Detroit River
INTERNATIONAL CROSSING
STUDY

DETROIT RIVER INTERNATIONAL CROSSING STUDY

PIOH #3

Workshop – Plazas and Crossings

April 12, 2006

Detroit River INTERNATIONAL CROSSING STUDY

Agenda

1. Opening Remarks/Introduction
2. Public Input from PIOH 3
3. Presentation by CBSA
4. Review and Refinement of Plaza Options
5. Air Quality Impact Assessment
6. Noise / Vibration Impact Assessment
7. MTO Property Acquisition Process
8. General Questions & Comments
9. Closing Remarks
10. Next Steps

Detroit River INTERNATIONAL CROSSING STUDY

1. Opening Remarks

2. Public Input Received at PIOH3

Public Input Received at PIOH #3 Sessions

PIOH 3 Total Sign-ins: 812

Comment Sheets Completed: 214

Common Themes

- locate a crossing outside of Windsor; Amherstburg, LaSalle, Fighting Island; eastern areas
- locate a crossing as far south from Sandwich as possible
- Minimize air and noise impacts
- Preserve natural areas (Ojibway, Black Oak)
- Keep plazas away from residential areas

The Border Transportation Partnership

Detroit River INTERNATIONAL CROSSING STUDY

Canada

U.S. Department of Transportation Federal Highway Administration

Ontario

MDOT Michigan Department of Transportation

Purpose of the DRIC Study

To provide for the safe, efficient and secure movement of people and goods across the Canadian-U.S. border in the Detroit River area to support the economies of Ontario, Michigan, Canada and the U.S.

In order to meet the purpose, this study must address the following regional transportation and mobility needs:

- Provide new border crossing capacity to meet increased long-term travel demand;
- Improve system connectivity to enhance the continuous flow of people and goods;
- Improve operations and processing capabilities at the border; and
- Provide reasonable and secure crossing options (i.e. network redundancy)

Given the importance of this trade corridor to the local, regional and national economies and recognizing the negative effects associated with poor traffic operations and congestion, the partnering governments must take all reasonable steps to reduce the likelihood of disruption to transportation service in this corridor.

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Key Milestones

Study Area Features, Opportunities & Constraints	April '05	Initial Public Outreach
Initial Set of Crossing Alternatives, Plaza Locations & Connecting Routes in Canada and the U.S.	June '05	PIOH1
Area of Continued Analysis	December '05	PIOH2
Specific Crossing, Plaza and Access Road Options	March '06	PIOH3
Results of Social, Economic, Environmental and Engineering Assessments	December '06	PIOH4
Preferred Crossing Location, Plaza Locations & Connecting Routes in Canada and the U.S.	Spring '07	PIOH5
Finalize Engineering and Mitigation Measures	Summer '07	PIOH6
Document Study and Submit for Approvals	End of '07	Public Review

Area of Continued Analysis (ACA)

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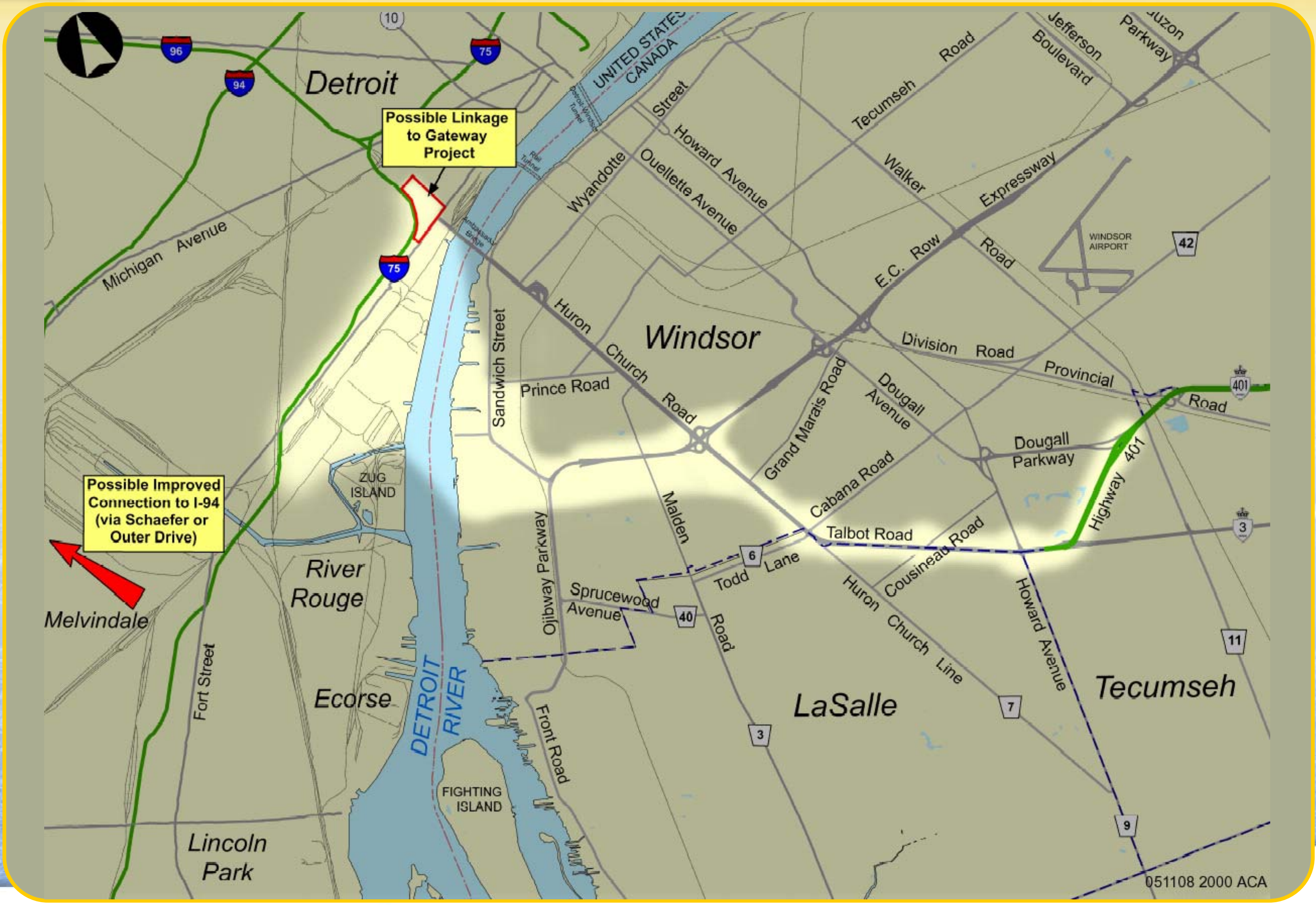

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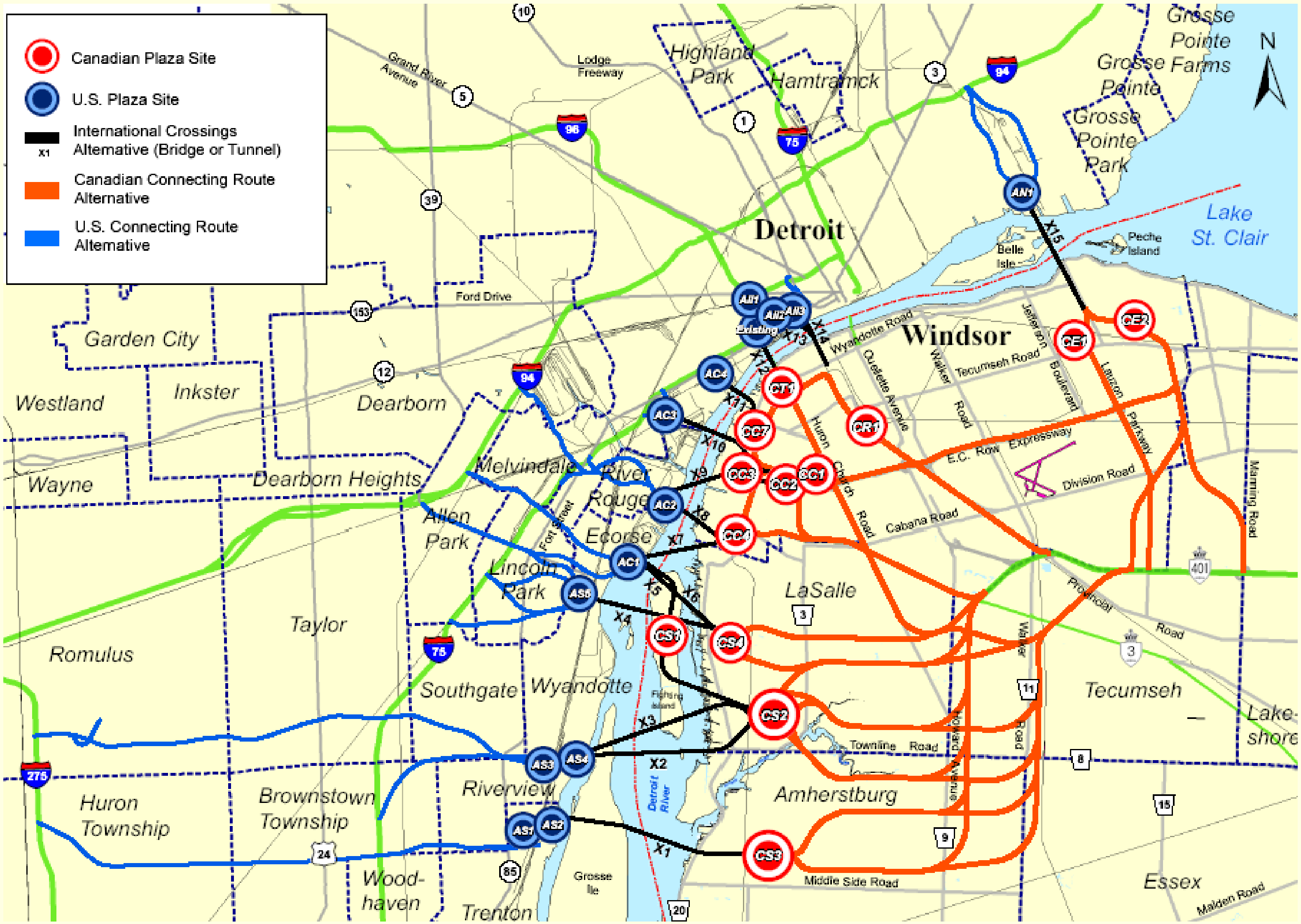
Illustrative Alternatives



Evaluation Factors

- Changes to Air Quality
- Protection of Community and Neighbourhood Characteristics (includes assessment of residential and business property impacts, impacts to noise levels, access and community features)
- Consistency with Existing & Planned Land Use
- Protection of Cultural Resources (includes parks, historic sites and areas of archaeological significance)
- Protection of Natural Environment (includes plant and animal species and habitat features)
- Improve Regional Mobility
- Minimize Cost (includes assessment of constructability issues).

Factor Weighting Results

Factor	Project Team		Public		CCG	
	Rating	Weight (%)	Avg. Rating* (reflects 60 responses received)	Weight (%)	Avg. Rating (reflects 15 responses received)	Weight (%)
Changes in Air Quality	70	12.39	85	17.31	91	17.30
Protection of Community & Neighbourhood Characteristics	90	15.93	80	15.49	73	13.88
Maintain Consistency with Existing & Planned Land Use	70	12.39	62	12.89	72	13.69
Protection of Cultural Resources	70	12.39	66	13.14	69	13.12
Protection of Natural Environment	90	15.93	78	16.34	90	17.11
Improve Regional Mobility	100	17.70	76	15.28	78	14.83
Minimize Cost	75	13.27	47	9.54	53	10.07
		100		100		100

Mobility Needs - Passenger Traffic

Trip Type	Crossing					
	Ambassador Bridge		Detroit-Windsor Tunnel		Detroit River Crossings	
	Volume	%	Volume	%	Volume	%
LOCAL to LOCAL	13,450	71	15,000	88	28,450	79
LOCAL (Southeast Michigan) to/from LONG-DISTANCE (beyond Windsor-Essex)	1,850	10	900	5	2,700	8
LOCAL (Windsor-Essex) LONG-DISTANCE (beyond Southeast Michigan)	1,700	9	900	5	2,600	7
LONG-DISTANCE to LONG-DISTANCE	1,800	10	150	0.9	2,000	6
OTHER	70	0.4	50	0.3	120	0.3
TOTAL TRIPS	18,850	100	17,000	60	38,850	100

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Mobility Needs - Commercial Traffic

Trip Type	Crossing					
	Ambassador Bridge		Detroit-Windsor Tunnel		Detroit River Crossings	
	Volume	%	Volume	%	Volume	%
LOCAL to LOCAL	2,100	71	350	59	2,450	19
LOCAL (Southeast Michigan) to/from LONG-DISTANCE (beyond Windsor-Essex)	1,950	16	100	19	2,100	16
LOCAL (Windsor-Essex) to/from LONG-DISTANCE (beyond Southeast Michigan)	1,750	14	100	15	1,850	14
LONG-DISTANCE to LONG-DISTANCE	6,450	52	50	6	6,500	50
OTHER	130	1.0	5	0.8	130	1.0
TOTAL TRIPS	12,400	100	600	100	13,000	100

3. Canada Border Services Agency (CBSA) Plaza Requirements

Detroit River International Crossing Study

Workshop

12 April 2006

Who we are

- More than 12,000 employees and border officers across Canada and abroad
- At more than 1,200 points of service in Canada and abroad
- Mission:
  - Ensure the security and prosperity of Canada by managing the access of people and goods to and from Canada

What we do

- Ensure that people and goods entering Canada are admissible
- Identify and interdict the entry or export of illegal shipments
- Process commercial shipments
- Detain and remove goods and people that are not admissible to Canada
- Collect taxes and duties

Some statistics

- 95M persons examined each year in all modes of transportation
- $350B commercial shipments processed annually
- Responsible to apply 90 Acts, including provisions of the Criminal Code
- Windsor-Detroit is the largest land border crossing in North America

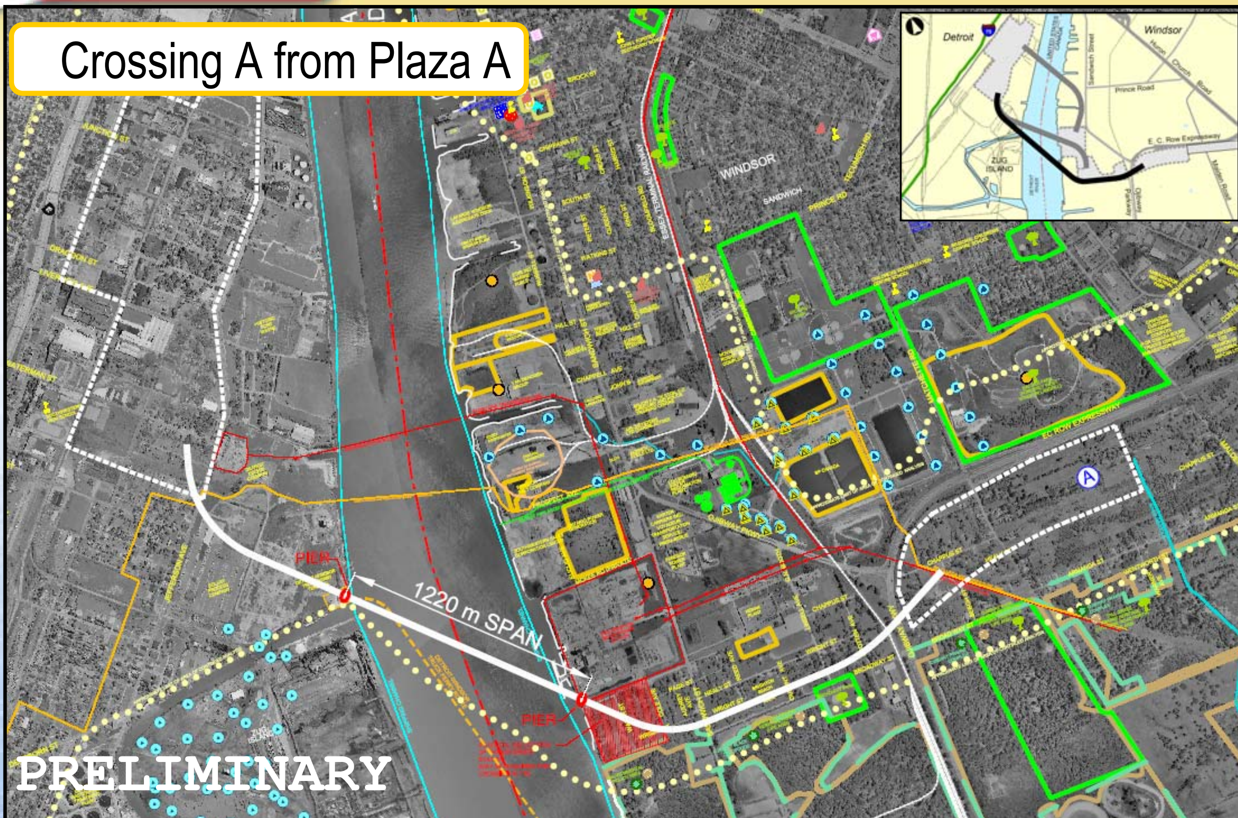
Essential features of a Port of Entry

- Located at or near the border
- Approaches from the US that are secure with clear lines of sight
- Secure port perimeter
- Adequate capacity – present and provisions for future
- Smooth, safe flow of traffic and pedestrians
- Well illuminated for examination, safety, and security
- Adequate set backs from adjacent land uses

Some of the impacts of a Port of Entry

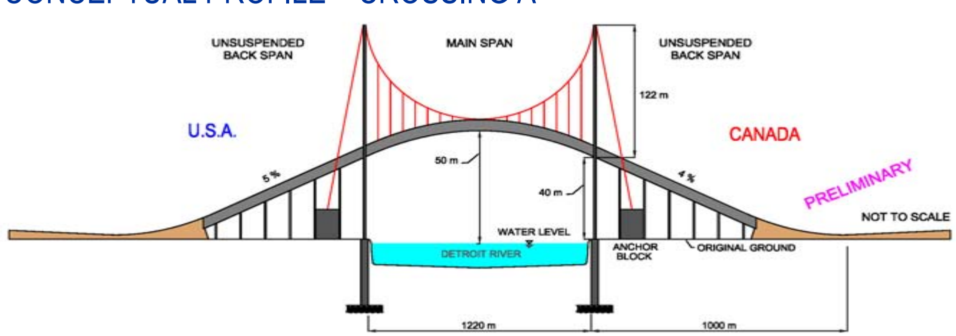
- 24 hours, 7 days/week operation
- Illuminated site at night
- Noise and air quality related to large number of vehicles transiting through the port
- Significant and secure land is necessary
- Positive economic impact

Crossing Alternative A



	Connecting to PLAZA A
Main Span Length:	1220 m
Number of Lanes:	6
Distance to Touchdown:	1000 m
Maximum Height over River:	50 m
Approx Height over River at Shoreline:	40 m
Approx. Height of Towers:	160 m
Distance from River to Plaza:	1740 m

CONCEPTUAL PROFILE – CROSSING A



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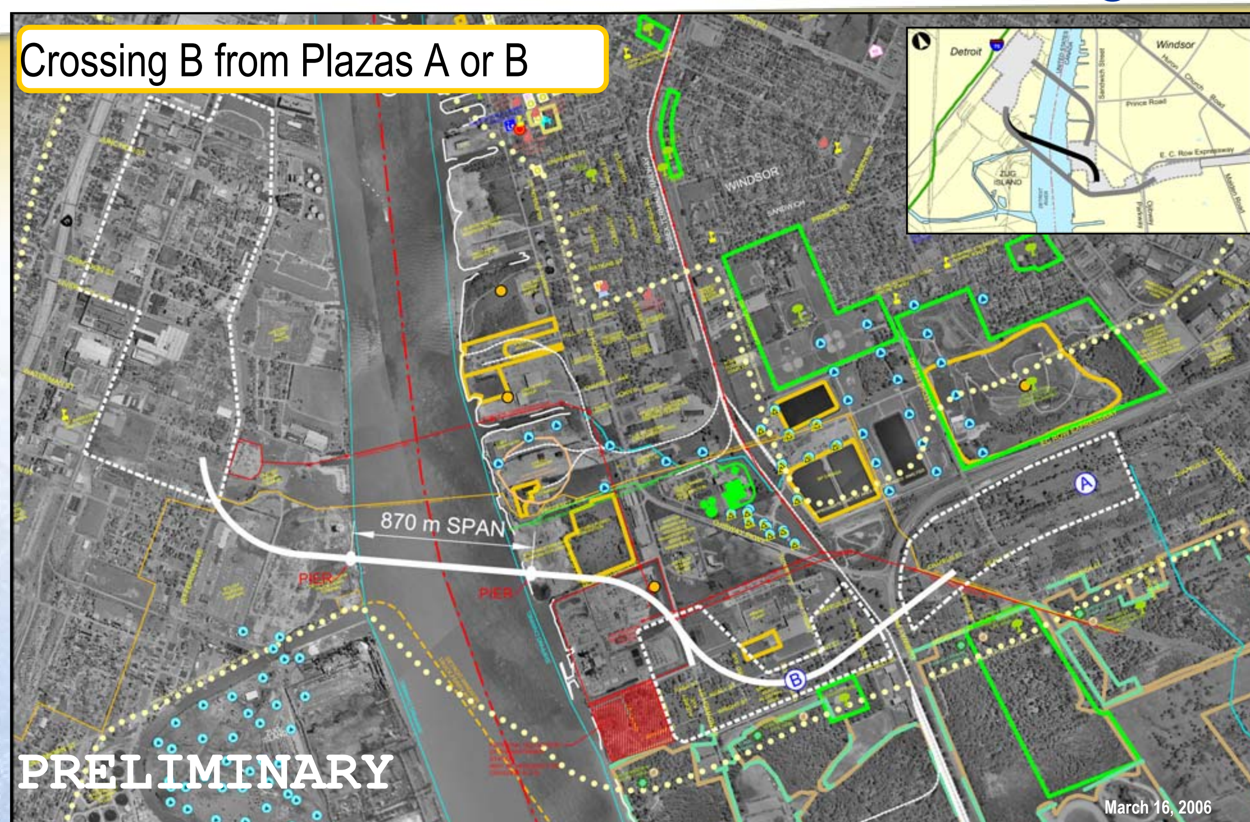
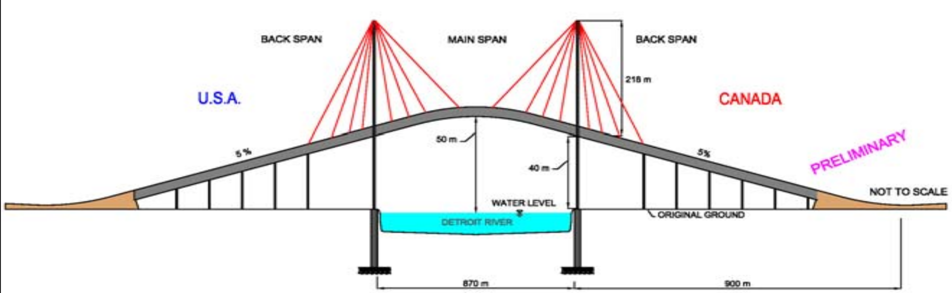
Crossing Alternative B



CONCEPTUAL PROFILE – CROSSING B AS CABLE-STAYED BRIDGE



	Connecting to **PLAZA A**	Connecting to **PLAZA B**
Main Span Length:	870 m	870 m
Number of Lanes:	6	6
Distance to Touchdown:	1120 m	975 m
Maximum Height Over River:	50 m	50 m
Height over River at Shoreline:	40 m	40 m
Height of Towers:	125–260 m	125–260 m
Distance from River to Plaza :	2120 m	760 m

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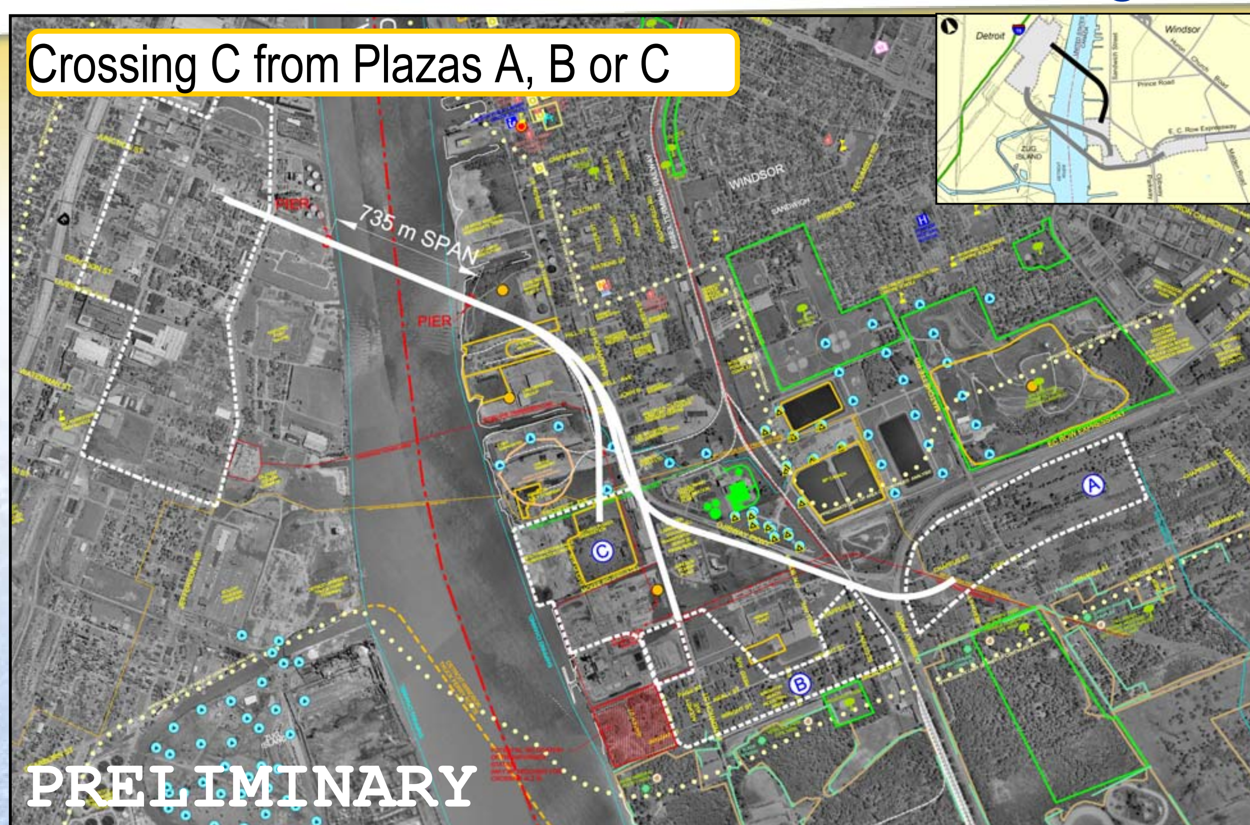
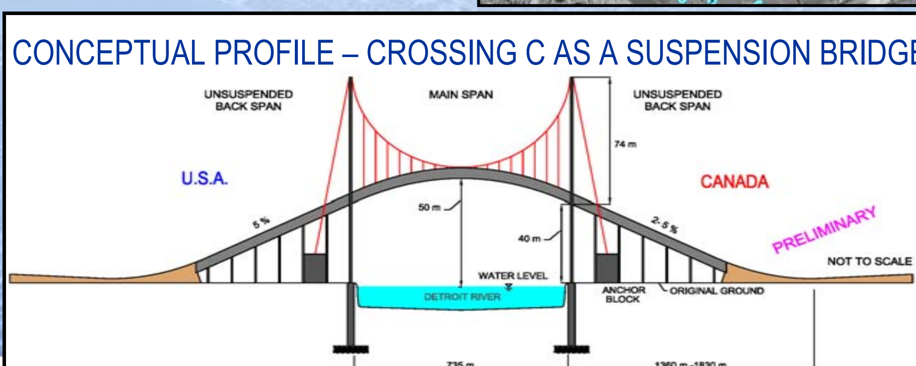
Crossing Alternative C

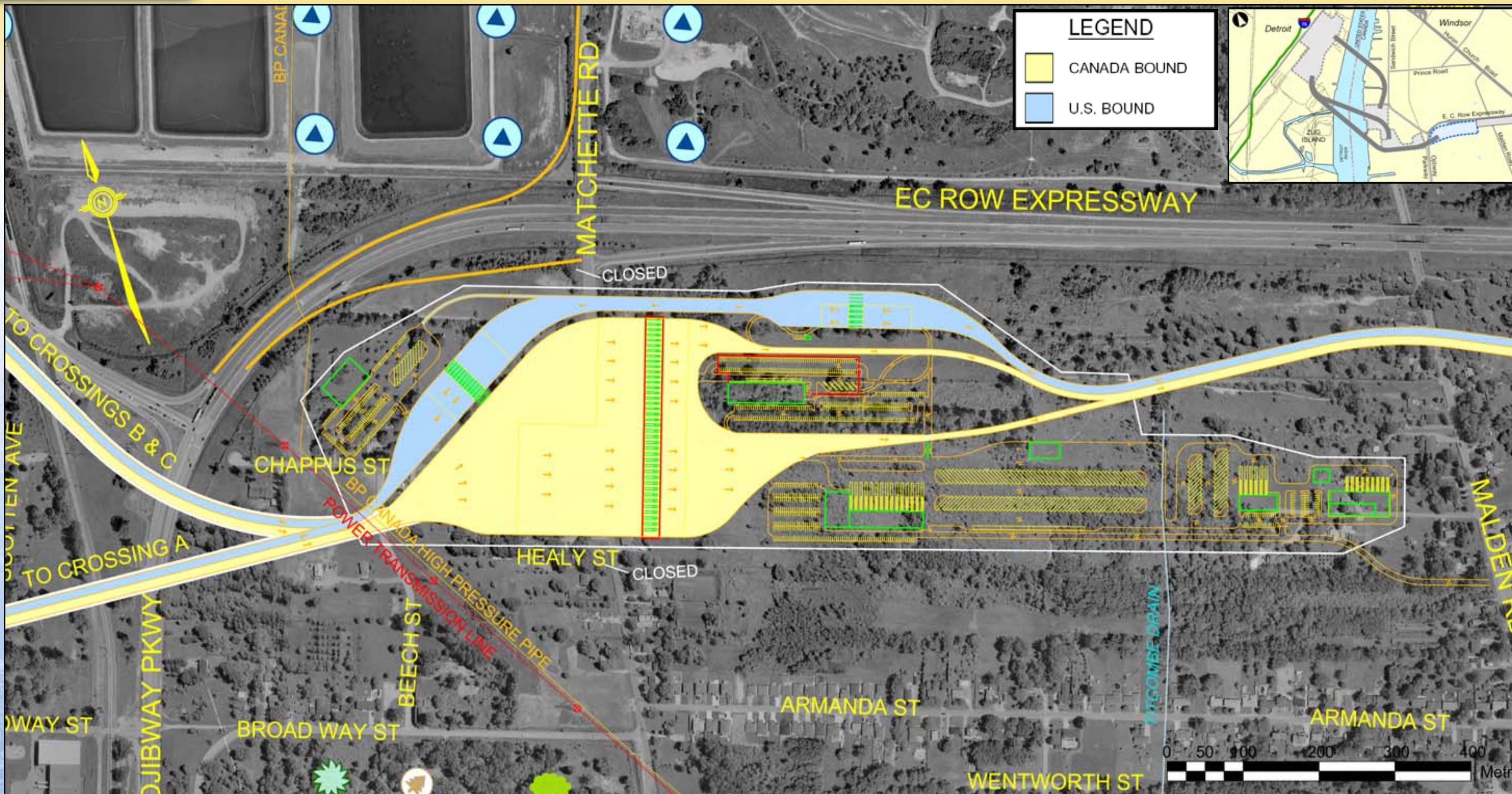




	Connecting to PLAZA A	Connecting to PLAZA B	Connecting to PLAZA C
Main Span Length:	735 m	735 m	735 m
Number of Lanes:	6	6	6
Distance to Touchdown:	1830 m	1920 m	1360 m
Maximum Height over River:	50 m	50 m	50 m
Height over River at Shoreline:	45 m (CAN)	45 m (CAN)	45 m (CAN)
Height of Towers:	115 – 225 m	115 – 225 m	115 – 225 m
Distance from River to Plaza:	2935 m	1955 m	1275 m

Canada | U.S. Department of Transportation Federal Highway Administration | Ontario | MDOT Michigan Department of Transportation

Inspection Plaza Alternative A



Area:	Approx. 35 ha (85 acres)
Primary Inspection Lanes:	20 Passenger; 19 Commercial.
Other Major Functions:	Secondary Inspection (Passenger/Commercial); Vehicle and Cargo Inspection System (VACIS); Agriculture Inspection; Toll Facilities.
Can Connect with:	Crossings A, B & C
Land Uses Directly Affected:	Residential; Industrial; Commercial.
Displacements:	66 Residential Existing; 19Residential Under Construction
Utility Easements/ROWs:	Power Transmission Line; BP Canada High Pressure Pipe
Realignments/Closures:	Chappus St.; Beech Street; Healy St.; Matchette Rd.

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Inspection Plaza Alternative A

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Inspection Plaza Alternative B

Area: Approx. 35 ha (85 acres)

Primary Inspection Lanes: 20 Passenger; 19 Commercial.

Other Major Functions: Secondary Inspection (Pass/Comm); Supplementary Inspection (VACIS); Agriculture Inspection; Toll Facilities.

Can Connect with: Crossings B & C

Land Uses Directly Affected: Brighton Beach; OPG Parking; Transformer Station; Nemak; OjibwayNatural Area.

Displacements: 12 Residential; 1 Manufacturing; 1 Utilities

Existing Easements/ROWs: Power Transmission Line

Realignments/Closures: Water St; Scott Ave; Cole Ave; Audrey Ave; Sandwich St; Chappus St.; Page St.; Wright St.; Broadway St.; Healy St.; Reed Ave.; Dupont St.

Inspection Plaza Alternative B

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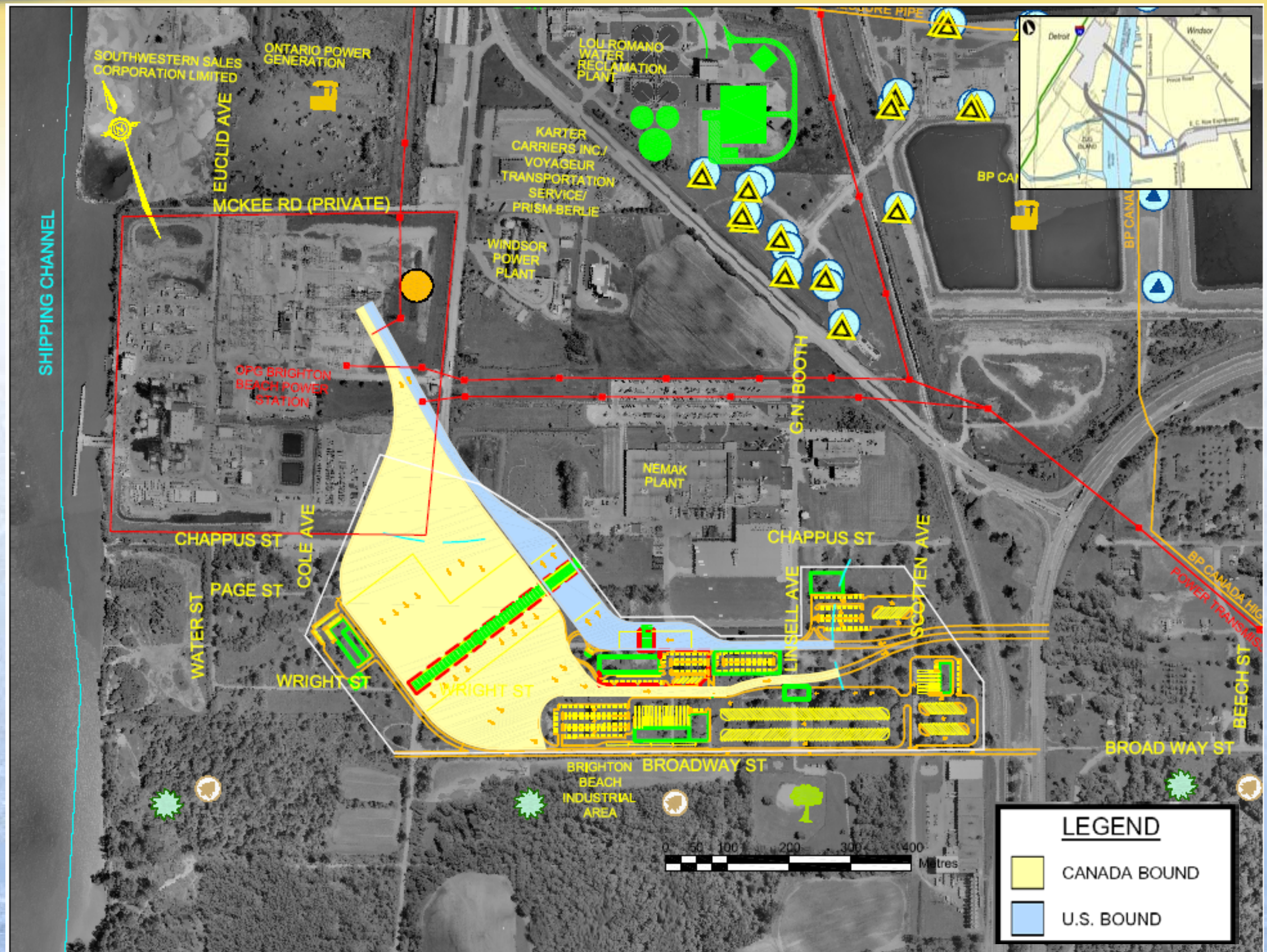
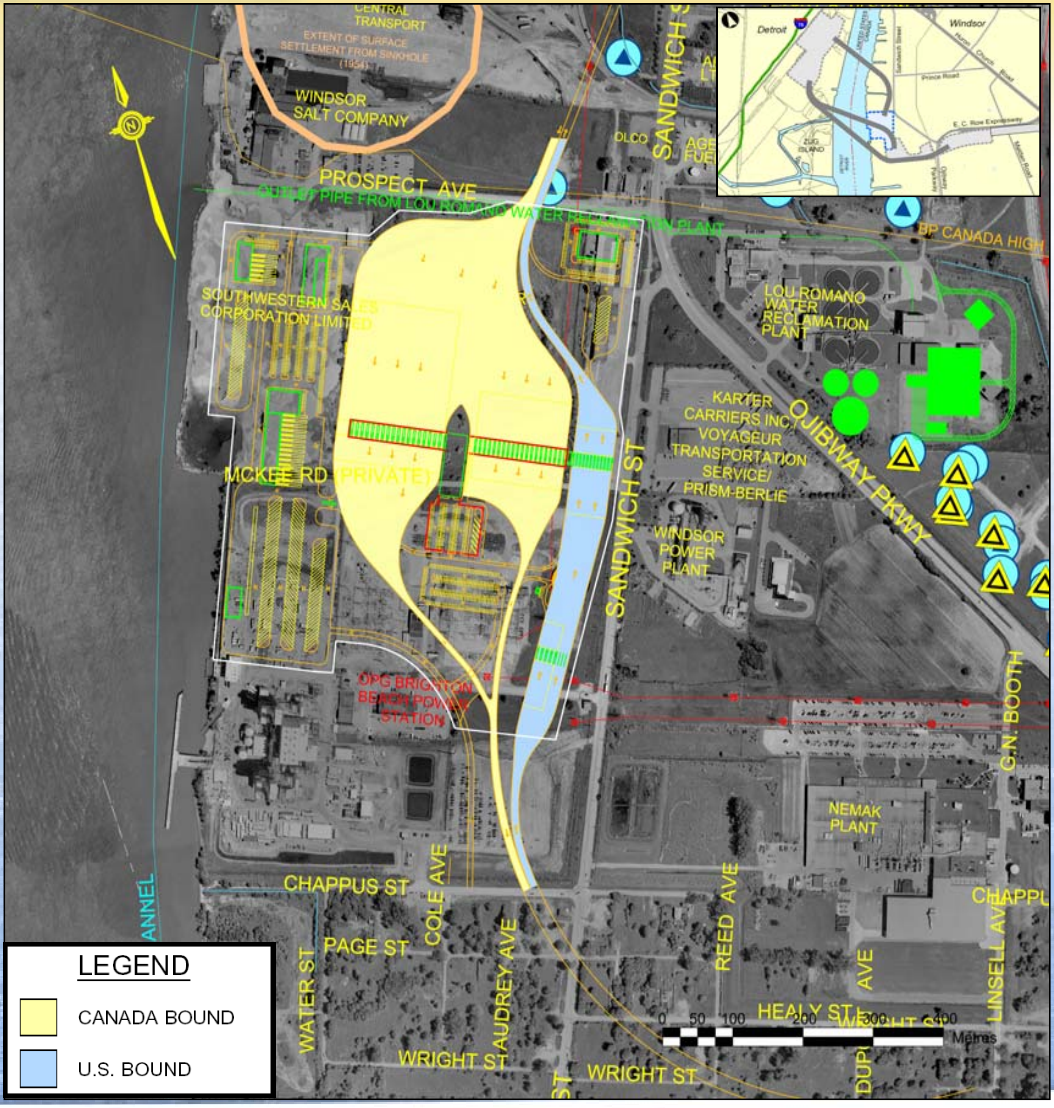
Inspection Plaza Alternative B1



Area:	Approx. 33 ha (82 acres)
Primary Inspection Lanes:	20 Passenger; 19 Commercial.
Other Major Functions:	Secondary Inspection (Pass/Comm); Supplementary Inspection (VACIS); Agriculture Inspection; Toll Facilities.
Can Connect with:	Crossings B & C
Land Uses Directly Affected:	Brighton Beach; OPG Parking; Transformer Station; Nemak; Ojibway Natural Area.
Displacements:	10 Residential; 1 Manufacturing; 1 Utilities
Existing Easements/ROWs:	Power Transmission Line
Realignments/Closures:	Water St; Scotten Ave; Cole Ave; Audrey Ave; Sandwich St; Chappus St.; Page St.; Wright St.; Broadway St.; Healy St.; Reed Ave.; Dupont St.

Inspection Plaza Alternative C



Area:	Approx. 35 ha (85 acres)
Primary Inspection Lanes:	20 Passenger; 19 Commercial.
Other Major Functions:	Secondary Inspection(Pass/Comm); Supplementary Vehicle Inspection (VACIS); Agriculture Inspection; Toll Facilities.
Land Uses Directly Affected:	Hydro One Transformer Station; Aggregate Operation; Windsor Salt; OPG Parking
Displacements:	Hydro One Transformer Station, Aggregate Operation; OPG Parking
Easements/ROWs Relocation:	Power Transmission Lines
Realignments/Closures:	Prospect Ave.; McKee St.; Euclid Ave.

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Inspection Plaza Alternative C

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URS

4. Air Quality

Consultation Feedback

- Air Quality is the #1 priority for Windsor residents
- Perception that air quality in Windsor is poor, and negatively affects their health
  - Specifically diesel exhaust from heavy trucks
- Concerned about increases in truck traffic and effect on air quality
- Residents want a tunnel to solve local air quality problems, among other reasons
  - Belief that a tunnel will reduce exhaust emissions

Current Air Quality

- Two active monitoring locations in Windsor
- Concentrations of most Criteria Air Contaminants (CACs – TSP, PM_{10}, $PM_{2.5}$, NO_x, SO_2, Ozone, CO) in Windsor generally below the MOE Ambient Air Quality Criteria (AAQCs)
- Exceptions are PM_{10}, $PM_{2.5}$ and Ozone
  - in excess of the criteria 14, 10 and 81 times per year respectively
- Fine particulate is released from vehicle exhaust and other industrial sources
- Small enough to penetrate deep into the lungs
  - Evolving science
- Highest concentrations measured in Sarnia
  - Concentrations in Windsor similar to Kitchener, Guelph and London
  - 50 – 90% due to long range, transboundary transport from U.S.

Current Air Quality

- Ozone is not released directly into the atmosphere;
  - formed through chemical reactions between NOx and VOCs in the presence of sunlight
- Port Stanley had the highest concentrations and most frequent exceedances in 2003
  - other rural areas along Lake Erie north shore also very high
  - due to transboundary transport from U.S. (50 – 90%)
- Concentrations in Windsor similar to Kitchener, Hamilton, London

Predicting Future Air Quality

- Use approved air pollutant emission models and air dispersion models
  - predict ambient concentration of air pollutants
  - Objective is to mimick reality
- Start with existing conditions
  - Model and compare to the ambient data
  - Reality check of how good we're doing
- Model the alternatives
  - 2015, 2025, 2035, for each alternative
  - Model "no build" conditions for each year
  - Compare predicted concentrations to standards and guidelines
- Compare to "no build" to determine change in air quality
  - Assess each alternative in comparison to one another

Predicting Future Air Quality

- Emissions Calculations and Air Dispersion Modelling Considerations
  - Use local meteorological data from Windsor Airport
  - Incorporate regulatory changes in fuels and engine technologies
  - Incorporate differences in Canadian and U.S. fuels and vehicles
  - Incorporate Canadian and U.S. fleet turnover rates

Predicting Future Air Quality: Practical Alternatives

- Assessment of Practical Alternatives will include both NO_x and $PM_{2.5}$
  - Preferred alternative(s) will be assessed for 14 air contaminants
- Determine predicted concentrations in zones around ROW and at sensitive receptor locations (schools, residences, etc.)
  - Assess changes to concentrations and frequency of exceedance (of standards and guidelines) in comparison to the “no build” conditions
  - Assess mitigation measures (if required)
  - Compare and score each alternative

5. Noise/Vibration

6. MTO Property Procurement Procedures

7. Questions and Comments

9. Closing Remarks

10. Next Steps