has been substantial research regarding opinions related to disasters, preparedness and support already done by PBEM.

Concerns: The COAD has generated important relationships and we don't want to: (1) make community members feel that they are required to participate in exchange for services; (2) Create an interaction that will discourage them from participating in the future. We also want to maintain safe practices and minimize COVID-19 risks, so we are not planning for in-person events at this time.

Amy's work will center around the COAD—using this as a platform to get feedback on community priorities and community-based projects.

Outputs:

- Recommendations for how to build a cohort of community members who can provide feedback on PBEM projects/Resilience in Portland
- Recommendations for criteria that should be used in including and prioritizing projects for inclusion in the plan based on community perspectives
- A set of projects that should be included or considered for the MAP that come from the community

Questions and feedback:

- **What about community members who aren't part of the COAD?:** We will still have an engagement process that targets other key stakeholders and the general public. The COAD is a unique opportunity to connect with BIPOC communities who are often left out of these other efforts.
- We need to continue to consider how we will incorporate the feedback from Amy's work into the plan.
- Is there any indication that communities won't support projects in their neighborhood due to fear of gentrification? Unsure, this is a good question to consider in our work.
- There may be an opportunity to connect with BPS around their convening for the Climate Action Plan—a third place for community to talk about climate change priorities.

10:20 Next steps

Next meeting we will consider the MAP strategy. We will review the actions from the 2016 MAP and discuss criteria for the strategy update.



STEERING COMMITTEE MEETING- AGENDA

Portland Mitigation Action Plan 2021

Date of Meeting: April 19, 2021

Subject: Steering Committee Meeting 4

Invited: **Steering Committee:** Ericka Koss, Jay Wilson, Aaron Fox, Louisa Jones, Laura Lehman, Mindy Brooks, Dave Lentzner, Kate Carone, Kim Kosmas, Nickole Cheron, Chris Silkie, Kim Anderson, Nishant Parulekar, Sallie Edmunds **Planning Team:** Beth Gilden, Jonna Papaefthimiou, Rica Perez

- Agenda Overview**
- Introductions (15 minutes)
 - What is the mitigation action strategy (5 minutes)
 - Key considerations for our mitigation action strategy (35 minutes)
 - Looking at projects—Initial priorities and additional information (30 minutes)
 - Review work for next time (5 minutes)

Agenda Item	Notes
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1:00 Introductions	Name, role, something you like to do outside in Portland
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1:15 The Mitigation Action Strategy

The Mitigation Action Strategy: the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose, or mission, of the planning process.

Mitigation goals are general guidelines that explain what the community wants to achieve with the plan

Goals

- Protect life and reduce injuries.
- Engage and build capacity for the whole community.
- Minimize public and private property damage.
- Protect, restore, and sustain natural systems.
- Minimize the disruption of essential infrastructure and services.
- Integrate mitigation strategies into existing plan and programs.
- Prioritize multi-objective actions that can further sustainability and equity goals during “ordinary times”
- Build on collaborations and lessons learned from resilience work that has occurred since 2016
- Incorporate community voice and reflect the priorities of frontline and underserved communities

Mitigation actions are specific projects and activities that help achieve the goals.

Action plan: The action plan: how actions will be implemented, prioritized, administered, incorporated into other plans

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	<p>What are mitigation actions?: see the table provided by FEMA</p> <ul style="list-style-type: none"> - Local plans and regulations - Infrastructure projects - Natural systems protection - Education and awareness programs
<p>1:20 Considerations for our Mitigation Action Strategy</p>	<p>Learning from RIPE and DRRAG: Since 2017 ISS has been working with infrastructure bureaus in the City of Portland to consider how the city can collaborate and coordinate for a more resilient city.</p> <p><i>“Resilience is the capacity of Portland’s social, environmental, economic and built systems to withstand and recover from chronic stresses and acute shocks from environmental events, such as, but not limited to, the Cascadia Subduction Zone Earthquake or flooding from the Columbia and Willamette rivers.”</i></p> <p>We can build on this work to develop a better Mitigation Action Plan.</p> <ul style="list-style-type: none"> - ISS Resilient Portland Program (2017) - Partnership formed after a CAMG and City commissioner meeting which considered disaster resilience and integrative planning between city bureaus. - After securing funding, ISS collaborated with 4 infrastructure bureaus and interviewed people to determine how they could bolster resilience. - Led to RIPE (Resilience Infrastructure Planning Exercise). <ul style="list-style-type: none"> o Scenario workshop: showed what would happen during natural disasters and what disaster response would look like. o People worked together within and across bureaus. o Map shows critical infrastructure (emergency transportation routes, critical assets, parks, water infrastructure) and highlights the intersection between major infra pieces. - Followed up with surveys: report notes key takeaways and developed recommendations/next steps towards resilience. - DRRAG continues to meet and keeps momentum after the RIPE report. <ul style="list-style-type: none"> o Currently testing the concept of a resilient island with the East Portland Community Center o Creating a resilient strategy for the city - Major findings <ul style="list-style-type: none"> o Resilience and recovery investments pay off. o Significant interdependencies across bureaus. Also, it helped pinpoint challenges that prevented collaboration. o Major focus is a need for a unified vision and working collaboratively

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across bureaus.

- Mitigation Action Plan is the primary plan that acknowledges and works on major findings from the RIPE workshop.
- Interdependencies: one type of infrastructure is still dependent on adjacent infrastructures. Blind spots and integrative planning opportunities were revealed which pushes for further discussion.

Community Priorities: Including community priorities in the plan are an essential part of reflecting community voice and incorporating equity into the plan. We can learn from what communities have already told us about resilience:

- Climate Change priorities are linked to resilience
- Using the language of frontline communities and calling-out their experience and impacts of our work is important
- Procedural equity is essential: explaining how we are furthering equity in our actions and investments and creating a clear and open strategy are essential
- Including projects that reflect community priorities for resilience
- Summer 2019, 7 documents analyzed to determine how to accurately incorporate community voices into plans.
 - Focused on what has already been said in existing climate documents and advised to move forward from there.
 - What are the community needs and priorities for policies and programs as stated in the documents?
 - Textual analysis: Coded priorities, recommendations, analysis, preferred process, policies
- Biggest priority: program and policy procedure and execution (procedural equity).
- Major findings:
 - Resilience is broader than climate resilience.
 - Procedural equity (the how) is important.
 - Look for capacity building opportunities/wealth building.
 - Communities called to be explicit about their experiences.

The 2016 Mitigation Action Strategy: We can learn from the 2016 Mitigation Action Plan. We asked for status reports on each action that was listed in the plan. The actions were listed by bureau with a individual point of contact.

- In order to ensure equitable outcomes, we cannot rely on anecdotal methods, we need data.
 - RBA = Results Based Accountability Training
 - Establish an equity indicator: resiliency in communities in relation to hazards
 - What data points do we look at that will demonstrate these indicators? How well are these points disaggregated by communities that are impacted?
- The better off measure: how do we do projects that help make people's lives better?

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- How do we improve lives in the 5-year timeframe of the plan?
- However, we have poor baseline data.
- Survey gathered community priorities and assets that were mined into potential projects.
- Avoid overtaxing the community with questions: look at data we do have and focus on major consensus areas across communities. After, get community involved by bringing them a plan and “are there things we have missed?”.
- Demonstrate the actions will be beneficial to the community and give reason why these actions were chosen.
 - Provide data to decisions
 - Be specific about intentions
- Community priorities show non-traditional mitigation projects: how do we integrate them into the plan/strategy?
- How do we develop projects that increase city resilience and build inter-bureau collaboration?

1:55 Small Group Exercises

Consider our list of hazards, for each hazard what are the most important problems to solve?

Examples: major infrastructure damage after the earthquake?, communicating with individuals in a floodplain about their risk. Minimizing damage to fire lanes resulting from severe weather.

At our next meeting, we will be developing a list of projects to include in the Mitigation Action Strategy, including a broader group of stakeholders.

What additional information do we need to choose and prioritize actions?

2:25 Next steps

- Read RIPE Report
 - Have conversations in your bureau about projects
 - Send Beth people who should be invited to the workshop
-



STEERING COMMITTEE MEETING- AGENDA
Portland Mitigation Action Plan 2021

Date of Meeting: July 20,2021

Subject: Steering Committee Meeting

Attendees: **Steering Committee:** Kate Carone, Anne Castleton, Nickole Cheron, Peter Dusicka, Sallie Edmunds, Aaron Fox, Louisa Jones. Ericka Koss, Dave Lentzner, Nishant Parulekar, Chris Silkie, Jay Wilson

Planning Team: Beth Gilden, Molly Baer Kramer (representing Rica Perez)

Risk Assessment Team: Zachary Boyce, Dr. Peter Dusicka,

Agenda Overview

- Introductions (15 minutes)
- Announcements and related updates (10 minutes)
- Risk Assessment Update Presentation (20 minutes)
- MAP Strategy Discussion and Work time (Remaining time)

Agenda Item	Notes
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12:30 Introductions	<p>Ice Breaker Questions: Over the past year our City has been impacted by many of the natural hazards covered by this plan. What have you learned from these experiences? Consider:</p> <ul style="list-style-type: none"> - Wildfire and smoke events in September of 2020 - Winter storm of February of 2021 - Heat in August of 2021
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12:45 Updates and Announcements	<p>Updates on plan development:</p> <ul style="list-style-type: none"> • Plan can be amended in Maintenance phase (Dave) • Acceptable to refer to other plans in Strategy (Beth G.)
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Update on Multnomah County mitigation planning - Dave Lentzner

- County’s NHMP
 - Multi-jurisdictional; includes all cities in county other than Portland, the Port of Portland, and Multnomah County Drainage District
 - Plan expires in 2022
 - Real-world application - current plan doesn’t have much info on extreme heat
 - Need to better define catastrophic events that we did not previously expect; stress impacts
 - Still in risk-assessment phase
- Community Wildfire Protection Plan (CWPP) update - most recent is 2011
 - Working with all fire districts that has a service area in the county

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- Goal - focus on fire mitigation strategies/practices
- Works outside of wildfire chapter NHMP, more of a fire district-oriented plan. Based on Healthy Forests Restoration Act. Works in tandem with NHMP; fire districts get opportunity to define strategies that don't fit in as well with broader plan.
- Started in 2019, goal is to finish this year
- MAP will point to CWPP
- Working on targeting plan and re-organizing plan structure
- Community outreach happening
- New risk assessment/mapping app
- Many more lands at risk
- Need to consider populations with functional needs where risks are elevated; need more evacuation planning

Reflections on extreme heat event and its implications on hazard mitigation work and MAP

- "Additional Needs Registry" program - moved from Office of Civic Life to Portland Fire & Rescue with no additional resources. Not being maintained, but such a tool is vital.

12:55 Risk Assessment

Risk Assessment Update Presentation: See Zachary's Powerpoint

- **Risks chosen/Level of analysis**
 - Flooding - High
 - Earthquakes - High
 - Landslides - Medium
 - Wildfire & Smoke - Medium
 - Extreme Heat - Medium
 - Drought - Low
 - Winter Storms - Low
 - Wind Storms - Low
 - Volcanic Activity - Low
- Units of aggregation - risk-reporting areas
 - In previous years, city segregated by financial reporting districts that do not align well with census tracts
 - We are continuing to use that general geography, but we moved the lines to align with census tracts
- Flooding
 - Hazus 5.0 is FEMA's in-house modeling software
 - Difficult to install; has a lot of dependencies
 - FAST tool is alternative; sufficient; two inputs:
 - UDF = user-defined facilities
 - Flood depth grid DEM
 - 2019 LiDAR flight data will provide better DEM
 - 100-year flood - discrepancies between 2016 and 2021 projections,

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- 2016 may have used too-general data; 500-year flood projections match up better
 - Evaluating stormwater risks - not required but seems important
 - First Street's National Flood Risk Assessment
 - <https://registry.opendata.aws/fsf-flood-risk/>
 - https://assets.firststreet.org/uploads/2020/06/FSF_Flood_Model_Technical_Documentation.pdf
 - Data model calculation details are unavailable/proprietary
 - Utilizing Katelyn Michelson's paper on flooding complaints in Portland
 - Earthquakes
 - Using Oregon Dept of Geology and Mineral Industries [DOGAMI] 'Earthquake Regional Impact Analysis for Clackamas, Multnomah, and Washington Counties, Oregon' report
 - Discussion of maps used and projections
 - Landslide
 - Using DOGAMI's IM-57 and SLIDO 4.5
 - BDS map shows fewer historical landslides because GIS has not been updated with the latest SLIDO version
 - Ericka offers to help - Ericka.Koss@portlandoregon.gov; 503-823-6617
 - Extreme Heat
 - Factsheets on heat from Regional Climate and Health Monitoring Report (Nov 2019)
 - 506 hospital visits from recent heat event
 - Map of where deaths occurred
 - Wildfire & Smoke
 - Awaiting CWPP 2021 update
 - Discussion on Pacific Northwest Quantitative Wildfire Risk Assessment 2018
 - Burn probability has increased from past 4x
 - Drought
 - In hydrological drought right now statewide; severe drought in county
 - Impacts on water storage: Bull Run under significant fire risk
 - Windstorms
 - Not a lot of data other than daily recordings
 - September 2020 windstorm
 - Winter Storms
 - FEMA's National Risk Index
 - Lot of metrics - building loss, population
 - Volcanic Activity
 - Low probability
 - Compounding Hazards
 - Planning for single risks - but most are compoundable
 - Three diagrams based on multi-hazard matrix:
 - Interactions between winter storms, landslides, flooding,
-

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volcanic activity, earthquakes, and wildfire

- Volcanic activity + earthquake can lead to wildfire, which causes landslides and flooding
- Landslides caused by volcanic activity, severe storms, earthquake, flooding, and fire

Questions/Comments:

- Narrative will include social impacts of disasters
- Include storm water risk in characterization? Need a deeper discussion
 - Have to include it if we have any projects that will deal with it
 - Public-facing plan: needs to be understandable
- Compounding risks makes planning difficult
- Story of plan - will emphasize multi-hazard projects

1:15 MAP Strategy Discussion and Work time

MAP Strategy discussion

Draft list of projects. Please put your name and notes next to projects you are responsible for carrying forward to include in the plan:

https://docs.google.com/spreadsheets/d/13zEwR3rSG5UovxoJqd_fNGYXpziEuUHNMZvyYLRpvfs/edit#gid=0

Please put as many projects as possible into the form:

<https://forms.gle/69e9ATRj2LcqzRLq5>

Next steps and follow up

Feedback on risk assessments - PLEASE COMPLETE if you haven't (will be used in MAP):

<https://docs.google.com/forms/d/e/1FAIpQLSeEkYjQL9VCcNvFbmZqVBqgnUt-XrQJtq7Rpw8jvinKsCl0ZA/viewform>

MAP Strategy - PLEASE ADD COMMENTS to this projects

list: https://docs.google.com/spreadsheets/d/13zEwR3rSG5UovxoJqd_fNGYXpziEuUHNMZvyYLRpvfs/edit#gid=0

Submit projects via the google form or e-mail Beth:

<https://forms.gle/69e9ATRj2LcqzRLq5>

Hazard mitigation grant opportunities - PLEASE LET BETH KNOW if you plan to submit an LOI.

- LOI period extended to August 1 for 2020 wildfires (#4562).
 - Dec. 4 deadline for grants related to 2/21 ice storm (#4599).
 - Risk must be described in the upcoming MAP and at least mentioned in Strategy (specific project does not have to match exactly).
-



STEERING COMMITTEE MEETING- AGENDA



Portland Mitigation Action Plan 2021

Date of Meeting: October 13, 2021

Subject: Steering Committee Meeting 6

Invited: **Steering Committee:** David Lentzner, Courtney Duke, Emily Tritsch, Jay Wilson, Mindy Brooks, Nickole Cheron, Nishant Parulekar, Aaron Fox, Anne Castleton, Chris Silkie, Ericka Koss, Kate Carone, Kim Anderson, Sallie Edmunds, Edina Na Songkhla, Steve Bregman, Kim Kosmas, Louisa Jones, Laura Lehman

Planning Team: Beth Gilden, Jonna Papaefthimiou, Rica Perez

Attendees: David Lentzner, Courtney Duke, Jay Wilson, Nishant Parulekar, Aaron Fox, Anne Castleton, Chris Silkie, Ericka Koss, Kate Carone, Sallie Edmunds, Edina Na Songkhla, Steve Bregman, Kim Kosmas, Louisa Jones, Laura Lehman, Zachary Boyce, Molly Kramer, Beth Gilden, Jonna Papaefthimiou, Rica Perez

Agenda Overview

- Introductions (15 minutes)
- Community Voice: Presentation Results of our community engagement, and community voice chapter (15 min)
- Mitigation Action Strategy activity: how are we incorporating community priorities into our work? (45 minutes)
- MAP Maintenance Strategy: Presentation and feedback (10 min)
- Next steps (5 min)

Agenda Item	Notes
3:00 Introductions	<p>Name, role, favorite Halloween candy?</p> <p>Any announcements or updates?</p>
3:15 Community Voice	<p>The purpose of the community voice chapter is to include the priorities of frontline communities.</p> <p>The approach we took was:</p> <ul style="list-style-type: none"> - To review existing community engagement documents - Talk with the JVIC liaisons to develop relevant lessons learned - Targeted outreach to community in parks <p>Key Takeaways</p> <ul style="list-style-type: none"> - A budgeting model that can support the JVIC (external, or cross bureau). - Maintain a JVIC or similar program and develop a plan for brining new orgs. In on an ongoing basis - Face to face connections with community are important - Develop projects that can build community resilience now - Develop community specific actions according to the needs of different communities and cultural groups in Portland - Increase education about hazards, create opportunities and include Children and include disaster preparedness guidance that consider barriers to preparation

Question: What are the challenges and opportunities for responding to this feedback?

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Including our goals around equity and community voice in the MAP: We discuss this as a priority throughout the MAP. Every chapter includes details about the connection between frontline and underserved communities and this was the focus of our community outreach.

Question: How can we see this come through in the MAP? Especially the MAP strategy?

- Lack of capacity in terms of funding may hinder educational opportunities for communities. Although this is an essential component to disaster mitigation, we should also determine which educational and awareness programs may see the greatest success.
- Disaster preparedness education should take a comprehensive approach rather than separate trainings for each hazard type.

3:30 Mitigation Action Strategy

Activity (30 minutes): Review Mitigation Action Strategy:

- Provide feedback that was asked for over email, if you have not done so
 1. Please review projects listed for your bureau/office and make sure we represented what you would like to see in the plan and make sure the wording and the other columns are accurate to the best of your knowledge.
 2. Add a quick "cost benefit" score for your bureau's projects. A full cost-benefit analysis for each project is not required, but we need a planning level assessment based on your best knowledge. You will rate the project A,B,C,D using the guide provided in the document.
- Identify actions that correspond to community priorities
- Can any actions be rewritten to include an equity or community element?
- Should we add any actions?

Discussion (15 min): Debrief activity and add actions

- Ongoing vehicle for community engagement and education. It is important we go beyond the minimum of a mitigation plan and incorporate community values to inform actions.
- There is an opportunity to enhance the educational content of the fix-it fairs project and reframe the action item in the MAP strategy to reflect this.
- PBEM community preparedness information/content includes first aid training, workbooks for household preparedness, incentives for community participants, and opportunities to strengthen relationships with CBOs/organizations.
- Portland Fire offers virtual presentations, infographics/visual content and interpreters to address language barriers. Including more hands-on activities, props, and visual information have been the most appealing and effective education methods for community members. PowerPoint presentations are discouraged.
- Identify which projects factor in community priority components and rework projects that do not address or have unclear priorities.
- Pre-established curriculum makes it difficult to meet communities halfway and address their specific needs. A flexible approach to community outreach may be more advantageous.

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4:15 MAP Maintenance Strategy

Presentation: MAP Maintenance Strategy

We developed a maintenance strategy based on our experience with the 2016 MAP:

- Allow for feedback on MAP Actions that are ongoing and connected to other resilience planning efforts. Marking strategies as simply completed, in progress, stalled, or incomplete, does not provide information on the progress and work that has been done for mitigation work that has a longer time frame. Likewise, the MAP strategy refers to several related resilience planning efforts; the interim goals for these plans may not be captured in the status reports. A more qualitative and descriptive reporting program is necessary to understand the progress being made.
- Provide feedback on how the MAP strategy is furthering equity goals.
- Incorporate lessons learned from natural hazard responses that happen during the five year period.

Major points:

- Real time evaluation
- Two surveys throughout the year (how well we are reaching our goals, and status reports)
- Consider after action reports and if any new priorities emerge
- DRRAG reviews surveys and provides recommendations for any changes
- Community has an opportunity to provide input via PBEM newsletter
- Updates to the plan once/year

Discussion: Feedback or changes to the MAP maintenance strategy.

4:25 Next steps

- Read the draft plan and provide comments
 - Final changes to MAP strategy—must be done by end of day October 18
 - We are in public comment period, plan to submit our plan to the state November 19
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STEERING COMMITTEE MEETING- AGENDA
Portland Mitigation Action Plan 2021

Date of Meeting: November 3, 2021

Subject: Steering Committee Meeting 7

Invited: **Steering Committee:** David Lentzner, Courtney Duke, Emily Tritsch, Jay Wilson, Mindy Brooks, Nickole Cheron, Nishant Parulekar, Aaron Fox, Anne Castleton, Chris Silkie, Ericka Koss, Kate Carone, Kim Anderson, Sallie Edmonds, Edina Na Songkhla, Steve Bergman, Kim Kosmas, Louisa Jones, Laura Lehman

Planning Team: Beth Gilden, Jonna Papaefthimiou, Rica Perez

Attendees: Kate Carone, Rica Perez, Beth Gilden, Jay Wilson, Jonna Papaefthimiou, Nishant Parulekar, Jovanna Quezada, Steve Bregman, Dave Lentzner, Laura Lehman, Kim NAnderson, Aaron Fox, Edina Na-Songkhla, Ericka Koss, Sallie Edmonds

- Agenda Overview**
- Introductions (15 minutes)
 - MAP Maintenance Strategy: Presentation and feedback (15 min)
 - Feedback on the plan (15 min)
 - Feedback on the process (15 min)
 - Next steps (5 min)

Agenda Item	Notes
2:00 Introductions	Name, role, what is something you have learned through this planning process? Any announcements or updates?
2:15 MAP Maintenance Strategy	<p>Presentation: MAP Maintenance Strategy</p> <p>We developed a maintenance strategy based on our experience with the 2016 MAP:</p> <ul style="list-style-type: none"> - Allow for feedback on MAP Actions that are ongoing and connected to other resilience planning efforts. Marking strategies as simply completed, in progress, stalled, or incomplete, does not provide information on the progress and work that has been done for mitigation work that has a longer time frame. Likewise, the MAP strategy refers to several related resilience planning efforts; the interim goals for these plans may not be captured in the status reports. A more qualitative and descriptive reporting program is necessary to understand the progress being made. - Provide feedback on how the MAP strategy is furthering equity goals. - Incorporate lessons learned from natural hazard responses that happen during the five year period. <ul style="list-style-type: none"> • Lessons learned <ul style="list-style-type: none"> ○ New more and different information than what is collected in status reports (i.e. discrete, ongoing, etc.) ○ Rely on existing organizational infrastructure to review and solicit feedback: Not practical to continue a committee solely used for the MAP. More effective to rely on an existing body for

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the maintenance strategy

Major points:

- Real time evaluation
 - To adaptively manage complex initiatives. This considers multiple/competing approaches, varying perspectives, and has possible solutions
 - Qualitative data is collected, compiled, and analyzed throughout allowing for agile and informed planning/decision-making
- In practice: Two surveys throughout the year (how well we are reaching our goals, and status reports)
- Consider after action reports and if any new priorities emerge
- DRRAG reviews surveys and provides recommendations for any changes
- Community has an opportunity to provide input via PBEM (NET and COAD) newsletters
- Updates to the plan once/year based on these engagement opportunities

Discussion: Feedback or changes to the MAP maintenance strategy.

- Will we produce enough information from surveys to meet CRS standards? Findings must also be reflected in the MAP.
- Survey 2 will have a similar status report collection process
- We will also consider new updates for MAP maintenance
- Figuring out the best way to collect information will involve a flexible approach

2:30 Plan feedback

Chapter 1 Introduction explains what the MAP is, how it meets federal requirements, and brief context for the update

Chapter 2 Natural Hazard Mitigation Planning in Portland: This chapter describes the City of Portland and its characteristics, the City's planning capabilities, and the process that was used to develop this plan. It also provides the top level details about the plan including the Vision, Mission and Goals.

Chapter 3 Natural Hazard Risk Assessments: This chapter provides an assessment of the natural hazards and their associated risks covered in this plan.

Chapter 4 Community Voices: This chapter outlines the priorities of frontline and underserved communities in natural hazard mitigation planning.

Chapter 5 Mitigation Action Strategy: The Mitigation Action Strategy builds on the previous three sections to describe the work that the City of Portland will do to reduce the harmful impacts of natural hazards ahead of an event.

Chapter 6 The Plan Maintenance Strategy: This chapter explains how the plan will

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be evaluated and updated on a regular basis with input from key stakeholders and the community.

Discussion:

[Padlet](#)

Big Picture Feedback: Big Picture Plan Feedback: Is anything missing, does it meet our planning goals, does it represent the mitigation work we are doing?

- Water projects may be too detailed and can be included as bullets under resilience goals. Consolidation may be necessary and include accessible verbiage to communicate with the public.
- A polished final document for bond raters that look closely at city and county natural hazard mitigation plans
 - Might be valuable to include a high level summary of mitigation success stories similar to 2016 plan recap/report out
- Acknowledge big issues that we cannot mitigate (i.e., CEI Hub)?
 - Consider political boundaries
 - Mentioning limitations for CEI hub may be appropriate in the Chapter 1 or 2

Chapter by chapter comments: Big feedback on individual chapters: Note which chapter and your comment.

- Chapter 1: a lot of context regarding the pandemic and homeless crises
- Chapter 2: frontline communities
- Strategy: include unique project numbers, include reporting titles, city goals centering around equity (is there an existing [statement](#))
 - The strategy list will be included in the plan (a polished version) as well as a narrative to provide readers adequate context

2:30 Process Feedback

Discussion: Feedback on the planning process. What went well, how could it be improved for the next update?

- Clear communication and expectations
 - Assign smaller bits or ask specific questions to point reviewers to sections where there is concern or a specific question. This may help avoid taking a lot of time reviewing the chapters.
 - Fine line between balancing zoom and face to face meetings. There are advantages and disadvantages to a fully remote process. Zoom allows people to save time by removing commuting time. In person promotes effective dialogue.
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2:45 Next Steps

- Plan draft is posted online for public comment: <https://www.portland.gov/pbem/map-2021>
 - THE VERY LAST DAY FOR FEEDBACK IS NOVEMBER 11
 - Submit plan to Oregon mid November, after approval it goes to FEMA, and then returned to City Council
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Stakeholder Outreach and Community Engagement

Planning Team Outreach Activities

The following is a list of recorded outreach activities conducted by the Planning Team.

Contact or Meeting Title	Lead Agency or Key Stakeholders	Topic	Date
Social Vulnerability Tool Technical Advisory Group	Metro organized, community based orgs	Social Vulnerability Tool for MAP risk assessments	1/13/21
Planning and Resilience Team Meeting	Portland Bureau of Emergency Management	MAP Update and Community Engagement	1/21/21
Regional Recovery Coordination	RDPO and EPA organized with technical area experts	Wildfire Smoke and Extreme Heat	1/28/21
Community Wildfire Protectin Plan	Multhnomah County Community Wildfire Protection Plan Stakeholders	Wildfire in the MAP	2/11/21
Chris Silkie, Emily Tristch, Nishant Prelukar	City of Portland DRRAG	Integrating MAP with DRRAG	2/17/21
Joe Gordon	Metro	Regional Social Vulnerability Tool	2/18/21
Sam Baraso	Portland Communtiy Energy Fund	Collaboration with PCEF	2/23/21
Community Wildfire Protectin Plan	Multhnomah County Community Wildfire Protection Plan Stakeholders	Wildfire in the MAP	3/29/21
Regional mitigation and recovery committee	RDPO organized, neighboring jurisdictions	Update on MAP Update	4/15/21
Portland Business Alliance	Portland Business Allianace	MAP Business Outreach	4/20/21
Emma Stocker, PSU Emergency Managenet	Portland State University	MAP Update and Strategy, coordinating with campuses	4/20/21
Disaster Resilience and Recovery Advisory Group	City of Portland DRRAG	MAP Update Strategy	4/21/21
City Climate Change Preparation Team Quarterly Mtg	City of Portland Climate Change Planners and Engineers	MAP Update and Strategy, coordinating with Climate Change priorities	5/3/21
Emergency Management Steering Committee Meeting	City of Portland Emergency Managers	MAP Update	5/6/21
Amanda Watson	City of Portland Mayor's Office	MAP Update	5/6/21
Wildfire Smoke Subcommittee	Multnomah County and neighboring jurisdictions	Regional Wildfire Smoke Issues	5/12/21
Public Involvement Survey via Email	General public and professional interested parties from 2016 MAP	Public Input in the MAP	5/19/21
Social Vulnerability Tool Technical Advisory Meeting	Metro organized, community based orgs	Social Vulnerability Tool for MAP risk assessments	5/25/21
Micah Meskel	Audon Portland	MAP Update and Audon feedback and priorities	6/1/21
Bret Holt	FEMA	MAP update, egnaging with the business community	6/7/21
PBOT Resiliency Plan: External Committee	PBOT	MAP update and coordination with PBOT Resilience Strategy	6/9/21
Gayle Palmer	East Portland Resilience Coalition	MAP update and coordination with EPRC	6/14/21

Contact or Meeting Title	Lead Agency or Key Stakeholders	Topic	Date
Bureau of Environment Services Workshop 1	Bureau of Environment Services Planners and Engineers with Natural Systems, Stormwater and Flooding expertise	MAP Strategy	6/15/21
Bureau of Environment Services Workshop 2	Bureau of Environment Services Planners and Engineers with Natural Systems, Stormwater and Flooding expertise	MAP Strategy	6/15/21
Regional mitigation and recovery committee	Regional Disaster Preparedness Organization (RDPO) and Neighboring Jurisdictions	Update on MAP Update	6/17/21
CWPP Topic Meeting 4	Multnomah County Community Wildfire Protection Plan Stakeholders	Community Wildfire Protection Plan Public Engagement and Wildfire Risk Coordination	6/22/21
Rachit Nerwal	Portland Bureau of Emergency Management (PBEM), Continuity of Operations Planning	Business Engagement in the MAP	6/22/21
Portland Bureau of Transportation Resilience Plan Meeting	Portland Bureau of Transportation (PBOT) Resilience Planner	MAP Strategy Coordination with Resiliency Plan	6/23/21
Disaster Resilience and Recovery Advisory Group	City of Portland, Disaster Resilience and Recovery Advisory Group (DRRAG)	MAP Strategy	6/23/21
	OEM	MAP Strategy and Hazard Mitigation Grants	7/1/21
Anna Feigum	Oregon Office of Emergency Management (OEM)	MAP Strategy and Hazard Mitigation Grants	7/15/21
Brain Eberhardt	Multnomah County Drainage District (MCDD)	MAP Strategy and Risk Assessment	7/21/21
Presentation to Planning and Sustainability Commission	City of Portland Planning and Sustainability Commission	MAP overview and opportunity to provide feedback	8/10/21
Community Organizations Active in Disaster	Community Organizations Supported by PBEM	Feedback on the MAP Draft and MAP Strategy	11/2/21

Community Engagement Team Outreach Activities

The following is a list of recorded outreach activities conducted by the Community Engagement Team.

Engagement	Key Stakeholders	Topic	Date
Joint Volunteer Information Center (JVIC) Interviews	Portland Bureau of Emergency Management (PBEM) and Joint Volunteer Information Center (JVIC)	JVIC Feedback with Community-Based Organizations	12/2020
Interview with Community Advocate for JVIC, Linda Novitski with Portland Bureau of Environmental Services	Bureau of Environmental Services (BES) and JVIC	JVIC Feedback with Community Advocates	5/10/2021
Interview with Community Advocate for JVIC, Leina Gonzalez Baird, Portland Mayor's Office	City of Portland, JVIC	JVIC Feedback with Community Advocates	5/18/2021
Interview with Community Advocate for JVIC, Marco Mejia Yopez, Community and Civic Life	Civic Life, JVIC	JVIC Feedback with Community Advocates	5/24/2021
Interview with Community Advocate for JVIC, Rachit Nerwal, Portland Bureau of Emergency Management	PBEM, JVIC	JVIC Feedback with Community Advocates	5/27/2021
Interview with Community Advocate for JVIC, Sharon White, Portland Bureau of Transportation	Portland Bureau of Transportation (PBOT), JVIC	JVIC Feedback with Community Advocates	6/7/2021
Interview with JVIC Community Advocate, Jeremy Van Keuren, Portland Bureau of Emergency Management	PBEM, JVIC	JVIC Feedback with Community Advocates	6/9/2021
Interview with Community Advocate for JVIC, Leslie Lum, Portland Bureau of Planning and Sustainability	Bureau of Planning and Sustainability (BPS), JVIC	JVIC Feedback with Community Advocates	6/10/2021
Interview with Community Advocate for JVIC, Regina Ingabire, Portland Bureau of Emergency Management	PBEM, JVIC	JVIC Feedback with Community Advocates	6/11/2021
Interview with Portland Bureau of Emergency Management Interim Director, Jonna Papaefthimiou	PBEM, JVIC	JVIC Feedback with Community Advocates	6/21/2021
Survey and Outreach with East Portland residents	Gateway Discovery Parkgoers	Emergency Preparedness and Disaster Resilience	7/20/2021
Survey and Outreach with East Portland residents	Montavilla Parkgoers	Emergency Preparedness and Disaster Resilience	7/26/21

Engagement	Key Stakeholders	Topic	Date
Survey and Outreach with East Portland residents	Luwit View Parkgoers	Emergency Preparedness and Disaster Resilience	8/2/21
Survey and Outreach with East Portland residents	Luwit View Parkgoers	Emergency Preparedness and Disaster Resilience	8/5/21
Survey and Outreach with East Portland residents	Wilkes Parkgoers	Emergency Preparedness and Disaster Resilience	8/5/21
Survey and Outreach with East Portland residents	Essex Parkgoers	Emergency Preparedness and Disaster Resilience	8/9/21

MAP Outreach Handout

GUIDANCE FOR DEVELOPING PROJECTS FOR THE 2021 PORTLAND MITIGATION ACTION PLAN

WHAT IS MITIGATION

Hazard mitigation reduces disaster damages and is defined as sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards.

THE MITIGATION ACTION PLAN

Portland’s Mitigation Action Plan update is taking place now through November 2021. The Mitigation Action Plan meets FEMA requirements for a “Natural Hazard Mitigation Plan” and some other FEMA programs. It is Portland’s plan that focuses most specifically on what we can do now to build resilience to natural disasters.

GOALS

- Protect life and reduce injuries.
- Engage and build capacity for the whole community.
- Minimize public and private property damage.
- Protect, restore, and sustain natural systems.
- Minimize the disruption of essential infrastructure and services.
- Integrate mitigation strategies into existing plan and programs.
- Prioritize multi-objective actions that can further sustainability and equity goals during “ordinary times”
- Build on collaborations and lessons learned from resilience work that has occurred since 2016
- Incorporate community voice and reflect the priorities of frontline and underserved communities

HAZARDS

- Earthquake
- Flooding and Dam Failure
- Wildfires and Smoke
- Landslides
- Extreme Heat
- Winter Storms (Snow, Ice, Cold)
- Drought
- Volcanoes
- Windstorms

TYPES OF MITIGATION PROJECTS

Mitigation actions reduce or eliminate the long-term risk to human life and property from hazards. They fall into the following categories:

- Local Plans and Regulations
- Structure and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness Projects

ALL ACTIONS MUST

- Reduce risk and adverse impacts of one of the hazards described in our plan
- Fit into one of the FEMA defined mitigation action categories
- Consider equity

GOOD ACTIONS

- Respond to multiple hazards
- Reduce risk and impacts for frontline and underserved communities
- Include an implementation plan
- Reflect existing plans and programs

THE BEST ACTIONS

- Have immediate benefits for the community
- Foster collaboration, and include a plan for working collaboratively to address interdependencies and coordination
- Include an engagement point for underserved and frontline communities in implementation via process, decision making, workforce development, contracting etc.
- Respond to all hazards



Institute for Sustainable Solutions
PORTLAND STATE UNIVERSITY

Earthquake Injury, Loss of Life and Damage Tables

Estimated Injury & Loss of Life in a CSZ 9.0 event - Dry Soil Conditions

RRA	Building Value	Population (2010, ACS)	Population (2021, ESRI)	Casualties Daytime				Casualties Nighttime			
				Level 1	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4
Central City	19,213,001,022	43,567	58,523	2,505	702	105	207	843	225	32	62
Northeast	7,699,626,572	57,559	65,194	396	105	16	32	125	25	3	5
Central Northeast	4,361,648,717	42,524	45,132	159	39	5	10	66	14	2	3
Northwest	6,019,329,733	18,809	21,437	974	287	40	78	105	28	4	7
Southeast	15,872,022,187	144,723	158,651	646	167	25	48	201	41	5	9
Southwest	11,536,787,884	64,788	71,787	762	205	31	60	194	44	6	11
East Portland	13,194,628,901	143,883	156,361	215	44	5	10	97	15	1	2
North Portland	12,834,368,511	65,975	74,678	1,562	431	57	109	211	49	6	11
Airport	5,174,754,640	2,549	2,631	698	197	26	50	117	32	4	8
Total	95,906,168,167	584,377	654,394	7,917	2,177	310	604	1,958	472	61	119

Estimated Injury & Loss of Life in a CSZ 9.0 event - Wet Soil Conditions

RRA	Building Value	Population (2010, ACS)	Population (2021, ESRI)	Casualties Daytime				Casualties Nighttime			
				Level 1	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4
Central City	19,213,001,022	43,567	58,523	3,253	951	145	285	1,216	341	49	96
Northeast	7,699,626,572	57,559	65,194	520	145	22	43	234	55	5	10
Central Northeast	4,361,648,717	42,524	45,132	194	50	7	13	104	24	2	5
Northwest	6,019,329,733	18,809	21,437	1,245	374	53	103	258	70	8	15
Southeast	15,872,022,187	144,723	158,651	913	252	37	72	468	113	11	21
Southwest	11,536,787,884	64,788	71,787	1,195	338	49	97	548	142	15	29
East Portland	13,194,628,901	143,883	156,361	233	49	6	11	118	20	2	3
North Portland	12,834,368,511	65,975	74,678	2,337	675	91	175	464	121	13	25
Airport	5,174,754,640	2,549	2,631	1,205	360	50	96	231	67	9	18
Total	95,906,168,167	584,377	654,394	11,095	3,194	459	896	3,641	955	115	220

Estimated Injury & Loss of Life in a PHF 6.8 event - Dry Soil Conditions

RRA	Building Value	Population (2010, ACS)	Population (2021, ESRI)	Casualties Daytime				Casualties Nighttime			
				Level 1	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4
Central City	19,213,001,022	43,567	58,523	6,972	2,163	343	677	2,483	731	108	213
Northeast	7,699,626,572	57,559	65,194	1,218	364	58	115	496	115	12	24
Central Northeast	4,361,648,717	42,524	45,132	346	93	13	26	177	38	4	8
Northwest	6,019,329,733	18,809	21,437	1,787	550	81	157	376	103	13	26
Southeast	15,872,022,187	144,723	158,651	2,432	719	112	220	1,138	264	28	54
Southwest	11,536,787,884	64,788	71,787	3,034	930	147	290	1,065	272	32	62
East Portland	13,194,628,901	143,883	156,361	430	97	12	24	273	46	3	6
North Portland	12,834,368,511	65,975	74,678	2,890	846	120	232	579	137	15	28
Airport	5,174,754,640	2,549	2,631	654	180	23	44	106	28	4	7
Total	95,906,168,167	584,377	654,394	19,763	5,942	908	1,783	6,693	1,733	220	427

Estimated Injury & Loss of Life in a PHF 6.8 event - Wet Soil Conditions

RRA	Building Value	Population (2010, ACS)	Population (2021, ESRI)	Casualties Daytime				Casualties Nighttime			
				Level 1	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4
Central City	19,213,001,022	43,567	58,523	7,657	2,393	379	749	2,856	848	124	245
Northeast	7,699,626,572	57,559	65,194	1,590	482	75	147	904	226	22	41
Central Northeast	4,361,648,717	42,524	45,132	479	134	18	36	340	82	8	14
Northwest	6,019,329,733	18,809	21,437	1,969	607	88	172	576	158	18	34
Southeast	15,872,022,187	144,723	158,651	3,282	984	147	287	2,193	552	51	94
Southwest	11,536,787,884	64,788	71,787	3,640	1,118	172	338	1,712	453	49	91
East Portland	13,194,628,901	143,883	156,361	684	176	23	45	558	123	10	18
North Portland	12,834,368,511	65,975	74,678	3,750	1,117	157	303	1,185	304	29	54
Airport	5,174,754,640	2,549	2,631	1,232	365	50	97	236	68	9	18
Total	95,906,168,167	584,377	654,394	24,283	7,375	1,110	2,173	10,561	2,815	320	608

Estimated Building, Structure, and Content Loss in a CSZ 9.0 event - Dry Soil Conditions

RRA	# of Buildings	SQFT	Building Value	Building Loss	Structure Loss	Content Cost	Content Loss
Central City	5,076	114,290,416	19,213,001,022	5,508,456,411	1,088,742,235	16,184,201,870	1,414,182,565
Northeast	22,812	57,332,592	7,699,626,572	728,356,450	149,127,633	5,125,636,160	180,526,060
Central Northeast	17,408	33,353,212	4,361,648,717	359,497,670	65,352,454	2,888,117,080	96,887,794
Northwest	7,157	42,905,968	6,019,329,733	2,102,959,606	371,660,514	4,968,798,201	683,518,496
Southeast	56,031	118,829,214	15,872,022,187	1,418,723,782	269,464,519	10,718,553,890	370,002,803
Southwest	23,831	74,977,461	11,536,787,884	1,434,595,805	238,905,595	8,710,078,028	392,302,593
East Portland	45,332	99,362,929	13,194,628,901	510,974,351	99,752,862	8,576,254,641	121,343,294
North Portland	26,797	93,348,275	12,834,368,511	3,713,708,711	643,064,614	11,873,985,970	1,231,409,739
Airport	1,723	36,738,132	5,174,754,640	1,970,875,392	407,846,599	5,248,295,111	592,423,244
Total	206,167	671,138,199	95,906,168,167	17,748,148,179	3,333,917,024	74,293,920,951	5,082,596,588

Estimated Building, Structure, and Content Loss in a CSZ 9.0 event - Wet Soil Conditions

RRA	# of Buildings	SQFT (Thousand)	Building Value	Building Loss	Structure Loss	Content Cost	Content Loss
Central City	5,076	114,290,416	19,213,001,022	7,797,390,566	1,319,081,621	16,184,201,870	2,111,565,603
Northeast	22,812	57,332,592	7,699,626,572	1,039,527,951	193,238,119	5,125,636,160	261,345,947
Central Northeast	17,408	33,353,212	4,361,648,717	453,413,979	78,602,958	2,888,117,080	123,028,937
Northwest	7,157	42,905,968	6,019,329,733	3,092,037,937	504,294,869	4,968,798,201	977,012,614
Southeast	56,031	118,829,214	15,872,022,187	2,106,671,513	367,447,626	10,718,553,890	548,449,594
Southwest	23,831	74,977,461	11,536,787,884	2,830,396,212	419,502,255	8,710,078,028	783,391,215
East Portland	45,332	99,362,929	13,194,628,901	554,317,316	106,330,677	8,576,254,641	131,568,298
North Portland	26,797	93,348,275	12,834,368,511	5,698,408,193	888,452,318	11,873,985,970	1,927,041,560
Airport	1,723	36,738,132	5,174,754,640	3,286,114,170	578,260,776	5,248,295,111	1,048,119,736
Total	206,167	671,138,199	95,906,168,167	26,858,277,837	4,455,211,220	74,293,920,951	7,911,523,504

Estimated Building, Structure, and Content Loss in a PHF 6.8 event - Dry Soil Conditions

RRA	# of Buildings	SQFT	Building Value	Building Loss	Structure Loss	Content Cost	Content Loss
Central City	5,076	114,290,416	19,213,001,022	14,816,084,562	2,281,212,940	16,184,201,870	4,180,798,434
Northeast	22,812	57,332,592	7,699,626,572	2,408,136,481	399,873,960	5,125,636,160	634,743,313
Central Northeast	17,408	33,353,212	4,361,648,717	855,314,003	137,500,658	2,888,117,080	236,468,582
Northwest	7,157	42,905,968	6,019,329,733	4,330,493,628	669,647,370	4,968,798,201	1,381,233,473
Southeast	56,031	118,829,214	15,872,022,187	5,463,290,468	875,616,932	10,718,553,890	1,449,682,057
Southwest	23,831	74,977,461	11,536,787,884	6,018,695,661	836,795,316	8,710,078,028	1,739,938,973
East Portland	45,332	99,362,929	13,194,628,901	1,335,917,995	218,371,032	8,576,254,641	357,371,513
North Portland	26,797	93,348,275	12,834,368,511	6,686,740,067	1,032,177,717	11,873,985,970	2,247,152,441
Airport	1,723	36,738,132	5,174,754,640	1,967,913,046	395,697,495	5,248,295,111	609,216,586
Total	206,167	671,138,199	95,906,168,167	43,882,585,911	6,846,893,419	74,293,920,951	12,836,605,372

Estimated Building, Structure, and Content Loss in a PHF 6.8 event - Wet Soil Conditions

RRA	# of Buildings	SQFT	Building Value	Building Loss	Structure Loss	Content Cost	Content Loss
Central City	5,076	114,290,416	19,213,001,022	17,072,703,510	2,477,580,906	16,184,201,870	4,887,819,599
Northeast	22,812	57,332,592	7,699,626,572	3,445,017,778	550,541,350	5,125,636,160	895,971,902
Central Northeast	17,408	33,353,212	4,361,648,717	1,230,248,588	193,942,554	2,888,117,080	333,403,175
Northwest	7,157	42,905,968	6,019,329,733	5,199,057,774	798,243,819	4,968,798,201	1,603,150,076
Southeast	56,031	118,829,214	15,872,022,187	7,692,253,871	1,202,649,770	10,718,553,890	2,009,403,612
Southwest	23,831	74,977,461	11,536,787,884	8,015,209,090	1,105,169,917	8,710,078,028	2,277,029,990
East Portland	45,332	99,362,929	13,194,628,901	1,911,015,747	303,436,093	8,576,254,641	503,440,443
North Portland	26,797	93,348,275	12,834,368,511	8,827,709,184	1,315,832,322	11,873,985,970	2,914,012,796
Airport	1,723	36,738,132	5,174,754,640	3,458,235,236	592,663,633	5,248,295,111	1,123,249,375
Total	206,167	671,138,199	95,906,168,167	56,851,450,780	8,540,060,364	74,293,920,951	16,547,480,968

Community Voices Detailed Reports

Outreach Summaries and Takeaways

Barbershop Survey

The Portland Bureau of Emergency Management surveyed two different barber shops that serve the Black community with the goal of improving community outreach and preparedness in this community. The survey consisted of ten questions pertaining to community strengths, household emergency concerns, preferred communication sources, and barriers to disaster preparedness.

Takeaways

Respondents reported that they are open and eager for more information on emergency preparedness, but the city must evaluate the community's values, priorities, and existing and missing assets and meet these needs in a way that works for them. In order to effectively offer resources or training to the Black community, the city must adopt a flexible strategy for distribution of resources such as fire extinguishers and first aid kits and provisioning of preparedness education. Ideally, training opportunities should be scheduled on weekends in the evening at neutral locations. Implementing these suggestions into the MAP will help the City determine resource distribution and education strategies that are accessible to everyone while effectively fulfilling the unique needs of the Black community.

Respondents noted fire and robberies as their main emergency concerns as well as knowing how to escape their apartments during emergencies. They also showed interest in developing an emergency plan but barriers such as transportation and work (time) hinder preparedness. Several respondents indicated that their community strengths included their ability to support each other in times of distress and their connection to sources of communication such as churches, police, family, or by word of mouth. While others mentioned that community programs and activities are key factors to resilience, people also stated that they are unsure what exactly their community strengths are. Incorporating these takeaways into the MAP will help determine appropriate projects and programs that address primary disaster and emergency concerns in a culturally specific way, strengthen existing assets, and make disaster preparedness a more manageable effort for communities.

JVIC Progress Report

The ECC and Multnomah County Emergency Operations Center created a Joint Volunteer Information Center (JVIC) in March 2020 as a means to directly support more than 80 community-based organizations. Nine JVIC staff members from the City of Portland worked with community-based organizations through a community advocate model for resource and information distribution.

In December 2020, the City conducted focus group interviews with JVIC community-based organizations to collect feedback on the project and overall collaboration with the City of Portland. JVIC advocates spoke to 34 community-based organizations as well as individuals in the disability community via phone calls, zoom conference calls, and an online survey. The goal of these interviews was to gather information on what has benefited community-based organizations and pinpoint areas of improvement. JVIC advocates scheduled either a 30-minute phone call with each community-based organization or a focus group meeting with several community-based organizations as a way to accommodate their schedules. Due to their busy schedules, about half (15) of the community-based organizations completed the questions in the follow-up online survey which asked them to elaborate on their responses, provide additional comments, and rank JVIC's products on a scale of 1-5. The outreach process in MAP projects and programs should involve several engagement options to achieve inclusive participation and build rapport within the community. In the focus group, three main questions were asked:

- What was the best /and most helpful part of working with the JVIC?
- What has been the most frustrating part of working with JVIC?
- What could we do to improve: something to stop doing, start doing, expand on, reduce?

Takeaways

The community-based organizations stated that the most helpful part of working with the JVIC was the accessibility to city services and trust building opportunities through the distribution of resources. This distribution model also created a zero entry barrier that avoided the city's bureaucratic process which they appreciated. However, the community-based organizations noticed how community needs greatly outweighed the JVIC budget, resulting in product shortages and delays to deliveries. They recommended revising the distribution model to include advance notice of product stockage and streamlining the delivery process. The hybrid model was another popular recommendation. The community-based organizations also emphasized the need for more culturally-specific hygiene and food products. Despite these limitations, the community-based organizations still ranked the variety of products as positive and 75 percent determined that access to these supplies is "very valuable" to the community. The MAP should highlight programs and projects that provide culturally specific resources and services to fulfill the unique needs of Portland's BIPOC communities and promote a sense of belonging. Doing so will achieve goals of disaster resilience as well as build trust between city agencies, community based organizations, and underserved population.

Based on the recommendations of the community-based organizations, next steps should include short-term, intermediate, and long-term goals/objectives. In the short-term, the goal is to obtain more funding for JVIC beyond the end of the fiscal year. The intermediate goal focuses on policy and procedural transformations that support emerging organizations in obtaining city services and grants. Finally, long-term goals focus on economic recovery programs to strengthen community resilience and create a space where community-based organization leaders and city representatives can collaboratively design these programs. Incorporating these recommendations into the MAP takes a systemic approach to achieving community needs, resulting in long-lasting, transformational changes.

Chinese Focus Group on Disaster Resilience

The Asian Pacific American Network of Oregon (APANO) conducted a focus group discussion in August 2018 with 12 Chinese immigrants to assess and improve their knowledge on disaster preparedness. Participants in the focus group were Cantonese-speaking women who also identified as primary caretakers for their families. The focus group was conducted entirely in Chinese to accommodate participants' limited English-language proficiency, and all were given an emergency kit worth approximately \$30 as compensation for their time as well as childcare services. Projects and programs listed in the MAP should involve staff members who represent the participating community and/or are fluent in non-English languages. Non-english speaking communities may feel more comfortable interacting with government officials and organizations who are familiar with the culture or language.

To begin, the group had a broad discussion on emergency preparedness. They described their initial thoughts when they heard the words "disaster and emergency preparedness" and many shared personal experiences with disasters such as earthquakes and flash floods. The conversation followed with a discussion about their perceptions on government responses to disasters which focused on communication methods, grassroots efforts, police presence, and the evacuation process. Afterwards, the group expressed interest in education opportunities such as disaster preparedness training and workshops because they felt "very unprepared."

Takeaways

After discussing the broad context of disaster preparedness, the participants noted that they would rely on themselves, their Chinese neighbors, and the government for help but several expressed little confidence in government response. This is based on the perception that the city government does not have employees capable of fluently communicating with the Chinese community. To bridge the language divide, the participants would like to see multilingual announcements and cell phone notifi-

cations as well as comprehensive government training. The use of WeChat, China's main social media platform, for communications was also a popular recommendation. Knowledge of this community's preferred communication methods will inform future emergency communication projects in the MAP. Participants expect the government to take preventative measures such as holding once a month meetings and events for disaster training and distributing information prior to a disaster.

In terms of the evacuation process, government officials must consider the implications of a heavy police presence due to fears of immigration checkpoints. Participants would also prefer emergency centers to be located in familiar sites such as grocery stores and specifically Fubonn Plaza. Future projects should take special consideration of critical community structures such as Fubonn Plaza and other culturally-specific locations as potential disaster centers to promote a sense of comfort and familiarity, more so than conventional disaster centers.

Communities of Color Insights Report

Latino Network, an education and capacity-building organization for Latinx youth and families, conducted focus group sessions on emergency and disaster preparedness with Latinx adults and youth on August 29, 2018 and September 12, 2018. Sponsored by PBEM, these group sessions used educational resources such as chart papers, discussion themes, and images to measure the community's experiences with emergency and disaster preparedness, assess their needs, and collect ways the city could improve their disaster responses. Since the sessions lasted 2 hours, participants were given childcare, transportation assistance, dinner, and \$25 gift cards as compensation for their time. A mixed method approach helped the City determine culturally specific emergency and disaster preparedness toolkits and facilitator guides. The focus group began with a broad discussion on the definitions of emergencies and disasters followed by questions regarding government responses.

On August 29 at PBEM's East Portland office, Latino Network held a focus group for Latinx adults which was conducted in Spanish to accommodate language needs and in the evening to accommodate schedule conflicts. Present at the focus group were four staff (one note taker, one facilitator, two staff members who provided community assistance with childcare and food) and ten adults from the Latinx community. The two staff members helped activate the recruitment process while increasing comfort and security amongst participants. All of the adults identified as parents from the East Portland Community and immigrants from different countries, namely Mexico, Guatemala, and Cuba. Participants were mixed gender (male/female) but balanced in representation.

On September 12 at PBEM's central office, Latino Network held a focus group for Latino youth which was conducted in English and after school to accommodate schedule conflicts. Present at the focus group were five staff (one note taker, one facilitator, and three staff who provided transportation) and eleven youth. With help from youth program educators and Portland Public Schools, youth participants were recruited from Benson High School, Madison High School, and Alternative Schools. Most participants came from Mexican families living in multigenerational households, single parent homes, or transitional housing. A few also noted their experiences with gang culture and the juvenile justice system. Most notably, all youth participants identified as having leadership roles in their families.

Takeaways

Youth participants showed interest in emergency disaster preparedness, in particular earthquake preparedness, but these topics are rarely discussed in the family which they admit makes them feel unsafe. The focus groups also revealed the importance of engaging the oldest child--who holds significant family responsibility in the Latinx community. Although the focus group participants felt uninformed about disaster preparedness, their recommended course of action was to practice emergency and disaster scenarios and maintain channels of communication. They recognized a disconnect between their white neighbors due to their minority status, thus they want more opportunities to

form authentic means to communicate disaster information that involve their immediate community as well as radio and social media platforms. Participants also wanted information distribution prior to disasters, lists on disaster essentials, and first steps on how to discuss this topic with their families.

Participants also want to have confidence in the government's responses to disasters but the City must do its part to build their relationship. Participants recommend integrating government personnel into the community as a way to gain trust and increase confidence. Heavy police presence, for example, triggers emotions of fear and distrust within the community. Although they recognize the importance of armed officials (for safety), some admit that they would not approach these officials due to intimidation. They also hope the government improves its methods for communication, preferably by utilizing radio in case of downed phone lines, incorporating universal messages through images/spanish media outlets, and creating communication channels through local organizations.

Voz Workers' Rights Education Project

Staff and interns from Portland Voz, an organization dedicated to leadership and economic development of day laborers in Oregon, conducted an emergency preparedness and disaster resilience workshop with 10 Spanish speaking day laborers on May 15, 2019. This event was held at the MLK Jr. Worker Center where participants were asked about their knowledge on emergencies and disasters, and were given resources such as culturally specific workbooks, created by Voz, Latino Network, APANO, and the Portland Bureau of Emergency Management, and training on preparedness. Participants also described their lived experiences with disasters, how these situations have informed their current understanding, and the strengths and challenges they may face if an earthquake or other disasters were to hit Portland. Future projects on the MAP can be drawn from participants' lived experiences and inform city agencies on how to best serve frontline communities' specific needs.

Takeaways

Voz staff and interns should continue to offer this workshop because participants were actively engaged in the content and eager to share their new knowledge with their peers. In terms of improvements, Voz staff suggested modifying the facilitator guide to ensure that there is sufficient time allotted for discussion and evaluation as well as more hands-on and creative activities rather than reading and writing. In the middle of the workshop, staff received a report that ICE was near the Worker Center during the "Your documents and your rights" section. Participants had the option to leave the site and postpone the workshop or to stay and move forward; they chose the latter. Staff followed security protocol and there were no interruptions for the remainder of the night. In the event of an ICE disruption, Voz staff should use this example as a model for similar situations. The MAP should take immigration challenges into consideration when engaging with frontline, immigrant communities. Although the disruption did not lead to a confrontation with authorities, disaster preparedness events should have measures in place with trained staff to handle a potential situation.

Joint Volunteer Information Center (JVIC) Full Report

Compiled by Amy Lubitow at Portland State University and Regina Ingabire from Portland Bureau of Emergency Management

Research approach: This report merges information and interview data from both City of Portland staff who have served as community advocates since March 2020 and community-based organization representatives. 30 minute zoom or phone interviews were conducted with 34 community-based organizations in December 2020 and interviews were conducted with 9 JVIC staff and community advocates in the spring and early summer of 2021. Interviews were conducted over the phone or via Zoom. Notes were taken if the interview was not recorded. All pertinent human subjects protocols were met in accordance with the Portland State University Institutional Review Board.

Interview questions for both CBOs and JVIC advocates centered on the following questions: What is the best /and most helpful part of working with the JVIC? What has been the most frustrating part of working with JVIC? What could we do to improve: something to stop doing, start doing, expand on, reduce?

Background on the JVIC Model: Together with Multnomah County's Emergency Operations Center, the Emergency Coordinate Center created a Joint Volunteer Information Center (JVIC) in March 2020. The JVIC provides direct support to over 80 community-based organizations (CBOs). Utilizing a community advocate model, nine JVIC staff from the City of Portland connect with CBOs regularly to provide resources and information. Early on in the pandemic, CBOs identified personal hygiene and cleaning supplies as an important unmet need among the community members they serve; these are the primary material support that the JVIC provides, though various immaterial supports have proven an essential component of the JVIC model.

How JVIC works

The JVIC staff (community advocates) connect weekly with CBO leaders to check in. A JVIC advocate works for a city bureau and devotes a certain percentage of their work time to the JVIC. A JVIC advocate works with between 4 and 10 CBOs.

JVIC staff take orders and provide hygiene and cleaning supplies through ECC Logistics.

Community advocates also offer information about other City resources and programs, support outside grant applications, and receive feedback about emerging community needs and how the City is showing up in the community.

This partnership model is a way of building relationships, earning trust, and increasing the City's capacity to meet the needs of communities it does not now serve adequately.

The JVIC prioritizes the distribution of supplies to organizations in service to communities most impacted by COVID-19, which include Black and Indigenous communities, communities of color, immigrant and refugee communities, people with disabilities and underlying conditions, and people with intersectional experiences of oppression.

The JVIC model of resource allocation is intentionally anti-racist. It prioritizes small and emerging organizations led by members of the communities they serve. In this way, the JVIC seeks not only to distribute essential resources but also to support emerging leaders and strengthen institutions in communities underserved by government.

JVIC's demographic breakdown

JVIC only serves CBOs that serve populations most vulnerable to COVID-19: Black, Indigenous, and other People of Color (BIPOC) communities, immigrant communities, the elderly, and persons with disabilities. Many JVIC CBOs are intersectional. But even still, most CBOs in the JVIC focus their mission on a specific demographic. The table below gives the number of JVIC CBOs focused on specific demographic categories.

Note: this shows the number of organizations served by the JVIC, not the number of people served.

African Immigrant: 13 (24%)

Black/African American: 9 (17%)

Hispanic/Latinx: 9 (17%)

Other Immigrant: 7 (13%)

Native American: 1 (2%)

Pacific Islander: 4 (9%)

SE/S Asian Immigrant: 4 (9%)

Persons w/ Disabilities: 7 (13%)

Findings

Enhanced CBO access to city services: Community-Based Organizations overwhelmingly appreciated direct access to the City of Portland's services, resources, and information through their assigned JVIC Advocates: Advocates are proactive, address questions and concerns, and provide prompt and frequent communication. Community leaders expressed their appreciation for JVIC's ability to provide communities with essential household cleaning items as well as personal hygiene products, which were difficult to find and more costly due to increased demand and shortage of supply. For example, some people felt like it's "Christmas in the middle of summer," when they received toilet paper rolls. Additionally, community members experiencing financial hardship due to income losses can spend their income on other essentials such as food and utilities. The ability to continually provide these items, throughout the pandemic as needed, relieves the burden to families/households when they must decide between utilities, rent, or groceries.

Program flexibility that builds trust and capacity: Community-based organizations appreciate working directly with the City of Portland to coordinate and distribute resources to their community members. This model is helping to build relationships and trust in these communities. A JVIC advocate similarly reflected on their observations of relationship-building:

"I just think CBOs like knowing that people have their backs. This is just what I've heard from other advocates. It seems like they're providing them with having their back. You have a need, and I may not be able to help you with that, but I see you and I see your trouble and it matters to me. That's meaningful. It's a trust building thing, but it's also like you're not alone. I think it's useful for people to know that they're not floating. Somebody cares and will figure out an answer no matter what the answer is." -Bureau of Environmental Services JVIC Advocate

The JVIC program has been instrumental in community-based organizations learning about and subsequently receiving grants and other essential resources: a trusted and established relationship with the City lends credibility to an emerging organization, which in turn increases visibility and trust to potential grant giving organizations. For example, the JVIC team provided letters of support that helped CBOs to secure grants from the Oregon Health Authority, and have routinely acted as a sounding board as CBOs have sought to develop their organizations.

Reducing Barriers to Entry: The CBOs and JVIC advocates both praised the JVIC model's zero-entry barrier that sidesteps bureaucratic processes, which often serve as a barrier to grassroots organizations and emerging nonprofits. One CBO staff said that "this whole idea that the City reaches out to CBOs, so resources can be distributed to communities, is a great way to do business." In this way, the JVIC model has sought to meet smaller and emerging organizations where they are; reducing complex modes of engaging with the city. This flexibility on the part of the City has not only served to allow a very diverse range of organizations to connect directly with the city bureaus in new ways, but it has again contributed to a sense of community and trust amongst the CBOs who are part of the JVIC. Notably, JVIC advocates report that part of this process requires shifting the burden of bureaucratic engagement to city staff and JVIC advocates and away from the CBOs.

JVIC Model Empowers CBOs: Multiple JVIC advocates noted their observation that the material goods and the information that CBOs had acquired through the JVIC allowed CBOs to not only serve their community members in direct ways, but also empowered them to act as sources of safety and health information and resources within their communities. While many organizations may have already played this role prior to COVID, some organizations experienced a sense of growth. As one JVIC advocate noted:

"The CBOs come and tell us what the community needs are as opposed to... lumping everyone into the most impacted pile and assuming that because you live in Southwest, this is your needs here, and if you live in the East, your needs are the same, when they're not. I think it really does empower the CBOs to represent the city to their community constituents."

One element of the JVIC model that has helped to further expand the city's connection to CBOs is a weekly newsletter that includes information on funding opportunities, COVID-19 updates, and other relevant information. JVIC advocates noted that this streamlined source of information was helpful in allowing organizations to choose which opportunities they are interested in pursuing, without being inundated with information. The newsletter represents a different method of engagement in that it again lowers barriers to entry and clearly communicates opportunities at the city-level that many smaller organizations may not have been aware of.

JVIC's Diverse Advocacy Team and Commitment to Serving those most-impacted by the pandemic: Community appreciates Advocates that "look like them," are multilingual and multicultural, and embody shared lived experiences. CBOs mentioned that having a diverse team working with them directly made them feel at peace knowing that these staff will advocate for the unique needs of their communities. They "give credit to the City of Portland for hiring a diverse team that represents their communities." JVIC advocates reported that they enjoyed working with the JVIC's explicitly anti-racist model that continually reevaluated the JVIC approach based on community insight and experiences, allowing community leaders to shape the JVIC.

Cross-Bureau Collaboration and Un-Siloizing the City: JVIC advocates noted that the model has been successful and adaptive because of the cross-bureau connections and collaborations. This allowed for the rapid transmission of information, greater understanding of the larger scope of the pandemic, and reduced redundancies in services and outreach. This can help to reduce burn-out from CBOs by streamlining where and how information is shared. As one JVIC advocate noted:

"I also think the interdisciplinary approach in JVIC is that these are different bureau representatives coming together and talking about their programs is really critical and not operating in their bureau vacuum. We're very conscious of trying to fight back against the outreach exhaus-

tion that a lot of executive directors face when they want to call them. I think if I was one of those [CBO] executive directors and I saw the city calling me, I wouldn't pick up the phone. They don't want to help me. They just want stuff. I think somebody...called it a very extractive model of community outreach. It has to be the opposite of that."

Recommendations for JVIC Model

Sustainable budgeting: Since March 2020 community need has surpassed the limited JVIC budget. Given the ongoing and long-term economic and social consequences of the pandemic, need for household essentials, food, rental assistance, and other supplies remains. Searching for novel budgetary models, models that merge funds from different city agencies, or which take advantage of federal emergency assistance will be critical in supporting the JVIC and its partner organizations.

Long-term vision: Both JVIC advocates and CBOs identified a desire to build the capacity of CBOs in ways that would allow the community to drive the JVIC model going forward, rather than relying on the city to do so. Reducing the city's role, while retaining its financial commitment, would further the capability of the JVIC model to be truly responsive and reflective of community needs and interests.

Remain flexible and adaptive: To date, the JVIC has continued to build trust and connection with CBOs by taking feedback seriously and adapting as needed. Modifications to the delivery of specific material goods have been over time in order to ensure that communities are able to access culturally appropriate items. Additional efforts have been made to reduce logistical and distribution challenges. For some smaller organizations, the ability to place an order for certain items and have them delivered is essential in terms of saving labor; yet other mid-sized or more established organizations may prefer regular micro grants.

Additionally, some JVIC advocates noted the need to be flexible in establishing the JVIC tiers that help to determine what share of resources a CBO is able to access; for some organizations, their service areas move well-beyond Multnomah county, or their status as a lower-tier organization may not take into consideration the complexity of their experiences.

Create New Pathways for CBO Growth and Connection: CBOs wish to remain connected to the city, and to one another. Moving forward, efforts should be made to regularly on-board new organizations and to find ways to create collaboration across CBOs. Along with this, finding new mechanisms to allow CBOs to access opportunities is critical.

In particular, current city procurement system requirements do not allow emerging nonprofits and grassroots organizations to become a vendor with the City. Lowering the bureaucratic barriers and supporting CBOs to become city contracts will be important, and the city might consider offering an annual call for vendors.

Disentangle JVIC Financial Model from Large Corporations: A consistent critique of the JVIC has been the reliance upon Amazon as a means of fulfilling orders for personal hygiene items. While Amazon has an unmatched system of distribution, JVIC advocates were highly critical of the fact that using a major corporation effectively removed the financial benefits of JVIC spending from the local community. Efforts to develop contingency contracts with local CBOs that would require city agencies to purchase local goods and services during crises would limit some of the financial impacts of

disasters. Moving forward, investing city time and effort into exploring such contracts and models of distribution will be invaluable.

Face-To-Face Still Matters: JVIC advocates and CBOs have been connecting primarily through phone calls, emails and Zoom. However, the JVIC advocates noted that the long-term success of the JVIC approach will require some face-to-face time in order to truly build trust and connection.

Recognize the Everyday, Ongoing Needs of Communities: Although COVID-19 has presented a unique social, health and economic crisis with acute needs, JVIC advocates and CBOs noted that long-term, endemic impacts of poverty and racism are an everyday crisis. Efforts must be made to establish economic recovery programs that will help to build actual community resilience. This might mean creating a platform that brings together CBOs leaders and City bureau representatives to design an economic recovery program that centers community needs and which results in the development of a resiliency plan that is created by, and for, BIPOC communities.

Specific Targeted Investments or Suggestions

Specific Organizations recommended for additional support or investment:

- Guerreras Latinas, Equitable Giving Circle
- Storage: Multiple JVIC advocates mentioned the challenge that CBOs face in being able to store personal hygiene or other emergency items. A lack of safe storage space creates a significant challenge in terms of disaster preparedness. Grants or funding that allows for strategic discussions regarding where and how to store emergency medical and hygiene supplies would be useful.
- City-CBO Relationship Building: Additional funding to convene discussions with city staff and CBOs to explore the question of annual calls for becoming established as a city vendor would be beneficial to community organizations. Further exploring the question of disaster-related contingency contracts would also serve to enhance local economic sustainability. Along with this, a bureau-wide tool to track community interactions and engagements might prove beneficial in reducing CBO outreach fatigue. A relationship-management system might serve to enhance the quality of city interactions and continue to leverage the trust built by the JVIC.

Portland Public Parks Outreach, Summer 2021

Outreach Approach

The Covid-19 pandemic has had devastating health, economic, and social impacts on the City of Portland, especially for frontline communities. These communities often consist of low-income and racial minorities who shouldered disproportionate levels of Covid-related illnesses and deaths. Community-based organizations, who often play intermediary roles between the City and underserved communities, did not have the capacity to serve frontline populations and simultaneously conduct outreach. Thus, the unprecedented consequences of the pandemic had the outreach team rethink their community engagement approach. The team conducted in-person, intercept surveys at outdoor locations as a means to safely gather community responses and keep to health protocols. Team members also wore masks and practiced social distancing to ensure the safety of all participants amidst rising Covid-19 cases.

In collaboration with Portland Parks and Recreation, the outreach team surveyed families at five East Portland Parks from July 20, 2021 to August 9, 2021. We chose East Portland parks with the intent to collect surveys from a more diverse group of respondents. We also coincided outreach events with Parks and Recreation's Free Lunch and Play events to ensure a sufficient number of participants. To incentivize participation, five dollar gift cards for Fred Meyer were given to those who completed the survey.

The survey consisted of 5 questions pertaining to disaster preparedness, concerns, and basic demographic information. Participants had the choice to take the survey independently or an interactive approach using colorful dots and diagrams. Since many of the families had small children, most of the participants preferred the independent format. The first question asked respondents to choose two locations they would go to, if they could not go home, during a natural disaster. The second question asked participants to rank natural disasters from one to five, with one being the most concerned. For the third question, participants noted which emergency supplies they had at home, and the fourth question asked participants certain reasons that prevented them from owning these supplies such as the cost to purchase supplies, lack of storage space, and uncertainty of what is needed. On July 20, 2021, the team conducted its first outreach event at Gateway Discovery Park during the Free Lunch and Play mealtime. It is Portland's newest urban park and includes amenities such as universally accessible play equipment and play features, sand and water play space, sensory play elements, and a climbing structure. In addition to ample street parking with designated ADA spaces, the park is adjacent to the 77 bus stop, making it a moderately transit accessible location. The team surveyed twenty-four participants using the interactive and independent approach.

The team held the next outreach event at Montavilla Park on July 26 during the Free Lunch and Play mealtime. It is a designated Basic Earthquake Emergency Communication Node (BEECN) and is frequently serviced by the 72 bus. Montavilla Park also provides kid-friendly play equipment, a public swimming pool, and soccer field. Nineteen East Portland families were surveyed.

On August 2, the team conducted a survey and outreach event at Luuwit View Park with 21 East Portland families. The park is adjacent to Shaver Elementary School in the Argay neighborhood and features a shaded picnic area, accessible play equipment, and paved walking and biking paths. Wilkes City Park was the next location for the survey and outreach event on August 5. However, due

to its low number of park users, a portion of the team returned to Luuwit View Park and distributed surveys there. Ten East Portland families participated at Luuwit View Park and eleven East Portland families participated at Wilkes Park. The final outreach event was held at Essex Park on August 9 where fifteen East Portland families participated in the survey. Although two surveys were distributed at the nearby Holgate Public Library, most respondents were families recreating at the park.

Outreach Participants

We engaged 102 individuals or families in July and August of 2021. Although the majority of our participants identified as white, the sample was more diverse than the city of Portland as a whole (which, according to the most recent American Community Survey was: 77.38% White; 8.18% Asian; 5.8% Black or African American; 5.34% people who identified as Two or more races: 5.34%; 1.89% who identified as “other race”; and .80% Native American; and .61% Native Hawaiian or Pacific Islander). We spoke to 35 individuals or families who were mult-lingual, with the following languages represented: Spanish, Lakota, Chinese, Vietnamese, Japanese, American Sign Language, Romanian, French, Italian, Greek, Cantonese, Ethiopian, and German.

Demographic Characteristics	Number
Gender	
Women	69
Men	32
Genderflui	1
Total	102
Race	
White	61
Hispanic/Latino	9
Asian/Asian-American	15
Black/African-American	9
Native American	3
Other Race	5
Total	102

Findings

Natural Hazard Prioritization

We asked families and individuals to rank, on a scale of 1 to 5, the natural hazards they were most concerned about in the Portland area. The natural hazards that received the most 1s and 2s (the hazards that warranted the most concern) were Earthquakes, Wildfires/Smoke, and Extreme Heat. Certainly, these are impacted by the fact that we were surveying people during the summer months and we are in the midst of the hottest Portland summer on record.

However, the fact that an Earthquake remains at the top of the list of hazards is significant. Additionally, both drought and winter storms were mid-range concerns for most survey participants. Interestingly, during our interactions, volcanoes and landslides were a primary concern for children who participated in our activity, which may suggest that additional outreach and education regarding earthquakes and seasonally-related concerns (air quality issue and winter storms) may be useful for families.

Community Safety Planning

We asked participants to clarify where they would go during a natural disaster if they could not return home. The rationale behind asking this was to provide insights about culturally or geographically-specific locations that individuals might go to that can inform resiliency planning. Respondents most commonly reported that they would go to another person's home, followed by a hospital or clinic, the local school, or a church/mosque/synagogue. Other common responses that people or families wrote-in included: library, community center, local park, and a chain store or restaurant they frequented.

Disaster Preparedness

Another question asked of individuals and families in Portland parks was related to their preparation for a natural disaster. A list of common items one should have on hand during a disaster was provided and people were asked to note the items that they knew they had at home. More than 90% of our respondents reported having shelf stable food, a flashlight or lantern, and hand sanitizer on hand. Around 84% of respondents also reported having a basic first aid kit and some bottled water on hand (though we did not confirm whether or not they had the recommended volume for their household size). 65% of those we surveyed also reported having extra blankets, a tent or a tarp, and a safety knife at home. People were least likely to have a battery or hand-crank radio (36%) or body warmers (33%) at home.

Barriers to Disaster Preparedness

Finally, we asked families and individuals to reflect on what prevented them from being more prepared for a disaster. While some families reported that they felt that were relatively well-prepared, many Portland residents noted that they faced challenges in feeling ready for a natural hazard. The most common response was that people didn't know what they needed (36%). We were able to provide PBEM's "Weekly Steps for Emergency Preparedness" handout, and a guide to the city's BEECN locations, which were received enthusiastically by families and individuals.

Additional barriers identified were a lack of financial resources to purchase the items needed (31%), and a lack of places to store the items needed (25%). This was mentioned by many people in terms of not having the space to store the amount of water that they might need in order to provide for their families in the event of a major emergency. An additional 8 people noted that they were unsure of where to go or information or who to ask about getting ready for a natural disaster. We are optimistic that our engagement helped in reducing this barrier, but recognize that many people are unsure where to access accurate information. Finally, we allowed people to offer additional information about their barriers to preparedness and a number of people reported that they didn't have time or that they fail to prioritize purchasing the materials they would want to have on hand.

Summary

Overall, the effort to engage and connect with East Portland community members demonstrates that people are aware of, and concerned about, natural hazards, but continue to lack some information and material resources in order to feel better prepared. There may be a gap in children's understanding of natural disasters, suggesting there may be opportunities to encourage emergency planning that includes the entire family. Barriers to disaster preparedness continue to be related to cost, knowledge, and sufficient storage space. The direct in-person community engagement was mostly well-received and suggests that additional investments in in-person outreach and education may be important aspects of natural hazard mitigation and resiliency efforts.

Portland Parks Outreach Survey

If there was an emergency (for example: snowstorm or earthquake) and you could not return to your home, where would you go to feel safe? Choose only two.

Fred Meyer/Safeway

Other local store (please name): _____

Hospital or Clinic

Local School

Church

Another person's house

Other: _____

Please rank what natural hazards you are most worried about? Number from 1-5 where 1= most worried.

___ Earthquake

___ Wildfires and smoke

___ Extreme heat

___ Landslides

___ Winter storms (snow, ice, cold)

___ Drought

___ Volcanoes

___ Windstorms

___ Flooding

If there was a natural disaster such as flooding, which of these supplies do you have at home?

Flashlight or lantern

Bottled water or water purification tool

Shelf stable food (like canned beans, corn, rice)

Tent or tarps

First Aid supplies (bandages, aspirin)

Safety knife

Battery powered radio

Hand sanitizer

Emergency blanket or poncho

Body warmers

What prevents you from having emergency supplies at your home?

Cost to buy supplies

No place to store supplies

Not sure what is needed

Not concerned about disasters

Unsure who to ask for information

Other: _____

Tell us about you:

What is your gender: _____

What is your race/ethnicity: _____

What is your age: _____

What languages can you speak: _____

BEECN Outreach Handout

Source: Portland Bureau of Emergency Management



PBEM Weekly Steps for Emergency Preparedness Outreach Handout

Source: Portland Bureau of Emergency Management

Week 17

- 1 gallon juice
- 3 cans fruit*
- Garbage bags

To Do:

- Arrange for a friend or neighbor to help your children if you are not able to respond.

Week 18

- Paper cups
- Blanket or sleeping bag*
- Change of clothing and sturdy footwear*

To Do:

- Volunteer with a local disaster/emergency group (Portland NET, Red Cross, Medical Reserve Corps).

Week 19

- Toothbrush/Toothpaste

To Do:

- Make a smaller kit for your vehicle.

Week 20

- Hammer
- Screwdriver
- Pliers
- Assorted nails & screws

To Do:

- Purchase and install an emergency escape ladder for upper story windows.

Week 21

- Electrolyte replacement drink (sports drink or infant electrolyte solution)
- 3 cans vegetables*
- Comfort/stress food (cookies, instant coffee, sweetened cereal, candy, tea bags)

To Do:

- Check with child's school/day care center to find out about their disaster plans.

Week 22

- Energy bars, snacks
- 1 box crackers
- Aluminum foil

To Do:

- Take a First Aid/CPR class. Many are free!

Week 23

- 1 box facial tissues
- Feminine hygiene products (Add extra sanitary pads. They work well as absorbent bandages.)

To Do:

- Find out about your workplace disaster plan.

Week 24

- Extra batteries for radio/flashlight
- Dust masks
- Sewing kit

To Do:

- Mark your calendar to check your Emergency Supply Kit in 6 months!

Special Items Your Family May Need:

Infant Items: Formula, diapers, bottles, pacifiers; powdered milk, infant medications.

Adult/Senior Items: Prescription medications, vision care items (extra glasses/contact lenses & supplies) diabetic supplies, denture needs, hearing aid batteries.

Persons with Disabilities/Special Needs: Communication board, specialized care items (oxygen, catheters, etc.), a list of prescription medications (including dosage and physician's name) and the type and model numbers of required medical devices, portable wheelchair.

Wear a medical alert ID and register with the office of emergency services or the local fire department for assistance so needed help can be provided. If you are dependent on a dialysis machine or other life-sustaining equipment or treatment, know the location and availability of more than one facility. Make sure your support network knows your information and can operate any devices you need.

Pet Items: Your pets should always wear a collar and ID/tags tags. Include food, water, bowls, leash/harness, crate/carrier, medical and vaccination records, sanitation needs (pet litter and litter box, newspapers, plastic bags), and a photo of you and your pet in your preparedness kit.

Content adapted from a Peoria City/County (Illinois) Health Department publication www.pccfd.org

Published by the Portland Bureau of Emergency Management portlandoregon.gov/PBEM



Weekly Steps for Emergency Preparedness



A budget friendly plan to build a family disaster supply kit in 24 weeks.

The Portland Bureau of Emergency Management encourages all residents to prepare their households by having some basic supplies on hand in order to survive for at least two weeks after an emergency.

Here you will find a plan to build a supply of basic items that every emergency supply kit should include. It is also important to review this list and consider where you live and the unique needs of your family in order to create an emergency supply kit that will meet those needs.

For additional information, visit portlandoregon.gov/PSEM

Week 1

- 3 gallons water*
- 3 cans ready-to-eat protein* (tuna, chicken, etc.)
- Large tub to hold items
- Hand operated can opener

To Do:

- Learn about the emergencies that could happen where you live and the right way to respond to them.

Week 2

- Dry fruit or trail mix
- Permanent marker, paper and pencil

To Do:

- Make sure Emergency Contact numbers are easy to identify in mobile devices: I.C.E. + contact (I.C.E. = In Case of Emergency).

Week 3

- First Aid kit
- Hand sanitizer

To Do:

- Date items in kit, and group by expiration date.

Week 4

- Battery/Hand crank emergency radio
- 2 flashlights with batteries
- Waterproof matches
- Bushcraft knife (perfectly useful knives cost less than \$20)

To Do:

- Install carbon monoxide and smoke alarms
- Make a list of bank account numbers, credit card account numbers and companies, and insurance policy numbers, include in kit.

*Multiply by the number of people in your household.

Week 5

- 3 gallons water*
- 3 cans ready-to-eat protein* (tuna, chicken, etc.)
- Energy bars

To Do:

- Identify family meet-up locations.

Week 6

- 3 cans fruit*
- 1 box crackers
- Paper plates
- Playing cards
- Plastic container for personal items

To Do:

- Develop Home Evacuation Plans

Week 7

- Pain Reliever
- Thermometer
- Hand Soap

To Do:

- Practice Home Evacuation Plans.

Week 8

- Aluminum (non-sparking!) wrench to shut off utilities
- Fire extinguisher
- Utility knife

To Do:

- Locate and identify Utility Shutoffs.

Week 9

- 3 gallons water*
- 3 cans soup*
- Puzzle books/games

To Do:

- Develop an Emergency Network among family, friends, & neighbors. You'll need each other!

Week 10

- Dry nuts
- 1 Rain poncho*

Week 11

- Laxative
- Antacid
- Anti-Diarrheal
- Rubbing alcohol

Week 12

- Duct Tape
- Whistle
- Tap
- Blank DVDs to record home inventory

To Do:

- Use camcorder to record the contents of your home for insurance purposes.
- Make a copy of the recording and send it to an out-of-town friend or family member.

Week 13

- Electrolyte replacement drink (sports drink or infant electrolyte solution)
- 3 cans fruit*
- Hard candy
- Comfort/stress food (cookies, instant coffee, sweetened cereal, candy, tea bags)

To Do:

- Photocopy important documents, include in kit.

Week 14

- 1 jar peanut butter
- 1 box crackers
- 1 package eating utensils

To Do:

- Discuss with your network and neighbors what help may be needed and how best to assist each other.

Week 15

- 2 rolls toilet paper
- Two buckets with tight-fitting lids (for pee and poo)
- 1 gallon regular household bleach (DO NOT USE scented, color-safe, or bleaches with added cleaners)
- Medicine dropper, to add bleach for purifying water

To Do:

- Review insurance coverage to be sure you are covered for disasters that may happen in your area.

Week 16

- Work gloves
- 50 foot rope
- Crow bar
- Cash (small bills) or traveler's checks, and coins

To Do:

- Keep a card with important health information in kit.

Mitigation Action Strategy Development Tools

Equity Tool

Source: Portland Bureau of Emergency Management

Table 19-2. Equity Screening Review Tool

	Procedural	Distributive	Structural
Programs/ Services	<p>How was the target audience included in the design of the program?</p> <p>What actions will be taken to ensure that services and programs are physically and programmatically accessible and inclusive?</p> <p>What are the criteria for participation or receipt of benefits?</p>	<p>Is the program or service designed to meet the needs of underserved and underrepresented communities? If not what would need to be changed to ensure their equitable participation?</p> <p>How will program dollars be allocated to ensure inclusive and accessible service delivery?</p> <p>Does the cost structure of the program result in disparate use?/Does the fee structure of the service result in increased burdens for low-income communities?</p>	<p>Does this program/service create unintended consequences for communities that are underserved and underrepresented? How will they be mitigated?</p> <p>Is there an opportunity to extend additional benefits through this program/service that can help support the healing of past harms to communities?</p> <p>Does the program empower and build capacity of a community?</p>
Capital Investments	<p>What are the criteria for prioritizing projects and investments?</p> <p>Does the data and information used consider the demographic, geographic and real-world experience of residents and businesses in the area?</p> <p>If data gaps exist, what are you using to guide decisions?</p> <p>What process will be used to get input from the community?</p> <p>How will you reach underserved populations?</p>	<p>Will the investment provide improved safety, health, access or opportunity for the communities who need it most?</p> <p>How will the underserved people who currently live and work in the area benefit from the investment?</p>	<p>What measures will be taken to mitigate the potential impacts of involuntary displacement in the project?</p> <p>How will business or employment opportunity created through the project be extended to communities of color, people with disabilities, and low-income people?</p> <p>How will community benefits be negotiated?</p>
Regulation	<p>Has analysis been done on the impacts to communities of color, people with disabilities, low-income populations, seniors, children, renters, and other historically underserved or excluded groups?</p> <p>How will impacted communities be able to learn about and understand changes with the regulation?</p> <p>How will the regulation be enforced?</p>	<p>Will the regulation provide improved safety, health, access or opportunity for the communities who need it most?</p> <p>How will the regulation alleviate any cost-burden for those who are already in a position where it is difficult to pay?</p>	<p>Does the regulation create or inhibit opportunity for communities of color, people with disabilities, and low-income populations?</p> <p>Will enforcement disproportionately negatively affect low-income communities or communities of color?</p> <p>How will this be mitigated?</p>
Planning	<p>How will impacted communities be involved in the planning process?</p> <p>What measures will be taken to ensure the process is fair and inclusive?</p>	<p>How does the plan prioritize and address the needs of the most impacted or vulnerable in the community?</p> <p>Does the plan improve safety, health, access or opportunity for the communities who need it most?</p> <p>How will resources shift to ensure equitable implementation of the plan?</p>	<p>What measures will be taken to mitigate the potential impacts of involuntary displacement?</p> <p>How will policies support community development?</p> <p>What support is needed to build the community's ownership and self-determination with the plan?</p>

- a. Procedural equity—ensuring that processes are fair and inclusive in the development and implementation of any program or policy
- b. Distributive equity—ensuring that resources or benefits and burdens of a policy or program are distributed fairly, prioritizing those with highest need first.
- c. Structural equity—a commitment and action to correct past harms and prevent future negative consequences by institutionalizing accountability and decision-making structures that aim to sustain positive outcomes

Source: BPS Presentation, Climate Action Plan and Equity: Connecting the Dots with the Community

Table 19-3. Equity Screening Question Matrix

Evaluation Question	Response
1. What issue/problem/risk is the action designed to address? And what are the expected benefits?	Issue: Benefits:
2. Who is the target audience/beneficiary for this action? Who is affected if no action is taken?	
3. How would you classify the mitigation action? (Programs/Service; Capital Investment; Regulation; Planning). <i>Refer to questions in table above based on your answer to this question.</i>	
4. Will any community groups be involved in the design/implementation of this action? (i.e. potential partners)	
5. Will this action reduce risk from natural hazards for the following groups? How?	
Communities of color	
Persons with disabilities and/or access and functional needs	
Households with limited English Proficiency	
Renters	
Economically disadvantaged families	
Seniors (age 65 or older)	
Children (under 15 years of age)	
6. How could this action benefit the following groups? Or How could this action be modified so that there are benefits?	
Communities of color	
Persons with disabilities and/or access and functional needs	
Households with limited English Proficiency	
Renters	
Economically disadvantaged families	
Seniors (age 65 or older)	
Children (under 15 years of age)	
7. How could this action burden/negatively impact/leave out the following groups, for example through communication, transportation, physical or programmatic barriers?	
Communities of color	
Persons with disabilities and/or access and functional needs	
Households with limited English Proficiency	
Renters	
Economically disadvantaged families	
Seniors (age 65 or older)	
Children (under 15 years of age)	
8. If you have identified burdens, barriers, or negative impacts, or opportunities for benefits please <u>revisit the action</u> to identify strategies to reduce or eliminate burdens or negative impacts; remove communication, transportation, physical or programmatic barriers; or enhance potential benefits.	
9. Have you identified a performance metric for evaluating progress on this action? How will you know when this action is complete? (please provide) Have you considered outcomes for communities of color, people with disabilities, low-income families, people with limited English proficiency, renters, seniors, and children?	

Project Selection Questions

Source: Portland Bureau of Emergency Management

Portland Mitigation Action Plan

We are collecting project ideas for the 2021 update to Portland's Mitigation Action Plan. For more information related to the plan and resources that can help you develop a good project idea, please visit: <https://www.portland.gov/pbem/map-2021>

If you work in city bureau represented in the MAP Update Steering Committee, please coordinate with the Steering Committee Member in your bureau before submitting a project.

If you don't work for the City or you work for a bureau not represented on the steering committee, please check in with Beth Gilden before submitting a project.

If you have questions you can follow up with Beth Gilden beth.gilden@portlandoregon.gov

Email *

Valid email

This form is collecting emails. [Change settings](#)

Provide a project name and short description *

Long answer text

What type of project is this? *

- Local Plans and Regulation
- Structure and Infrastructure
- Natural Systems Protection
- Education and Awareness

Explain how it responds to hazard you checked above if not clear from the project description.

Long answer text

Does this project do the following:

- Protect human life, reduce injuries
- Minimize property damage
- Protect and restore a natural system
- Minimize the disruption of essential infrastructure and services

Please explain your answer to the question above if not clear from the project description.

Long answer text

Will this project provide a benefit to community ahead of a hazard event? *

- Yes
- No

If you answered yes above, explain how. Include any benefits or engagement points for frontline and underserved communities in your explanation.

Long answer text

Which existing plan(s) or program(s) does this project fit into?

Long answer text

What emerged from the equity considerations for this project?

Long answer text

Who is the project lead, who are the collaborators?

Long answer text

What resources existing or anticipated will be used to support this project?

Long answer text

What is the anticipated timeline?

Long answer text

Mitigation Action Strategy Workshop

MAP Workshop Agenda

Date of Meeting:	May 26, 2021
Subject:	MAP Strategy Workshop
Invited:	<p>Steering Committee: David Lentzner, Courtney Duke, Emily Tritsch, Jay Wilson, Mindy Brooks, Nickole Cheron, Nishant Parulekar, Aaron Fox, Anne Castleton, Chris Silkie, Ericka Koss, Kate Carone, Kim Anderson, Sallie Edmonds, Edina Na Songkhla, Steve Bregman, Kim Kosmas, Louisa Jones, Laura Lehman</p> <p>Stakeholders: Alexandra Howard, Mike Saling, Kavita Heyn, Nick MicCullar, Ronnie Mompellier, Justin Douglas, Jeff Caudill, Hillary Adam, Matt Galzewski, Vicente Harris, Dave Evonuk, Laura Hanson, Mona Schwartz, Sonia Schmanski, Michelle Rodriguez, Dan Douthit, Glenn Devvitt, Angela Carkner, Eva Love, Rachit Nerwal, Derek Brandley, Katy Wolf, Molly Kramer,</p> <p>Planning Team: Beth Gilden, Jonna Papaefthimiou, Rica Perez</p>
Agenda Overview	<ul style="list-style-type: none"> - Introductions (15 minutes) - What is the Mitigation Action Plan and strategy (10 minutes) - Odyssey of the MAP (1 hour 25 minutes) - Awards Ceremony and Next Steps (10 minutes)

Agenda Item	Notes
2:00 Introductions	Name, position, favorite extracurricular activity when you were in school
2:15 The Mitigation Action Plan and Strategy	<p>The mitigation action plan: Update started in January and will be completed in November. There are three teams working on different planning tasks: Risk Assessment Team, Community Engagement Team, and Steering Committee. The Steering Committee has made some big decisions about the hazards we will cover, the plan mission, vision and goals. The Planning Team brings the three tasks together.</p> <p>The Mitigation Action Strategy: the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose, or mission, of the planning process.</p> <p>*See handout that describes some of the key considerations</p>
2:25 Odyssey of the MAP (Activity 1: 55 min) (Activity 2: 30 min)	<p>In order to generate ideas for the MAP strategy we are going to engage in a “Creative Problem Solving Competition” This is meant to provide a low-stakes way to think deeply about what makes a good project and generate a lot of initial project ideas.</p> <p>There will be two rounds—one where we slowly walk through a single idea, and then a second “spontaneous idea” where we generate many ideas.—the brainstorm</p>
3:50 Next steps	<ul style="list-style-type: none"> - Coordinate with your bureau about project ideas - Bring project ideas to the steering committee

MAP Workshop Handouts

GUIDANCE FOR DEVELOPING THE MITIGATION ACTION STRATEGY FOR THE 2021 PORTLAND MITIGATION ACTION PLAN

- 1 Review the vision mission and goals for the 2021 plan, the hazards we are considering and what types of projects can be included in the mitigation action strategy.**

VISION

Portland is a prosperous, healthy, equitable and resilient city where everyone has access to opportunity and is engaged in shaping decisions that affect their lives. (City of Portland 2035 Comprehensive Plan).

MISSION

To equitably reduce risk and the adverse impacts of natural hazards by building community resilience through collaborative, cost-effective actions and strategies.

GOALS

- Protect life and reduce injuries.
- Engage and build capacity for the whole community.
- Minimize public and private property damage.
- Protect, restore, and sustain natural systems.
- Minimize the disruption of essential infrastructure and services.
- Integrate mitigation strategies into existing plan and programs.
- Prioritize multi-objective actions that can further sustainability and equity goals during “ordinary times”
- Build on collaborations and lessons learned from resilience work that has occurred since 2016
- Incorporate community voice and reflect the priorities of frontline and underserved communities

HAZARDS

- Earthquake
- Flooding and Dam Failure
- Wildfires and Smoke
- Landslides
- Extreme Heat
- Winter Storms (Snow, Ice, Cold)
- Drought
- Volcanoes
- Windstorms

TYPES OF MITIGATION PROJECTS

Mitigation actions reduce or eliminate the long-term risk to human life and property from hazards. They fall into the following categories:

- Local Plans and Regulations
- Structure and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness Projects

ALL ACTIONS MUST

- Reduce risk and adverse impacts of one of the hazards described in our plan
- Fit into one of the FEMA defined mitigation action categories
- Consider equity

GOOD ACTIONS

- Respond to multiple hazards
- Reduce risk and impacts for frontline and underserved communities
- Include an implementation plan
- Reflect existing plans and programs

THE BEST ACTIONS

- Have immediate benefits for the community
- Foster collaboration, and include a plan for working collaboratively to address interdependencies and coordination
- Include an engagement point for underserved and frontline communities in implementation via process, decision making, workforce development, contracting etc.
- Respond to all hazards



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GUIDANCE FOR DEVELOPING THE MITIGATION ACTION STRATEGY FOR THE 2021 PORTLAND MITIGATION ACTION PLAN

2 Use these resources to help you develop a great project for inclusion in the Mitigation Action Strategy

RESOURCES

The following resources are available on the 2021 Portland Mitigation Action Strategy Website:

<https://www.portland.gov/pbem/map-2021>

- The 2016 Mitigation Action Plan
- Status Reports on the actions from the 2016 Mitigation Action Strategy
- An Equity Tool that should be used in developing proposed actions
- A FEMA handout that describes what types actions should be included in the mitigation action strategy and examples

3 Answer the following questions for projects to be included in the Mitigation Action Strategy

REQUIRED QUESTIONS TO DESCRIBE A PROJECT

1. What is the project name, and short description?
2. What type of project is this?
 - (a) Local Plans and Regulations
 - (b) Structure and Infrastructure
 - (c) Natural Systems Protection
 - (d) Education and Awareness
3. Which hazard(s) does this repond to? (explain if not clear)
4. Does this project do the following (explain if not clear)
 - (a) protect human life, reduce injuries
 - (b) minimize property damage
 - (c) protect and restore a natural system
 - (d) minimize the disruption of essential infrastructure and services
5. Will this project provide a benefit to community ahead of a hazard event? How? Explain any benefits or engagement points for frontline and underserved communities.
6. Which existing plan(s) or program(s) does this project fit into?
7. What emerged from the equity considerations for this project?
8. Who is the project lead, who are the collaborators?
9. What resources existing or anticipated will be used to support this project?
10. What is the anticipated timeline?

Submit your responses via google form: <https://forms.gle/69e9ATRj2LcqzRLq5>

Or E-mail: beth.gilden@portlandoregon.gov



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Source: FEMA Local Mitigation Planning Handbook

Table 6.1: Types of Mitigation Actions

Mitigation Type	Description	Examples
Local Plans and Regulations	<p>These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built.</p>	<ul style="list-style-type: none"> • Comprehensive plans • Land use ordinances • Subdivision regulations • Development review • Building codes and enforcement • NFIP Community Rating System • Capital improvement programs • Open space preservation • Stormwater management regulations and master plans
Structure and Infrastructure Projects	<p>These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure.</p> <p>This type of action also involves projects to construct manmade structures to reduce the impact of hazards.</p> <p>Many of these types of actions are projects eligible for funding through the FEMA Hazard Mitigation Assistance program. <i>Task 9 – Create a Safe and Resilient Community</i> provides more information on these programs.</p>	<ul style="list-style-type: none"> • Acquisitions and elevations of structures in flood prone areas • Utility undergrounding • Structural retrofits. • Floodwalls and retaining walls • Detention and retention structures • Culverts • Safe rooms
Natural Systems Protection	<p>These are actions that minimize damage and losses and also preserve or restore the functions of natural systems.</p>	<ul style="list-style-type: none"> • Sediment and erosion control • Stream corridor restoration • Forest management • Conservation easements • Wetland restoration and preservation
Education and Awareness Programs	<p>These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady¹ or Firewise² Communities. Although this type of mitigation reduces risk less directly than structural projects or regulation, it is an important foundation. A greater understanding and awareness of hazards and risk among local officials, stakeholders, and the public is more likely to lead to direct actions.</p>	<ul style="list-style-type: none"> • Radio or television spots • Websites with maps and information • Real estate disclosure • Presentations to school groups or neighborhood organizations • Mailings to residents in hazard-prone areas. • StormReady • Firewise Communities

1 For more information on the National Weather Service’s StormReady, see <http://www.stormready.noaa.gov/>.

2 For more information on the Firewise Communities program, see <http://www.firewise.org/>.

MAP Workshop Project Ideas

- look at alternative water supplies for post-earthquake
- develop rainwater catchment systems at schools for drinking water after treatment during disasters - beacon sites, use for irrigation during the blue skies period
- develop plan for alternative water supplies - pumping from river post earthquake
- Require flood mitigation projects to balance out the built environment changes since 1850 (not 2021)
- Install portable water treatment systems near rivers and wells
- Develop plan to pump from irrigation wells in golf courses and parks after earthquake
- Riverine flood resilience at the water treatment plant
- Restore floodplain in waterfront park
- Rebuild the Portland waterfront to integrate flood storage
- Paint the level of the 1896 flood on buildings downtown to remind people that floods can happen (art and education project)
- A system of half dozen solar and bicycle crank powered "PrepHubs" that include screens with disaster information messages as well as radio communications and mesh networks
- Develop easy to set up and portable large work stations with access to power and internet for essential workers that can be used in case of long term power and communications outage
- Solar phone-charging stations in parks
- Composting toilets throughout the city to be used now and in post-disaster situations
- Support NETs to develop mid-term recovery plans and build projects to support them
- Superdome over the city to protect from climate change
- Buy out tanks at the CEI hub and restore the land
- Guaranteed income for low-income residents so their disaster vulnerability is significantly lowered
- Underground utilities
- Solar powered cell towers
- Develop Bike Emergency Transportation Routes (BETRs)
- Develop mesh network plan for dark skies communications
- Develop well-developed communication/information system that reaches the whole community
- Acquire repetitive loss properties
- Look at effects of climate change and long term troubleshoot for long-term policies to inform short-term policies
- Review college student projects and apply them citywide
- Improve fire lanes and breaks in forested areas
- Mitigate for liquefaction at CEI hub
- Put HEPA filters in buildings
- Finish the Sears Center Project
- Build a westside ECC
- Make a community garden for sharing
- Plant more street trees everywhere especially in neighborhoods that have high heat
- Remove hazard street trees for people that can't afford to remove them
- More green infrastructure of all kinds in neighborhoods with heat islands
- Wildfire mitigation actions
- Seismically retrofit and provide emergency power for two pump stations
- Fund URM retrofits
- Undergrounding utilities
- More emergency response education for neighbors

- Retrofit or relocate fossil fuel facilities in liquefaction zones
- Wildfire smoke mitigation: Installing filters at schools (EPA partnership)
- Heat island impacts: demonstrate greening solutions at EPCC resilience hub
- Composting toilets throughout the city to be used now and in post-disaster situations
- Identify safe location for transportation vehicles
- Acquire properties in the floodplain
- Expand flood mitigation capacity in the Willamette by buying property
- Acquisition of high landslide risk areas
- Protect Columbia well field in case of flooding
- UBI (Universal Basic Income)
- Seismically resilient runway
- Personal water storage containers
- Public outreach campaign to take two weeks ready to historically disadvantaged communities as a series of prep workshops done through/by CBOs
- Seismically retrofit or replace bridges
- Community preparedness grants: Focused on supplies for low income households for Two Weeks Ready
- Plant trees in high heat island areas
- Small/microgrid electrical power distribution and generation
- Debris management plan that includes reuse and recycle
- Changes to Title 17 of City Code, Public Improvements, enlarge the underground wiring districts to make the City less vulnerable to tree-related power outages. Right now, it's a fairly limited swath of the City that is permitted for this, focused mainly on the inner Eastside and downtown areas.
- Two Weeks Ready: Public Outreach Push and Language Translations: Translation of FEMA / OEM's Two Weeks Ready campaign into all the City's safe harbor languages
- Assistance program for low-income or historically disadvantaged community members to prepare for Two Weeks Ready, Things that are challenging: Food, Water, Shelter
- Westside City Emergency Operations Facilities: Westside fueling depot and staging area for PBOT / PWB Continuity of Operations Facility for displaced City Workers Backup EOC - Backup 911 Dispatch Facility
- Upgrades to BEECN: Add solar panels and deep cycle batteries to BEECN caches to allow for spots to recharge cellular phones, Add cellular / wifi hotspots to BEECN caches, use devices that can take multiple SIMs to leverage what cell providers are available
- Block grants to ameliorate the cost of having troublesome trees removed from private property, with a focus on targeting low-income or historically disadvantaged community members. There are strict limits on what Asplundh / PGE will cut in terms of how close it comes to a line, and getting dead / troublesome trees pruned is SUPER expensive
- Project to develop City-funded tiny house or long-term camping pods in key neighborhoods? Buy existing foreclosures, raze, and insert 4 - 6 tiny houses or camp sites, plus garbage water and power service, communal kitchen
- freeway capping, for example over 405, could put solar panels on top to reduce reliance on fossil fuels, would have immediate benefit of reconnecting neighborhoods
- Expand COAD to do work groups, surveys, help community groups mobilize. Could roll into plans and regulations. Sacramento has several COADS, project could expand the program. Underserved communities may not have groups that are organized and have resources, this project could help establish, organize, and fund groups.
- Communication project about resilience for residents about how to prepare, and city capabilities and what the community can expect from the city after an event.
- Develop emergency kits that could be sold at school as a fundraiser, could be kept at school and at home to help residents be prepared.

- reduce reliance on fossil fuels for emergency response and recovery, so we can function without them for some period of time after an event and still provide city functions. solar panels, battery storage at critical infrastructure hubs, etc
- PSU just did an analysis of level of preparedness for community groups, COAD could address those very issues.
- 1)Update Historic Resource Inventory. 2)create inventory of vulnerable buildings including URMS, concrete, and soft story. 3)Map those on emergency transportation routes to see which roads will be impassable. 4)Develop financial planning expertise for mitigation resources. 5)Use this information and equity lens to prioritize
- BDS program (EQUIP) to allow large organizations to inspect their own facilities after an event
- An education programs that targets property owners to encourage them to seismically strap wood-frame structures.
- Mailer and community education project for folks who live in the landslide hazard zone
- Recovery plan needs to include where the CEI hub would be moved to after an event. Fund a study for this.
- Expedited permitting plan for BDS for after an event.
- Annual tabletop exercises with every other year being earthquake -- have paid community involved tabletops based at community centers in underserved communities
- Flood-proof critical facilities in the upcoming revised 100-year flood zone
- map all ETRs, critical infrastructure, and vulnerable buildings to overlay with hazards and identify critical points
- Tabletop exercises with private utilities to identify cascading failures between critical infrastructures and community impacts of high concern.
- Damage assessment app that integrates with the BDS permitting system
- identify critical infrastructure in landslide hazard zones prioritizing areas of multiple critical infrastructure and cascading failures
- fund a recovery plan for the city as a whole. would we change/relocate freeways, bridges, etc?
- Parks markers: Community education and notification; Outreach in surrounding communities in WHZ for fire safety, evac, Preparedness, Go bags/medical, home hardening against fires and embers, Public alerts and engagement, Forest Park Conservancy. Tied to Parks Access and Emergency Response. Trail head markers. Peacock Signs
- Social Media and news release regarding fire hazard
- No Camping/no fire signs in parking throughout the City
- CEI Hub: Not just protecting fuel but transitioning away from depending on oil. Reduce environmental danger. Alignment of policies (climate, fuel, green economy, equity)
- Communications: Hyperlocal distributed internet access, mesh access (see: Detroit and others struggling with access due to financial reasons), Guidance and liaison assistance
- Workforce development and subsidies for green infrastructure/invasives: Leverage natural habitat enhancement projects, esp on private property. Teach how to remove and what to replace with On public lands, replace/improve lands not under the canopy, to reduce fuel load. Balance the ecosystem. Increase canopy to mitigate heat buildup in the City.
- Integrate GIS capabilities between jurisdictions in a common mitigation/preparedness picture
- Update the 100 yr floodplain map to incorporate climate change modeling (flooding)
- impervious surface limits for new development in the Hills and other landslide-prone areas (flooding, landslide, heat)
- identify local streets that can have vehicles removed, dedicate bike/ped and incorporate trees, amenities (heat)
- Bridge gaps in emergency notifications between what we have (WEA, PublicAlerts, Everbridge) due to connectivity and service gaps. Will they reach everyone?
- Pilot a hub of resilience