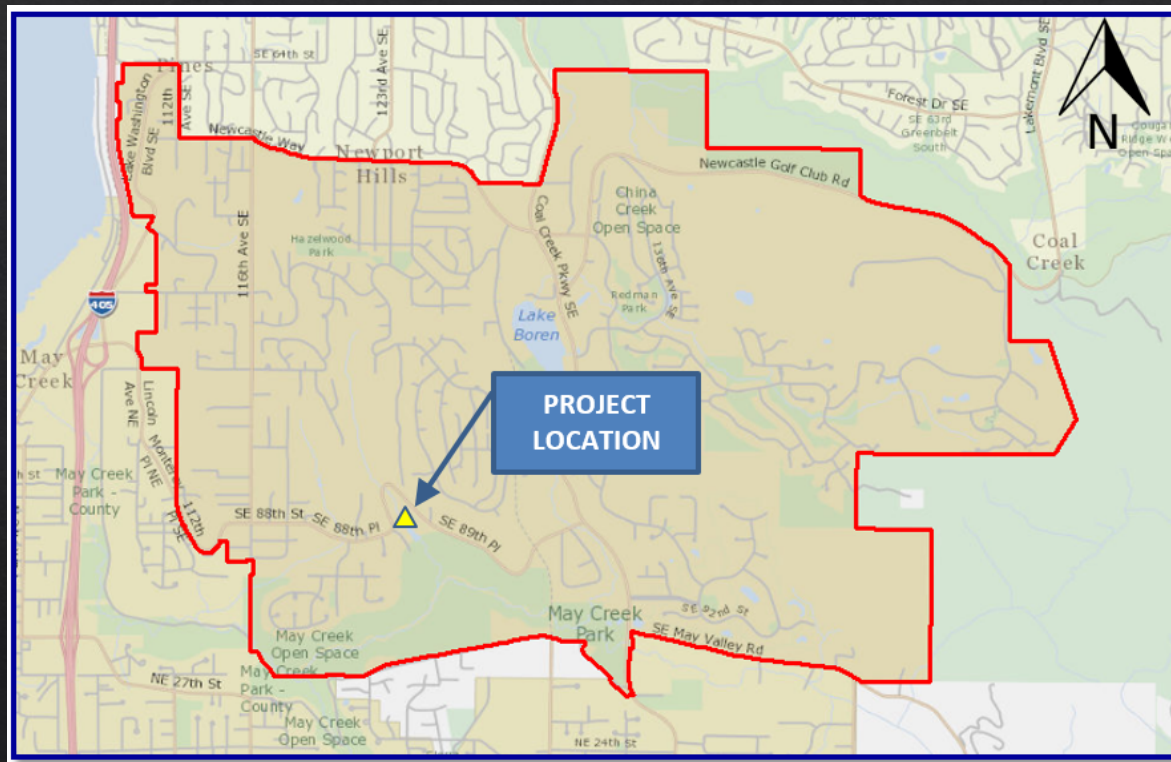


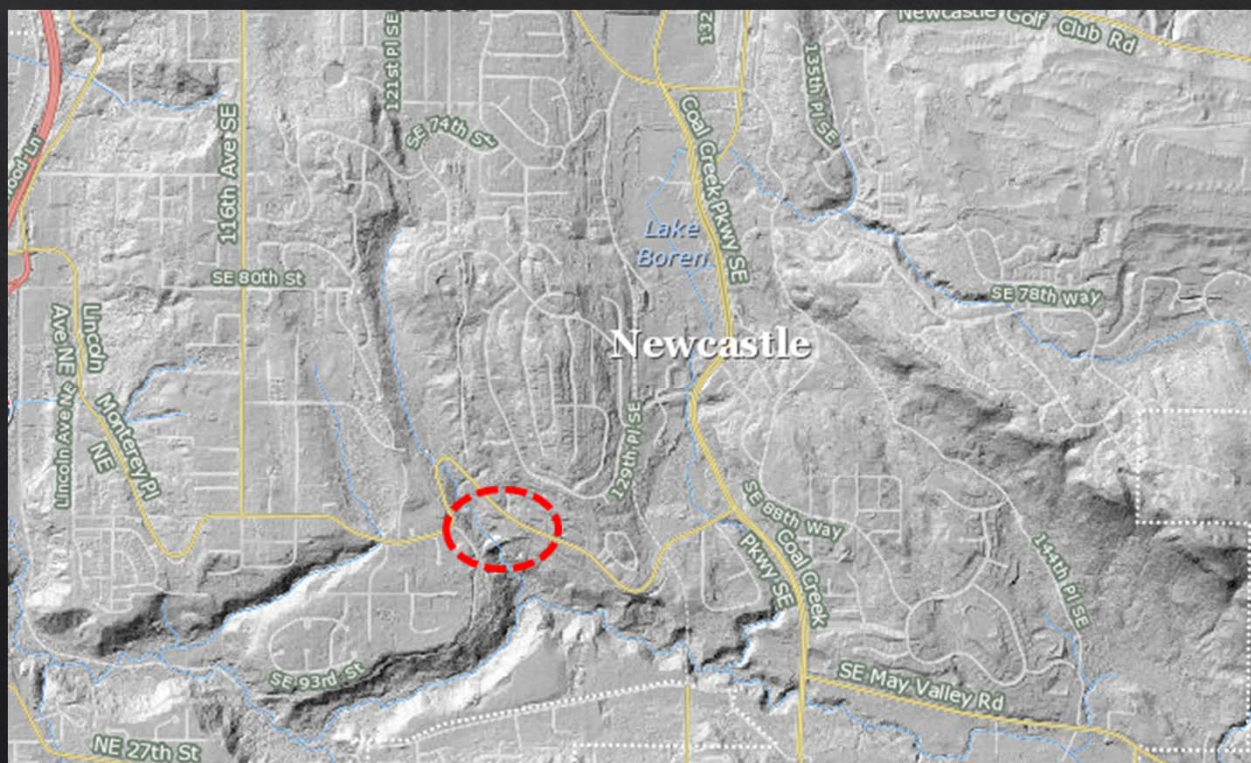


# S-017 Newcastle Railroad Embankment Project



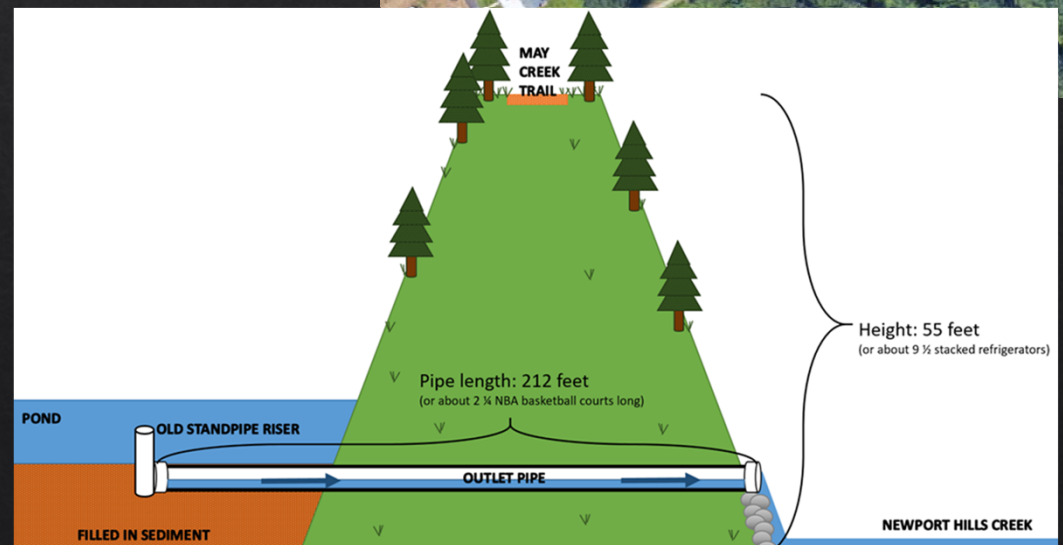
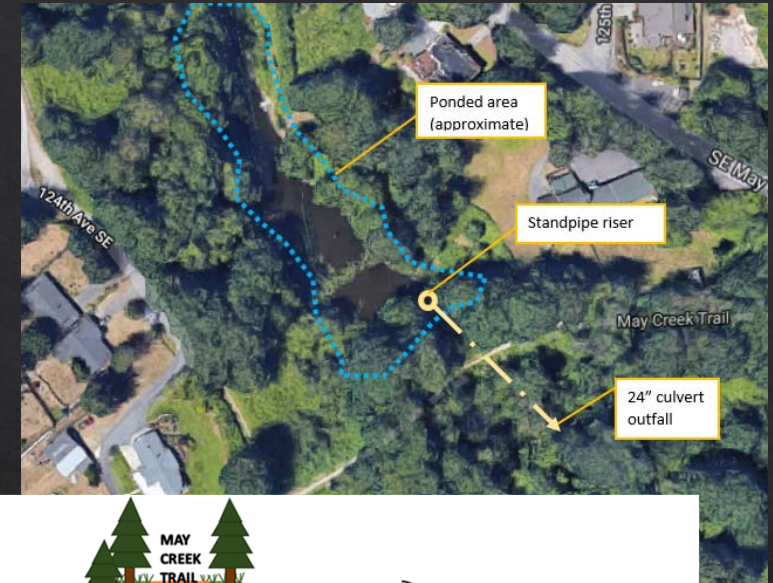
# S-017 Background

The Newcastle Railroad Embankment was constructed as part of the railroad line which transported coal from Newcastle to Seattle during the 19th and early 20th centuries. Although the City does not have any construction records, the embankment is a railroad trestle that was filled in during the coal mining era.



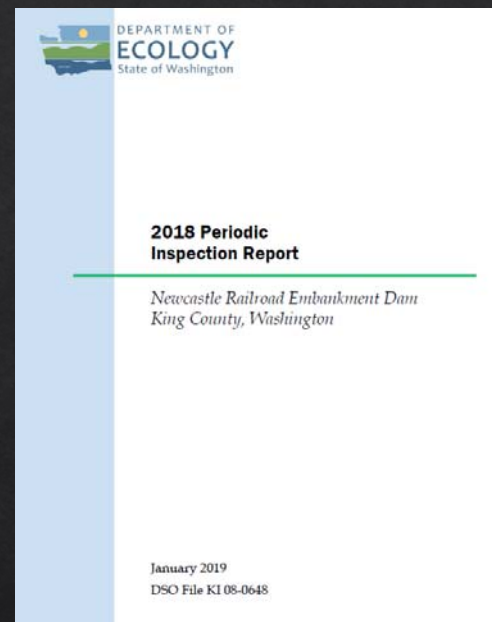
# Railroad Embankment Details

- ◆ The embankment is 55 feet tall and 150 feet long. May Creek Trail is located on top of the embankment.
- ◆ Newport Hills Creek flows under the embankment in a long culvert. A vertical pipe, called a standpipe, was attached to the upstream end of the culvert at least 50 years ago, creating a pond.
- ◆ The Railroad Embankment is considered a High Hazard Dam, based on its size and condition.
- ◆ At the top of the embankment (at dam crest), the dam holds 120 acre-feet of water (the equivalent to 60 Olympic sized swimming pools).



# Issues with the Railroad Embankment

- ◆ In 2018, the riser began to exhibit operational issues and the outlet of the dam was only flowing intermittently.



- ◆ The Railroad Embankment was also given a Poor Condition rating by the Washington Department of Ecology Dam Safety Office.

# Rising storm waters

- ◇ During the December 2019 and February 2020 storm events, the riser was not flowing at all.
- ◇ Water level rose 15' in a few days, sinkholes developed at the dam crest.

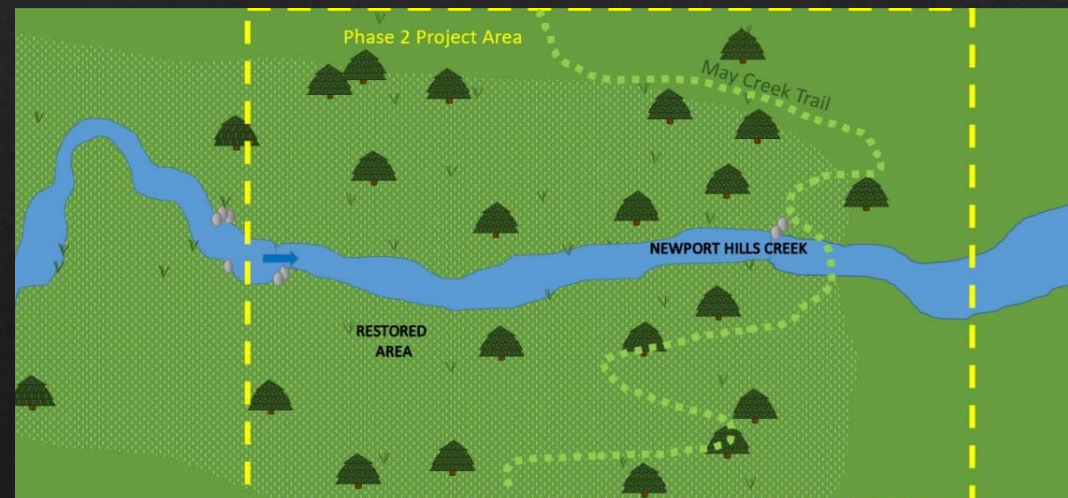


- ◇ 3 pumps running 24 hours/day could not keep up with rising water levels.



# S-017 Project Planning

- ◆ The City evaluated options for the embankment and has been working with numerous regulatory agencies and stakeholders.
- ◆ To reduce flood hazard at the embankment, the City determined that the project would consist of 2 phases:
  - ◆ Phase 1: Removing or replacing the riser
  - ◆ Phase 2: Removing part or the entire embankment
- ◆ Project goals:
  - ◆ Reduce or eliminate flood hazard and environmental damage from a dam breach/failure
  - ◆ Remove the embankment from the DSO inventory of high hazard dams
  - ◆ Restore fish passage to Newport Hills Creek



# Phase 1A Construction: September 2020



# Phase 1A Construction: Old Riser





# S-017 Phase 1A: Completion

- ◇ Completed October 2020
- ◇ Design Engineers: Osborn Consulting, Inc.
- ◇ Survey: Axis Survey
- ◇ Geotech: ZipperGeo
- ◇ Contractor: Nordvind Company, LLC



# S-017 Project Planning

## ◇ Completed in 2020:

- ◇ Phase 1 and 1A Design
- ◇ Phase 1A permitting
- ◇ Phase 1 construction
- ◇ Phase 2 Survey work
- ◇ Phase 2 Geotechnical evaluation (including 2 borings)
- ◇ Phase 2 Wetland assessment
- ◇ Phase 2 Permitting support
- ◇ Phase 2 Archaeological assessment
- ◇ Alternatives Analysis (December 2020)
- ◇ 30% design for Phase 2 (December 2020)

## ◇ Next steps:

- ◇ 2020
  - ◇ Final Alternatives Analysis
  - ◇ 30% design completion of selected alternative
  - ◇ Phase 2 permit submittal
- ◇ 2021
  - ◇ Phase 2 PS&E 100% completion
  - ◇ Phase 2 permit support
- ◇ 2022 – 2023
  - ◇ Phase 2 permit support
  - ◇ Possible trail relocation
- ◇ 2024
  - ◇ Phase 2 construction

# Thank you to our funding partners

## Alternatives Analysis, Phase 1 Design, Phase 2 30% Design

Washington State Department of Ecology, Dam Safety Office

King County Office of Emergency Management

Department of Homeland Security, Federal Emergency Management Agency

## Phase 2 Design

King County Flood Control District

Washington State Department of Ecology, Dam Safety Office

King County Office of Emergency Management

Department of Homeland Security, Federal Emergency Management Agency