

## Nooksack River FLIP Reach 2 Charrette

Ferndale Events Center

February 4, 2020

### Participants

Albert deBoer	Janet Curran	Ned Currence
Carol MacIlroy	Jason Hall	Paul Knippel
Chris Elder	Jeff DeJong	Paula Harris
Dave Timmer	Joel Ingram	Rich Appel
Deborah Johnson	John Thompson	Scott Bedlington
Duane Holden	Karin Boyd	Todd Bennett
Frank Corey	Kasey Cykler	Travis Bouma
Fred Likkel	Kelley Turner	Trevor Delgado
Gary Goodall	Mark Ewbank	Ty Neevel
Greg Ebe	Mike Maudlin	John Doyle
Haylie Miller	Mike Schoneveld	

**Facilitators:** David Roberts (Kulshan Services) and Steve Moddemeyer (CollinsWoerman)

### Purpose of event

- To conduct a value planning charrette to understand physical processes that affect fish and floods in Reach 2
- To identify opportunities and challenges to overcome
- To develop integrated adaptive strategies and actions to guide Whatcom County and the affected communities

### Summary of Day

David Roberts (facilitator) and Paula Harris (Whatcom County) opened the meeting with a welcome, introductions and an overview of the purpose of the meeting. David also shared the FLIP goals and established ground rules for the day.

Our first activity was to define the common values of the group. This was done with a simple exercise where each participant came up with ideas for shared values and put them on stickies which were then posted for everyone to see. While we moved on to presentations, Mark Ewbank and Mike Maudlin organized the stickies into common themes.

Following the values exercise, the group reviewed technical information developed over the last couple of years pertaining to management of the river and future changes. Presentations were provided by Paula Harris on flooding patterns and land use, Jason Hall on fish processes and habitat uses, and Karin Boyd on geomorphic processes. These presentations provided a technical foundation for the group to develop new management concepts to meet the goals and shared values.

Following a brief break, John Doyle and Carol MacIlroy shared their perspectives on a similar process carried out in LaConner. The purpose of that charrette was to develop ideas on how to address the City's

flooding issues. Carol and John shared their impressions of how the charrette helped the community develop new ideas for moving forward.

Prior to beginning our idea generation process, Mark Ewbank and Mike Maudlin shared how they had grouped the input from the stickies into values for everyone. The 10 shared values agreed to by the group are as follows:

- Safety and Reliability
- Creativity
- Environment
- Culture
- Community
- Fairness via Collaboration
- Respect, Honesty and Integrity
- Sustainable Economy
- Practical
- Fun

(Page 4 lists the input into these values.)

Our next session began the ideation process. Everyone was asked to come up with as many ideas for improving conditions in the floodplain as they could in about five minutes. Each idea was written on a sticky. Everyone posted their stickies on the wall. Once this step was completed, several people began organizing them into concepts. A total of 14 concepts were identified including one with miscellaneous ideas. They included the following:

- **Economic Incentives (24)**
- **Floodplain Connectivity (20)**
- **Land Use Planning (20)**
- **Water Rights (17)**
- **Levy Re-configuration (16)**
- Sediment (8)
- Improve Drainage (6)
- Tree Planting and Wetlands (5)
- Collaborate (5)
- Improve Mainstream Habitat Complexity (3)
- Recreation (2)
- Miscellaneous (2)
- Look at Crop Suitability and BMPs (0)
- Bank Edge Roughening and Improvements (0)

Our final step in identifying concepts was to rank the themes with the greatest group interest. Each participant was given the opportunity to vote with five dots for their favorite concept. From this process we identified five concepts that had the greatest interest for additional evaluation. The number of votes received by each theme is indicated by the number following the above concepts. The **bolded** concepts were chosen for additional conversation and conceptualization.

While the non-bolded concepts did not receive a full conceptualization, some were included in the discussions of the five chosen concepts. All concepts suggested by the participants are recorded here and may be included in future conceptualizations or re-examined at a later date.

The outcomes of the discussions regarding the five bolded concepts are detailed in this document and can be found starting on page 8.

After lunch, participants broke up into five table groups with the goal of further developing the five concepts. There was a good diversity of participants at each table. After some discussion and

brainstorming, each table was asked to prepare a flip chart summary showing the following information as agreed upon by those at the table:

- Name of their solution
- Description (sentences) of the theme and solution
- Describe how their solution meets all of the success criteria (group values)
- Plans & Sections (drawings)
- Sales pitch: Solution's most worthy features/benefits
- Questions/obstacles to be addressed

The final exercise for the day was to have each of the tables present their concepts using their flip charts to the rest of the group. The group went around the room with each table presenting their findings followed by an opportunity for the rest of the group to ask questions or provide input.

At the close of the day, all were asked their thoughts on the day. On the positive side:

- there was good listening
- everyone was respectful
- the conversation was balanced
- it was helpful to hear different perspectives
- the case study was a good primer
- they enjoyed working around the table
- coming together felt good
- solutions were good
- it felt good to be included in the local process and to learn about the issues

The only negative comment was that some felt the process made for a long day.

The meeting concluded at 4:10PM.

**The notes including all sticky ideas from both the values development and concept generation process follow in this document.**

## VALUES DEVELOPMENT

The group's values were determined using a sticky exercise. The following shows the agreed upon values and the content of the stickies that led to the values. If multiple stickies shared the same idea, this is noted. For example, if three people share a comment, "x3" follows the idea.

### **Fairness via Collaboration**

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- desire to seek common objectives and solutions
- be fair, be open, and try to understand different points of view
- equitable
- compromise x3
- balanced
- work together for common goal
- working together
- willingness to leave one another's challenges and problems and seek solutions
- seek consensus
- understanding
- open communication
- be objective
- open to new ideas / ways of doing things
- open
- we are here to solve mutual problems
- balance habitat with agriculture and growth (urban)

### **Respect, Integrity, and Honesty**

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- be respectful x6
- honesty x6
- ask honest questions
- have integrity x4
- trust (even government)
- listen to ideas of others
- be an active listener
- listening skills
- professional integrity
- trusting relationships
- transparency
- compassion

### **Sustainable Economy**

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- sustainable agriculture
- desire to save ag land
- preserve agriculture
- a sustainable farming community

- plan for the future 20 to 100 years
- a sustainable fishing community
- family sustainability
- economics versus community values
- ability to catch fish
- economical
- resilience
- sustainability
- a comfortable lifestyle
- planning for 100 years
- driving rural economy
- economy
- quick recovery
- economic viability for everyone
- prosperity
- quality livable communities
- moderate living for all (farmers, fishers, etc.)
- support farming community and economy
- economically feasible (with a stretch)
- forward looking

### **Practicality**

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- common sense approach x2
- able to implement
- practical x2
- what has worked in the past
- learn from the past
- solutions oriented
- cost effectiveness
- make decisions with common sense
- cost effective
- scientific knowledge and understanding
- regulations based on shared values

### **Fun**

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- enjoy life
- have fun
- occasional humor
- friendship
- chocolate

## **Culture**

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- family
- culture
- respect our history
- agrarian culture
- support tribal culture and economy
- friends

## **Community**

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- is exciting and inspiring and builds and strengthens community
- social equity
- socially equitable
- respect community identity
- respect for each other's opinions
- putting yourself in other people's shoes and open to others' experiences
- listen to all perspectives
- supports local community
- neighbors supporting neighbors
- cares for broad community
- community integrity
- health
- good health

## **Safety and Reliability**

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- safety x 4
- security
- nimble and responsive
- predictability x2
- reduces negative flood impacts
- reliability

## **Environment**

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- clean water
- ecosystem resilience
- recover salmon
- desire to protect natural resources
- environmentally beneficial for people and wildlife
- healthy environment
- protect water resources for everyone and animals / habitat
- natural resources are community resources
- clean and cool water
- open space

## Values: Creativity

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- be creative x2
- have faith that creative ideas can work
- holistic x2
- proactive
- keep an open mind
- challenge assumptions

## CONCEPT DEVELOPMENT

The five following concepts were developed and shared with the group. Each concept includes a list of the [Stickies](#) that contributed to the concept, followed by the notes from the ideation process shown as [IDEAS](#).

### Economic Incentives (24)

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#### *Stickies*

- acquire homes or retrofit to be flood proofed
- floodplain buyback program when owners won't sell
- compensate farmers for ecosystem services
- acquire marginal farmland to create floodplain wetlands
- flood easements to compensate farmers to receive floodwaters - ecosystem services valuation
- funding landowners for natural resource improvements
- purchase more flood properties
- have a chat on private property needs to be valued
- find incentives and compensation to help landowners impacted by natural resource improvements
- acquisition of flood storage areas upstream of I-5
- flood storage to offset development
- infrastructure buyout River Rd
- property acquisition for projects / capacity
- allow for responsible growth in city of Ferndale
- floodplain conservation program for landowners (similar to CREP)
- channel migration easements (set levee back, remove armor, and compensate landowners to dedicate land as river bottom)
- create fund to support farmers in crop replanting after flooding
- acquire key properties at risk and widen active corridor
- voluntary conservation easement / reimbursement program
- salmon habitat easements on farmland
- compensate farmers for ecosystem service
- compensate for crop loss - for floodplain connection outside growing season
- find economic incentives to farmers to transition to regenerative farming techniques
- get more money to implement
- mitigation banks
- strategic efforts to convert nominal ag land along the river into habitat
- help fund drainage projects
- support dairies
- find low lying areas that are not productive for farming and restore / reconnect to the river for habitat
- do not forget the cheese next time

## **IDEAS: Economic Incentives Ideas**

- Creating a more organized, nimble incentive program / making people aware
- Pilot project
  - design beyond current regulatory structures (water rights)
  - track success
  - quantify results / benefits
  - demonstrate value (could show Ferndale improvements that help also could help with the money)
- Monitoring - is this working?
  - Site specific multi-benefit projects
- Elements of incentive program
  - reduce flood risk
    - remove homes
    - remove development rights
    - have money ready for opportunities
  - farm benefits
    - increase drainage
    - spring flood protection
    - water rights
    - culvert improvements
    - compensation: buffers, CMZ, land
  - fish benefits
    - water retention / water increases in the summer
    - LWD
    - riparian
    - access to more habitat
    - stranding / predation improvements

## **Conservation Futures (written on side of page)**

- Flood tax
- Ferndale? Lynden?
- Reduce flood risk
  - remove homes
  - remove development rights
  - explore how to have money move quicker
- Long term easements and transition
- Flood impacts
  - field damage
  - crop loss
- Look into creative compensation
  - \$15,000 an acre
  - 15 to \$25,000 per acre with water rights
  - 8 to \$12,000 an acre without water rights (?)
  - Improved levees for protection

- Incentivize other creeks to increase fish capacity
- Cougar Creek - culverts
- CMZ easements
  - drainage
  - water rights
- package of incentives - pilots
  - Fish: LWD, connectivity, riparian, culvert removal
  - Farm: drainage, water rights
- show benefits to those downstream i.e., Ferndale. Help get money for changes
- combine mitigation dollars
- flight shows lands more challenging to farm

### **Questions / obstacles**

- Funding needs - increase significantly
- Water right laws / complexity significant barrier (getting water right and getting access to existing water)
- Current dollars take years for acquisition
- Limitations in how to value farmland
- Active conversion to higher crop value that might not be compatible with flooding
- Impact on neighbors or downstream / upstream
- Uncertainty of outcome, belief done properly
  - outcome: have to deal with other things (predation)
- Certainty: how often flooded, when flooded and where fish can go (floodgates)
- Will there be money for some projects. They have to “hang” together to be an incentive
  - water: fish, farm
  - habitat
  - flood
- Land use outside of study area – stormwater management and other responsibilities

### **Cool things**

- If there are things we can do, let's do them.
- No one wants to harm their neighbor.

## Floodplain Connectivity (20)

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### Stickies

- fish-friendly floodgates
- additional floodgates (beyond currently planned) in Bertrand / Fishtrap area
- Cougar Creek flood gate
- Ritter Road flood gate
- Cougar Creek flood / flap gate and riparian improvements
- Whiskey Creek fish passage / automated floodgate
- Ritter Road gate flood and riparian improvements
- retrofit all flood gates
- calibrate flood gates
- focus new floodgates at outlets of tributaries
- bigger pipe and flood gate at Whiskey Creek
- help fund the Duffner / Bertrand floodgate project. It helps fish and farms - win / win

### IDEAS: Integrated Floodplain Connectivity

**Theme / Solution:** address floodplain connectivity by improving access for salmon and managing floodplain storage and drainage

- For timing and duration as applies to fish, farm, flood, and facilities
- Solution through new and or refurbished floodgates (includes upstream habitat enhancements on tributaries and ditches)
- Identify areas of the floodplain for storage, refuge, flood relief / drainage, and groundwater recharge

**How we meet success criteria:** practical solutions that use creativity to optimize fairness, environment, and sustainable economy

**Plans / locations of flood gates:** (Includes all barriers upstream and habitat enhancements in the tributaries and ditches)

- Duffner Ditch
- Fishtrap (side ditch upstream)
- Whiskey Creek
- Ritter Road
- Schneider Ditch
- Cougar Creek
- others
- Road / culvert barriers (ask Joel Ingram)

**Identify areas for:** floodplain storage, levee setback, drainage

**Sales pitch:** solutions that simultaneously:

- maintain / enhance drainage during the growing season
- increase connectivity for fish access to blocked habitat and enhance habitat quality

- enhance groundwater recharge

***Questions / Obstacles:***

- future growth / climate change impacts / resilience of solutions
- potential impacts downstream
- how well do the floodgates work for fish passage?
- what is the balance between groundwater recharge benefits and drainage during growing season?

## Land Use Planning (20)

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### Stickies

- include culturally important areas in planning
- include climate change projections in our planning process to increase plan resiliency
- look at I-5 to Main Street flood conveyance
- support Ferndale in preventing development in flood prone areas
- reduce residential densities in floodplain
- Ferndale rezoning
- reduce impacts from development
- develop a long-term land use strategy for the floodplain that promotes sustainable floodplain management approaches
- do not build in frequently flooded areas including small cities
- support Lynden in not developing into the floodplain
- city planning more integrated and better communicated between fish and farm
- manage stormwater impacts on flooding / water quality
- function of Lynden stormwater pond
- current Lynden stormwater issues / future Lynden stormwater
- relocate structures in floodplain
- widen Main Street bridge crossing in Ferndale
- floodgates (stop logs) in railroad trestle (so Bo doesn't have to berm)
- construct a flood tunnel in Ferndale
- evaluate Ferndale development plans and impacts to I-5 and Lummi Nation
- remove developments and development potential from floodplain

### IDEAS: Sustainable Land Use

- appropriate zoning and land use regulations to keep problem from getting worse (existing and with climate change)
- evaluate structural (bridges, tunnels etc.) and nonstructural (buyouts, rezoning) measures to address existing damages to infrastructure and facilitate future integrated projects

### CONSISTENCY WITH VALUES:

- safety - that's the point
- environment - cultural preservation and habitat improvement potential
- community - better integration between and with County and city avoids devastation of community
- fairness via collaboration - basing changes in regulations and zoning on science to protect future owners. Includes honesty and respect with property rights included (ac \$ hand-in-hand with down zone)
- Sustainable - good development reduces future damages; increase open space / recreation opportunities for residents
- practical - cost effective, politics aside
- Fun? Not so much ☹
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**SPECIFICS:**

1. Evaluate impacts of filling for buildout based on current zoning (existing and future hydrology)
2. Require modeling for zero-rise floodplain developments
3. Identify areas and candidates for buyout (flood + culture + habitat)
4. Don't annex into floodplain - based on climate change

***Future / Maybe***

- flood code changes
- zoning changes
- flood risk prevention not just reduction

## Water rights (17)

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### Stickies

- water rights issues addressed for farmers
- water rights for habitat improvements
- trade restoration sites on ag land for irrigation water
- trading fish habitat improvements for water rights
- water rights for habitat
- head gates on ditches to improve summer flows
- use weirs on ditches to release / slow water at best times
- Lower Fishtrap restoration project in exchange for providing farmers permanent water rights for cropland in that area
- give water access for habitat
- find a way to marry when we want to be rid of water and when we want it for irrigation

### IDEAS: Bertrand Natural Resource Habitat Partnership pilot 2.0

Shift to more productive sites to show net benefit to fish and agriculture

- trading water rights
- water bank
- transfers
- surface to groundwater
- setback levees
- making better habitat
- making better riparian
- managed groundwater withdrawals
- flood easements

#### Parameters:

- Who: people in this room
- Metric: acres of functional habitat, acres of productive farmland increased
- How long: up to 10 years with three phases
- Given: a pilot to not impinge on or impede any property rights and treaty rights and to provide a model of collaboration

## Levee Re-configuration (16)

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### Stickies

- remove the back levee below south dry bridge to help convey flood water
- setback levees in strategic locations
- Pinch point - set back on southside (RM 14.5)
- setting back levees: to allow complex habitat
- pinpoint historic / most likely area for fish passage
- model road / levee removal at site (yesterday)
- levee removal
- levee setbacks where possible
- evaluate impacts of opening upstream end of Vanderpoel levee
- raise and lower levees in strategic areas
- open up fish trap to provide flood relief and habitat
- restore Fishtrap Creek - levee setback, re-meander
- raise Main Street bridge in Ferndale to reduce upstream flood stage
- set back levees at corners to reduce flood heights and help habitat
- lower Bertrand / Fishtrap levees for improved Nooksack flood conveyance
- side channel development opposite Ritter Road flood gate
- side channel / slough development low spot right bank, upstream of I-5 bridge

### IDEAS: Levee Reconfiguration: Long- and short-term levee reconfiguration alternatives

- levee setbacks to reduce flood pressure, increase flood storage, and improve fish habitat
  1. AJ's setback levee – acquisition, setback levee, habitat channel
  2. lower Fishtrap levee setback – acquisition, new levee setback levee, riparian enhancement
  3. Fishtrap Grand Plan!! - large levee setback, possible re-route in exchange for water rights
  4. Dahlberg property - Oxbow and setback levee
- questions and obstacles
  1. modeling of benefits and drawbacks
  2. current land uses
  3. downstream effects
  4. streamlined property acquisition process

## OTHER CONCEPTS

The following concepts were created but no further development occurred at the meeting.

### Sediment (8)

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#### *Stickies*

- dredge the river
- sediment removal
- take serious look at managing sediment
- remove sediment
- improve river capacity
- sediment removal in the Everson / Lynden - areas of the Nooksack River to decrease flooding
- construct pilot channels
- evaluate each pinch point and what can be done. This will also help sediment routing
- readily repeatable river channel surveys (sediment changes)

### Improve Drainage (6)

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#### *Stickies*

- improve drainage / pump Bertrand / Fishtrap
- manage drainage as fish habitat / restore fish passage
- (from) Appel Farms (to the) south: re-plumb drainage with flood flow direction

### Tree Planting and Wetlands (5)

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#### *Stickies*

- enhance riparian corridors
- plant riparian cover on floodplain channels
- riparian plantings on "stream" channels
- reforest Nooksack River buffer
- strategically restore riparian processes everywhere we can along river in Reach 2 and then large tributaries in floodplain
- increase riparian coverage
- connect floodplain drainage to reduce fish stranding and improve drainage after floods
- Schneider ditch wetlands riparian improvements
- restore low floodplain wetland areas and improve connectivity to river
- one large scale floodplain wetland revegetation project
- restore forested wetlands
- constructed wetlands with water quality improvement on ditches
- improve current wetlands for fish habitat
- create connected wetlands where possible

## Collaborate (5)

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### *Stickies*

- Is there linkage between drought resilience for farmers and fish?
- a better understanding of the issues surrounding salmon survival
- continue farm / fish discussions
- landowner agreements with tribes for fishing access
- streamline process for agreed improvements
- make government easy to work with
- involve tribal historians in specific project design development
- find creative ways to get community members from different perspectives more connected and create mutual understanding – regulator's tools
- listen to landowners who deal with flood directly
- build broad coalition for getting more money
- support culture that protects and returns tribal cultural artifacts, increase understanding of tribal culture - current and historic

## Improve Mainstream Habitat Complexity (3)

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### *Stickies*

- specific salmon habitat project list
  - levee setback
  - LWD installation
  - side channel re-connection
- increase mainstem habitat complexity (more pools, wood)
- reconnect historic meanders and side channels
- increase floodplain habitat complexity (riparian trees, wood, etc.)
- improve side channel complexity
- re-meander floodplain channels
- apply channel migration zone management concepts to widen corridor
- clearly define needs i.e., what is good fish habitat
- allow some migration to recruit trees

## Recreation (2)

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### *Stickies*

- establish a feasible location standard for the Nooksack Loop Trail
- enhance public access / enjoyment
- explore public education opportunities such as trails along levees

## Miscellaneous (2)

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### *Stickies*

- measure project success and monitoring programs
- addressing issues bigger than Reach 2 that affect salmon recovery (predation)
- hatchery development
- channel(?)

## Look at Crop Suitability and BMPs (0)

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### *Stickies*

- communicate with farmers about changing crops and understanding seasonal needs
- explore crop options that are more tolerant of wet ground
- education / outreach
- land use banks for overflow corridors to maximize and improve juvenile survival

## Bank Edge Roughening and Improvements (0)

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### *Stickies*

- build large wood structures in pilings
- identify habitat restoration projects at tributary mouths (Bertrand, Fishtrap, Schneider, Cougar, Ten Mile)
- improve fish habitat without sacrificing bank stability
- restore riparian and roughen edges
- enhance confluence of streams with river
- address and improve LWD recruitment and retention
- reduce rock along channel edge - more natural banks
- enhance bank edges with wood and plants
- large wood at tributary mouths
- riprap roughening with LWD
- restore and enhance bank edges on mainstem
- increase in stream wood cover
- increase large woody debris accumulations in mainstem
- interlock bank protection piling with additional LWD
- restore buffers on floodplain channels working with owners' needs
- drive piles strategically to catch mobile wood but don't block channel
- soften river edges for fish
- look at creating ideal habitat within current levee systems
- enhance and restore habitat where tributaries meet river (fish rearing and refuge)
- excavate slack water areas where levees are set back

# SUPPLEMENTAL INFORMATION FROM FLIP CHARTS

## Community resilience

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1. diversity
2. modularity
3. connectivity
4. storage
5. feedback
6. story
7. trust
8. self-organizing

## Draft FLIP goals

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- Reduce risk to public safety
- Optimize benefits to public infrastructure, private property, to public resources such as salmon, salmon habitat, and water quality
- Provide a comprehensive understanding of the river, its form and functions, and importance to resource-based economies including agriculture and fisheries
- Protect and maintain, and where feasible, restore river and floodplain habitats and habitat forming processes
- Create a more resilient flood risk reduction system now and into the future
- Identify and prioritize a list of action items to implement the plan
- Build consensus around mutually beneficial outcomes

## Ground Rules

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- Start and end on time
- Ask questions to increase understanding
- One speaker at a time
- No interruptions
- Take side conversations outside
- Turn cell phones to stun
- Think outside the box
- Have a good time!