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

Canada-United States-Ontario-Michigan Border Transportation Partnership

Draft Social Impact Assessment Work Plan

February 2006
Version 2

PREFACE

The Canada - U.S. – Ontario - Michigan Border Transportation Partnership (The Partnership) is composed of the Federal Highway Administration and Transport Canada representing the federal levels of government, and the Ontario Ministry of Transportation and the Michigan Department of Transportation representing the provincial/state level. The purpose of the Partnership is to improve the movement of people, goods, and services across the United States and Canadian border within the region of Southeast Michigan and Southwestern Ontario.

This international transportation improvement project will require approvals from governments on both sides of the border. The Partnership has developed a coordinated process that will enable the joint selection of a recommended river crossing location that meets the requirements of *Ontario Environmental Assessment Act* (OEA), *Canadian Environmental Assessment Act* (CEAA), and *National Environmental Policy Act* (NEPA).

The goal of the partnership is to:

- obtain government approval for a new or expanded crossing with connections to the provincial highway system in Ontario and the interstate freeway system in Michigan, including provisions for processing plazas to improve traffic and trade movements at the Windsor-Detroit border;
- completion of comprehensive engineering to support approvals, property acquisition, design and construction; and,
- submit environmental assessment documents to request approval by December 2007.

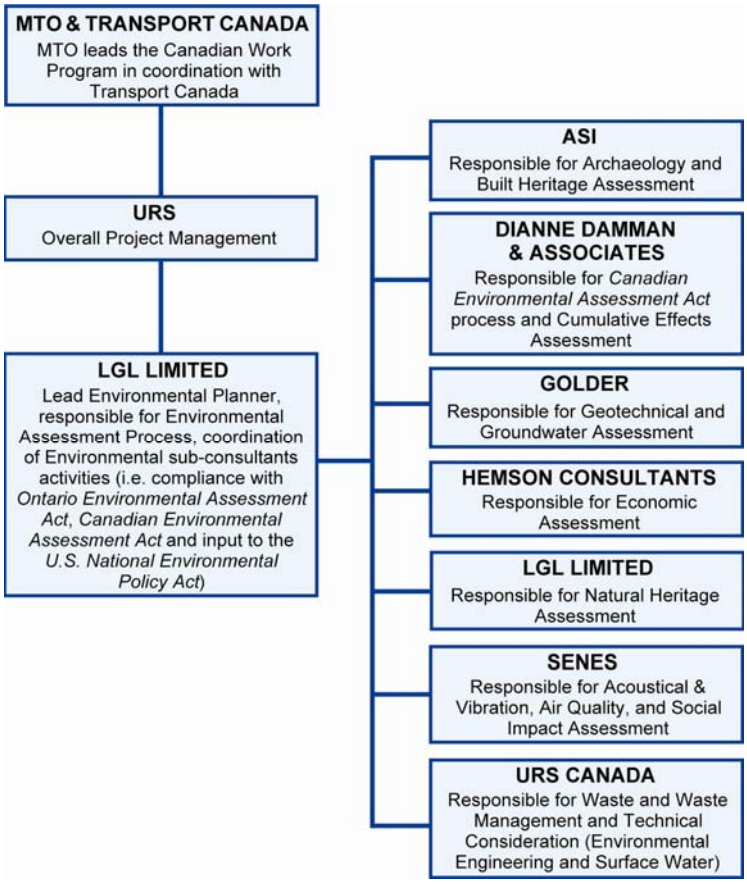
The Partnership completed a *Planning/Need and Feasibility Study* (P/NF) in January 2004 to address cross-border transportation demands for a 30-year planning period. Included in the documentation for that study was an Environmental Overview Report which provided an inventory of the existing condition in a Focused Analysis Area. Subsequently, in accordance with the *Ontario Environmental Assessment Act,* MTO prepared and submitted in May 2004 an environmental assessment Terms of Reference to the Ontario Ministry of the Environment for review and approval. The Terms of Reference was approved by the Ontario Minister of the Environment on September 17, 2004. The Terms of Reference outlines the framework that MTO and Transport Canada will follow in completing the Detroit River International Crossing Environmental Assessment (DRIC EA).

The Ontario Ministry of Transportation (MTO) is leading the Canadian work program in coordination with Transport Canada. The Michigan, Department of Transportation (MDOT), in coordination with the Federal Highways Administration (FHWA), is leading the U.S. work program.

The partnership is moving forward with technical and environmental work leading to the selection of a new or expanded border crossing, to address cross-border transportation demands for a 30-year planning period.

As an initial step in the DRIC EA process and to build upon the work completed in-depth secondary source data collection has been conducted. This work has been focused within the Preliminary Analysis Area (PAA) identified in the Environmental Overview Report, (as Amended January 2005). The noted data collection effort has been documented in a series of Working Papers. Working Papers have been prepared for the following topics: social impact assessment; economic assessment; archaeological resources; cultural resources; natural heritage; acoustics and vibration; air quality; waste and waste management; and technical considerations. The Working Papers are presented within the Environmental Overview Report (June 2005).

The Canadian Study Team and their tasks are presented below.



The purpose of the Working Papers is to document the secondary source data collection by: describing the data collection/sources used; providing an overview of study area conditions; identifying significance/sensitivity of features in the study area; and, identifying gaps in study area data and developing Work Plans to fill identified data gaps.

In conjunction with the Working Papers, a Work Plan for each discipline has been prepared to structure the filling of identified data gaps. They provide:

- a schedule and order of events for the subject under investigation by phase;
- a rationale for further data collection methodologies;
- data sources;
- methods of assessment, criteria, indicators and measures; and,
- details on the integration of each work plan with the work plans of other disciplines.

The Work Plans have been developed based on current knowledge of existing conditions within the PAA and therefore, should be considered to be living documents which will be subject to agency and public review. The partnership is aware that the assessment and evaluation of alternatives at all phases will require applying the requirements of three pieces of legislation, the OEA, CEAA, and NEPA. Therefore, in preparing the Work Plans, the partnership has sought to integrate the most rigorous requirements from each piece of legislation.

Social Impact Assessment Work Plan

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1. INTRODUCTION

1.1 Planning/Need and Feasibility Study – Existing Environmental Conditions

The Partnership jointly commissioned a Planning/Need and Feasibility Study (P/NF) (Canada-US-Ontario-Michigan Border Transportation Partnership 2004), which identified a long-term strategy to address the safe and efficient movement of people and goods between southeast Michigan and southwest Ontario. Although conducted in a manner consistent with the environmental study processes in both countries, the P/NF Study was not completed within the formal environmental study framework. The findings of the P/NF Study, however, serve as an important basis for governments to move forward in the development and improvement of cross border transportation services, including proceeding with the environmental study processes in the U.S. and Canada for major transportation improvements at the Detroit River International Crossing.

A consultation component was incorporated into the P/NF Study process. Canadian and U.S. government departments, ministries and agencies, local municipalities, First Nations groups, private sector stakeholders in border transportation issues, as well as the general public were engaged in the course of the study. Throughout the P/NF Study, the Partnership affirmed that the findings of the P/NF Study may be used to initiate environmental studies in accordance with the requirements of the U.S. National Environment Policy Act (NEPA), Canadian Environmental Assessment Act (CEAA) and Ontario Environmental Assessment Act (OEAA). This step would be followed by completion of the appropriate environmental impact/assessment studies, design of the approved improvements and ultimately, construction.

During preparation of the P/NF Study, background papers were prepared to establish existing conditions within the Preliminary Analysis Area (PAA). The PAA is roughly bounded by 9th Concession Road in the Town of Lakeshore, County Road 18 in the Town of Amherstburg on its southern extent and by the Detroit River on its western and northern extent. An Environmental Overview Working Paper (Canada-US-Ontario-Michigan Border Transportation Partnership 2005) was prepared to document environmental constraints which may preclude or otherwise constrain the generation of feasible transportation alternatives. The information contained in the Environmental Overview Working Paper was gathered from readily available secondary sources. Social economic environment identified in the Environmental Overview Working Paper included: neighbourhoods, centres of commerce and manufacturing, and population centres. A summary of the social information contained in the Environmental Overview Working Paper is presented below.

1.1.1 Existing Social Environment

The Canadian side PAA encompasses the City of Windsor, the Town of LaSalle, and the Town of Tecumseh. Combined, the area has a census metropolitan area population of over 300,000, including more rural parts of adjoining Essex County.

1.1.2 Population Characteristics

Population growth has occurred in the Canadian PAA between 1980 and 2000 with an average growth rate of 14.6% achieved in the last decade. The population is projected to grow moderately over the next twenty years with the City of Windsor's declining population expected to stabilize, and the surrounding communities of LaSalle and Tecumseh to continue to experience growth. The Town of LaSalle is a rapidly urbanizing municipality with a project growth rate between 2½ to 4% annually.

1.1.3 Land Use

Zoning ordinances and land use policies control existing land use within the PAA. The Canadian PAA is a combination of agricultural lands under tillage and urbanized areas (City of Windsor, Town of LaSalle, Town of Tecumseh) consisting of residential, commercial and industrial land uses with some land designated open space and parks.

1.2 Detroit River International Crossing – Terms of Reference

A Terms of Reference was submitted to the Ontario Ministry of the Environment for approval in May 2004. The Terms of Reference identifies the framework that the proponent will follow in completing an individual environmental assessment. The Terms of Reference received approval in September 2004.

The planning process that the Route Planning Study and Environmental Assessment Study will follow is outlined in the Terms of Reference and consists of four stages:

- Stage 1 – Define Study Area;
- Stage 2 – Illustrative Alternatives;
- Stage 3 – Practical Alternatives; and,
- Stage 4 – Concept Design Alternatives.

1.3 Social Impact Assessment Work Plan

The Social Impact Assessment (SIA) Work Plan presents the approach and methodology for conducting the Social Impact Assessment Investigation for the Detroit River International Crossing Route Planning and Environmental Assessment Study. The proposed approach to completing the Social Impact Assessment Investigation is to

increase the level of detail used to assess social indicators progressively as the geographical area of study is sequentially narrowed down. The proposed level of analysis, resolution, and type of data collection at each stage of the study is designed to maximize efficiency. The Social Impact Assessment Investigation is also designed to complement the work to be performed in the U.S.

The workplan is structured to provide the rationale, objectives, data sources, criteria and indicators for the analysis and evaluation of both the illustrative and practical route alternatives, in addition to the final impact assessment and concept design of the preferred alternative.

SIA is generally defined as: "efforts to assess or estimate, *in advance*, the social consequences that are likely to follow from specific policy actions (including programs and the adoption of new policies) and specific government actions (including buildings, large projects and leasing large tracts of land for resource extraction)." (italics in original text) (International Committee on Guidelines and Principles for Social Impact Assessment, 1993).

Social impacts can occur at various units of social order: individuals, businesses, families, communities, economic sectors or broader societal units such as whole cultures or nations. Social impacts can be positive or negative but the overall goal within a specific undertaking is to produce an overall improved benefit to society (otherwise the project would have never been undertaken in the first place). However, with any project there remains the potential for parts of the population to be potentially negatively impacted in particular those who work, live or recreate where an actual physical undertaking is to occur.

SIA has often been blended with economic analysis to be coined as "socio-economic impact assessment." The DRIC project has kept the two disciplines as separate and so the social impact assessment will assess the impacts on individuals, families, neighbourhoods, communities and the region. Several specific SIA objectives for the project have been identified specifically:

- Minimize the number of displacement and disruptional effects on private properties and community residents.
- Minimize the number of displacement and disruptional effects on social, recreational and cultural institutions and facilities.
- Minimize negative social impacts on municipalities with respect to population change and disruption of social services.
- Minimize the loss of visual/aesthetic features and values and where possible enhance existing visual environment.
- Maximize compatibility with existing social structure and minimize impact or enhance the social cohesion of existing communities and neighbourhoods.
- Minimize any dislocational or disruptional effects on agricultural operations and rural way of life.

Both the social and economic workplans will examine Official Plans and other land-use planning documents but both disciplines will be using these documents to address their unique disciplines and are not intended to be the land-use discipline.

The social objectives, rationale, criteria/indicators, measures and general data requirements outlined in this workplan were developed through research and internal peer review. Specifically, several of social impact assessment books and articles were reviewed along with transportation and non-transportation environmental assessments in Ontario.

The SIA literature consulted included:

- Barrow, C.J. Social Impact Assessment - An Introduction. Hodder Headline Group: London. 2000;
- Burdge, Rabel J. (ed.). A Conceptual Approach to Social Impact Assessment. Social Ecology Press: Middleton, Wisconsin, 1994;
- Burdge, Rabel J. (ed.). A Community Guide to Social Impact Assessment. Social Ecology Press: Middleton, Wisconsin, 1995;
- International Committee on Guidelines and Principles for Social Impact Assessment. Guidelines and Principles for Social Impact Assessment. International Association for Impact Assessment: Belhaven, North Carolina, 1993; and,
- Wolf, Charlie. Social Impact Assessment and Social Policy. 2002.

The EA documents reviewed included:

- Marshall Macklin Monaghan. St. Clair Avenue West Transit Improvements Class Environmental Assessment. Socio-Economic Assessment Report (draft). 2004;
- Armour Environmental. Taro East Quarry Environmental Assessment. Social Impact Assessment Scoping Report. 2005;
- URS et. al. Mid Peninsula Transportation Corridor EA Terms of Reference. Appendix E Socio- Economic Workplan;
- MM Dillon. Eglinton West Rapid Transit Line. Master Factor List. Factors for Data Collection and Analysis of Direct Effects to Individuals. 1992; and,
- Gartner Lee Limited. Environmental Assessment Issues Report: Work Package 5-8 "Socio-Economic Impact Assessment". For Ontario Power Generation. 1999.

Other documents consulted included:

- TDM Encyclopaedia – Land Use Evaluation. Land Use Evaluation – Evaluating How Transportation Decisions Affect Land Use Patterns and the Economic, Social and Environmental Impacts that Result. 2003;
- US Department of Transportation. Community Impact Mitigation. Case Studies. 1998; and,
- US Department of Transportation. Community Impact Assessment. A Quick Reference for Transportation. 1996.

These documents were reviewed in order to identify the objectives for the study and the full range of potential criteria/indicators that should be considered for the project and to use the most relevant definitions, interpretations and measures of them. Based on our EA and SIA experience and our knowledge of the proposed DRIC, these objectives, criterion/indicators, rationale, measures and data sources were refined to this workplan.

A summary of the Social Impact Assessment Investigation in relation to the study stages is presented in Table 1.

At each stage of the study process, similar tasks will occur. These tasks include:

Task 1 – Define Area of Investigation - Identify the study area for the purposes of investigating the potential effects of the project.

Task 2 – Data Collection - Identify the type, source, level of detail and methods to be used to obtain information.

Task 3 – Data Analysis - Identify how the information will be interpreted to determine the significance and sensitivity of social impacts.

Task 4 – Evaluate Alternatives - Identify the social criteria and indicators that will be used to compare alternatives.

Task 5 – Conduct Impact Assessment - Identify the range of potential environmental effects to be assessed.

Task 6 – Recommend Environmental Protection Measures - Identify the range of potential environmental protection measures to be assessed. Environmental protection measures typically include avoidance, minimization, mitigation, compensation and monitoring.

TABLE 1. SOCIAL INVESTIGATION BY STUDY STAGE

Study Stage[1]	Level of Analysis	Task 1 Define Area of Investigation	Task 2 Data Collection	Task 3 Data Analysis	Task 4 Evaluate Alternatives	Task 5 Impact Assessment	Task 6 Environmental Protection Measures
Stage 1 – Describe Study Area	Community/ Region	Preliminary Analysis Area	• Municipal, County Websites • Demography data from Statistics Canada • Municipal Official Plans, Secondary Plans • Canada Land Inventory Mapping (assess soils ratings). • OMAF land use mapping	No comparative analysis at this stage; however, demography and social statistics assessed.	Not applicable at this stage.	Not applicable at this stage	Not applicable at this stage
Stage 2 – Illustrative Alternatives	Communities/ Region	Illustrative routes, plazas, plaza extensions and crossings rights-of-way, footprints and adjacent zones of influence	• Secondary sources • Census of the Population. Dissemination Area data (small geographical level) • Municipal Official Plans, Secondary Plans • Municipal studies, inventories, website • House Counting • Windshield Surveys • Air photos • Municipal and other Mapping Sources • Project construction information. • Canada Land Inventory Mapping (assess soils ratings). • OMAF land use mapping	• Quantify potentially displaced dwellings within proposed ROW; • Quantify potentially disrupted dwellings with adjacent to proposed ROW; • Quantify potentially displaced social features within proposed ROW; • Quantify potentially disrupted social features adjacent to proposed ROW; • Assess land use plans within and adjacent to proposed ROW.	• Compare potential displacement of residences/dwellings located within ROW. • Compare potential disruption of residences/dwellings located adjacent to ROW (extent, significance). • Compare potential displacement to community features located within ROW. • Compare potential disruption to community features located adjacent to ROW (extent, significance). • Assessment impact on Community cohesion character and function.	Comparative Analysis.	Minimize the number of displacement and disruptional effects on private properties, residents, social features (recreational and cultural institutions).

TABLE 1. SOCIAL INVESTIGATION BY STUDY STAGE

Study Stage[1]	Level of Analysis	Task 1 Define Area of Investigation	Task 2 Data Collection	Task 3 Data Analysis	Task 4 Evaluate Alternatives	Task 5 Impact Assessment	Task 6 Environmental Protection Measures
Stage 3 – Practical Alternatives	Communities/ Neighbourhood	Practical routes, plazas, plaza extensions and crossings rights-of-way, footprints and adjacent zones of influence	• Secondary sources • Census of the Population. Dissemination Area data (small geographical level). • Official Plans, Secondary Plans • House Counting • Windshield Surveys • Air photos • Property Data Maps • Project construction information. • Agency consultation • Public consultation • Resident Interview/surveys • Facility managers interviews	• Quantify potentially displaced dwellings within ROW; • Quantify potentially disturb dwellings with adjacent zones of influence; • Quantify potentially displaced social features and their users within ROW; • Quantify potentially disrupted social features and their users within the zones of influence; • Qualitative assessment based on the ability to efficiently and safely provide alternative routes for services.	• Minimize the number of displacement and disruptional effects on private properties and community residents. • Minimize the number of displacement and disruptional effects on social features (recreational and cultural institutions and facilities). • Minimize negative social impacts on municipalities with respect to population change and disruption of social services. • Maximize compatibility with, minimize impact on or enhance the social cohesion, function and character of existing communities and neighbourhoods.	Comparative Analysis	Minimize the number of displacement and disruptional effects on private properties, community residents, social, recreational and cultural institutions and features.

TABLE 1. SOCIAL INVESTIGATION BY STUDY STAGE

Study Stage[1]	Level of Analysis	Task 1 Define Area of Investigation	Task 2 Data Collection	Task 3 Data Analysis	Task 4 Evaluate Alternatives	Task 5 Impact Assessment	Task 6 Environmental Protection Measures
Stage 4 – Concept Design Alternatives	Communities/ Neighbourhood	Concept design routes, plazas, plaza extensions and crossings rights-of-way, footprints and adjacent zones of influence	• Secondary sources • Census of the Population. Dissemination Area data (small geographical level). • House Counting • Windshield Surveys • Air photos • Property Data Maps • Project construction information. • Conservation Authorities • MNR • Agency consultation • Public consultation • Resident Interview/surveys • Facility managers interviews	• Assess the impact of the design alternatives through consultation and research.	• Identify design alternatives that have the least amount of negative social effect and highest positive effect.	Site-Specific Impacts	Avoidance. Site-specific mitigation, compensation and monitoring.

[1] Detail Design is not currently included in the Detroit River International Crossing Route Planning and Environmental Assessment Study.

2. STAGE 1 – DESCRIBE COMMUNITY/REGION

A study area will be established to encompass the stated problems, opportunities and range of feasible alternatives. The study area will be generated based on a review of significant physical and environmental constraints that may preclude the development of feasible alternatives and the ability to provide continuous corridors of sufficient area to generate a range of linear transportation facility alternatives.

The social discipline at this stage focuses on broadly describing the communities and region identified in the Preliminary Area of Analysis.

2.1 Task 1 – Define Area of Investigation

The area of investigation is the Preliminary Analysis Area identified in the amended Environmental Overview Document. In general, this includes the City of Windsor and the Towns of LaSalle, Tecumseh and Amherstburg.

2.2 Task 2 – Data Collection

Social information used to describe the study area communities and region will be collected from readily available secondary sources such as municipal official plans and Census Canada. A list of the secondary source information to be collected and its source is presented in Table 2.

TABLE 2. SOCIAL IMPACT ASSESSMENT INFORMATION TO BE COLLECTED FROM SECONDARY SOURCES

Secondary Source Information	Information Source
Number of households	Aerial photos, Census Canada data
Number of residents	Census Canada data
Location and number of social, recreational and cultural institutions and facilities.	Municipal studies, inventories, plans, website Conservation Authorities, MNR
Official Plans and Secondary Plans, Municipal Zoning By-laws	City of Windsor Town of Tecumseh Town of LaSalle Town of Amherstburg
Soil classification in rural/agricultural areas	Soil Capability Report for Essex County Canada Land Inventory mapping Agricultural Drainage System mapping

Demographic data collected includes population, population characteristics, employment, and income, and household characteristics. Land use data collected include existing and planned land use designations, and soil classification for agriculture.

2.3 Task 3 – Data Analysis

Social and demographic data of the various communities and broader DRIC study region were assessed in order to identify general social and demographic trends and identify the overall make-up of the area.

2.4 Task 4 – Evaluate Alternatives

No alternatives were assessed at this stage.

2.5 Task 5 – Conduct Impact Assessment

No analysis was conducted at this stage, as the objective is to describe the communities and region.

2.6 Task 6 – Recommend Environmental Protection Measures

Not applicable as the objective of this stage is to describe the communities and region.

2.7 Results

Illustrative alternatives will be generated and carried forward for further evaluation.

3. STAGE 2 – ILLUSTRATIVE ALTERNATIVES

Illustrative alternatives represent the full set of alternative highway alignments/crossing locations to be considered. Illustrative alternatives will be generated by identifying routes, plazas, plaza extensions and crossings extending from Highway 401 to the Canada/U.S. border.

3.1 Task 1 – Define Area of Investigation

The area of investigation is illustrative routes, plazas, plaza extensions and crossings within the Preliminary Analysis Area. In general, this includes the City of Windsor and the Towns of LaSalle, Tecumseh and Amherstburg.

3.2 Task 2 – Data Collection

Social impact information collected previously from secondary sources will be supplemented with windshield surveys, air photos, municipal studies, plans, inventories and websites, and public and agency consultation. Data will be collected for this stage on each of the indicators using the data sources outlined in Table 3. The overall objective of the SIA is to identify the alternative that will have the fewest negative impacts on the smallest population and/or number of features.

3.3 Task 3 – Data Analysis

Described below are the proposed criteria and indicators for the social impact assessment at the illustrative alternative stage. The rationale for each of the indicators is also explained and how the indicator is to be measured. A combination of quantitative and qualitative measures has been developed. Table 3 provides a summary of the criteria and indicators.

Property/Community Resident Impacts

The first criterion grouping is for Property/Community Resident Impacts. These would be impacts that would generally occur at the individual home/dwelling unit level. Two indicators are identified.

1) Households/Dwellings Displaced

Property takings and the consequent displacement of residences and dwellings (all forms of housing) can have a significant negative impact on community residents (owners and tenants). The total number of households displaced will be identified. For the purposes of analysis a property will be considered displaced if any part of the home or building (including yards) is situated within the ROW, plaza or crossing. The terms residences, dwellings, households and homes are used somewhat interchangeably in the analysis but the common unit of measurement is household, which is also used by Statistics Canada.

TABLE 3. CRITERIA AND INDICATORS FOR SOCIAL FACTORS – ILLUSTRATIVE ANALYSIS

Criterion/Indicators	Background/Rationale	Data Sources	Measures
Property/Resident Impacts 1) Households/ dwellings displaced. 2) Households/ dwellings disrupted.	• Property takings and the consequent displacement of residences and dwellings (all forms of housing) can have a significant negative impact on the community residents (owners and tenants). • Residents adjacent to the proposed ROW may experience construction and operational disruption effects such as: dust, noise, odour, lighting, visual intrusion, traffic, vibration, access to properties, emergency vehicle access, pedestrian access/safety, etc.	• Census of the Population. Dissemination Area data (small geographical level). • Site visits. • Land Use Surveys • Windshield Surveys • Air photos • Municipal and Other Mapping Sources. • Municipal studies, inventories, plans, website.	Quantitative assessment of the total number of dwellings (all housing formats) wholly or partially in the proposed ROW. Quantitative assessment of the total number of dwellings (all housing formats) that will be disrupted.
Social Features Impacts (Institutional/Recreational/Cultural) 1) Social Features displaced. 2) Social Features disrupted.	• Property takings and the consequent displacement of institutions (e.g., schools, community centres, day care, churches, libraries, municipal offices) and recreational uses (e.g., playgrounds, parks, recreation centres, pools, museums, cultural facilities, heritage buildings) can have a significant negative impact on the owners and tenants. • Institutional and recreational users adjacent to the proposed ROW may experience construction and operational disruption effects such as: dust, noise, odour, lighting, visual intrusion, traffic, vibration, access to properties, emergency vehicle access, pedestrian access/safety, etc.	• Site visits. • Windshield Surveys • Air photos • Municipal and Other Mapping Sources. • Municipal studies, inventories, plans, website.	Quantitative assessment of the total number of institutional and recreational uses wholly or partially in the proposed ROW. Quantitative assessment of the total number of institutional and recreational uses disrupted.
Community and Neighbourhood Impacts Effects on the functionality of communities and neighbourhoods (social cohesion).	• Proposed project has the potential to segment/divide existing neighbourhoods and communities. Social patterns and linkages in the community may be disrupted. These social patterns could include school catchment areas, community centre catchment areas, pedestrian routes, etc. Note the proposed project may also have the potential for upgrading or enhancing existing communities where there is a lack of social cohesion (indicated by safety/crime rate, business vacancy rate, residential turnover, approximate age of existing development, level of investment in community)	• Local Municipal Official Plans • Secondary Plans • Project Construction Information • Agency Consultation	Qualitative assessment of the impact of the alternative on the function of existing neighbourhoods/communities (e.g., are formerly whole neighbourhoods now divided, are community functions displaced?). This would include school and community centre catchment areas, pedestrian routes (pedestrian paths severed, pedestrian paths made more indirect), etc. May also include the opportunity to enhance/upgrade some communities/neighbourhoods, improve access.

TABLE 3. CRITERIA AND INDICATORS FOR SOCIAL FACTORS – ILLUSTRATIVE ANALYSIS

Criterion/Indicators	Background/Rationale	Data Sources	Measures
Agriculture 1) Number of Farm Operations displaced. 2) Number of Farm Operations disrupted. 3) Qualitative assessment on agricultural operations.	• Proposed project has the potential to displace farm operations (e.g., identifiable farm buildings). • Proposed project has the potential to disrupt farm operations by proximity. • Proposed project has the potential to negatively effect the functionality of agricultural operations and rural area.	• Windshield Surveys • Air Photos • Municipal Official Plans and maps. • Municipal studies, inventories, plans, website. • Canada Land Inventory Mapping • OMAF Land Use Mapping	Measure the number of agricultural operations that are likely to be displaced. Measure the number of agricultural operations that are likely to be disrupted. Qualitatively assess how the agricultural community may be segmented, divided and impacted.

So for example, if a ROW would displace 11 single family residences and 14 units in an apartment building, the total number of households displaced would be 25.

2) Households/Dwellings Disrupted

Residents adjacent to the ROW may experience construction and operational disruption effects such as: dust, noise, odour, lighting, visual intrusion, traffic, vibration, access to properties, emergency vehicle access, loss of enjoyment of property, interruption of day to day activities, pedestrian access/safety, etc.

The total number of households within 200 m of both edges of the ROW (or plaza or crossing) will be assessed. Similar to the displacement assessment any property partially or wholly within this impact zone will be assumed to be impacted. The terms residences, dwellings, households and homes are used somewhat interchangeably in the analysis but the common unit of measurement is household, which is also used by Statistics Canada.

A 200 m impact zone was selected for a variety of reasons. As identified above, there are potentially a wide range of social effects such as the more typical impacts of noise or air on the public to more social or community impacts such as separation from a local recreational facility or school or decreased pedestrian access, safety concerns or aesthetics. As there can be a myriad of impacts, it is important to identify an impact zone large enough that will likely encompass the majority of impacts rather than a zone too small and therefore underestimating the total impacts. Some impacts such as local air quality are likely to impact an area of less than 100 m from the side of the road. Noise impacts can be of a greater distance depending on the sensitivity of the receptor, topography and/or buildings, structures and vegetation but generally should be under 200 metres. Aesthetic impacts could vary depending on the proposed facility, topography and structures with the impact more directly obvious from a significant distance in a rural area. Finally, other social impacts such as access or interruption of day to day life (walking to a shopping plaza, local park) are variable but it is generally argued that these impacts should be only felt within 200 m or less of the side of the ROW.

Institutional - Social/Recreational/Cultural Impacts

The second criterion grouping is for institutional, recreational and cultural impacts. These would be impacts that would occur at local social, recreational and cultural institutions including facilities such as parks, recreation centres, pools, museums, cultural facilities, heritage districts/areas, schools, day cares, senior residences, etc. Two indicators are identified.

1) Institutional – Social/Recreational/Cultural Uses Displaced

Property takings and the consequent displacement of social, recreational and cultural institutions can have a significant negative impact on the users, employees and managers of such facilities. The measures that will be used include a quantitative assessment of the total number of institutional uses wholly or partially in the ROW.

2) Institutional – Social/Recreational/Cultural Uses Disrupted

Institutional users adjacent to the ROW may experience construction and operational disruption effects such as: dust, noise, odour, lighting, visual intrusion, traffic, vibration,

access to properties, emergency vehicle access, pedestrian access/safety, etc.

The total number of institutions within 200 m of both edges of the ROW (or plaza or crossing) will be assessed. Similar to the displacement assessment any property partially or wholly within this impact zone will be assumed to be impacted. The terms residences, dwellings, households and homes are used somewhat interchangeably in the analysis but the common unit of measurement is household, which is also used by Statistics Canada. The same logic that applies to the 200 m impact zone with private properties is also used for the effects on institutions.

Community and Neighbourhood Impacts

The third criterion is community and neighbourhood impacts. The undertaking may or may not be compatible with the existing planned land uses for the neighbourhood and community. As well, the undertaking may positively or negatively impact existing communities and neighbourhoods. The social discipline will only assess the plans and initiatives from a social perspective. For example, we will not assess an alternative against the commercial/industrial/employment objectives and policies of the Official Plans as that will be part of the economic discipline. However, we would assess the alternatives against the plans with respect to residential and community objectives and policies.

1) Effects on Community Cohesion, Structure and Function

The proposed project has the potential to segment/divide existing neighbourhoods and communities. Social patterns and linkages in the community may be disrupted. These social patterns could include school catchment areas, community centre catchment areas, pedestrian routes, etc. The proposed project may also have the potential for upgrading or enhancing existing communities where there is a lack of social cohesion (indicated by safety/crime rate, business vacancy rate, residential turnover, approximate age of existing development, level of investment in community). A qualitative assessment of the impact of the undertaking on the function of existing neighbourhoods/communities (e.g., are formerly whole neighbourhoods now divided, are community functions displaced?). This would include school and community centre catchment areas, pedestrian routes (pedestrian paths severed, pedestrian paths made more indirect), etc. This may also include the opportunity to enhance/upgrade existing communities and neighbourhoods.

Agriculture and Rural Life

The fourth criterion is agriculture and rural life. With this criterion it is difficult to separate the social aspects of farm and rural life from the economic aspects and many rural farm dwellers specifically choose farming as a lifestyle. However, this way of life is often dependent on their farm operations being economically viable. This criterion will assess the extent to which agricultural and rural life will be impacted.

1) Number of Farm Operations Displaced

The total number of farm operations that would be displaced by a ROW, plaza and/or crossing will be assessed. A farm operation is defined as a singular farm complex/operation (house, barn(s) and related facilities).

2) Number of Farm Operations Disrupted

The total number of farm operations that would be within the 200 m impact zone of a segment, plaza or crossing will be identified as disrupted. A farm operation is defined as a singular farm complex/operation (house, barn(s) and related facilities).

3) Qualitative Assessment on Agricultural and Rural Way-of-Life

A qualitative assessment on the agricultural operations and rural way of life will also be conducted. Any speciality farm operations or crops will be noted such as horse ranches. This will also include an assessment of the mix of farm operations and rural (non-farm) residences as well as a commentary on farms in the urban/rural fringe.

3.4 Task 4 – Evaluate Alternatives

Alternatives will be evaluated using comparative criteria. The evaluation of illustrative alternatives will be based on: the potential displacement of dwellings and residents, the potential disruption of residents due to nuisance effects located within adjacent zones of influence; loss of social features located within rights-of-way and footprint areas; and, the potential disturbance of social features located within adjacent zones of influence. Secondary source information and aerial photos and windshield surveys will be used to determine the extent and significance of social indicators.

3.5 Task 5 – Conduct Impact Assessment

The impact assessment will be carried out using a comparative analysis of social indicators. This will entail using a geographical information system (GIS) to map out data. Individual layers within the GIS will be overlaid to create a composite map, which will then be used as a basis for examination of environmental and technical feasibility of the alternatives.

Impact assessment will involve comparison of alternatives based on each social impact indicator. The objective is to indentify the alternative that will have the fewest negative impacts on the smallest population and/or number of features.

3.6 Task 6 – Recommend Environmental Protection Measures

Avoidance of residents/dwellings and social features is the only practical environmental protection measure to be considered at this stage.

3.7 Results

The illustrative alternatives will be evaluated to select a technically preferred illustrative alternative(s). Practical alternatives will be generated and carried forward for further evaluation.

4. STAGE 3 – PRACTICAL ALTERNATIVES

Practical alternatives represent the set of illustrative alternatives that, upon evaluation of impacts and benefits, are carried forward for further consideration. Practical alternatives are generated through more detailed design (although still at a preliminary level) to better identify property requirements, infrastructural implications, construction staging impacts and mitigation measures.

4.1 Task 1 – Define Area of Investigation

The area of investigation is practical routes, plazas, plaza extensions and crossings within the technically preferred illustrative alternative(s). This area is known as the Area of Continued Analysis (ACA) and is illustrated in Figure 1.

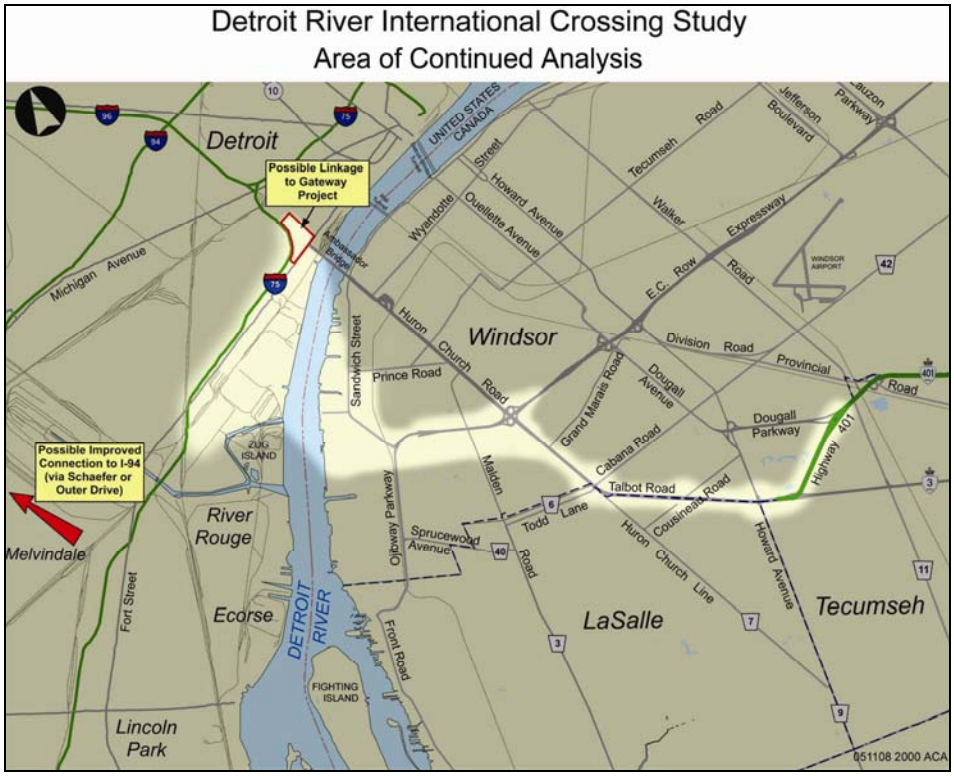

FIGURE 1. KEY PLAN OF THE AREA OF CONTINUED ANALYSIS.

4.2 Task 2 – Data Collection

Social information collected previously from secondary sources and windshield surveys will be supplemented with agency and public consultation, and interviews/surveys. Table 1 provides an overview of data collection for the Practical stage.

4.3 Task 3 – Data Analysis

Described below are the proposed criteria and indicators for the social impact assessment of the analysis of the practical route alternatives. The rationale for each of the indicators is also explained and how the indicator is to be measured. A combination of quantitative and qualitative measures has been developed. Table 4 provides a summary of the criteria and indicators.

The overall objective of the SIA is to identify the alternative that will have the fewest negative impacts on the smallest population and/or number of features. In this sense, the use of the Census at a very detailed level of the geographical hierarchy (e.g., disseminations areas) becomes highly important. With each alternative we plan to identify the likely impacted area and identify the population of that area (given the geographical classification constraints of the Census).

Public and agency consultation is an important part of the social impact assessment discipline. Input from the public will be used to: verify and/or identify important features or populations; identify any major data gaps; assist in interpreting any uncertain social issues and/or trends; identify issues of priority social concern; indicate alternative route preferences; and, understand their rationale for route preferences.

Property/Community Resident Impacts

The first criterion grouping is for Property/Community Resident Impacts. These would be impacts that would generally occur at the individual household/dwelling unit level. Two indicators are identified.

1) Residences/Dwellings (including total number of people and special populations) Displaced

Property takings and the consequent displacement of residences and dwellings (all forms of housing) can have a significant negative impact on the community residents (owners and tenants). The measures that will be used will include: a quantitative assessment of the total number of dwellings (all housing formats) wholly or partially in the ROW; a quantitative assessment of the total number of people in dwellings wholly or partially in the ROW; quantitative assessment or residents potentially displaced and their attachment to home (length of tenure, ownership) and, a quantitative assessment of the total "special population" (seniors, children, youth, disabled, minority, ESL) in dwellings wholly or partially in the ROW.

TABLE 4. CRITERIA AND INDICATORS FOR SOCIAL FACTORS FOR PRACTICAL ALTERNATIVES

Criterion/Indicators	Background/Rationale	Data Sources	Measures
Property/Resident Impacts 1) Households/dwellings (including total number of people and special populations) displaced. 2) Households/dwellings (including total number of people and special populations) disrupted.	• Property takings and the consequent displacement of households/dwellings (all forms of housing) can have a significant negative impact on the community residents. • Residents adjacent to the proposed ROW may experience construction and operational disruption effects such as: dust, noise, odour, lighting, visual intrusion, traffic, vibration, access to properties, emergency vehicle access, pedestrian access/safety, etc.	• Secondary sources. • Census of the Population. Dissemination Area data (small geographical level). • Surveys of residents. • Windshield Surveys • Air photos • Municipal and Other Mapping Sources. • Municipal studies, inventories, plans, website. • Project construction information. • Agency and Public Consultation. • Resident interviews/surveys. • Facility managers interviewers.	Quantitative assessment of the total number of dwellings (all housing formats) wholly or partially displaced in the proposed ROW. Quantitative assessment of the total number of people in dwellings wholly or partially in the ROW. Quantitative assessment of the total "special population" (demography and social characteristics, lifestyle, access) in dwellings wholly or partially displaced in the proposed ROW. Quantitative assessment of residents potentially displaced and their "attachment" to home. Assess via tenancy and length of living in home. Quantitative assessment of the total number of dwellings (all housing formats) that will be disrupted. Quantitative assessment of the total number of people in dwellings that will be disrupted. Quantitative assessment of characteristics of disrupted population (demography and social characteristics, lifestyle). Quantitative and qualitative assessment of the disruption of day-to-day use and enjoyment of property for residents during operation (access, commuting patterns, disruption to neighbourhood, circulation, etc.).
Social Features Impacts (Institutional/ Recreational/Cultural) 1) Social features displaced. 2) Social features disrupted.	• Property takings and the consequent displacement of institutions (e.g., schools, community centres, day care, churches, libraries, municipal offices) and recreational uses (e.g., playgrounds, parks, recreation centres, pools, museums, cultural facilities, heritage buildings) can have a significant negative impact on the owners and tenants. • Institutional and recreational users adjacent to the ROW may experience construction and operational disruption effects such as: dust, noise, odour, lighting, visual intrusion, traffic, vibration, access to properties, emergency vehicle access, pedestrian access/safety, etc.	• Interviews with facility managers. • Windshield Surveys • Air photos • Municipal and Other Mapping Sources. • Municipal studies, inventories, plans, website.	Quantitative assessment of the total number of social features displaced in the proposed ROW. Quantitative assessment of impacts on use of displaced facility (characterization of use, number and location of users, facility access and catchment area). Quantitative assessment of total number of social features disrupted. Quantitative and qualitative assessment of impacts on use of facility (characterization of use, number and location of users, facility access and catchment area, etc.).

TABLE 4. CRITERIA AND INDICATORS FOR SOCIAL FACTORS FOR PRACTICAL ALTERNATIVES

Criterion/Indicators	Background/Rationale	Data Sources	Measures
Municipal/Regional Impacts Delivery of Community Services	• Maintain overall levels of community soft services	• Municipal/community reports and studies. • Interviews with municipal officials.	Qualitative assessment of delivery of public transit, school bus routes, emergency services (police, fire, ambulance).
Community and Neighbourhood Use Impacts 1) Degree of Compatibility with local Official Plans. 2) Effects on development proposals. 3) Effects on the functionality of communities and neighbourhoods (social cohesion).	• Compatibility of the proposed alternative with the local Official Plans. • Proposed project has the potential to segment/divide existing neighbourhoods and communities. Social patterns and linkages in the community may be disrupted. These social patterns could include school catchment areas, community centre catchment areas, and pedestrian routes. The proposed project may also have the potential for upgrading or enhancing existing communities where there is a lack of social cohesion (indicated by safety/crime rate, business vacancy rate, residential turnover, approximate age of existing development, level of investment in community) • Proposed project has the potential to displace and disrupt future committed land uses and development projects.	• Local Municipal Official Plans • Secondary Plans • Development Plans • Agency Consultation • Public Consultation • Municipal studies, inventories, plans, website.	Qualitative assessment of the compatibility of the alternative with current and future land uses. Qualitative assessment of the impact of the alternative on the function of existing neighbourhoods/communities (e.g., are formerly whole neighbourhoods now divided, are community functions displaced?). This would include school and community centre catchment areas, pedestrian routes (pedestrian paths severed, pedestrian paths made more indirect), etc. May also include the opportunity to enhance/upgrade some communities/neighbourhoods, and improve access.

A survey will be implemented and distributed to each dwelling that is potentially displaced by each alternative. The survey will include questions on: total number of household members, tenancy, age and type of household, length of time living in home, etc.

2) Residences/Dwellings (including total number of people and special populations) Disrupted.

Residents adjacent to the ROW may experience construction and operational disruption effects such as: disruption of community and neighbourhood use, dust, noise, odour, lighting, visual intrusion, traffic, vibration, access to properties, emergency vehicle access, pedestrian access/safety, etc. The measures that will be used will include: a quantitative assessment of the total number of dwellings (all housing formats) that will be disrupted; a quantitative assessment of the total number of people in dwellings that will be disrupted; and a quantitative assessment of the total "special population" (seniors, children, youth, disabled, minority, ESL) in dwellings that will be disrupted.

A qualitative assessment of the disruption of day-to-day use and enjoyment of proety by residents by the undertaking will also be assessed. This will be done through public consultation/focus group sessions.

Institutional - Social/Recreational/Cultural Impacts

The second criterion grouping is for institutional, recreational and cultural impacts. These would be impacts that would occur at local social, recreational and cultural institutions including facilities such as playgrounds, parks, recreation centres, pools, museums, heritage sites, cultural facilities, heritage buildings, schools, day cares, senior residences, areas of aesthetic importance, etc. Two indicators are identified.

1) Institutional – Social/Recreational/Cultural Uses Displaced

Property takings and the consequent displacement of social, recreational and cultural institutions can have a significant negative impact on the employees, managers and users of such facilities. The measures that will be used will include: a quantitative assessment of the total number of institutional and recreational uses wholly or partially in the ROW; and, a qualitative (or quantitative if feasible) assessment (characterization of use) of the total number of people associated with the institutional and recreational uses wholly or partially in the ROW.

Interviews will be held with institutional managers (e.g., school principals, park managers, senior residence home directors or their designates) in order to describe the function of the institutions and the populations served. Interviewees will also be asked to assess the effects of the displacement.

2) Institutional – Social/Recreational/Cultural Uses Disrupted

Institutional users adjacent to the ROW may experience construction and operational disruption effects such as: dust, noise, odour, lighting, visual intrusion, traffic, vibration, access to properties, emergency vehicle access, pedestrian access/safety, etc. The measures that will be used will include: a quantitative if feasible assessment (characterization of use) of the total number of institutional uses disrupted; a qualitative

(quantitative if feasible) assessment of the total number of people associated with the institutional and recreational uses disrupted; and a, qualitative (or quantitative if feasible) assessment (characterization of use) of the total number of "special populations" using these institutional and recreational uses disrupted. The social impact assessor will work with the noise and air disciplines to first ascertain what the noise and air effects would be within the study area and than assess those effects against the population.

Interviews will be held with institutional managers (e.g., school principals, park managers, senior residence home directors or their designates) in order to describe the function of the institutions and the populations served. Interviewees will also be asked to assess the effects of the disruption on their institution. Of particular importance would be to assess whether the proposed undertaking would effect the catchment area and travel routes of their clientele (e.g., children in schools, park catchment area).

Municipal/Regional Impacts

The third criterion grouping is Municipal/Regional Impacts. These would be impacts that would occur at the municipal or regional level and will generally be addressed at the concept design stage. However, one criterion group will be assessed at this stage.

1) Delivery of Community Services

The project may impact the delivery of community soft services. A qualitative assessment will be undertaken to determine the ability of the municipality to efficiently and safely provide alternatives routes for services such as school buses, ambulances, transit and fire response. Interviews will be conducted with community service agencies in order to assess impacts on community services. At a minimum this will include: fire service, ambulance service, school bus service, police service and public transit.

Community and Neighbourhood Impacts

The third criterion is community and neighbourhood impacts. The undertaking may or may not be compatible with the existing planned land uses for the neighbourhood and community. As well, the undertaking may positively or negatively impact existing communities and neighbourhoods. The social discipline will only assess the plans and initiatives from a social perspective. For example, we will not assess an alternative against the commercial/industrial/employment objectives and policies of the Official Plans as that will be part of the economic discipline. However, we would assess the alternatives against the plans with respect to residential and community objectives and policies.

2) Effects on Community Cohesion, Structure and Function

The proposed project has the potential to segment/divide existing neighbourhoods and communities. Social patterns and linkages in the community may be disrupted. These social patterns could include school catchment areas, community centre catchment areas, pedestrian routes, etc. The proposed project may also have the potential for upgrading or enhancing existing communities where there is a lack of social cohesion (indicated by safety/crime rate, business vacancy rate, residential turnover, approximate age of existing development, level of investment in community). A qualitative assessment of the impact of the undertaking on the function of existing neighbourhoods/communities (e.g., are formerly whole neighbourhoods now divided, are community functions displaced?). This

would include school and community centre catchment areas, pedestrian routes (pedestrian paths severed, pedestrian paths made more indirect), etc. This may also include the opportunity to enhance/upgrade existing communities and neighbourhoods.

4.4 Task 4 – Evaluate Alternatives

Alternatives will be evaluated using comparative criteria. The evaluation of practical alternatives will be based on: the potential displacement of dwellings and residents, the potential disruption of residents due to nuisance effects located within adjacent zones of influence; loss of social features located within rights-of-way and footprint areas; and, the potential disturbance of social features located within adjacent zones of influence. In addition, the practical alternative evaluation will include the potential for negative social impacts on municipalities with respect to disruption of social services, loss of; and the impact to community cohesion and character.

4.5 Task 5 – Conduct Impact Assessment

Impact assessment will involve comparison of alternatives based on the net social effects for each social impact indicator. The objective is to indentify the alternative that will have the fewest negative impacts on the smallest population and/or number of features. With each alternative we plan to indentify the likely impacted area and identify the population of that area.

4.6 Task 6 – Recommend Environmental Protection Measures

Environmental protection measures to be incorporated at this stage include:

- Minimize the number of displacement and disruptional effects on private properties and community residents.
- Minimize the number of displacement and disruptional effects on social, recreational and cultural institutions and facilities.
- Minimize negative social impacts on municipalities with respect to disruption of community social services including police, fire, and ambulance.
- Minimize impact or enhance the social cohesion of existing communities and neighbourhoods.

4.7 Results

The practical alternatives will be evaluated to select a technically preferred practical alternative(s). Concept design alternatives will be generated and carried forward for further evaluation.

5. STAGE 4 – CONCEPT DESIGN ALTERNATIVES

Concept design alternatives represent the set of practical alternatives that, upon evaluation of impacts and benefits, are carried forward for further consideration. Concept design includes the consideration and development of specific engineering and environmental issues to further understand very particular implications of the recommended alternative. The level of engineering detail is sufficient to develop environmental protection measures in consultation with the appropriate agencies and to secure environmental assessment approvals.

5.1 Task 1 – Define Area of Investigation

The area of investigation is concept design routes, plazas, plaza extensions and crossings within the technically preferred practical alternative(s) of the ACA (Figure 1).

5.2 Task 2 – Data Collection

Social information collected previously from secondary sources, windshield surveys, site visits, surveys and interviews with residents, and interviews with facility managers.

5.3 Task 3 – Data Analysis

Data will be analyzed at the community level to determine the specific impacts associated with the ROW to residents, social features, community cohesion and character, and municipal services.

5.4 Task 4 – Evaluate Alternatives

The various design alternatives will be assessed with respect to measures that result in the least amount of negative social effects and greatest positive effect

5.5 Task 5 – Conduct Impact Assessment

The various measures will be assessed relative to their site-specific impacts. Both positive and negative impacts will be considered.

5.6 Task 6 – Recommend Environmental Protection Measures

Environmental protection measures to be incorporated at this stage include avoidance of residents and social features, and conceptual site-specific mitigation, compensation and monitoring measures for the proposed project.

5.7 Results

The concept design alternatives will be evaluated to select a technically preferred concept design alternative(s). Detail design is not included in the current scope of work for the Detroit River International Crossing Route Planning and Environmental Assessment Study.