

# Existing Conditions - Ward Street ROW

## Pedestrian Environment

- Ward Street currently has inconsistent pedestrian facilities with a mixture of sidewalk and paved boulevard.
- The environment is not pedestrian friendly – there s limited buffer between the road and pedestrian facilities; the paved boulevard is used for parking as well as walking; there are numerous wide commercial entrances with no clear sidewalk through them.

## Main Street Function

- In addition to its arterial status as County Road, Ward Street must function as the “main street” in Bridgenorth, to provide access to homes and businesses.





# Existing Conditions - Ward Street ROW

## Right-of-way (ROW) Constraints

- The Ward Street ROW is constrained with a minimum width of 18.5 m in places. The narrow R.O.W. limits the extent of road widening possible.
- Several properties along the corridor have minimal setback from the ROW, making grading changes difficult.
- Existing road surface (asphalt pavement) reaching end of life; last reconstructed in 1979

## Utilities

- The corridor has overhead and underground utilities that must be accommodated with any changes to the cross section.
- Overhead hydro will need to be relocated underground to facilitate widening and meet current hydro safety requirements.





# Existing Traffic Conditions

## Traffic Volumes & Capacity

- Traffic volume on Ward Street is approaching the capacity for a two-lane road based on 2017 traffic data.
- Additional capacity will be required to prevent excessive delays.

## Traffic Operations

- Turning movements to/from side streets and commercial entrances experience significant delays during peak periods due to high volumes in the corridor.

## On-Street Parking

- Paved boulevards throughout the village provide extensive opportunities for on-street parking. However, observations during the study period indicate this parking is seldom used as there is ample parking in commercial properties.

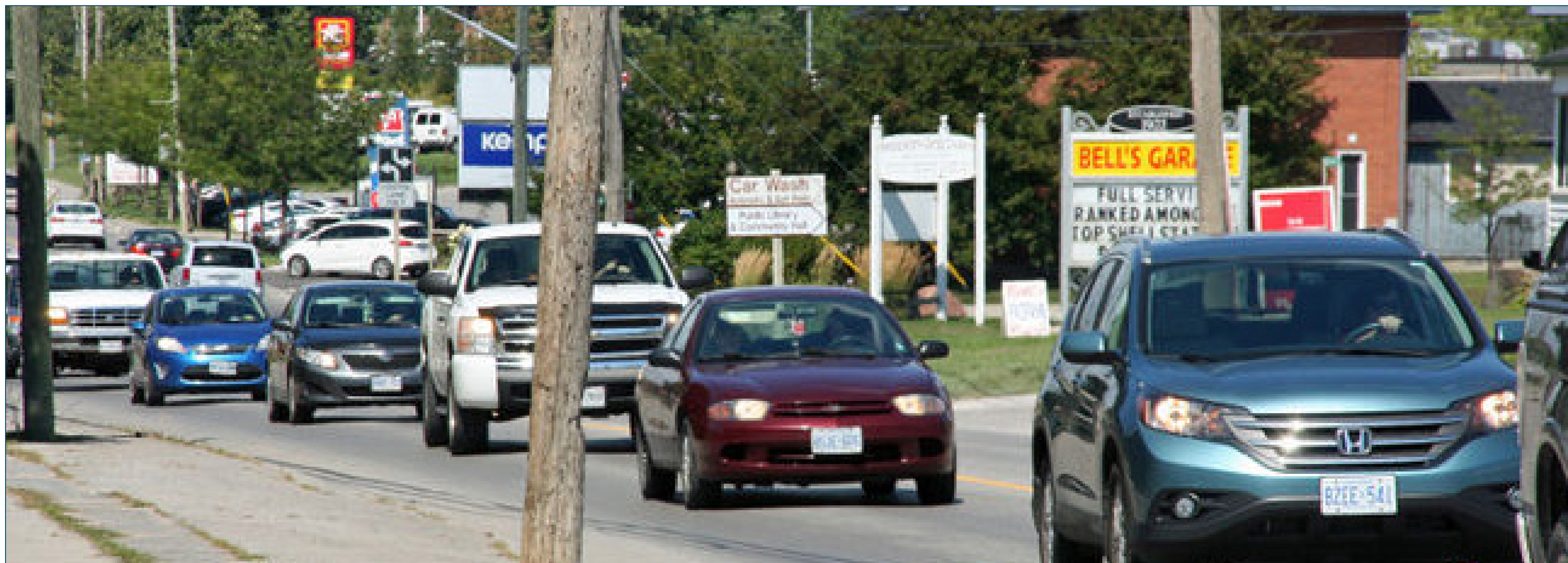




# Traffic Analysis

Improving corridor capacity and levels of service is one of the primary objectives for this study. A comprehensive traffic forecasting and analysis program is being completed as part of the study. The detailed traffic analysis will:

- Identify peak traffic volumes and turning movements for Ward Street for 2017.
- Forecast future traffic volumes and turning movements for the corridor to 2031.
- Analyze the corridor to determine capacity and levels of service for 2017 and 2031 to identify deficiencies.
- Analyze various design alternatives to determine which alternative best addresses capacity issues.

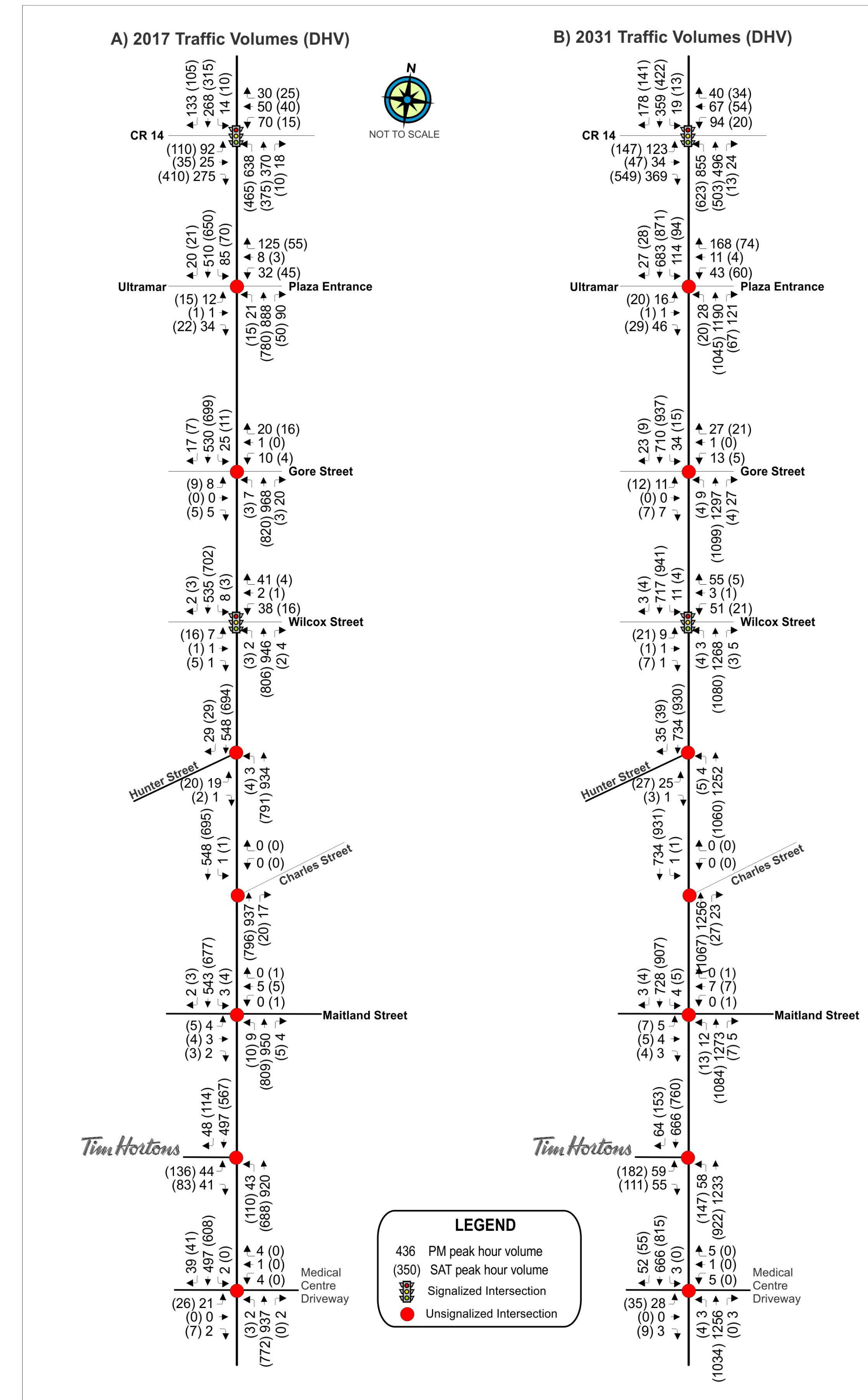




# 2017/2031 Traffic Forecasts

- The diagram at right shows the 2017 and 2031 traffic volumes for the corridor including turning movements at intersections.
- 2013 summer peak hour periods (weekday p.m. and Saturday) were selected as the base year, based on the data available.
- A traffic count program was completed in the spring of 2017 to collect additional data.
- An annual growth rate was calculated based on the data from the County's 2031 traffic model.
- The background data was expanded at the annual growth rate to provide 2017 summer p.m. and Saturday peak hour volumes.
- The 2017 data was similarly expanded to produce 2031 p.m. and Saturday peak hour volumes.

2017 and 2031 Traffic Volumes



 Peterborough County The Ward Street Corridor Improvement Study 2017



# 2017/2031 Traffic Volumes

- A traffic model of the Ward Street corridor was created using Synchro software.
- The model was used to analyze Ward Street and all intersections to determine how they perform.
- Intersection performance is quantified by Levels of Service (LOS), which range from A to F (See Table).

## CAPACITY ANALYSES

2017 PM Peak Existing and (2031 PM Peak Do Nothing)



## CAPACITY ANALYSES

2017 SAT Peak Existing and (2031 SAT Peak Do Nothing)



Table 2. Level of Service Criteria for Unsignalized Intersections	
Level of Service	Average Control Delay (seconds/vehicle)
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F <sup>1</sup>	>50

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.

1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.

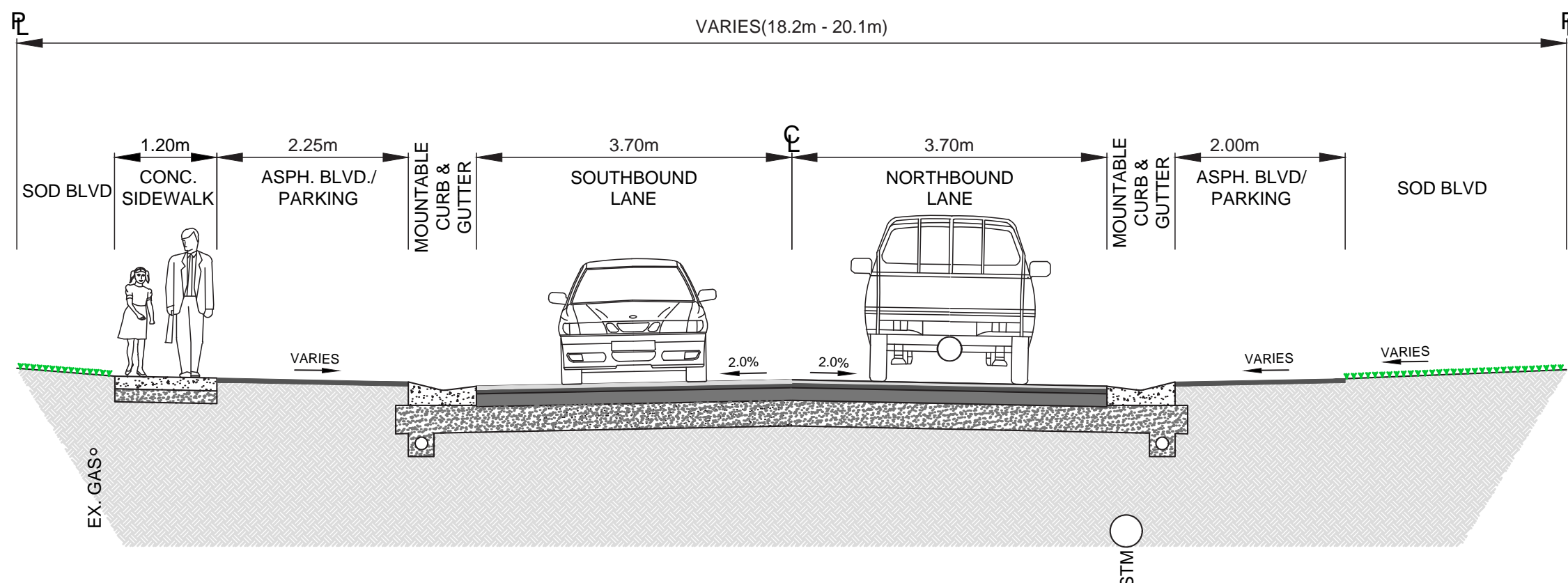
- The analysis indicates that by 2031 many intersections within the corridor will operate at or below LOS 'D'.
- Some improvements are required to maintain LOS beyond 2031.



# Alternative Solutions

## Alternative 1

- No change to existing Ward Street corridor



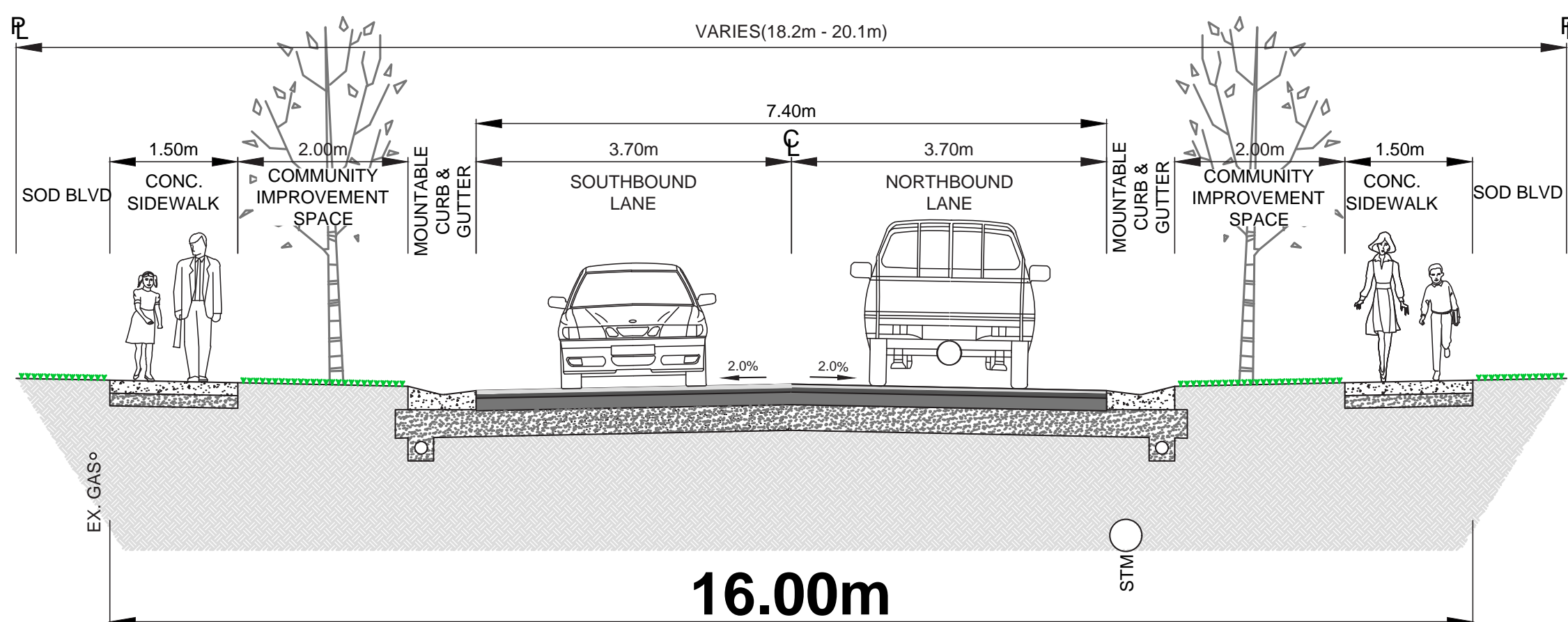
**EXISTING WARD STREET CROSS SECTION  
FROM CHAMPLAIN RD. TO GORE ST.**

- TWO 3.7m LANES - SOUTHBOUND AND NORTHBOUND LANES
- EXISTING ASPHALT BOULEVARD PARKING BOTH SIDES
- EXISTING 1.2m CONCRETE SIDEWALK ON WEST SIDE ONLY

## Alternative 2

Rehabilitate Existing Road & Incorporate CIP Elements

- No widening or additional lanes
- Existing pavement would be rehabilitated
- CIP elements would be constructed including sidewalks and streetscaping



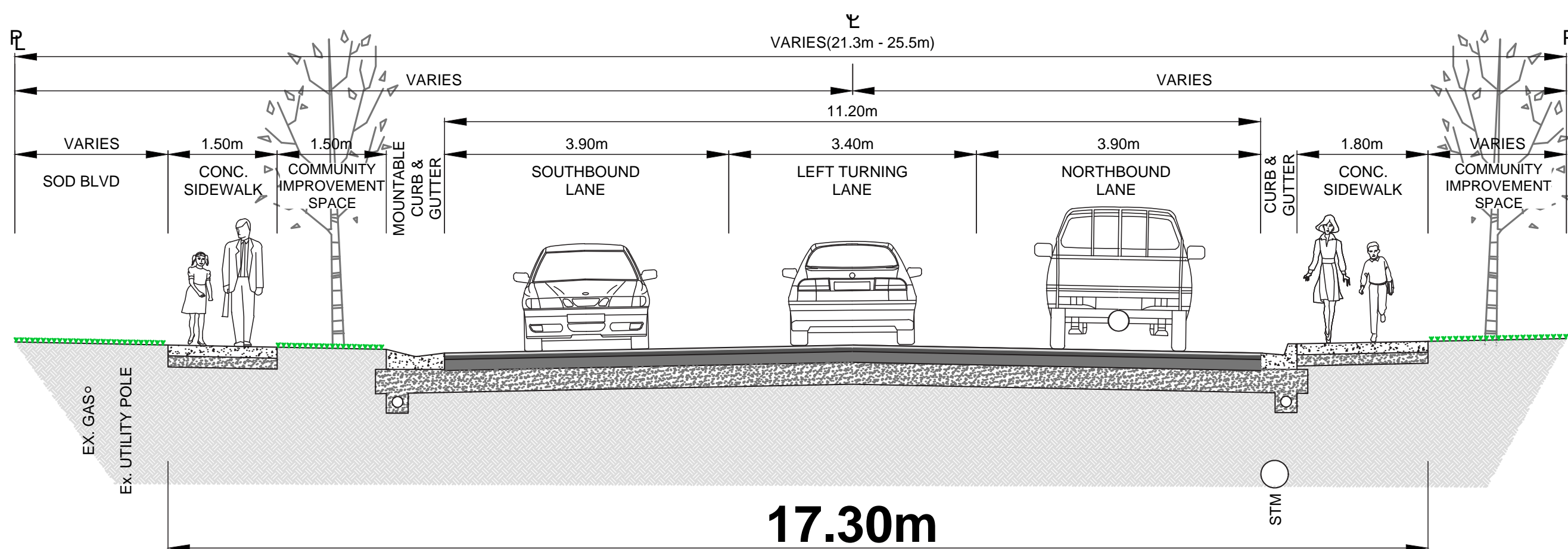
**16.00m  
CIP INITIATIVES & PAVEMENT REHABILITATION  
FROM CHAMPLAIN RD. TO GORE ST.  
WITH CONCRETE SIDEWALK ON BOTH SIDES**

- TWO 3.7m LANES - SOUTHBOUND AND NORTHBOUND LANES
- COMMUNITY IMPROVEMENT SPACE ON BOTH SIDES
- NEW 1.5m CONCRETE SIDEWALK ON BOTH SIDES
- NO ON STREET PARKING BOULEVARD
- PAVEMENT REHABILITATION - 50mm MILL & PAVE

## Alternative 2A

Rehabilitation, CIP and Causeway Link (Bridgenorth By-Pass)

- Same scope as Alternative 2 however construct Causeway Link (Bridgenorth By-Pass) to provide capacity



**17.30m  
CIP INITIATIVES & PAVEMENT REHABILITATION  
FROM GORE ST. TO JAMES A. GIFFORD CAUSEWAY  
WITH CONCRETE SIDEWALK ON BOTH SIDES**

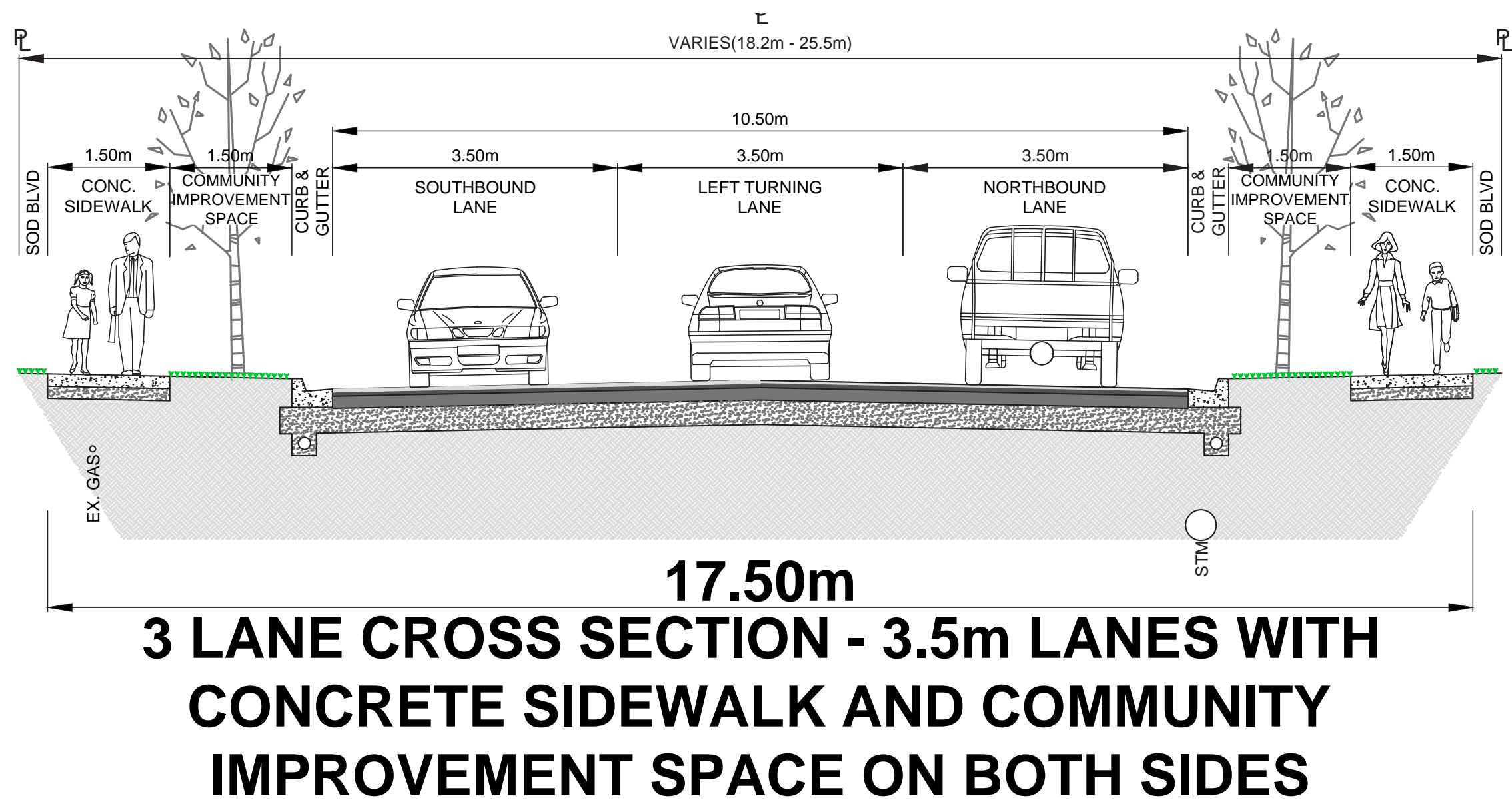
- THREE LANES - SOUTHBOUND(3.9m), NORTHBOUND(3.9m) AND TURNING(3.4m) LANES
- COMMUNITY IMPROVEMENT SPACE ON BOTH SIDES
- NEW 1.5m CONCRETE SIDEWALK ON WEST SIDE
- NEW 1.8m CURB FACED CONCRETE SIDEWALK ON EAST SIDE
- PAVEMENT REHABILITATION - 50mm MILL & PAVE



# ALTERNATIVE SOLUTIONS

## Alternative 3 3 Lane Cross Section

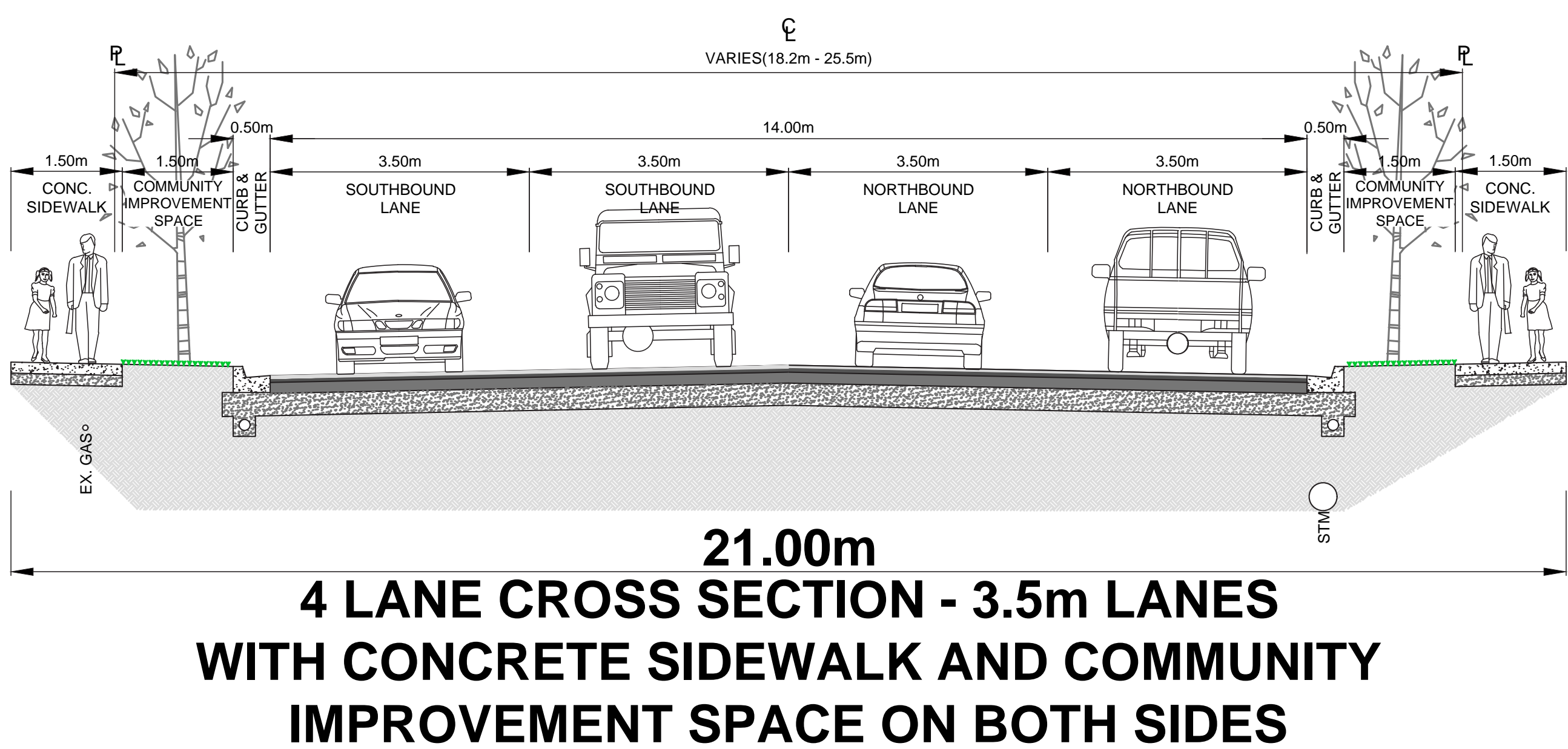
- Reconstruct Ward Street from Champlain Road to Gore Street to provide 3-lane cross section throughout study area
- Incorporate elements of CIP



- THREE 3.5m LANES - SOUTHBOUND, NORTHBOUND AND TURNING LANES
- COMMUNITY IMPROVEMENT SPACE ON BOTH SIDES
- NEW 1.5m CONCRETE SIDEWALK ON BOTH SIDES
- NEW ASPHALT THROUGHOUT
- NEW BARRIER CURB
- NO ON STREET PARKING

## Alternative 4 Four-Lane Cross Section

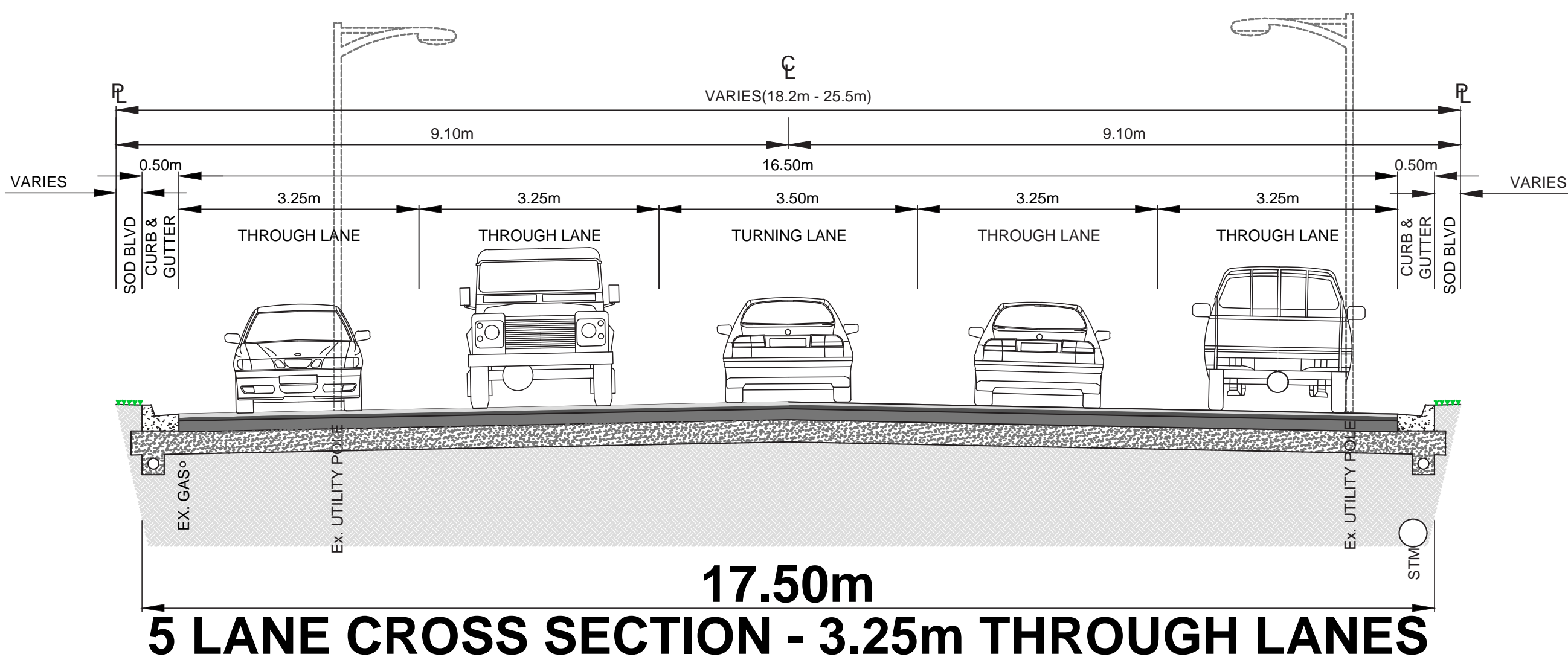
- Reconstruct entire corridor from Champlain Road to Causeway to provide 4 lanes (2 in each direction)
- Provide limited CIP elements (reduced space due to road widening)



- FOUR 3.5m LANES - TWO SOUTHBOUND & TWO NORTHBOUND LANES
- COMMUNITY IMPROVEMENT SPACE ON BOTH SIDES
- NEW 1.5m CONCRETE SIDEWALK ON BOTH SIDES
- NEW ASPHALT THROUGHOUT
- NEW BARRIER CURB
- NO ON STREET PARKING
- PROPERTY ACQUISITION REQUIRED FROM CHAMPLAIN RD. TO GORE ST.

## Alternative 5 Five-Lane Cross Section

- Reconstruct entire corridor from Champlain Road to Causeway to provide 5 lane cross section (2 through lanes and centre turn lane)
- Insufficient space for sidewalks or CIP elements





# Evaluation Criteria

Each alternative solution will be evaluated against the following criteria.

## Natural Environment

- Water quality/quantity impacts to Chemong Lake
- Loss of green space/vegetation communities within the Corridor
- Impact to air quality and noise levels

## Social/Cultural

- Impact to public spaces
- Extent of property acquisition and/or disturbance to private property
- Pedestrian and cycling opportunities within the corridor
- Impacts to heritage resources in corridor

## Economic

- Capital cost of improvements
- Property acquisition costs
- Utility relocation costs
- Economic impact on local economy
- Construction timing, schedule and phasing

## Technical

- Does it satisfy problem statement
- Degree of improvement in through traffic capacity of corridor
- Improvement in traffic operations (access to/from side streets and businesses)
- Safety of pedestrians and motorists
- Impact on parking within the corridor





# Next Steps

- The Study Team will review all comments and suggestions from the stakeholders
- Alternatives will be screened against the evaluation criteria and a preliminary preferred alternative identified
- Detailed traffic analysis will be completed for all alternatives
- Design alternatives will be refined and evaluated and a preferred solution identified
- PIC #2 will be held to present the preferred solution

How can you comment and/ or stay involved in the project?

- Fill in a comment sheet and leave it in the comment box, or email comments directly to project contacts below
- Comments should be provided by October 6, 2017

Questions?

If you have questions about the project, please contact:

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Thank you for  
coming!