



# Bay Roberts Transportation Master Plan

Public Information Session

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JUNE 7, 2016



# Introduction

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Harbourside Transportation Consultants (HTC) was retained by the Town of Bay Roberts to complete a Transportation Master Plan for the Town.

## Some of the tasks included:

- Kick-Off Meeting & Public Consultation
- Assembling and Reviewing Existing Data
- Traffic Counting and Site Evaluation
- Modelling the Roadway Network and Operational Evaluation of Systems
- Assessment of Solution and Improvement Plan
- Draft and Final Copies of the Report

# Summary of Existing Issues throughout Town

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## INFORMATION FROM THE KICK-OFF MEETING

- Country Road, speeding issues and short-cutting
- Hope Avenue, shift change congestion
- Pedestrian Safety
- Traffic Signals need to be upgraded
- Access Management along the Golden Mile

## INFORMATION FROM THE FIRE CHIEF & EMO

### Intersections with Multiple Collisions

- Tim Horton's
- Dominion
- McDonald's
- Irving/Beaver Plaza

### Pedestrian Generators (Town Centre/Golden Mile)

- Gas Stations, Restaurants
- Town Shopping Centres
- Grocery Stores

# Public Consultation

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- HTC held a Public Consultation/Workshop at the Wolverine Search & Rescue Building on October 1, 2015 from 4 to 8pm.
- Representatives from the Town and HTC were there to solicit comments and feedback about general traffic, pedestrian safety and other traffic concerns throughout the Town.

# Data Collection

HTC collected the following data in September 2015:

- 2 Average Daily Traffic Counts
- 12 Turning Movement Counts
- 5 Pedestrian Crossing Counts



# Existing ADT Traffic Counts



# Traffic Analysis - Level of Service Criteria

LOS	Signalized Intersection Control Delay (seconds per vehicle)	Level of Service (LOS) Descriptions	Two Way Stop Controlled Intersection Control Delay (seconds per vehicle)
A	≤ 10 sec	Very low delay. Majority of through traffic on main street does not stop at all. <b>(Excellent)</b>	≤ 10 sec
B	10 – 20 sec	Somewhat higher delay. More vehicles have to stop for red lights. <b>(Very Good)</b>	10 – 15 sec
C	20 – 35 sec	Higher level of congestion and vehicles wait through more than one signal indication, occasionally backups may develop, however traffic flow is still stable and acceptable. <b>(Good)</b>	15 – 25 sec
D	35 – 55 sec	Congestion is noticeable and delays may become extensive. Most cars have to wait more than one red light to pass. This threshold is the upper limit for design. <b>(Satisfactory)</b>	25 – 35 sec
E	55 – 80 sec	Congested conditions. Traffic fills intersection capacity with long queues and delays. Many vehicles need to wait more than one green indication. The LOS is nearing capacity and is unsatisfactory. <b>(Unsatisfactory)</b>	35 – 50 sec
F	≥ 80 sec	Very congested conditions. Traffic demand exceeds capacity of the intersection with very long queues and delays. The LOS is generally considered to be unacceptable. <b>(Unacceptable)</b>	≥ 50 sec

# Traffic Analysis Results

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HTC modelled the study area in Synchro, a traffic modelling software, to determine the level of service on the road network.

During the AM peak hour (7:45am-8:45am) all intersections are operating at LOS D or better, which is considered acceptable.

During the PM peak hour (4:15-5:15pm) two intersections have movements operating at LOS E, and nearing capacity, they are:

- Veteran's Memorial Highway SB Ramp @ Country Road – Southbound Movement
- L.T. Stick Drive @ Conception Bay Highway – Southbound Through Movement



# Discussion of Transportation Issues

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HTC reviewed different transportation issues throughout the Town of Bay Roberts, they are:

- Access Management along the Golden Mile (Conception Bay Highway)
- Pedestrian Facilities
- Traffic Signal Conditions
- Alternative Road Cross Sections/Treatments
- Intersection & Roadway Operations
- Future Growth Scenarios (2025)

# Access Management

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Access Management is “the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed.”

Unregulated or uncontrolled land development is one of the primary causes of traffic problems from both operational and safety perspective.

Some techniques to increase capacity and improve safety are:

- Increasing spacing between intersections
- Managing driveway location, spacing and design
- Implementing median treatments (two-way left turn lanes)

# Access Management

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- Access along Conception Bay Highway from L.T. Stick Drive to Water Street is highly uncontrolled.
- Driveway management is one of the most critical access management measures that can be undertaken along the Golden Mile.
- HTC has completed a plan for access management along Conception Bay Highway.

# Pedestrian Facilities

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Walkways include sidewalk, multi-use paths and in rural area, shoulders.

There is very little sidewalk in the Town of Bay Roberts, new sidewalk near Amalgamated Academy.

There are three marked crosswalks throughout the Town of Bay Roberts:

- Bay Arena
- Amalgamated Academy
- Ascension Collegiate

Other crossing locations noted are:

- T'Railway at Bay Roberts Drive
- George Mercer Drive/McDonald's
- Tim Horton's

# Traffic Signals

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There are three signalized intersections throughout the Town of Bay Roberts. They are:

- L.T. Stick Drive @ Conception Bay Highway
- Bareneed Drive @ Conception Bay Highway
- Water Street @ Conception Bay Highway

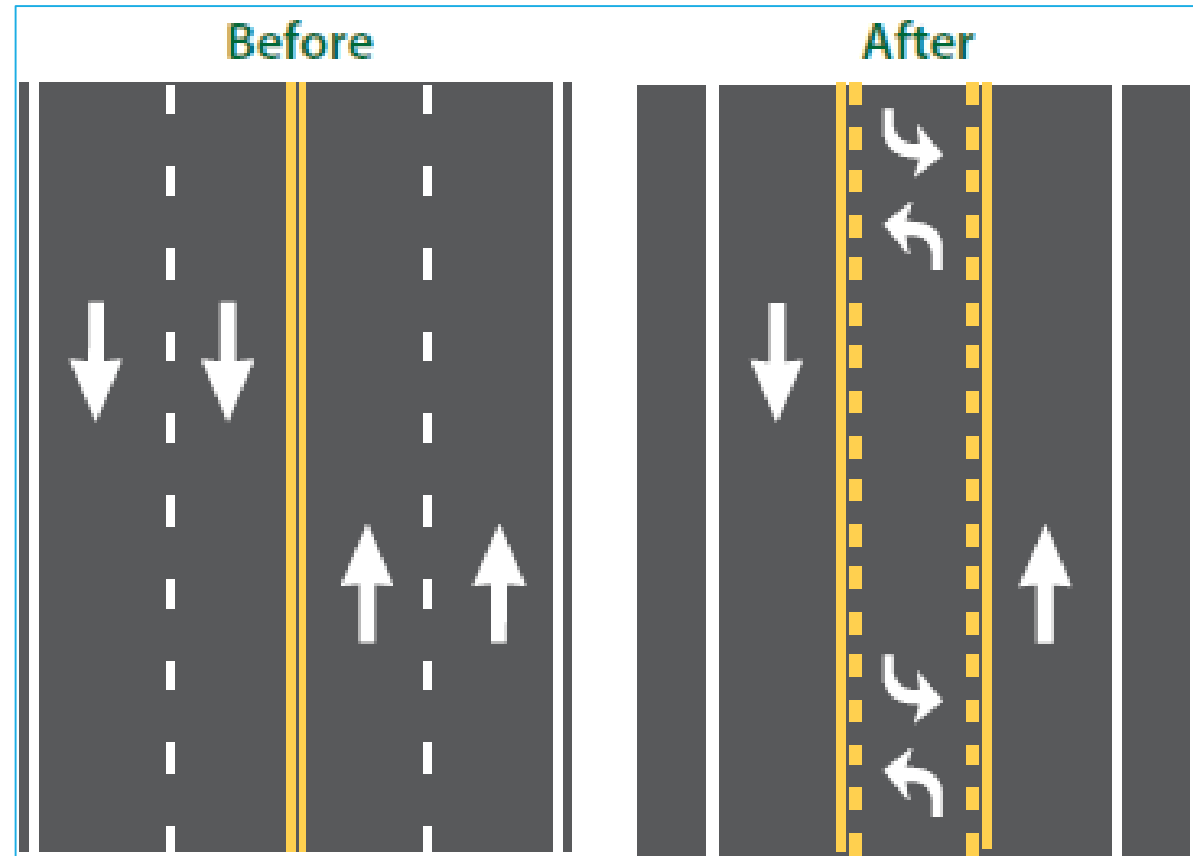
Key Issues:

- TAC MUTCDC Standards
- Equipment/Operational Issues

# Alternative Road Cross Sections/ Treatments

A Road Diet is when an undivided four lane roadway is converted into three lanes, which consists of two through lanes and one center lane (TWLTL).

The reduction of lanes allows the roadway to be relocated for sidewalks, pedestrian crossings and bike lanes.



# Road Diet Examples (3-lane Cross Section)



Four Lanes

Two Lanes w/ center turn lanes,  
bike lanes, ped refuge island at  
bus stop



# Road Diet (3-lane Cross Section)

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Road Diets have multiple safety and operational benefits for vehicles and pedestrians:

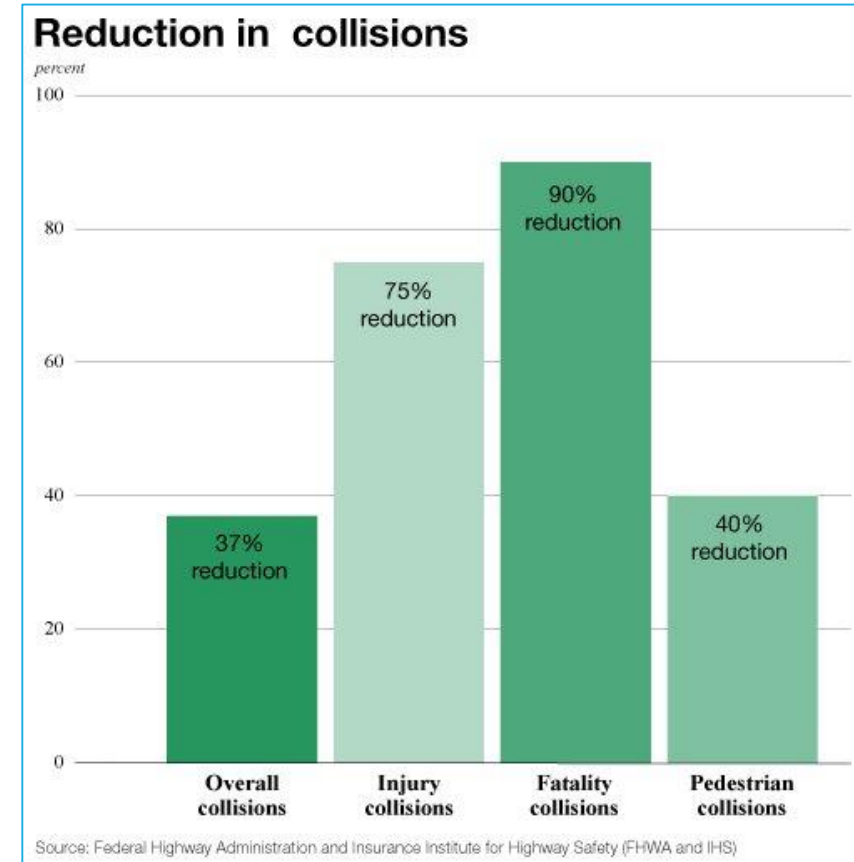
- Reducing rear-end and side-swipe collisions,
- Improving speed limit compliance and decreasing collision severity when collisions do occur,
- Decreasing vehicle travel lanes for pedestrians to cross, therefore reducing the multiple-threat collision for pedestrians,
- Providing room for a pedestrian crossing refuge island, and
- Providing the opportunity for a buffer between pedestrians and vehicles.



# Roundabout

## Why roundabouts?

- Traffic Safety
- Operational Performance
- Environmental Factors
- Access Management
- Traffic Calming
- Pedestrian Safety
- Aesthetics
- Land Use
- Ongoing Operations and Maintenance



# Existing Traffic Analysis Results (2015) – Road Diet

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HTC modelled the existing traffic network again, however this model included the Road Diet which is a 3-lane cross section along Conception Bay Highway from L.T. Stick Drive to Water Street.

During the AM peak hour all intersections continue to operate at LOS D or better, which is considered acceptable.

During the PM peak hour Veteran's Memorial Highway SB Ramp @ Country Road– Southbound Movement continues to operate at LOS E.

The three existing traffic signals were all optimized with new signal timing plans.

# Future Traffic Analysis Results (2025) – Road Diet

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## Included:

- Road Diet (3-lane cross section) along the Golden Mile
- 1% growth rate per year to the year 2025
- The three existing traffic signals were all optimized with new signal timing plans.
- Improvements include left-turn storage bay lanes on 5 stop-controlled intersections.

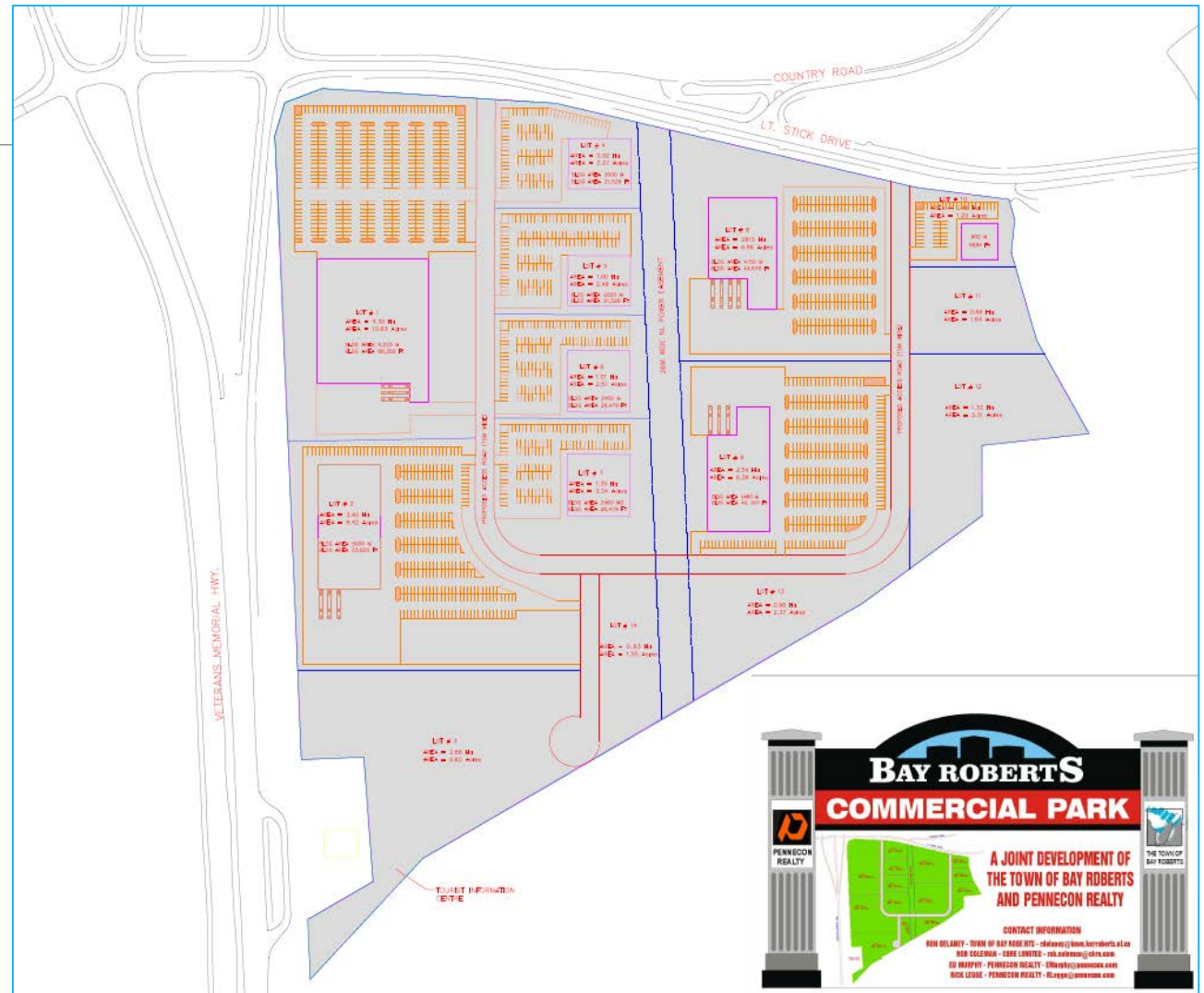
## Results:

- AM peak hour: all intersections operate at LOS D or better, except
  - Veteran's Memorial Highway SB
  - George Mercer Drive WB
- PM peak hour:
  - Veteran's Memorial Highway SB Ramp @ Country Road – Southbound Movement

# Future Commercial Development

The proposed commercial development site is to include:

- Commercial Retail
- Grocery Store
- Bank
- Restaurants
- Office Space



# Future Commercial Development – Trip Generation Rates

The proposed development is expected to generate approximately 1,169 additional trips in the AM peak hour and approximately 2,590 additional trips in the PM peak hour.

Use	Proposed Development	Number	Unit	1000 sq ft GFA * Coverage	ITE Code	AM Peak Rate	AM Peak Trip Gen	AM Peak In	AM Peak Out	PM Peak Rate	PM Peak Rate Gen	PM Peak In	PM Peak Out
Future Development													
Lot #1	Free-Standing Discount Store	99,300	sq. ft	99.3	815	1.06	106	73	33	4.98	495	248	247
Lot #2	Free-Standing Discount Superstore	53,820	sq. ft	53.8	813	1.85	100	56	44	4.35	234	115	119
Lot #3	General Office	54,615	sq. ft	54.6	710	1.40	77	68	9	1.49	82	14	68
Lot #4	Walk-In Bank	21,528	sq. ft	21.5	911	0	0	0	0	12.13	261	115	146
Lot #5	Free-Standing Discount Store	21,528	sq. ft	21.5	815	1.06	23	16	7	4.98	108	54	54
Lot #6	Free-Standing Discount Store	26,479	sq. ft	26.5	815	1.06	29	20	9	4.98	132	66	66
Lot #7	Free-Standing Discount Store	26,479	sq. ft	26.5	815	1.06	29	20	9	4.98	132	66	66
Lot #8	Variety Store	44,670	sq. ft	44.7	814	3.81	171	86	85	6.82	305	153	152
Lot #9	Free-Standing Discount Store	45,007	sq. ft	45.0	815	1.06	48	33	15	4.98	225	113	112
Lot #10	High-Turnover (Sit-Down) Restaurant	9,554	sq. ft	9.6	932	10.81	104	58	46	9.85	95	57	38
Lot #11	High-Turnover (Sit-Down) Restaurant	13,530	sq. ft	13.5	932	10.81	147	81	66	9.85	134	81	53
Lot #12	High-Turnover (Sit-Down) Restaurant	27,308	sq. ft	27.3	932	10.81	296	163	133	9.85	269	162	107
Lot #13	Free-Standing Discount Store	19,553	sq. ft	19.6	815	1.06	21	15	6	4.98	98	49	49
Lot #14	General Office	12,788	sq. ft	12.8	710	1.40	18	16	2	1.49	20	4	16
<b>Future Development Total</b>							<b>1169</b>	<b>705</b>	<b>464</b>		<b>2590</b>	<b>1297</b>	<b>1294</b>

# Future Commercial Development – 100% developed Traffic Analysis Results

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HTC modelled the future traffic network again.

Model includes:

- Road Diet
- Site generated trips on the study road network.
- The three existing traffic signals were all optimized with new signal timing plans.

Results:

AM peak hour - all intersections continue to operate at LOS D or better, except:

- Veteran's Memorial Highway
- George Mercer Drive

PM peak hour - 13 of the 16 study intersections operate with a movement operating at LOS E or F and some intersections have an overall LOS E or F.

# Future Commercial Development – 50% developed Traffic Analysis Results

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Due to the previous model having a major impact on the road network, HTC completed another scenario with the proposed development at 50% developed.

During the AM peak hour all intersections continue to operate at LOS D or better, with Veteran's Memorial Highway SB Ramp @ Country Road is operating at LOS E.

During the PM peak hour a few intersections have movements at LOS F, they are:

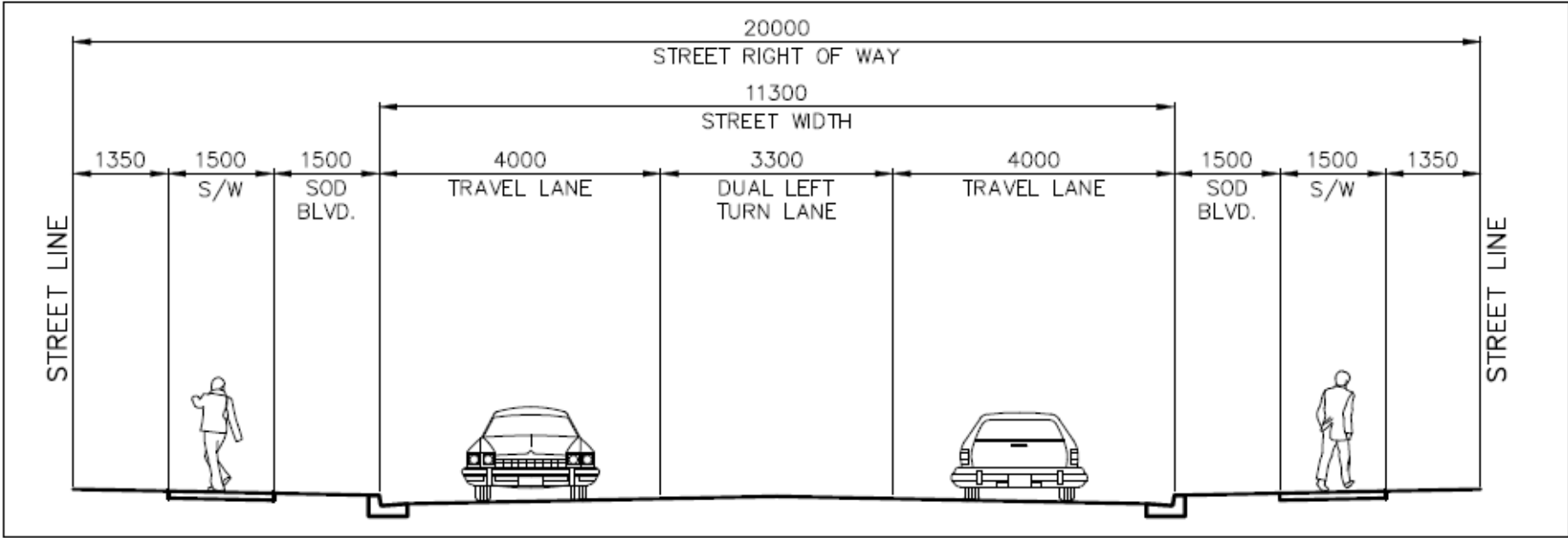
- Veteran's Memorial Highway SB @ Country Road
- Entrances to the Development @ Country Road
- Shearstown Road @ Conception Bay Highway

# Improvement Plan

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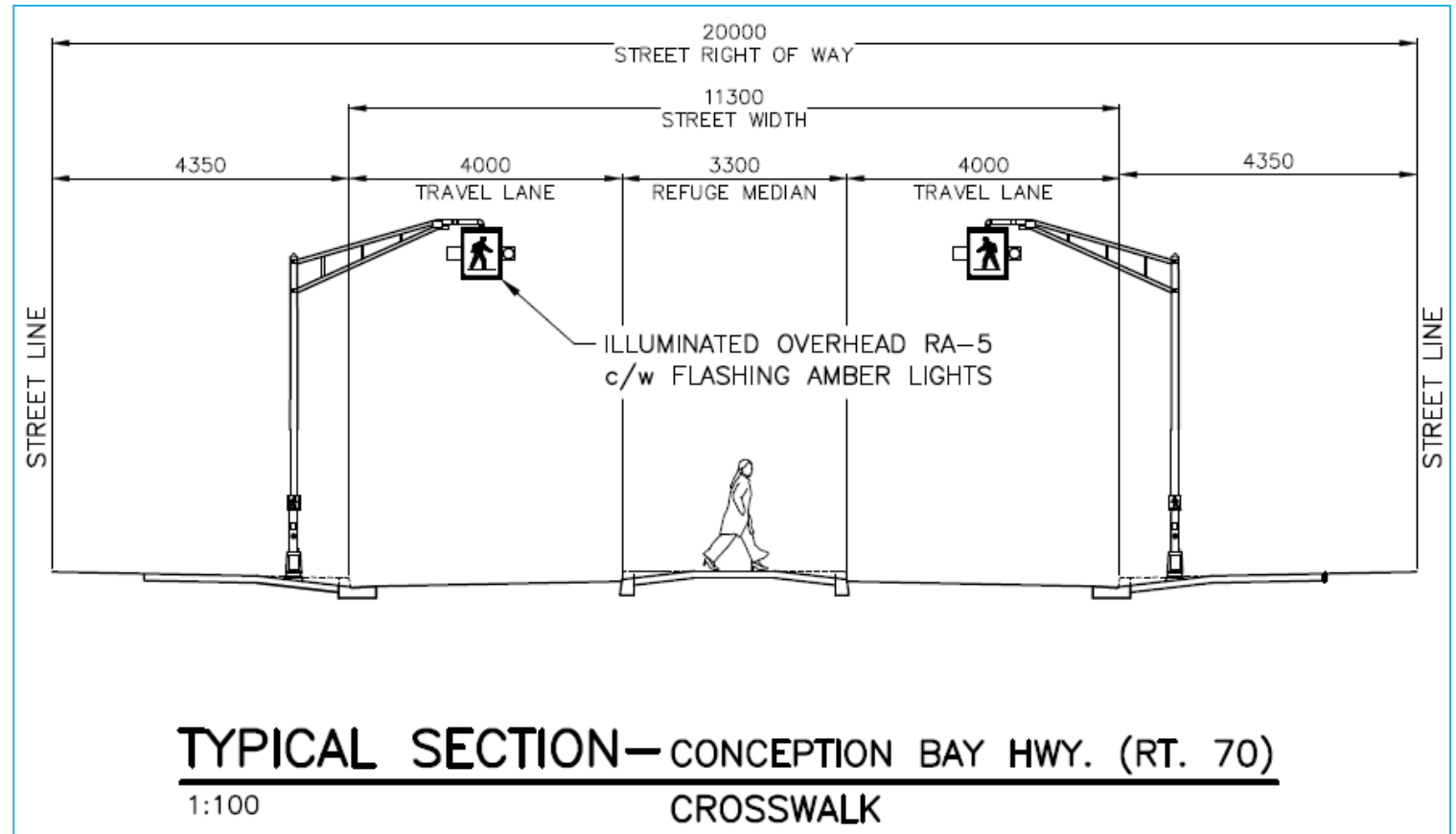
# Road Diet Cross Section

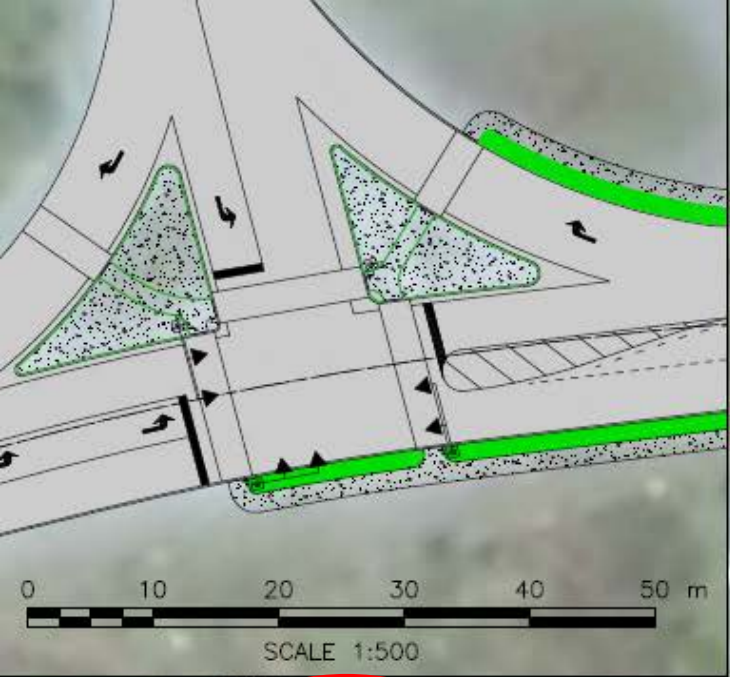


# Recommended Pedestrian Facilities

Provision of sidewalks are to be a priority on arterial and major collector street like Conception Bay Highway.

Installing a pedestrian corridor on both sides of Conception Bay Highway will connect the residents to the closest intersection or proper pedestrian crossing.

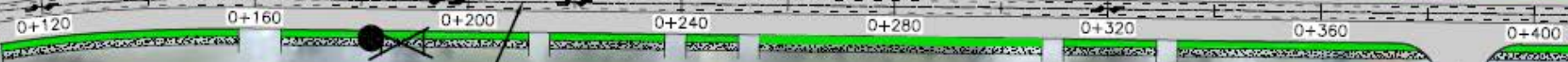




SCALE 1:500



NEW SIDEWALK (TYP.)



NAPA AUTO PARTS

BATTEN'S WAREHOUSE

CLOSE EXISTING ACCESS

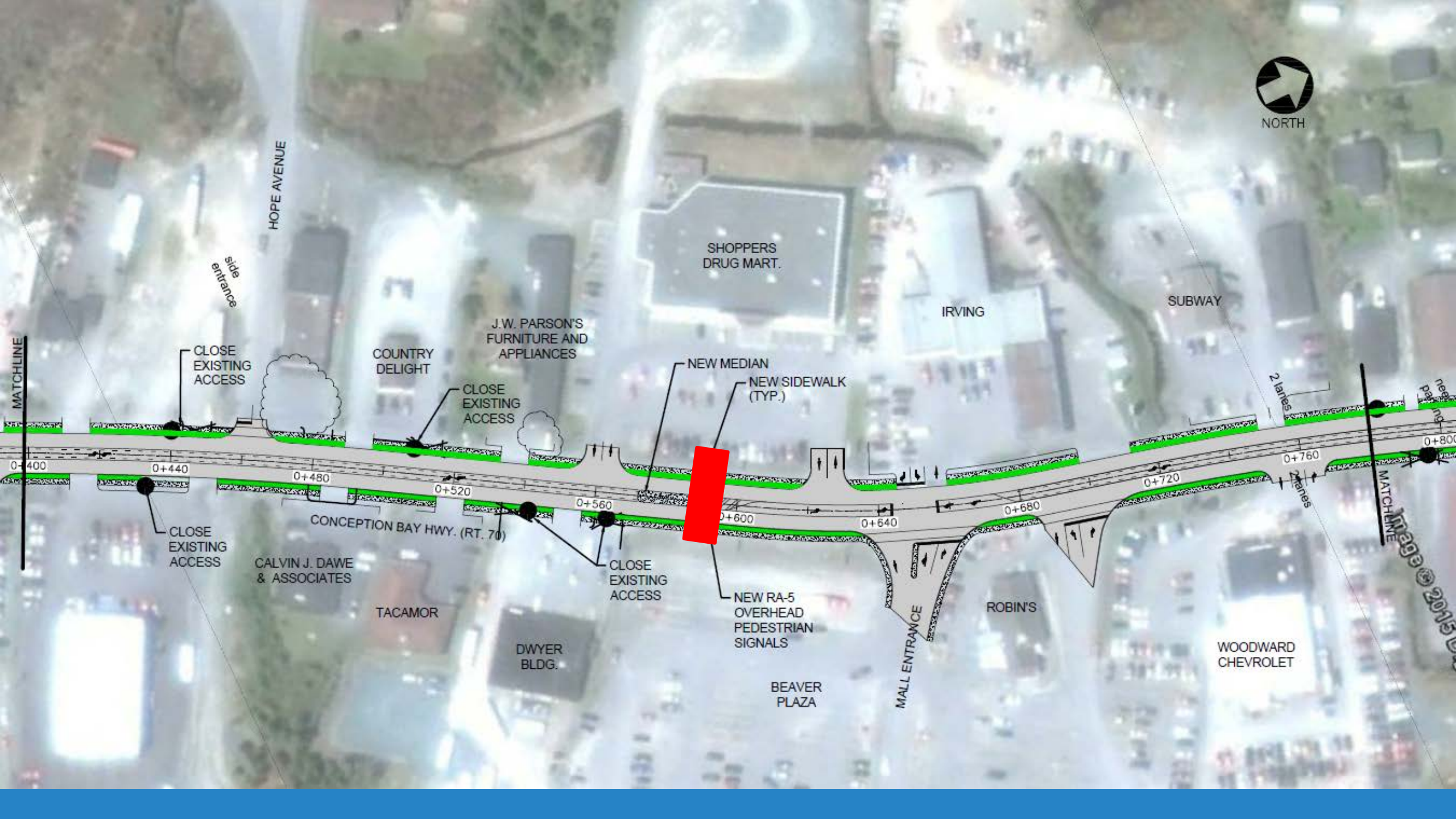
CONCEPTION BAY HWY. (RT. 70)

CLOSE EXISTING ACCESS

BACCALIEU TRAIL ANIMAL HOSPITAL

AVALON FORD

MATCHLINE



HOPE AVENUE

SHOPPERS DRUG MART.

IRVING

SUBWAY

J.W. PARSON'S FURNITURE AND APPLIANCES

COUNTRY DELIGHT

NEW MEDIAN

NEW SIDEWALK (TYP.)

CLOSE EXISTING ACCESS

CLOSE EXISTING ACCESS

2 lanes

MATCHLINE

0+400

0+440

0+480

0+520

0+560

0+600

0+640

0+680

0+720

0+760

0+800

MATCHLINE

CLOSE EXISTING ACCESS

CONCEPTION BAY HWY. (RT. 70)

CALVIN J. DAWE & ASSOCIATES

TACAMOR

DWYER BLDG.

CLOSE EXISTING ACCESS

NEW RA-5 OVERHEAD PEDESTRIAN SIGNALS

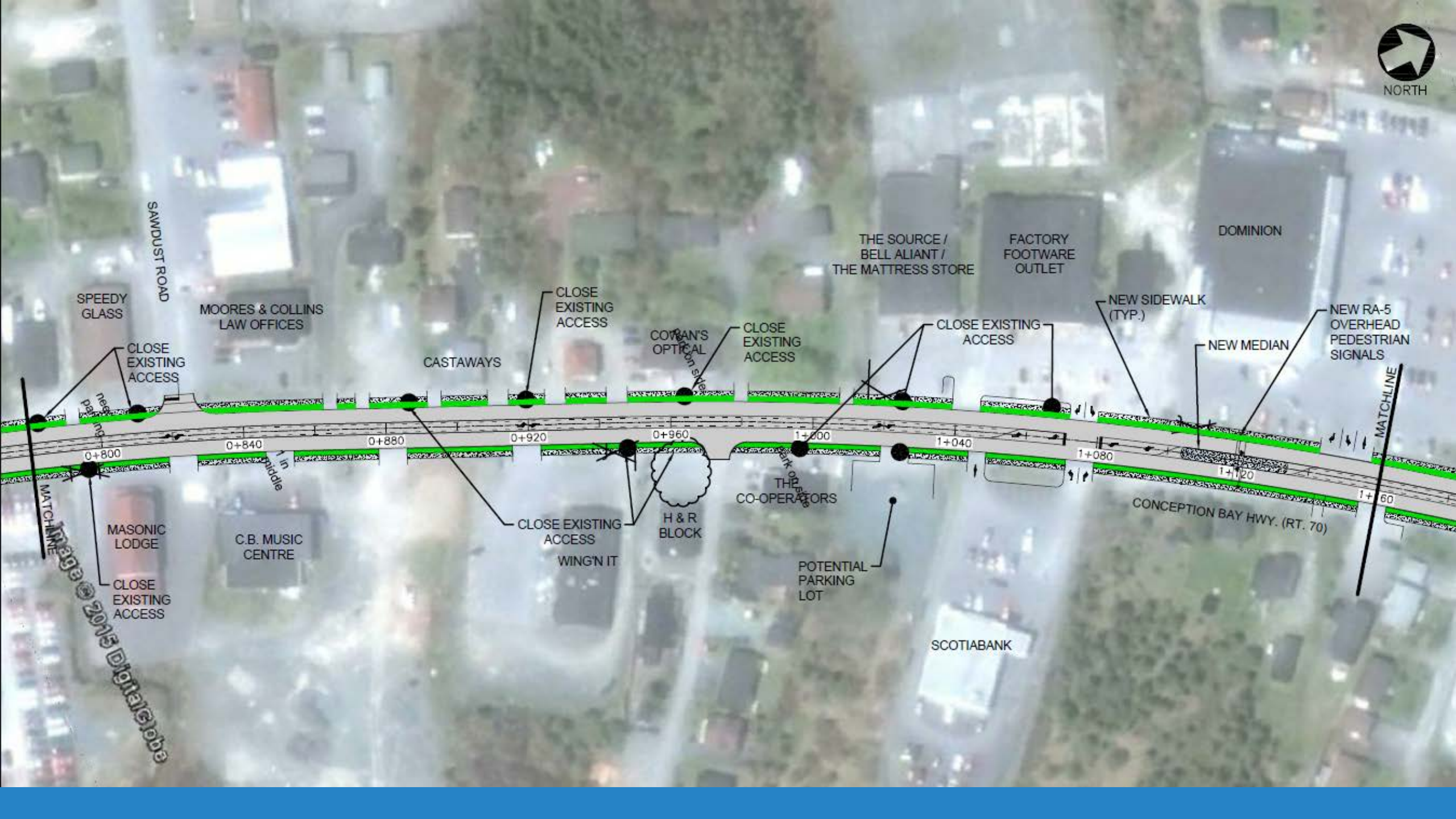
MALL ENTRANCE

ROBIN'S

BEAVER PLAZA

WOODWARD CHEVROLET

Image © 2015



NORTH

SANDUST ROAD

SPEEDY GLASS

MOORES & COLLINS  
LAW OFFICES

CASTAWAYS

THE SOURCE /  
BELL ALIANT /  
THE MATTRESS STORE

FACTORY  
FOOTWARE  
OUTLET

DOMINION

NEW SIDEWALK  
(TYP.)

NEW RA-5  
OVERHEAD  
PEDESTRIAN  
SIGNALS

NEW MEDIAN

CLOSE  
EXISTING  
ACCESS

CLOSE  
EXISTING  
ACCESS

COVERAN'S  
OPTICAL

CLOSE  
EXISTING  
ACCESS

CLOSE EXISTING  
ACCESS

0+800

0+840

0+880

0+920

0+960

1+000

1+040

1+080

1+120

1+160

CONCEPTION BAY HWY. (RT. 70)

MATCHLINE  
Page © 2015 DigitalGlobe

MASONIC  
LODGE

C.B. MUSIC  
CENTRE

CLOSE EXISTING  
ACCESS  
WING'N IT

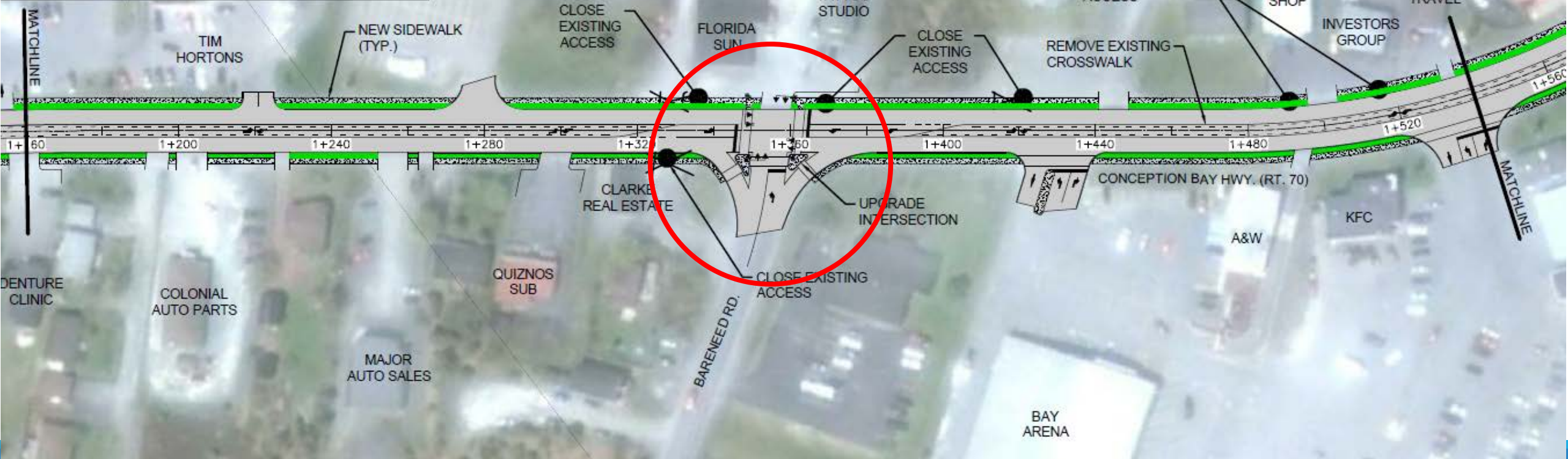
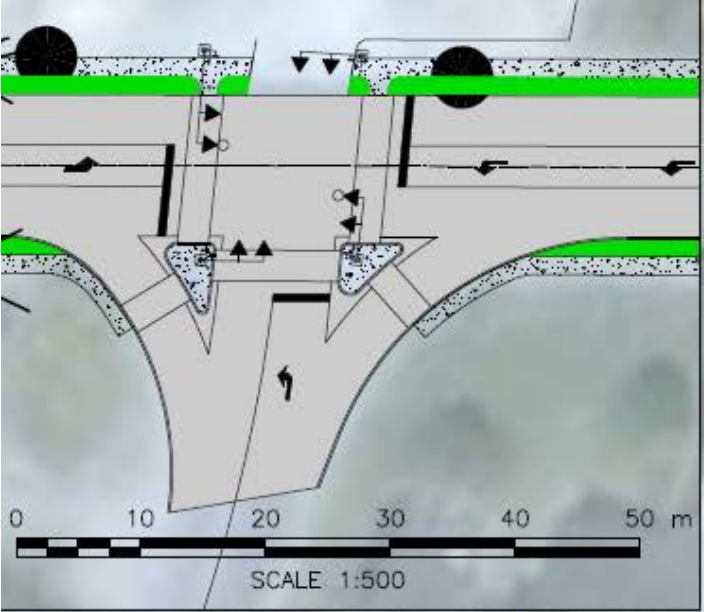
H & R  
BLOCK

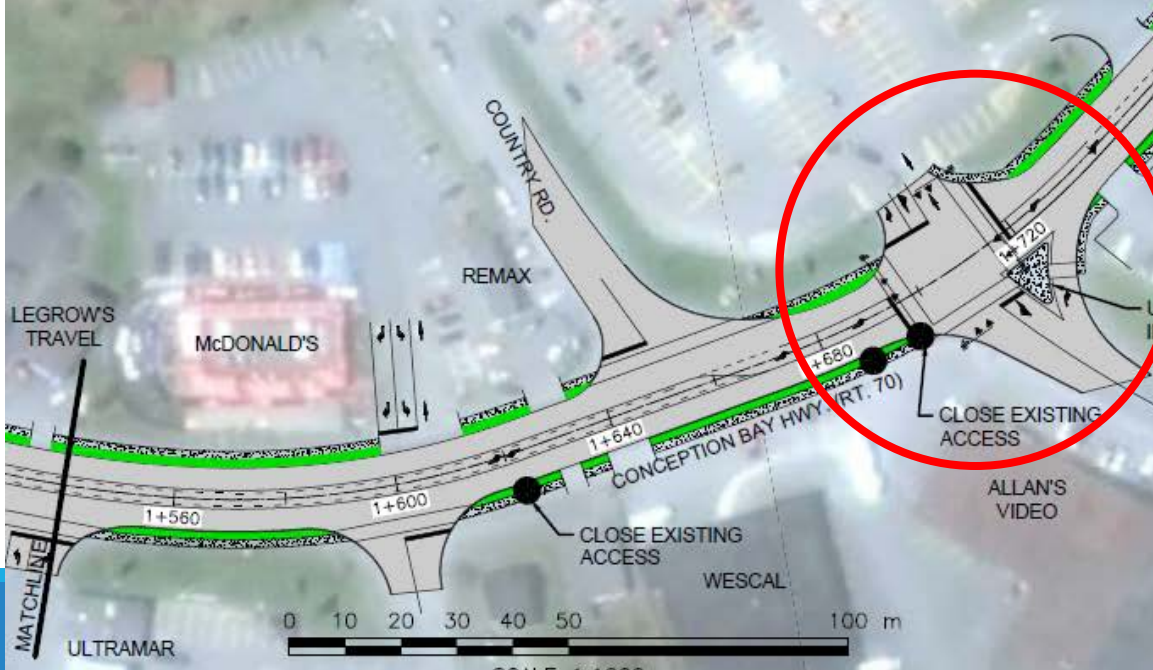
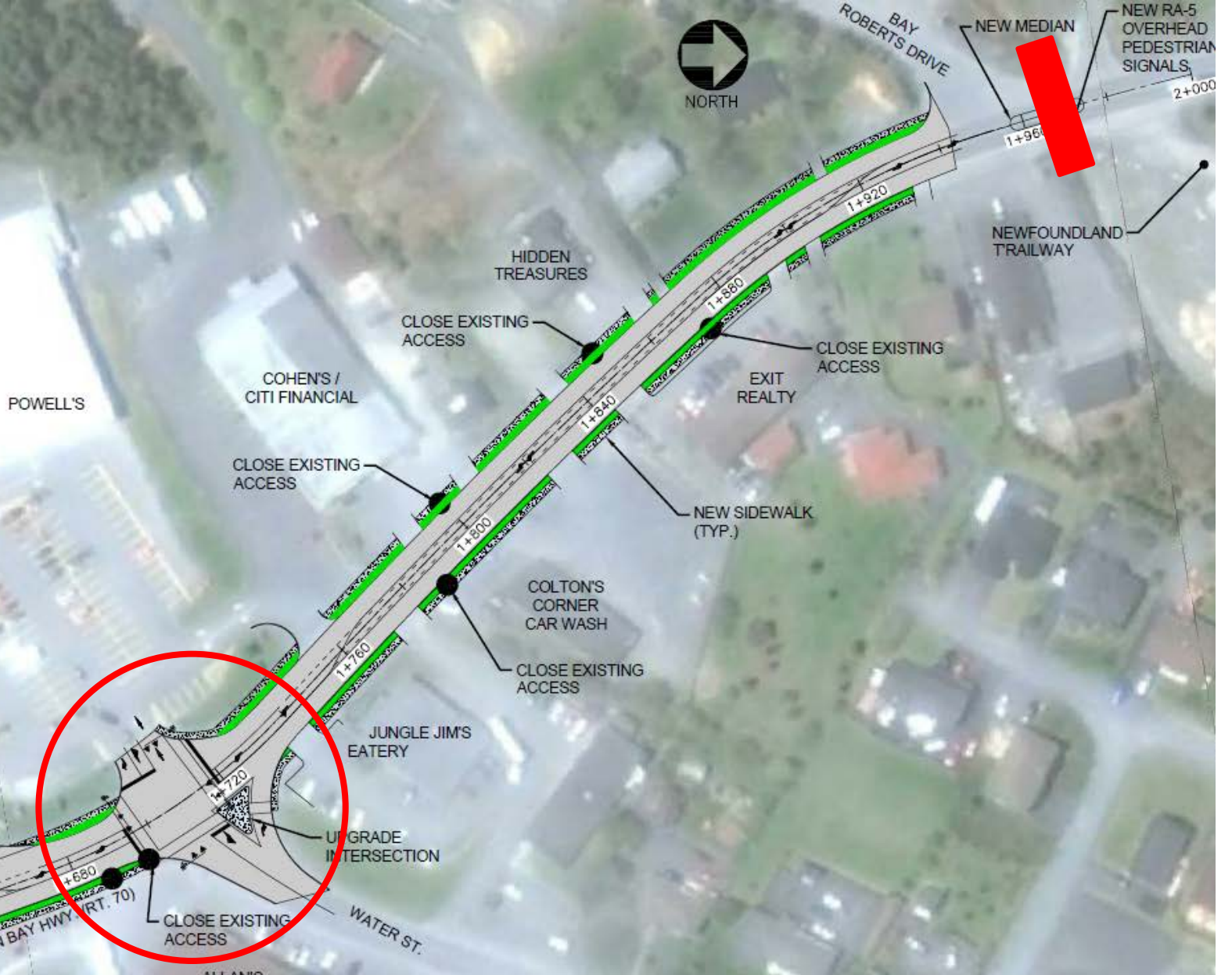
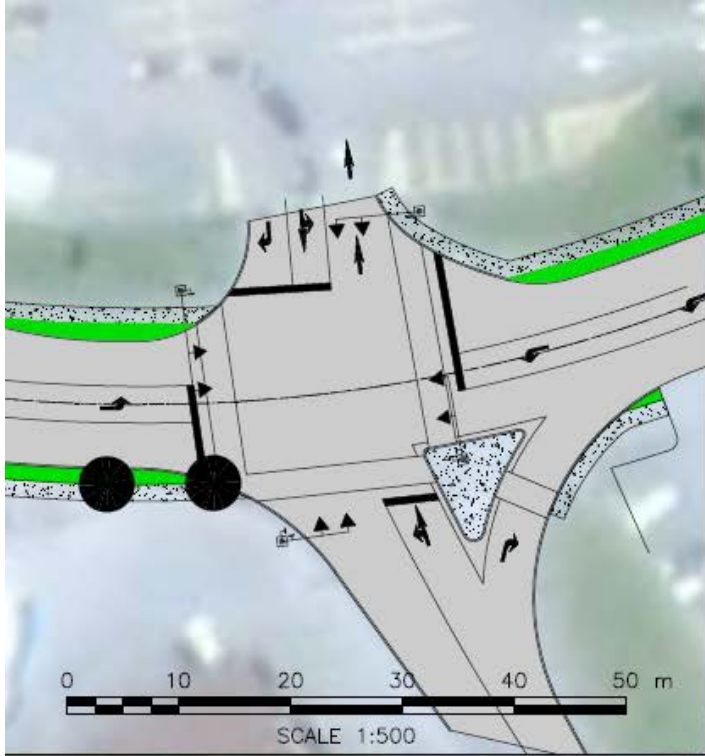
THE  
CO-OPERATORS

POTENTIAL  
PARKING  
LOT

SCOTIABANK

MATCHLINE





Scale AS NOTED	Date MARCH 2016	Drawn K. MacDONALD	Designed M.S. MacDONALD	Checked	Approved	Contract 15330
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**TRAFFIC IMPACT STUDY**  
**BAY ROBERTS, NFLD.**

ACCESS MANAGEMENT PLAN

Sketch No.  
**Sk-5**

# Other Improvement Alternatives

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## 5-Lane Cross Section

- Provides a higher level of capacity
- Disadvantages include:
  - Difficult for pedestrian to cross
  - Vehicles required increase gap time for turning maneuvers
  - Wider pavement surface may encourage higher vehicle speeds



# Other Improvement Alternatives

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## Parallel Capacity to Conception Bay Highway

- New interchange on Route 75, connecting to Conception Bay Highway
- Parallel road from L.T. Stick Drive to Water Street
- Upgrading Country Road

# Other Improvement Alternatives

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## Different Intersection Controls

- Roundabouts
  - L.T. Stick Drive @ Entrance to Developments
  - Veteran's Memorial Highway SB @ Country Road
  - L.T. Stick Drive @ Conception Bay Highway

# Roundabout Concept



# Other Considerations

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- Speed Zoning Policy
- School Zone/ Crosswalk Signage
- Pavement Markings
- Traffic Calming Policy
- Street Lighting
- Snow Clearing

# Next Steps

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## Improvements:

- Intersection improvements
  - L.T. Stick Drive @ Conception Bay Highway
  - Bareneed Drive @ Conception Bay Highway
  - Water Street @ Conception Bay Highway
- Survey
- Municipal services assessment
- Pedestrian crossings
  - Conception Bay Highway @ Shoppers Drug Mart
  - Conception Bay Highway @ Dominion
  - Conception Bay Highway @ Bay Roberts Drive (T' Railway)

# Thank you!

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Questions and Discussion:  
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