



Rehabilitating Surface Water Intake Facilities at Mountainous Streams

2018 PNWS-AWWA Section Conference



Background

Skagit PUD is a Public Utility District providing potable water service in northwest Washington State since the 1940s.

Skagit PUD's Judy Reservoir water system serves nearly 70,000 people in Skagit County.



Source Water – Skagit River



Source Water – Streams



Mountain Stream Challenges

Steep and unstable mountain terrain

Volatile stream flows

“Rain-on-Snow” storms

Debris and sediment



Mountain Stream Challenges

Access

Intake screen clogging

Sediment input to Judy Reservoir

Large debris

Gilligan Creek





Intake Screen at Gilligan Creek





01/16/2006







01/12/2009

Mundt Creek









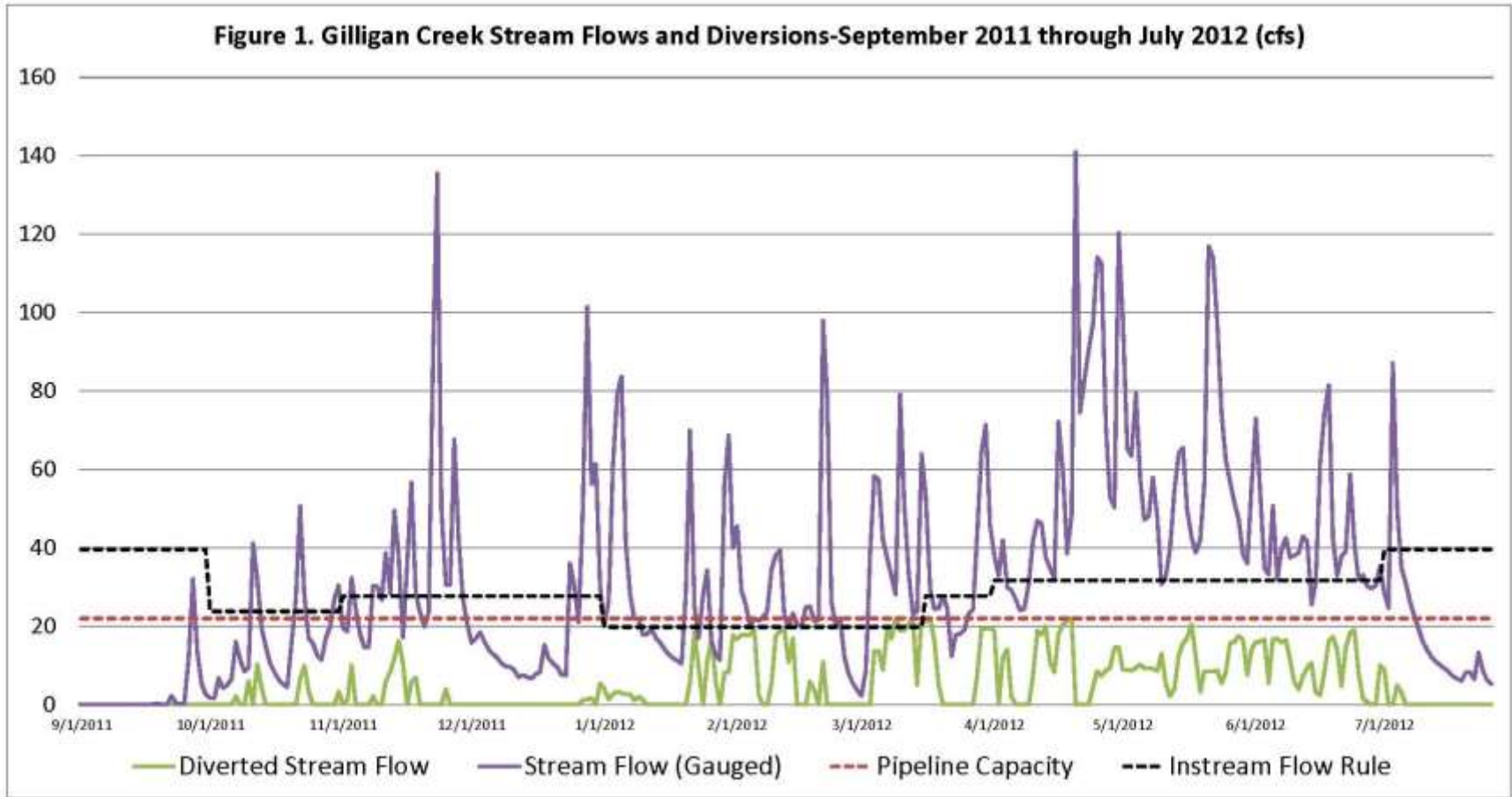
Diving into the Numbers

“Instream flow” regulations

Real-time stream gauging

Metering of diversions to Judy Reservoir

Diving into the Numbers

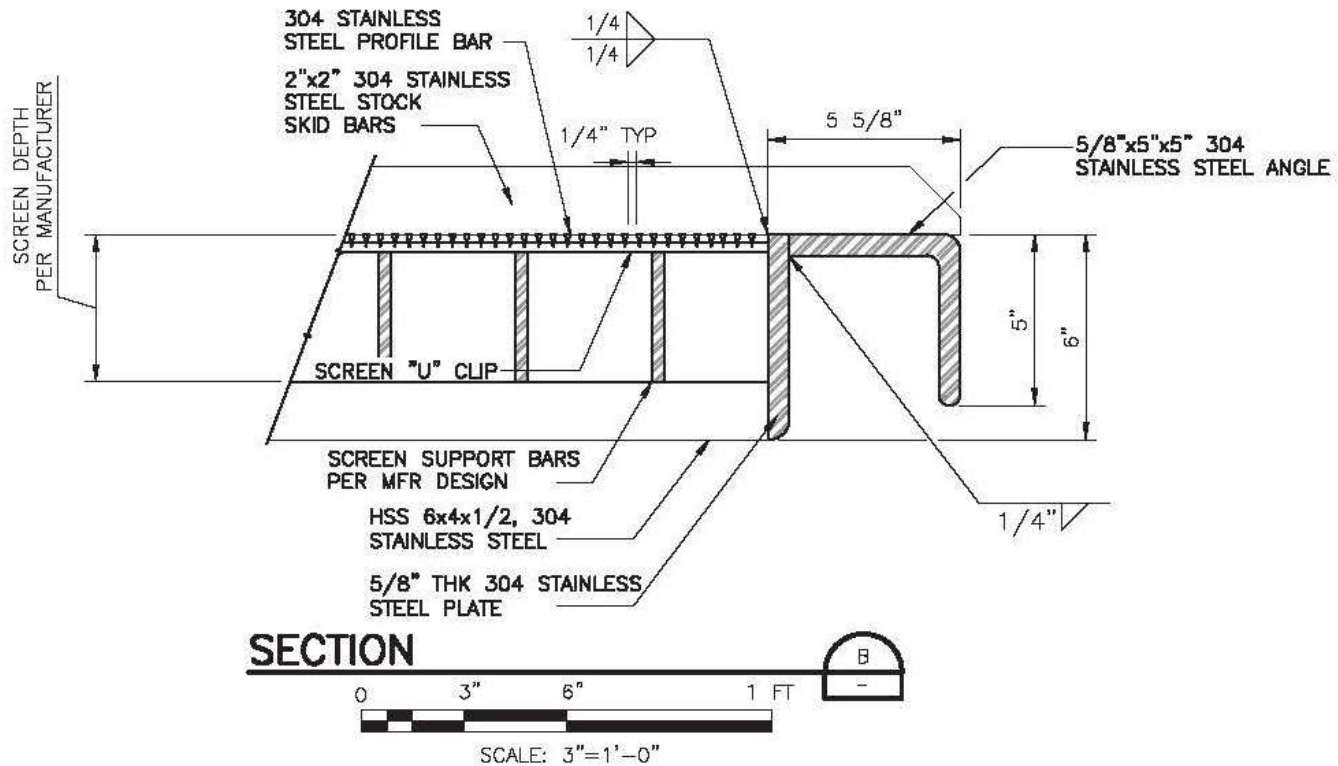


Solutions

HDR Engineering Inc. hired for design

- Address screen “blinding” from debris
- Reduce debris input to pipelines
- Minimize maintenance requirements
- Withstand large debris and storm events
- Water rights

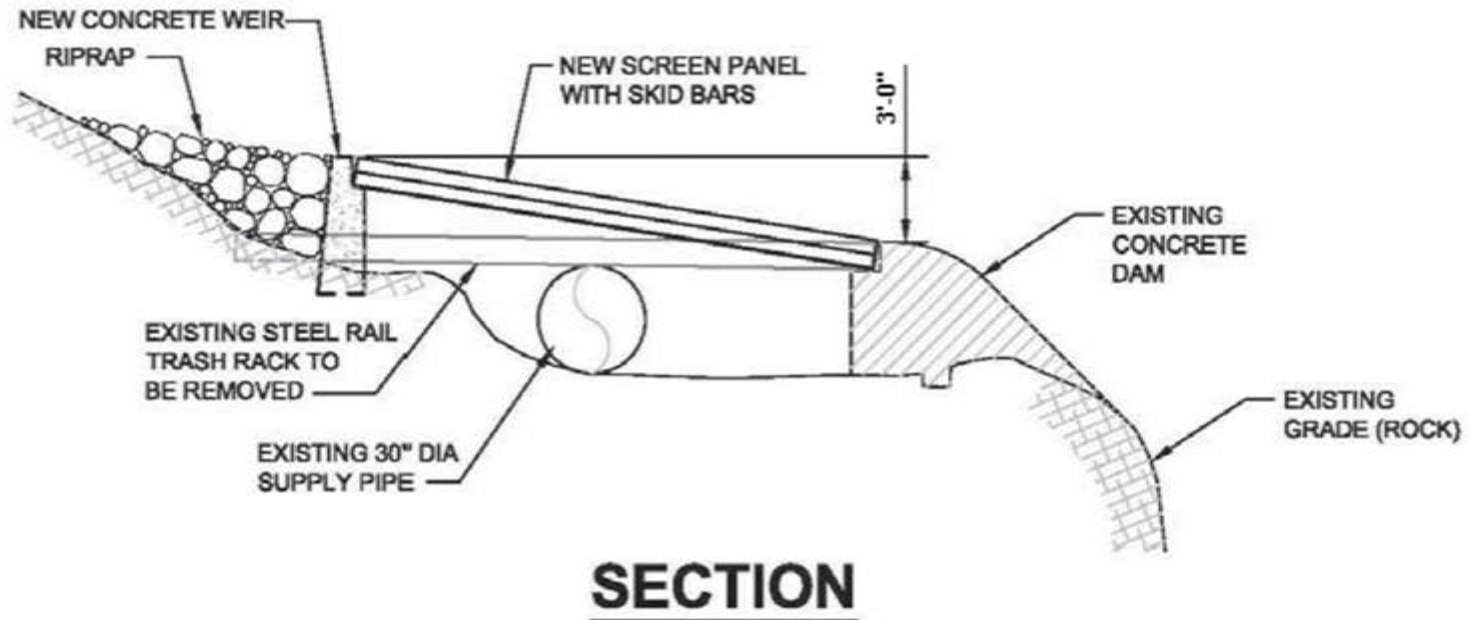
Intake Screen Concept







Gilligan Creek Concept











NESS
CRANES

NESS
CRANES

DANGER
FALLING
MATERIALS

0131560









DEMO DAY!





















Riding off into the Sunset

Improved reliability of intakes

- Increased withdrawals
- No in-season screen maintenance
 - Full flows into pipelines
- Sustaining high stream flows and storm events

www.SkagitPUD.org

Questions?

