Water Control Structures Repair and Upgrades

Kick off meeting 9/23/14

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Preliminary reviews:

Safety review by engineer or safety expert

- On-call engineer
- Bill Jemison

Structural Review by engineer

Matt Brenan at CWS might have an idea who would be good for these reviews.

Smith and Bybee:

Trash Rack Removal

- Currently unsafe excavator operation to remove
- Ideas:
    - Mechanize removal system with mobile crane – Steve Liske idea
    - Hinges where racks open – operate more like door and would not be removed

Tide Gates:

- Need two way tide gates vs. one way
- Leaks around edges – replacement?

Box culverts/concrete weirs

- Traps animals due to water leakage
- Some hold water and trap fish, luring birds into the structure which then become trapped
- Ideas:
    - Notch them to release trapped water
    - Ramps for animals

Catwalk/grates:

- Not enough coverage/unsafe
- However, may be necessary to prevent trapping animals/people below

Water release mechanism/removal issues:

- Top down removal time consuming and difficult

- Can this become bottom up where we could utilize a rising gate with a wheel?
- Will need fish passage review and to coordinate with ODFW since they set restrictions

Fish passage bay escape route:

- Rusted and needs replacing

Confirm elevation for overflow

Multnomah Channel South:

Tide gates

- Ability to lock gates ~~down~~closed
- Damaged screw wheel – replace with larger wheel (NM would like lighter aluminum wheel)

Downstream angled Trash racks

- Door and latch missing allows debris in (,but not much. If replced, the new doors should be easy to open, in case needed as emergency exit from inside culvert, and to facilitate relatively easy access for routine culvert inspection/clean out.)

Upstream riser Trash racks

- These need to be checked for safety and structural quality (one of these was removed from the north WCS last year)

East and West Bay

- Stop logs too heavy to conveniently/safely remove (though infrequent it does happen from time to time) To reiterate, the way the structures are now managed, removal of the large stoplogs are not planned for any reason. In fact, they should probably be unmanipulated to allow the gaps between the logs to close up with material. That said,
- Ideas:
    - Mechanize system with screw gate (are we talking the reverse tide gate raising and lowering?)
    - Replace large boards with smaller boards – would have to reduce channels and vet with an engineer!!!
    - Replace with non- removable parts. Even though the stoplogs are not scheduled for manipulation, I would be opposed to replacing them with something like a large steel plate that reduced options for removing individual boards. We want to promote ease of management without removing management options, because our management has changed over time as we have learned more about the system, and identified different management goals.

Upstream boom ~~needed~~desired. Ideally, the boom/cable system would be anchored by posts embedded in thr ground rather than attached to trees. The boom should be angled to direct debris to one shore and clean out area. The clean out area should be engineered to perhaps allow for a nearby tractor/truck/mule with winch to haul out large material.

Multnomah Channel North:

Trash Racks
One was removed last year. Need to check and anchor.

Tide gates

- Ability to lock ~~down~~ closed tide gates
- Undersized and difficult to turn wheels

Upstream boom needed

General:

Need some sort of security for boards

Possibly standardize board materials across all WCS – t & g of standard size