

10/24/2024

Technical Team Meeting

Panelists: (in order of how we introduced ourselves)

Christer LaBrecque, Tillamook Estuaries Partnership (TEP)

Noel Bacheller, Natural Resource Specialist, Oregon Parks and Recreation Dept. (OPRD)

Jason Elkins, Park Manager, OPRD

Hunter White, Civil and Water Resources Engineer, Environmental Science Associates (ESA)

Tim Laws, Wildlife Biologist, Confederated Tribe of Siletz Indians (CTSI)

York Johnson, North Coast Coordinator, Dept. of Environmental Quality / TEP

Justin Parker, North Coast District Manager, OPRD

Jennifer Jones, NOAA Restoration Center

Dennis Comfort, Coastal Region Director, OPRD

Celeste Lebo, Partners for Fish & Wildlife Program, US Fish & Wildlife Services

Liz Ransom, Director, Salmon Superhighway (SSH) / Trout Unlimited (TU)

Steven Johnson, Tech Support, ESA

Luke Johnson, Watershed Ecologist and Permitting Specialists, ESA

Michael Sinnott, Assistant District Fish Biologist, Oregon Fish & Wildlife Department (OPRD)

Chris Laity, Director / County Engineer, Tillamook County Public Works (TCPW)

Adriana Morales, District Fisheries Biologist, US Forest Service (USFS)

Sarah Kaufman, Assistant Wildlife Biologist, USFS

Claire Feigener, Coastal Habitat Project Coordinator, Dept. of Land Conservation & Development

Jasper Lind, TCPW

Meg Reed, Coastal Policy Specialist, DLCD

NOTES:

Noel Bacheller, OPRD, presents the first set of slides.

- 2014 purchase of the property; goes over the timeline of the project; 2020 TEP takes over project management, fundraising, etc.
- Description of the dike, park boundaries, etc.
- Slides and description of dilapidated tide gate structure. Current tide gate is failing, and tide gate flap is completely non-functional. Water enters the marsh through the tide gate box culvert as if there were no flap there.
- Pointed out Reneke and Beltz streams and the road crossing locations, including “east marsh”
- Dike is undersized and low point is only 12.2 feet, which is also the height of the highest recorded tide in Sand Lake Estuary; existing dike would not handle the long-term impacts of sea level rise
- The speed at which the tides move through the undersized culvert is way too fast to enable juvenile fish passage, even without storm events. Extreme water velocity “fire hose” is causing erosion of the dike around the inside of the tide gate.
- We've had meetings with adjacent landowners and ongoing email collaboration with Tierra del Mar Community Association and other interested landowners. This, of course, is on top of relationships that have been in place with this tech team; some of these conversations have been in progress for about ten years.
- Touched on the options that have been analyzed
 1. No action. This would mean the existing dike will fail at some point because of the combination of sea level rise and erosion around the tide gate. The existing dike in its current condition is the worst-case scenario for water retention in and around the southern boundary at Tierra Del Mar. In terms of pros and cons, there really are no pros for this scenario. This option does not meet OPRD's state goals.
 2. Dike breach. This scenario is a “bookend” reference that would not be in line with one of our project goals, which is to not do anything that increases risk to the Tierra del Mar Community. This alternative has the highest estuary restoration value, but it would allow more tidal water to enter private property more often and therefore does not meet OPRD stated project goals.
 3. Install muted tidal regulator into the existing dike. This scenario only offers moderate habitat and fish passage benefit, but would not have capacity for the effects of sea level rise, would be expensive, and would not meet modern flood control design standards.
 4. **New setback dike with modern tide gate.** This is the **preferred option** chosen by OPRD in 2020 using the careful groundwater and surface water analysis from

2017-2019 as well as review and discussion from the series of meetings with stakeholders, tech team, and county leadership done in 2019 and early 2020.

- A setback dike in the southern portion of the marsh would allow unfettered fish passage to both Beltz Creek and Reneke Creek, and would allow for rearing habitat and marsh habitat enhancement in general. It would also mean that a pedestrian bridge or boardwalk would be installed to re-establish access for recreationists.
 - The setback dike option would allow the marsh elevation north of the setback dike to potentially keep pace with sea level rise because of the sediment accumulation that can happen when tides are allowed to naturally flow. It's also less erosive than something that would have a small aperture and higher water velocity like a much narrower modern tide gate in the existing dike.
 - The TDM tide and stormwater management benefits are probably best of anything that's been considered.
 - The cons of a setback dike, on the other hand, would be that it would be constructed through high value wetland. The footprint of the setback dike would be about 1.5 acres, and the muted tidal gate structure in the setback dike itself would require some maintenance. Expensive.
- Dike breach with new setback dike option with as it relates to tide and stormwater patterns compared to other alternatives. (appx. 13:30-minute mark)
 - Surface water patterns were modeled for each scenario. The preferred option mitigates the old dike's current water retention issues. The setback dike option would limit tidal exchange in the area south of the setback dike, enable efficient drainage of water behind the setback dike, and minimize the duration of the water retention in and adjacent to Tierra del Mar.
 - As part of the 2022 and 2023 assessment work, ESA also assessed the rainwater pooling situation in Tierra del Mar, including low areas that accumulate water and the inadequacy of roadside ditches and drainage that would allow for efficient drainage of the neighborhood's low points.
 - Video shared showing tide and stormwater patterns for dike modification scenarios (appx. 15-minute point); shows surface water models for different scenarios, including a 100-year storm event at the same time as a king tide.
 - OPRD sideboards and goals
 - The design should result in virtually no increase in tide water, stormwater, or elevated groundwater on private properties in Tierra Del Mar.
 - The design should result in meaningful improvements to estuary and fish habitats in the area inside the existing dike.
 - The design should restore fish passage to the mouths of Reneke and Beltz Creeks.
 - Recreational access across the marsh should allow visitors to see the marsh up close, reach the beach, and enjoy the diverse coastal environments in between.
 - The design should route Reneke Creek to the marsh naturally, rather than in an artificially constructed and channelized path near the parking area (that would enter the

marsh on private property to the north), or along the roadside Sand Lake Road ditch to the south

- Since 2022 TEP has received grants and hired ESA to continue analysis to find out the best location for the dike and proceed with design through the 30, 60, 90, and 100% phases.
- The project will restore natural hydrology to approximately 70 acres of tidal marsh that were cut off from the estuary by construction of the old dike, while also allowing for community protection and mitigating the impacts of sea level rise
- We will also gain 5.6 acres of rewetted estuary relative to existing conditions as a result of increased tidal reach in the “bathtub ring” edges of the marsh north of the setback dike and south of the old dike.

Hunter White’s slide deck begins: (Appx. 28-minute mark)

- Summarized the evaluation of alternatives and the preferred option of the new setback dike with a modern tide gate
- We evaluated the drainage structure and tide gate system that would be involved in the setback dike to again prevent peak tides from reaching the private properties in Tierra del Mar, but also having enough storage capacity to contain the storm water and lower water levels that are currently experienced under the existing condition.”
- Other tidal enhancements would likely also be involved, such as filling in linear drainage ditches, re-contouring of the main channel, and adding large woody debris to the marsh
- Currently using a placeholder of a 200’ span for new pedestrian bridge to make sure there are no trade-offs in hydraulic performance, erodibility, or for the site to manage sediment. Further analysis may allow for reducing this span if cost, constructability, and other considerations that will be evaluated in coming phases of work show that to be a workable solution.
- There may be a reason to pursue the boardwalk option if the permitting agencies decide that the wetland fill we’re going to do for the new dike must equal the “cut” we make in the existing dike
- Tides in Sand Lake Estuary never fall below 5’, which is important to understand how the dike breach channel would evolve over time and to what elevation it should be excavated. The scour holes upstream and downstream of the existing tide gate provide some indication of channel deepening that would result from relocating the site’s inflow/outflow to the new breach location, but the existing tide gate is much more constricted than the new breach would be. ; this design refinement is coming in the next phase of design
- The beaver that are active on site will have more than 10 acres of primarily freshwater wetland
- Beaver exclusion fencing and/or flow devices will likely need to be installed on either side of the new muted tidal regulator to prevent blockages
- We are working with permitting agencies to enable us to utilize specialized drilling rigs to collect borings that will inform the geotechnical analysis by subconsultant Shannon & Wilson. ; We propose a 2-phase Geotech investigation with Phase 1 including borings on existing roadways and dike to inform design of the new bridge/culvert structures and Phase 2 including borings along the setback dike alignment in the marsh.
- Hunter describes the beaver exclusion areas in more detail; also explains how the 36” backup culverts on either side would drain water when it reaches the 10’ level mark, ensuring drainage of the freshwater marsh behind the setback dike in the event of blockage of the main drainage structure

- Construction estimates for the marsh restoration are about \$6.6 million; new muted tidal regulator is \$700k on its own; new bridge structure could be approximately \$1M but we will be working to refine the bridge design and cost in the upcoming phase of work.

Chris Laity, TCPW (46-minute mark)

- US Federal Highways grant to fund Reneke Creek crossing construction; TCPW has already paid ESA to do the 30% design work; 100% design of Reneke to be covered by TEP grant, as well as 30% design on Beltz and No Name Creeks.
- He explains how Reneke has changed course due to human changes made to the landscape and is now in a perilous spot with the creek making a 90-degree turn at the road, causing the stream to flow into the roadside ditch, where it again makes a 90-degree turn to flow under Sandlake Rd. (proven through a series of historical aerial images)
- TCPW knew when they recently re-paved Sandlake Rd. that a segment would end up having to be re-paved after bridge(s) are installed
- Will require a 3' raise of the road; bridge would be ~49' in span; 775' of length of road; 28' width so that no road closures will be needed associated with the Reneke or other crossings under Sandlake Rd.
- Exact details will shake out as design progresses past 30%

Hunter White, ESA (51-minute mark)

- Describes the geomorphic rationale for realigning Reneke Creek and locating the new bridge crossing at the topographic low point of the area and current low point of the roadway, including how we will realign Reneke Creek to its more natural state when it used to meander through forested wetland; there is still a remnant forested area including swales and channels that currently convey floodwater and emerging ground water towards the existing low point and culvert crossing.

Permitting Status and pathway (Luke, ESA)

- Section 404 of the Clean Water Act requires fill/removal permit w/ both US Army Corps of Engineers (USACE) and Dept. of State Lands (DSL)
- Tillamook County Floodplain Development Permit will be required; we are as of yet unsure of the pathway to our County permits because FEMA has an updated Biological Opinion that could affect the County permits
- Section 106 /cultural resource protection through the State Historic Preservation Office (SHPO)
- ODFW has to sign off on our fish passage plans and fish salvage operations during construction
- DLCDC will do an Oregon coastal management review
- Just getting the pre-application meetings going with Federal, State, and County Planning

Funding and fundraising (from Christer, TEP)

- (2022) TEP used an Oregon Watershed Enhancement Board (OWEB) grant to move through the initial design to 30%

- (2024) TEP secured \$1.4 million from the NOAA Fisheries program to bring the design to 100%, assist with permitting, and drawings and specs, and bid documents
- (2024-25) DLCD/TEP will be applying for \$6 million from the NOAA FY24 Bipartisan Infrastructure Law Coastal Zone Management Habitat Protection and Restoration Competition. This funding would pay for most of the restoration, excluding construction of Beltz and No-name/east marsh.
- TCPW has applied for funding through the Federal Highways Culverts Program that would deal with the Reneke Creek crossing, which is the location of flooding on the roadway multiple times per year