



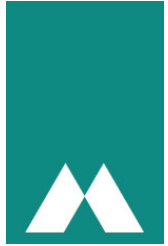
**McElhanney**

# Highway 7 Harris Road Study

BC MoTI

June 4, 2020





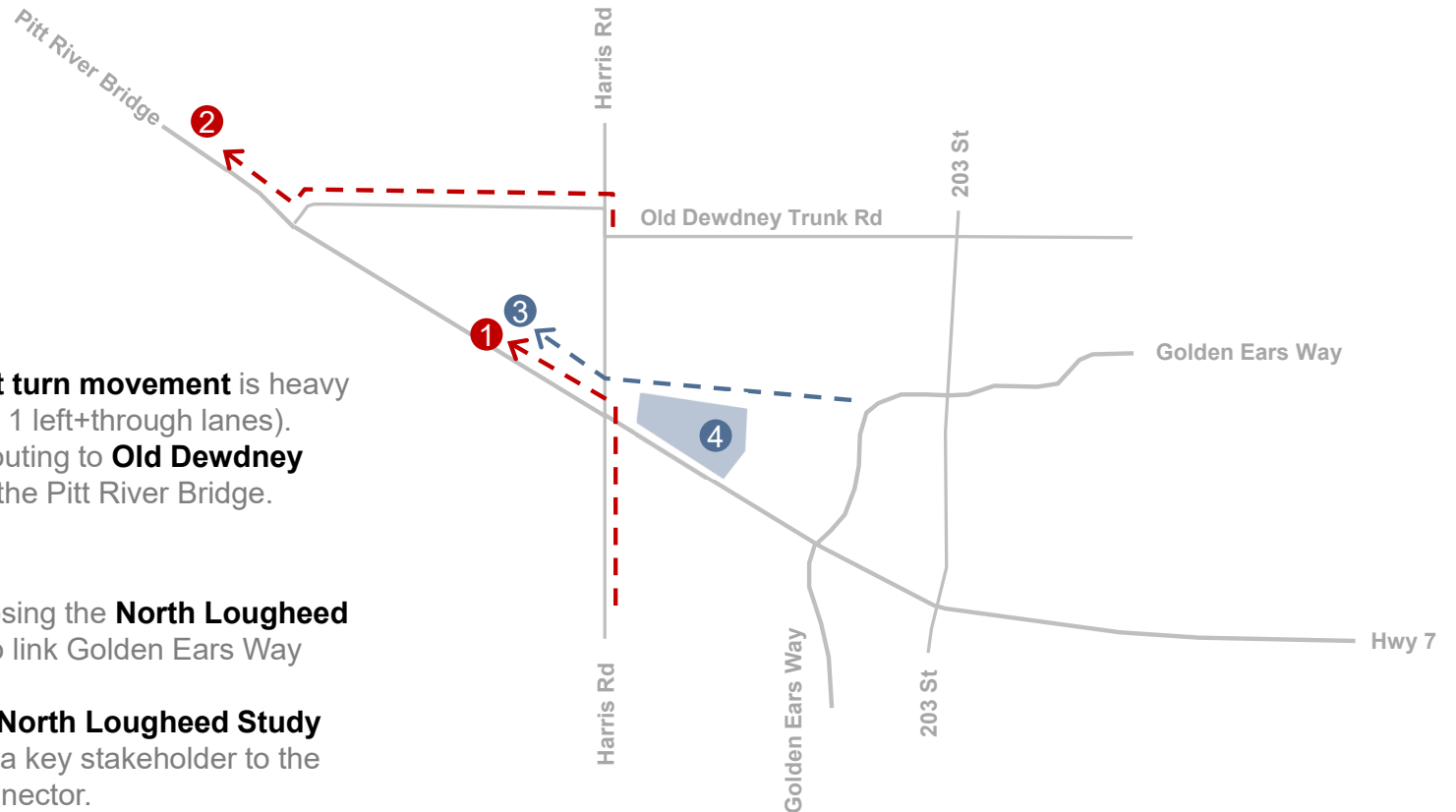
# Study Area

## Issues:

1. The **northbound left turn movement** is heavy today (2 left-turn and 1 left+through lanes).
2. The vehicles are rerouting to **Old Dewdney Trunk Rd** to access the Pitt River Bridge.

## Challenges:

3. The ministry is proposing the **North Lougheed Connector** project to link Golden Ears Way with Highway 7.
4. The development at **North Lougheed Study Area (NLSA)** will be a key stakeholder to the North Lougheed Connector.



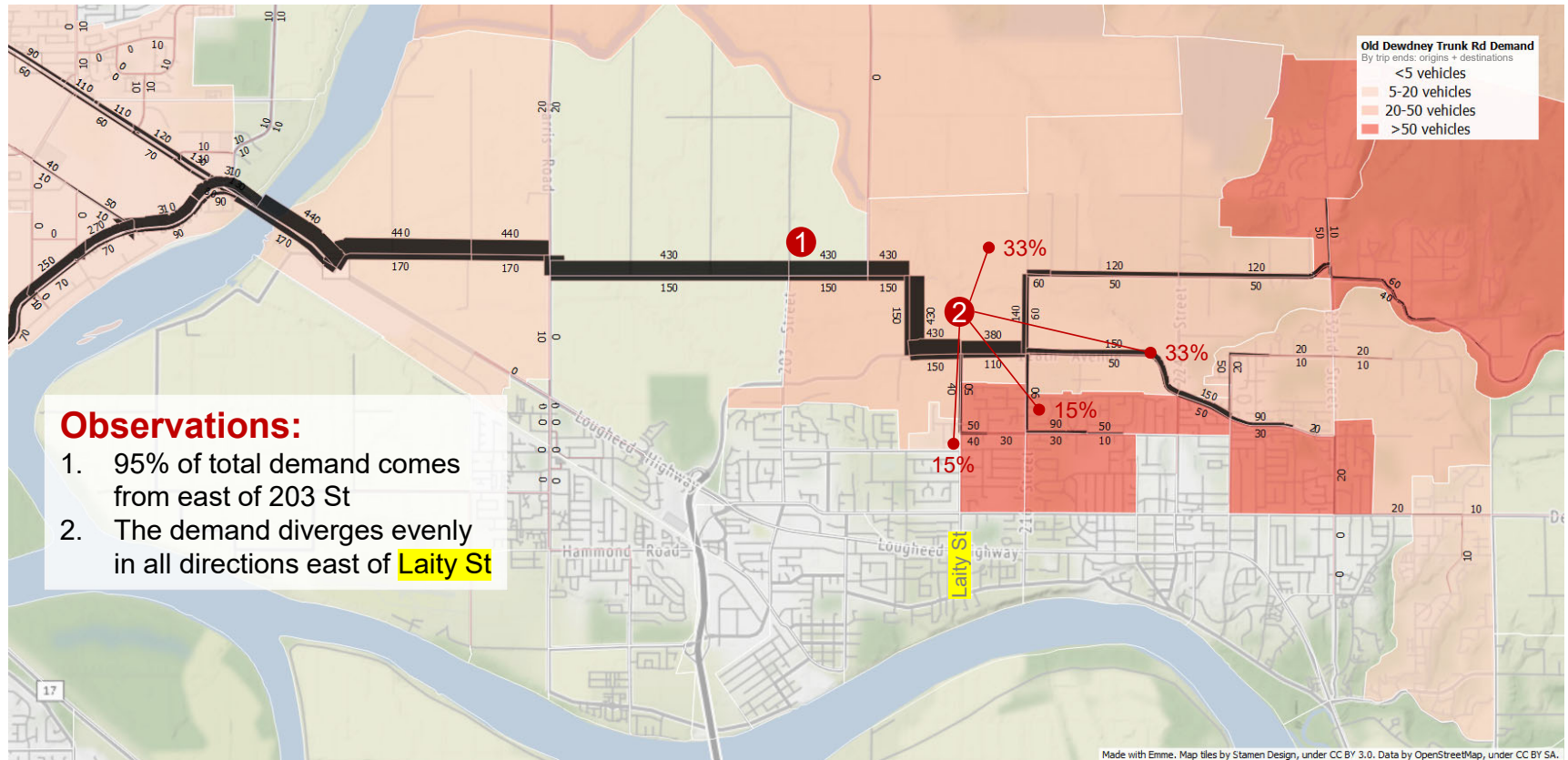


# Abbreviations

|      |                               |
|------|-------------------------------|
| BAU  | Business As Usual             |
| CAGR | Compound Annual Growth Rate   |
| GEB  | Golden Ears Bridge            |
| GP   | General Purpose (Lane)        |
| HOV  | Highway Occupancy Vehicle     |
| NLSA | North Lougheed Study Area     |
| PRB  | Pitt River Bridge             |
| RTM  | Regional Transportation Model |
| TAZ  | Traffic Analysis Zone         |
| VDF  | Volume Delay Function         |



# Old Dewdney Trunk Rd Demand: 2017 AM Peak



## Base year validation suggests...

- ❑ We are going to use RTM to inform the **trend**
  - ✓ %growth
  - ✓ %diversion
- ❑ We need to adjust the RTM volumes
  - \* do not use RTM direct outputs as traffic operation model inputs

# 2035 Horizon Year



# Scenarios

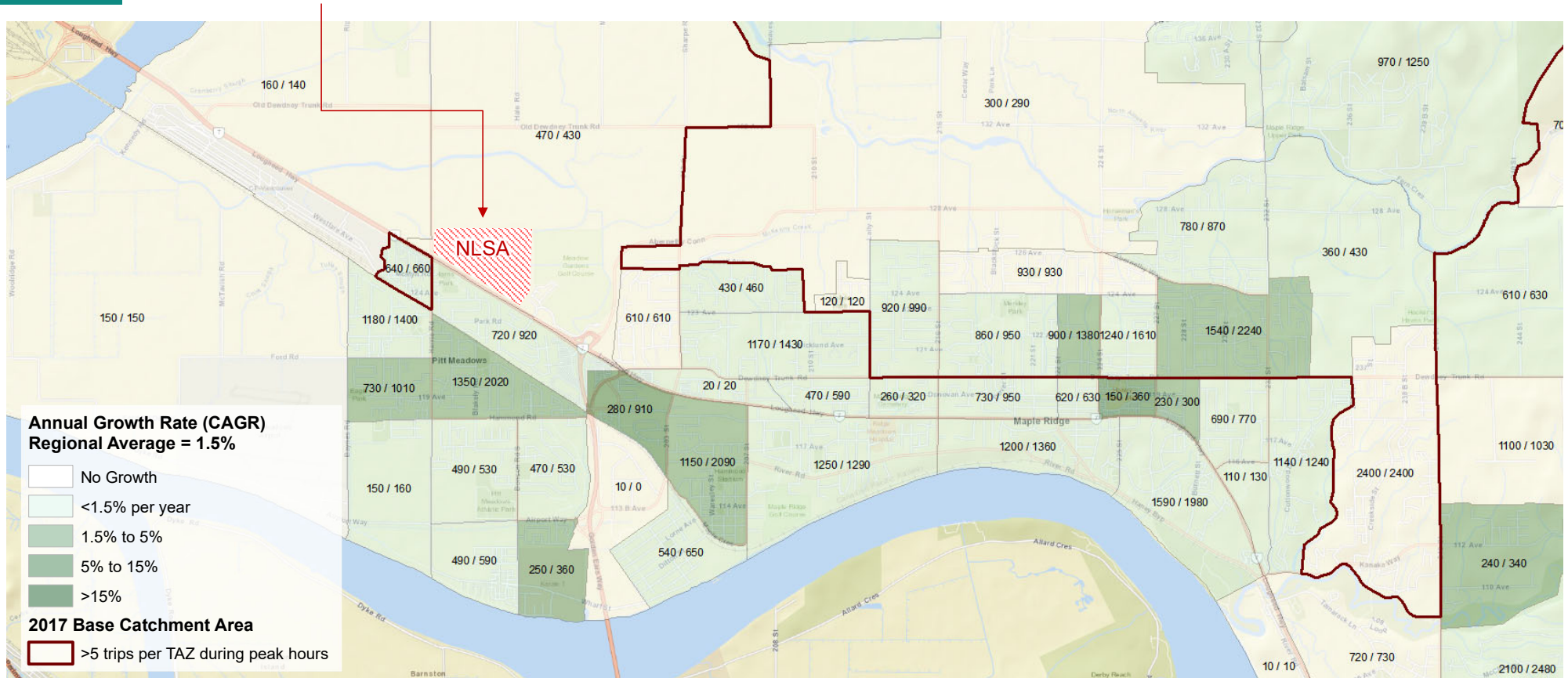
- 2017 Base
  
- **2035 BAU:**
  - Includes background growth
  - No NLSA
  - No North Loughheed Connector
  - No Traffic Calming on Old Dewdney Trunk Rd
  
- 2035 Concept:
  - Includes background growth
  - Includes NLSA
  - Includes North Loughheed Connector
  - Includes Traffic Calming on Old Dewdney Trunk Rd





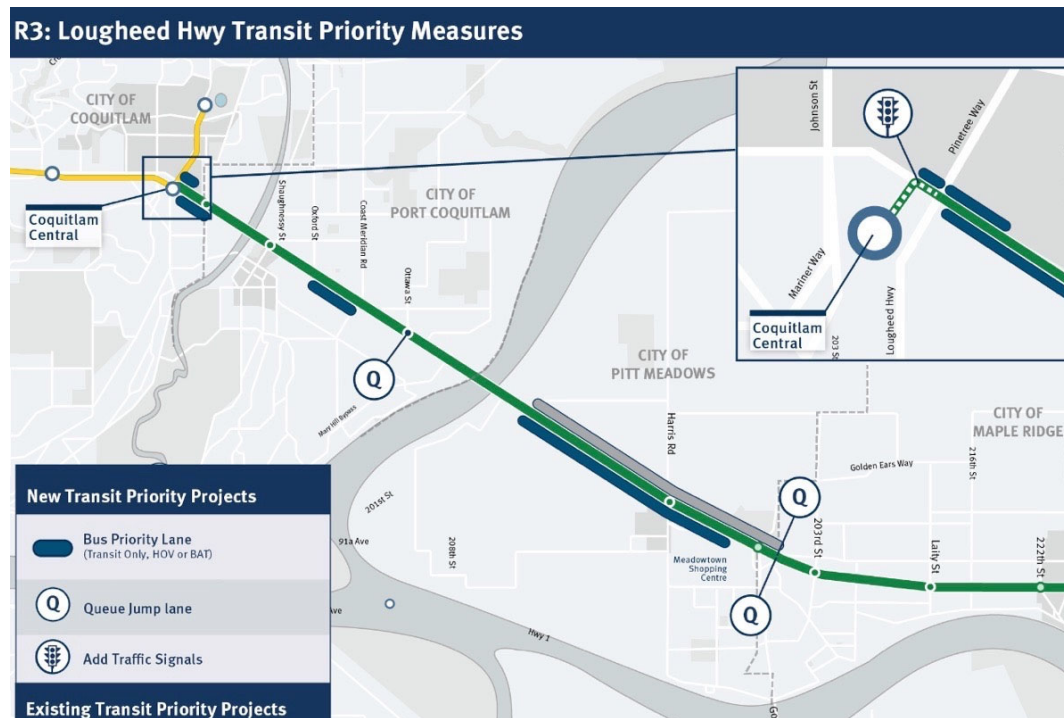
# Number of Households: 2017 / 2035 Baseline

The land development at NLSA has not been incorporated into the RTM baseline land use.



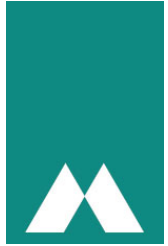


# Recent Infrastructure Projects



- The 2035 BAU scenario includes
- ✓ Eastbound HOV lane (3 GP → 2 GP + 1 HOV)
  - ✓ Right turn lane near Allen Way

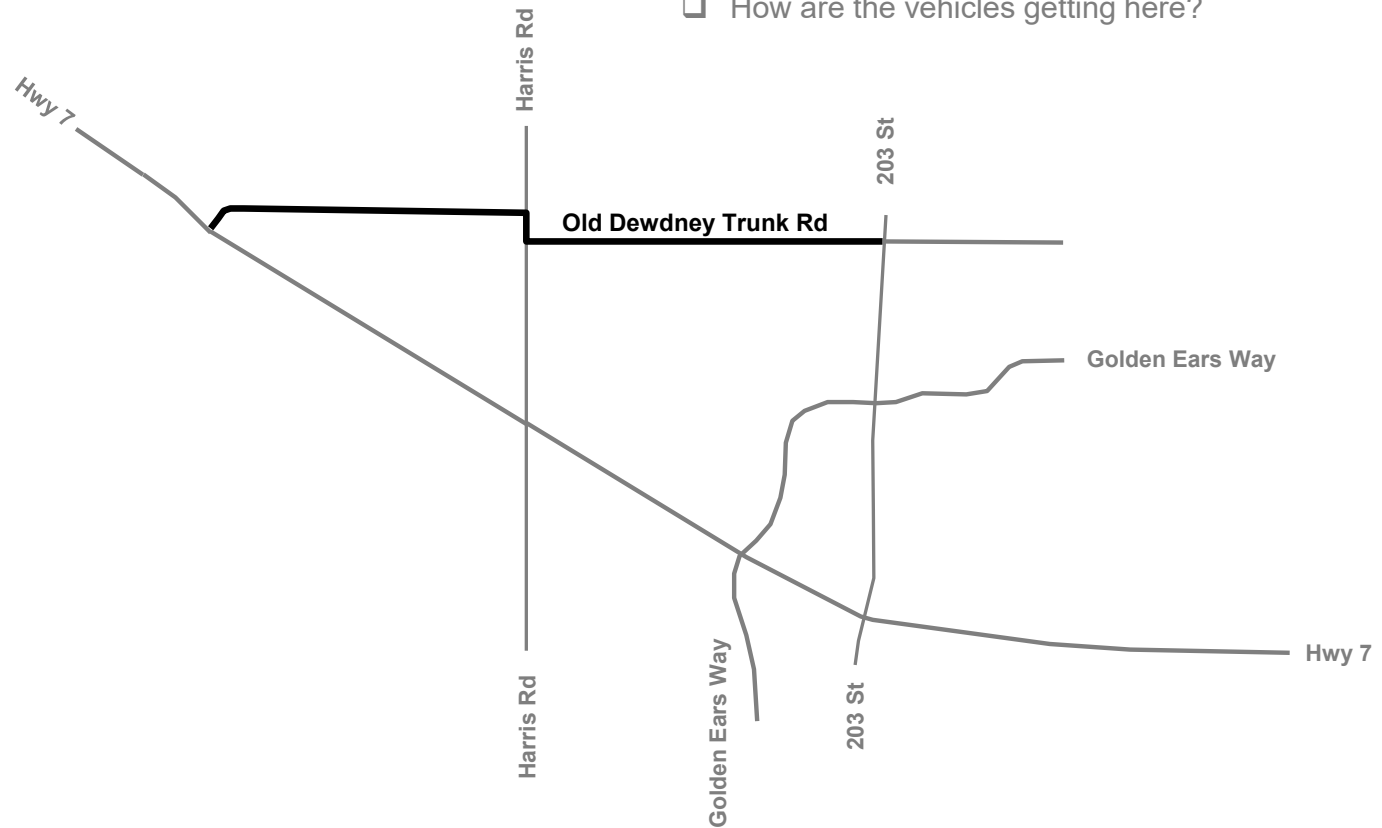




# Select Link Analysis

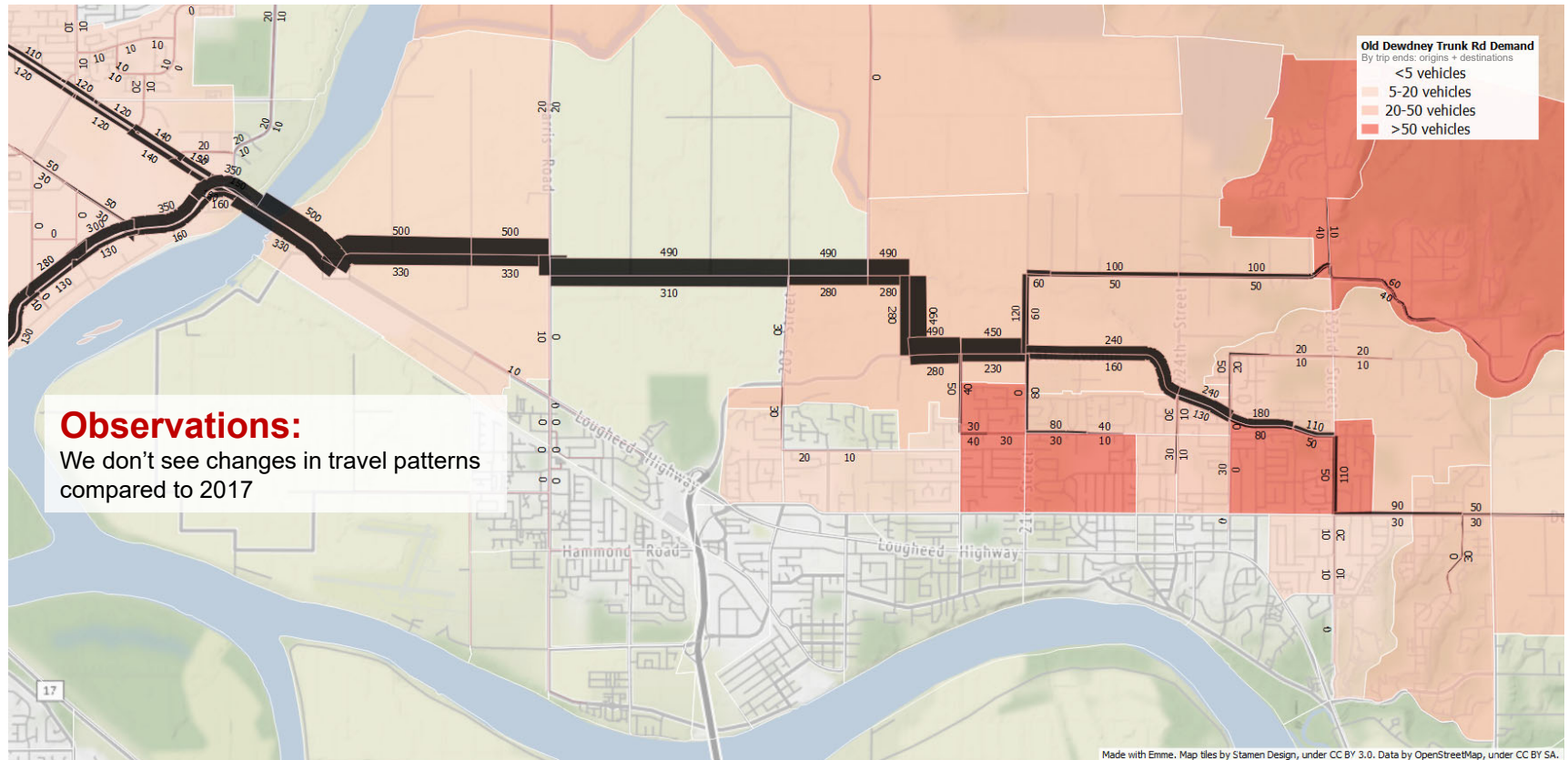
Analyze the vehicle paths that traverse through  
Old Dewdney Trunk Rd between Hwy 7 and 203 St:

- ☐ Where are the trip ends?
- ☐ How are the vehicles getting here?



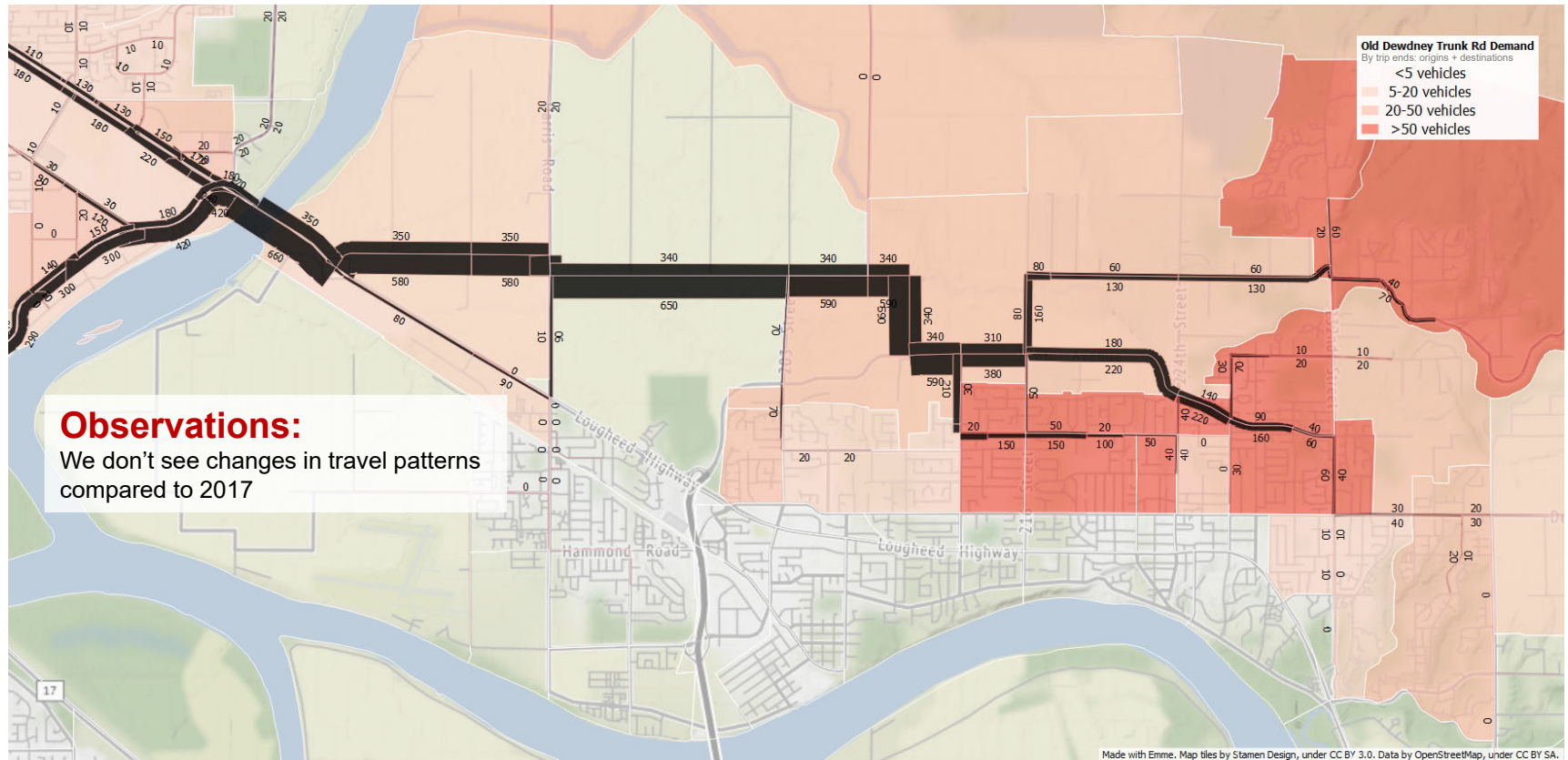


# Old Dewdney Trunk Rd Demand: 2035 Base AM Peak





# Old Dewdney Trunk Rd Demand: 2035 Base PM Peak



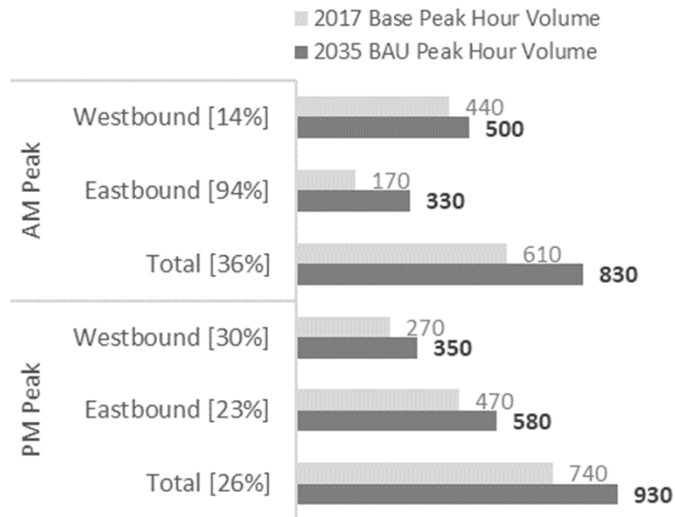


## 2035 BAU: Demand Growth

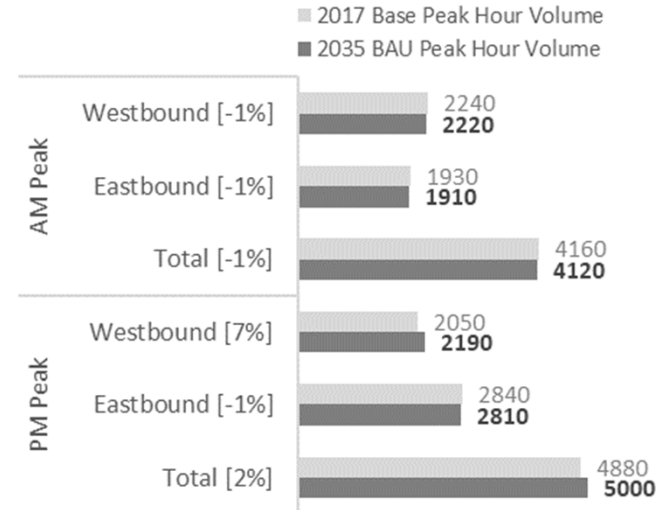
- The growth of traffic on Old Dewdney Trunk Rd is mostly in the off-peak direction.

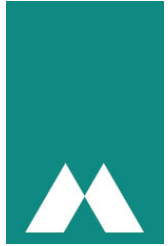


Old Dewdney Trunk Rd: Background Growth



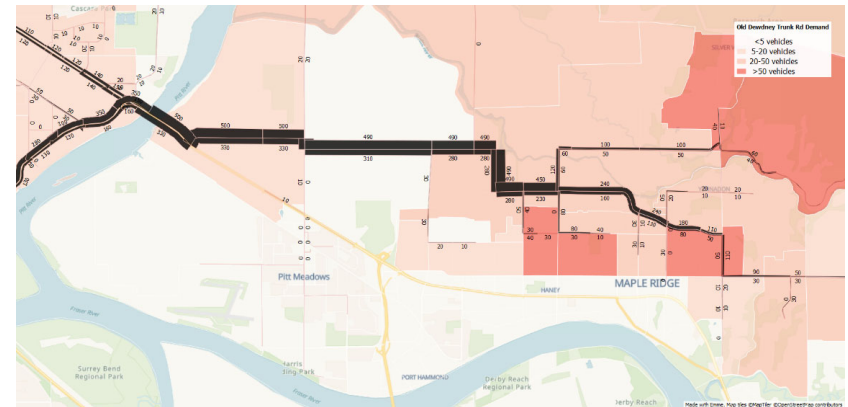
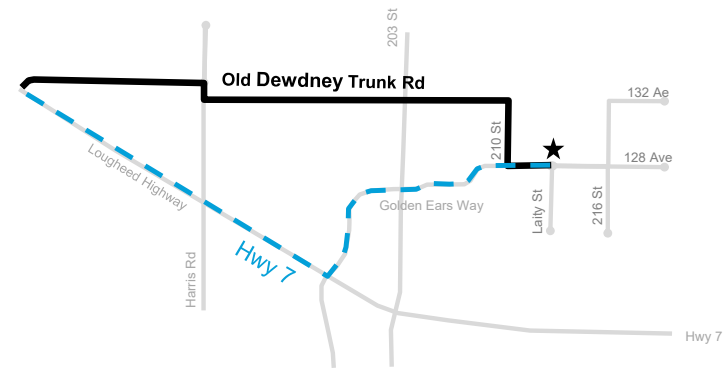
Lougheed Highway: Background Growth





## 2035 BAU: Travel Time

- Today, Old Dewdney Trunk Rd is the faster alternative by approximately **1 minute**.
- In 2035, Old Dewdney Trunk Rd becomes the faster alternative by approximately **2 minutes**.
- For people in **Maple Ridge area**, Old Dewdney Trunk Rd is more attractive.

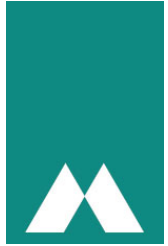




# Scenarios

- 2017 Base
- 2035 BAU:
  - Includes background growth
  - No NLSA
  - No North Loughheed Connector
  - No Traffic Calming on Old Dewdney Trunk Rd
- **2035 Concept:**
  - Includes background growth
  - Includes NLSA
  - Includes North Loughheed Connector
  - Includes Traffic Calming on Old Dewdney Trunk Rd





# NLSA Demographic Assumptions

- Based on land use development plan received

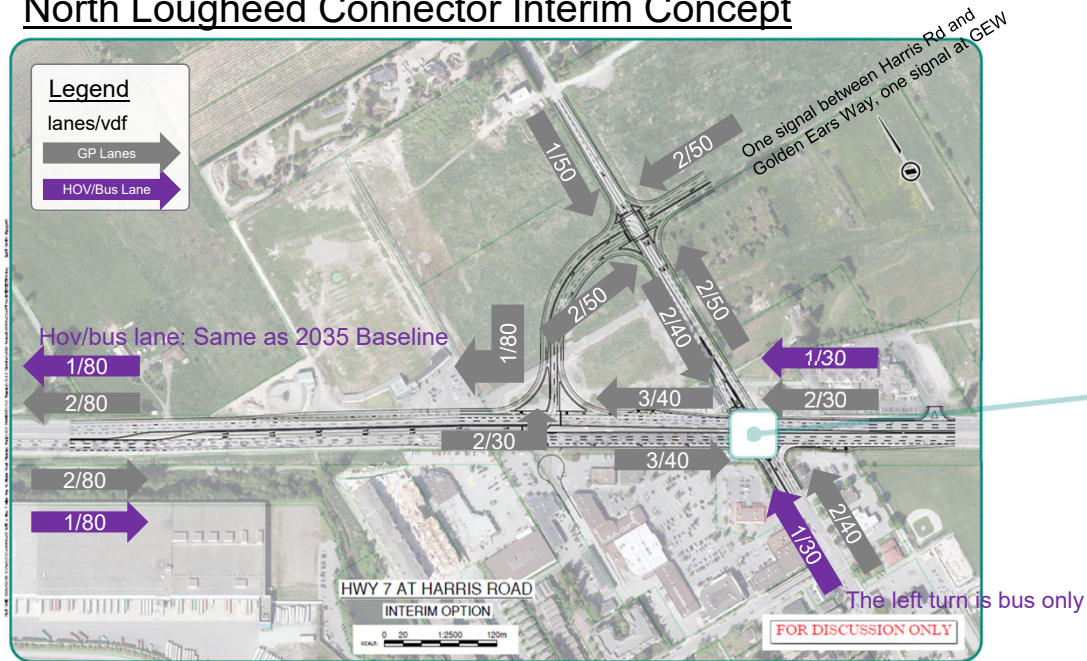
| NLSA Land Use | 2035  |
|---------------|-------|
| Household     | 1,345 |
| Population    | 2,930 |
| Employment    | 4,920 |

| NLSA <u>Vehicle</u> Trips | Inbound | Outbound |
|---------------------------|---------|----------|
| AM Peak                   | 860     | 450      |
| PM Peak                   | 540     | 910      |



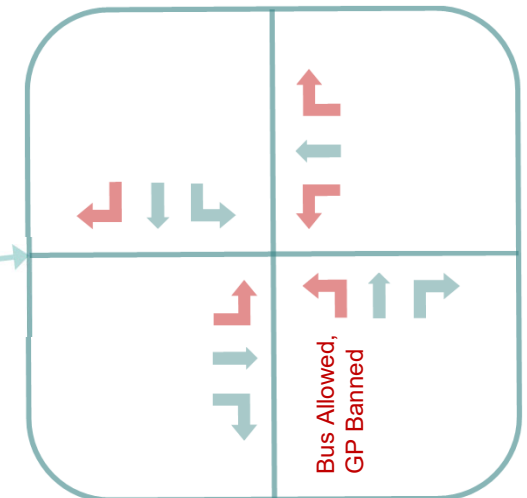
# North Loughheed Connector

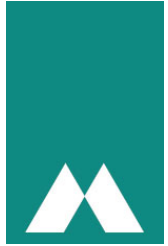
## North Loughheed Connector Interim Concept



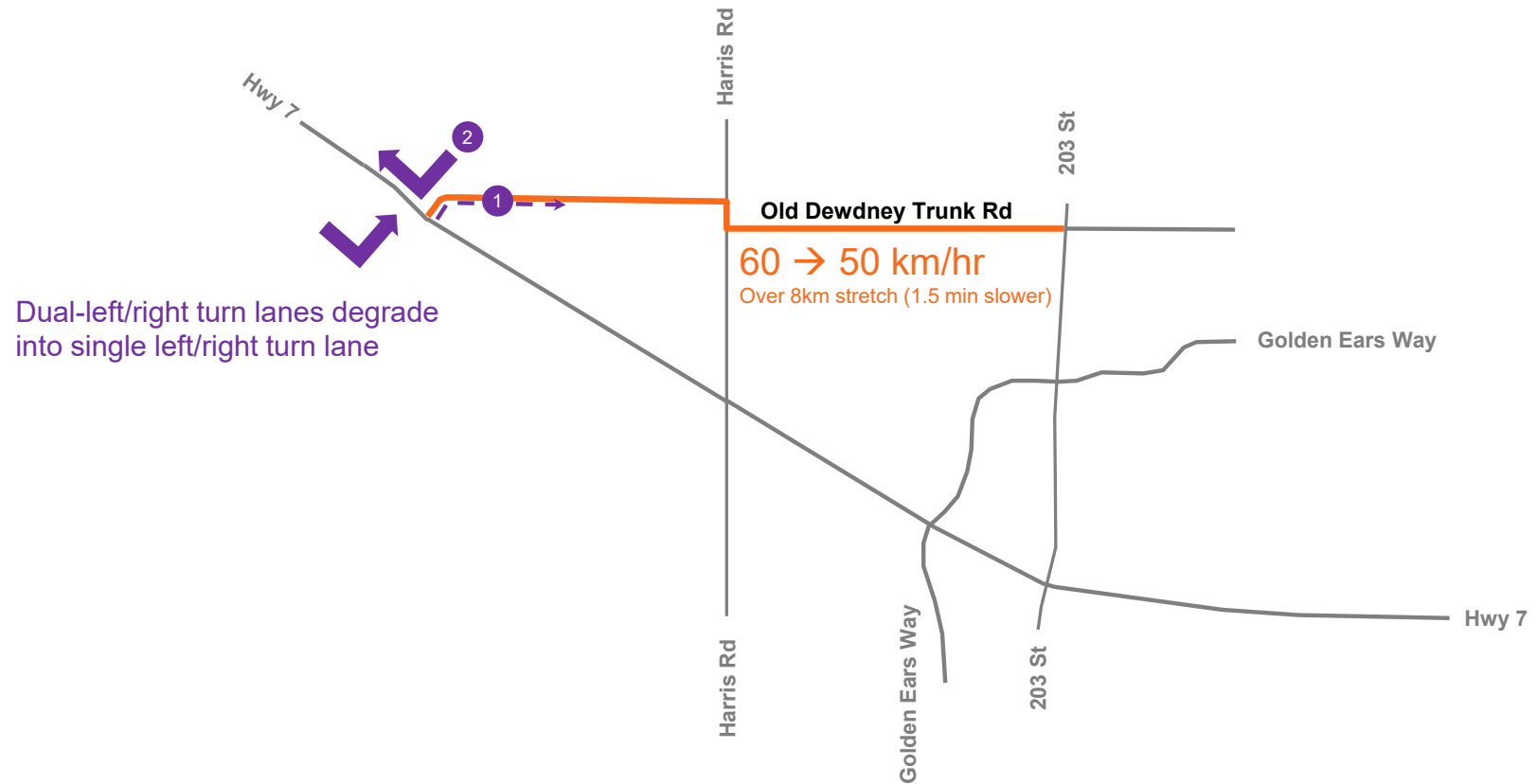
### Turn Restrictions

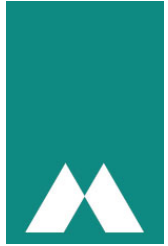
Highway 7 at Harris Rd





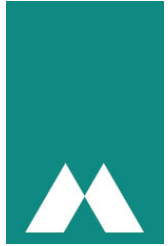
# Traffic Calming





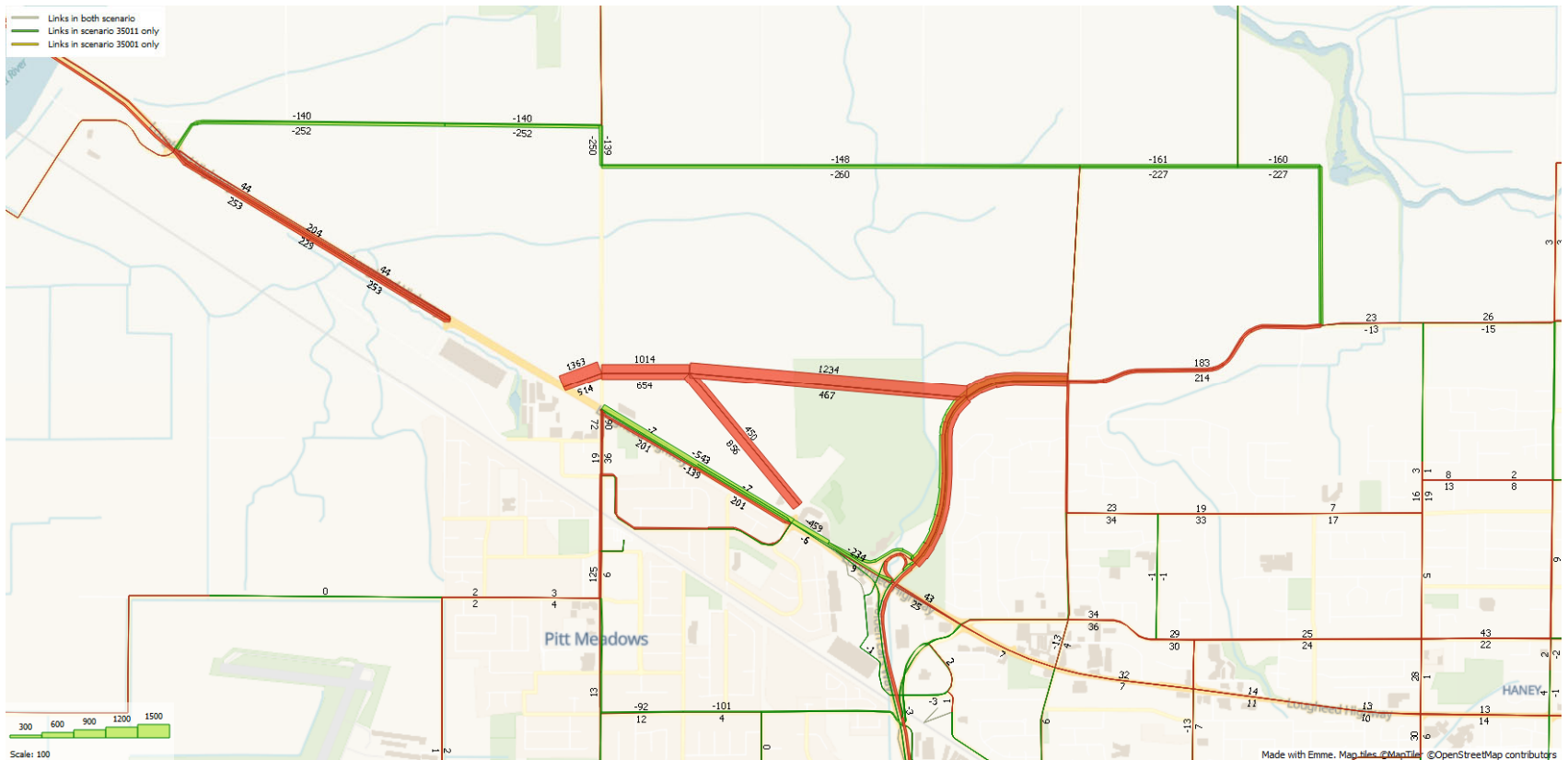
# Old Dewdney Trunk Road: Key Demand Drivers





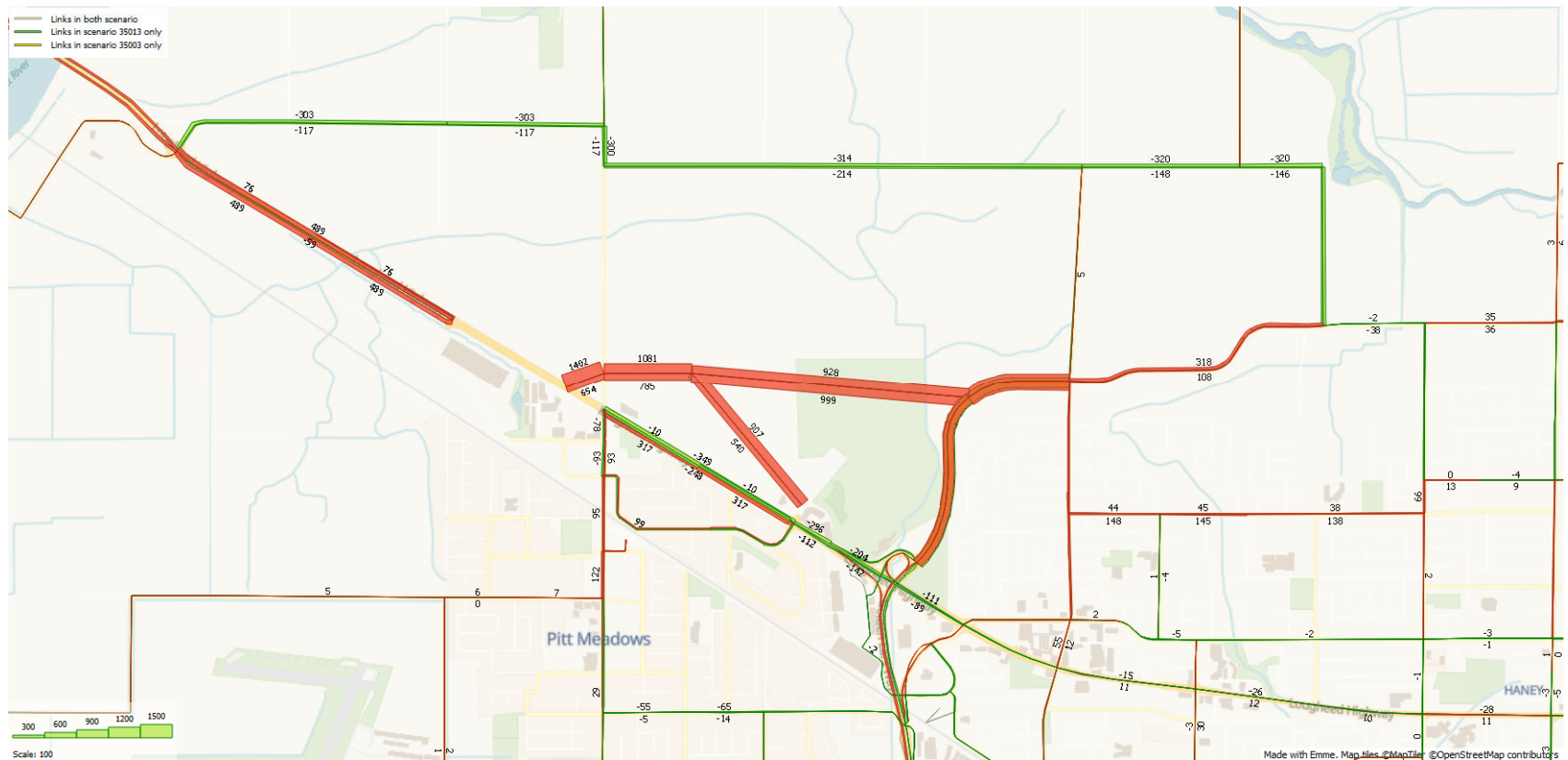
# Volume difference plot: AM Peak

We see a decrease on Old Dewdney Trunk Rd.  
The Pitt River Bridge volume increased by 340 (6%).





We see a decrease on Old Dewdney Trunk Rd.  
The Pitt River Bridge volume increased by 570 (10%).

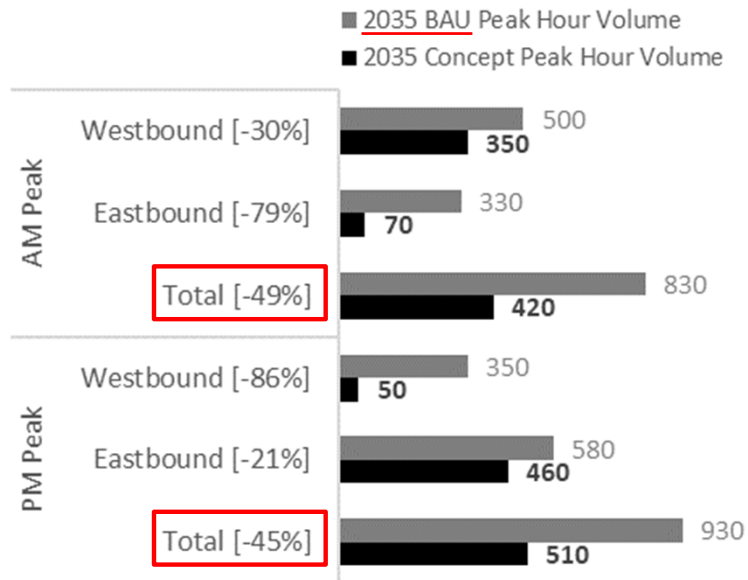




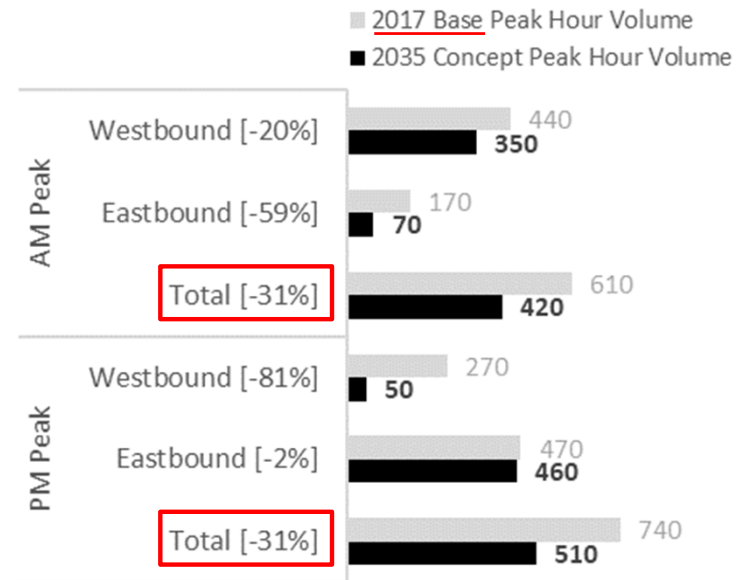
# Old Dewdney Trunk Rd: Diversion

There are more traffic on Pitt River Bridge, but less of them coming from Old Dewdney Trunk Road. The traffic is diverted.

## Old Dewdney Trunk Rd: Diversion



## Old Dewdney Trunk Rd: Diversion

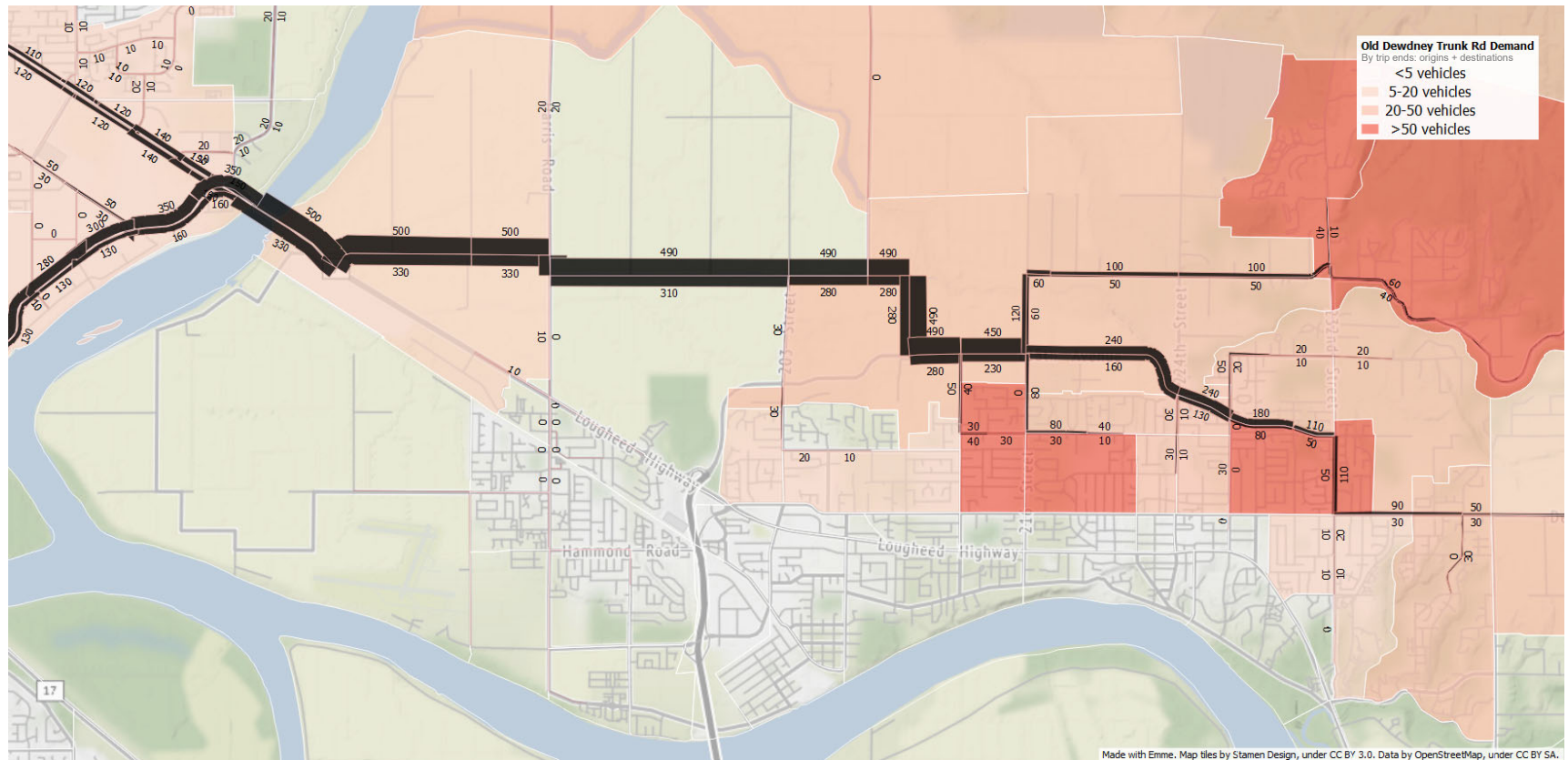




# Appendix

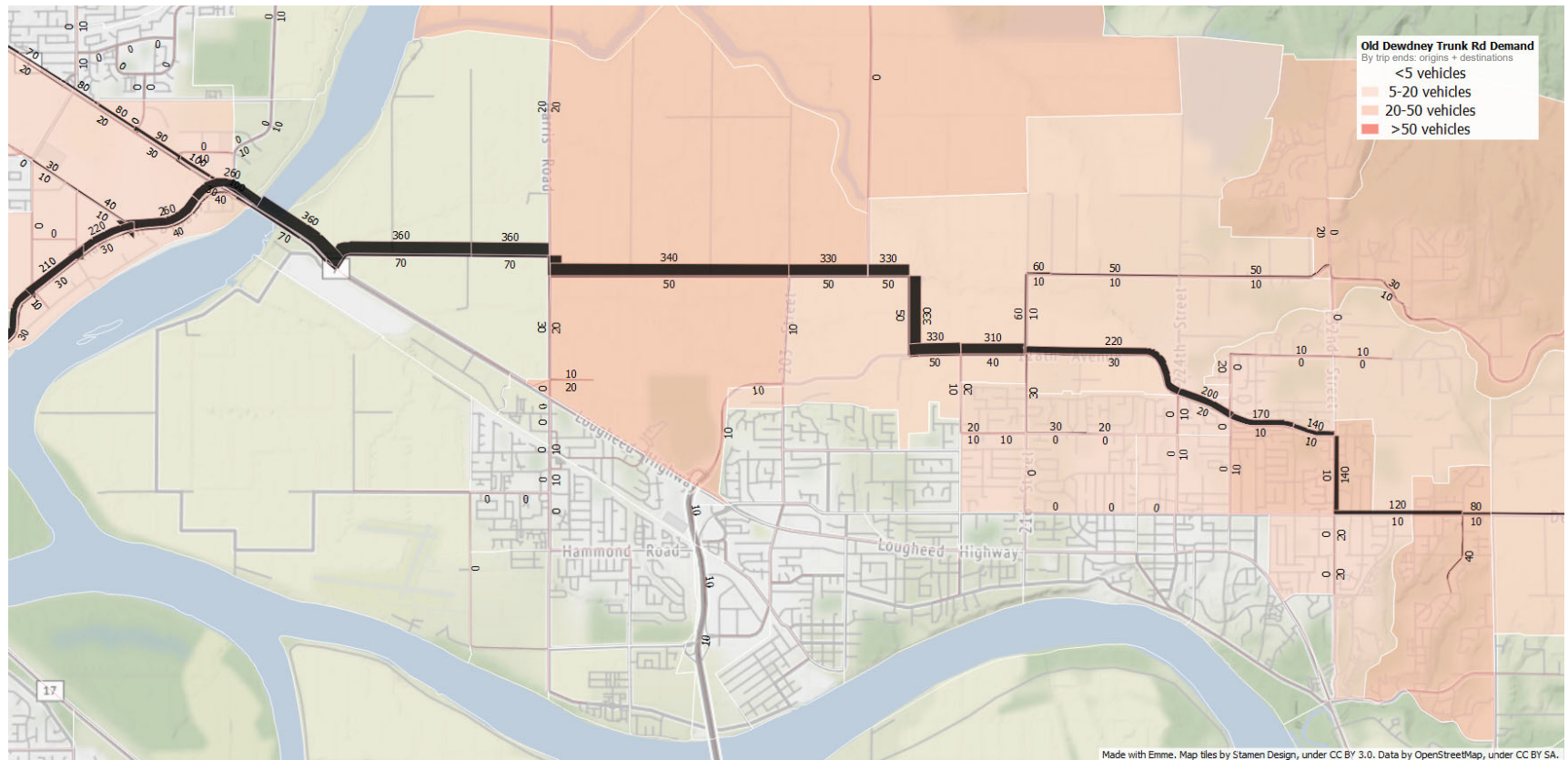


# Old Dewdney Trunk Rd Demand: 2035 Base AM Peak



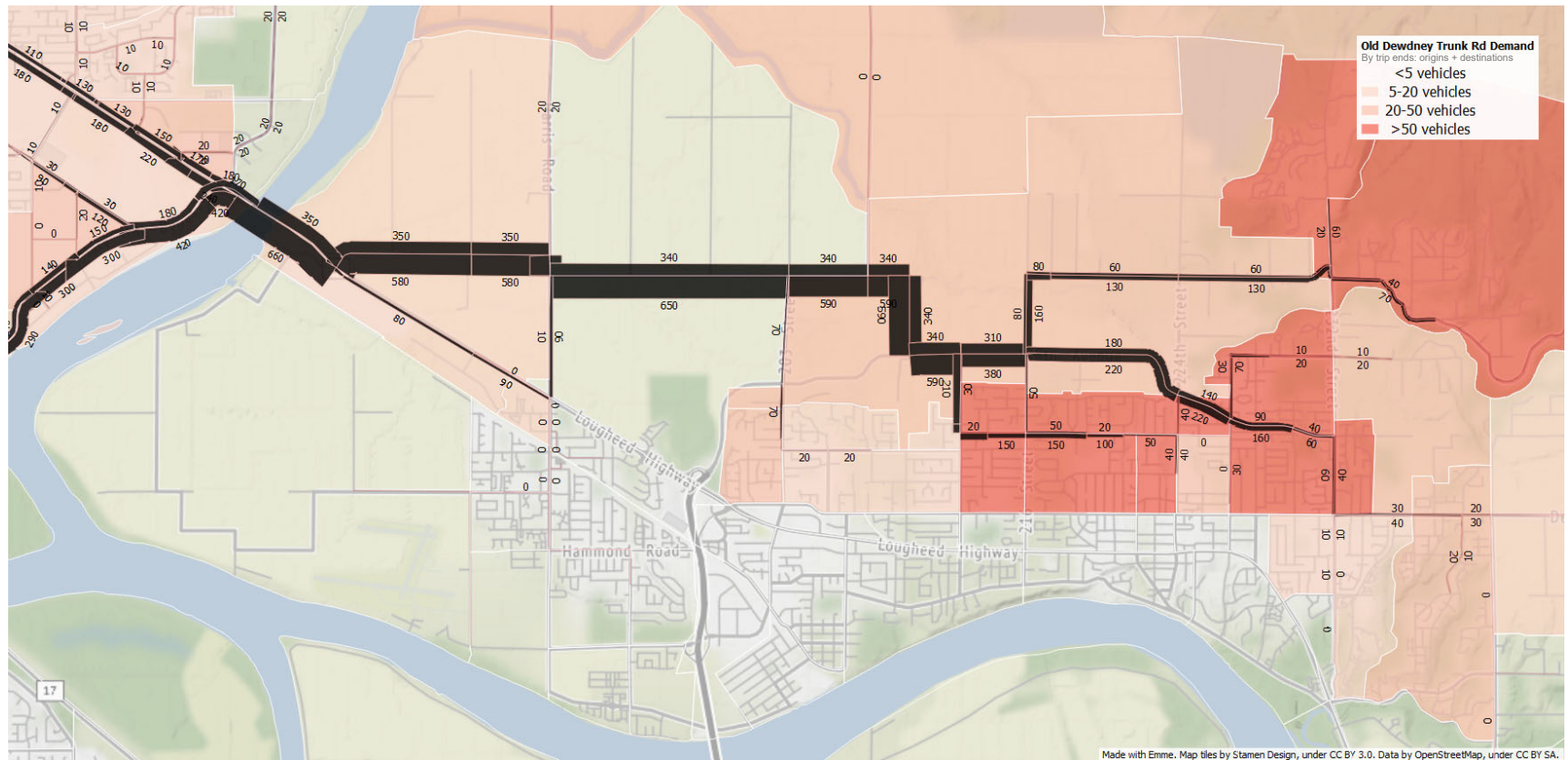


# Old Dewdney Trunk Rd Demand: 2035 Interim Concept AM Peak





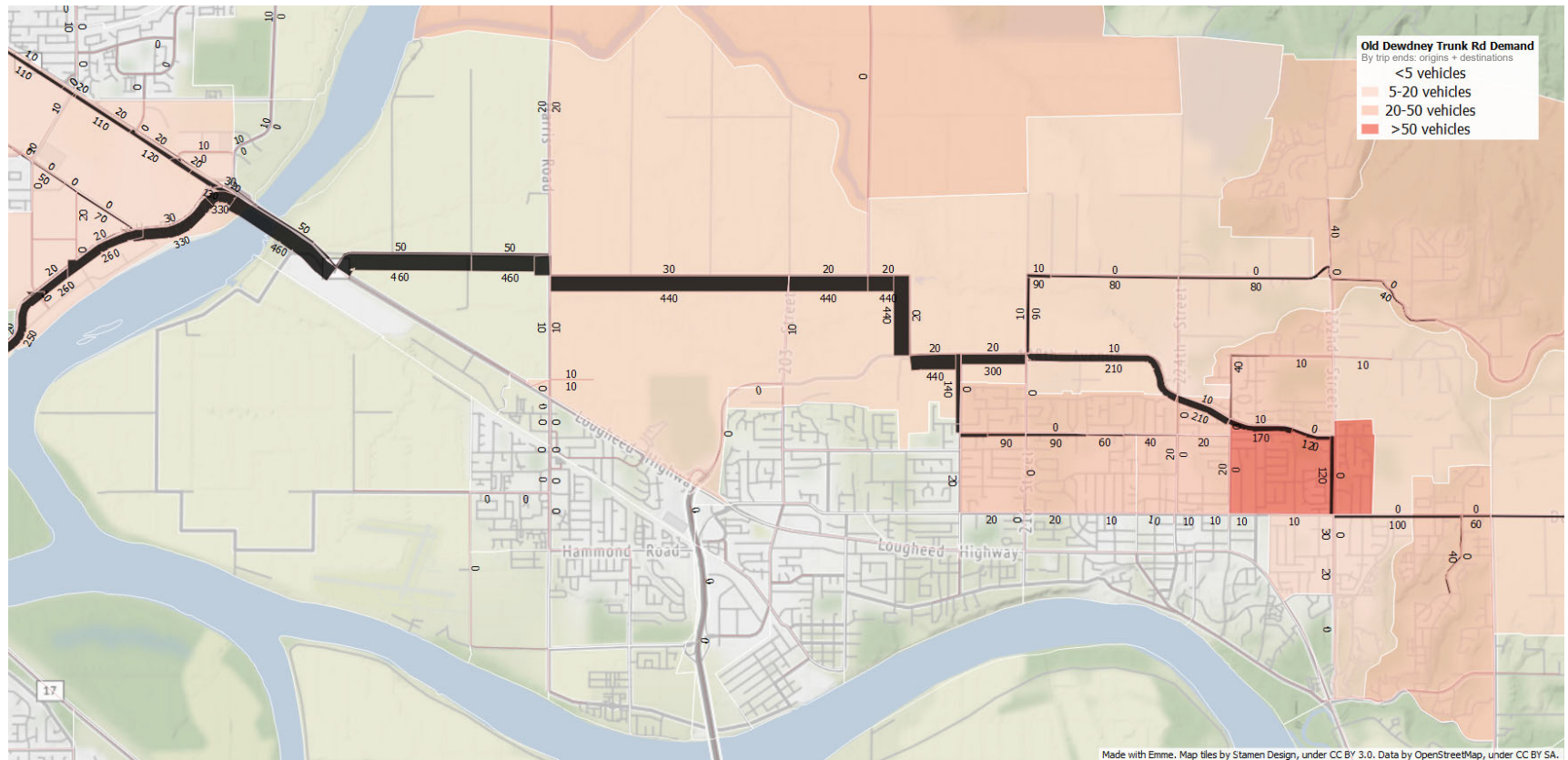
# Old Dewdney Trunk Rd Demand: 2035 Base PM Peak





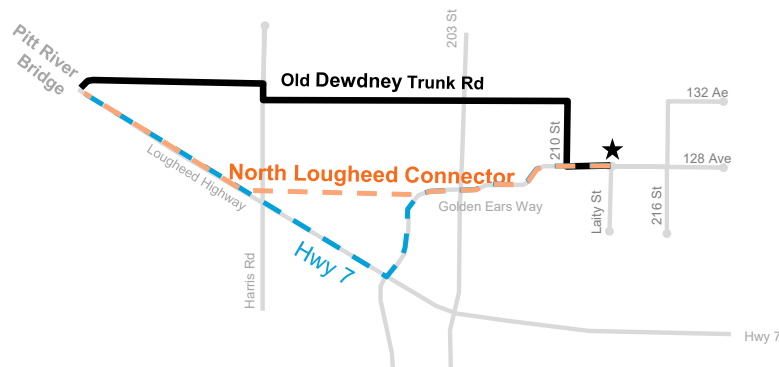


# Old Dewdney Trunk Rd Demand: 2035 Interim Concept PM Peak





# Corridor Travel Time Comparison



| RTM Travel Time |                          | AM Peak |          |               | PM Peak |          |               |
|-----------------|--------------------------|---------|----------|---------------|---------|----------|---------------|
|                 |                          | 2017    | 2035 BAU | 2035 Concept  | 2017    | 2035 BAU | 2035 Concept  |
| Westbound       | Old Dewdney Trunk Rd     | 12 min  | 14 min   | <b>13 min</b> | 9 min   | 10 min   | <b>10 min</b> |
|                 | Hwy 7                    | 13 min  | 16 min   | <b>14 min</b> | 11 min  | 12 min   | <b>10 min</b> |
|                 | North Lougheed Connector | -       | -        | <b>14 min</b> | -       | -        | <b>10 min</b> |
| Eastbound       | Old Dewdney Trunk Rd     | 8 min   | 9 min    | <b>9 min</b>  | 12 min  | 17 min   | <b>13 min</b> |
|                 | Hwy 7                    | 9 min   | 11 min   | <b>13 min</b> | 12 min  | 18 min   | <b>17 min</b> |
|                 | North Lougheed Connector | -       | -        | <b>10 min</b> | -       | -        | <b>14 min</b> |