

# State Hydraulics Office



HYDRAULICS – HYDROLOGY – STORMWATER – FISH PASSAGE

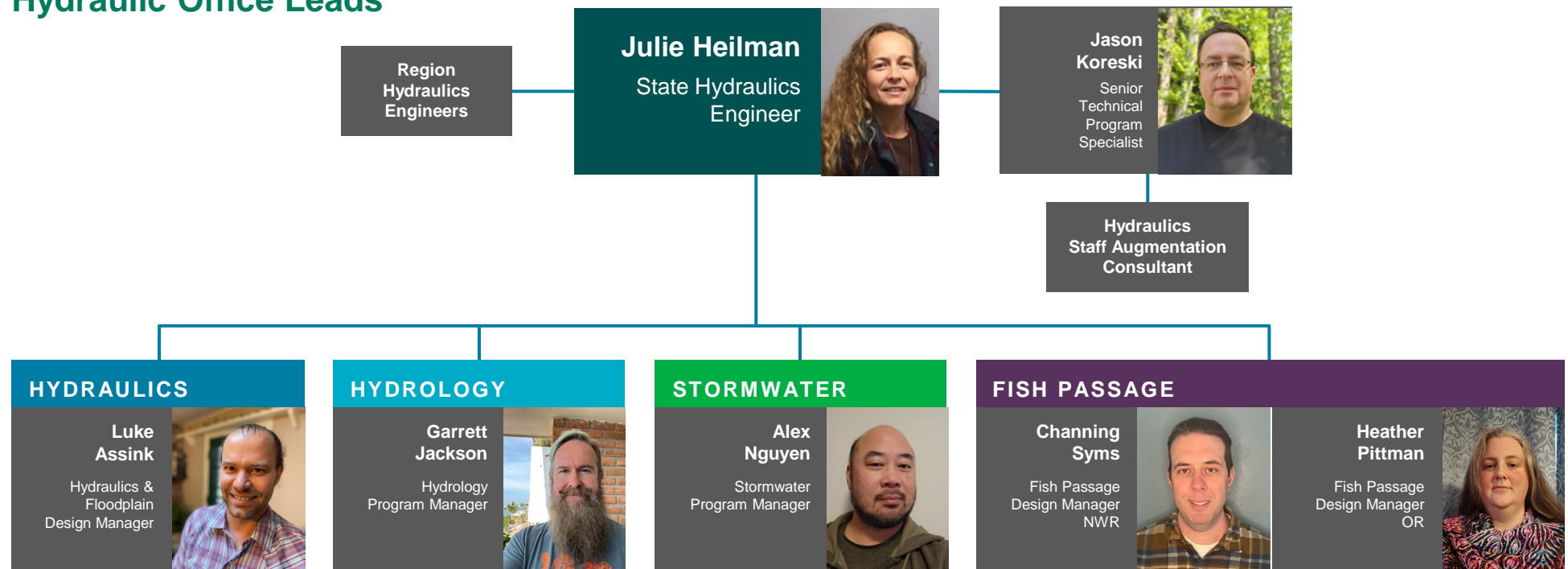
## Core Work

- Design policy & guidance
- Hydraulic Technical Support
- Specialty Designs
- Policy Compliance
- Asset Management
- Hydraulics & Hydrology Training

## Our Mission

- *The hydraulics section provides customers with responsive, reliable, and progressive professional services and products.*
- *We are committed to building diversity and community engagement through our technical expertise by ensuring our infrastructure allows for the natural processes to occur within our watersheds and water bodies now and into the future.*
- *We integrate resilient and innovative solutions by provide technical support, training and policy in the fields of hydraulics, fish passage, hydrology and stormwater to ensure our roadways provide a safe, effective and efficient movement of people and goods while maintaining the natural movement and treatment of water.*
- *In addition, we are an employer of choice because we promote work force development by providing the latest training and resources available and we coordinate and participate on a national level to provide technical guidance and policy on the state-of-the-art research in the fields of hydraulics, fish passage, hydrology and stormwater.*

## Hydraulic Office Leads



**Luke  
Assink**

Hydraulics &  
Floodplain  
Design Manager



**Katerina  
Ternovets**

TE4 in  
Training



**Vacant**

TE4 in  
Training



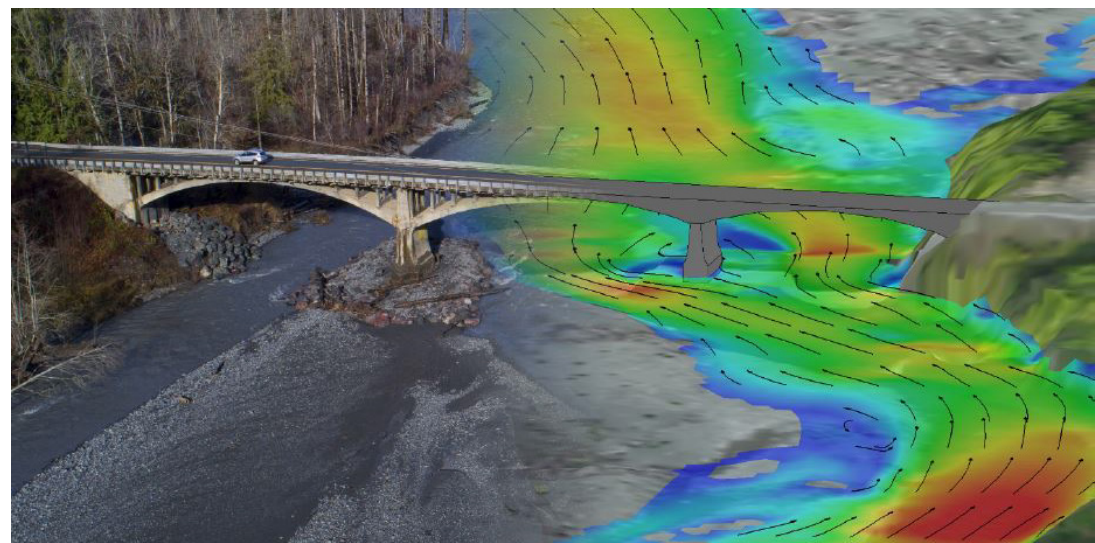
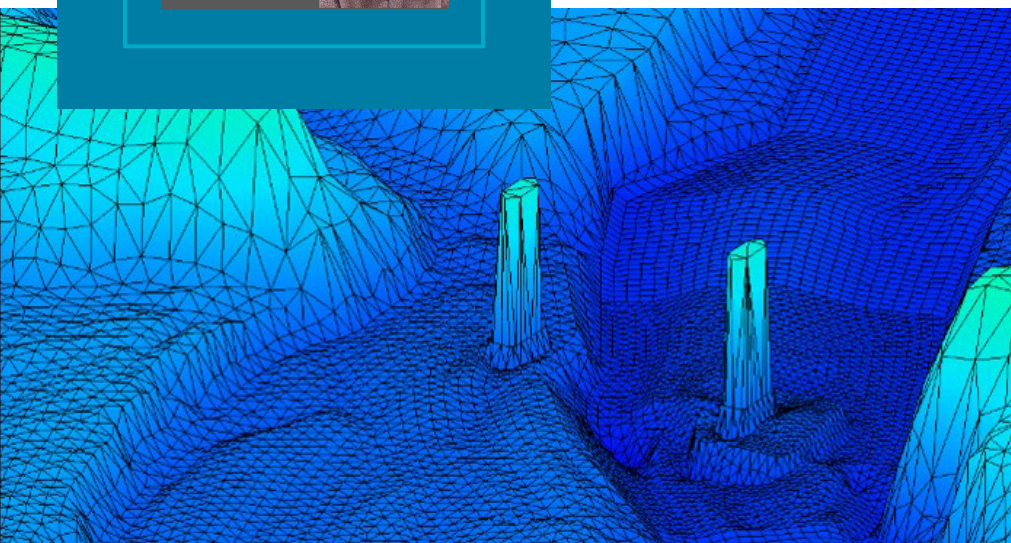
**Ahn  
Nguyen**

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## The Hydraulics & Floodplain Design section has primary responsibility for the following:

- Hydraulic analysis of existing and new bridges, including hydraulic conveyance, floodplain impacts (zero rise), bridge deck drainage and scour using various 2D (and at times 1D) hydraulic models.
- Coordinate the inventory of all hydraulic assets statewide.
- Serve as subject matter experts to the WSDOT Major Drainage, Bridge Scour and Bridge Replacement program projects.
- Serve as subject matter experts on various floodplain regulations including performing floodplain analyses for determining regulatory flood elevations for river channels and bridge openings.
- Serve on research panels as subject matter experts.
- Provide hydraulics manual training.
- Maintain and update the WSDOT Hydraulics Manual as well as the hydraulic sections of the Design Manual, Plans Preparation, Utilities Manual, Environmental Manual, Construction Manual, Design Build Manual, Standard Plans and Standard Specifications.
- InRoads/OpenRoads Support for Water Crossing Projects.
- Construction Oversight support
- Emergency Response Support
- PS&E support for water crossing projects





**Garrett Jackson**

Hydrology  
Program Manager



**Robert Humphries**

TE4



**Cygnia Rapp**

TE4



**Sam Fixler**

TE4 in  
Training



**Simon Page**

TPS4



**Vacant**

TE4 in Training

## The Hydrology section has primary responsibility for the following:

- Provides subject matter expertise in geomorphology and hydrology.
- Research to keep WSDOT at the forefront of the science.
- Conduct Watershed assessments. This includes supporting the Chronic Environmental Deficiencies Program through watershed assessment and alternatives analyses.
- Maintain and update the WSDOT Hydraulics Large Woody Materials guidelines and policy.
- Serve as subject matter experts on:
  - *Hydrology*
  - *Fluvial geomorphology*
  - *Coastal processes*
  - *Aquatic habitat restoration*
  - *Estuarine and wetland mitigation*
  - *Channel migration zones*
  - *Nature-based solutions*
- Design of habitat restoration components.
- Analysis of riverine systems using various 1D and 2D hydrodynamic and sediment transport models.



Alex  
Nguyen

Stormwater  
Program Manager



Vacant  
TE4



Olivia  
Torres-  
Stagner

TE4 in  
Training



Arjun  
KC

TE4



## The Stormwater section has primary responsibility for the following:

- Serve as subject matter experts on:
  - WSDOT's stormwater and hydraulic policies and regulations
  - Modeling of stormwater conveyance systems and stormwater Best Management Practices (BMPs)
  - WSDOT stormwater and hydraulic trainings
  - WSDOT Stormwater Retrofit program projects
  - Stormwater related issues on Design Build projects
  - WSDOT stormwater related research
- Provide final hydraulic report concurrence.
- Conduct Region hydraulic report audits.
- Develop, analyze, and implement stormwater policies in close cooperation with ESO that eventually go into the National Pollution Discharge Elimination System (NPDES) Municipal Stormwater Permit or WSDOT Highway Runoff Manual (HRM).
- Maintain and update the WSDOT HRM.
- Provide training for the WSDOT HRM.
- Maintain and update the hydraulics, hydrology, and stormwater related guidelines and policy chapters of the Hydraulics Manual.
- Maintain and update hydraulic and stormwater software including MGSFlood, StormShed3G, and WSDOT Excel Spreadsheets on the Hydraulics website.
- Technical author of the WSDOT Temporary Erosion and Sediment Control (TESC) Manual.





# Fish Passage

**Channing Syms**

Fish Passage  
Design Manager  
NWR



**Heather Pittman**

Fish Passage  
Design Manager  
OR



**Erin Pletcher**

TE4 in  
Training



**Hannah Morsch**

TE4



**Brendan Leistiko**

TE4 in  
Training



**Ryan Barkie**

TE4



## The Fish Passage Design section has primary responsibility for the following:

- Innovation and research to advance fish passage design for resilience.
- Design of Stream restorations including habitat features and geometrics such as profile, channel shape, and bed.
- Serve as the subject matter expert for WSDOT Fish Passage program projects, fish passage design Build projects, and other WSDOT specialty groups.
- Provide training for fish passage and stream restoration and inspection.
- Provide onsite technical assistance during fish passage construction and repair actions.
- Maintain and update the WSDOT Hydraulics Fish Passage Design guidelines and policy chapters of the Hydraulics Manual. Incorporate lessons learned and partnered research into design guidance.
- Provide project specific Special provisions involving fish passage or Large Wood Material related items.

