



2022 Arterial Optimization Program

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Agenda

- ▶ What is an Arterial Optimization Program
- ▶ Levels of Service
- ▶ Ingredients
- ▶ Centralized Traffic System – Centrac
- ▶ CCTV Traffic Monitoring
- ▶ Measures of Effectiveness
- ▶ 2022 Corridors for Review
- ▶ Questions



Levels of Service

FREE FLOW

Low volumes and no delays.

LOS
A



STABLE FLOW

Speeds restricted by travel conditions, minor delays.

LOS
B



STABLE FLOW

Speeds and maneuverability closely controlled because of higher volumes.

LOS
C



STABLE FLOW

Speeds considerably affected by change in operation conditions. High density traffic restricts maneuverability; volume near capacity.

LOS
D



UNSTABLE FLOW

Low speeds; considerable delay; volume at or slightly over capacity.

LOS
E



FORCED FLOW

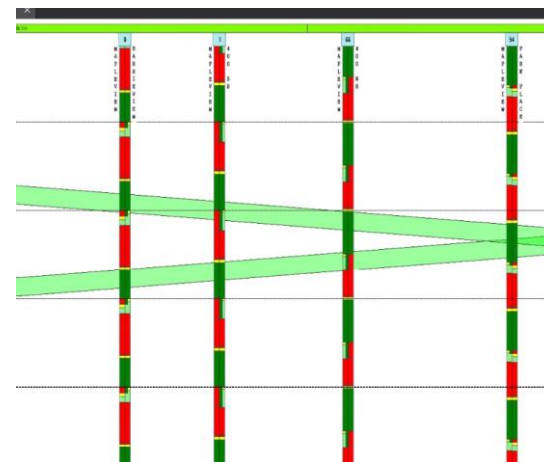
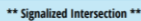
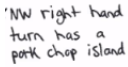
Very low speeds; volumes exceed capacity; long delays with stop-and-go traffic.

LOS
F



- Level of Service means a quantitative standard for transportation facilities describing operational conditions. Level of service may be described for intersections (signalized or unsignalized) or street segments (between signalized intersections)

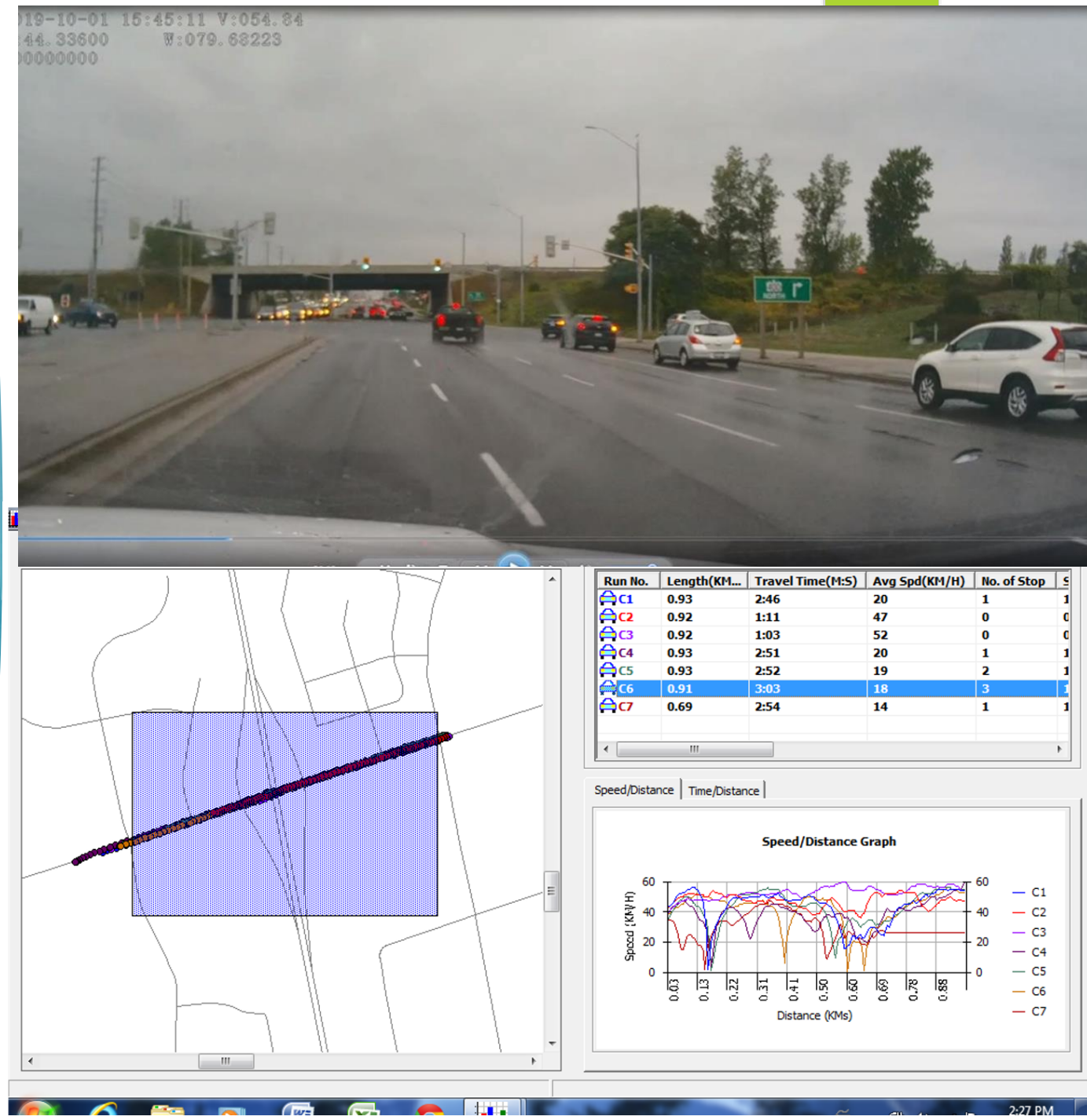
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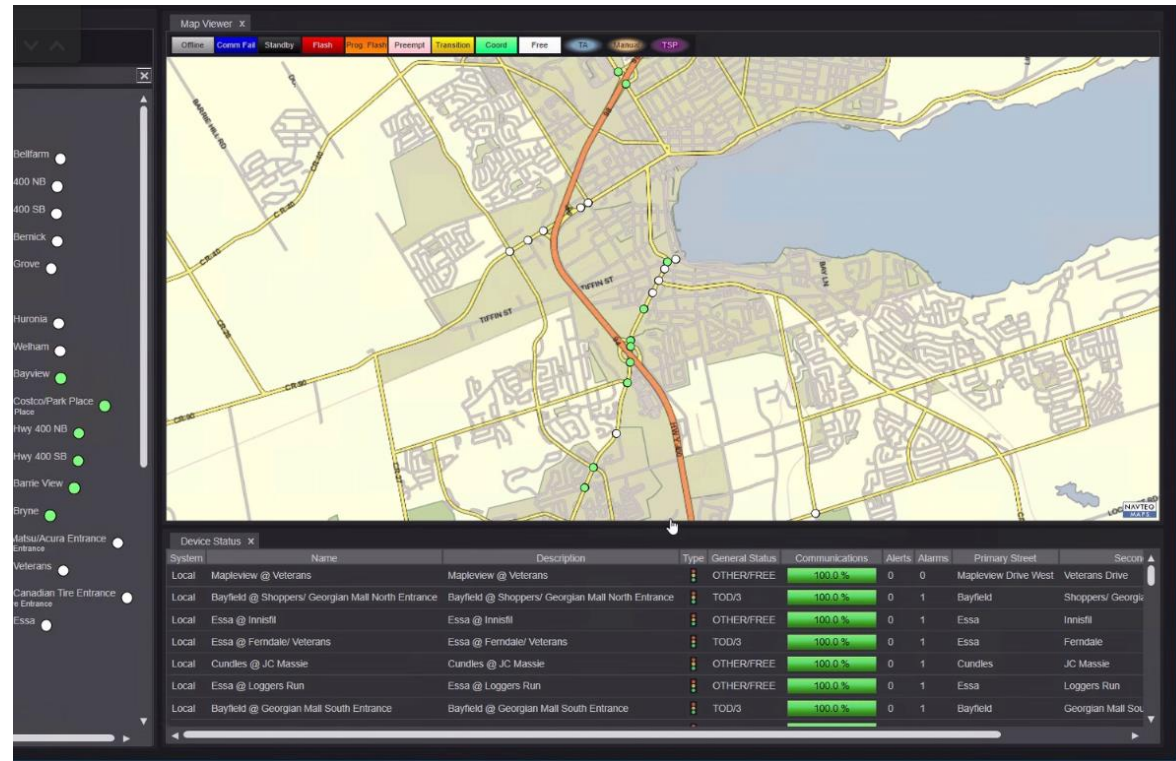
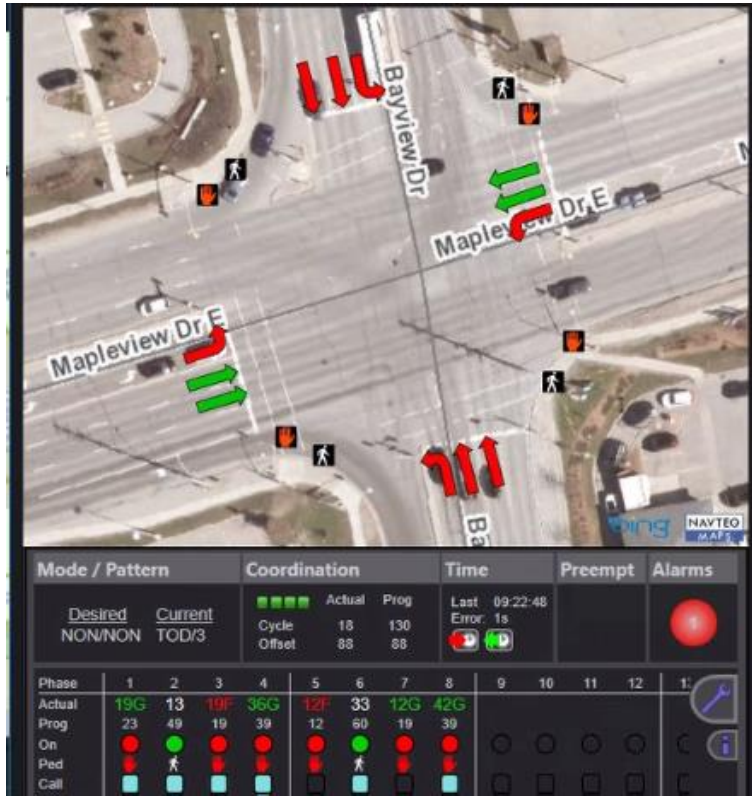


- ▶ Operational Checklist
- ▶ Turning Movement Counts
- ▶ Geometric Conditions
- ▶ Existing Concerns
- ▶ Phase Changes
- ▶ Offset Optimization
- ▶ System Integration
- ▶ Implementation

Before vs After Studies

- ▶ Travel Time
- ▶ Number of Stops
- ▶ Stopped Delay
- ▶ Average Speeds





CENTRACS

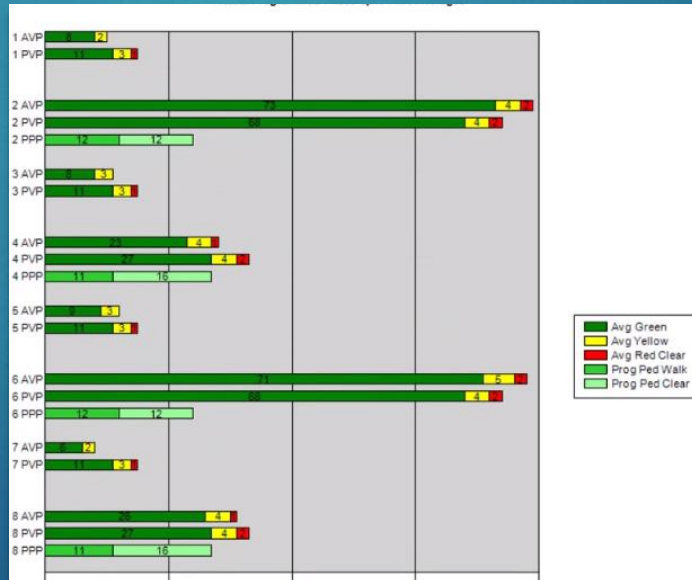
- A centralized traffic control system package using cellular modems providing 24 hour connection and monitoring tools at key intersections.

CENTRACS Functionality

- Specialized Plans
- Modify and implement signal timings
- Reporting on vehicle detection, fire preemptions, cabinet alarms.....
- Split monitor reporting
- Front page displays
- Daily Maintenance

Time Range:
2/7/2022 8:17:10 AM - 2/8/2022 9:17:10 AM

Date/Time	Signal Name	Event	Details
2/7/2022 9:10:06.5	Essa @ Gowen (Essa @ Gowen)	Preempt Active	Preempt #2
2/7/2022 9:10:06.5	Essa @ Gowen (Essa @ Gowen)	Offline	
2/7/2022 9:10:22.8	Essa @ Gowen (Essa @ Gowen)	Preempt Active	Preempt #1
2/7/2022 9:10:22.8	Essa @ Gowen (Essa @ Gowen)	Preempt Inactive	Preempt #2
2/7/2022 9:11:06.2	Essa @ Gowen (Essa @ Gowen)	Preempt Inactive	Preempt #1
2/7/2022 9:11:06.2	Essa @ Gowen (Essa @ Gowen)	Online	
2/7/2022 10:51:06.6	Essa @ Gowen (Essa @ Gowen)	Preempt Active	Preempt #2
2/7/2022 10:51:06.6	Essa @ Gowen (Essa @ Gowen)	Offline	
2/7/2022 10:51:22.9	Essa @ Gowen (Essa @ Gowen)	Preempt Active	Preempt #1
2/7/2022 10:51:22.9	Essa @ Gowen (Essa @ Gowen)	Preempt Inactive	Preempt #2
2/7/2022 10:51:54.0	Essa @ Gowen (Essa @ Gowen)	Preempt Inactive	Preempt #1
2/7/2022 10:51:54.0	Essa @ Gowen (Essa @ Gowen)	Online	
2/7/2022 12:27:32.4	Bayfield @ Hwy 400 NB/ Rose (Bayfield @ Hwy 400 NB/ Rose)	Alarm Active	Alarm #1
2/7/2022 12:27:42.8	Bayfield @ Hwy 400 NB/ Rose (Bayfield @ Hwy 400 NB/ Rose)	Alarm Inactive	Alarm #1
2/7/2022 12:30:00.0	Essa @ Ferndale/ Veterans (Essa @ Ferndale/ Veterans)	Alarm Active	Alarm #1
2/7/2022 12:30:35.5	Essa @ Ferndale/ Veterans (Essa @ Ferndale/ Veterans)	Data Change Initiated	
2/7/2022 12:34:16.0	Essa @ Ferndale/ Veterans (Essa @ Ferndale/ Veterans)	Alarm Inactive	Alarm #1
2/7/2022 12:35:29.3	Bayfield @ Hwy 400 NB/ Rose (Bayfield @ Hwy 400 NB/ Rose)	Alarm Active	Alarm #1
2/7/2022 12:35:32.4	Bayfield @ Hwy 400 NB/ Rose (Bayfield @ Hwy 400 NB/ Rose)	Alarm Inactive	Alarm #1
2/7/2022 12:50:47.1	Essa @ Ferndale/ Veterans (Essa @ Ferndale/ Veterans)	Data Change Timeout	
2/7/2022 18:30:00.0	Essa @ Coughlin (Essa @ Coughlin)	Coord Local Free	
2/7/2022 18:30:00.0	Essa @ Ferndale/ Veterans (Essa @ Ferndale/ Veterans)	Coord Local Free	



Configuration Controller Coordination Preempt Time Base Detectors

Timing Plan (MM) 2-1

Plan #: 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	7	26	7	10	7	26	7	10	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	12	0	10	0	12	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	18	0	16	0	18	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	0.0	5.0	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	26	20	30	15	26	12	30	35	35	35	35	35	35	35	35
Max2	0	0	0	0	0	0	0	0	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SecAct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Phase Descriptions

	Direction	Direction
1	N-L	A N
2	S-T	B N
3	E-L	C N
4	W-T	D N
5	S-L	E N
6	N-T	F N
7	W-L	G N
8	E-T	H N
9	N	I N
10	N	J N
11	N	K N
12	N	L N
13	N	M N
14	N	N N
15	N	O N
16	N	P N

2. CONTROLLER 7. STATUS DISPLAY

3. COORDINATOR 8. UTILITIES

4. PREEMPTOR/TSP 9. DIAGNOSTICS

5. TIME BASE

PRESS KEYS 1...9 TO SELECT

Main Menu Sub Menu Next Data Next Screen

Enter

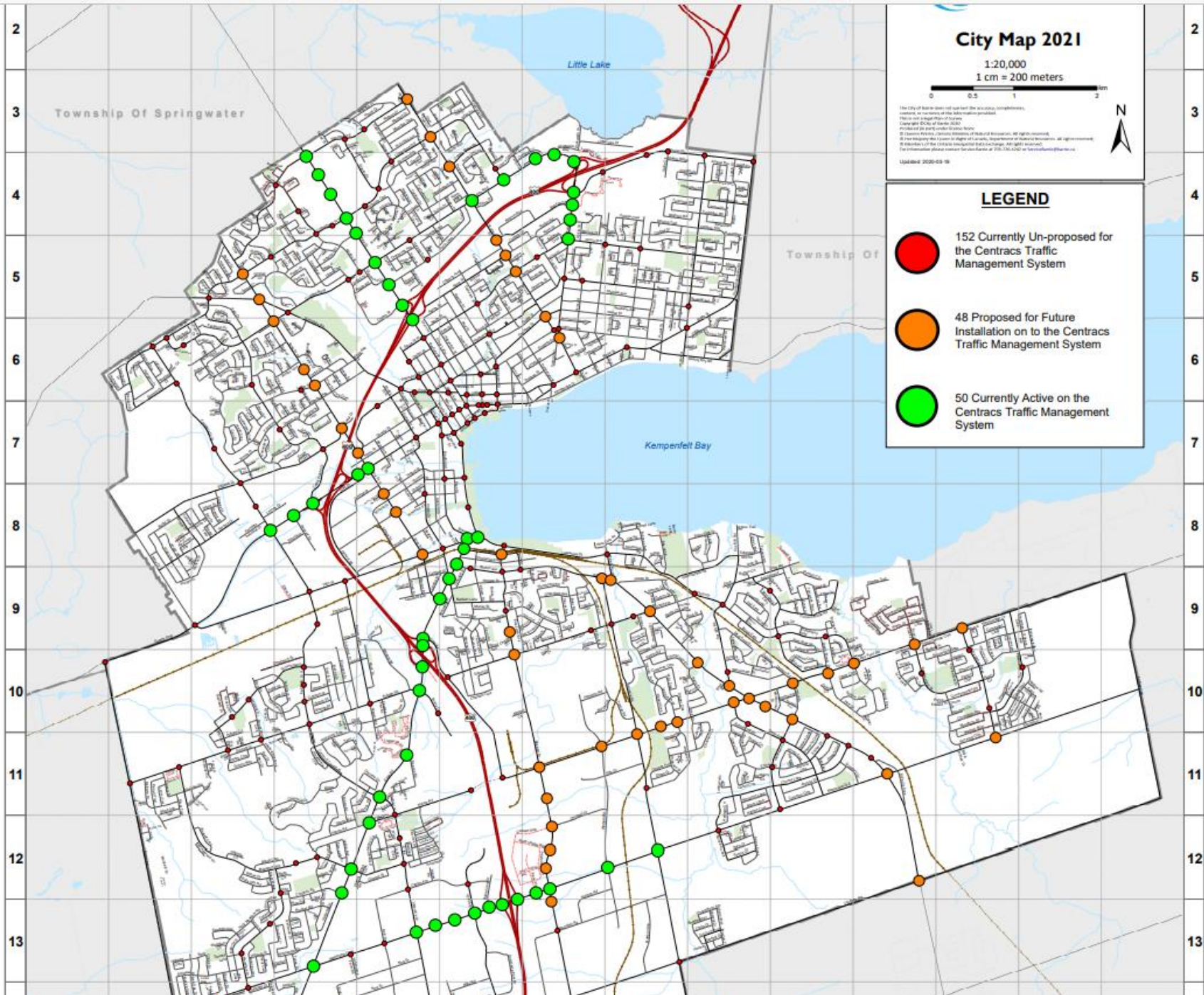
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1 2 3

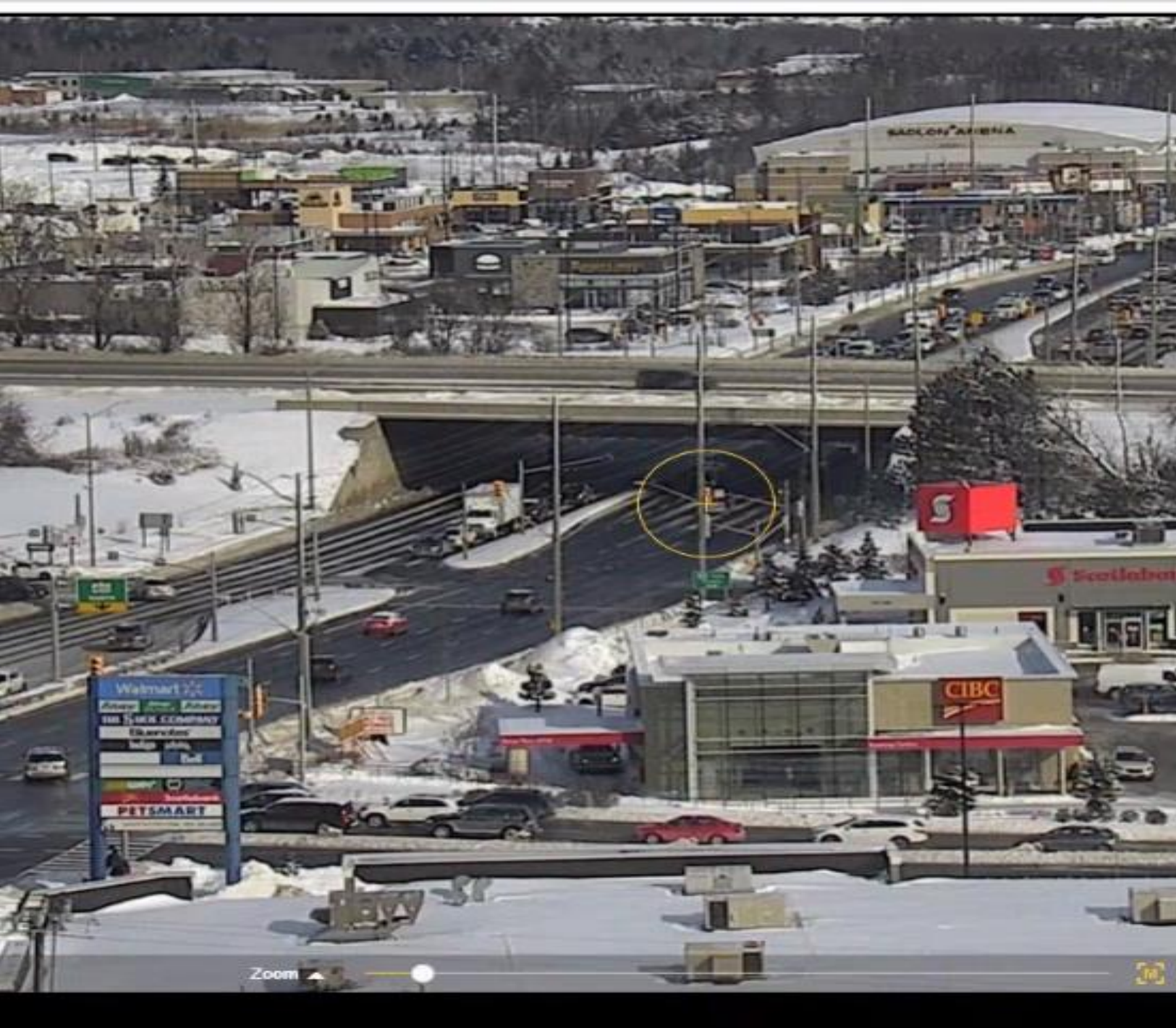
4 5 6

7 8 9

Spec Func 0 Clear



CENTRACS ROLLOUT



CCTV

- ▶ Traffic Monitoring
- ▶ Road Operations
- ▶ Emergency Services
- ▶ 12 Existing Locations
- ▶ Expansion
 - ▶ Mapleview Dr & Yonge St
 - ▶ Veterans Drive

2022 Corridors for Review



- ▶ Q1 – Mapleview/Bayfield/Essa
- ▶ Q2 – Harvie Road – Essa to Bayview
- ▶ Q3 – Duckworth Street – Grove to Georgian
- ▶ Q4 – Dunlop Street – Ferndale to Anne

The background of the slide is a dark blue field filled with numerous light blue, three-dimensional question marks of varying sizes. Some question marks are in sharp focus, while others are blurred in the background, creating a sense of depth. In the top right corner, there is a solid yellow rectangle.

Questions