

# Virtual Flipchart Results: Local Options Brainstorming

Feedback from Stakeholders

Last Updated August 10, 2020

## NFIP Floodplain Impact **Avoidance** Options

Categories	Avoidance Options
<b>DEFINITIONS &amp; MAPPING</b>	10-year flood interval floodway
	Six inch-rise floodway
	Zero rise floodway
	Risk-based floodway that expands from FEMA model to include channel migration, fast water, and deep water (e.g., Pierce County)
	Define water-dependent and/or water-related uses
	Map the high hazard area defined in the RPA
	Where possible, update floodplain maps through an FIS process, and conduct planning level modeling and mapping for channel migration zones and climate change impacts
<b>DEVELOPMENT PROHIBITIONS - FLOODWAY</b>	Prohibit development in floodway
	Flood-compatible use only floodway
	Water-dependent uses only in floodway
	Water-related uses only in floodway
	Public use only floodway
<b>DEVELOPMENT PROHIBITIONS - OTHER</b>	Prohibit new development in 10-year floodplain
	Prohibit new development that will have a significant negative impact on floodplain functions that cannot be mitigated
	Prohibit new development in the channel migration zone
	Prohibit new development in the floodplain
	Environmental Protection overlay zone (Portland)
	Apply river setbacks where non river-dependent or river-related new development is prohibited (e.g., 25-50 ft from top of bank in different parts of Portland)
<b>OTHER DEVELOPMENT LIMITS</b>	Prohibit land divisions and planned developments in flood-prone areas
	Prohibit new land divisions that would create buildable lots exclusively within the floodplain (e.g., Troutdale?)
	Limit land division/creation of new lots in SFHA
	Only allow development within SFHA when no viable alternative site exists on parcel (i.e. parcel is fully encumbered by SFHA areas).
	Apply density fringe criteria to limit development to outer edge of floodplain; prohibit development w/in the closer to river area
	Zone floodplains with large lots, low density, location restriction for buildings
	Set strong avoidance standard that must be cleared before new development is permitted in SFHA
	Prohibit rezoning of properties to residential, commercial, or industrial (and similar) uses
	Require CLOMR/LOMR for all floodplain fill (e.g., Troutdale?)
	Limit/avoid siting of critical structures in flood-prone areas
	Allow transfer of development rights to compensate for loss of value, where potential exists (e.g., Washington County)

Categories	Avoidance Options
	Encourage passive use zoning designation like Parks/Open Space
	Environmental Conservation overlay zone (Portland)
	River overlay zone (Portland)
	Require development be situated outside of the SFHA whenever possible and requiring River Review if not, as well as all areas within 100 feet of the top of bank, at minimum.
	Map the full extent of the 1996 flood (including areas that were previously omitted). Apply all floodplain/overlay requirements to both the SFHA and the full 1996 flood extent

OTHER CONSIDERATIONS	
	Allow NFIP communities to exempt properties from new standards if applying those standards would result in a regulatory taking or triggers a Measure 49 claim
	Extend exceptions to the “net benefit” standard for water dependent uses (from RPA) to water related uses
	Recognize that in Oregon it is already very difficult to develop in the resource zones in rural areas where many of the natural floodplain functions take effect. May be no additional protections are needed to achieve desired outcomes in rural areas.
	Property that is already developed should be allowed to continue and even expand
	Recognize parks as a desired use for the SFHA in UGBs
	Recognize that sewer systems rely on gravity and treated effluent is generally discharged to surface waters. Grant the same exceptions as water depended uses to sewage treatment and conveyance infrastructure.
	Recognize that infrastructure that enables development outside the SFHA should be encouraged, even if it must traverse the SFHA. Limit the scope of habitat impact assessment and mitigation required for these infrastructure projects.
	Code amendments that alter the assumptions on which a buildable land inventory is based require revisiting the BLI and may require adjustments to the zoning maps or UGB to maintain supply. Whether or not updates are required concurrently with code amendments, findings are required, which are costly and time consuming in themselves.
	Avoid triggers for additional process steps for code amendments in cities with a significant portion of their vacant employment land located in the SFHA (See memo for details) or extended implementation schedule when these triggers are not avoided.
	Avoid triggers for additional process steps for code amendments in cities with a significant portion of their vacant residential land located in the SFHA (See memo for details) or extended implementation schedule when these triggers are not avoided.
	As a state, we have been developing in urban cores (by streams often) as a matter of specific state policy. Land is dedicated to meet housing and economic development needs through planning and zoning. Removing the land from the intended use would result in a needed urban growth boundary (UGB) expansion, which isn't either fast or predictable. In Oregon a UGB is established around each city to encourage compact urban development inside the UGB and to prevent urban development

	<p>(densities, infrastructure, and most commercial and industrial uses) outside the UGB on rural lands. UGBs can only be expanded to make room for an identified urban land need. The standards for demonstrating that need are state law and require lengthy and detailed analysis and public process, including the potential for multiple appeals.</p>
	<p>One of the issues that we've had with the BiOp is its unclear impact on agriculture. We believe that implementation of the state's current land use system - paired with the myriad of other state laws protecting water resources and habitat - are sufficient to protect ESA listed fish habitat. In the context of agriculture, land use zoning helps protect agricultural lands and associated habitats, and severely limits opportunities for development on that land. We do not believe that FEMA has the authority to implement the BiOp, nor do we believe its provisions are necessary to protect ESA listed fish habitat.</p>
	<p>Clear standards for infrastructure and utilities</p>

## NFIP Floodplain Impact **Minimization** Options

Categories	Minimization Options
<b>GENERAL</b>	Broad minimization language (e.g. Metro: "demonstrate that no reasonably practicable alternative design... would have a lesser impact... than the one proposed.")
	Building up rather than out to take up a smaller development footprint
	Establish resource protection zones (e.g., Eugene)
	Open space requirements (Happy Valley 20% open space requirements for planned unit development - more erosion than flood)
	Prohibit any construction or grading changes in the floodway
	Strengthen design standards around impacts to floodplain function in SFHA (or beyond) - consider review of design criteria derived through other ESA consultations with NMFS in Oregon
	See Portland Environmental and River overlay zones that require the analysis of alternative development proposals to reduce impacts (size, location, construction management, etc. ), including on-site and downstream impacts to critical habitat and SFHA. The chosen alternative must be the least impactful of all practicable alternatives (which does allow for consideration of economic and other external project factors).
	Expand flood code to apply to broader area (e.g., 1996 flood in Portland)
	The City of Central Point has a stream setback/floodway buffer that extends 25-feet from the top of bank or edge of floodway, whichever is greater. The Central Point Municipal Code defines the stream setback as follows: "Stream setbacks mitigate future flood losses by providing flood storage, enhancing channel stability, and buffering structures and other development from migrating stream channels. In addition, the stream setback establishes riparian buffer areas that provide opportunities for natural stormwater treatment, increased habitat for fish and wildlife species and increased opportunities for recreation and wildlife viewing."
	Require a Type III review for new structures in SFHA
	Adoption of floodplain regulatory standards that relate to maintaining or restoring natural functions. Or may adopt standards outside of floodplain ordinance (i.e. design standards) voluntarily.
	<b>FLOOD STORAGE</b>
Prohibit all fill in the special flood hazard area	
Better regulate fill throughout SFHA	
Elevation on stem walls rather than fill so that flood storage is retained	
Require flow through designs for structures in the floodplain	
<b>RIPARIAN VEGETATION</b>	Restrict vegetation removal for most types of development (e.g., via local environmental overlay) and require mitigation
	Clear, consistent (but locally adaptable) wetland and floodplain setback/buffer standards including vegetation preservation standards (e.g., Metro 3.07.340 - minimum buffer width depends on site characteristics)
	Native vegetation shall be maintained, enhanced or restored, if disturbed, in the Water Quality Resource Area.
	Encourage use of native vegetation (Metro)
	Zoning to limit development and vegetation removal (potentially different buffer distance in RR vs. resource zones) (e.g., Lane County)

Categories	Minimization Options
	Requirement to maintain, enhance, or restore (if disturbed) native vegetation in defined footprint (e.g., Metro)
<b>WATER QUALITY/STORMWATER</b>	<p>Use existing stormwater process and standards for MS4 communities: National Pollutant Discharge Elimination System (NPDES) permitting conducted under the purview of the Environmental Protection Agency (EPA) as delegated to the Oregon Department of Environmental Quality (DEQ). Rely on MS4 process to avoid any water quality or conveyance degradation from new impervious surfaces over 500 ft<sup>2</sup>.</p> <p>Potential alternatives stormwater standards for non-MS4 communities: Compliance with DEQ's Construction Stormwater Permitting, Industrial Stormwater Permitting, and/or Total Maximum Daily Loads, as applicable, and the stormwater infrastructure design standards from one or more of the following sources as deemed appropriate by the local jurisdiction:</p> <ul style="list-style-type: none"> <li>- The geographically closest MS4 permitted jurisdiction</li> <li>- The geographically closest non-MS4 jurisdiction that has adopted stormwater treatment design standards</li> <li>- The ODOT SLOPES V program</li> <li>- DEQ's Low Impact Development in Western Oregon: A Practical Guide for Watershed Health</li> </ul> <p>Impervious surface limitations (e.g., Johnson Creek Plan District in Portland, Troutdale erosion zone) - could be applied throughout the SFHA</p> <p>Prohibit uncontained areas of hazardous materials as defined by DEQ in SFHA (e.g., Metro)</p> <p>Require or incentivize green stormwater infrastructure (e.g., Salem)</p> <p>Use permeable materials for surfacing, i.e., driveways, parking lots, paths.</p> <p>Threshold trigger of 500 ft<sup>2</sup> of new impervious area for stormwater requirements</p> <p>Hierarchy that mandates on site infiltration using vegetated facilities or underground injection control systems (dry wells) before other grey or piped solutions</p> <p>Offsite management fee for stormwater that cannot be treated on site (e.g., added to Portland's Environmental Services' 1% for Green fund which funds city and community projects to remove or treat impervious area (via retrofits) throughout the city.</p> <p>Apply low impact development standards everywhere, not just in floodplains.</p> <p>Low impact stormwater development should be required if not already mandated by another program: preventing increases in peak runoff reduces flood heights and damaging erosion events.</p>

<b>OTHER CONSIDERATIONS</b>	<p>Minimization appears more geared towards urban systems like bio-swales and drainage laws. Whereas in a larger property in the rural area bio-swales, compensatory storage, or drainage systems may not be necessary or prudent. For example, compensatory storage is most effective in the immediate stretch of the floodplain waterway and not 1 mile downstream. Perhaps it makes sense to have separate rural and urban minimization methods to highlight, along with exception allowances for appropriate development for property owners.</p>
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## NFIP Floodplain Impact Compensation Options

Categories	Compensation Options
<b>PROJECT-LEVEL COMPENSATORY MITIGATION</b>	Balanced cut and fill (compensatory storage) for fill in the SFHA
	Require compensation for removal of native vegetation
	Require compensation for addition of impervious area (on- or off-site)
	Consider requiring a 2:1 mitigation ratio for loss of flood storage (combined with development restrictions in floodway or 10-year floodplain, provided exceptions to development restrictions are narrow)
	RPA 4(F) outlines an approach for FEMA to develop mitigation guidance - can a "mitigation sequencing checklist" that generally follows RPA 4(F) be used instead of a Habitat Assessment for communities that do project-by-project implementation?
	Identify and implement existing mitigation standards required by community code that may already exceed no-net loss measures described in RPA.
<b>MITIGATION DETAILS</b>	Follow mitigation hierarchy
	Consider mitigation for functions
	Ensure mitigation achieves functional value replacement.
	An effective monitoring and enforcement program to mitigate for loss of flood storage, could negate the presumed need for greater than 1:1 mitigation (in RPA).
	Mitigation needs to be flexible (e.g., off-site)
	Allow compensatory mitigation to be sited within the watershed (at 5th or 6th field HUC level), not just hydraulic reach for defining the area in which offsite mitigation should occur. The 5th and 6th field HUCs may provide appropriate parameters for replacing lost function.
	Require a cut-fill balance as close to site as feasible, within same reach at least
	Out of kind/out of area mitigation options for smaller communities or those without access to restorable lands
	Equal or better benefits to fish and their habitat can be achieved using more relaxed mitigation design standards. (e.g.: use return intervals instead of elevation increments; require a cut be located at or below the elevation (or flood interval), relative to the location of the fill it mitigates.)
	FEMA guidelines for mitigating for the loss of trees should recognize the limited authority of local jurisdictions to regulate forest practices. Mitigation requirements should apply only to tree removal that occurs as part of development activity, not to the harvest of commercial timber.
	Restoration of priority off-channel refugia can provide equal or greater benefits to fish than the NMFS mitigation ratios and design standards for mitigating lost flood storage.
	Be clear about who will be responsible for finding mitigation projects
	Consider use of in-lieu fees
	Develop a clearinghouse or other programmatic approach to mitigation at the local or state scale
	Create a regional land/parks/stream restoration bank to meet multiple local needs: stormwater management, floodplain protection, fish habitat improvement, riparian restoration. all federal and state programs are implemented at the local level within a limited set of local departments.

Categories	Compensation Options
	<p>These departments have not often put their individual plans into a multipurpose larger plan.</p> <p>"Development, excavation and fill shall be performed in a manner to maintain or increase flood storage and conveyance capacity and not increase design flood elevations:(A) All fill placed at or below the design flood elevation in Flood Management Areas shall be balanced with at least an equal amount of soil material removal.(B) Excavation shall not be counted as compensating for fill if such areas will be filled with water in non-storm winter conditions.(C) Minimum finished floor elevations for new habitable structures in the Flood Management Areas shall be at least one foot above the design flood elevation. (D) Temporary fills permitted during construction shall be removed." – <i>From Metro Urban Growth Plan</i></p> <p>Apply increased mitigation ratios - at least 1:1, more to reflect siting, sources of uncertainty</p> <p>Establish riparian buffer area, within which any impacts to three natural floodplain functions have to be mitigated</p> <p>Improvement/enhancement or no-net-loss standard, depending on siting, type of impacts, etc.</p> <p>Where mitigation opportunities are limited, allow off-site at same ratio as on-site.</p> <p>Increase tree mitigation ratios in the floodplain to meet or exceed ratios included in the BiOp. Tree replacement will be required for trees 1.5 inches or larger in the river setback (50 feet from top of bank) and 3 inches or larger in the remainder of the floodplain.</p> <p>Map the riparian buffer area (riparian buffer zone) and increase mitigation requirements in the riparian buffer area to require beneficial gain in floodplain functions for non-river-dependent development.</p> <p>Increase cut/fill ratios in the floodplain depending on the frequency of flooding and existing floodplain functions (HHA and naturally functioning floodplain to have highest ratio). A minimum ratio of 1:1 for developed areas susceptible to shallow flooding, with required ratios increasing based on floodplain function.</p> <p>Develop quantification tools and a credit and/or in-lieu fee program available to applicants seeking floodplain development permits.</p>
<b>COMMUNITY-LEVEL EFFORTS</b>	<p>Community program to support/fund addressing existing non-conforming uses (FEMA has criteria)</p> <p>Incorporate proposed projects into Natural Hazard Mitigation Plans (to access funding through PDM or similar program).</p> <p>Open space protection (parks, greenways) (Salem)</p> <p>Public/private/NGO partnerships to acquire floodplain lands to place in permanent conservation easements</p> <p>Public/private/NGO partnerships to provide land swap opportunities</p> <p>Willing seller programs (Portland Johnson Creek)</p> <p>Designate or create sacrificial greenspace to offset floodplain development. Either through removing derelict structures, preserving already empty space, or establishing development boundaries around the flood storage area. Can be done on an impact area ratio scale.</p> <p>Impact fees that scale based on functional value of floodplain, default to highest category when no habitat assessment conducted, fees used to fund mitigation and restoration (kind of fits all three categories)</p>

Categories	Compensation Options
	<p>Portland Grey to Green Land Acquisition program (now the Watershed Land Acquisition Program) acquired over 450 acres since 2008 and future expenditures are set at \$1.5M/yr.</p> <p>Preference to use SEP (Supplemental Environmental Projects) for all DEQ violations</p>
<b>RESTORATION</b>	<p>Enhancing channel stability and buffering structures and other development from migrating stream channels.</p> <p>Fund purchase and restoration of developed land in the floodplain</p> <p>More aggressive buy-out program post-disaster</p> <p>Regulatory streamlining for restoration projects</p> <p>Replace tide gates that block fish passage</p> <p>Restoration efforts should "count" toward compliance (Tillamook Southern Flow Corridor - but note concerns about public conservation funding being used to offset development)</p> <p>Utilize federal conservation lands funding to purchase open space (if this funding pool is available)</p> <p>Consider local cost-share in joint restoration projects - portions that are not federally funded should "count" toward compliance at the community level</p> <p>BES surface water restoration program ~\$20M/yr (EDT analysis to demonstrate salmon benefits) primarily focused on culvert removal/upgrades for fish passage, floodplain restoration, or instream habitat improvements.</p> <p>Codify restoration programs and expand them.</p> <p>Pursue floodplain restoration projects on city/county owned land.</p> <p>The only approach to restoration that is effective is one that is community driven, voluntary, well-funded and that brings all interests to the table. Oregon has had a VERY long track record of successful restoration projects through the Oregon Watershed Enhancement Board and other leveraged funding that is then invested in a strategic manner in communities that bring forward proposed projects.</p> <p>Communities should get credit for voluntary actions and those outside SFHA</p>

<b>OTHER CONSIDERATIONS</b>	<p>Recognize that infrastructure that enables development outside the SFHA should be encouraged, even if it must traverse the SFHA. Limit the scope of habitat impact assessment and mitigation required for these infrastructure projects.</p> <p>Some stream restoration and fish habitat restoration projects result in rises within floodways (i.e. replacing culvert that has experienced scour below it with fish ladder or fish friendly option has resulted in a rise in a floodway). Need to ensure higher standards don't make these more difficult</p> <p>Assume that it will not be easy to use farm land for offsite compensatory mitigation for fill placed in development zones</p> <p>Provide guidance specific to mitigating impacts from new agricultural structures, so that the difference between current provisions for agricultural structures and new directives is understood</p>
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	<p>Set review and mitigation standards specific to parks. Relax the mitigation standards in the RPA so barriers to park development are not created.</p>
	<p>Set standards for mitigation specifically designed for linear features such as power, gas, water and sewer lines, and recognize where impact to habitat are temporary and de minimis.</p>
	<p>Set standards for mitigation specifically designed for uses that require proximity to rivers, lakes and estuaries. Consider setting lower mitigation requirements for water dependent and water related uses, since there is little or no option for alternate siting.</p>
	<p>Oregon cities don't contain vast amounts of vacant land for future mitigation. All buildable land inside UGBs is, by state law, presumed to be available for development, so any offsite mitigation will of necessity in most cases be taking place on land already planned and zoned for some other urban use.</p>

## NFIP Floodplain Impact **State & Federal** Options

Categories	State & Federal Options
<b>REGULATORY FRAMEWORK</b>	Institute deep wetland and watercourse buffers into regulatory requirements
	End federal exemption on water quality to irrigation districts
	State regulation of farming practices
	Ensure there is a route to compliance for communities that can be implemented with M49
	Is there a better way to approach GTAs/CACs/CAVs in an ESA context?
	Model greenway code
	State development of a mitigation framework outlining parameters for effective mitigation to avoid ratios in RPA
	Implement a regional banking approach that cuts across multiple programs: USFWS, ODFW, NMFS, OWEB, DSL, DEQ have requirements to restore riparian, restore fish habitat, prevent pollution during and after construction. Transportation and parks planning efforts often have an active transportation plan that both are interested in streamside uses. Talk locally about how these overlap, can create synergy, pose conflicting obstacles and aim to develop their own streamlined set of processes. Does it make sense to plan for landscape-wide natural corridors that benefit multiple species?
	Discount SFHA areas within the UGB to minimize pressure on flood-affected areas when determining Buildable Land supply in inventory.
	Allow floodplain area to be netted out of net area calculations for minimum density calculations
	CLOMR/LOMR Community Acknowledgement Form needs to be revised to provide a standardized path to demonstrate ESA compliance for projects with no federal nexus that would otherwise trigger a formal federal ESA consultation, preferably model code language.
<b>FUNDING</b>	Inquire about and discourage shifting of responsibility among different agencies. Many communities have TMDL, NPDES MS4, construction and stormwater permit requirements. Developers will be required to get 1200-C permits, ACE 404/DEQ 401 Water Quality Certification permits. The agency should acknowledge this, engage in local development community discussions about how to best integrate and streamline the requirements imposed directly on the private party and separately on the public sector because the purpose and goals are very similar even if the individual regulatory statutes have different origins.
	More aggressive buy-out program post-disaster
	Increase federal pre-disaster mitigation grants
	BRIC program may eventually be a tool that can support community efforts to establish community-wide RPA measures such as Floodplain Management Plans, etc. (new program for pre-disaster mitigation)
	Federal funding should also be given to watershed groups through grants that will conduct enhancement projects.
	FEMA or DLCD provide funding for elevation surveying for some people when they are clearly above the BFE but located within a mapped SFHA, possibly even carry the LOMR / LOMA application process. New NFIP maps based on LIDAR data would be most helpful.
	Land purchase (to reduce available developable area within SFHA) would be an excellent strategy -- but funding is severely limited.

	<p>ODFW purchase any waterfront properties from Counties when they become available via tax foreclosure. Many times I have seen strips of land between a highway and a river get purchased on the cheap from a County then the new buyer wants to develop the site. Seems like a missed opportunity to protect the riparian area and keep it in public ownership.</p>
	<p>Provide grant funding to local municipalities to fund purchase of land in SFHA for park &amp; trail use.</p>
	<p>Having an easily accessible grant program available to quickly purchase properties that become available in the SFHA would help local communities protect and restore floodplain habitat and natural functions.</p>
<b>CRS</b>	<p>CRS - highlight alignment with CRS activities where they apply across all buckets, with every applicable option, to encourage participation as a means of incentivizing BiOp/RPA measures (CRS crosswalk included in DLCD draft Model Ord)</p>
	<p>Major CRS points for prohibiting development in floodplain</p>
<b>ANALYSIS &amp; MAPPING</b>	<p>Coordinated state-wide assessment of priority conservation and restoration targets</p>
	<p>Coordinate restoration efforts with local watershed councils &amp; OWEB.</p>
	<p>Recommendations for developing 10-year flood hazard zone mapping, and discussion of challenges presented when considering the 10-year flood hazard zone alongside other overlays identified in the RPAs.</p>
	<p>Review and analysis of design criteria derived through other ESA consultations with NMFS in Oregon for their application in drafting mitigation standards specific to floodplain development.</p>
	<p>State / FEMA should provide maps and models for update/refinement at the site level of anything that local governments are expected to regulate, e.g. CMZs, 10-year floodplain, etc.</p>
	<p>Have the local programs implementing riparian (OWEB), fish (ODFW, NMFS, USFWS), land use/building (NFIP, riparian) and streets (ODOT/FHWA funding, stormwater, streets) met together to see where their efforts overlap or have competing goals? Active transportation and parks networks may also have their sights on riverbank trail systems. After the agency staff find some paths and alternatives, invite the development community to take part and help find opportunities where permits would be hard and they may be willing to donate corridors or be required to stay out to meet NFIP CRS goals.</p>
	<p>FEMA HMA grants can be used to support this kind of plan integration, at least when the plans reference the contents of the NHMP which all counties and many cities have been required to have for nearly 25 years.</p>
	<p>Require that governing body, either manager or elected officials, engage with planning and integration projects. Reluctance between departments to work together, and be given the staff time and direction to work together needs a higher coordinating force.</p>
	<p>State / FEMA should provide maps and models for update/refinement at the site level of anything that local governments are expected to regulate, e.g. CMZs, 10-year floodplain, etc.</p>
	<p>Consider broader context - other impacts, other ways to benefit fish</p>
	<p>Crosswalk in ordinance checklist of the various state programs (Planning Goals) that should get a community partway to meeting RPA implementation</p>

**TECHNICAL SUPPORT**

Local planners are not qualified to certify ESA impacts (or lack thereof). Ideally, there needs to be a staff person at DLCD or FEMA Region X that would perform these reviews. We need formal criteria for submission -- what ESA review should include, qualifications for contractors, something like a formal No-Rise Certificate that the qualified consultant must sign, maybe a pre-qualification list for consultants?

State-wide administrative support for implementing CRS standards, providing technical support, and submitting documentation

Concern that if you take development rights away from people it will create a new round of Measure 37/49 claims requiring compensation or allowing development - DLCD to put together talking points for local jurisdictions in how to respond to the private property rights arguments or even better develop an option to purchase the property when it becomes unusable for development.

Need much more education on how to show people how to do compensatory mitigation and how staff should review for effective compensatory mitigation. As Oregon stresses infill development and lot sizes are shrinking, State/FEMA needs to help local jurisdictions develop mitigation banks.

Provide examples of how mitigation for loss of flood storage can be accomplished on farm land in a manner that supports ongoing use of the land for farming

Provide examples of how mitigation for loss of flood storage can be accomplished on farm land in a manner that supports uses allowed in EFU zones.

Provide examples of how mitigation for loss of flood storage can be accomplished on farm land without triggering statutes and laws for mining or how it can be accomplished in conjunction with a an authorized and permitted mining activity.

Review and identify existing policies, regulations, and programs that conserve or restore natural functions of floodplains. Develop guidance and a framework for how communities can demonstrate mitigation and restoration work completed to date, planned, or required through another program, statute, etc... and how that work relates to what their floodplain regulation and permitting requirements have to be to maintain compliance with the NFIP.

Having a resource at the State and/or Federal level to review ESA studies. It would also be helpful to have list of minimum criteria that would need to be included in the ESA study.

A State/Federal approved list of people/consultants that are qualified to perform the study would also be super helpful.

Provide training to municipalities to educate staff on key criteria and reasoning behind regulations.

Provide funding and other resources for peer-review of applications.

Coordination/communication engagement strategies that serve both Risk Rating 2.0 and FEMA BiOp needs.

Land use and public works often are managed by separate departments; investigate ways to jointly meet all goals. Public works departments have been slow to move away from pave it and send it downstream.

## Additional Resources

- Communities who have already put in place higher regulatory floodplain standards. City of Portland; Talent, OR; Yamhill Co., OR.
- CRS program
- Development codes from Washington State prohibits floodway development - Yakima Co. WA; Kittitas Co., WA.
- Floodplains by Design <https://ecology.wa.gov/About-us/How-we-operate/Grants-loans/Find-a-grant-or-loan/Floodplains-by-design>
- Lane County Class 1 Stream Regulations Lane Code 16.253
- Oregon TNC tide gate replacements <https://www.nature.org/en-us/about-us/where-we-work/united-states/oregon/stories-in-oregon/restoring-tidal-wetlands-at-winter-lake/>
- Oregon's Model Floodplain Code
- Should probably mine CRS for additional ideas, unless someone already has
- Statewide Planning Goals 3 & 4 Farm and Forest Regulations (Rural property)
- Consider methods used by the Oregon Department of State Lands to delineate wetlands and review application materials for sufficiency to satisfy regulatory criteria (i.e. specify conditions and outcomes of permit approval)
- 2035 Comprehensive Plan (<https://www.portland.gov/bps/comp-plan/2035-comprehensive-plan-and-supporting-documents>)
- River Plan/South Reach (<https://www.portland.gov/bps/river-plan/south-reach>) Floodplain Management Update Work Plan
- Metro Title 3 (<https://www.oregonmetro.gov/urban-growth-management-functional-plan>)
- Willamette Partnerships Smarter Floodplain Management tools (<https://willamettepartnership.org/floodplains/>)
- US Water Alliance/One Waters Equitable Approaches to Urban Flooding case study (<http://www.uswateralliance.org/sites/uswateralliance.org/files/publications/Water%20Rising%20paper.pdf>)
- SLOPES V
- Oregon's NHMP introduced LID stormwater planning in 2015. Oregon NHMP update 2020 is out for public review this month, July.
- Take advantage of FEMA online recorded seminars on NHM Planning and go after their HMA funding to conduct integration efforts for different hazards: flood, storm, wildfire. County emergency departments holding the NHMP should get engaged with the police, fire and public works depts of the communities within the county.