



Floodplains by Design

• REDUCING RISK, RESTORING RIVERS •

Newsletter

November/December 2022



Typical flooding on Lower Big Quilcene River.

Protecting the Community of Quilcene, Restoring ESA-Listed Hood Canal Summer Chum

Lower Big Quilcene River and Estuary Restoration

The Hood Canal Salmon Enhancement Group's (HCSEG) Lower Big Quilcene River and Estuary Restoration Project is an integrated, multi-benefit floodplain restoration project. It comprises the Big Quilcene River's Lower One Mile Reach (RM 0 to 1.2) and the Moon Valley Reach (RM 2.2 to 3). In both reaches, human actions have disconnected the river from its expansive historical floodplains and confined it to an artificially straight, narrow, high-energy channel. By removing the numerous constrains to geomorphic processes and properly reconnecting the river to its floodplain, the project will provide an impressive suite of benefits for the Quilcene community, native salmon populations, and Quilcene Bay shellfish resources.



140

acres of floodplain reconnected



4

structures removed from the floodplain



1.6

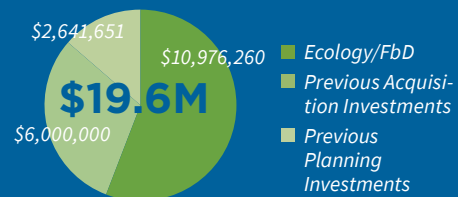
miles of river restored

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FUNDING OVERVIEW

Economic Benefit: With a total cost of nearly \$19M, this project would generate more than 327 new or sustained jobs and roughly \$43.1M-\$49M in total economic activity, of which \$34.5M-\$39.2M is expected to stay in Jefferson County.



PARTNERS IN ACTION



Hood Canal Salmon Enhancement Group
Skokomish Tribe



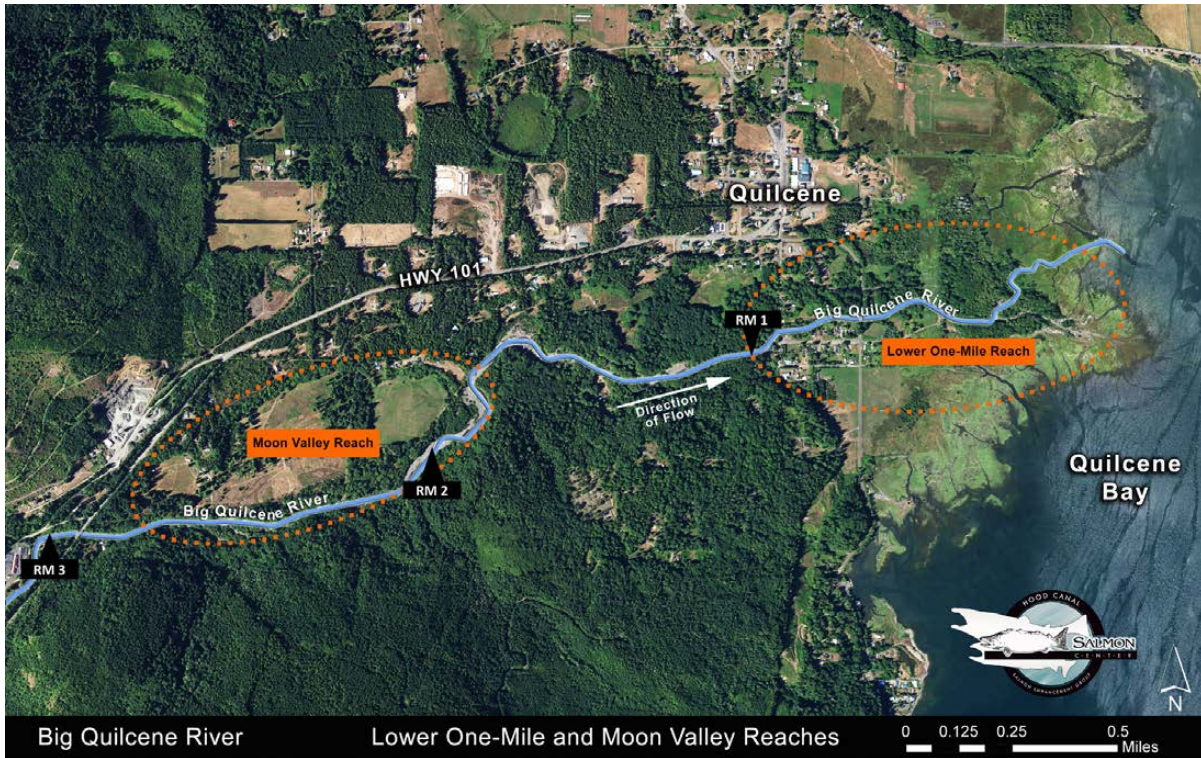
Hood Canal Coordinating Council
Jefferson Land Trust



Jefferson County
Port Gamble S'Klallam Tribe
Pacific Seafoods



Jamestown S'Klallam Tribe
United States Forest Service
Washington Department of Fish and Wildlife



“The Lower Big Quilcene River, perched above its floodplain between two levees, is not well configured to support salmon nor conducive to the current residential use of the floodplain. This project integrates local community needs to move forward critical work for the recovery of ESA-listed Hood Canal summer chum salmon. “

Alicia Olivas
Lead Entity coordinator, hood canal coordinating council



“The Jamestown S’Klallam Tribe has been working to conserve and restore Hood Canal salmon habitat for decades. Our Tribal citizens have depended upon the resources of Hood Canal for countless generations. We fully support the Hood Canal Salmon Enhancement Group’s Lower Big Quilcene River and Estuary Restoration grant proposal that requests funding from the Floodplains by Design program.”

Hansi Hals
Natural Resources Director,
Jamestown S’Klallam Tribe



“Pacific Seafood strongly supports this restoration work as it not only paves the way for estuary restoration to enhance salmon habitat but also addresses flood issues and provides additional benefits to the local community.”

Miranda Ries
Director of Regulatory Affairs,
Aquaculture Division, Pacific Seafoods



Trust, Collaboration and Public Works

AN INTERVIEW WITH ANNE-MARIE MARSHALL-DODY

Anne-Marie Marshall-Dody is an Assistant Director of Public Works for the City of Redmond. She strongly believes that public works is the underpinning of society: the systems and processes which support public health, safety, economic development and quality of life for the residents of our communities.

She has over 28 years of experience working in the public works sector as a planner, supervisor and manager in the fields of wastewater, stormwater, drinking water, solid waste and airports and ferries. Anne-Marie holds a bachelor's degree from Central Washington University in Physical Geography and Environmental Studies and a certificate in Community Planning from University of Washington. She also holds her Public Works Management credentials from the American Public Works Association and is a Certified Floodplain Manager from the Association of State Floodplain Managers.

We caught up with Anne-Marie as she transitioned from her long-time role at Pierce County Public Works to a new role at the City of Redmond to get her insights on the role of trust in public works, building strong collaboration and what she's learned in nearly three decades in public works.

Could you give a brief overview of your background in public works and your role at Pierce County?

I have been in public works for my entire career, over 28 years. I started fresh out of school. I graduated on a Saturday, and I started as an intern in the Pierce County Utilities Department on Monday. Almost my entire career has been at Pierce County, working for many different divisions. As an intern I helped with the Solid Waste and the Utilities departments. I also spent time working with our water utility as it was forming and working for a group called public development. Over the last 10 years I was with the Surface Water Management Division, where I also completed some special assignments with the Pierce County Flood Control Zone District and served as the Interim Airport and Ferry Administrator. So my Utility and Public Works background is very, very broad, which is what

helped lead me to the position I am at today at the City of Redmond as the Assistant Public Work Director for Environmental and Utilities Services.

My early career was working in utility service planning. For me, it was so rewarding to see a plan from inception to implementation and think through the strategy of how you provide service. I think it really set the tone for how I approach my work today, which is working to figure out the best way to accomplish whatever my goal is or whatever mission is set before me.

One of my largest long term projects I worked on was the Chambers Creek Master Site Plan project. I worked on that project from 1994-2011, from the time of inception through implementation. When we started that project, it was really about mitigation for the expansion of the wastewater treatment plant. So it looks like a park, it acts like a park, but really, it's a large mitigation project. As a part of that project, we opened public access to a west facing South Puget Sound beach that had been closed for 100 years. The project also includes walking trails, a playground, a dog park and a nationally recognized golf course. In the early 2000s the project won an American Planning Association Award for parks and public lands, which was thrilling. I was able to attend the awards ceremony in Washington DC and help accept the award with the rest of the project team.

What do you think the role of trust is in public works?

In my mind, it's twofold. First there is the public's trust. I truly believe that public works is the underpinning of society. People need to trust that when they turn on their tap, the water is going to come. When they flush the toilet, that water is going to go away from their house. That the roads function so people can get where they need to go, commerce can operate and so that we can all

move around society freely. People need to trust that all happens. I think in many ways we take those things for granted. We just assume and trust it's going to happen. As soon as it snows or your street gets closed or the pipes in the street burst, that trust starts to get a little shaky. I think it is our job as public works to continue to earn that trust and be on top of maintenance to ensure for the public that the water pipes are in as good of shape as possible, that our roads are as good as we can possibly make them or that we at least have a system for improving them. We break that trust when we don't do the maintenance and the things that we need to do.

Now, given that there's not enough time and enough money in the world to get everything done, there will always be those points where there's a push and pull when we have to make hard decisions. Here in the Northwest, we have additional responsibilities to salmon and commitments to not harm the environment which are not required in other areas in the US. We need to balance that against everything else.

The other part of trust to me comes from the point that everything is so integrated. Water doesn't respect boundaries, roads don't end at your jurisdiction. You need to develop trust, not only with your residents and the people that you serve, but you need to ensure that there is trust amongst the other jurisdictions and trust amongst the people that you work with in the organizations you seek permits for. We can't do it in a vacuum, you have to do it in partnership with everyone. I don't think the general public realizes how much partnership there really is going on. Public works as a whole could not exist without them. If we didn't have trust and we didn't have inter-local agreements for agencies to help each other, we'd be in huge trouble. So trust really is everything. Like that old adage says, it takes forever to build trust and seconds to destroy it. It's something you have to tend to.

As a woman in public works, do you have any insights to share on how to build teams with people from diverse backgrounds and navigate the complexities of being an outsider in that system?

When I started, I was one of the very first hires at the county in probably eight years. Between me and the next person, there was a 10 or 15 year age gap, so I was not only female, I was significantly younger than everyone else and I wasn't an engineer or an administrative assistant, so I didn't fit in a box. I was naive. I didn't know any better and so I saw no reason why I couldn't have an opinion. My personality did not let me sit on the sidelines or be ignored. Now, I did have some tips and tricks. Everyone who knows me knows that I am on the shorter side so when I am at the office,

I always wear high heels, because I wanted to be able to physically look more people in the eye. I also learned to speak precisely and with confidence. Through trial and error, I learned how to be assertive without being aggressive. I would also be super persistent; never say die is my motto. I was willing to play a long game and was persistent and patient enough to keep at it and come at it from different directions until I achieved the result I was looking for. Building trust and being forthright and honest also played a role. If I didn't know something, I'd say I didn't know. I'd go find out and follow up and get back with people right away.

That's not to say I didn't struggle and still to this day at times struggle. There's still times where I'm like "did that just happen?" I learned to cultivate relationships with people who could champion me. Find someone who can be a mentor and find someone who can be your champion, because they're two different things. I had people who helped me move up in my career. They helped make sure that I had exposure, that I could attend lots of meetings and be seen. It doesn't work for everyone, but through fate, luck, persistence and naivety, that's how I did it.



Marshall-Dody accepting an American Planning Association Award

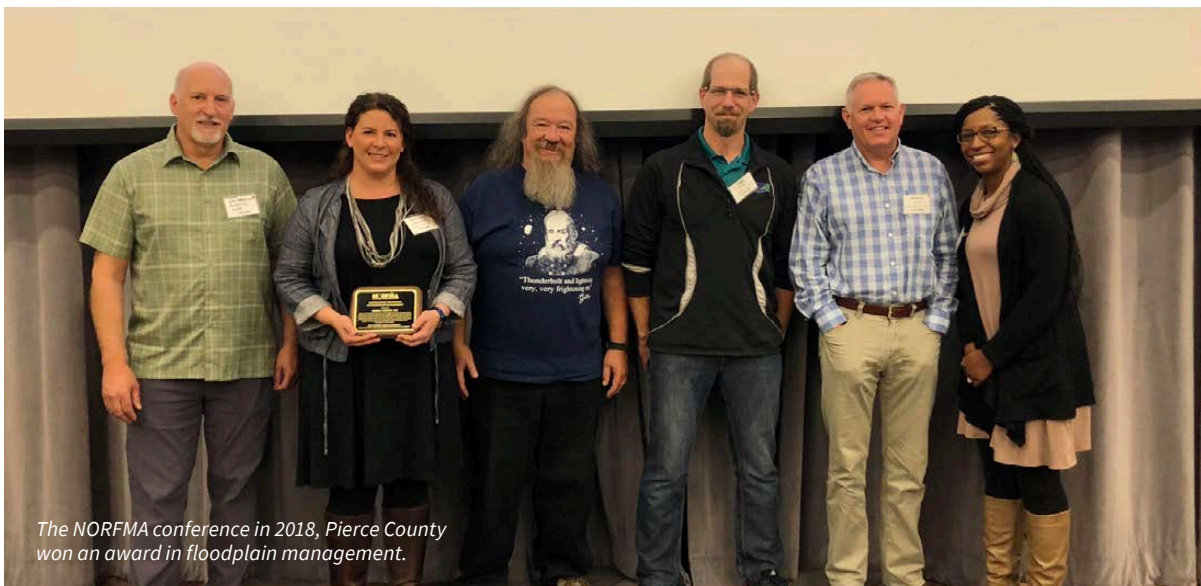
If you were to imagine the public works department 20 or 30 years from now, do you think it would look significantly different than it does today?

I think at its most basic level, it will always be about providing water and providing roads. It's the delivery that is going to look really different. Technology keeps changing. In the years that I was at Pierce County, our wastewater treatment plant changed radically in the way we provided treatment. The collection is the same as it was 100 years ago, you put the pipes in the ground, and you want to use gravity as much as possible, etc. It's in the treatment side of things that have changed radically and will continue to change. I think the other area you will see change is in the desire to be even more efficient with the services we provide. In the past when we had more space stormwater treatment was approached differently. In the future we're going to be more thoughtful about where we put a project and how much of an area it can serve. I see that in the city of Redmond, where they are very pressed for space, they use different technologies and have larger regional projects. The equipment we use is also changing and becoming more efficient as it moves to electrical or other fuel types. Ferry systems and airplanes are also moving that direction. People are looking at electrifying their fleets. The issue becomes do we have the electrical grid to handle it. I think that's where everyone in particular in public works is struggling, but eventually,

we will have that new technology, whether it's electrical, or hydrogen. When it still comes down to it though, streets, pipes, those foundations will remain the same.

After serving Pierce County for so long, what legacy are you most proud of leaving?

I am proud of the contributions I have made to projects getting completed. I'm proud of the time I spent working with surface water management and building our floodplain and watershed services group and that team there, that was incredible. I learned so much from that group, I learned a ton about leadership. I hope that my leadership made someone's career better. I think that's what my legacy for me is, is that I contributed to something being better. It's not about my individual contribution, it's about what I contributed to the whole. Public works is collaborative in its very nature. When I was talking with people before I interviewed at this new job, I asked people, "When you think about me, what is it that you think of?" Lots of people said "Oh, collaboration, it's your number one go-to tool." I think the value of collaboration is what I left behind. Wherever I go, and whatever I do, that feeling still resonates. You might not remember who I was, but you may be still doing collaboration and partnering and building. That's what's important to me, that those things continue on, but not that you remember who I am. That's less important to me.



The NORFMA conference in 2018, Pierce County won an award in floodplain management.

Reflections from Retirement

FBD ORIGINS AND MODERN FLOODPLAIN MANAGEMENT

David Radabaugh, the Washington Department of Ecology's (Ecology) longtime state National Flood Insurance Program (NFIP) coordinator, retired from state service over the summer. We recently caught up with Dave to see how he has been enjoying his time (sleeping in and hiking) and invited his reflections on floodplain management, including his experience as a project manager on the first round of Floodplains by Design (FbD) grants.

What was your first impression of the FbD initiative when it began? And/or what was Ecology's first impression?

My first impression of FbD: it was an important step in the sea change toward modern floodplain management. In all fairness, the state—Ecology—had been moving towards that change with the comprehensive floodplain planning program, but it had been defunded after the 2008 recession. In a way, the comprehensive floodplain planning program helped set the stage for FbD because there were floodplain managers around the state thinking about these projects. So, at the outset, when we put out a request for grants, we got some great projects. That was sort of the predecessor to FbD; FbD was on a much bigger scale.

In 2013, Ecology had asked for \$1 million for a floodplain management planning and capital program. With the work of the FbD coalition, the legislature budgeted \$50 million. So, I go to work on Monday and the regional director promptly walks up to me as I enter the building lobby and says, 'Dave, tell me about FbD.' In the decade since, the interest in FbD at the local, state, and national level has continued.

Ecology's Flood Control Assistance Account Program (FCAAP) helps local and tribal governments plan for and reduce their flood risks. For more than a decade, the funds were redirected to address other state needs. FCAAP was restored in 2021.



Dave Radabaugh at his retirement party this summer. Photo Credit: Jow Burcar

There was a lot of work to do initially just to get started. There had been no time to prepare for the new grants. There was a minimal amount of information to work with. We started writing grants from scratch. The first round of grants was probably the most difficult.

There was another component in that initial proposal in 2013: we had \$11 million in grant money that was more discretionary. So, we conducted a grant round. We had some good projects, and it's nice to now see the completed projects. It's nice to see those changes on the ground.

What was it like working with the first round of FbD grant recipients?

It was not nearly as systematic as it is today. It took us longer to get grants off the ground. There was no framework. What was included in the budget was one line per project from \$5 million-\$10 million. We had to ask the project proponent, 'What are you doing?' We had to develop that proposal into contract language and a scope of work. That took some time. The process is much better now.

Projects were at various points of readiness to proceed. With some projects, there were still some big discussions that had to happen between some of the project proponents to work out what they really wanted to accomplish. It really varied. There was no template. Honestly, the project managers were given projects with a whole different level of complexity than we'd ever seen before, and there was a learning curve.

What are some of the biggest changes you've seen in the FbD initiative since it began?

It's become more systematic. The program has clear goals and criteria. It's clearly a statewide program now. The floodplain issues vary across the state, but it's really important that the state address floodplain management on a statewide basis.

I admit I worry sometimes that the program has almost become too complicated with applications getting too long. That's some of what you deal with in grants. FbD includes big projects, so things are going to get complicated. It's good there's more set criteria and a more clear understanding of what's expected in applications and how they're going to be reviewed and scored. That's important.

I wouldn't take FbD for granted, and I hope other people don't take the program for granted. But the program has become somewhat institutionalized, which is a good thing. It's important to show the world the progress being made across the state.

Do you have a favorite FbD project?

I can't say that I have a favorite. In King County, they did a series of levee setbacks and let the Snoqualmie River basically reoccupy part of its channel. I think part of it was the work the County did in discussions with the agricultural community near Fall City. That took years to get those discussions going and make them happen. It was good progress all the way around, really having a dialogue. The projects included setback levees and allowed additional land for ecological restoration, making room for riparian forests and for the river to migrate a bit within a limited area.

And there was Riverbend, also in King County. The river was eventually going to take out a mobile home park, so it's good that we got people out of harm's way first. What I especially liked about the Riverbend project was that it really implemented the heart of the FbD ethos: it provided flood safety, helped get people out of a dangerous location; and created an area for ecological restoration. It really did both of those things in a big way. It's usually easier to do one of those things than the other, so having a project that does both is important.

There's also a great recently funded project in Clallam County that combines ecological restoration, improved conditions for agriculture, and flood safety.

Can you describe some of the big impacts you've seen, both policy wise and on the ground with a project, during your tenure in floodplain management?

I first started working as a floodplain planner in 2011. At the time, there was almost no comprehensive flood planning going on. There were a couple plans that local governments had done without state money because there was no state money. But, by and large, floodplain planning had stopped. Getting the guidance updated to start that again and getting that program started again is one of the big policy changes. And maybe it's just reinvigorating an existing policy that had gone dormant, but it is very important.

One of the great things about FbD was it made the resources available to do the work. It has allowed local governments to focus on good floodplain safety and ecological restoration. That has been a big change. Just having the resources available and knowing those resources are out there. That has been important and with that, we are seeing more projects.

What FbD has done is make it possible to think about a different approach to floodplain management—to do ecological restoration in conjunction with flood safety. That has been a big philosophical change, allowing people to put together good projects, knowing that the resources are there to get them done. That is a big

deal. It shouldn't be understated how important that is, because that is a big change. That didn't always exist. People had great ideas but no way to implement them.

In 2015, Ecology provided basic guidance for frequently flooded area regulations as part of critical area ordinance updates. I expect that frequently flooded area regulations will become increasingly important as society addresses climate change. There will be a need for the state to help local governments address frequently flooded areas in the future.

The implementation of the NFIP has grown more complicated over the years. This is in spite of the fact that most NFIP rules are decades old. I cannot tell you that the added complexity and process has made buildings in floodplains any safer from flood damage. The complexity of NFIP processes can be an impediment for good projects. I hope that we do not have to wait too long for meaningful changes to the NFIP.



*Dungeness River Nature Center FbD Project.
Photo Credit: John Gussman*



Planning for Change: Resilience, Resistance and Recovery

A CONVERSATION BETWEEN STEVE MODDEMEYER AND HANNAH BUEHLER

Hannah Buehler: Could you share a little bit about yourself and the work that you do?

Steve Moddemeyer: I'm a principal for planning at [CollinsWoerman](#), an architecture and planning firm based in Seattle. I work at the intersection of sustainability, resilience and land use. I am also the Chair of the National Academies of Sciences, Engineering, and Medicine's Committee on Hazard Mitigation and Resilience Applied Research Topics.

HB: What are you learning about resilience doing the work that you do?

SM: Most of our attention in the practice of architecture and planning is very much centered around the near-term demands of today. It is difficult to look too far ahead because projects must address today's climate, today's technology, today's market, and today's financing. When technology, demand, and financing are short-term focused, innovation and resilience get short shrift.

A huge problem that we still don't seem to understand is that the climate of the past is not going to be the climate of the future. We continue to plan for, design, and build assuming that weather extremes will continue to be rare. That fundamental concept, called "stationarity" was officially declared dead by scientists in 2008. The death of stationarity means that the built environment

will break more often and more dramatically than we expected. The death of stationarity also impacts how we calculate benefit cost analyses. Benefits calculations are based on the probability of failure over the life of the asset. The shift from a largely stationary past to a largely unstable future means this kind of planning focused on design standards and subsequent cost-benefit analysis is flawed.

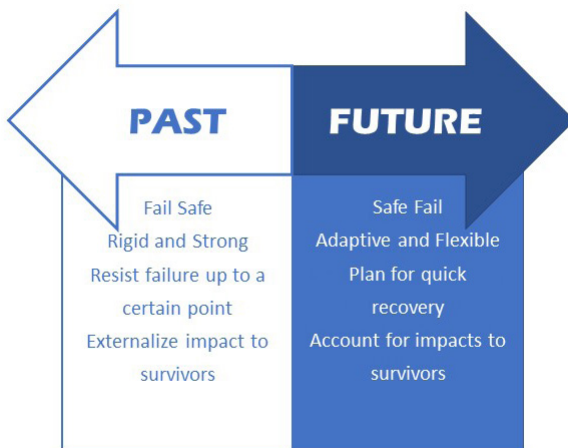
Many of the strategies that we've relied on in the past are now misinforming us of our risks and of a safe pathway forward. Worldwide, and certainly in the US, we continue to spend billions and trillions of dollars for infrastructure designed for the way the climate used to be. When we do these things, either willfully or inadvertently, we make ourselves more vulnerable. The result is that our investments don't deliver the service that we expect. This mismatch emerges during extreme events with the result that we needlessly compound the misery for folks whose lives and livelihoods depend on that infrastructure and who live and work in the buildings that infrastructure is designed to serve. It also means we dismiss the event as a 'once in a lifetime' event and focus on rebuilding in the same hazardous areas.

With my colleagues in engineering, design, architecture and planning, we're working to recognize that we have different baseline conditions now. Our work is to help people navigate and make smart decisions in light of this change.

HB: It's fascinating to think about how an individual's personal ability to adapt to change or how open they are to thinking about how different things might be in the future must trickle into the work you do.

SM: That's one of the things I notice a lot. We are paid to focus on what we are going to do. When I start asking about why we're doing what we're doing in light of these shifting conditions, some people get nervous. It creates apprehension because it starts to undermine some bedrock concepts that we've applied, appropriately we thought. In many cases it was appropriate for the information we had, but changing mindsets mid-career is a challenge.

For example, a lot of folks just want to know how high the water is going to be during flooding, "Just give me the number," or tell me how often we will get a high intensity storm so that they can design something



appropriate to resist it. With the death of stationarity, we have to acknowledge that the design metrics—whatever they are—are going to get exceeded, potentially multiple times in the service life of the system that we’re building. That changes how we need to think about the whole challenge in front of us.

The challenge shows up every day in governmental requests for proposals for projects. We ask for the same information that we were asking for 20 years ago. Even if we want that infrastructure or that building to be green or climate savvy, we likely are still thinking with a stationarity mindset. Even downscaling of climate models is a bit of a crutch. These models, no matter how skillfully applied, tend to reinforce the mindset that we can determine the probability of failure with confidence. We can’t. What we can do, though, is pick a reasonable performance number and then also plan for that reasonable number to be exceeded. The best solutions will select the best design that reduces the impact on those affected when that system fails. Some call it “safe fail” rather than failsafe.

Working in watersheds to plan for fish habitat, flood management, safe cities and viable farms is wonderful because we interact with people that have all kinds of backgrounds, political persuasions, cultural realities and alliances. Everyone has their strengths, and everyone has their weaknesses. The vast majority of us are just trying to do the right thing. I really don’t ever want blame to

be any part of it. It’s really more about how we can work together to navigate in this new way so that we can do our collective best to navigate the complexity before us.

Here’s a metaphor I like. In the 1850’s settlers headed west across the Great Plains in wagon trains. They rolled mile after mile across the mostly flat prairies on the Oregon Trail. Imagine that the person guiding the wagon train forward has glasses on, but all they can see is what’s behind them. What they see behind them is flat, flat, and flat. In the middle of the plains, what we’re seeing behind us is a really good predictor of what’s ahead. We can make good progress.

This approach works great until we encounter the easternmost front of the Rocky Mountains. That’s where we start bumping into obstacles. As they look west toward their future, those special glasses show them that everything behind them is still flat. What they see is flat, but that doesn’t change the reality that the landscape in front of them is different.

Driving straight ahead might work reasonably well in the plains, but we are asking for nothing but grief in the mountains. At some point, whoever is running the wagon train will call out “Whoa! We need to stop because we don’t know what’s in front of us anymore. We hear from our scouts that we are approaching the Rocky Mountains. But what does that mean? Do we have the right stuff on our wagon trains? Do we have what we need to get through this really high, really



Photo Credit: Carol Macilroy

uncertain terrain? Maybe we need to rethink our supplies, ropes and tools. Maybe we're going to have to expect more obstacles. Rather than just speeding ahead thinking that it's going to be just like what's behind us, maybe we need to slow down and start making more incremental decisions."

That's pretty good advice for the situation our world is in. Folks in the train might argue that the mountains ahead are just a rumor, that we don't have enough evidence to be certain that the mountains are that much different than the plains. But their doubts and second-guessing do not change the facts on the ground. We are entering a new environment where we need new strategies and a new approach to how we plan for the future.

The reason I like this metaphor is because we do know how to navigate uncertain futures. It seems that in just the last just two or three years that the United States public is coming around to this new reality. We thought climate change was going to happen in the future, but it is happening now. Hopefully we're slowing down the wagon train. Hopefully we're starting to look at what's really important. Hopefully we're also trying to bring everyone along. Hopefully we're not throwing people off the train. Hopefully we are going to figure out how to get everyone over the mountains together.

HB: What are the similarities and differences between developing true resilience and just recovering from events like extreme weather and natural disasters?

SM: I'll mention the PanREMEDY project, which is from the Johns Hopkins School of Public Health. I'm an advisor to that process right now and the team is developing metrics for identifying what recovery means from a disease like COVID. Some might say that COVID cases are down to .05% of total cases in the year, which is basically the medical definition of recovery. Have "we" recovered? Is the medical definition sufficient when the impacts are distributed disproportionately in some communities—some of whom have yet to recover from the trauma, the loss, the dislocation, the economic impacts?

There are lots of definitions of resilience. What the Johns Hopkins team is doing is looking thoughtfully at how to develop a more robust, humane and empathetic understanding of what it means to be resilient. My shorthand for resilience is the capacity to adapt to change. When people go through an extreme event like a cancer diagnosis, an economic downturn, a car wreck, a flood, or a pandemic, each one of those things is a shock to a person, family, community or a nation. For COVID it was global. Climate change is global, too, but it manifests at every scale and across many systems. If we

get another different shock before we've recovered from the previous one, then our capacity to adapt to change is reduced. We are still pulling together the pieces from the last shock and now this? So how we build adaptive capacity in communities is the key question for how we create the conditions for resilience to emerge. Recovery is broader than the metric of what hurt us. It includes the things that give us the capacity to handle what life throws our way.

HB: I've heard people move away from the language of resilience and replacing that with language around resistance. Those nuances of language are so interesting.

SM: The Borg from Star Trek were correct, resistance is futile. This is one of my concerns with the way we do engineering now. Too often we design a system to resist an event of a certain intensity, and then figure our job is done. We let God and FEMA figure out what to do once those systems fail. That ultimately means we're leaving it to the people who are the survivors to bear the brunt of impact and the hard slow slog to recover. That's not equitable. There is a lot of evidence to suggest that these events are going to exceed whatever limit we pick. I believe our work is not just designing systems and buildings to meet some metric, but that our work is also in making sure that when that metric is exceeded, that the people, particularly those who are most vulnerable, can recover as quickly as possible with the least amount of misery.

Our National Academies committee had a wonderful online workshop and subsequent report, [Equitable and Resilient Infrastructure Investments](#). I recommend watching the video of the speakers at that workshop. They laid out clearly that while climate change will likely affect everyone, it is also clear that the vulnerable are affected much more often and much more severely. The speakers lay out how they are working with communities to co-develop solutions that empower folks to build their adaptive capacity to navigate all these impacts. They are telling the stories that we all need to hear. At some point soon we need to tap in and say, how do we get out of this? What is it that we can do together? That's when we start actually being part of the solution.

This conversation with Steve Moddemeyer on planning for resilience will be continued over the course of the next two editions of the FbD newsletter. Stay tuned for more!

Flood Control Assistance Account Program (FCAAP) Update

FROM AMELIA PETERSEN, WASHINGTON DEPARTMENT OF ECOLOGY

As fall and winter wet weather return, communities across the state are bracing for potential floods. In Washington, the costs associated with flooding exceed all other natural hazards. In any given year, there is better than an 80 percent chance that 10 or more flood events will occur, and the frequency of floods will increase as the climate changes.

The Washington State Legislature established the [Flood Control Assistance Account Program \(FCAAP\)](#) in 1984 to help local and tribal governments plan for and reduce their flood risks. Preparing for and avoiding flood damages is particularly important because storms are increasing in strength and frequency while sea levels are rising. Responding to a flood emergency often costs four to seven times more than investing in preventative measures, which save about \$6 for every \$1 spent.

The FCAAP is expected to have up to \$2.3 million in available funding for the 2023-25 state biennium (the exact amount will be determined by the legislative process). The application period for these planning grants will be open in Ecology's Administration of Grants and Loans (EAGL) online system on Wednesday, February 15, 2023, and run through Thursday, March 30, 2023. Applications to the FCAAP will be scored and ranked in spring 2023, and final funding decisions will be announced in July 2023.

The FCAAP is a funding source for the creation of Comprehensive Flood Hazard Management Plans (CFHMPs). The CFHMPs are intended to help communities identify, inform, prepare for, and mitigate flood hazards that affect their citizens, businesses, and infrastructure. They also position communities for success in various federal, state, local, and tribal grants programs. More information on the intent of the program and guidance on how to create a CFHMP is available at [Ecology's FCAAP website](#).

Following from the 2021-23 funding cycle, we will once again emphasize grants for comprehensive flood hazard planning. Priority funding will be awarded for planning efforts that support creating a new, or updating an existing, CFHMP that benefits underserved communities. Priority funds will also be awarded for stakeholder outreach or technical studies that support the development of a CFHMP.

Ecology is hosting two virtual FCAAP application workshops for interested applicants. The workshop information is below.

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

[Click on this link to register in advance for the Jan. 11 workshop.](#)

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

[Click on this link to register in advance for the Jan. 19 workshop.](#)

We didn't have funding to support flood risk reduction planning activities for over 12 years. In 2021, we were able to again provide FCAAP grants to support this statewide planning need. To help us understand the status of need across the state and how we can best serve your community, **please complete our [CFHMP interest survey](#)**. This will only take 3-5 minutes of your time.



Photo Credit: Larry McCarter for Whatcom County, 2021

Cooperating Technical Partners (CTP) Program Overview

FROM AMELIA PETERSEN, WASHINGTON DEPARTMENT OF ECOLOGY

To ensure additional capacity and expertise, [FEMA's Cooperating Technical Partners \(CTP\) program](#) funds local stakeholders, regional representatives, state agencies, tribes, and universities to expand the delivery of the [Risk Mapping, Assessment, and Planning \(RiskMAP\) program](#). Its main objectives include building and maintaining partner capabilities through training, mentoring, and sharing best practices, as well as increasing community resilience to flooding and other hazards through communications and mapping efforts.

General project types in our region fall into one or more of the following categories: LiDAR collection, hazard mapping and/or analysis, technical assistance, outreach, and coordination. Specific examples include risk assessments, communication of risk analysis, strategic plans for outreach and engagement, mitigation planning technical assistance, resilience workshops, mitigation support, and training.

Consider applying for a 2023 CTP grant! Contact Kara Jacobacci at kara.jacobacci@fema.dhs.gov, FEMA Region 10's WA CTP Project Monitor, to discuss project ideas. Executive summaries are due January 31, 2023. In February, FEMA Region 10 will invite selected applicants for further application pending release of the Notice of Funding Opportunity (projected spring 2023).

The following entities are eligible for funding:

- State, county, city, or special district governments
- Federally recognized Native American tribal governments
- Nonprofits with 501 (c)(3) IRS status
- Institutions of higher education
- Public housing authorities/Indian housing authorities

Executive summaries should highlight the following information:

- Local advocacy for the proposed project
- Examples of advancing or informing mitigation activities to reduce risk to people and property
- Will this project advance FEMA's efforts to support disadvantaged communities and/or socially vulnerable populations?
- Will this project develop an understanding of climate change impacts, information on future conditions, climate mitigation actions, or climate adaptation to enhance resilience for communities?
- Any relevant experience working on FEMA or other federal grants, including, but not limited to, technical experience, cost control, quality, and compliance with performance and reporting schedules



Events and Opportunities

National Flood Insurance Program Requirements for Substantial Improvement and Substantial Damage Course

Please join staff from the Washington Department of Ecology to learn more about the National Flood Insurance Program requirements for substantial improvement and substantial damage.

After major disasters, numerous buildings in a community may be substantially damaged. A determination of substantial damage applies to a severely damaged home or other structure in a Special Flood Hazard Area (SFHA), regardless of the cause of damage. It is important for floodplain managers to have the knowledge and resources needed to process numerous substantial damage determinations during the rebuilding process.

Before improvements can be made to buildings in the SFHA, the local floodplain manager must determine if the building will be substantially improved. This is a formal determination of whether the costs of repairs and improvements will equal or exceed 50 percent of the market value of the structure before the improvement. If the proposed repairs/improvements are determined to be a substantial improvement, the building must meet the same requirements in the community's floodplain ordinance that apply for new construction.

The core purpose of the substantial improvement/substantial damage rule is to bring nonconforming buildings up to current floodplain safety standards. It is important for floodplain managers to understand the accepted methodologies to do this, such as floodproofing a non-residential structure, relocating the structure outside the floodplain, elevating the structure, etc. This course will discuss techniques for determining substantial improvement and substantial damage, regulatory requirements, managing substantial damage determinations in the post-disaster environment, and more.

The course will be offered two days in a row, both in the morning and afternoon. Please register below:

[Tuesday, January 24 from 12:30 to 4 p.m.](#)

[Wednesday, January 25 from 8:30 a.m. to 12 p.m.](#)

Conservation Finance Learning Lab Webinar Series

The webinar series from Highstead and The Conservation Finance Network will feature panel discussions, case studies, and networking opportunities for participants to take a deep dive into tangible, innovative approaches to conservation funding and financing.

The free webinars are available to registrants and take place on the second Tuesday of each month, from December 2022 through April 2023.

[Learn More](#)

U.S. Fish and Wildlife Service Seeks Project Applications for \$38 Million in Fish Passage Funding

U.S. Fish and Wildlife Service is seeking project applications for \$38 million in fish passage funding. Projects will be part of a five-year, \$200 million Bipartisan Infrastructure Law investment to restore aquatic ecosystems, through the National Fish Passage Program. Selected projects will address outdated, unsafe or obsolete dams, culverts, levees and other barriers fragmenting our nation's rivers and streams.

[Learn More](#)

Resources and Relevant Links

Drought.gov Launches New Map Feature for Tribal Nations

In response to these needs expressed by tribal partners, NOAA's National Integrated Drought Information System (NIDIS) is pleased to announce a new map customization feature for Tribal Nations. Developed in collaboration with NOAA's National Centers for Environmental Information (NCEI), this feature allows users to display reservation boundaries on any map on [Drought.gov](#).

The U.S. Promised Tribes They Would Always Have Fish, but the Fish They Have Pose Toxic Risks

For decades, the U.S. government has failed to test for chemicals and metals in fish. What was found was alarming for tribes.

[Learn More](#)

Implementation of the Federal Flood Risk Management Standard Getting Underway

Where is the nation in terms of implementing a strong Federal Flood Risk Management Standard (FFRMS) to protect taxpayer investments in new infrastructure and mitigation actions to reduce flood losses?

[Learn More](#)

Decades After Dam Removal, A Record Run of Salmon

This year more than 140,000 juvenile coho salmon departed the Goldsborough Creek watershed this year, an exciting milestone after the Squaxin Island Tribe and partners teamed up more than 20 years ago to remove a fish-blocking dam.

[Learn More](#)

US Water Alliance Racial Equity Toolkit

Led by US Water Alliance staff and the consulting team at Water Savvy Solutions—and guided by the water sector and environmental justice experts in our Racial Equity Advisory Group—this Toolkit was developed to enable water utilities to work to improve their racial equity practices and outcomes both internally and externally.

[Learn More](#)

Equitable Buyouts? Learning From State, County, and Local Floodplain Management Programs

Climate change-exacerbated flooding has renewed interest in property buyouts as a pillar of managed retreat from coastal zones and floodplains in the United States. However, federal buyout programs are widely critiqued for being inaccessible and inequitable. To learn whether and how subnational buyout programs overcome these limitations, this paper examines five leading U.S. state, county, and local buyout programs to see what they teach us about redesigning future federal policies.

[Learn More](#)

2022 Climate Summit Series: Human Influence on the 2021 Pacific Northwest Floods

The Climate Summit Series' fourth entry — Human Influence on the 2021 Pacific Northwest Floods — comes from Dr. Nathan Gillett, a research scientist with Environment & Climate Change Canada. Dr. Gillett holds a PhD in atmospheric physics from the University of Oxford. In 2008, he returned to Canada to work as a research scientist at Environment and Climate Change Canada's Canadian Centre for Climate Modelling and Analysis.

[Learn More](#)

White House Releases First-of-a-Kind Indigenous Knowledge Guidance for Federal Agencies

In early December, the White House Office of Science and Technology Policy (OSTP) and the White House Council on Environmental Quality (CEQ) jointly released new government-wide guidance and an accompanying implementation memorandum for Federal Agencies on recognizing and including Indigenous Knowledge in Federal research, policy, and decision making.

[Learn More](#)