

# ATTACHMENT 1

## April 19, 2021 Wilsonville City Council Work Session

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### Project Background:

The proposed “Boeckman Dip” project will upgrade a section of Boeckman Road that was constructed in the 1960s according to USGS mapping records. At that time the road was straightened from its previous switchback alignment, and a large corrugated metal pipe (CMP) culvert was installed to convey creek flows.

Boeckman Road, one of three east-west cross-town arterials in Wilsonville, serves an important role in the City’s transportation system; becoming even more important as the Frog Pond neighborhoods build out. The project, included in the Wilsonville Transportation Plan (TSP) as Project UU-01, will upgrade the existing steep and narrow rural roadway alignment to urban standards, and assumes a bridge would be used to achieve project goals. The project will provide safe bicycle and pedestrian facilities that connect residential neighborhoods, jobs, schools, and commercial land uses. The alignment will improve sight distances through the area, particularly at the Canyon Creek Road intersection, which will be signalized in the near future, and remove the barrier that the steep road creates for bicycles. The project will also provide for wildlife passage under Boeckman Road.

The TSP also includes the Boeckman Creek Trail (Projects RT 01A, 01B, and 07), a north-south trail through east Wilsonville that follows Boeckman Creek and will ultimately extend all the way from the Frog Pond neighborhoods to Memorial Park. The Boeckman Dip project work scope has to date assumed the existing access/maintenance road north of Boeckman Road will remain but will be relocated to the east. Staff recommends the project also address how a future Boeckman Creek Trail alignment can best be accommodated within the project reach.



Project Location

Over time, the Boeckman Creek basin was significantly altered not only by urban development within the basin but possibly more importantly by modifications to its natural basin boundaries. Substantial drainage areas were added and out-of-basin flows were diverted to the Boeckman Creek basin. These areas are north and west of Boeckman Road including Mentor Graphics up to and including Argyle Square.

Designed to address and manage these out of basin flows in order to protect against flooding and the overall integrity of Boeckman Creek, the main creek culvert is enhanced with flow control infrastructure as illustrated in the photos below. These include a benched embankment on the north (upstream) side of the Boeckman Road with an emergency overflow culvert; a main culvert and flow control structure at the creek level; and an inundation easement. Comparative elevations are:

Boeckman Road surface at low point: elevation = 176+/- feet

Upper bench and emergency overflow culvert: elevation = 154+/- feet

Main culvert near base of flow control structure: elevation = 140+/- feet



Main Large Corrugated Metal Pipe (CMP) Culvert conveys creek flows under the Road



North to South View from Boeckman Creek up to Boeckman Road – Shows flow control structure for culvert and creek level, upper bench and road (see car)



Emergency Overflow Culvert (42"x66" CMP - Corrugated Metal Pipe) Located on Upper Bench



Profile from Road to Upper Bench



Upper Bench Looking Down at Creek and Flow Control Structure

**Preliminary engineering work completed to develop the project scope, include:**

- The OBEC Consulting Engineers (OBEC) **May 2014 “Boeckman Dip Planning Design Narrative for Frog Pond Master Plan”** that explored alignments and developed costs for two bridge options; “Option A” – a 305-foot long with a 6 percent maximum grade and “Option B” – a 432-foot long bridge with a 3.5 percent maximum grade. Both assumed full road closure during construction and removing the roadway embankment fill down to the upper level bench and emergency overflow culvert.
- The DOWL (formerly OBEC) **December 2019 “Boeckman Dip Alternative Analysis Memorandum”** that explored costs, permitting, and right-of-way implications for three construction detour alternatives and updated the full road closure. The “Option A” bridge is lengthened to 380 feet for all alternatives to preserve a significant tree at 7550 Boeckman Road. This memorandum also took a preliminary look at a bridge option where existing embankment would be removed to allow for the main culvert removal.

The memo concluded the full road closure remained the preferred option based on cost, contractor constructability, construction duration, tree removal, and environmental impacts; but that Alternative 1 (the north-side temporary road detour) was preferred (based on the same criteria) over the two others evaluated should the City rule out the full road closure. It was also determined that the road would need to closed for a duration of time in any scenario.

- DKS Associates **June 2019 “Wilsonville Boeckman Road Dip Detour – Traffic Study”** that evaluated the effect a full road closure and the associated traffic diversion would have on the rest of the transportation system and concluded that impacts to the majority of the study intersections are minor and can support the temporary diversion of PM peak hour traffic volumes from Boeckman Road with the exception of the Stafford Road/65th Avenue/Elligsen Road. This location fails under existing (2019) conditions as well as with full closure detour conditions. A temporary traffic signal to relieve congestion at these intersections would help mitigate the impacts of the Boeckman Road closure. These intersection are under both Clackamas County and Washington County jurisdiction and the signal requires their approval. Staff is currently working with both agencies to advance a temporary signal design.
- The preliminary tree inventory covered trees greater than 6 inches in diameter in an area 70 feet north of Boeckman Road on the west side of the dip. It found 7± Oregon Oak trees, 6± Douglas-Fir, 10± Big Leaf Maple, 10± Red Cedar, 1± Pine, and 20± Red Alder. Most of the trees, with only a few exceptions, located within this area were in relatively good condition.
- Pacific Habitat Services, Inc (PHS) **March 2020 “Fish Passage Assessment for the Boeckman Dip Crossing on Boeckman Road, Wilsonville”** reported Boeckman Creek provides habitat for cutthroat trout both upstream and downstream of the crossing and habitat for rainbow trout/steelhead and Chinook salmon downstream of the crossing. It was determined that fish could reach the crossing and that the existing culvert and flow

control structure are considered fish barriers. It concluded that environmental permitting agencies could reasonably require fish passage at the Boeckman Dip Crossing if project work warranted.

- Further discussion with Oregon Department Fish and Wildlife (ODFW) provided the project elements that would trigger a fish passage requirement. A fish passage requirement will likely involve removing the flow control structure that was constructed to manage the drainage from out-of-basin flows diverted to the Boeckman Creek Basin from the Coffee Creek Basin. A hydraulic/hydrologic study would then be needed to evaluate the impacts of flow modifications to Boeckman Creek.

**Project engineering work to be discussed at the April 19, 2021 Council Work Session:**

- **DOWL February 2021 “Boeckman Dip Alternative Analysis Memorandum – Embankment”** explored an embankment alternative for two construction staging options, full road closure and on-site detour. The memo additionally evaluated environmental permitting fish passage requirements for both the bridge and embankment alternatives and concluded all project alternatives trigger fish passage requirements.
- **DOWL February 2021 “December 2019 Boeckman Dip Bridge Alternative Analysis Memorandum – Addendum #1”** updated the bridge alternative analysis to account for fish passage requirements and revised environmental permitting assumptions (providing consistency with the embankment study).
- **DOWL February 2021 “Boeckman Dip Studies – Comprehensive Executive Summary”** provided one document that combines all the technical memoranda completed for the project over the past two years and applies the latest design assumptions. Two main alternatives to raise the roadway and cross the creek are summarized in the comprehensive executive summary and include a bridge structure and an embankment. Traffic options were considered during construction and included fully closing the road during construction with traffic following a designated detour route or constructing a temporary on-site detour (a temporary road) and routing traffic around Boeckman Road when construction activities allow (a full road closure is required for certain construction activities).

**Project engineering work that is underway:**

- Brown and Caldwell (B&C) – Anticipated **September 2021 “Boeckman Road Improvements – Hydraulic Evaluation”** evaluating the hydraulic impacts of the proposed Boeckman Road improvements and associated modifications in the Boeckman Creek basin, including removal of the existing flow control structure and culvert at Boeckman Road.