



TC₂BGT CONNECTOR

Design Alternatives Evolution

City Council Regular Meeting

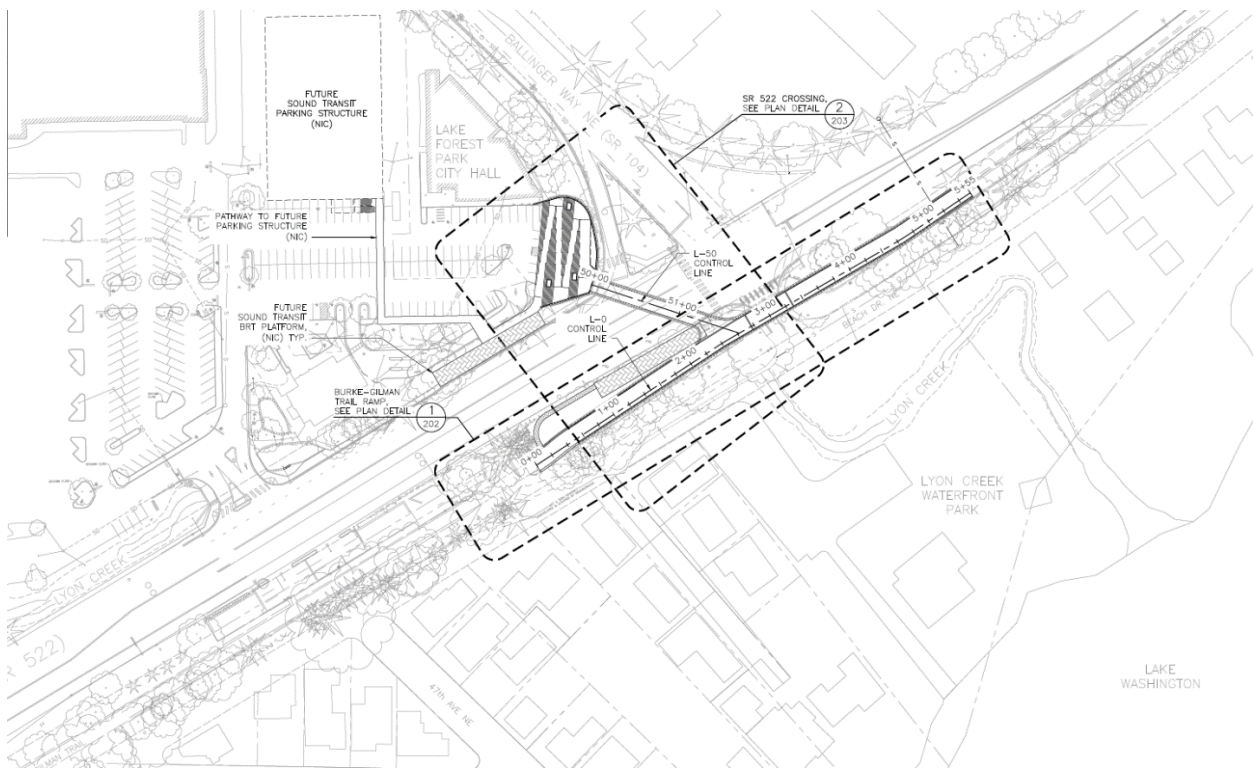
March 28, 2024

TS&L TUNNEL DESIGN

January 2021

Intersection Underpass of SR 522

A tunnel crossing that runs diagonally under SR 522. On the Town Center side, the underpass daylight into a sunken plaza with stairs and ramps (aka “stramps”). On the BGT side, the underpass connects to a depressed landing approximately 11 feet below the existing trail grade that rises to grade on the east and west.



Cost Estimate

\$34,780,000

Benefits

- No bridge visual
- Minimal property impacts

Considerations

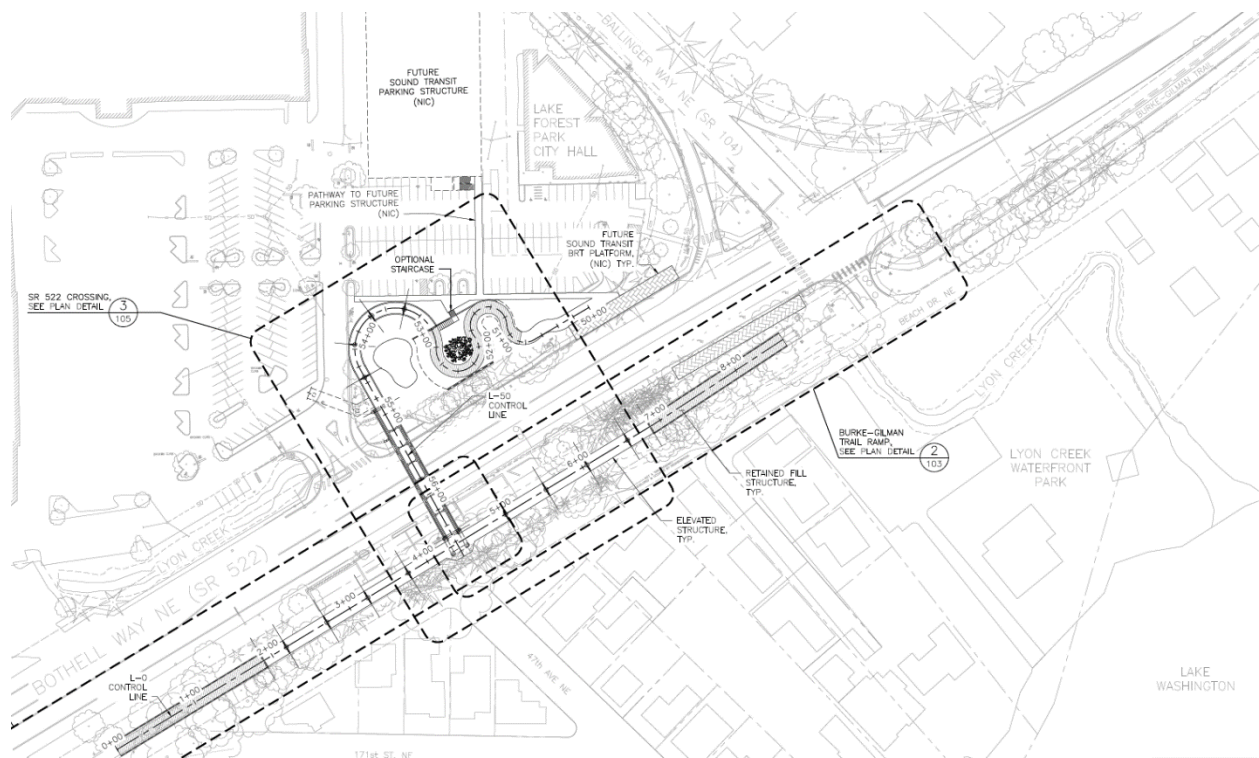
- Water table constraints
- Limited sight lines
- Safety concerns
- Long-term mechanical systems maintenance costs
- Substantial tree removal
- King County Parks design criteria conflict

TS&L BRIDGE DESIGN

January 2021

Mid-block Overpass of SR 522

A bridge crossing at approximately mid-block, to the east of the driveway entrance into Town Center. On the Town Center side, the main span of the bridge connects to a meandering ramp at the current Bank of America site. On the BGT side, the main span connects to an elevated landing approximately 18 feet above the existing trail grade. The trail would be elevated on a viaduct structure extending approximately 400 feet to the east and west to meet the bridge landing.



Cost Estimate

\$19,463,000

Benefits

- This design greatly minimizes tree removal and allows for additional plantings at current Bank of America site
- Elevated BGT would become a walk through the tree canopy with views of Mount Rainier and Lake Washington

Considerations

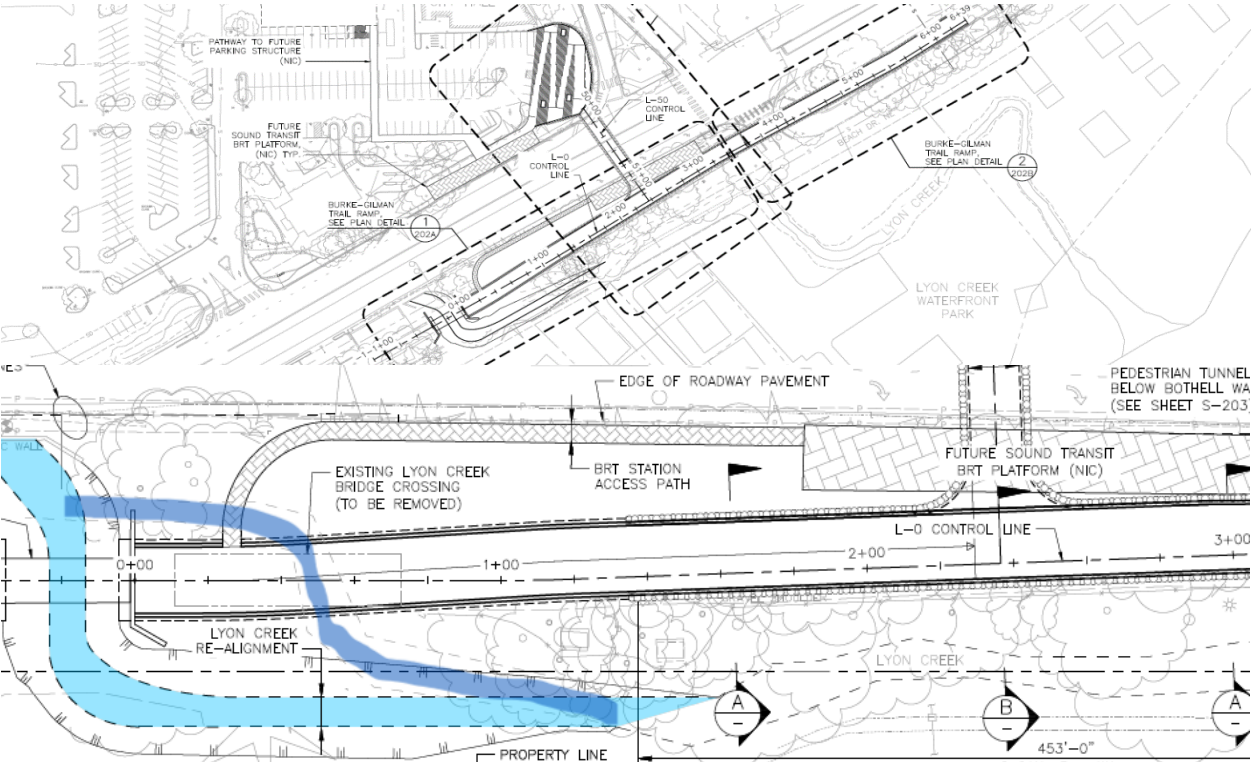
- Property impacts at Bank of America building (property acquisition) and Farmers Insurance building (air rights acquisition)
- King County Parks design criteria conflict

UPDATED TUNNEL DESIGN WITH LYON CREEK DETAIL

Current Conceptual Design

Perpendicular Intersection Underpass of SR 522

Conceptual update to the TS&L Tunnel Design that would align the tunnel crossing to run perpendicular under SR 522. To accommodate this tunnel alignment, Lyon Creek would be re-routed as shown below in light blue. The current path of Lyon Creek is shown in dark blue.



Cost Estimate

> \$34,780,000
 Cost increases due to permitting, design, and implementation of new Lyon Creek alignment, extent and magnitude currently unknown

Benefits

- Avoid impact to existing WSDOT signal infrastructure
- Shorter tunnel length
- Mitigate safety issues through improved sight lines

Considerations

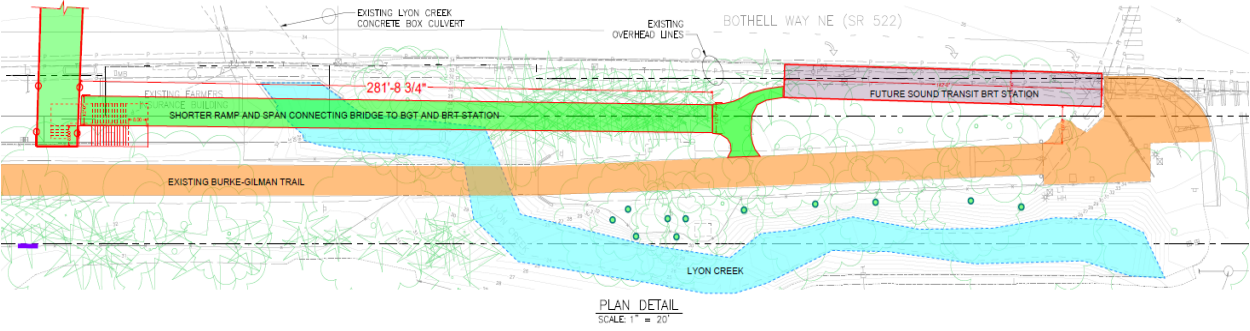
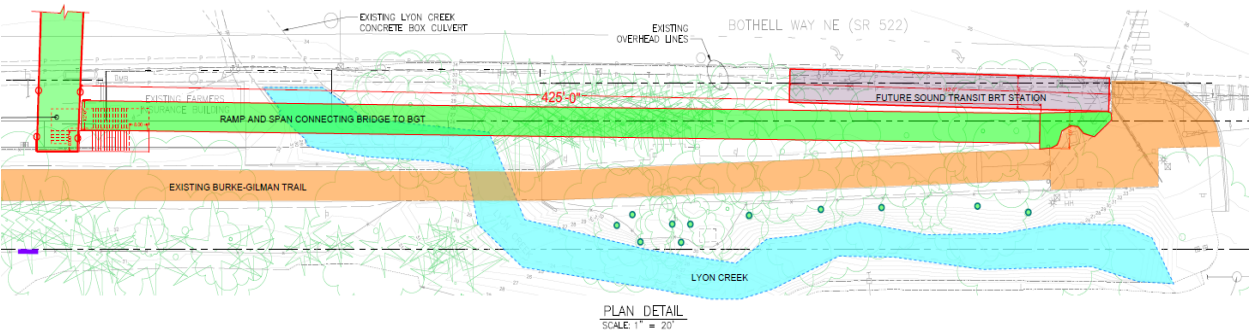
- Environmental implications of re-routing Lyon Creek
- Increased tree removal over TS&L Tunnel Design
- King County Parks design criteria conflict

UPDATED BRIDGE DESIGN TWO LEADING CONCEPTS

Current Conceptual Design

Mid-block Overpass of SR 522 with Ramp to BGT

Updates to the TS&L Bridge Design include: the implementation of a parallel ramp that connects the main span to the BGT. The ramp on the west side of the main span has been eliminated in this concept. This concept also includes stairs leading down from the main ramp to the BGT.



Cost Estimate

~ \$16,463,000
Cost decreases by ~4.5M with elimination of west ramp and increases by ~1.5M with addition of stairs and property acquisition, resulting in net decrease of ~3M over TS&L Bridge Design

Benefits

- Sole design to date that satisfies King County Parks requirement to avoid changing the grade of the BGT
- Temporary detour of BGT eliminated with this design

Considerations

- Farmers Insurance property acquisition required
- Increased tree removal over TS&L Bridge Design
- Pedestrians will be required to either utilize stairs or backtrack on the ramp when heading west after crossing from Town Center