



Floodplains by Design

• REDUCING RISK, RESTORING RIVERS •

Newsletter

October 2025



Ecology floodplain team with U.S. Water Alliance award. From left, Alex Rosen, Arati Kaza, Amelia Petersen, Director Casey Sixkiller, Mary Huff, Layne Slone, Jonathon Loos and Joenne McGerr.

Washington Department of Ecology Awarded with 2025 U.S. Water Prize for Floodplains by Design Grant Program

The Washington State Department of Ecology received the 2025 U.S. Water Prize for Outstanding Public Sector Organization on July 10th at the One Water Summit in Pittsburgh, Pennsylvania. The prestigious national award, presented by the U.S. Water Alliance, celebrates the Department's Floodplains by Design grant program for its innovative, community-driven approach to flood risk reduction, salmon habitat restoration, agricultural support, and water-quality protection.

"Floodplains by Design is a leading example of One Water in action," the Alliance noted in announcing the honor, praising the program as "a model for how collaborative, multi-benefit water management can protect people, ecosystems, and livelihoods."

Learn more about the US Water Alliance recognition [here](#).

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**Featured Stories from the
Integrated Floodplain Management Network**

Data and Deep Roots: The Snoqualmie Tribe and EPA are Restoring the Tolt River for Salmon, Culture, and Climate Resilience

**AN INTERVIEW WITH MATTHEW BAERWALDE DIVING INTO
THE MODELING PARTNERSHIP BETWEEN SNOQUALMIE
TRIBE & EPA AND IMPLICATIONS FOR LOCAL PLANNING**

Matt Baerwalde is the Senior Environmental Policy Analyst for the Snoqualmie Indian Tribe in Western Washington State. He joined the Snoqualmie Tribe's Water Program in 2008, and holds a B.S. in Conservation Biology and a certificate in Wetland Science and Management from the University of Washington, and a B.A. in Philosophy from the College of Charleston. Matt represents the Tribe by engaging in and bringing scientific understanding to local and regional environmental policy issues while also working to implement restoration, protection, and research projects. He has successfully secured and helped manage millions of dollars in grant funds from a variety of sources for habitat and water quality restoration, protection, research and monitoring projects occurring both on and off the reservation.

In a collaborative effort, the Snoqualmie Indian Tribe's Environment and Natural Resources Department, EPA Office of Research and Development, and EPA Region 10, deployed the Visualizing Ecosystem Land Management Assessments (VELMA) watershed model to the Tolt River; ancestral lands vital to the Tribe's identity and central to Puget Sound salmon recovery. The joint study is a unique look at how restoration strategies in upland forests and floodplains can enhance streamflows, reduce water temperatures, and strengthen climate resilience.



*North Fork Tolt and South Fork Tolt Confluence.
Photo Credit: Matthew Baerwalde*

The project applied EPA's [VELMA ecohydrological model](#) and [Penumbra solar-shading model](#) to simulate how forest and riparian restoration practices affect water flows and stream temperatures critical to salmon recovery. The full technical report, "[Modeling Floodplain and Watershed Restoration for Salmon Recovery in the Tolt River Watershed](#)", was co-authored by Tribal and federal scientists. To expand on the data and deepen the collaboration behind the work, Baerwalde participated in a supplemental interview to share how the Tribe's Indigenous knowledge is shaping restoration decisions.

"The Tolt River is one of the most important places for Snoqualmie people," said Baerwalde, Senior Environmental and Natural Resources Policy Representative for the Tribe. "One of our main villages was right at the confluence. This work is a part of our responsibility to care for it."

Modeling for a Better Future

Visualizing Ecosystem Land Management Assessments (VELMA) allowed the Snoqualmie Tribe to compare alternative land-use and restoration scenarios. One of the most striking findings: streamflows during summer flow months (July - October) could have been 20% to 60% higher in 2010 if historical forest management had favored selective thinning over industrial clearcutting. The VELMA-

Penumbra simulations yielded powerful insights:

- Riparian forestation has the potential to increase floodplain soil and groundwater shading by up to 44% by the year 2100, enhancing cold-water refuges for salmon.
- These cooler zones could be 2-6C colder than surrounding river temperatures in late summer. A critical benefit during salmon migration and rearing.
- If historical logging in the upper watershed had used thinning instead of clearcutting, summer flows could have been 20-60% higher during key spawning months in 2010.
- Forest thinning also showed minimal increases in peak flows, suggesting its viable restoration strategy for boosting streamflow without worsening flood risks.

This isn't just theoretical. It's a potential lifeline for temperature sensitive salmon species. In a future shaped by an ever changing climate, more summer streamflow means cooler, healthier habitat for endangered Puget Sound Chinook, steelhead, and bull trout.

The modeling confirms what restoration leaders have long suspected: actions in the uplands directly shape conditions in the floodplains. In climate-sensitive watersheds like the Tolt, forest health, stream shading, and groundwater recharge are all connected.

How Uplands Shape the Lowlands

What happens in the uplands doesn't stay there. The study showed that land management practices, especially in forests, have downstream impacts on hydrology and river temperatures. Tree species, age, and density all influence how much water infiltrates



*Tolt River steelhead.
Photo Credit: J. Glasgow, Wild Fish Conservancy*



*Snoqualmie River and Tolt River Confluence.
Photo Credit: Matthew Baerwalde*

the soil, recharges groundwater, and flows to streams throughout the year.

The VELMA model revealed how integrated strategies such as combining upland forest thinning with riparian restoration, could create big wins: increased streamflow, better temperature control, and enhanced watershed resilience.

Indigenous Knowledge as a Framework

While the modeling tools are powerful, Baerwalde emphasized that this project was equally rooted in Indigenous knowledge and science.

“This isn’t just about metrics,” he said. “Our work is guided by generations of knowledge about how these lands and waters connect. We are trying to braid that with Western science. Not just to include it, but to let it lead.”

That perspective shaped the questions asked in the study. Shifting the focus from isolated fixed to full watershed health. Where others might ask, “How do we restore this stream?” Baerwalde asks, “How do we restore our relationship with this river?” For the Tribe, that means looking beyond the riverbanks and into the full watershed: connecting upland forest practices, traditional village sites, water rights, and cultural lifelines with today’s data and decision-making frameworks.

A Model for More than One River

The EPA and Snoqualmie Tribe report doesn’t just model flows. It models a way forward for other communities. The report outlines how the VELMA model can help other communities prioritize limited resources and weigh

the tradeoffs of restoration options. Should funds go to buying and restoring floodplains? Or toward upland forest thinning and road decommissioning? VELMA helps make those decisions more informed and defensible.

The collaboration with EPA set a strong example for how federal agencies can align to produce tools that serve both cultural and ecological restoration. It proves that when landowners, agencies, and Indigenous communities collaborate, they can identify the most effective actions to support climate resilience and salmon survival.

“These big projects take time and resources,” Baerwalde said. “The only way they happen is when salmon recovery and flood resilience are aligned.”

This project is a strong example of what alignment can look like: culturally grounded, scientifically rigorous, and future-looking.

What’s Next for the Tolt

The Snoqualmie Indian Tribe completed a detailed assessment of the North Fork Tolt River with support from King County grants, gathering baseline data on water quality and hydrology. They are now developing conceptual restoration actions for future implementation, guided in part by VELMA’s insights.

Meanwhile, work continues downstream. The Snoqualmie Indian Tribe is maintaining restored floodplain areas near the river’s confluence, while King County and other partners pursue new levee setback projects. With the City of Seattle also relicensing its hydroelectric dam on the South Fork Tolt, there’s more activity in the watershed now more than ever.

“This study gives us the tools to make smarter choices,” Baerwalde said. “But more than that, it reminds us that this river still has a future and so do the salmon, forests, and people connected to it.”





Opportunities and Challenges in Brinnon

BY SPENCER EASTON, CFM – SCJ ALLIANCE

Community engagement in Brinnon highlighted the need for flood solutions that also address economic and infrastructure challenges. Any successful path forward must center local priorities and include residents in every step of the planning process. (Spencer Easton, CFM – SCJ Alliance, spencer.easton@scjalliance.com)

Brinnon is a small frontline community located where the Dosewallips River flows into Hood Canal. Almost the entire community is located in the floodplain, including the community center and the roads that serve the school and fire station. Much of the community is in the floodway, where no development is allowed, even if elevated above the 100-year flood elevation. The median age in Brinnon is over 65. Brinnon's poverty rate is higher than Jefferson County and Washington State as a whole, and its median household income is lower.

Over the past few years, Jefferson County has been investing in resiliency planning in the watershed, including new information about the geomorphology, hydrology, and habitat conditions for listed salmonids in the river channel and floodplain, working with Natural Systems Design (NSD).

In early 2025, a new funding opportunity led Jefferson County to convene two meetings of the Brinnon community, with facilitation and planning support from SCJ Alliance. This was a stand-alone opportunity for the County to:

1. gather information about current community priorities and concerns ahead of a grant request,
2. gauge progress in communicating flood risk information, and
3. further inform appropriate next steps. The meetings also provided an opportunity to share multiple types of floodplain management expertise with the community.

At the meetings, community members shared ongoing concerns about economic development and infrastructure improvements, both of which are made much more challenging by Brinnon's location in a floodplain. Community members also expressed interest in actions that would improve drainage, maintain berms, consider forest practices upstream, and help people protect their property. The community requested involvement in every step of the process for any action to address flood risk or restore floodplain areas. Across

the two meetings, the County and the community had a productive conversation about the reality of flood risk in the area and actions that have been taken to address concerns in other areas of the state. The conversation made it clear that any solution to flood risk in Brinnon will also need to advance other community priorities.

Following the meetings, community leaders collaborated with Jefferson County on a Flood Control Assistance Account Program (FCAAP) grant to fund planning, but unfortunately the FCAAP program experienced funding cuts and Jefferson County was not awarded a grant. The County also had planned to apply for FEMA Building Resilient Infrastructure and Communities (BRIC) funding, but the BRIC program is currently on hold. However, there is still interest in a collaborative planning process to identify a community-developed range of alternatives to mitigate flooding, test the alternatives using a new hydraulic/hydrologic model, and build agreement on solutions. Jefferson County continues to work with NSD on conceptual designs to restore habitat for listed Hood Canal Summer Chum salmon and other species. The County is currently considering other grant funding sources to support efforts to increase the resiliency of this frontline community.



Brinnon. Photo Credit: Google Street View



Northwest Fish Passage Podcast Spotlight with Annika Fain

HIGHLIGHTS FROM HER INTERVIEW + LINK TO NEW PODCAST EPISODE, PARTIALLY EDITED FOR CLARITY

Annika Fain is a hydrologist, geomorphologist, and the president of Fain Environmental. She is a Certified Floodplain Manager and PE who has broad-based experience in ecosystem restoration, coastal geomorphology, watershed hydrology, floodplain management, and environmental outreach. She has over 18 years of experience managing and performing analyses of physical and geological processes throughout the watershed. For the past nine years, she has lead restoration events along the Duwamish River as a Puget Sound Steward with EarthCorps. She has participated in restoration events throughout the watershed for the past 30 years. Annika teaches students about oceanography through the Ocean Inquiry Program. She participates in the Girls on the Run program as a running buddy for elementary school girls. Annika is an avid runner, cyclist, swimmer, triathlete, and hiker.

AUSTIN: Thank you so much for sharing today and allowing us to interview you. It's really exciting to get to know you more and talk to you about your podcasts. When did you first start recording podcasts?

ANNIKA: Thanks for the question. I started recording podcasts in 2017 with the *Outdoor Women Adventure* (formerly *Seattle Outdoor Sister*) podcast. In 2020, I started *NW Fish Passage*.

AUSTIN: What inspired you to create it?

ANNIKA: I love meeting new people, especially those passionate about the environment. I wanted to bring more diverse voices to environmental and outdoor podcasts, especially women from all backgrounds. The last four podcast episodes for *NW Fish Passage* have been interviews with amazing indigenous women.

AUSTIN: That's amazing! It feels like podcasting became especially popular following COVID. How did you get your start?

ANNIKA: I started my own environmental consulting business (Fain Environmental, dba NW Fish Passage in 2015). I started *PNW Cycling Sisters* in 2016 and then the *Outdoor Women Adventure Podcast* in 2017. I initially did five-minute snippets about my adventures. After about ten of those, I started interviewing people who are passionate about the outdoors. I enjoyed the interview format much more and began interviewing people passionate about the environment on the *NW Fish Passage* podcast.

AUSTIN: What do you hope listeners take away from your two podcasts?

ANNIKA: I hope they learn something new. While my two podcasts may seem different, they both focus on people passionate about the environment and the outdoors. I want listeners to enjoy hearing people's stories and how they got to where they are. I always ask my guests what they're excited about in the coming years, which inspires me as well. On *NW Fish Passage*, I often ask for advice for young professionals and motivation for their work.

AUSTIN: Do you have any particular favorite episodes or guests that really inspired you?

ANNIKA: That's a tough question because I learn something from every guest! But I'll mention a few that stood out:

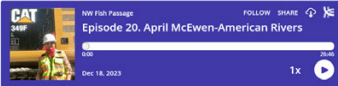
- **Episode 7 & 20:** April McEwan from American Rivers, discussing dam removal projects in Washington and Oregon. She's the first guest I've interviewed twice.
- **Episode 9:** James Rasmussen, a Duwamish tribal member, sharing perspectives on the Duwamish River.
- **Episode 16:** *Sea Potential* with Savannah Smith and Ebony Wellborn, exposing BIPOC youth to marine environments.
- **Episode 17:** Deborah Lakenoff, Washington state representative, who advocates for salmon and the environment.
- **Episode 24:** Kayeloni Scott, a Nez Perce Tribe member, telling the story of salmon and her people.

NW FISH PASSAGEPODCASTPARTNERS

NW Fish Passage

Episode 20. April McEwen – American Rivers

PUBLISHED DECEMBER 16, 2023



In this episode, April McEwen, River Restoration Project Manager at American Rivers, talks about a variety of dam removal projects she is involved in. She discusses projects she has done since our last podcast about the Middle Fork Nooksack Fish Passage in 2020 (Episode 7). She talks in detail about the Barrel Springs and Kellogg Creek dam removal projects. April talks about the importance of partnerships and collaboration in both of these projects. Barrel Springs was completed last summer in Skagit County, Washington. This project involved removing a 12-foot-tall dam and providing access to a natural cold-water spring. The Kellogg Creek Restoration and Community Enhancement Project will include removing a dam that blocks 14 acres of habitat in Milwaukie, Oregon. NOAA has awarded 15 million federal infrastructure grant to the

AUSTIN: You cover topics related to watershed health, ecosystem restoration, and environmental outreach. Are there any emerging issues or conversations you want to explore in future episodes?

ANNIKA: Everyone I've interviewed has inspired me and provided a unique perspective. I want to explore ways to support the next generation of scientists and engineers. I'm also excited about interviewing more people from diverse backgrounds.

AUSTIN: You've been involved in community restoration efforts for decades. How do you see outreach and education playing a role in environmental restoration efforts?

ANNIKA: Outreach and education are critical. If people don't understand why restoration efforts matter, they won't support them. I've led tree plantings with *Duwamish Alive*, *EarthCorps*, and other groups. I also volunteered with programs like the Ocean Inquiry Program, which introduced underrepresented students to oceanography. These hands-on experiences are the best way to learn.

AUSTIN: Are there any women in science, conservation, or environmental leadership who have inspired you?

ANNIKA: Yes! Two major influences were:

- Rachel Carson, whose book *Silent Spring* inspired me to pursue environmental work.

- Sylvia Earle, a marine biologist and explorer, whose books about marine science are incredible.

On a personal level, my friends' mothers, who were science and math teachers, inspired me. I also draw inspiration from strong women like Frida Kahlo, Rosa Parks, Maya Angelou, Michelle Obama, and Ruth Bader Ginsburg.

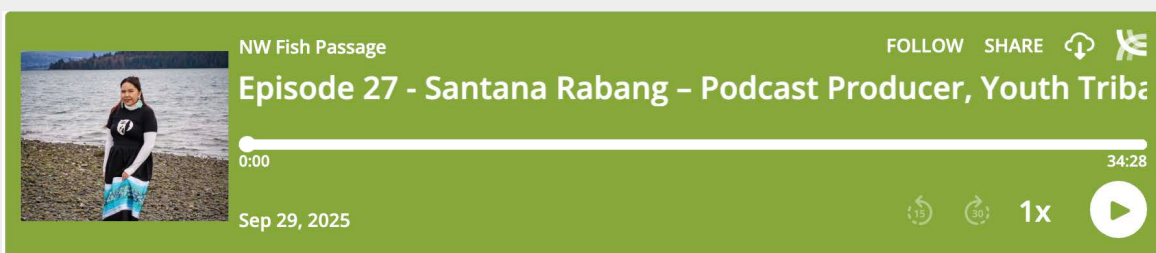
AUSTIN: What's next for *NW Fish Passage* and *Outdoor Women Adventures*? Any exciting guests or topics coming up?

ANNIKA: I recently interviewed Bethany Fackrell, a Snoqualmie Tribe member who participated in a *Tribal Water Corps* program. I'm excited to feature more Indigenous people, young professionals, and possibly organize a panel discussion on supporting the next generation of scientists and engineers.

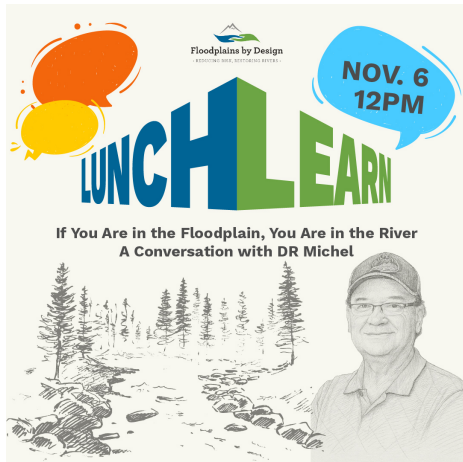
AUSTIN: For those who want to support your work, where can they find your podcasts?

ANNIKA: My website, nwfishpassage.com, has all the episodes. *NW Fish Passage* and *Outdoor Women Adventures* are available on Spotify, Apple Podcasts, and many other platforms. Reviews are especially important for smaller podcasts like mine to gain visibility, so I encourage listeners to subscribe, review, and spread the word!

Subscribe to the [NW Fish Passage Podcast](#) and listen to the most recent episode featuring Santana Rabang. Santana is a podcast producer for the Young and Indigenous Podcast, youth tribal leader, and canoe paddler.



Upcoming Events



Lunch & Learn: If You Are in the Floodplain, You are in the River with DR Michel

November 4th at 1PM

[Join via Zoom](#)

FbD Acquisition Coffee Chats

November 3, December 1 at 3-4PM

[Learn More](#)

Rewetting Our Waterways: Floodplain Restoration in an Occupied Landscape Workshop

November 18th from 9AM-3:30PM

[Register Now](#)

Funding & Policy Action Group Winter Meeting

December 3rd at 1PM

[Learn More](#)

Join Ecology FbD staff at these meetings if you have any questions as you are preparing your pre-application.



New FbD Applicant Webinar

November 5th at 3PM

[Register Now](#)



Returning FbD Applicant Webinar

November 6th at 10AM

[Register Now](#)

Resources on the Web

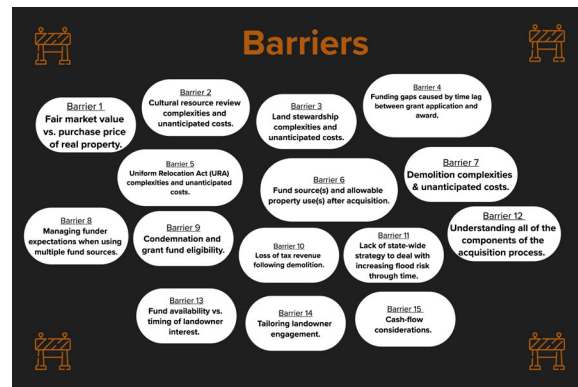
With valuable input from experts across Washington, we've developed visual resources designed to support work across various priority efforts. We welcome your feedback to continuously improve these resources.

ACQUISITIONS & BUYOUTS

Stepping Stone to Acquisition Graphic

The journey to completing a property acquisition isn't a single leap, it's a series of important steps. The "Stepping Stones to an Acquisition" graphic above illustrates this process as a river crossing, where each stone represents a key step along the way. Each step in the acquisition process builds upon the one before it. From early planning and community engagement, to securing funding, navigating legal requirements, and finalizing the transfer, every step is essential to reaching long-term stewardship. This visual helps break down complex, multi-year processes into approachable, sequential riverstones. By viewing the acquisition pathway as stepping stones, we can better understand where challenges may arise, how to prepare for them, and how each step moves projects closer to desired outcomes of flood risk reduction, climate resilience, conservation, and public safety.

[View the full PowerPoint.](#)



15 Barriers to Acquisition Visual

The 15 Barriers to Acquisition graphic highlights common obstacles faced by practitioners across Washington State. By naming and documenting these challenges, we hope to create a shared understanding of where projects tend to get stuck, so that people might better identify and share what solutions they have used to move forward. Each barrier is tied to a specific step in the acquisition process and corresponds to the "Stepping Stones to Acquisition" graphic above. This helps implementers and funders see not only what the challenge is, but also when it is most likely to arise. Explore more about the 15 barriers [online](#) or via this [Google Sheet](#).

FBD GRANT UPDATES — WHAT'S NEW FOR 27-29

Thanks to your feedback, especially through a series of four advisory group meetings in 2025, we've made some major improvements that will hopefully make the FbD 27-29 funding round smoother, simpler, and more aligned with applicant needs.

Pre-Application Updates

- Simplified form: We've trimmed the pre-application to focus on key questions.
- New feedback form: Every proposal will receive feedback, no one gets turned away unless a project is ineligible.
- Deadline extended: Now due January 23, 2026, so you can come back from the holidays with time to finish strong.

Full Application Updates

- New narrative option: Tell your project story your way with one cohesive narrative instead of answering repetitive questions.
- Budget made easier: Submit a high-level project budget and basic leverage/phasing info. No match breakdowns required.

- Fewer questions: We cut the clutter. You'll see fewer overall application questions.
- More prep time: New deadline is May 13, 2026, two extra weeks to get everything ready.

Scoring Criteria Changes

- Category cleanup: Removed: Outcomes & Public Benefits. Recombined: Collaboration + Integration (back to how it was pre-2025).
- Evaluator clarity: We rewrote the scorecards so evaluators know exactly what to look for and how to score it.
- Now live: Updated evaluator scorecards are already in the Program Funding Guidelines.

Presentation Timeline

- Shifted later: Presentations now start ~6 weeks later than before.
- More time for applicants to prepare.
- Evaluators will see your presentation closer to when they begin reviews.

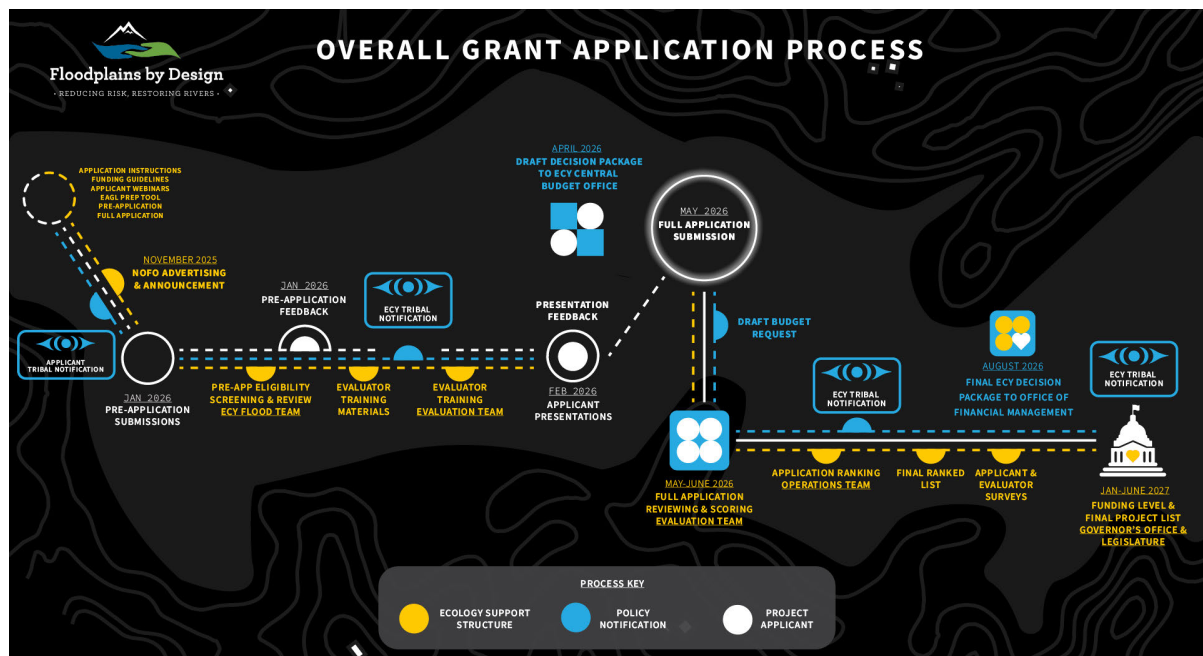


Diagram of the FbD Grant Application Process created by Austin Bernales



Image of Ag Innovation Demo Day.
Photo Credit: Austin Bernales

SITE TOUR RECAP: AG INNOVATION DEMO DAY AT SWAN TRAILS FARM

Thank you to everyone who joined us at Swan Trails Farm for Ag Innovation Demo Day. The site tour and tech demonstrations showcased the Ag Tech lending library that is helping farmers try high-tech tools at no cost, improving efficiency while supporting conservation goals.

Learn more about the Snohomish County lending library [here](#).

For a deeper dive into the program and video from the tour [read the full story](#) covered by KING 5.

2026 NRDC CLIMATE STORYTELLING FELLOWSHIP

The Black List is thrilled to announce that it has partnered with NRDC's (Natural Resources Defense Council) Rewrite the Future program, The Redford Center, NBCUniversal, and The CAA Foundation to launch the fifth annual NRDC Climate Storytelling Fellowship. The Fellowship will grant \$20,000 each to three writers to support revision of a feature screenplay or pilot that engages with climate change in a compelling way through events, actions, character, emotions, plot, and/or setting.

[Apply by November 28th.](#)

REGULATORY REQUEST SYSTEMS OVERVIEW

The Regulatory Request System (RRS) is a new online portal designed to streamline and standardize the permit application process across states. The system allows users to submit requests, schedule meetings, and track permit actions through a centralized dashboard, with full implementation expected by Fall 2026. Key features include a step-by-step request process, and integrated support tools.

[Learn more in this PowerPoint.](#)



THE GAME OF FLOODS

The Game of Floods was piloted at NORFMA, where teams navigated No-Rise and Conditional Letter of Map Revision/Letter of Map Revision (CLOMR/LOMR) permitting processes. They experienced the trade-offs among modeling, funding, timelines, and community outcomes.

This game is part of FbD's Permitting Priority effort, and aims to build a shared understanding and spur conversation around complex mapping, modeling and permitting processes associated with CLOMRs and LOMRs so that improvements can be grounded in a deeper shared knowledge.

- Want to bring this game to your team or county? [Add your email to the signup list and we'll coordinate a session.](#)

SNOQUALMIE TRIBE RIVER AND FLOODPLAIN PROJECT MANAGER POSITION

The River & Floodplains Project Manager is a senior-level position responsible for planning, coordinating, and implementing complex, multi-benefit floodplain and river corridor restoration projects that advance the Snoqualmie Indian Tribe's ecological, cultural, and climate resilience priorities. This position serves as a lead technical and strategic resource in riverine habitat restoration, flood risk reduction, and landscape-scale natural infrastructure efforts across the Tribe's ancestral lands.

[Apply Now.](#)

ANAEROBIC DAIRY DIGESTER PROGRAM NOW ACCEPTING APPLICATIONS

Commerce is now accepting applications for \$12.8 million in grants to repair, upgrade, or build dairy digesters

[Learn More and Apply Now.](#)