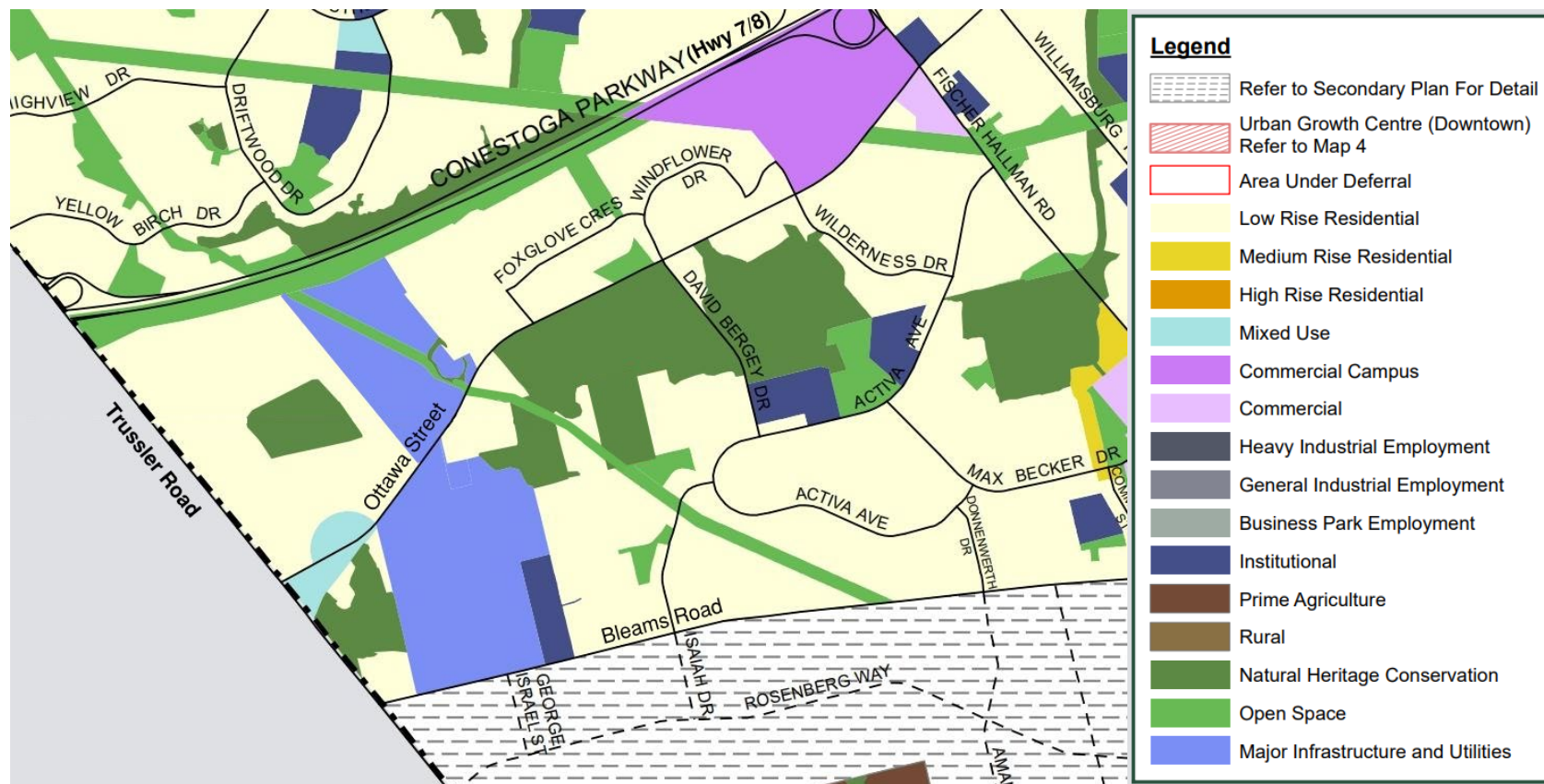


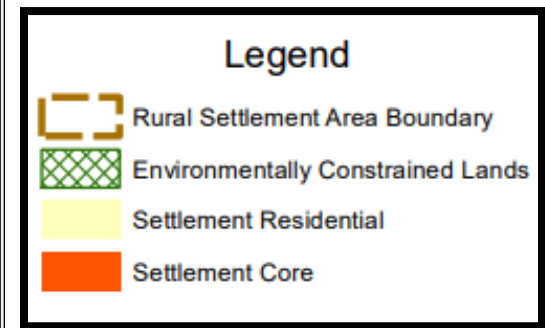
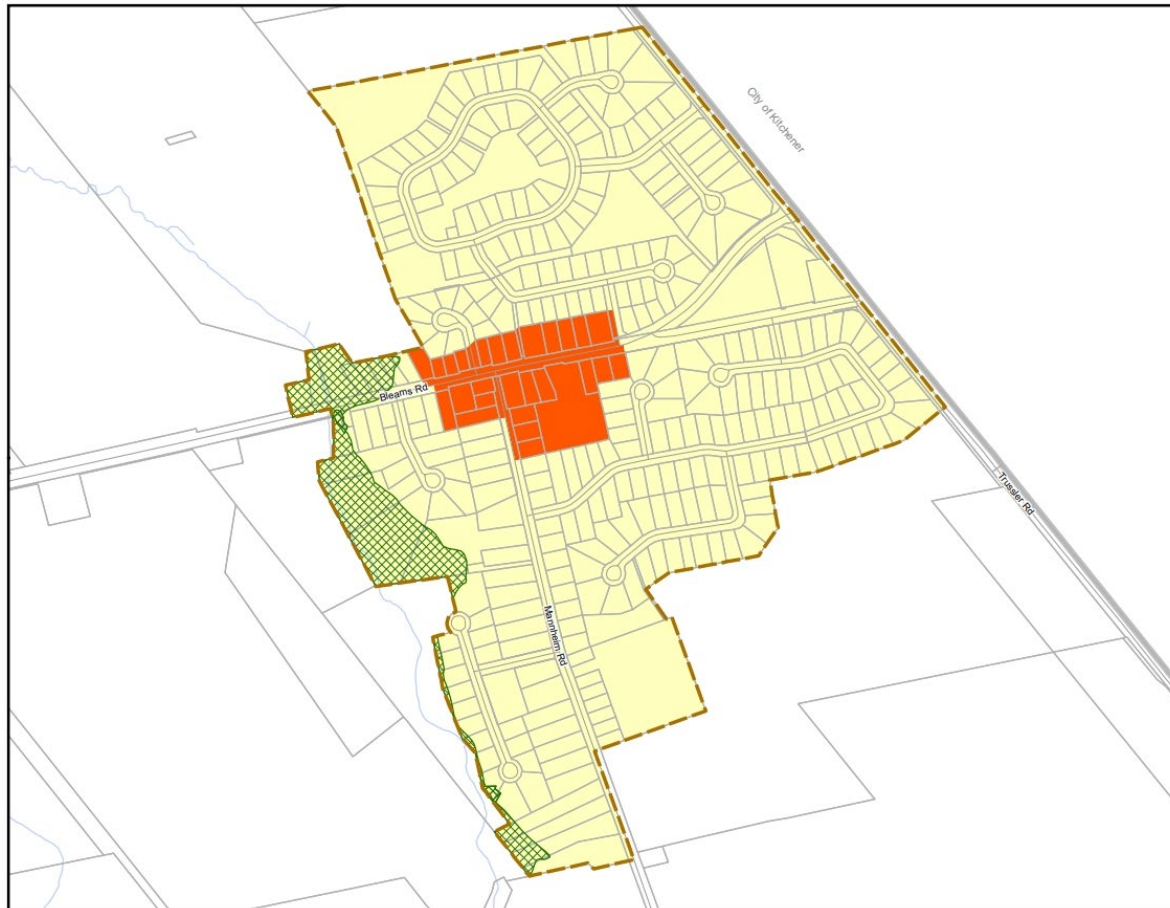
Trussler Road Improvements: Environmental assessment study findings

Land use (City of Kitchener)



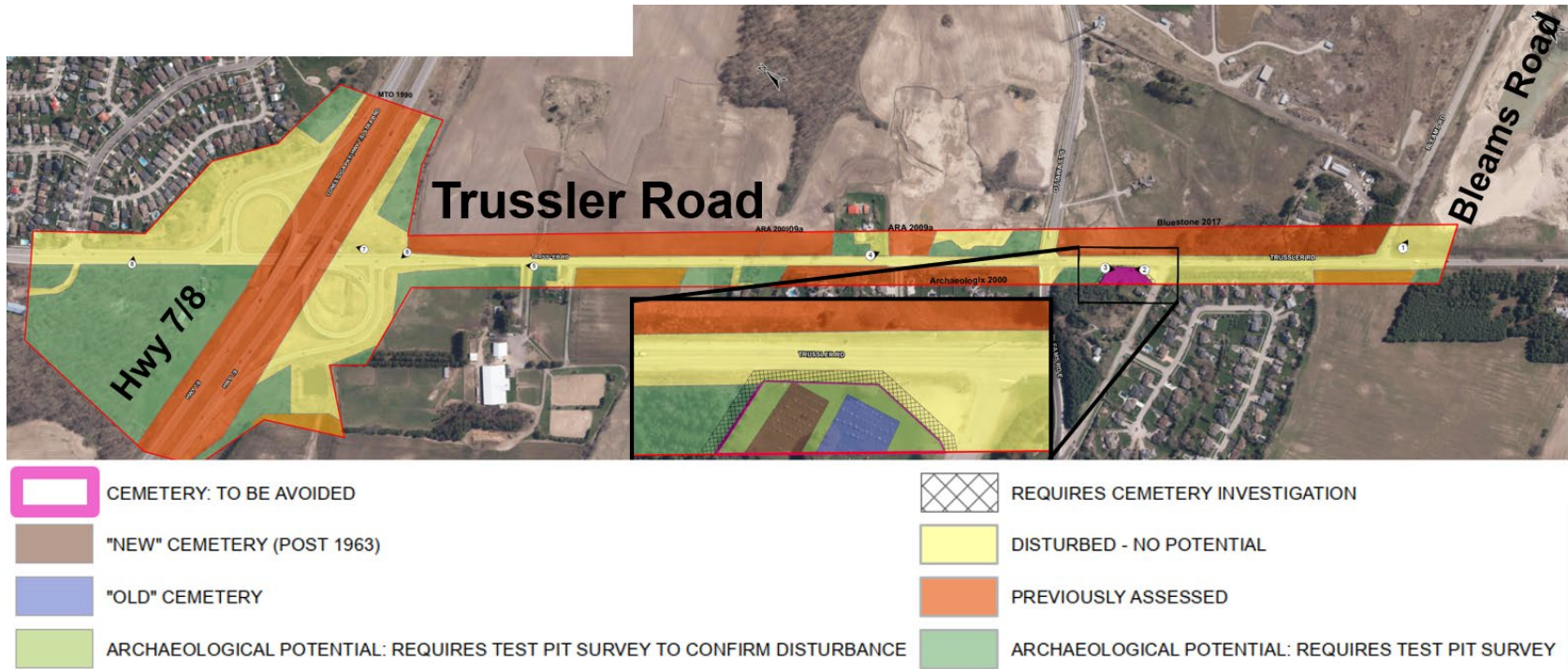
The study area land uses are obtained from the City of Kitchener 2014 Official Plan. As shown in this figure, the surrounding land uses to the east of Trussler Road include low rise residential, mixed-use commercial/residential, natural heritage conservation, major infrastructure and utilities, and some open space adjacent to Highway 7/8.

Land use (Township of Wilmot)



Within the Township of Wilmot, the rural settlement of Mannheim is established to the west of Trussler Road between Bleams Road and north of Rickert Way. The Mannheim study area is primarily comprised of residential land uses, a settlement core, and environmentally constrained lands.

Archaeology features

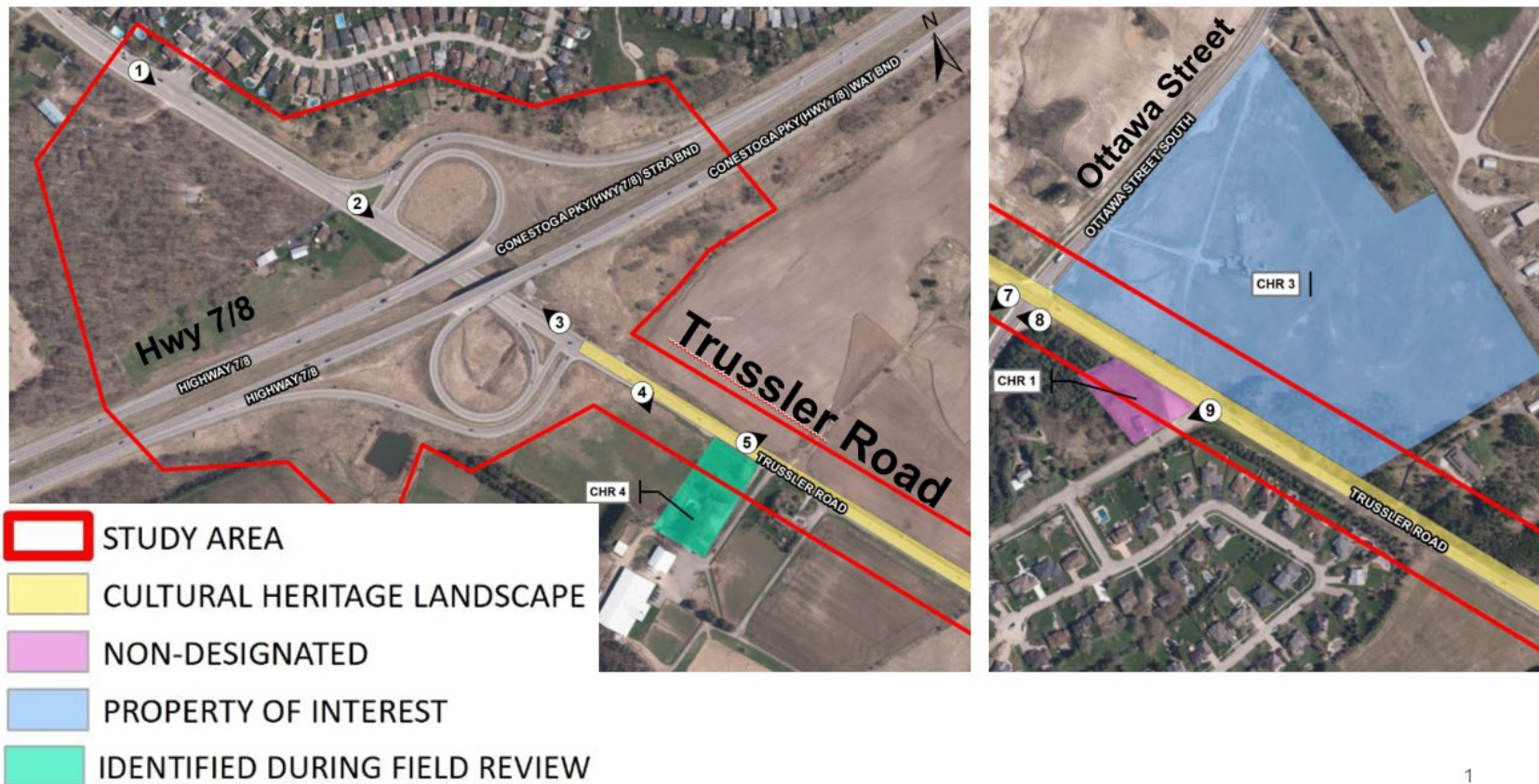


A Stage 1 archaeological investigation was conducted for the study area. The purpose is to describe the past and present land use, settlement history, and any other relevant historical information pertaining to the study area. This includes an understanding of the Indigenous land use as well as a review of the historical Euro-Canadian settlement history.

The Stage 1 background study determined that five previously registered archaeological sites are located within one kilometre of the study area. The results of the Stage 1 study are illustrated in this figure and highlight the areas that have been previously assessed, determined to be disturbed (or having no potential), and those that have archaeological potential. The parts of the study area that exhibit archaeological potential will require Stage 2 assessment. The Stage 2 assessment would occur once a preferred improvement alternative has been selected.

A cemetery associated with St. James Lutheran church has also been identified within the study area and will be the subject of further investigation as it relates to the improvement alternatives proposed.

Cultural heritage features



A desktop inventory was also prepared of known cultural heritage resources to assess their proximity, and the potential impacts related to the proposed improvement alternatives. A total of four cultural heritage resources were identified within and, or adjacent to the study area. Two built heritage resources and two cultural heritage landscapes were identified within and, or adjacent to the study area. Of the built heritage resources, one is a residence located at 2219 Ottawa Street South (highlighted blue), a Property of Interest in the City of Kitchener, and the other is a residence at 483 Trussler Road (highlighted green). Of the cultural heritage landscapes, one is a nineteenth century church and cemetery at 1000 Knechtel Court and is listed by the Township of Wilmot (highlighted purple), and the other cultural heritage landscape is a scenic road identified in the City of Kitchener Cultural Heritage Landscapes Study (Trussler Road).

Level of service analysis

Intersection	Knechtel Court	Bleams Road / Ottawa Street	Rickert Way / Nathalie Street	Hwy 7/8 South Ramp	Hwy 7/8 North Ramp	Yellow Birch Drive
East Bound	F	D	F	C-F	-	-
West Bound	-	D	F	-	F	F
North Bound	B-C	F	B-C	F	-	-
South Bound	-	A-F	C-F	-	C	C-D

The Ontario Traffic Council Multi-Modal Level of Service analysis has target level of service (LOS) for each mode based on a combination of best practices from transportation planning and engineering and contemporary knowledge around land-use and public realm planning.

Actual level of service is found based on performance measures catered to each mode. LOS A is best. LOS F is worst. (F=Failure)

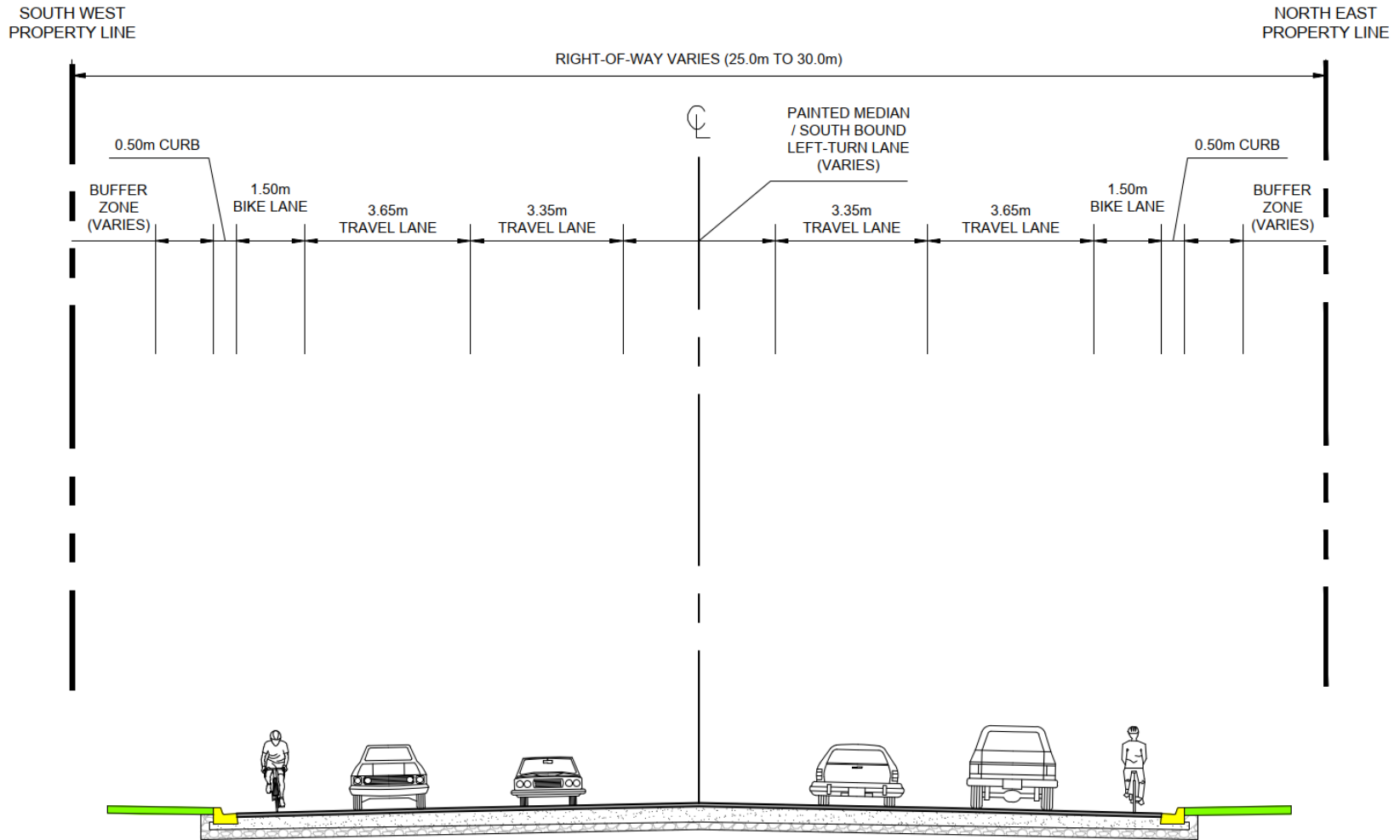
The target and actual level of service are compared for each mode to understand discrepancies.

Overall, the analysis assessed the level-of-service for all modes at key locations along Trussler Road for the Study Area. The analysis was conducted using the forecasted 2037 peak volumes and the current intersection configurations.

The increased volumes result in excessive delays, significant capacity issues, and long queues at all study intersections, particularly at the stop-controlled approaches. Specifically, the following critical movements have been identified:

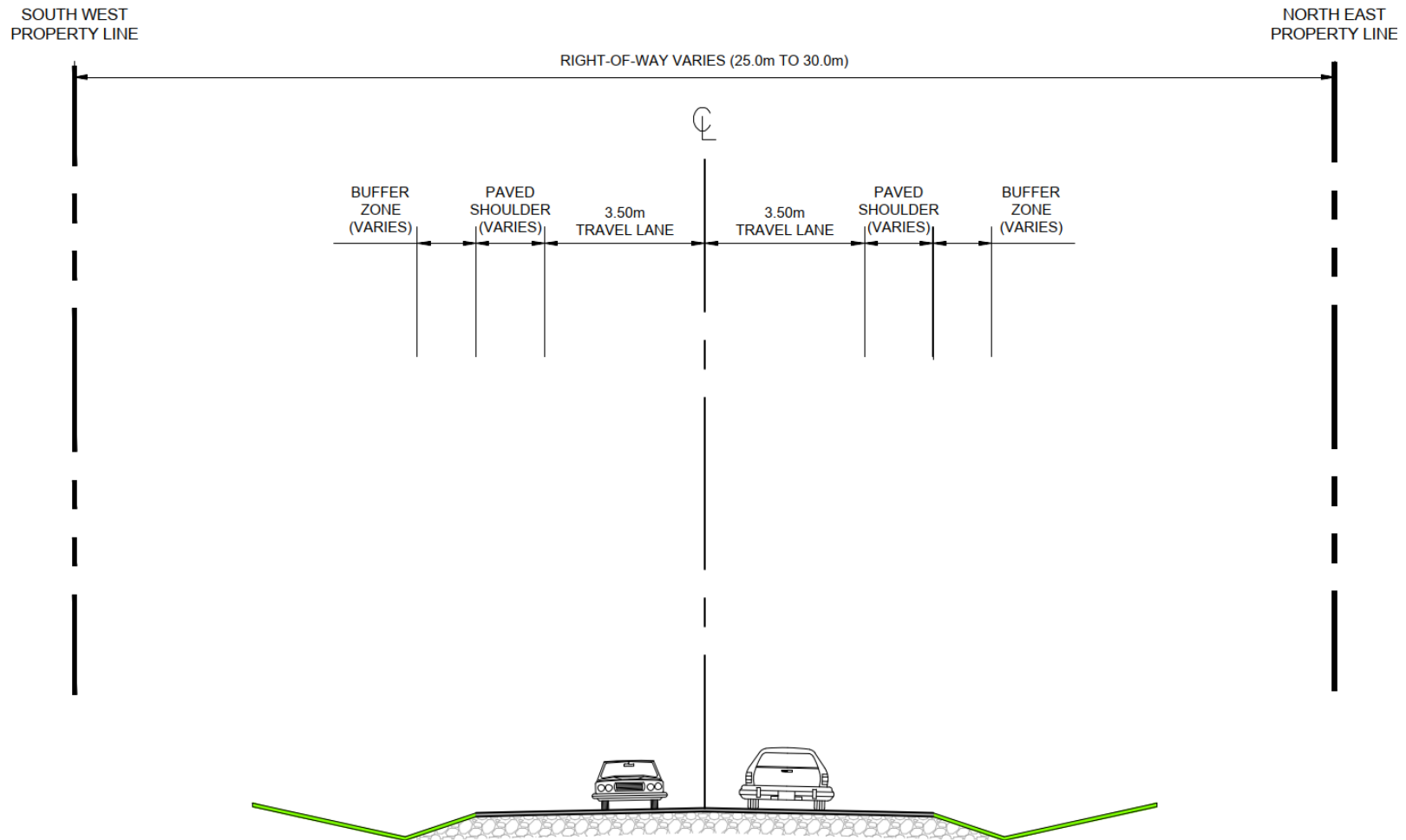
- Eastbound approach at Trussler Road and Knechtel Court
- Northbound approach and southbound through/right at Trussler Road and Bleams Road/Ottawa Street
- Eastbound, westbound and southbound approaches at Trussler Road and Rickert Way/Nathalie Street
- Eastbound approach and northbound left-turn at Trussler Road and Highway 7/8 south ramp
- Westbound left-turn at Trussler Road and Highway 7/8 north ramp
- Westbound approach at Trussler Road and Yellow Birch Drive

Alternative design #1a: Do nothing on the four-lane urban section from Highway 7/8 to Yellow Birch Road



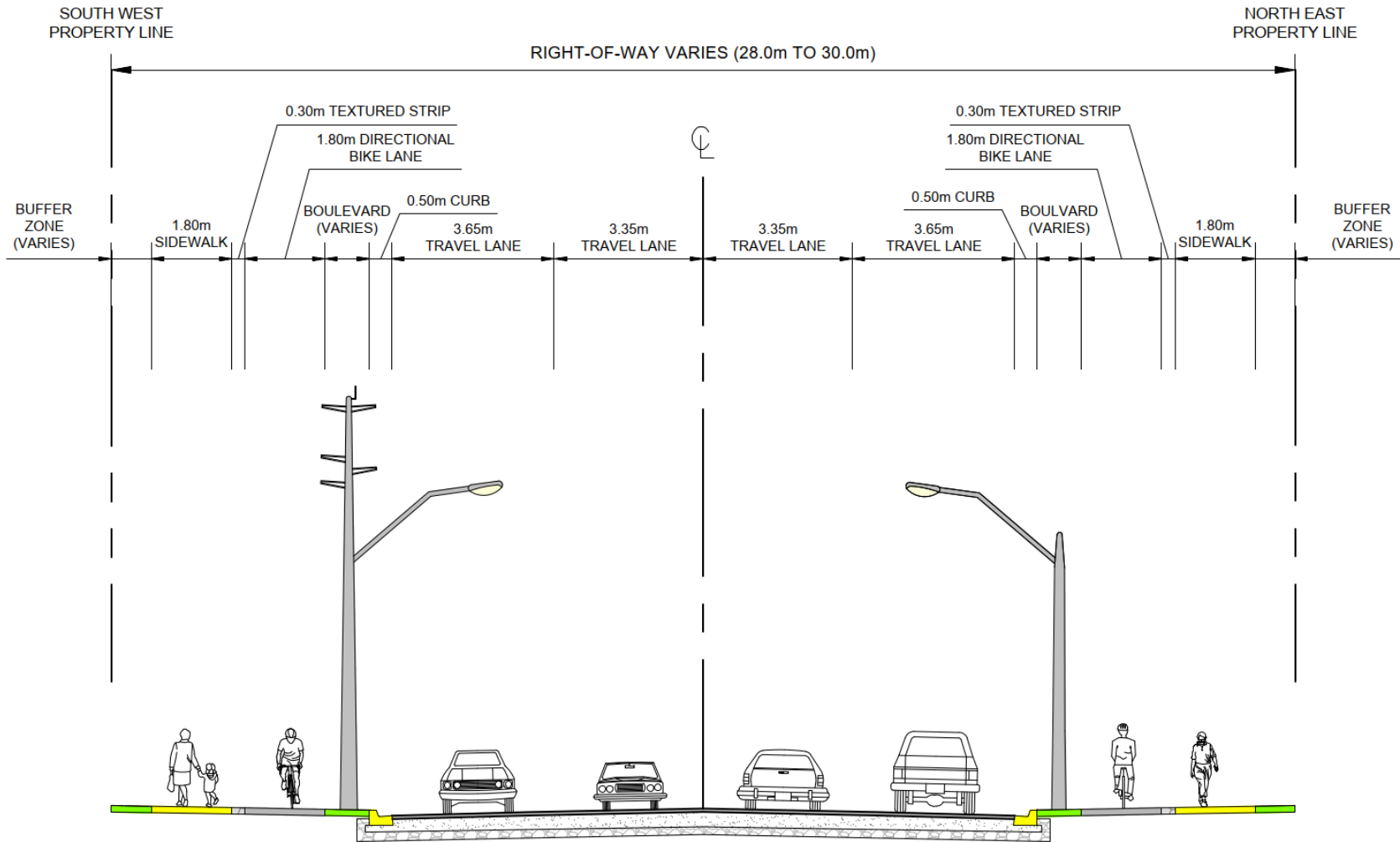
From Highway 7/8 to Yellow Birch Drive, the existing cross-section exhibits an urban four-lane travelled roadway with on-road bike lanes. Concrete curb and gutter is also present along this section.

Alternative design #1b: Do nothing on the two-lane rural section from Highway 7/8 to Bleams Road



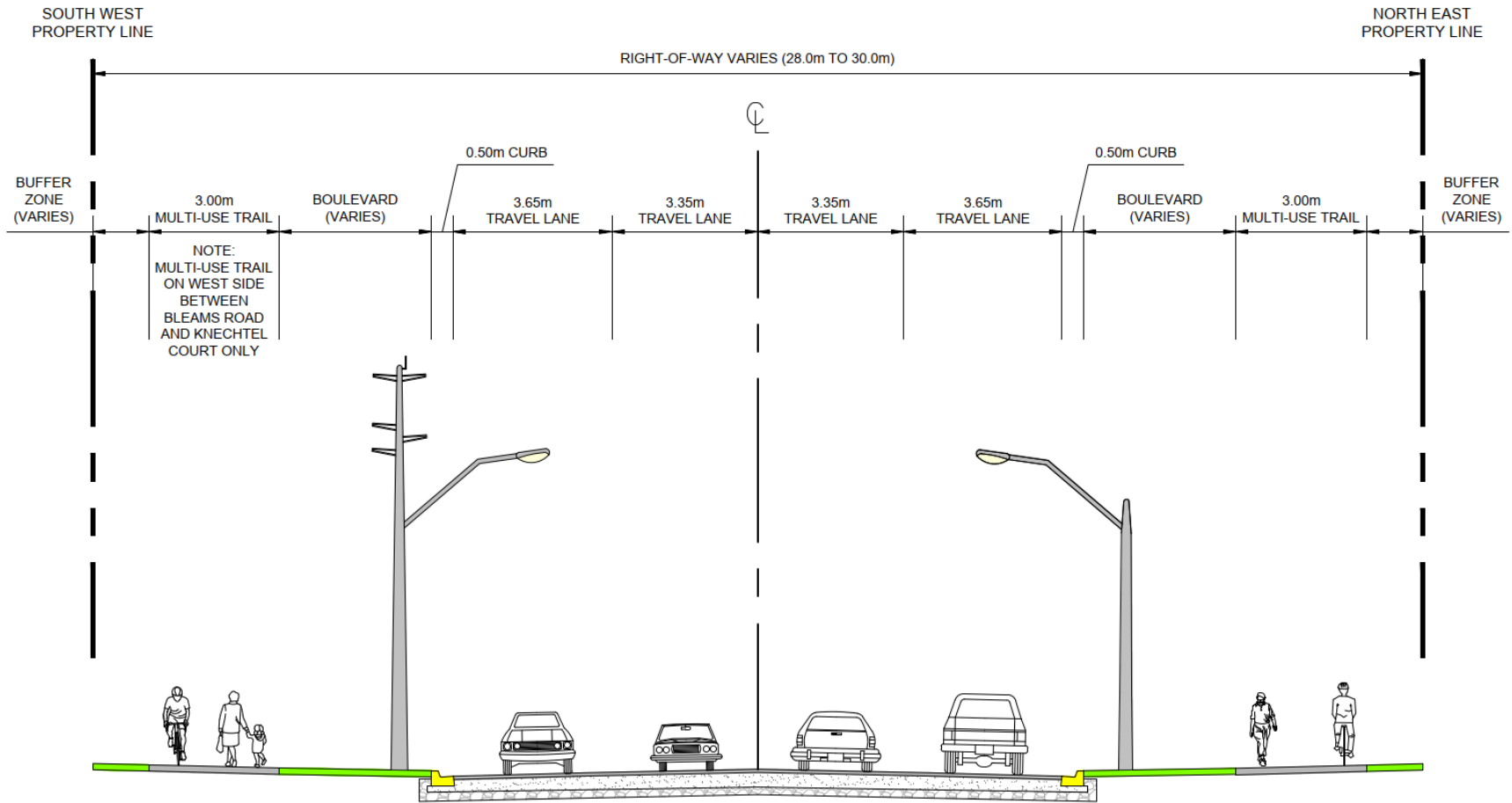
From Highway 7/8 to Bleams Road, the existing cross-section exhibits a rural two-lane travelled roadway with gravel or paved shoulders, and ditches and for conveying storm water runoff. The right of way in both existing cross sections spans about 25 to 30m wide.

Alternative design #2: Widen to four lanes with directional bike lanes and sidewalks



Alternative #2 considers the widening of the existing rural two-lane cross-section limit (Bleams Road to Highway 7/8) to four-lanes. Separated sidewalk and bike lanes in the boulevard would provide a buffer from the adjacent vehicular lanes.

Alternative design #3: Widen the road to four lanes with multi-use trails



Alternative #3 considers the widening of the existing rural two-lane cross-section limit (Bleams Road to Highway 7/8) to four-lanes. A shared off-road multi-use path would be introduced with a wider boulevard between the multi-use path and the vehicular roadway.