



# Floodplains by Design

• REDUCING RISK, RESTORING RIVERS •

# Newsletter

January 2023

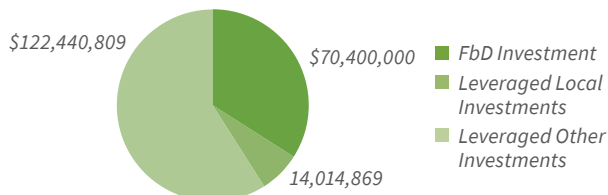


A Wetland Heron. Photo Credit: Lower Columbia Estuary Partnership

## By the Numbers: How State Investments in FbD Leverage Other Funds and Lead to Big Outcomes

The Floodplains by Design grant program contributes to major improvements for communities across the state: reducing flood risk, restoring salmon and other wildlife habitat, and boosting the local economy while also making it more resilient. But the FbD grant program is only part of the story when it comes to the overall impact of the integrated floodplain management approach it helps incentivize. Local implementation partners leverage the state investments in FbD at almost \$2 to \$1 with local and other funding, helping make communities and watersheds safer, healthier, and more vibrant. Here's a look at the impact the top 11 FbD projects would have if funded at \$70.4M for 2023–2025:

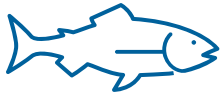
*FbD project proposals are funded by a diverse set of public-private partners who collaboratively develop a suite of integrated projects that move everyone closer to their goals.*



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PROJECT OUTCOMES:



**60.7**

stream miles of  
habitat restored

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**14,416**

number of people with  
reduced flood risk

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**3,391**

jobs created

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**3,314**

number of homes or structures  
with reduced flood risk

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**9,021**

acres of improved  
working lands

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**\$452,503,203\***

value of infrastructure protected

\*The National Institute of Building Sciences' [Natural Hazard Mitigation Saves: 2019 Report](#) showed that for riverine flood mitigation, public sector investment provides \$7 benefit for each \$1 invested; figure above includes some local value assessments.



**1,720**

acres of floodplain  
reconnected

# Reflections and Thanks For 2022 Legislative Site Tours

BY ALLAN WARREN

With the holidays behind us, a new year ahead, and the start of the legislative session, the backbone team wanted to take a moment to reflect on and celebrate all the great outreach Floodplains by Design partners did this past year with state legislators and other elected officials. Keeping local, state, and federal elected officials informed of the impacts of these public investments, how each of these different funding sources leverage one another, and the challenges to implementation that local partners face isn't just vitally important, it takes a lot of effort.

We know that all the FbD implementation partners across the state face significant capacity constraints and so we just want to give our thanks and praise for all the efforts local partners put into reaching out, sharing fact sheets, and hosting site tours or virtual meetings. So much of the work of integrated floodplain management is based on building relationships and trust, and that's as true for the partners working side by side on planning

and project implementation as it is for elected officials that help support this work. Building these relationships is an ongoing effort, but it helps build public support and awareness for how investments in FbD are helping reduce flood risk, restore salmon habitat, and support the economic vitality of working lands and communities across the state.

These outreach efforts started in earnest back in July with partners in the Nooksack watershed meeting with Rep. (now Senator) Sharon Shewmake to inform her of the ongoing challenges they are facing with their recovery efforts from the major floods they endured in November of 2021. In August, the Floodplains for the Future partnership in the Puyallup watershed went above and beyond and hosted site tours at six different sites, bringing together local elected officials and Reps. Mari Leavitt and Dan Bronoske.

In September, Skagit Conservation District (CD) and Forterra hosted Sen. Liz Lovelett for a site tour of the



*District 12 Rep. Keith Goehner (4th from the left) joins partners from the Tulalip Tribe, Snohomish Conservation District, Snohomish County, City of Sultan, and hosts at the Reiner Farm on a tour of a project along the Skykomish River in the Tualco Valley.*





*Rep. Steve Tharinger, District 24, is seen here on a site tour of the recently completed Lower Dungeness River levee setback project. Behind him is a stand of poplar trees he planted roughly 40 years ago where his former home was located. Rep. Tharinger accepted a buy-out to help make this project happen.*



*Rep. Ed Orcutt, District 20, (middle) is joined by Lower Columbia Estuary Partnership's Executive Director, Elaine Placido, and Principal Restoration Ecologist, Paul Kolp, on a tour of the East Fork Lewis River at Daybreak and Danger Parks, owned by Clark County.*

Skagit CD project site and discussion about Forterra's Town of Hamilton project. Later that month, Kittitas Conservation Trust, along with the Mayor of Cle Elum and Kittitas County Commissioner Laura Osiadacz, hosted Rep. Tom Dent and Sen. Judy Warnick to discuss the flood risk and salmon benefits of their project on the Yakima River.

In early October, Sen. Mark Mullet was able to join partners from Lake Washington/Cedar/Sammamish Watershed (WRIA 8), Puget Sound Partnership, Recreation and Conservation Office, and King County to tour the Riverbend Levee Setback and Floodplain Reconnection Project site, which at the time was finishing up construction. Shortly after the tour, the first rains of the season elevated the water levels and the new side channel got wet for the first time.

In early November, the Sustainable Lands Strategy partnership in the Snohomish River watershed hosted



*Sen. Mark Mullet, District 5, (second from left) is seen here on a site tour of the recently completed Riverbend Levee Setback and Floodplain Reconnection Project on the Cedar River.*

Rep. Keith Goehner, District 12, for a site tour of multiple sites in the agriculturally significant Tualco Valley reach. Joined by the Mayor of Sultan, Tulalip Tribes members and staff, local farmers, Snohomish County staff, and Snohomish Conservation District staff, the tour helped highlight not only the great multi-benefit work this partnership is doing, but also introduced Rep. Goehner to a completely new part of his district given how dramatically the map of District 12 changed this year.

Also in November, the Lower Columbia Estuary Partnership met with three legislators to share information about the Lower East Fork Lewis Floodplain Reclamation project and the funding opportunity provided by the Floodplains by Design program. Rep. Ed Orcutt accompanied the Estuary Partnership on a tour of the East Fork Lewis River at Daybreak and Danger Parks, owned by Clark County. Damage to county infrastructure from erosion and impacts from legacy gravel mines are visible at these locations. The Estuary Partnership hosted a virtual tour with Rep. Peter Abbarno, ranking minority member of the house budget committee.

Outreach continues heading into the Legislative Session and the FbD Lobby Day on January 25, but with so many great site tours and opportunities to build relationships with elected officials, it's important to take a moment and reflect on all the great work partners are doing across the state. Thank you to the entire FbD network for all the effort you put into making communities throughout Washington safer, more resilient, and healthier for fish, wildlife, and the people that call these watersheds home. And thank you to local, state, and federal officials for continuing to support such a dynamic and impactful program. We look forward to more site tours throughout the state in the year ahead!

## Governor's Budget Update for the '23-'25 Biennium

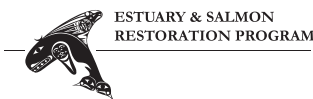
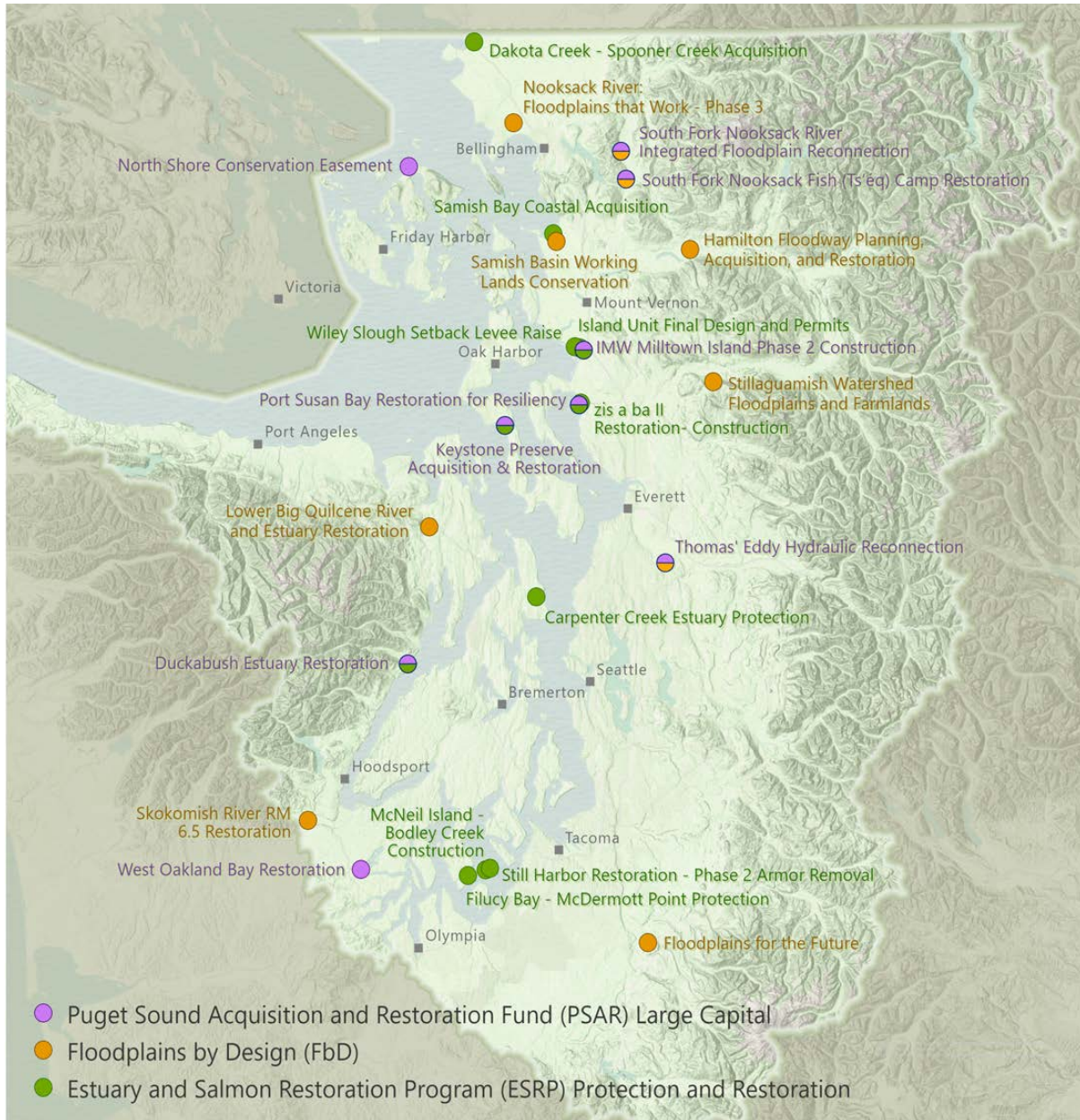
The Governor released his proposed '23-'25 biennium budget on Wednesday, December 16, including \$49.8 million for Floodplains by Design. Our work continues. In years past, the final budget allocation from the legislature to Floodplains by Design has been higher than what was proposed in the original Governor's budget. The next step is getting that number higher in the final capital budget in the spring, and that's a marathon, not a sprint.

You can find the full Proposed Budget and Policy Highlights document [here](#). Check out the full budget for information on allocations for salmon, riparian programs, stormwater, fish passage, funding for Floodplains by Design and much more.





# Puget Sound Capital Programs for Salmon, Habitat, and Jobs



Every \$1 million invested in Puget Sound restoration projects means at least 17 jobs and over \$3 million in economic activity.”

-Office of Financial Management



Program	Puget Sound Acquisition and Restoration Fund <i>Puget Sound Region</i>	Estuary and Salmon Restoration Program <i>Puget Sound Region</i>	Floodplains by Design <i>Statewide</i>	Salmon Recovery Funding Board <i>Statewide</i>
<b>2023-2025 Agency Request</b>	\$65.4M 100% to Puget Sound	\$25.5M 100% to Puget Sound	\$70.4M 62% to Puget Sound	\$82M 40% to Puget Sound
<b>2023-2025 Governor’s Budget</b>	\$50M 100% to Puget Sound	\$25.49M 100% to Puget Sound	\$49.8M 87% to Puget Sound	\$40M 40% to Puget Sound
<b>Program scope</b>	Puget Sound watersheds from headwaters to marine	Puget Sound shorelines, river deltas, and embayments.	Reduce flood risk and restore habitat along Washington’s rivers and streams.	Salmon-bearing watersheds
<b>Unique focus</b>	Watershed and Regional priorities from the Puget Sound Salmon Recovery Plan and Puget Sound Action Agenda	Built on large scale Sound-wide process-based science investigation from PSNERP, includes multiple sub-programs including Shore Friendly	Improves flood protection; restores salmon habitat; improves water quality; enhances outdoor recreation	Implement Federally approved regional salmon recovery plans for statewide salmon recovery
<b>Contact</b>	<b>Don Gourlie</b> Legislative Policy Director  Puget Sound Partnership 360.688.3253 don.gourlie@psp.wa.gov	<b>Tom McBride</b> Legislative Director WDFW 360-480-1472 Thomas.mcbride@dfw.wa.gov and <b>Brock Milliern</b> Policy and Legislative Director RCO (See right)	<b>Tim Gates</b> Policy and Operations Manager WDOE Tim.gates@ecy.wa.gov 360-701-5847	<b>Brock Milliern</b> Policy and Legislative Director  Recreation and Conservation Office (RCO) 360.789.4563 brock.milliern@rco.wa.gov

\*State Capital programs SRFB, ESRP, and PSAR are used as state match to the Federal Pacific Coast Salmon Recovery Fund (NOAA), National Estuary Program Puget Sound Geographic Funds, and other BIL funding opportunities.



## Planning for Change: The Eight Principles of Resilience

A CONVERSATION WITH STEVE MODDEMEYER

*The first part of this conversation between Steve Moddemeyer and Hannah Buehler can be found [here in our Nov/Dec newsletter](#). Steve is a principal for planning at Collinswoerman, an architecture and planning firm based in Seattle. He works at the intersection of sustainability, resilience, and land use and is the Chair of the National Academies of Sciences, Engineering, and Medicine's Committee on Hazard Mitigation and Resilience Applied Research Topics.*

**HB:** As you're helping people and organizations to navigate uncertainty, what attributes of resilience do you use to inform your work?

**SM:** I became interested in resilience science when the International Water Association (IWA) based in The Hague, Netherlands hired me in 2008 to help them launch a global program called "Cities of the Future." Their members are mostly outside the United States, so it was a wonderful opportunity to travel the world to visit cities that are planning for the 21st century. We mostly focused on districts and neighborhoods where redevelopment was taking into account climate change, renewable energy, and new technologies. For about three years, I worked with IWA members and staff to convene meetings in regions of the world including Turkey, China, Korea, Canada, and Europe. In the meetings we'd examine what forward-looking people in infrastructure design and city planning were doing and how we can all learn from them. Seeing on-the-ground built examples where people were planning for a climate-changed future demonstrated these ideas are not only not crazy, but already being implemented at full scale. This was more than a decade ago. The United States was an outlier—even then.

During that time, I came across the [Stockholm Resilience Center](#) founded by [Carl Folke](#). I resonated with their approach to socio-ecological resilience. They look at how ecological and social systems adapt to change and persist over time, through good times and tough times. Istanbul is a great example of a social system that adapts and persists over time.

Istanbul has been a city for 5,000 years. It is thriving and dynamic. It has endured and rebounded from multiple pandemics, major wars, name changes, regime changes, and it still persists. So what is it that makes a city grow and thrive through thousands of years? Are there special

attributes or systems that enable that? The same question arises with ecological systems. Any ecosystem or species that is with us today has managed to navigate and persist through all kinds of change: through glaciation, wildfires, disease, drought, floods, hunting, pests, pestilence... through everything. So what is it that makes them able to keep their identity and manage to navigate through those thousands and thousands of years?

Back in the late 1960s and early '70s, Canadian ecologist C.S. "Buzz" Holling had a great insight. He realized that it is not the ability to grow and prosper that makes a species or an ecosystem persist through time, rather it is their ability to keep their identity through times of loss and change. Resilience is not simply the ability to resist change, but to recover from it with your identity intact.

If readers are interested to understand socio-ecological resilience, Steve highly recommends any and all of these authors: Carl Folke, Elinor Ostrom, Reinette Biggs, Steve Carpenter, Brian Walker, Lance Gunderson, Ann Kinzig, Johan Rockström, Will Steffen, and Marten Scheffer.

After a lot of reading and attending the [Resilience 2011: Leading Transformational Change](#) conference in Phoenix, AZ, I was inspired to understand the attributes of resilient systems so that I could apply this emerging science to my work with cities and communities. In 2015, I drafted a paper *Applying Elements of Resilience to Prioritization and Decision Making* and asked Mike Jones of the [Swedish Biodiversity Institute](#) to be a co-author. It hasn't been published, but it outlines eight key attributes of resilience of particular importance to planners.

The first principle is **diversity**. Diversity of species, food sources, ecological niches, even diversity of methods, systems, and cultures are all essential attributes of resilient systems. The broader the range of diversity, the more likely the system has the capacity to adapt to change. For planners, this means that if we only take one point of view, or one person's life experience into account, then we're not hearing all the other perspectives that can cast clarifying light or open up



new perspectives on the challenges we face. It is often that the ideas that are on the edge are most relevant for survival when conditions change. Diversity is not just a good idea culturally, or as a nation. It is a fundamental attribute of the capacity for a system to be resilient.

In a flooding, farming, and habitat context, it means that we get smarter when we blend the wisdom from folks with expertise in each. It also means that we need to have not only a single strategy for resisting floods, managing flood impacts, or even thriving with floods, but also pragmatic strategies for recovery when our flood defenses are overtopped.

The second attribute of resilient systems is **modularity**. When we find a pattern that works, it makes sense to find ways to replicate that pattern in a smart way. Systems and species that survive through change have modular approaches that can work in various settings and can be repeated when the conditions are right. Modularity is closely tied to a distributed systems approach in infrastructure, where multiple modules offer services (or ecosystem services) that can dot the landscape. If one module winks out because of some disturbance, the others continue to function and can provide capacity to reestablish the affected areas.

**Connectivity** is the third attribute. If we're under-connected, then we risk being isolated and vulnerable. If we are over-connected, then we are vulnerable to contagion and exhaustion. It's when we maintain a balance of strong and weak links of connectivity then we can acquire resources from across distances and share insights. For example, the internet helps us to connect and we can learn more about what's going on in the world, but that's just one mode of connection. Connecting with where we are—right here in this place experiencing it with our senses—is another essential pathway for connectivity.

**Storage** is fourth. Storage that is distributed throughout a system allows for a resilient system to maintain viability when disaster strikes. The importance of storage became obvious during the pandemic when our just-in-time supply chains collapsed. Personal protective equipment (PPE) was not in adequate supply and the United States did not even have the capacity to make our own PPE as the pandemic impacts unfolded. We valued efficiency (and profitability) for the good times, but failed to recognize that it's the tough times that demonstrate if we have the capacity to be resilient.

In the Boulder County floods of 2013, the bridge over the river failed. The Jamestown, Colorado, Fire Department had the firehouse and trucks on one side of the river and major fires on the other side. The firefighters could cross the flooding river, but they could not get the fire-fighting equipment they needed to adequately fight the fire once they got over the river. Providing a fireproof storage

## Eight Attributes of Resilience:

Diversity
Modularity
Connectivity
Storage
Feedback
Story
Trust
Self-Organizing

shed for fire-fighting equipment on both sides of the river was needed.

For individual families and businesses, storage can refer to financial savings and access to credit. Over and over it has been shown that minimal savings and limited access to credit can cripple the recovery of an impacted community.

Systems that have storage have better odds of survival and can speed recovery. Some communities are creating “resilience hubs” by retrofitting community halls, schools, or even building new facilities within walking distance of neighborhoods to store energy, water, food, tools, and communication equipment. Communities need to be able to store enough that they can continue essential community functions on their own for some length of time, get information when mobile phone grids are down, and share resources with friends and neighbors when things get dicey.

The fifth aspect of resilience is **feedback**. Systems with resilient capacity are able to sense, hear, and incorporate new information when it comes their way. Failing to be sensitive to and responsive to feedback is a surefire way to become vulnerable to change.

The sixth attribute is **story**. What does the story have to do with ecological systems and species? If we know the stories of salmon, we begin to know salmon: their life history, their will to survive, their ability to shift their bodies to salt water and then return home again to spawn in freshwater is how we know who they are. They are salmon and they bring wonderful gifts to us and the entire ecosystem.

We humans have our stories, too. The stories we tell ourselves about ourselves are a key element of how we maintain our identities. The cultures we grow in and the ceremonies we learn keep our stories alive through the generations. We share ceremonies and origin stories to remind ourselves of who we are and the breadth and depth of how we got here.

Community leaders are encouraged to remind impacted communities of “who we are.” They retell our own story to us. They say we are going to work together to respond and recover. They say we will not stop until everyone that can be saved is saved. They say we are all in this together. And they mean it.

Story is so important to resilience that sometimes people battle over the story by trying to change it to fit their own purposes. For example, “conflict entrepreneurs” tell stories to disempower people, often to advantage or reinforce their own power. They may misinform or repeat false caricatures designed to divide.

Being aware of the role that story plays in resilience is key because it reinforces our identity, which reinforces our capacity to resist, endure, and recover from bad events. When we remind ourselves of our highest values through our words and actions, even during tough times, then it shows us who we really are and what we really stand for.

**Trust** is the seventh attribute. Trust is more than an element of social systems; it is also an attribute useful for species survival. Outside my window is a bird feeder that attracts juncos, nuthatches, and chickadees. As a junco feeds on the ground, a chickadee may land just inches away yet they barely acknowledge each other. On the other hand, if a cat were to be lurking a few inches away, the juncos and the chickadees would flee instantly. It turns out that knowing who we can trust and who we can't is essential for our survival.

OK, then, who can we trust? Who do we dare not trust? If a junco gets confused and flees every time a chickadee lands then it will spend too much energy fleeing and not enough time eating. For us humans, we know that when trust is broken, our ability to recover from setbacks can take longer or maybe take forever.

Can we repair trust when it is broken? Whole books have been written about that. A shorter answer is that trust is the result of three things: 1) demonstrating consistent behaviors of trustworthiness over time; 2) providing clear and unbiased communication; and, 3) respecting others, which means to re-spect i.e., relook at the outcomes of our actions on others and use that feedback to take responsibility, and when needed, begin to repair those outcomes.

An aphorism we hear from emergency managers is, “During a disaster event is not the time we want to be exchanging business cards.” They know local people need to know each other before disaster strikes so they know who they can trust after the disaster. That is important because disasters attract lots of help: some altruistic and effective, some incompetent, and some opportunistically malevolent. A pre-disaster strategy is to create opportunities for all different strata of a community to meet and work together, preferably when the stakes are low. This enables the local

community with the ability to know who to trust so that they can safely leverage their diversity when they need it the most.

**Self-organization** is the last attribute in our list. Systems that self organize are more capable of being resilient and adaptable to changes in conditions. This distributes decision-making up and down the system and creates the opportunity for creative solutions to emerge. A resilient system has people that feel empowered to act and make decisions at every level.

In his book, “[Planning for Post-Disaster Recovery](#)”, Gavin Smith discussed how to manage the multiple levels of self-organized and voluntary activities that emerge after disasters. These emergent groups can help survivors “tip in” to restore community functions. If oriented around the attributes of resilient systems listed above, they can be a healthy outlet for individuals, families, and local businesses to recommit to rebuilding or starting over.

Managing these kinds of self-organized impulses is not easy in the aftermath of a disaster, as initial response methods are command and control based. Command and control responses make sense when things are under extreme stress because someone in charge creates a sense of order despite the chaos of the disaster. Yet command and control has a relatively short shelf-life in many communities because most individuals, families, and businesses prefer to make their own decisions. The transition from command and control during response to distributed decision-making during recovery can often be uneven or awkward. The skills required to respond to a disaster in real time tends to be different than the skills needed to work with survivors and community members who must make their own recovery choices about their own future. Yet we often put the response folks in charge of the recovery on the assumption that it's all the same skillset. Dr. Susan Cutter makes a compelling case on this topic in her keynote presentation at the [National Academies of Sciences Hazard Mitigation and Resilience Committee's Compounding and Cascading Events workshop](#) in May of 2022.

Taken together, these eight attributes of resilient systems can be thought of as a checklist for pre- and post-disaster planning. We can evaluate our everyday spending on capital, operations, and investments against these attributes. Perhaps we can even use them to reduce our vulnerability, reduce future suffering and loss, and build stronger and more equitable communities.

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**We want to be in conversation about resilience and planning with you.** Feel free to reach out to Steve at [smoddemeyer@collinswoerman.com](mailto:smoddemeyer@collinswoerman.com) with any questions or comments.

# Flood Control Assistance Account Program (FCAAP) Update

FROM AMELIA PETERSEN, WASHINGTON DEPARTMENT OF ECOLOGY

FCAAP funding helps communities develop comprehensive flood hazard management plans to prepare for and reduce flood risks. For over 10 years, Ecology did not have sufficient FCAAP funding to help our local partners develop flood hazard management plans. In 2021, we were able to again provide grants to support this statewide planning need.

## Interested in helping build a case for more funding for flood risk reduction planning, technical studies and project implementation?

Please fill out [this short questionnaire](#) (3-5 min) to help articulate the level of need your community has to reduce flood risk while building a foundation to support other community benefits. Advocates will use this critical information (being gathered by Ecology as part of their relaunched FCAAP program) in the upcoming legislative session. It would be great to have at least 100 data points across the state.

On Feb. 15, 2023, we will start soliciting applications from local and Tribal governments for FCAAP competitive flood planning grants. We anticipate having up to \$2.3 million available. Although there is no maximum award amount, we anticipate individual grants will not exceed \$300,000.

To help interested FCAAP grant applicants, Ecology is hosting two 90-minute virtual workshops in January 2023. The workshops will provide an overview of the upcoming 2023-25 grant funding cycle, as well as which projects are eligible and how to apply. The events will be held:

**Wed., Jan. 11, 2023 from 10:00-11:30 a.m.**

[Register in advance for the Jan. 11 workshop.](#)

**Thurs., Jan. 19, 2023 from 1:00-2:30 p.m.**

[Register in advance for the Jan. 19 workshop.](#)

Our focus will be on getting grant solicitations to help underserved communities and economically disadvantaged areas develop flood hazard management plans. Applicants should describe how their proposal will benefit these communities and areas. Emerging research shows Latino and Tribal communities are more exposed to flooding. For example, research estimates that while Latino residents make up 8% of Washington's total population, they comprise 16% of those living in flood zones. Tribal governments employ more than 37,000 people and generate \$5.7 billion to Washington's economy. They represent Tribes occupying flood-risk areas that would directly benefit from flood planning. Updated flood plans sustaining and enhancing salmon habitat also helps address Tribal treaty rights.

Flood hazard management plans help communities:

- Develop or update strategies and projects to reduce flood risks while restoring salmon habitat, protecting agricultural lands, and providing other benefits.
- Raise residents' awareness about local flood hazards.
- Better assess local flood and climate risks.
- Identify resilient building strategies.
- Review and update zoning and land-use options to keep people and infrastructure safe from flood hazards.

Flood planning helps keep people and properties out of harm's way and reduces economic losses for communities and the state. Integrated flood planning also helps preserve and protect salmon and important habitat areas. Ecology has published a comprehensive [guide for flood hazard management planning](#). The guide details how to prepare a plan and offers important considerations for the planning process.

These plans additionally help lower flood risks for local roads, bridges, and utilities while protecting the value of public and private property. Finally, communities completing flood plans will be in a better position to compete for federal and other state grants to build better flood resiliency. Visit our [FCAAP website](#) for more information.



# Upcoming Substantial Damage Course

BY AMELIA PETERSEN

Substantial Improvement (SI) and Substantial Damage (SD) assessments are one of the most critical evaluations that Floodplain Administrators must complete, especially when considering a post-event environment. In this article, we provide the definitions for both terms, explain why these assessments are necessary, and provide information about upcoming training opportunities and other resources.

## Definitions

**Substantial improvement**, as defined in [44 Code of Federal Regulations \(CFR\) § 59.1](#), means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement. The term includes structures that have incurred “substantial damage,” regardless of the cause of damage and regardless of the cost of repair work actually performed. However, the term does not include:

- Any project for improvement of a structure to correct existing violations of State or local health, sanitary, or safety code specifications that have been identified by the local code enforcement official, and that are the minimum necessary to ensure safe living conditions, or
- Any alteration of a “historic structure,” provided that the alteration will not preclude the structure’s continued designation as a “historic structure.”

**Substantial damage**, as defined in 44 CFR § 59.1, means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Most damage occurs during a single and sudden event, such as a fire, windstorm, lightning strike, falling tree, tornado, earthquake, flood, or natural gas explosion. Damage may also be unrelated to a specific event, such as soil settlement, exposure to the elements, termite infestation, vandalism, deterioration over time, and other causes.

## Who Makes Substantial Improvement (SI) and Substantial Damage (SD) Determinations?

The NFIP requires participating communities to review all applications for development in mapped floodplains and enforce their adopted floodplain management

regulations and building codes. The designated Floodplain Administrator is responsible for making SI/SD determinations.

Generally, a determination is completed in four steps:

1. Determine the cost of the work.
2. Determine the market value of the building (ensure that LAND is not included).
3. Calculate the percentage of improvement/repair (this calculation is completed by dividing the cost of improvement/repair by the market value of the structure).
4. Require owners to obtain permits to bring substantially improved or substantially damaged structures into compliance with the floodplain management requirements.

## Why Are SI/SD Determinations Required?

While completing these determinations is a regulatory requirement through the NFIP and lack of compliance with these requirements could lead to compliance measures from FEMA, the intent of the goal is why the SI/SD requirements are so critical. The purpose of the SI/SD regulations is to slowly, over time and with effective implementation, improve community safety and resilience. There are many existing developments across the country that are below the base flood elevation or otherwise not meeting the minimum NFIP regulations and are at a higher risk for extreme flood damage. Elevating or otherwise floodproofing them will improve safety and, when a flood event occurs, hopefully lead to quicker recovery post-flood.

## Upcoming SI/SD Training

The following courses will take a deep dive into SI/SD. The two offerings are of the same content, free to attend, and will be held virtually. The class is CEC eligible.

[Tuesday, January 24, 2023: 12:30 pm - 4:00 pm](#)

[Wednesday, January 25, 2023: 8:30 am - noon](#)

## Events and Opportunities

### Five Star and Urban Waters Restoration Grant Program 2023

Proposals are due January 31, 2023.

The Five Star and Urban Waters Restoration grant program seeks to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance to diverse local partnerships focused on improving water quality, watersheds and the species and habitats they support. This program will award approximately \$1.6 million in grants nationwide.

[Learn More](#)

### U.S. Department of Transportation: 2022 National Culvert Removal, Replacement, and Restoration Grant Program

Deadline to apply is February 6, 2023.

The U.S. Department of Transportation's Federal Highway Administration has opened applications for the FY2022 Notice of Funding Opportunity for the National Culvert Removal, Replacement, and Restoration Grant Program (Culvert Aquatic Organism Passage Program). This annual competitive grant program awards grants to eligible entities for projects that replace, remove, and repair culverts or weirs to meaningfully improve or restore fish passage for anadromous fish. Anadromous fish species are born in freshwater such as streams and rivers, spend most of their lives in the marine environment, and migrate back to freshwater to spawn. Estimated total program funding is \$196 million, with an award ceiling of \$20 million.

[Learn More](#)

### Restoring Riverscapes: Workshop for Advancing Process-Based Actions

March 7-9, 2023

Restoring Rivers is holding a multi-day conference from March 7-9 2023 with the goals of expand the scale and pace of riverscape restoration and floodplain reconnection, increase knowledge of the principles and benefits of process-based, riverscape restoration approach, examine institutional and social constraints to implementing these restoration approaches and explore how to encourage robust, region-wide implementation and innovations to expand the practice.

[Learn More](#)

## JOB ANNOUNCEMENTS

### Trout Unlimited—NW Cascades Restoration Project Manager

This position will help implement habitat restoration projects that improve native fish habitat in Washington's Cascade Mountains on the Mt. Baker-Snoqualmie National Forest. To begin, this project manager will work closely with the Forest Service and a diverse group of federal, tribal, state, and local partners within the Snoquera Landscape (White River and Green River watersheds). Applications are open until filled. To apply and see the full position description, click [HERE](#).

### Washington Environmental Council—Toxics and Stormwater Policy Manager

Washington Environmental Council seeks a Toxics and Stormwater Policy Manager to advance policies and campaigns that reduce impacts from toxics and stormwater on people, water, and wildlife. Responsibilities include analyzing and developing policy and establishing advocacy strategies; engaging in rulemaking and implementation work; participating in and at times leading coalitions; and being a leader in toxics and stormwater policy. Applications are open until filled. To apply and see the full position description, click [HERE](#).

## Events and Opportunities (Continued)

### Funding Availability for Puget Sound Action Agenda—Climate Resilient Riparian Systems Lead

Monday, March 31, 2023, at 11:59pm (Eastern)

This request for funding announces the availability of funds and solicits applications from eligible applicants that are interested in acting as the Puget Sound Climate Resilient Riparian Systems Lead. This funding opportunity is focused on working with local programs and landowners to voluntarily protect and restore Puget Sound riparian habitat in priority watersheds, supporting salmon recovery and resilience to climate change. The successful applicant will develop a shared approach to achieving permanent protection (and restoration, as appropriate) of riparian areas concentrated within prioritized stream reaches across Puget Sound.

[Learn More](#)

### NOAA Announcement of Fish Passage Funding including Tribal Priority Projects

NOAA is recommending nearly \$105 million in funding for 36 fish passage projects this year and \$61 million in future funding under the Biden-Harris Administration's Bipartisan Infrastructure Law, of which 10 projects are located in Washington State.

[Learn More](#)

## Resources and Relevant Links

### Hazard Mitigation Grant Program (HGMP) Webinar

Missed last month's FbD webinar on the Hazard Mitigation Grant Program? Click [here](#) to watch!

### Congress Passes Key Provisions of the PUGET SOS Act

The Senate passed legislation last week that affirms and advances Puget Sound recovery as a national priority. Since the House of Representatives already passed these key provisions of the "PUGET SOS Act" (integrated within the National Defense Authorization Act), it moves now to President Biden for signature.

[Learn More](#)