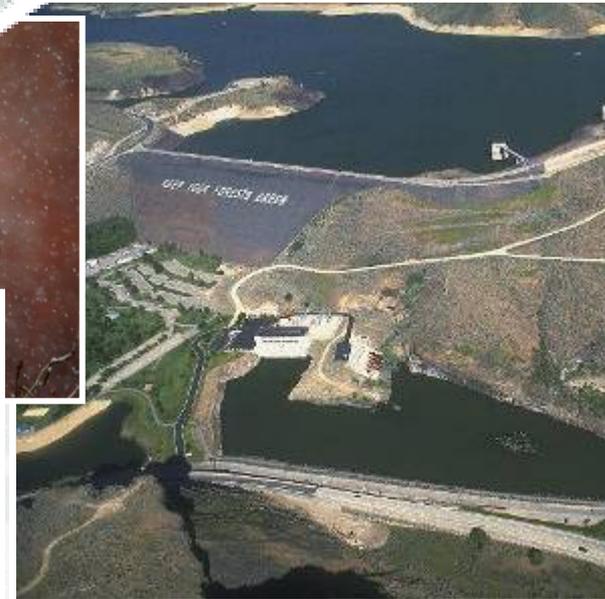


Pit Tag Antennas - Hydrofoils

Jack Sands Project Manager

Eric Hockersmith Fish Biologist

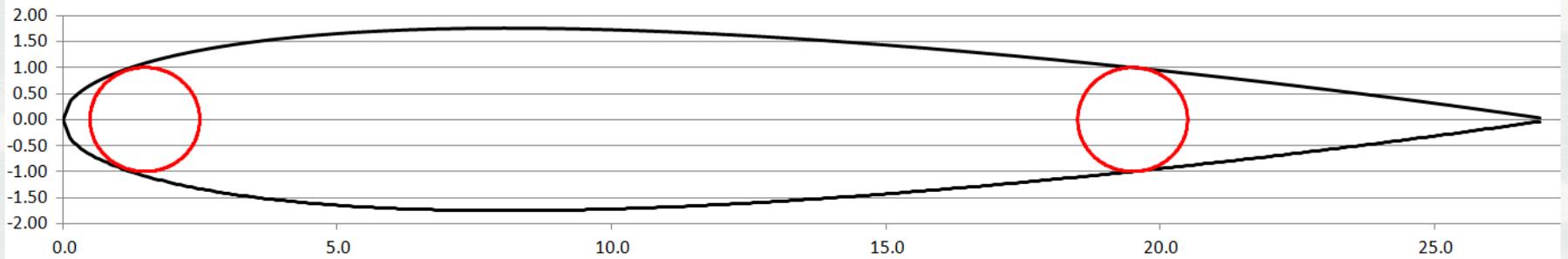
Ryan Laughery Hydraulics



®

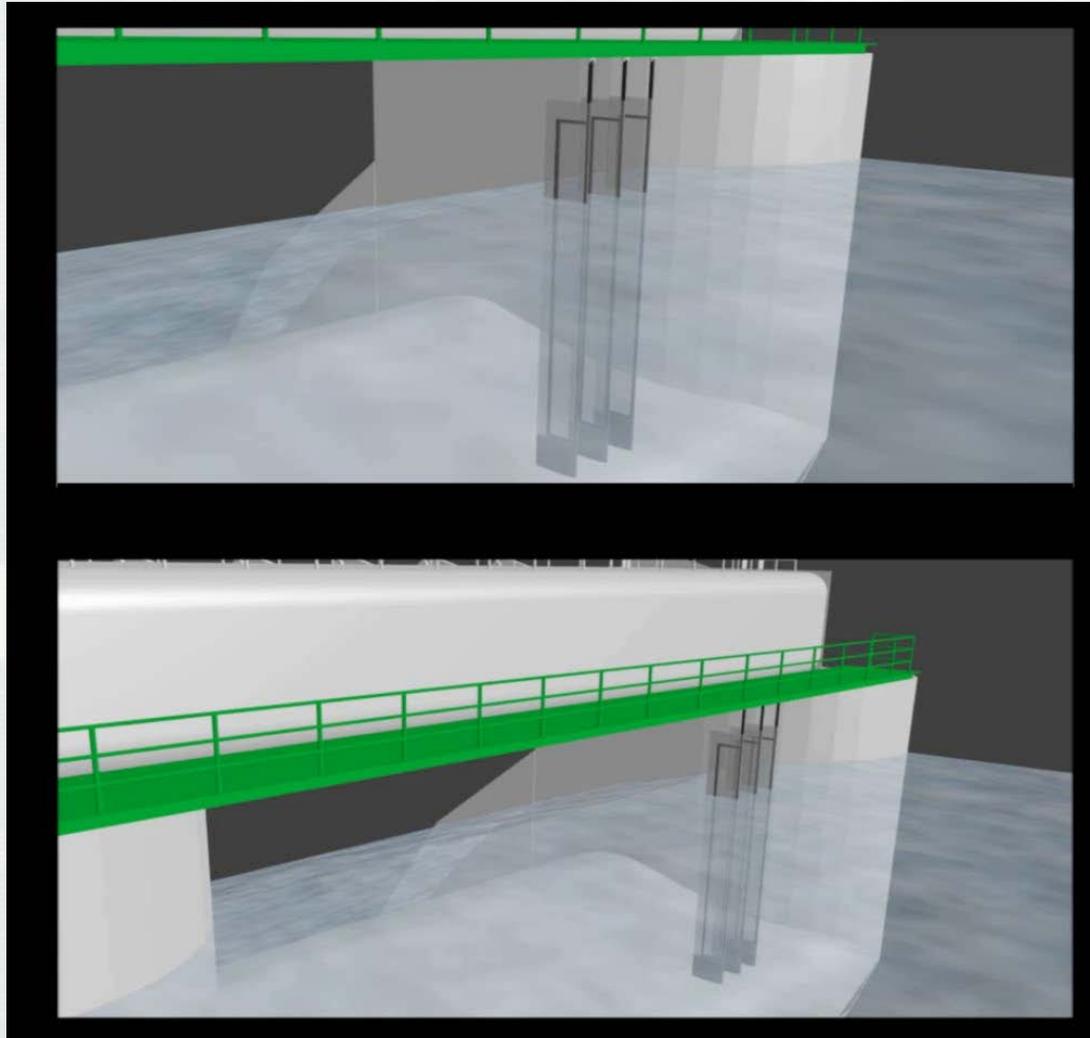
US Army Corps of Engineers
BUILDING STRONG®

The Idea



BUILDING STRONG®

The Idea



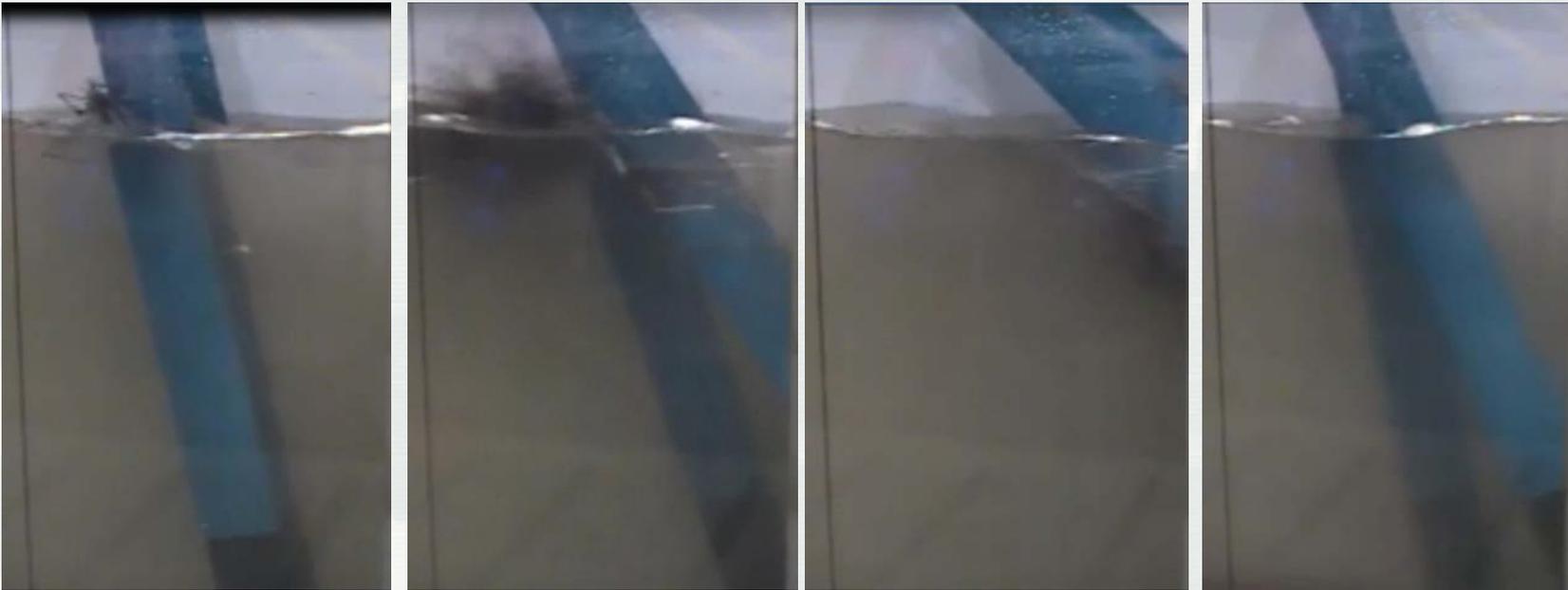
BUILDING STRONG®

1 to 5 Flume Model

- 2 Hydrofoils
- 16ft deep
- 9.6 fps



1 to 5 Model



0 Sec
Impact 1

1 Sec
Impact 2

1.5 Sec
Sliding Down

3.5
Debris Clear

Replicating 1.5 ft followed by 4ft tumbleweed spanning two hydrofoils
Needs 6 seconds to clear.



BUILDING STRONG®

1 to 5 Model



BUILDING STRONG®

1 to 5 Model - Results

- 20 to 30 times less drag than a pipe
- Minimal weight at base required
- Capable of shedding debris
- Debris interacted with walls

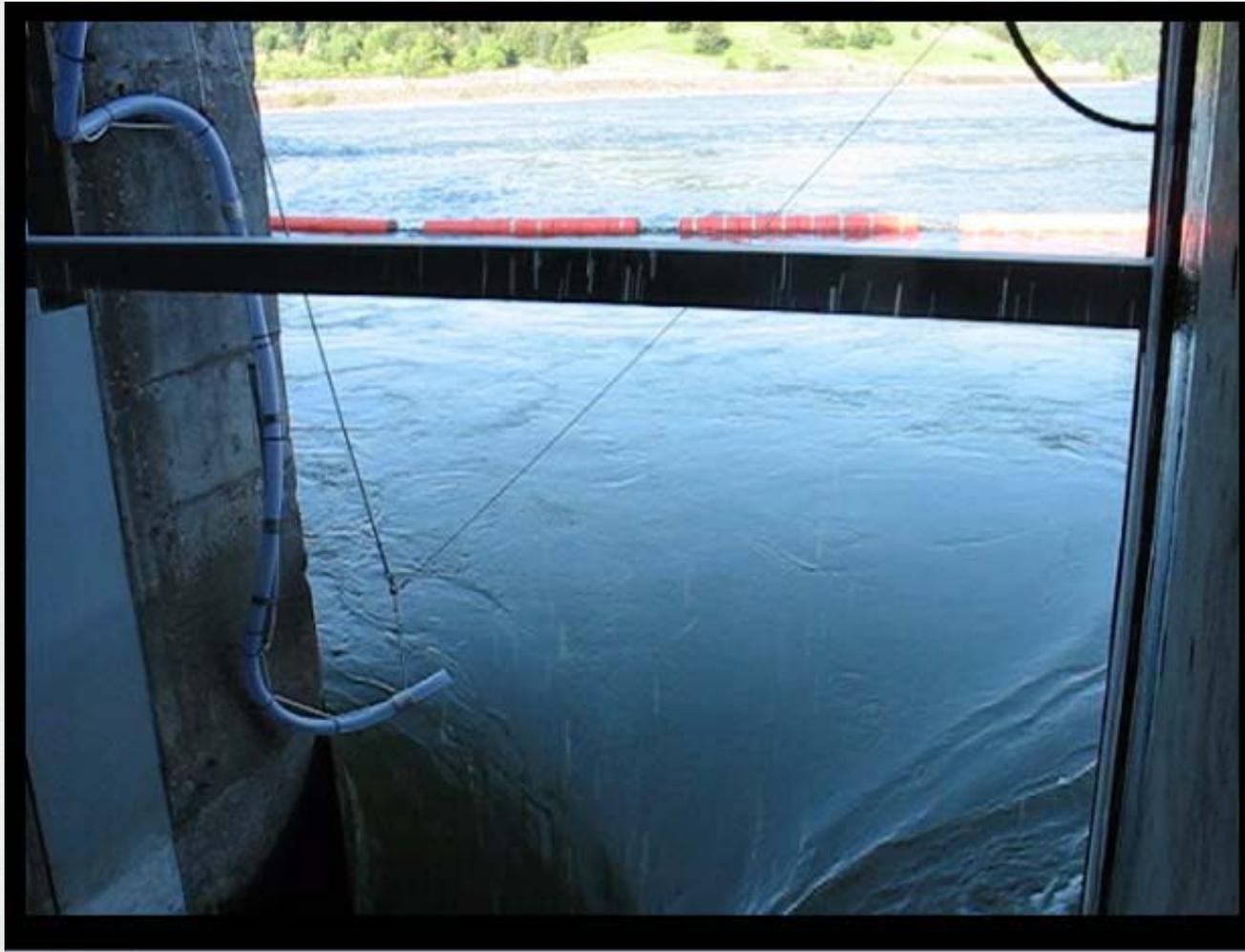


1 to 20 RSW Model

- Uses forebay of Little Goose Sectional
- Replicates Lower Granite RSW entrance
- 16 hydrofoils across entrance
- Identify debris interaction
- Quantify discharge impacts
- Determine lifting beam arrangement
- Model visit Mid to Late March



B2CC - Hydrofoils



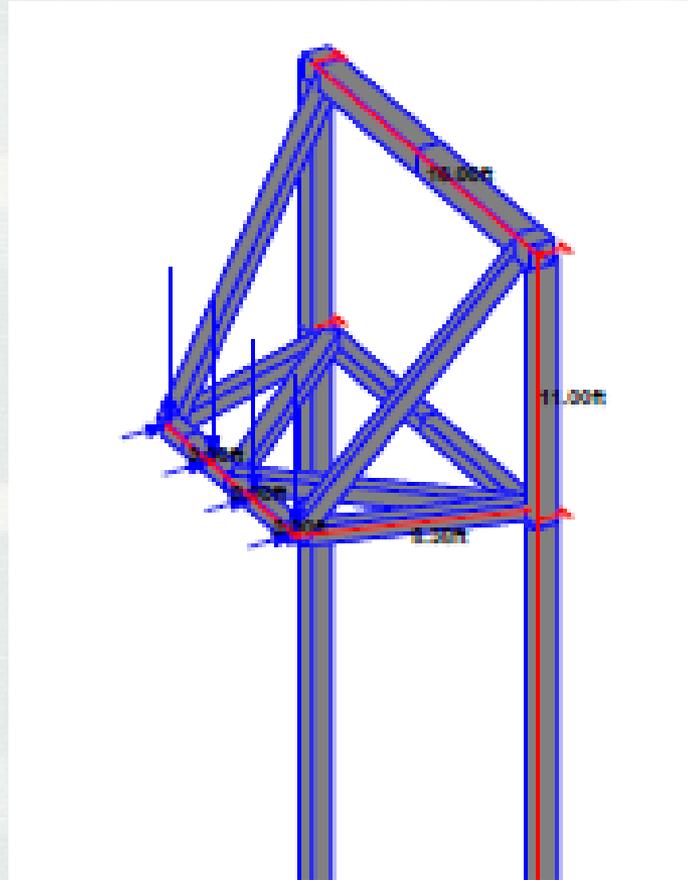
BUILDING STRONG®

B2CC - Hydrofoils



BUILDING STRONG®

B2CC - Hydrofoils



B2CC - Hydrofoils

- Higher velocities
- Aggressive flow lines
- Existing structure may support
- Project impacts still need to be identified
- Need to shut down during install (1 Day)
- Deploy by mid June if no show-stoppers



Pit Tag Antennas - Hydrofoils

- Questions?

