

Brookside Drive Complete Street Upgrade

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 Client: Jody Boone, P. Eng., City of Fredericton

BACKGROUND INFORMATION

- Existing subsurface and surface infrastructure on Brookside Drive has reached end of service and requires replacement.
- Opportunity to add infrastructure that is more climate resilient while also increasing the active transportation facilities along Brookside Drive.
- Corridor consists of 319 meters of road infrastructure to redevelop.

DESIGN DELIVERABLES

- New Road Realignment tying into upstream and downstream cross-sections;
- New Cross-Section Design;
- Retaining Wall Design;
- Culvert Assessment;
- Storm Water and Watermain Assessment;
- Pavement Design;
- Sustainability Assessment; and
- Cost Estimate.

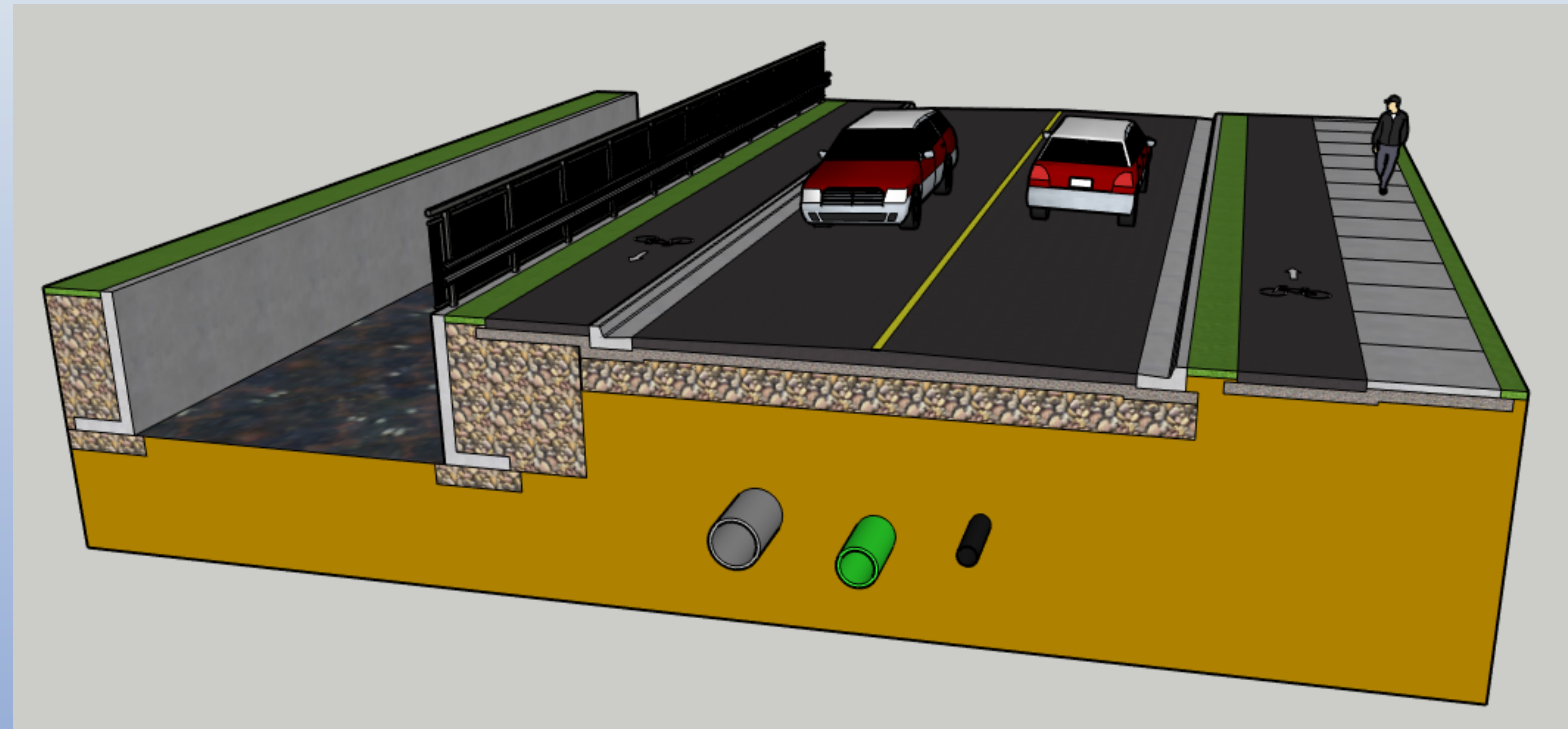
COST ESTIMATE

- Design Cost: 248,000 CAD
- Construction Cost: 1,889,000 CAD
- Present Value of Life Cycle Cost: 92,000 CAD
- Total Expected Cost Range: 2,238,000 CAD

DESIGN HIGHLIGHTS

- Unidirectional cycle lanes increases active transportation linking Brookside neighborhoods and Main Street through the Northside Trail.
- 80-year design life.
- Water main and storm sewer systems accommodate future Brookside neighborhood development with increased capacity
- Two retaining walls along Killarney Brook.
- Cycle rail/guiderail combination located on West retaining wall.
- Larger culverts provide more flow capacity to service increased rainfall.
- East cycle lane is tied into Northside Trail.
- Pavement structure redesign with 140 mm asphalt concrete with 2% crown slope, 150 mm granular base, and 450 mm granular subbase.
- Raised cycle track with buffer for increased user safety.

TYPICAL CROSS-SECTION (FACING SOUTH)



ENVIRONMENTAL CONSIDERATIONS

- 100-year-return-period rainfall event multiplied by 1.2 to account for climate change.
- Minimize impacts on watercourse and animal habitats.

CONSTRUCTION SCHEDULE

- Construction to begin in May and end in October.
- Construction is estimated to take 112 days to complete.

LOCATION

- Brookside Drive is located on the Northside of Fredericton off Main Street.
- The study area is Brookside Drive between Hawkins Street and the Northside Trail.
- Brookside Drive acts as an urban collector with high traffic volumes.

DESIGN COMPONENTS

- 3300 mm travel lanes;
- 1500 – 1800 mm unidirectional cycle lanes located on the East and West of Brookside Drive;
- 1500 mm sidewalk located on the West side of Brookside Drive;
- 450 mm curb and gutter;
- 250 mm diameter DI water main;
- 600 mm diameter RCP storm water main;
- 140 mm asphalt concrete with 2% crown slope;
- 150 mm of granular base beneath all surface components;
- 450 mm of granular subbase below roadway; and
- Reinforced concrete cantilever retaining walls spanning 186 meters.

PLAN VIEW

