

Indirect and Cumulative Impact Analysis Technical Report

The Detroit River International Crossing Study



January 2008

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SUMMARY

The Detroit River International Crossing (DRIC) Study is a bi-national effort to complete the environmental study processes for border crossing improvements between the United States and Canada. The study will identify solutions for border crossing infrastructure that supports the region, state, provincial and national economies while addressing civil and national defense and homeland security needs of the busiest trade corridor between the United States and Canada (Figure S-1).

Figure S-1
Detroit River International Crossing Study
Existing Detroit River International Crossings



The purpose of the Detroit River International Crossing Project is to: (for the foreseeable future, i.e., at least 30 years):

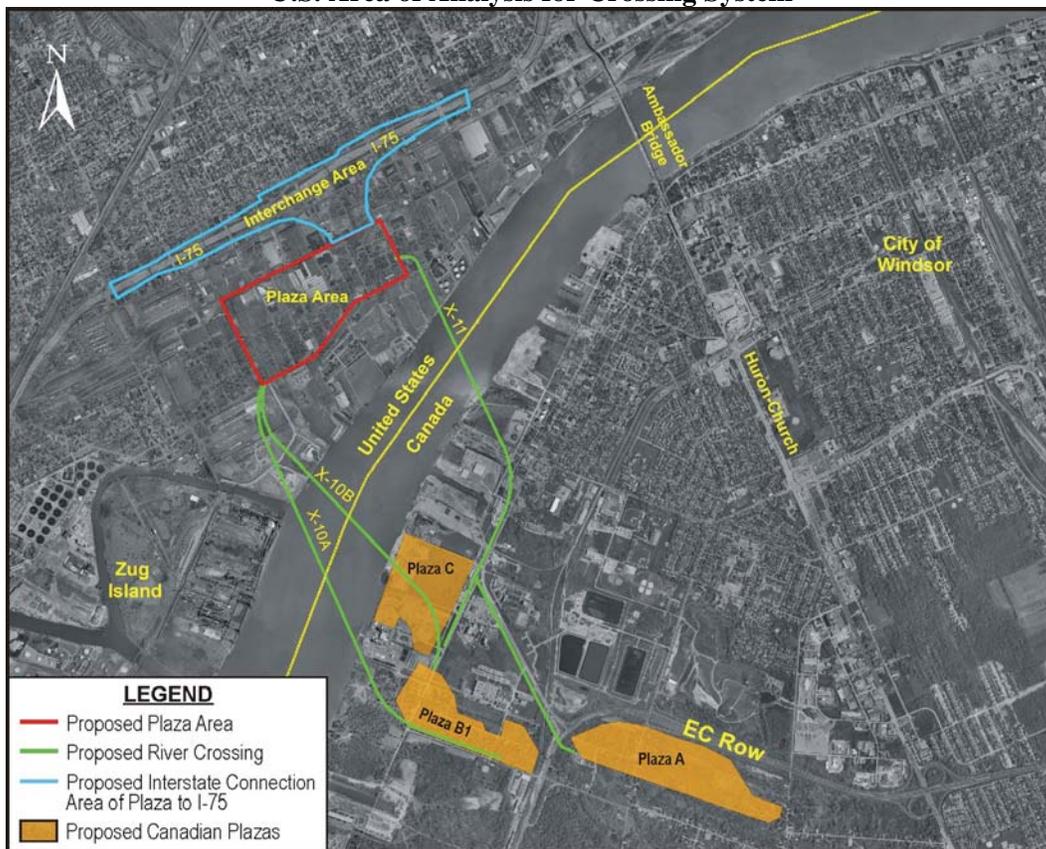
- Provide safe, efficient and secure movement of people and goods across the Canadian-U.S. border in the Detroit River area to support the economies of Michigan, Ontario, Canada and the U.S.
- Support the mobility needs of national and civil defense to protect the homeland.

To address future mobility requirements (i.e., at least 30 years) across the Canada-U.S. border, there is a need to:

- Provide new border crossing capacity to meet increased long-term demand;
- Improve system connectivity to enhance the seamless flow of people and goods;
- Improve operations and processing capability; and,
- Provide reasonable and secure crossing options in the event of incidents, maintenance, congestion, or other disruptions.

The Detroit River International Crossing Study (DRIC) Draft Environmental Impact Statement (DEIS) analyzes issues/impacts on the U.S. side of the crossing system over the Detroit River between Detroit, Michigan, and Windsor, Ontario, Canada. The alternatives are comprised of three components: the crossing, plaza (where tolls are collected), and interchange connecting the plaza to I-75 (Figure S-2).

**Figure S-2
Detroit River International Crossing Study
U.S. Area of Analysis for Crossing System**

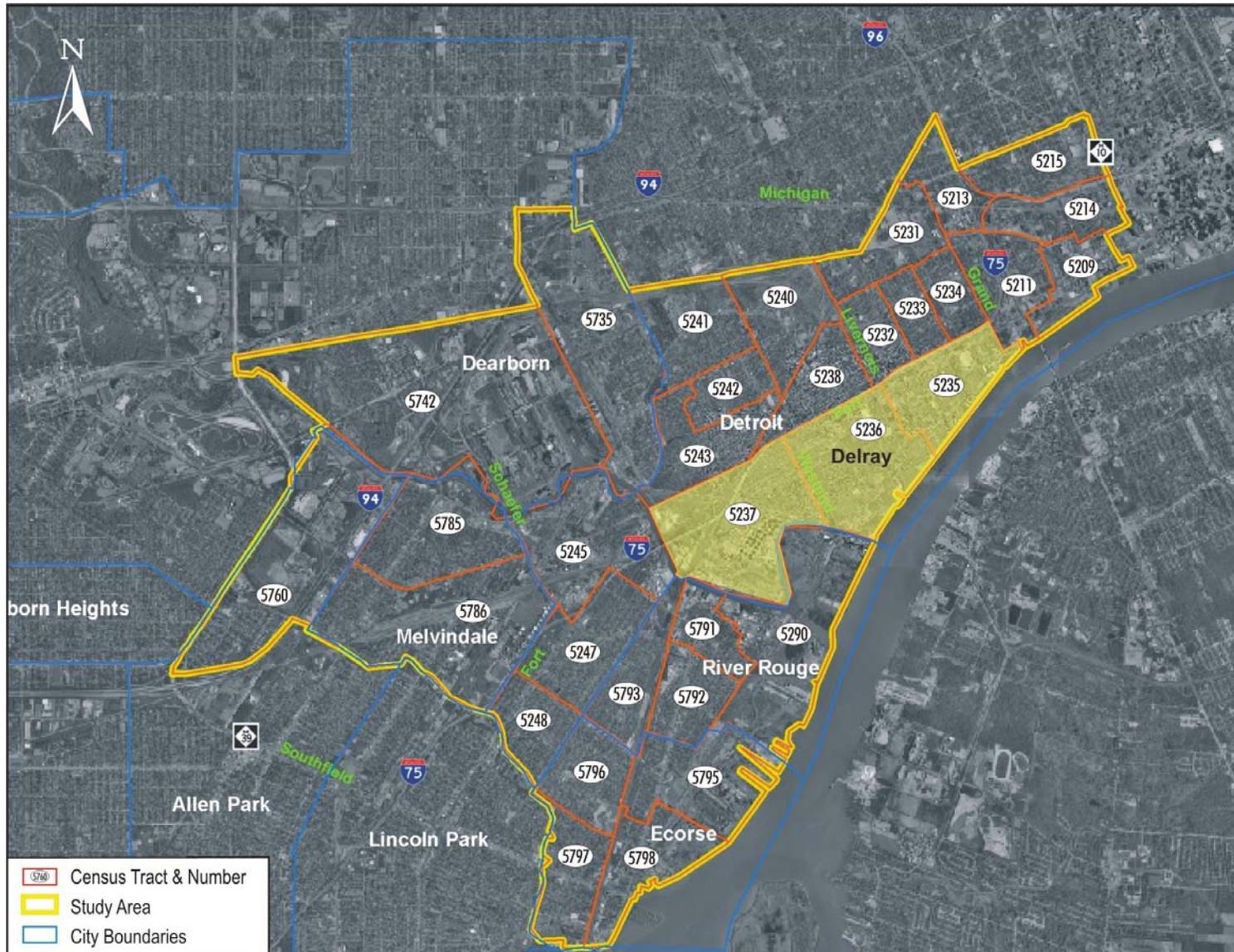


Source: The Corradino Group of Michigan, Inc.

Purpose of the Report

The purpose of this report is to assess the impacts of indirect (secondary) and cumulative effects associated with the proposed Detroit River International Crossing in a broad study area (Figure S-3) and beyond.

**Figure S-3
Detroit River International Crossing Study
Study Area**



Source: The Corradino Group of Michigan, Inc.

The basis upon which the analysis was conducted is defined in federal guidance, which indicates the following:

Indirect (secondary) effects – Caused by the action and occurring later in time or farther removed in distance, but occurring in the reasonably foreseeable future (40 CFR 1508.8(b)).

Cumulative effects – Resulting from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7).

Findings

The DRIC alternatives, as crossing systems, are very similar in their direct impacts (except for traffic on the crossing itself) and act as a unit of “action” alternatives in terms of their indirect and cumulative effects. This is because the interchange associated with all DRIC alternatives is a variation of a trumpet-type connector to I-75 in the vicinity of Livernois Avenue/Dragoon Street. The plazas are variations of an “oblong” footprint south of the Delray rail line just south of Fort Street and removed and/or buffered from sensitive uses that remain. The crossings (X-10 and X-11) vary more widely in location than the plazas and interchanges but do not vary in terms of direct impacts nor contribute to differences among DRIC alternatives in terms of indirect/cumulative effects on the U.S. side of the river. Therefore, the DRIC alternatives are considered the “Build” option compared to the No Build condition on the U.S. side of the river.

In summary, the U.S. indirect and cumulative effects of the No Build Alternative are expected to be associated with a continuation of past trends, accelerated by another downturn in the Michigan economy (Table S-1). The effects can be expected to be felt for the next eight to ten years with continued losses of jobs, and the abandonment of industrial land uses. The economic downturn could also have the unintended positive consequence of improving air quality as some polluting industries may cease operations. Small positive changes in traffic and air quality to partially offset these negative trends would occur with the No Build Alternative in the area immediately around the Ambassador Bridge once the Gateway Project is completed in 2009.

With the Build Alternatives, a small number of new jobs could be attracted to the Southeast Michigan Council of Governments (SEMCOG) region (3,350 by 2035) because of the improved accessibility that comes with a new border crossing. Nonetheless, new developments, if not controlled by local governments, could continue the trend of unwanted mixing of land uses.

Truck traffic in the community surrounding the proposed DRIC project should be reduced, but circuitous auto traffic would increase because of changes in streets that cross I-75 and changes to the interchanges that now serve the freeway. Even still, the overall air quality in the surrounding community should improve because of improved vehicle engines and fuels, even if ripple-wave development occurs with the DRIC project. Cultural resources in the directly affected community are more likely to be protected as historic properties are blended into redevelopment plans and new historic districts are created in Delray and immediately north of the I-75 service drive.

Table S-1A
Detroit River International Crossing Study
Summary of U.S. Indirect Impacts
The No Build Condition Versus the Build Condition

Category	No Build	All DRIC Build Alternatives
Traffic	Domestic traffic increases are expected to be relatively small. Positive effects will be experienced in Mexicantown and along Fort Street (M-85) with completion of Ambassador Bridge Gateway Project.	Domestic traffic increases are expected to be relatively small. Positive effects will be experienced in Mexicantown and along Fort Street (M-85) with completion of Ambassador Bridge Gateway Project. The community north and south of I-75 will experience negative and positive indirect effects. <u>Negative:</u> More difficult for traffic to gain access to I-75 and move across it. <u>Positive:</u> Fewer trucks penetrating the area would reduce noise levels and improve air quality.
Economic Impacts	A continued jobs loss is expected in the SEMCOG region until about 2015 with relatively small net growth by 2030 compared to current conditions. In Wayne County and Detroit, a net loss in jobs can be expected, not just a loss of job growth.	A continued jobs loss is expected in the SEMCOG region until about 2015 with relatively small net growth by 2030 compared to current conditions. In Wayne County and Detroit, a net loss in jobs can be expected, not just a loss of job growth. The change in accessibility associated with a new bridge would create 1,800 new jobs in Wayne County, with a small number of these locating in Southwest Detroit near the I-94/Wyoming Avenue interchange in the vicinity of the Livernois-Junction Yard intermodal (truck/rail) terminal. Oakland County could stand to gain 900 jobs near Novi. The SEMCOG region could gain 3,350 jobs (including those noted above). All these jobs would come from outside Michigan.
Land Use	Existing land use patterns are expected to continue with little change in the region. Expected losses of population and jobs in Wayne County and Detroit could lead to abandonment of some current land uses.	Existing land use patterns are expected to continue with little change in the region. Expected losses of population and jobs in Wayne County and Detroit could lead to abandonment of some current land uses. Slightly offsetting this trend could be development associated with new jobs, noted above. They would require about 120 acres of land. There is enough brownfield space in Wayne County to accommodate the development. Other locations that could see additional jobs, like the I-96/I-696/I-275 interchange area in Oakland County, could absorb the development with no negative consequences foreseen. The possibility that a "Welcome Center" will be part of this project has been mentioned at several public meetings. At this time a decision as to whether a "Welcome Center" will be included has not been made, and is subject to further study. If a Welcome Center is to be included, it will be addressed as part of the FEIS.
Air Quality	Pollution from mobile sources is expected to decrease because of cleaner engines and fuels. The forecast loss of jobs may close some polluting industries.	Pollution from mobile sources is expected to decrease because of cleaner engines and fuels. The forecast loss of jobs may close some polluting industries. Sensitive receptors in the study area are not expected to be negatively impacted if development is properly located consistent with planning/zoning rules. Additional areas, particularly north of I-75 and near the Ambassador Bridge at Mexicantown, would benefit because of less truck traffic there.
Community Effects	Some housing rehabilitation can be expected to continue. Industrial/commercial uses will continue to be mixed with residential uses. Both uses may degrade as forecast loss in jobs and population over the next eight to ten years can be expected to result in property abandonment in spots.	Some housing rehabilitation can be expected to continue. Industrial/commercial uses will continue to be mixed with residential uses. Both uses may degrade as forecast loss in jobs and population over the next eight to ten years can be expected to result in property abandonment in spots. Other indirect community effects of the proposed DRIC alternatives are discussed throughout this table.
Noises/Vibrations	No perceptible increases in noise and vibrations are expected overall. Some improvement is expected in Mexicantown with completion of Ambassador Bridge Gateway Project in 2009. Blasts from nearby room-and-pillar salt mining will continue to cause vibrations at annoyance levels in the area.	No perceptible increases in noise and vibrations are expected overall. Some improvement is expected in Mexicantown with completion of Ambassador Bridge Gateway Project in 2009. Blasts from nearby room-and-pillar salt mining will continue to cause vibrations at annoyance levels in the area. The introduction of noise-attenuating walls along I-75, where none exist now, would benefit the nearby community. No vibrations from the project would affect the area.
Cultural Resources	Continuation of past trends expected with some older structures being abandoned. Potential exists in West Delray and in the area north of I-75 to protect the area's historical integrity and open an avenue to grant/loan programs for improving properties in historic districts identified in those two locations.	Continuation of past trends expected with some older structures being abandoned. Potential exists in West Delray and in the area north of I-75 to protect the area's historical integrity and open an avenue to grant/loan programs for improving properties in historic districts identified in those two locations. A positive and, at the same time, possibly negative indirect effect is possible on aboveground cultural resource sites in the study area that are on or recommended eligible for listing on the <i>National Register of Historic Places</i> . While several of these would not be directly impacted by the DRIC, care must be taken that "ripple-wave" development in the area not create a negative indirect impact on them. The FEIS will document the analysis and proposed mitigation for the Preferred Alternative. Another by-product of the DRIC is the identification of two historic districts in West Delray and another north of I-75. The recognition of the districts will help protect the area's historical integrity and open an avenue to grant/loan programs for improving properties in them.
Water Quality, Wetlands, Threatened and Endangered Species	Status quo is expected to be maintained, while recognizing some additional wetlands may form due to human activities at abandoned sites.	Recognizing no negative indirect effects are anticipated on wetlands, nor threatened and endangered species, some additional wetlands may form due to human activities. Further, government approvals of development that could be stimulated by building a new border crossing would avoid water quality impacts, ensuring proper treatment of water runoff/wastewater. Surface water runoff would decrease as there would be less total roofed/paved area.

Source: The Corradino Group of Michigan, Inc.

Table S-1B
Detroit River International Crossing Study
Summary of U.S. Cumulative Impacts
The No Build Condition Versus the Build Condition

Category	No Build	All DRIC Build Alternatives
Mobility	Completion of the Gateway Project, which will directly connect the Ambassador Bridge to I-75, will favorably alter circulation patterns in a large portion of the study area.	Completion of the Gateway Project, which will directly connect the Ambassador Bridge to I-75, will favorably alter circulation patterns in a large portion of the study area. Negative effects could occur if induced development is not guided by proper government approvals. If properly guided, a mix of compatible uses and no congestion is foreseen.
Land Use	A continuation of past trends is expected, at best. Potential for population and employment decline in Detroit and Wayne County may lead to continued abandonment of land uses.	A continuation of past trends is expected, at best. Potential for population and employment decline in Detroit and Wayne County may lead to continued abandonment of land uses. Land use change associated with “ripple-wave” development of the DRIC will likely be minimized by applying planning principles that exist in all communities to ensure they are compatible with neighborhood uses.
Air Quality	Pollution from mobile sources is expected to decrease. Continued loss of jobs and population throughout region over next eight to ten years could lead to closing of polluting industries.	Pollution from mobile sources is expected to decrease. Continued loss of jobs and population throughout region over next eight to ten years could lead to closing of polluting industries. Proper location of new development, consistent with existing planning/zoning rules, would also help control pollution as a cumulative effect of the DRIC project.
Cultural Resources	A continuation of past trends is expected with some older structures being abandoned.	A continuation of past trends is expected with some older structures being abandoned. Adverse impacts with new development stimulated by the DRIC will likely be prevented by applying local controls and proper planning.
Community Effects	Communities are expected to be challenged as the continued slump in the economy will likely cause businesses and homes to be left vacant as jobs and related income are lost. Even so, some housing rehabilitation can be expected to continue.	Communities are expected to be challenged as the continued slump in the economy will likely cause businesses and homes to be left vacant as jobs and related income are lost. Even so, some housing rehabilitation can be expected to continue. A new crossing can be expected to stimulate some development. There are large and small tracts of land throughout the study area in locations compatible with industrial, logistics and transportation-related land uses. This re-use would minimize, if not totally avoid, negative impacts on community cohesion of such development. Housing rehabilitation would likely continue.
Noise	No perceptible increases are expected, overall. Some change could occur in spots if the downturn in the economy causes continued abandonment of noise-generating industrial/commercial uses.	Traffic volumes and noise levels would increase if economic development conditions improve with a new crossing. Negative community impacts can be avoided with care by the developer/builder and government agencies in locating this development away from sensitive uses. Blasts from nearby room-and-pillar salt mining will continue to cause vibrations at annoyance levels in the area.
Water Quality, Wetlands, Threatened and Endangered Species	A continuation of past trends is expected. Some wetlands may develop incidental to human activity on abandoned sites.	A continuation of past trends is expected. Some wetlands may develop incidental to human activity on abandoned sites. Nonetheless, no negative wetlands and/or water quality impacts are foreseen. Some positive effects could occur if brownfield sites are remediated for new development.

Source: The Corradino Group of Michigan, Inc.

In the broader region, indirect and cumulative traffic and air quality impacts are not expected to worsen. The same is true of water quality, wetlands and impacts on threatened and endangered species. At the regional scale, no negative indirect or cumulative cultural resources impacts are foreseen.

The transboundary/Canadian impacts are summarized on Table S-2. There is more variation in impacts because the proposed plaza options are significantly different from one alternative to another and the approach road feeding all plazas varies from a tunnel to at-grade facility. A second span of the Ambassador Bridge is not assumed in this situation.

Finally, it is important to recognize what effects may occur in one key regional area: wealth distribution/redistribution which are associated with shifts in population, employment and tax base.

For both the Build and No Build Alternatives, it is noted that market-driven actions and supporting public policy decisions underlie the dynamics of the wealth distribution pattern in the Detroit-centered region. All these decisions operate separately from the DRIC alternatives. These dynamics include, as cited by SEMCOG in a report entitled *Land Use Changes in Southeast Michigan, Causes and Consequences*, "...residential segregation by race and income, federal tax subsidies for home mortgage interest and property taxes, school funding and quality, crime and public safety, societal ideals of lifestyle and urban design, constitutional protections of private property rights, infrastructure financing policies, and extent of personal vehicle ownership and use."

MDOT, in partnership with FHWA, is exploring a number of concepts by which enhancements may be made to the study area for the DRIC project. These concepts include partnering with the private sector and with other government agencies in areas such as job training, small business development, improving and replacing housing stock, and other community enhancing amenities. Depending on comments from stakeholders and community leaders, these concepts may continue to be studied and refined as the DRIC process moves toward the selection of the Preferred Alternative, which will be addressed in the FEIS. This can occur regardless of the proposed Ambassador Bridge Enhancement Project, which is a six-lane replacement span of the existing four-lane bridge or by the construction of the Detroit River Tunnel Partnership proposed truck-only tunnel. Neither project nor both projects would measurably diminish the traffic on the proposed DRIC crossing and neither is associated with a program to enhance the community which hosts the crossing.

Table S-2
Detroit River International Crossing Study
Summary of U.S. Transboundary/Canadian Impacts
The No Build Versus Build Condition

Category	No Build	DRIC in Canada
Mobility	Acceleration of negative consequences is expected as congestion in the Huron Church Road corridor causes spillover traffic to disrupt surrounding communities.	All alternatives would improve overall traffic operations for Huron Church Road and the surrounding area without need for local infrastructure improvements. The new crossing would reduce by almost 30 percent the amount of international truck traffic in the Huron Church Road corridor north of E.C. Row Expressway.
Economic Impacts	A continuation of past trends due to the economic downturn of auto and related industries is expected.	Changes in accessibility would benefit the Windsor/Essex County area. These changes would influence development as guided by local governing bodies.
Land Use	A continuation of past trends is expected but with acceleration of negative consequences as congestion in the Huron Church Road corridor causes spillover traffic to disrupt surrounding communities.	Land use conversion to respond to increased economic development would be expected with improved accessibility in Windsor/Essex County. Local municipalities will determine the nature and extent of such development.
Air Quality	Changes in engines and fuels are expected to, at least, partially offset possible air pollution increases in communities surrounding Huron Church Road that will realize increased spillover traffic from a congested corridor to the Ambassador Bridge.	Increases in particulate matter are forecast in the vicinity of all proposed plazas. But, all DRIC alternatives would likely have no discernible difference in air quality among them in residential areas of Sandwich Towne.
Cultural Resources	No impacts to designated heritage features. Possible future development in Brighton Beach Industrial Park could impact (displace or disrupt) one cultural landscape.	No impact to designated heritage features. Potential impact to the area of high archaeological potential (Petit Cote French Settlement) and potential of displacement/disruption to cultural landscapes (Brighton Beach and Sandwich Towne).
Community Effects	<p>Pedestrian movements along/across Huron Church Road, where schools, senior housing, shopping and a host of other community attractions exist, will be impacted by the increased traffic/congestion.</p> <p>Noise increases are expected in sensitive areas as spillover traffic from Huron Church Road infiltrates surrounding communities.</p>	<p>Plaza traffic is not expected to cause high noise impacts. Homes are usually 600 feet or more from all plazas. Crossing X-11 will impact 100 households with increased noise. Mitigation will be defined once a Preferred Alternative is chosen.</p> <p>The areas of south and west Windsor and LaSalle would benefit from having international traffic removed from local streets.</p> <p>The new access road would have an aesthetic impact on the surrounding community. Plaza A and Crossing X-11 are expected to have the greatest effect on neighborhoods.</p>
Water Quality, Wetlands, Threatened and Endangered Species	Continuation of past trends is expected, including positive efforts to protect wetlands and threatened and endangered species. Also, unwanted and often unexpected pollution impacts on water bodies as associated with industrial operations are to be expected.	<p>Continuation of past trends is expected, including positive efforts to protect wetlands and threatened and endangered species. Also, unwanted and often unexpected pollution impacts on water bodies as associated with industrial operations are to be expected.</p> <p>Plaza C/Crossing X-11 is expected to have a relatively low impact. Plaza B1/Crossing X-10B, Plaza A/Crossing X-10A and Plaza B and B1 via Ojibway Parkway are expected to have a moderate impact. Crossing X-10 and Plazas B and B1 would encroach on the Ojibway Black Woods Environmentally Sensitive Area.</p> <p>Plaza A/Crossing X-11 via Brighton Beach, Plaza A/Crossing X-11 and Plaza A/Crossing X-10A are expected to displace more provincially rare vegetation communities and species.</p> <p>Plaza A/Crossing X-11 via Ojibway Parkway would have fewer impacts to natural features than Plaza A/Crossing X-11 via Brighton Beach.</p>

Source: The Corradino Group of Michigan, Inc.

1. INTRODUCTION

The Detroit River International Crossing (DRIC) Study is a bi-national effort to complete the environmental study processes for the United States, Michigan, Canada and Ontario governments. The study proposes solutions that support the region, state, provincial and national economies while addressing civil and national defense and homeland security needs of the busiest trade corridor between the United States and Canada (Figure 1-1).

Figure 1-1
Detroit River International Crossing Study
Existing Detroit River International Crossings



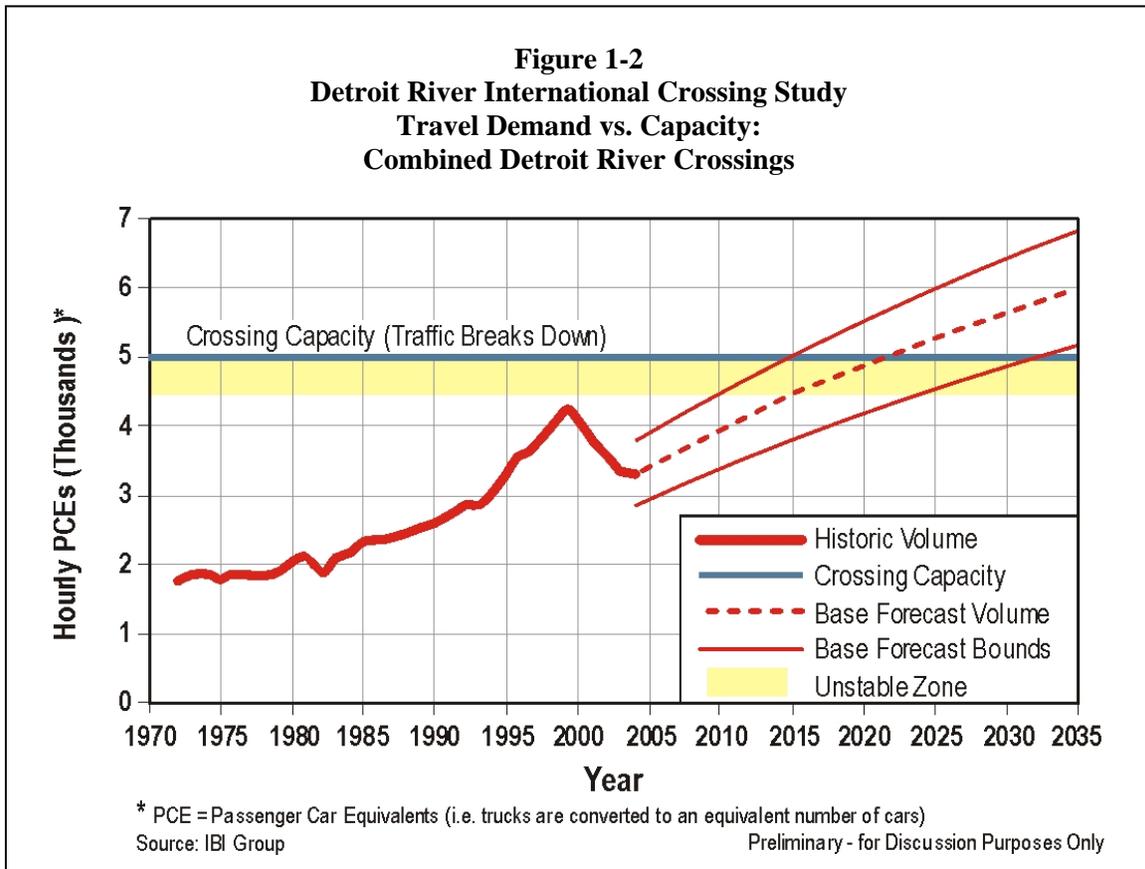
The purpose of the Detroit River International Crossing Project is to: (for the foreseeable future, i.e., at least 30 years):

- Provide 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 Michigan, Ontario, Canada and the U.S.
- Support the mobility needs of national and civil defense to protect the homeland.

To address future mobility requirements (i.e., at least 30 years) across the Canada-U.S. border, there is a need to:

- Provide new border crossing capacity to meet increased long-term demand;
- Improve system connectivity to enhance the seamless flow of people and goods;
- Improve operations and processing capability; and,
- Provide reasonable and secure crossing options in the event of incidents, maintenance, congestion, or other disruptions.

Over the next 30 years, Detroit River area cross-border passenger car traffic is forecast to increase by approximately 57 percent, and movement of trucks by 128 percent. Traffic demand could exceed the “breakdown” cross-border roadway capacity as early as 2015 under high growth scenarios. Even under “low” projections of cross-border traffic, the “breakdown” roadway capacity of the existing Detroit River border crossings (bridge and tunnel combined) will be exceeded by 2033 (Figure 1-2). Additionally, the capacity of the connections and plaza operations will be exceeded in advance of capacity constraints of the roadway. Without improvements, this will result in a deterioration of operations, increased congestion and unacceptable delays to the movement of people and goods in this strategic international corridor.



The forecast of capacity indicates that there will be inadequacies in: 1) the roads leading to the existing bridge and tunnel; 2) the ability to process vehicles through customs and immigration; and, 3) the capacities (number of lanes) of the Ambassador Bridge and Detroit-Windsor Tunnel themselves. So, even though incremental adjustments can and will be made to the plazas and, even though there is adequate border crossing capacity today (bridge and tunnel combined), the planning, design and construction of any major international crossing takes time. Therefore, it is

prudent to address, now, how and when the capacity need is to be satisfied at the crossing itself as well as the connecting roads.

The DRIC Draft Environmental Impact Statement (DEIS) analyzes issues/impacts on the U.S. side of the border of the end-to-end crossing system over the Detroit River between Detroit, Michigan, and Windsor, Ontario, Canada. The alternatives are comprised of three components: the crossing, plaza (where tolls are collected and Customs inspections take place), and interchange connecting the plaza to I-75 (Figure 1-3). Nine alternatives exist in the U.S. These options are listed on Table 1-1 and schematically presented in Figures 1-4 and 1-5.

Figure 1-3
Detroit River International Crossing Study
U.S. Area of Analysis for Crossing System



Source: The Corradino Group of Michigan, Inc.

**Table 1-1
 Detroit River International Crossing Study
 Crossing System Alternatives Included in DRIC DEIS**

Alternative	Interchange	Plaza	Crossing
#1	A	P-a	
#2	B	P-a	
#3	C	P-a	
#5	E	P-a	
#14	G	P-a	
#16	I	P-a	
#7	A	P-c	
#9	B	P-c	
#11	C	P-c	

Source: The Corradino Group of Michigan, Inc.

1.1 Purpose of the Report

The purpose of this report is to assess the impacts of indirect (secondary) and cumulative effects associated with the proposed Detroit River International Crossing.

The basis upon which the analysis was conducted is defined in federal guidance, which indicates the following:

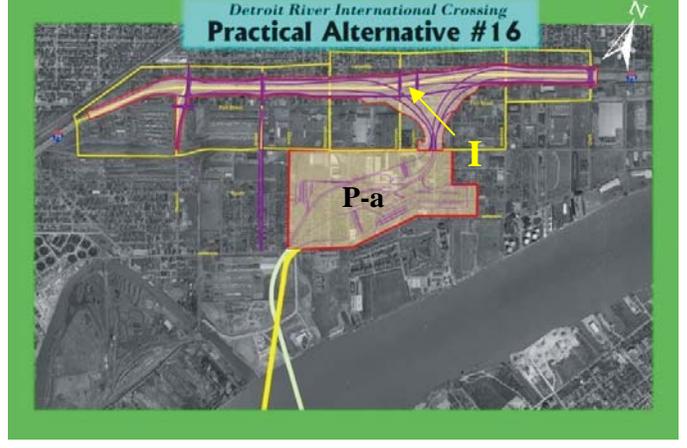
Indirect (secondary) effects – Caused by the action and occurring later in time or farther removed in distance, but occurring in the reasonably foreseeable future (40 CFR 1508.8(b)).

Cumulative effects – Resulting from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions (40 CFR 1508.7).

The data supporting this analysis includes material from a number of sources, such as the following:

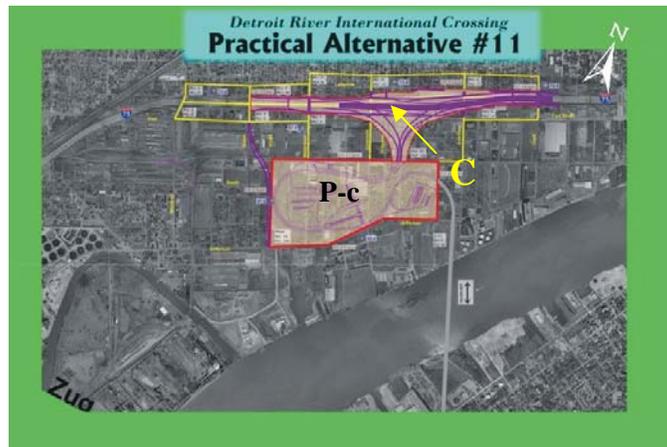
- From SEMCOG:
 1. “Historical Population and Employment by Minor Civil Division,” June 2002
 2. “Quality of Life Survey,” 2002/2003
 3. “Detroit Wetlands and 300 years of Metropolitan Growth”
 4. “Land Use Change in Southeast Michigan, Causes and Consequences,” March 2003
 5. “2030 Regional Development Forecast for Southeast Michigan,” 2001
 6. “A Region in Turbulence and Transition,” April 2007
 7. Future land use maps

Figure 1-4
Detroit River International Crossing Study
Schematic Representation
of
X-10 Crossing Alternatives #1, #2, #3, #5, #14 and #16



Source: The Corradino Group of Michigan, Inc. and Parsons Transportation Group

Figure 1-5
Detroit River International Crossing Study
Schematic Representation
of
X-11 Crossing Alternatives #7, #9, #11



Source: The Corradino Group of Michigan, Inc. and Parsons Transportation Group

- From U.S. Census:
 - Population
 - Employment
- Land Use Plans of Detroit, Allen Park, Dearborn, Ecorse, Melvindale and River Rouge
- Interviews with more than 100 individuals in the host community (Delray) and the larger study area. This included social service groups, neighborhood organizations, environmental groups and their representatives.
- Technical reports, produced for the DRIC Study, in the following areas:
 - Illustrative Alternatives (three volumes)
 - Community Inventory
 - Traffic
 - Induced Demand
 - Air Quality
 - Noise and Vibration Studies
 - Wetlands, Threatened and Endangered Species
 - Cultural Analysis/Archaeological Investigations
 - Cultural Analysis/Aboveground Investigation
 - Initial Site Assessment/Preliminary Site Investigation (Contamination)
 - Deep Drilling/Geotechnical Analysis Program (three volumes)
 - Conceptual Engineering

It is recognized that this database is limited. In this situation, federal guidance is also helpful, i.e., “... the continuing challenge of cumulative effects analysis is the focus on important cumulative issues, recognizing that a better decision, rather than a perfect cumulative effect analysis, is the goal of NEPA” (National Environmental Policy Act).

1.1.1 Analysis Process

With that background, the geographic limits of the area in which indirect and cumulative effects of the proposed DRIC crossing, and transportation facilities serving them, will be felt (refer to Figure 2-4) were defined.

This area was established based on transportation/land use, community facilities and services interactions. It was reviewed with the Local Advisory Council and Local Agency Group of the Detroit River International Crossing Study, then revised/finalized based on that input.

The issues by which indirect/cumulative effects can be measured in this area include:

- Traffic changes associated with creating the DRIC
- Economic Impacts – Jobs
- Community Effects
 - Conversion of land uses
 - Number of residential units and business properties potentially affected
 - Effects on community cohesion
 - Potential environmental justice issues
 - Change in aesthetics
- Air Quality
 - Regional air quality effect

- Study area carbon monoxide air and particulate matter emissions
- Noise
 - Noise exposure of sensitive receptors (e.g., schools, places of worship, residential properties)
- Cultural Resources
 - Change in historic/archaeologic resources
 - Change in parklands
- Water
 - Water quality
 - Quantity of wetlands affected

The indirect/cumulative effects are reported upon in Section 4 of this technical report. First, a review of the trends and projections of future conditions sets the background for this analysis.

2. HISTORIC TRENDS OF REGION/STUDY AREA

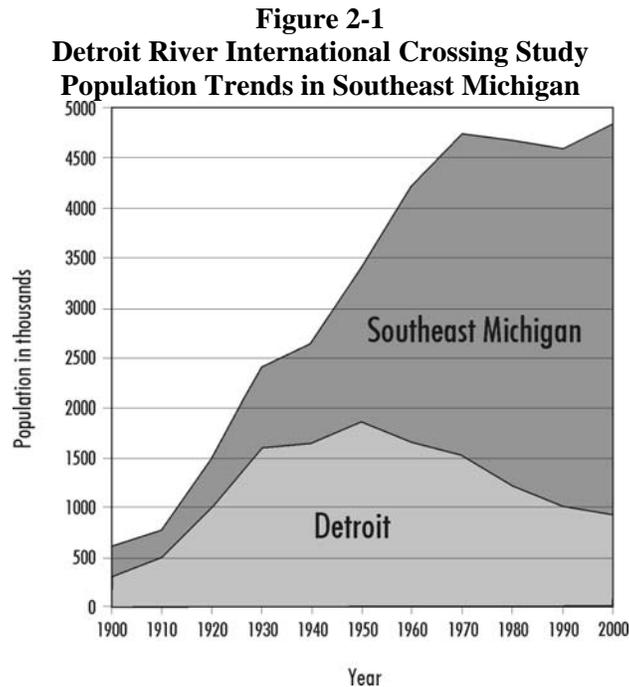
A review of historic trends is presented in this section of the report, as well as projections of future conditions, presented in Section 3. Together they establish the setting for the indirect/cumulative effects (ICE) analysis. This is particularly important to provide an understanding of the cumulative effects and focus of the past, present and reasonably foreseeable future actions that may have an impact.

2.1 Population and Community Development

This section presents historic development trends in the southeast Michigan region (the seven-county SEMCOG area) first, followed by a discussion of Wayne County trends and historical patterns for Detroit and each of the cities of Allen Park, Dearborn, Ecorse, Melvindale and River Rouge, of which a piece of each is included in the study area.

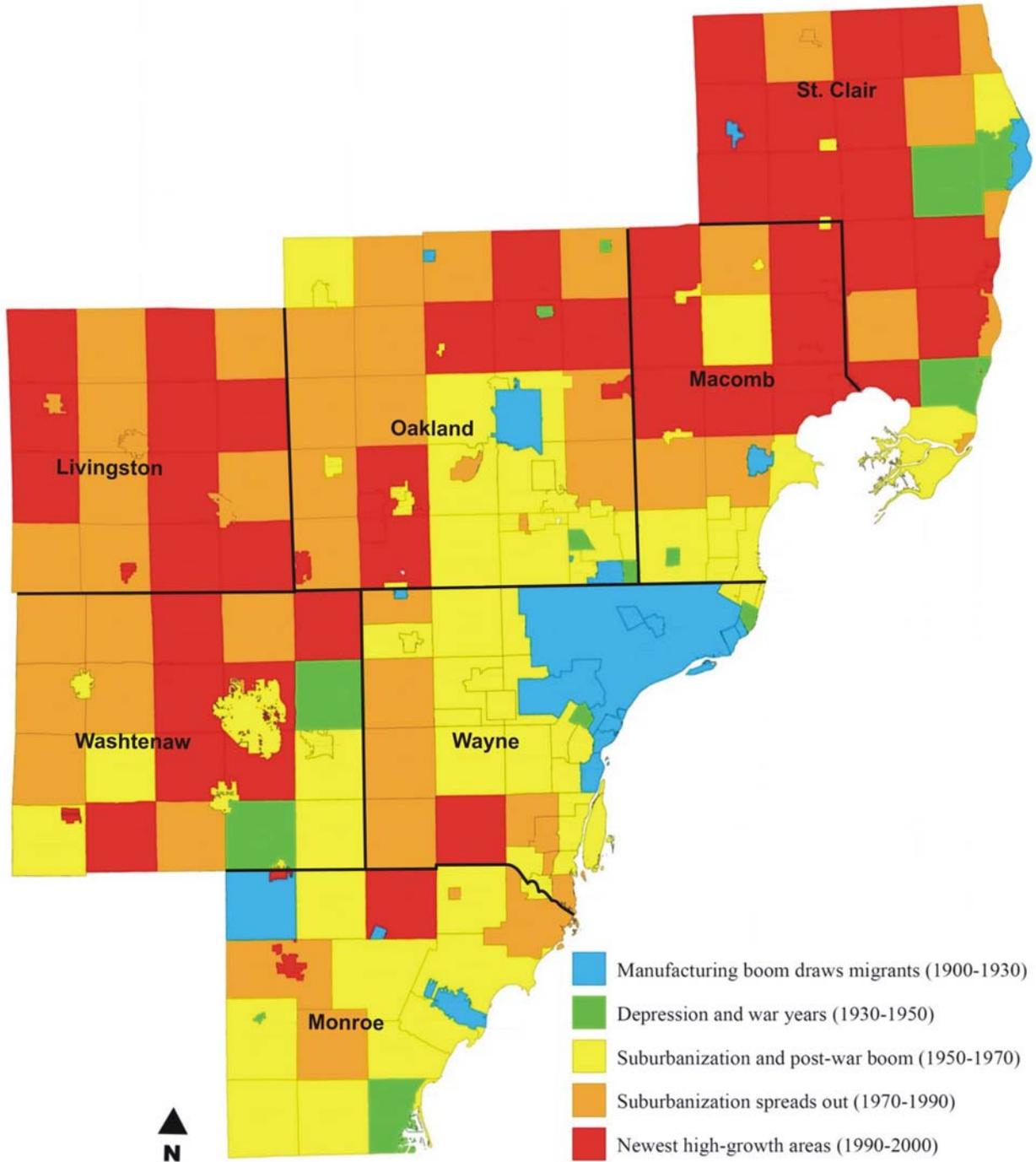
2.1.1 Regional Trends

At the beginning of the 20th Century, Southeast Michigan attracted many rural residents and international immigrants (Figure 2-1). The attraction was the opportunity for higher income in industrial jobs. After the Depression of the 1930s, growth in the region resumed first because of industrial efforts required by World War II and, then, as a result of increased economic prosperity, expanding family size and increased mobility.



Between 1900 and 2000, the Southeast Michigan region added about 4.3 million people with increased movement to the suburbs (Figure 2-2).

Figure 2-2
Detroit River International Crossing Study
Peak Growth by Community in Southeast Michigan
1900-2000



Source: SEMCOG

At the beginning of the century, Wayne County was the largest population center. By 2000, each of Wayne, Oakland and Macomb Counties had become urbanized centers. The pattern is also evident in the incorporation of townships and villages, which went from 10 cities in 1900 to 89 cities in 2000.

2.1.2 Trends in Wayne County and the Study Area Cities

Wayne County was the manufacturing center of Michigan in the 1800s. By 1900, shipping was its largest industry and Wayne County was exporting Michigan's natural resources of iron, copper, and farm products through its ports.

The birth of the auto industry brought people to Wayne County. Each of the "Big Three" American car companies was founded there: General Motors in Detroit; Ford in Dearborn; and, Chrysler in Highland Park. With the growing auto industry came factory jobs and a promise of work and higher wages that drew people from all over the world to Michigan. From 1900 to 1930, the population grew from just over 340,000 to almost 1.9 million people (Table 2-1).

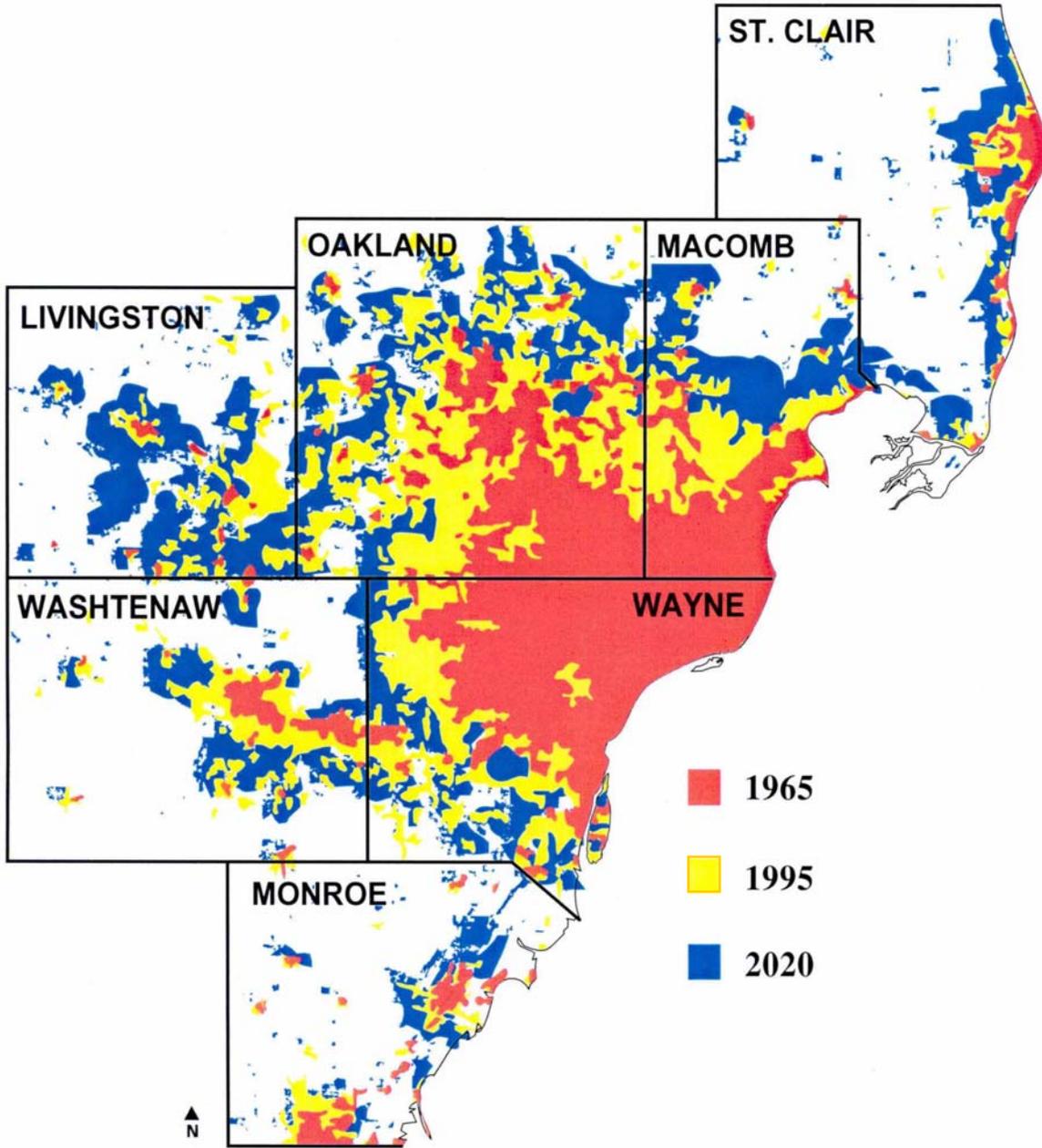
The "rubber-tire revolution" began in the early 1920s. Prior to that time, rail systems played a dominant role in the location of most households and businesses; the increase in motor vehicles and paved roads throughout the region began changing this pattern.

Development slowed during the Great Depression. Following World War II, growth resumed and the Interstate Highway System was born. During the period of its development, the railroad network decreased, rail passenger transportation virtually disappeared, and bus ridership shrank. Despite these trends, Wayne County's population grew until 1970. But, as suburbanization continued to spread throughout the rest of the region, Wayne County's population decreased. From 1970 until 2000, Wayne County's population declined by approximately 600,000 people returning to its 1940 level. In the year 2000, while Wayne County was still the largest population center, Oakland and Macomb counties joined the ranks of major urbanized centers in Southeast Michigan.

Population developments in Detroit closely track those of Wayne County for most of the 20th Century (Table 2-1). After 1950, Detroit began to lose population, declining from about 2 million people to fewer than 1 million in 2000 when it returned to its World War I level.

Other cities touched by the DRIC study area like Allen Park, Ecorse, Melvindale and River Rouge have all declined since 1970 with no rebound (Figure 2-4). Dearborn also saw a population decline in the 1980s and 1990s. But, its population rebounded by 2000 to about 100,000 – the 1970 level.

Figure 2-3
Detroit River International Crossing Study
Urbanization in Southeast Michigan, 1965, 1995, 2000



Source: SEMCOG

Table 2-1
Detroit River International Crossing Study
Population Trends – Wayne County and Study Area Communities

Place	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
SEMCOG Region Total	582,236	761,481	1,467,964	2,382,195	2,613,844	3,344,793	4,181,354	4,736,008	4,682,726	4,590,468	4,833,493
State of Michigan Total	2,420,982	2,810,173	3,668,412	4,842,325	5,256,106	6,371,766	7,823,194	8,881,826	9,262,044	9,295,287	9,938,444
United States Total	76,212,168	92,228,496	106,021,537	123,202,624	132,164,569	151,325,798	179,323,175	203,302,031	226,542,199	248,709,873	281,421,906
Wayne County Total	348,793	531,591	1,177,645	1,888,946	2,015,623	2,435,235	2,666,297	2,670,368	2,337,843	2,111,687	2,061,162
Detroit City	285,704	465,766	993,678	1,568,662	1,623,452	1,849,568	1,670,144	1,514,063	1,203,368	1,027,974	951,270
Allen Park	0	0	0	0	0	0	37,494	40,747	34,196	31,092	29,376
Dearborn	0	(911)	(2,470)	50,358	63,584	94,994	112,007	104,199	90,660	89,286	92,775
Ecorse	0	0	0	12,716	13,209	17,948	17,328	17,515	14,447	12,180	11,229
Melvindale	0	0	0	4,053	4,764	9,483	13,089	13,862	12,322	11,216	10,735
River Rouge	0	0	9,822	17,314	17,008	20,549	18,147	15,947	12,912	11,314	9,917

Population Peak

Source: SEMCOG Historical Population 1900-2000 and U.S. Census.

**Figure 2-4
Detroit River International Crossing Study
Study Area**



Source: The Corradino Group of Michigan, Inc.

2.2 Employment

The employment trends in the SEMCOG region in the last 30 years have occurred partly through the growth of large employment centers. By 2000, the ten largest employment centers in Southeast Michigan had more than 60,000 workers each and all but three of those centers were outside Wayne County. By contrast, in 1970, five of the ten largest employment centers were in Wayne County. It is noteworthy that during the period 1970 to 2000, the number of business establishments in Wayne County held constant at about 36,000 but in Detroit they dropped by two-thirds from about 25,000 in the early 1970s to approximately 8,300 by the beginning of 21st century. Employment in Detroit during this period declined by almost 400,000 (from 735,000 to 345,000) (Table 2-2). In Dearborn, employment has held steady at 105,000 to 110,000 workers over the 30 years ending 2000. Allen Park employment increased from 1970 to 1980 and has held steady since. On the other hand, Ecorse, Melvindale and River Rouge employment has steadily declined from the 1970s with Ecorse and River Rouge being particularly hard hit by the decline in the U.S. steel industry.

Table 2-2
Detroit River International Crossing Study
Employment Trends in Wayne County and Study Area Communities

Place	1970	1980	1990	2000
SEMCOG Regional Total	1,938,512	2,105,879	2,350,238	2,673,180
State of Michigan Total	3,558,467	4,039,438	4,826,388	5,654,522
United States Total	91,281,600	114,231,200	139,426,900	167,465,300
Oakland County Total	332,973	509,086	681,037	910,441
Wayne County Total	1,211,174	1,077,723	976,191	970,531
Detroit	735,104	562,120	412,490	345,424
Allen Park	11,210	15,041	16,543	15,718
Dearborn	105,532	113,040	101,443	108,418
Ecorse	31,464	13,229	5,898	5,093
Melvindale	5,968	5,091	3,874	3,326
River Rouge	7,393	5,721	2,618	2,653

Source: SEMCOG Historical Employment 1970-2000 and U.S. Census

2.3 History of Study Area and Its Key Characteristics

The 27-square-mile DRIC study area (shown on Figure 2-4) will experience the most direct, indirect and cumulative impacts, if this project is approved. It includes all or portions of the cities of (alphabetically listed):

- Allen Park
- Dearborn
- Detroit
- Ecorse
- Melvindale
- River Rouge

The following neighborhood planning subclusters are included in Detroit within the Southwest Detroit cluster. The Delray area of Southwest Detroit (between I-75 and the Detroit River and between Zug Island and the foot of the Ambassador Bridge) is considered the “host community” for this proposed project (refer to Figure 2-4).

- Delray
- Vernor-Junction
- Springwells Village
- Hubbard-Richard
- Corktown
- Oakwood Heights
- South Schaefer

2.3.1 General Physical Characteristics

The study area is generally bounded by the Detroit River on the south and Michigan Avenue to the north. Its east border can be generally defined as the Lodge Freeway (M-10), and the west boundary runs along the north branch of the Ecorse River, Outer Drive and Southfield Freeway. This area covers 33 census tracts.

Railroad facilities are extensive in the area: CSX, Canadian National, Canadian Pacific and Norfolk Southern are all active here. Three major railroad terminals exist in the area.

Transit service in the area is provided by the Detroit Department of Transportation (DDOT) and Suburban Mobility Authority for Regional Transportation (SMART). The DDOT bus routes are: 11, 19, 27, 30, 49 and 54 (Figure 2-5). SMART routes serve outlying areas, but pass through Delray and pick up and drop off passengers. SMART routes include 110, 125, 150 and 830 (express). The DDOT routes run throughout the day with headways (frequencies) of 30-40 minutes. The SMART routes provide primarily peak hour service to jobs, especially downtown.

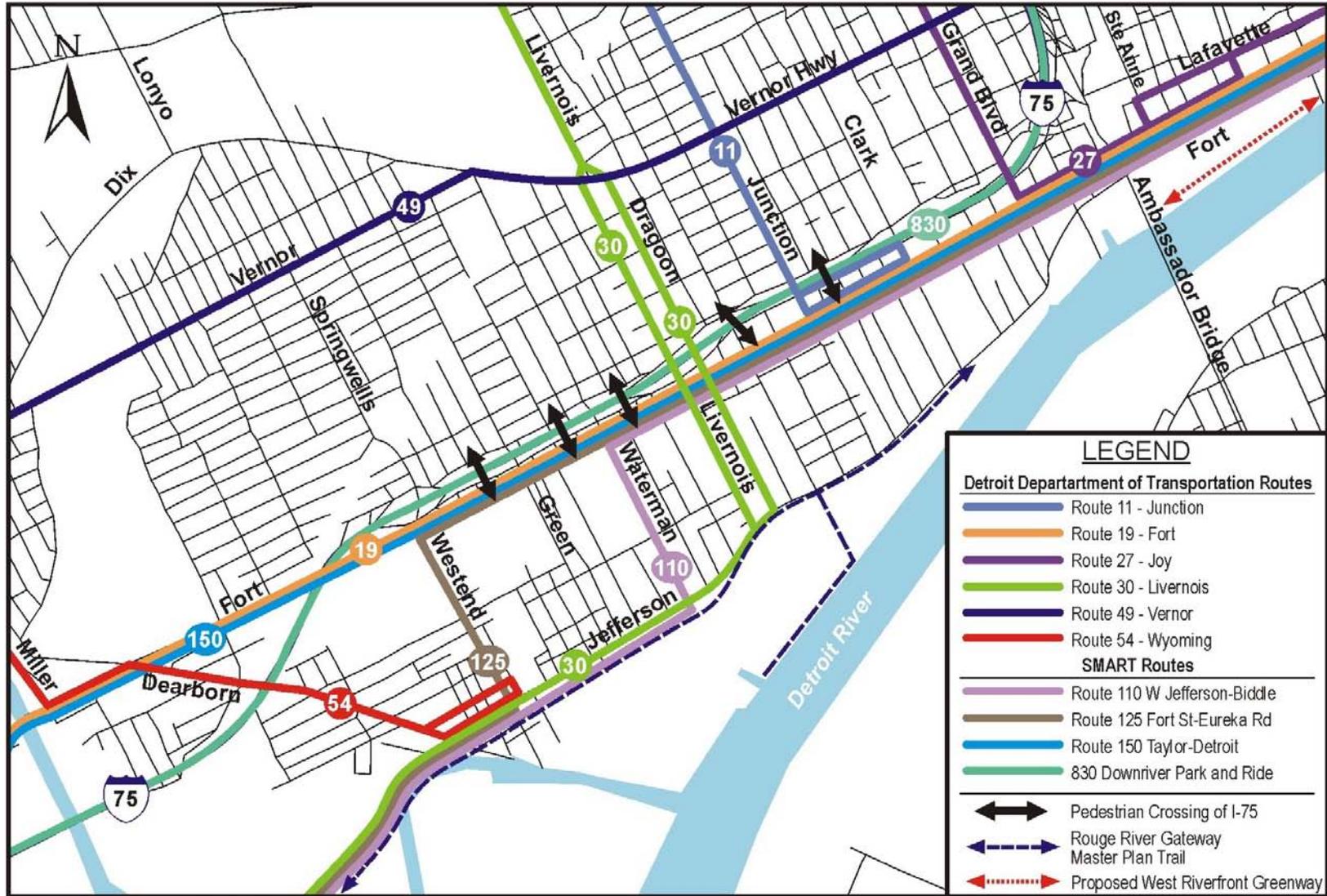
Overall, about 83 percent of the study area households are reported in the 2000 Census as having access to an automobile. In Delray, that statistic is 76 percent. Access to automobiles is highest in Allen Park at 96 percent. The comparable statistic for the SEMCOG region is approximately 92 percent.

2.3.2 Population and Employment Characteristics

In 2000, the DRIC study area encompassed almost 99,000 people, 56 percent of whom are minority (Table 2-3).¹ The minority population has increased by more than 12 percent between 1990 and 2000 while the overall population has decreased slightly. The Hispanic community, in particular, has almost doubled its share of the area’s total population in that ten-year period. The African American population is about 26 percent of the study area total, almost unchanged since 1990.

¹ Minority population is calculated based on groups protected under *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, December 2, 1998.

Figure 2-5
Detroit River International Crossing Study
Bus Routes and Pedestrian Links



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Source: The Corradino Group of Michigan, Inc., Hamilton Anderson Associates

Table 2-3A
Detroit River International Crossing Study
2000 Population and Total Households for Groups
Covered by Environmental Justice Regulations

2000 Population Category	SEMCOG Region		Study Area	
	Number	Percent	Number	Percent
Black or African American	1,052,090	21.8	25,289	25.7
American Indian & Alaskan Native	17,379	0.4	809	0.8
Asian	123,477	2.6	637	0.6
Native Hawaiian & Other Pacific Islander	1,165	0.0	45	0.0
Hispanic/Latino	136,359	2.8	28,705	29.1
Total Minority	1,330,470	27.6	55,485	56.3
White	3,408,124	70.5	39,664	40.2
Other ^a	94,899	1.9	3,426	3.5
Total Population	4,833,493	100.0	98,575	100.0
Total Households	1,846,352	100.0	34,622	100.0
Households w/Income < Poverty Level	183,181	9.9	8,487	24.5

^a Other includes all other races not specifically listed.

Source: U.S. Census 2000

Table 2-3B
Detroit River International Crossing Study
1990 Population and Total Households for Groups
Covered by Environmental Justice Regulations

1990 Population Category	SEMCOG Region		Study Area	
	Number	Percent	Number	Percent
Black or African American	969,749	21.1%	27,139	26.1%
American Indian & Alaskan Native	17,643	0.4%	825	0.8%
Asian	65,914	1.4%	517	0.5%
Native Hawaiian & Other Pacific Islander	478	0.0%	27	0.0%
Hispanic/Latino	83,495	1.8%	16,698	16.0%
Total Minority	1,137,279	24.8%	45,206	43.4%
White	3,450,422	75.1%	58,759	56.4%
Other ^a	2,767	0.1%	169	0.2%
Total Population	4,590,468	99.9%	104,134	100.0%
Total Households	1,700,644	1.0%	38,688	1.0%
Households w/Income < Poverty Level	214,668	12.6%	11,859	30.7%

^a Other includes all other races not specifically listed.

Source: U.S. Census 1990

Another significant group in this area is the Arab population, which represented about five percent of the area's population in 2000 (Table 2-4). It is exceeded only in the non-minority category by White persons of German or Irish ancestry. And those two groups' presence in the study area has dwindled significantly since 1990.

Table 2-4A
Detroit River International Crossing Study
2000 Population for Groups
Covered by Title VI Federal Regulations

2000 Population Ethnic Category ^a	SEMCOG Region		Study Area	
	Number	Percent	Number	Percent
Total Population	4,833,493	100.0	98,575	100.0
Arab	98,500	2.0	4,627	4.7
English	402,479	8.3	2,574	2.6
French (except Basque)	213,367	4.4	2,580	2.6
German	842,459	17.4	6,085	6.2
Irish	510,609	10.6	5,743	5.8
Italian	304,981	6.3	2,128	2.2
Polish	510,988	10.6	4,000	4.1
Scottish	113,901	2.4	936	0.9

^a The U.S. Census asks individuals to state their ethnic background. The Census tallies up to two ethnicities per individual. So, when data are summed, the total can be more than 100 percent.
Source: U.S. Census 2000

Table 2-4B
Detroit River International Crossing Study
1990 Population and Total Households for Groups
Covered by Title VI Federal Regulations

1990 Population Ethnic Category	SEMCOG Region		Study Area	
	Number	Percent	Number	Percent
Total Population	4,590,468	100.0%	102,596	100.0%
Arab	63,260	1.4%	4,273	4.2%
English	543,393	11.8%	5,865	5.7%
French (except Basque)	288,183	6.3%	4,721	4.6%
German	1,124,065	24.5%	13,374	13.0%
Irish	637,121	13.9%	12,693	12.4%
Italian	288,442	6.2%	3,204	3.1%
Polish	554,517	12.1%	6,569	6.4%
Scottish	127,858	2.8%	1,297	1.3%

Source: U.S. Census 1990

Almost 25 percent of the households in this area have incomes below the poverty level per the 2000 Census, down from about 31 percent in 1990. But, more than ten percent of the households have been eliminated since 1990 – most of the houses were razed.

A brief discussion of the history of the important non-White minority groups – Hispanic and African American, and Arab follows.

2.3.2.1 Hispanic Population

The Hispanic population is about 29 percent of the study area’s population, making it the largest minority group (Table 2-3). As defined by the U.S. Census Bureau, Hispanics are those who

classify themselves in one of the following categories listed on the Census 2000 questionnaire – “Mexican, Mexican-American, Chicano, Puerto Rican, or Cuban,” as well as those who indicate that they are from other countries of Central or South America, the Dominican Republic, or people identifying themselves generally as Spanish, Spanish-American, Hispanic, Hispano, or Latino.

The Mexican community has been a part of Michigan’s history since about 1910 when only 27 Mexicans lived in the City of Detroit. In 2000, there were 33,143 Mexicans living within Detroit’s borders. The first wave of migration was influenced by the railroad industry during the early twentieth century. Mexicans also worked in the agricultural and mining industries. The second wave of immigration to the U.S. occurred during World War II when a labor shortage led to the *Bracero* Program. The primary *Bracero* Program allowed Mexicans to enter the United States as farm workers. A second, and smaller, program allowed Mexicans to work as laborers for the railroads. *Braceros* were expected to return to Mexico at the end of their contracts, but many chose to remain. At its peak, during the late 1950s, the number of Mexican laborers in the U.S. was more than 400,000. The third and current wave of immigration is largely due to changes in immigration laws, the organized nature of the Mexican-American community throughout the United States, and the economic/political relationship between the United States and Mexico. Today, the Mexican community is not only the largest group within the Hispanic community nationally, but it is also the largest in the state of Michigan, and in the Detroit area.

Puerto Ricans are the second largest Hispanic group living in the study area. Between 1910 and 1920, the Puerto Rican population in Detroit grew from 11 to 121. The Puerto Rican population during the 1950s totaled about one thousand within the City of Detroit. The mid-1960s to mid-1970s was a time of large growth in the Puerto Rican community.

The Cuban community is the Detroit area’s third largest Hispanic population at about 2,600 people. Its formation is largely associated with the Mariel Boatlift of 1980.

Other Hispanics groups, such as Dominicans and Central and South Americans, are also found throughout the Detroit area; however, their numbers are small in comparison to the primary Hispanic groups.

Growth of the Hispanic community may have peaked in the DRIC study area as a spillover effect is now occurring to the north into nearby inner-ring suburbs. Upward mobility has provided Hispanics the opportunity to purchase homes in other areas of Detroit and nearby suburbs. But, the future growth pattern of Hispanics is uncertain because of the changes in immigration policy in the United States.

2.3.2.2 African American Population

The African American population in Detroit in 1910 was below 6,000 but spiked tremendously during the 1910-1920 period, primarily because of WWI production demands and labor shortages caused by cutting off the flow of laborers from Europe and the swelling of the American Armed Forces ranks by working class whites. Between 1910 and 1920 the African American population in Detroit increased by about 600 percent.

The African American population is about 26 percent of the study area’s total, according to the 2000 Census. African Americans largely populate the study area communities of Detroit and the cities of Ecorse and River Rouge.

African American migration into Detroit was led by migration from the South to Detroit in search of employment in the automotive and steel industries.

Housing patterns for the first half of the 20th Century were mandated through restrictive covenants that African Americans were only allowed to live in certain areas. Detroit was one of the cities that allowed Blacks to purchase homes. Other factors that influenced African American housing patterns include the discriminatory practices in real estate and mortgage lending that steered African Americans and Whites away from each other.

In the DRIC study area, the South Schaefer community is a Detroit neighborhood that has a higher percentage of African Americans than any other within the area of analysis (98%).

2.3.2.3 Arab Population

The U.S. Census Bureau defines Arab people as those who classify themselves: Egyptian, Iraqi, Jordanian, Lebanese, Moroccan, Palestinian, Syrian, Arab/Arabic and Other Arab.

The Detroit Metropolitan area is home to one of the largest Arab populations outside the Middle East. The earliest Arabs who settled in the area were recorded in 1900, totaling 50. In the 1920s, when the Ford Motor Company opened plants in the city of Dearborn, more Arabs (Lebanese and Yemenis) migrated to the area in search of the good-paying jobs. By 1930, there were 9,000 Arabs in the area.

The predominant Arab groups in the Detroit/Dearborn area are from Lebanon, Iraq, Palestine and Yemen. The creation of the State of Israel, the Arab-Israeli wars, the long Lebanese civil war, the Iraq-Iran war, the Yemeni civil wars and, then, the Gulf War, led Arab refugees, political dissidents and immigrants, to relocate to the Detroit/Dearborn area. Today, approximately 20 percent of Dearborn residents are of Arab origin. Continuing political hostility along the Lebanese-Israel border and the Iraq War could lead to another wave of Arab immigrants to the Detroit/Dearborn area.

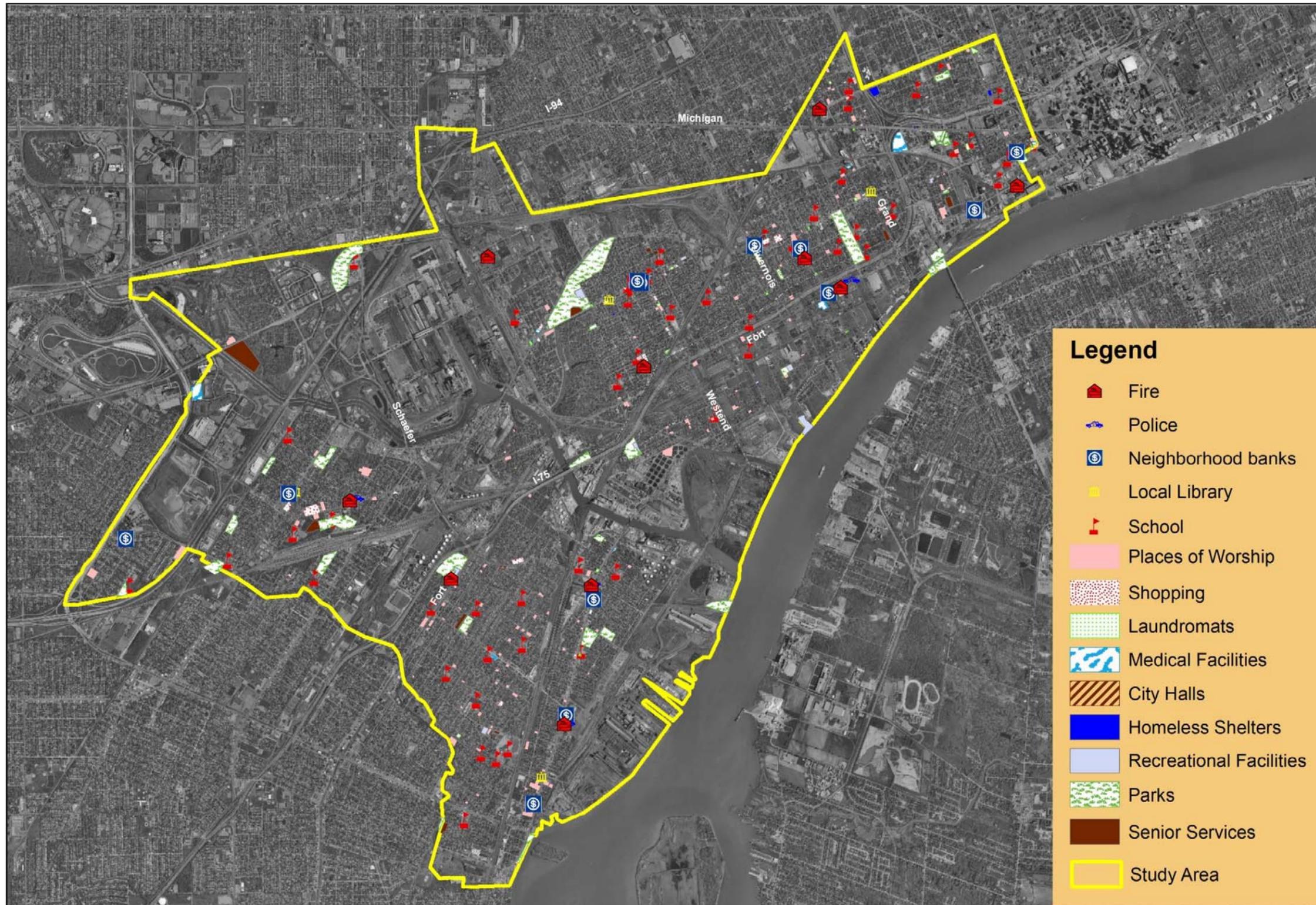
Eighty percent of the Arab population in the DRIC study area resides in the South Dearborn neighborhood in the city of Dearborn. The 3,700 Arab people in South Dearborn represent half the total population of this neighborhood.

2.3.3 Community Facilities

Community facilities of significance serving the study area are shown on Figure 2-6. More than 50 schools serve this area. There are 30 parks and recreation centers. The major social services organizations include the Latino Family Services, the Arab Community Center for Economic and Social Services, and the Delray United Action Council, to name just a few.

In Delray there are four places of worship (First Latin American Baptist Church; Jehovah Jireh Temple; Holy Cross Hungarian Catholic Church; and, St. John Cantius Catholic Church (decommissioned in October 2007); one medical facility (CHASS – Community Health and Social Service Center), which is a comprehensive primary care clinic; four recreation areas, including the Historic Fort Wayne, City of Detroit parks at the South Rademacher Center (closed at the end of 2006) and the little-used pocket parks at Post-Jefferson Streets and Harvey-Junction Streets. There is also a boat launch owned by Detroit Edison Company. The newly-opened Delray Recreation Center is the magnet for community activities for people of all ages. The only shopping in the area is at service stations; there are no pharmacies. There are no libraries in

Figure 2-6
Detroit River International Crossing Study
Community Facilities in Study Area



Source: Hamilton Anderson and The Corradino Group of Michigan, Inc.

Delray and only one school, Southwestern High School. Two fire stations serve Delray – one on each side of the rail line that cuts through the area from Dearborn Avenue to the Ambassador Bridge. The major police/public safety service center is located at Fort and Campbell Streets.

2.3.4 Major Employers in Study Area

Figure 2-7 depicts the 17 major employers (200+ jobs) in the study area; seven are in the Detroit portion of the study area. Two are in Delray – Arvin Meritor and Bridgewater Industries, each located on Fort Street. Arvin Meritor employs about 400 people and Bridgewater Industries approximately 200 people.

2.3.5 Infrastructure

I-75, the Southfield Freeway (M-39) and the Lodge Freeway (M-10) serve the study area. While the latter two are on the edges of the area, I-75 cuts through it. Construction of I-75 is considered by many as one of the major reasons for the decline of the study area, beginning in the 1960s.

Fort Street (M-85) is a key artery on the north edge of Delray. It now accommodates a large number of international trucks gaining access from the Ambassador Bridge to I-75 at Clark Street. This will change once the Ambassador Bridge Gateway Project, a new connector from the bridge's plaza to I-75, is completed in 2009.

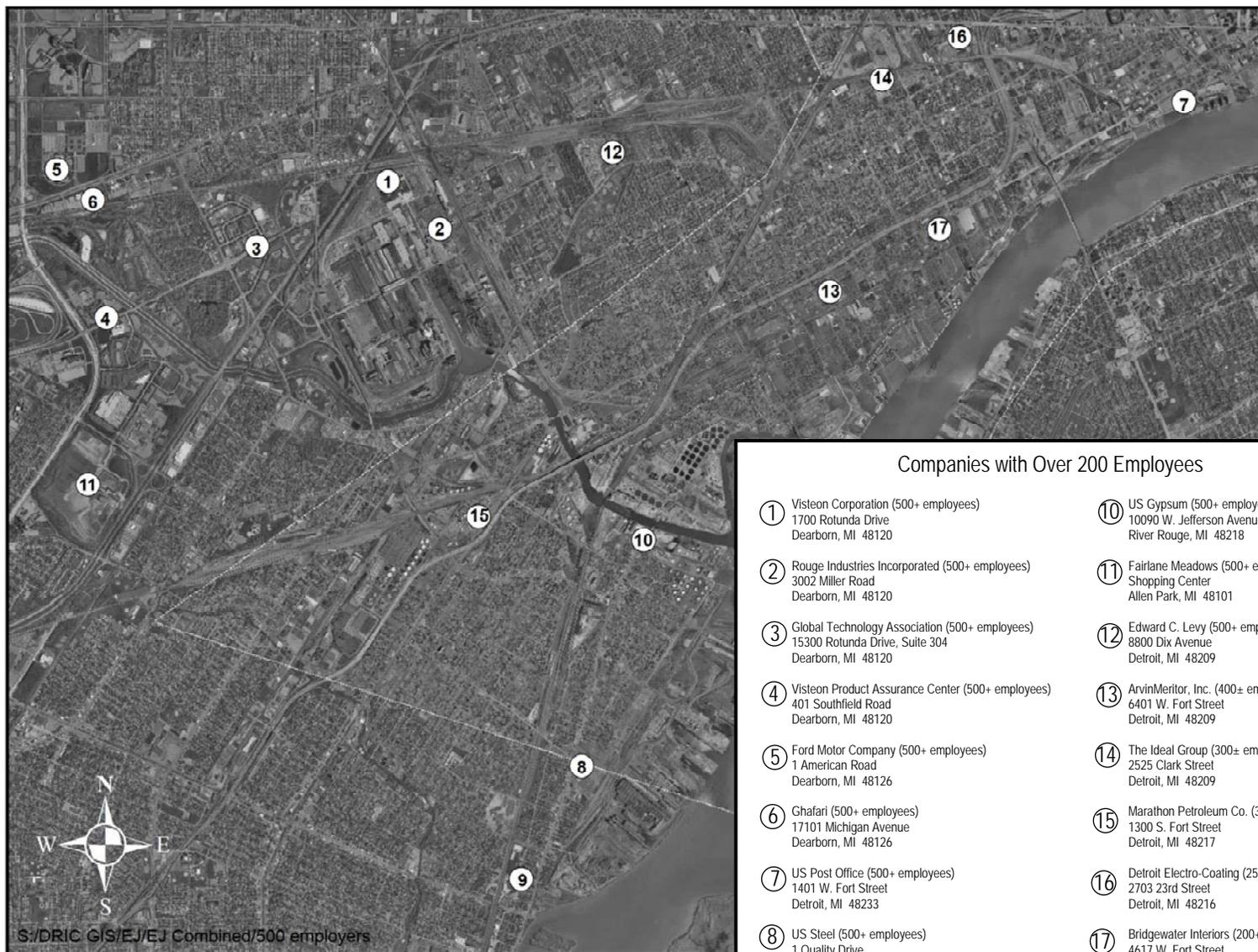
In Delray, streets are in poor to good condition, poor in the neighborhood and good on the major arterials, like Fort and Jefferson Streets. Repaving is scheduled in the next few years of Cavalry Street, between Fort and Jefferson; Dearborn Avenue, between Jefferson and I-75; the Springwells Avenue overpass of I-75; Waterman Street from the I-75 northbound service drive north to Regular Street; and, Clark Street between the northbound I-75 service drive and Vernor.

Street lighting in Delray is in poor condition in the neighborhood with many lights not working. Lighting is in good repair on the major arterials of Fort and Jefferson Streets. There are no scheduled lighting projects for the area.

Sidewalks are in poor condition throughout, with many impassable because of penetrating tree growth or trash strewn across them. No projects are scheduled for the area.

Other infrastructure in the Delray area includes the Detroit Water and Sewer Department's (DWSD) large diameter sewers. They are gravity-driven and discharge into the Jefferson Interceptor, which flows south into the wastewater treatment plant. The DWSD Combined Sewer Overflow group is currently planning on combining six outfalls into one treatment chamber (chlorination, de-chlorination, and sediment removal). These outfalls will be combined to a new basin and outfall located between Campbell and Junction Streets. The DWSD also owns an office building within the project area bounded by South Street on the south, Dragoon on the east, and Livernois on the west. The DWSD is currently planning on constructing a new laboratory across South Street from the existing office building. The design for this new building is nearly complete and the next step is property acquisition. DWSD plans to occupy a new laboratory by October 2009.

Figure 2-7
Detroit River International Crossing Study
Major Employers in Study Area



Companies with Over 200 Employees	
① Visteon Corporation (500+ employees) 1700 Rotunda Drive Dearborn, MI 48120	⑩ US Gypsum (500+ employees) 10090 W. Jefferson Avenue River Rouge, MI 48218
② Rouge Industries Incorporated (500+ employees) 3002 Miller Road Dearborn, MI 48120	⑪ Fairlane Meadows (500+ employees) Shopping Center Allen Park, MI 48101
③ Global Technology Association (500+ employees) 15300 Rotunda Drive, Suite 304 Dearborn, MI 48120	⑫ Edward C. Levy (500+ employees) 8800 Dix Avenue Detroit, MI 48209
④ Visteon Product Assurance Center (500+ employees) 401 Southfield Road Dearborn, MI 48120	⑬ ArvinMeritor, Inc. (400± employees) 6401 W. Fort Street Detroit, MI 48209
⑤ Ford Motor Company (500+ employees) 1 American Road Dearborn, MI 48126	⑭ The Ideal Group (300± employees) 2525 Clark Street Detroit, MI 48209
⑥ Ghafari (500+ employees) 17101 Michigan Avenue Dearborn, MI 48126	⑮ Marathon Petroleum Co. (300± employees) 1300 S. Fort Street Detroit, MI 48217
⑦ US Post Office (500+ employees) 1401 W. Fort Street Detroit, MI 48233	⑯ Detroit Electro-Coating (250+ employees) 2703 23rd Street Detroit, MI 48216
⑧ US Steel (500+ employees) 1 Quality Drive Ecorse, MI 48229	⑰ Bridgewater Interiors (200+ employees) 4617 W. Fort Street Detroit, MI 48209
⑨ Pak Right Industries (500+ employees) 4270 High Street Ecorse, MI 48229	

Source: The Corradino Group of Michigan, Inc.

DTE Energy's facilities include underground conduits and substations. The main energy lines run along Jefferson connecting the PLD Mistersky Power Plant with the Waterman Substation at Jefferson/Waterman. Other high power energy lines run north along the main streets from the Waterman Substation. DTE Energy also owns the Artillery Substation located on Livernois. Replacing this substation has been estimated at a cost of \$4.5 million. DTE Energy has not indicated it has any plans for future work in the Delray area.

The International Transmission Company (ITC) specializes in high-voltage transmission and has both underground and aerial high voltage lines that are impacted by the proposed project. Included are four (4) 120kV UG lines, and a 120/230kV aerial line. The aerial lines cross the Detroit River near the Waterman Substation. ITC has not indicated it has any plans for future work in the Delray area.

The Public Lighting Department has 24kV transmission lines leading from the Mistersky Power Plant. These lines transmit power to the City of Detroit and are required to maintain access to the Power Plant. PLD has not indicated it has any plans for future work in the Delray area.

A number of additional utilities have facilities located in the Delray area including gas distribution/transmission of Michcon and Dome Pipeline, and telecommunications of AT&T, Comcast, Level3, Lightcore, MCI, Nextel and Qwest. Most of these utilities are located within the railroad right-of-way or along Fort Street or Jefferson.

The long-range transportation plans in Southeast Michigan include a host of improvements that affect the study area (Figure 2-8). These include:

1. An improved connection between the Ambassador Bridge and the interstate highway system (i.e., the Gateway Project).
2. A possible new border crossing including a possible new truck tunnel, rail tunnel and bridge.
3. Rehabilitating I-94 from east of the I-94/I-96 interchange to west of Conner Avenue in Detroit.
4. Improvements to I-375.
5. Possible development of the Livernois-Junction Yard into a consolidated intermodal rail/truck terminal.
6. Passenger rail service between Detroit and Ann Arbor as well as Metro Airport.
7. Rapid bus, rapid rail or commuter rail transit service in almost one dozen corridors.
8. Widening I-75 in Oakland County.

Each of the proposed projects will affect the movement of people/traffic in the study area. Items 1, 2 and 3 will particularly affect the movement of freight in these areas. These proposals have been incorporated into the analysis of direct, indirect and cumulative impacts of the Detroit River International Crossing Study, which is reported in this technical report.

2.3.6 Community/Neighborhood Characteristics

The study area's municipalities have experienced a wide range of economic and social changes over the last 40 years. In Southwest Detroit, the effects of industrial abandonment are most noticeable in the Delray neighborhood, which is located in Detroit's industrial core. Throughout the greater Southwest Detroit area, businesses ancillary of major industrial employers, such as suppliers and local restaurants, closed as the manufacturing downturn began. Throughout the 1980s and early 1990s, the community leadership led several revitalization efforts to create new economic and housing opportunities. The success of those efforts is evidenced by the various small retail businesses and new housing that serve as the backbone of the revitalized Southwest Detroit community.

Migration to the inner ring suburbs of Detroit (Melvindale, Allen Park, and Dearborn) was led in part by the upward mobility of blue collar families. The demographics of those inner ring suburbs were influenced by the restrictive covenant laws that once prevented African Americans from purchasing homes there.

Migration into the cities of River Rouge and Ecorse was led by those families who moved into Michigan seeking employment at local steel mills. Once the restrictive covenant laws were removed, African Americans moved into River Rouge and Ecorse as White families moved to other suburban communities.

2.3.6.1 Southwest Detroit

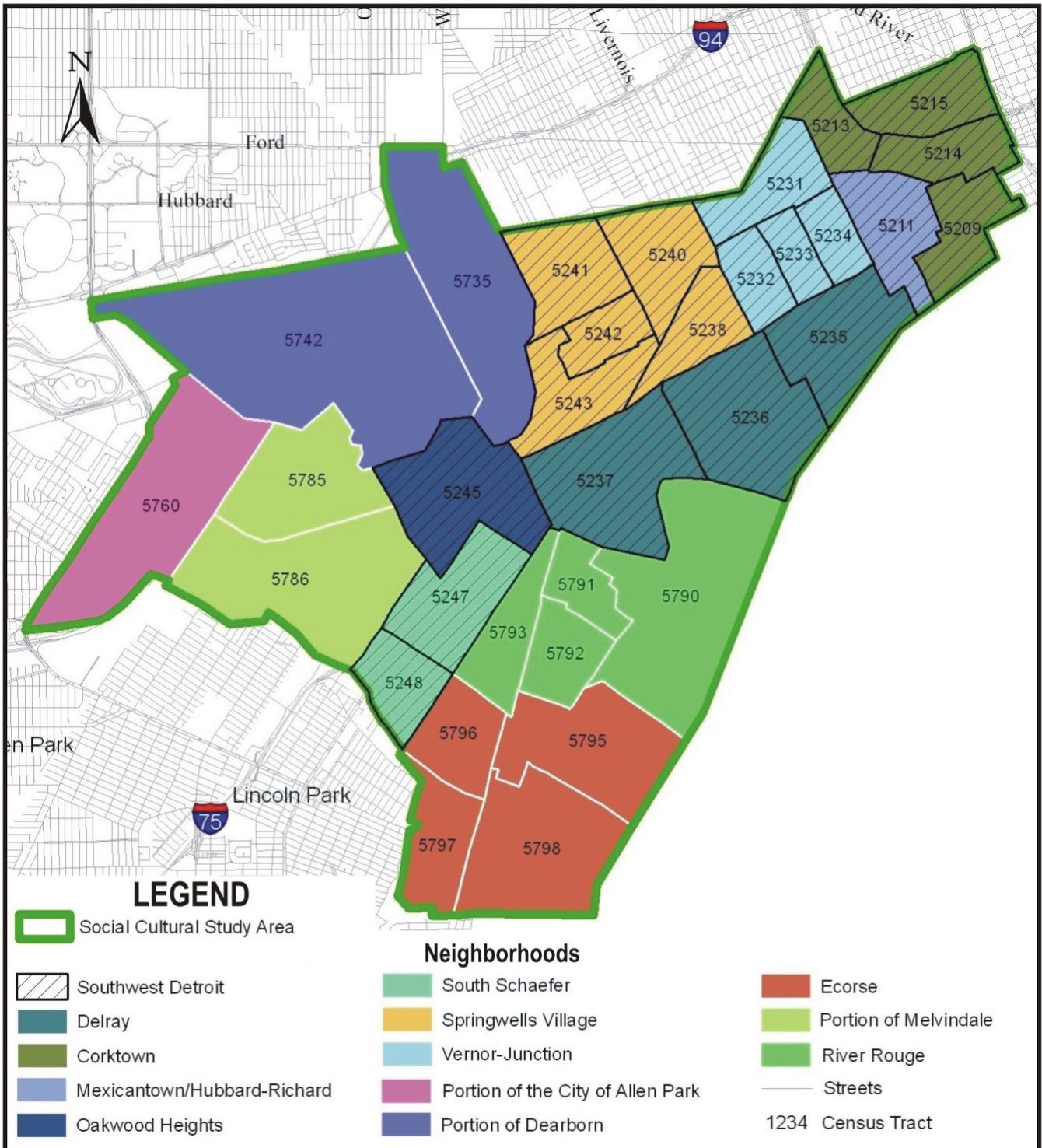
Historically, Southwest Detroit has been one of the most ethnically diverse and densely populated areas of the City. Southwest Detroit is located two miles west of downtown Detroit and is bounded by Michigan Avenue to the north, the Detroit River to the south, the north fork of the Ecorse River to the west, and the Lodge Freeway (M-10) to the east. Southwest Detroit is a mixture of heavy industrial, residential, and commercial/retail uses and is Michigan's transportation center (Figure 2-9).

While the entire city of Detroit has faced considerable population loss over the past 30 years, Southwest Detroit has rebounded; the 2000 Census demonstrated that Southwest Detroit experienced a population shift from White and African American households to largely Hispanic households. Investment by the Hispanic community is evidenced by the amount of new and revitalized business and housing, as noted above. The clearest demonstration of that is along and around the West Vernor Highway corridor.

Southwest Detroit is composed of seven neighborhoods (Delray, Corktown, Mexicantown/Hubbard-Richard, Oakwood Heights, South Schaefer, Springwells Village, and Vernor-Junction) with a mixture of different ethnic groups. The census tracts for Southwest Detroit are 5209, 5211, 5213, 5214, 5215, 5231, 5232, 5233, 5234, 5235, 5236, 5237, 5238, 5240, 5241, 5242, 5243, 5245, 5247, and 5248 (Figure 2-9).

A discussion of each of the Southwest Detroit neighborhoods is provided next with a more complete discussion of Delray, the area of direct impacts of the proposed DRIC, presented first.

Figure 2-9
Detroit River International Crossing Study
Neighborhoods/Communities in the Study Area



Source: The Corradino Group of Michigan, Inc.

2.3.6.2 Delray Neighborhood

Delray is located in the heart of Southwest Detroit's industrial core (Figure 2-9) and includes census tracts 5235, 5236 and 5237.

Delray of Yesterday

At the turn of the 20th century, Delray was a predominately lower-middle-income community with waves of Polish, Hungarian, German, and Armenian immigrants settling there. Delray had a population of 5,000 in 1900. It was around this time that heavy industry began to realize the geographic attractiveness of Delray and began moving in. By 1905, the community boasted a population of 8,000. Delray remained an independent village for less than a decade, undergoing annexation to the City of Detroit in 1906.

Even after it was annexed into Detroit, Delray had a close community feeling that remained well into the 20th century. At its height, one never had to leave Delray. People worked, lived and shopped there. They worked at one of the many industries lining the Detroit River or at one of the auto and steel factories located nearby. They rented a residence (until they saved enough money to purchase it), and either walked or took the streetcar to work. They shopped at the grocery stores on Jefferson Avenue, Dearborn Street, and West End Avenue, frequented the local theaters, bars, restaurants, bakeries, and meat markets that provided native specialties. They went to church there, often helping to build the ethnic church where they could hear services in their native language. They sent their children to one of the many local schools.

The population of Delray reached its peak in the 1930s at about 24,000 people. By the 1940s, the automobile and attractiveness of the suburbs precipitated the declining population – those who could afford to, moved out of Delray. The war effort during World War II temporarily revitalized some of the industrial base of the neighborhood. Foundries, metal-working shops, and machine factories provided essential services for the war effort, but some industries continued down-sizing and relocating elsewhere, or closed entirely. With fewer opportunities for employment, residents left the neighborhood, and the subsequent decline of the area was a product of suburban flight.

By the 1950s, the population of Delray had dropped to about 18,000. The attraction of jobs and cheap land, together with concerns about the quality of schools, and declining property values, made the suburbs attractive throughout the 1950s and 1960s. The adoption of Detroit's master plans in 1955 and 1963 were also major factors in the depopulation of the neighborhood. Those plans outlined broad, sweeping changes that focused, in part, on the creation of new land use patterns, the division of residential and industrial areas, and the construction of I-75. The path of this highway skimmed the northern edge of Delray, and, although it did not result in the widespread demolition of buildings in Delray, it did divert people away from neighborhood business districts and industries.

With the coming of the freeways and suburban growth, shifting job markets and social upheaval (such as the Detroit riots in 1967), the population of Delray continued to drop during the 1960s. More industrial zoning and factory development further isolated the population. By the 1970s, only about 9,800 people called Delray home. It was during the 1970s and 1980s that deterioration reached new lows in Delray. By then, the Detroit Water Board expansion practically wiped out the Polish community, which was forced to relocate. That development would become one of the largest wastewater disposal and treatment plants in the country.

Delray Today

Today, there remains little of the old downtown Delray, other than a few bars and a fire station. Some 1,500 parcels in Delray are vacant property, many owned by the City of Detroit as a result of non-payment of taxes (Figure 2-10). Of the homes that remain in Delray, many built at the beginning of the 20th century, are in need of major repairs.

Today, the fabric of the Delray community is maintained through two distinct groups. First are the long-time residents, while the second group is comprised of Hispanics immigrating to Detroit. For all the residents, neighborhood convenience stores are the only facilities that provide the basic food group items such as milk, bread, meat, eggs, etc. Delray residents understand prices may be higher in this circumstance, but when limited by transportation options, travel to a more distant location to shop is usually not an option. Major grocery stores are at least a few miles away.

The recently-dedicated Delray Community Center is an institution that provides a strong anchor of support for Delray residents. The Center is the only institution in Delray that provides organized physical activity, after-school programming, and mentoring for children. Activities for senior citizens are also offered. The Center is operated by a local, non-profit agency, Peoples Community Services, which has received grants from a number of sources, the largest being from Chrysler Corporation.

The only educational institution in the area is Southwestern High School. The McMillan Elementary School was closed in 2002. Students from McMillan School were reassigned to schools in the South Schaeffer neighborhood or to the newly-built Clemente Elementary School, located on the north side of I-75 on Beard Street.

The ethnic composition of Hispanics in Delray is primarily Mexican and Puerto Rican. Hispanics are moving into Delray for a variety of reasons; primary among them is housing affordability. A house in need of repair can be purchased for as little as \$15,000, cash. From information gained in a number of interviews, it appears fixing the house is accomplished by “sweat equity” with the help of immediate and extended family members. Family members are often skilled tradesman in cement/masonry work, drywall installation, painting, roofing, carpentry, plumbing and electrical work. People with these skills have relationships with wholesalers that offer good rates on materials and, therefore, make it financially possible to renovate a house.

Another draw to Delray for the Hispanic community is the presence of a support network in the nearby West Vernor corridor (to the north, across I-75). The facilities there include churches, non-profit agencies, Hispanic grocery stores, schools, and other Hispanic-specific retail establishments.

Delray Census Data

Data from the 2000 Census indicate that Delray’s ethnic composition is African American (32.3%), Caucasian (32.4%) and Hispanic (Mexican & Puerto Rican) (30.2%) (Table 2-5). The Hungarian community, once dominant in Delray, now has a very small presence after dwindling rapidly over the last 30 years.²

² Commonwealth Cultural Resources Group, Detroit River International Crossing Study Cultural Resources Aboveground Investigations Technical Report, August 2007.

Figure 2-10
Detroit River International Crossing Study
Vacant Parcels in Delray



Source: The Corradino Group of Michigan, Inc.

Table 2-5
Detroit River International Crossing Study
Demographics
Delray Neighborhood
(Census Tracts 5235, 5236 and 5237)

Race	Total	Percent
White alone	1,351	32.4
Black or African American alone	1,347	32.3
American Indian and Alaska Native alone	17	0.4
Asian alone	4	0.1
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some other race alone	52	1.2
Two or more races	141	3.4
Hispanic or Latino	1,253	30.2
Total Population	4,164	100.0

Source: U.S. Census 2000

In the Delray neighborhood there are 1,420 Households and 922 families. About a quarter of the Delray households are reported in the 2000 Census as having no access to an automobile, compared to just eight percent in the SEMCOG region. Approximately 39 percent of Delray’s families live as a Married-Couple Family, while approximately 61 percent live as an Other-Family type. The most-common type of Other-Family reported in the 2000 Census is “Female Householder/No Husband Present,” which constituted about 51 percent of total families. Slightly more than 40 percent of the Delray households live below the poverty level.

The educational attainment for the Delray population over the age of 25 is as follows: 2.5 percent of the population has completed no schooling; 19.8 percent has received an 8th grade education; 34.3 percent has received a 12th grade education but without a high school diploma; and, 25.6 percent has a high school diploma or has passed a high school equivalency exam. Those living in Delray with a college education represent three percent of the total population. According to the U.S. Census, approximately 11 percent of the workers in Delray are unemployed, compared to six percent for the SEMCOG region.

2.3.6.3 South Schaefer Neighborhood

The South Schaefer neighborhood is located within the City of Detroit (refer to Figure 2-9). The census tracts that make up the area are 5247 and 5248.

South Schaefer is a close-knit, stable, predominately African American community. This area is unique because the majority of the community has lived in their residences for dozens of years. In the South Schaefer neighborhood, there are 3,441 households of which 73 percent are owner-occupied. Approximately 47 percent of the men in the labor force hold positions in construction, manufacturing, or transportation/warehousing-related fields, while 44 percent of the women in the labor force hold positions in manufacturing and the education and health and social services-related fields. The unemployment rate in South Schaefer was approximately 14 percent according to the 2000 Census.

2.3.6.4 Oakwood Heights Neighborhood

The Oakwood Heights neighborhood is located in census tract 5245 (refer to Figure 2-9). The area was once known as “Little Italy” because of the large population of Italian-Americans. Today less than three percent of the area is of Italian ancestry.

2000 Census data demonstrate that this Detroit neighborhood has a population of 1,627. The largest single group is non-Hispanic-White which totals 41 percent of the population. Hispanics make up 33 percent and African Americans 19 percent of the neighborhood’s total population. Approximately 53 percent of the men in the labor force hold positions in fields such as waste management services, manufacturing, or transportation/warehousing-related work, while 44 percent of the women in the labor force hold positions in education and health and social services-related fields or food services. The unemployment rate in Oakwood Heights was 12.2 percent according to the 2000 Census.

2.3.6.5 Springwells Village Neighborhood

Springwells Village is located in census tracts 5238, 5240, 5241, 5242, and 5243 (refer to Figure 2-9). The Springwells Village neighborhood connects to the Vernor-Junction and Mexicantown neighborhoods through the commercial thoroughfare of Vernor Avenue. Within the last 15 years, this neighborhood has undergone strong revitalization.

Data from the 2000 Census indicate this Detroit neighborhood has approximately 22,800 residents living in 7,755 dwelling units. The largest cultural group is Hispanic at 57 percent of the population. The second largest population is White at 32 percent, with other groups following in much lower percentages. Approximately 64 percent of the men in the labor force are likely to hold jobs in construction, manufacturing, or transportation/warehousing-related fields, while 44 percent of the women in the labor force hold positions in manufacturing and the education and health and social services-related fields. Also, women tend to hold positions in the food-service industry. The unemployment rate in the Springwells Village neighborhood was 13.7 percent according to the 2000 Census.

2.3.6.6 Vernor-Junction Neighborhood

The Vernor-Junction neighborhood is located in census tracts 5231, 5232, 5233, and 5234 (refer Figure 2-9). This neighborhood is at the core of the Hispanic community in Detroit. The residential area is served by Vernor as the main commercial thoroughfare. The West Vernor commercial thoroughfare most notably demonstrates the entrepreneurial efforts that led the revitalization that started in the mid-1990s.

Census data indicate that this Detroit neighborhood has approximately 13,500 residents. Hispanics make up 69 percent of the population, while Whites are 21 percent. Approximately 68 percent of the men in the labor force are likely to hold positions in the construction, manufacturing, or transportation/warehousing-related fields, while 53 percent of the women in the labor force tend to hold positions in manufacturing and the education/health/social services-related fields. The unemployment rate in the Vernor-Junction neighborhood was 12.4 percent according to the 2000 Census.

2.3.6.7 Mexicantown/Hubbard-Richard Historic Neighborhood

The Mexicantown/Hubbard-Richard neighborhood is located in Southwest Detroit in census tract 5211 (refer to Figure 2-9). The area contains a regional restaurant destination. Also, within the area is the Hubbard Farms neighborhood. The Mexicantown/Hubbard-Richard area is a point of convergence of many significant transportation facilities, such as the Fisher Freeway (I-75), the Ambassador Bridge, and numerous truck and rail routes, including a railroad tunnel which connects with Canada.

2000 Census data demonstrate that this Detroit neighborhood has a strong element of diversity. The largest population group is Hispanic which totals about 64 percent of the population, while American Indians make up five percent, with African Americans and Whites both at 15 percent. Approximately 73 percent of the men in the labor force hold positions in fields such as construction, manufacturing, or transportation/warehousing-related, while 34 percent of the women in the labor force hold positions in manufacturing and the education and health and social services-related fields. The unemployment rate in the Mexicantown/Hubbard-Richard neighborhood was 14.1 percent according to the 2000 Census.

2.3.6.8 Corktown Neighborhood

Corktown is Detroit's oldest neighborhood. It is located just west of the downtown commercial district, and north of the Detroit River in census tracts 5209, 5213, 5214 and 5215 (refer to Figure 2-9). As the initial destination of many of Detroit's immigrant populations, the Corktown Historic District has been home to the people who built and worked in Detroit's industries during the late 19th and early 20th centuries.

Corktown is ethnically diverse with a population of about 4,100 residents. The largest group is African American which totals 62 percent of the population, while Whites make up approximately 22 percent and Hispanics 12 percent. Approximately 55 percent of the men in the labor force are likely to hold positions in manufacturing, retail-related work and positions in scientific or administrative fields; while 54 percent of the women in the labor force tend to hold positions in manufacturing and the education and health and social services-related fields. The unemployment rate in the Corktown neighborhood was 17.5 percent according to the 2000 Census.

2.3.6.9 Allen Park (Part)

The City of Allen Park is an inner-ring suburb located west of the City of Detroit (refer to Figure 2-9). The section of Allen Park within the study area is in census tract 5760. The demographics of this area indicate that more than 81 percent of the residents are White. Asians and African Americans each make up about five percent of the part of Allen Park that is in the study area. 2000 Census data indicate that 69 percent of the men in this area are employed in the manufacturing and retail trade industries, while women are likely to hold positions in education. The unemployment rate was 2.4 percent according to the 2000 Census.

2.3.6.10 Dearborn (South)

The portion of Dearborn in the study area is located in census tracts 5735 and 5742. This area of Dearborn is home to the Ford Rouge Auto Assembly Plant and satellite offices for the Ford Motor Company (refer to Figure 2-9). It had a population in 2000 of 7,709 people, 48 percent of which are Arab people. The two census tracts of South Dearborn are quite different. In the west,

census tract 5742, there are twice as many married couples with children as opposed to census tract 5735 to the east. Men in both areas are likely to hold jobs in the manufacturing sector; however, more men in census tract 5742 hold positions in the education, health and social services fields. Twice as many women in census tract 5742 are likely to work as opposed to women in census tract 5735. The women in census tract 5742 are likely to hold positions in the education, health and social services fields, as well. The unemployment rate according to the 2000 Census in census tract 5742 was 1.9 percent and it was 5.6 percent in census tract 5735.

2.3.6.11 Ecorse

The city of Ecorse is also considered an inner-ring suburb located south of Detroit. It neighbors the city of River Rouge (refer to Figure 2-9). Ecorse is located in census tracts 5795, 5796, 5797 and 5798.

Ecorse was built on industries such as the Ford Motor Company and Great Lakes Steel. The steel industry still serves as the city's largest employer.

Data from the 2000 Census indicate Ecorse has over 11,000 residents of whom approximately 46 percent are considered White. The second largest group is African American, which make up approximately 41 percent of the population. Hispanics represent nine percent of the total population. About two-thirds of the City's African American population lives in census tract 5796. Approximately 60 percent of the men in the labor force hold positions in physically-demanding jobs such as construction, manufacturing or transportation/warehousing-related work, while about half of the women in the labor force tend to hold positions in education, health and social services-related fields. The unemployment rate in Ecorse was 8.5 percent according to the 2000 Census.

2.3.6.12 Melvindale

The City of Melvindale is an inner-ring suburb west of the City of Detroit (refer Figure 2-9). The census tracts in the study area for the City of Melvindale are 5785 and 5786.

Data from the 2000 Census demonstrate that 81 percent of the portion of Melvindale in the study area is predominately White, while Hispanics make up almost seven percent of the population. Approximately 65 percent of the men in the labor force have jobs in the construction, manufacturing, or transportation/warehousing fields, while 54 percent of the women hold positions in manufacturing and the education, health and social services-related fields. Unemployment in the area stood at 7.1 percent according to the 2000 Census.

2.3.6.13 River Rouge

River Rouge is an inner-ring suburban city located west of the city of Detroit. The City is located in census tracts 5790, 5791, 5792 and 5793 (refer to Figure 2-9). River Rouge was one of the first communities to become industrialized, which stemmed from its unique access to water transportation and the railroads. Immigration to the area was originally driven by the need for labor in the steel industry.

Data from the 2000 Census indicate that River Rouge has fewer than 10,000 residents, of which approximately 50 percent are considered White. The second largest population group is African American, which makes up approximately 42 percent of the population, while Hispanics make up five percent. Seventy-two percent of African Americans live in census tract 5793.

Approximately 63 percent of the men in the labor force are likely to hold positions in fields such as waste management services, manufacturing, or transportation/warehousing-related, while most women in the labor force tend to hold positions in education, health and social services-related fields. Unemployment was at 13.4 percent in 2000 according to the U.S. Census.

3. EXPECTED FUTURE DEVELOPMENT

3.1 Regional Trends

This section presents an overview of expected future development in land use and population. It must be recognized that the primary decisions concerning density, mix of land uses, and compatibility with transportation and other infrastructure are made by local governments. Southeast Michigan has 233 cities, villages, and townships that manage land development.

The "quality of life" findings of two separate and relatively-recent opinion surveys are also important to review. In late 2002/early 2003, a SEMCOG survey found that 66 percent of respondents rated overall quality of life in the region as good or excellent. Nonetheless, most residents recognized problems like traffic and wanted growth better managed.

An exception to the general pattern of relative contentment is in Detroit, where satisfaction is much lower on a range of issues, from public schools to roadway maintenance. In the Detroit Area Study 2001,³ at least 70 percent of each county's residents indicated satisfaction with their community. In contrast, for Detroit, only 32 percent were satisfied while 45 percent were dissatisfied.

3.1.1 Land Use

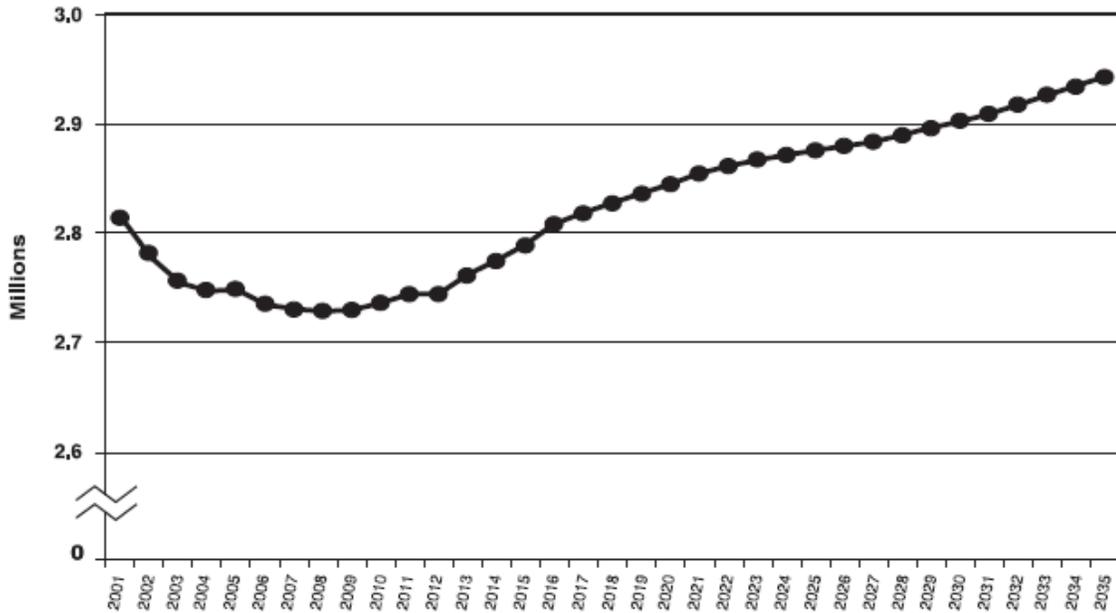
SEMCOG, in a report issued in April 2007 titled *A Region in Turbulence and Transition*, indicates the following:

Southeast Michigan's economy is in the midst of a fundamental restructuring that has serious consequences for the region's long-term future. This turbulence and transition is due to the shrinkage of the domestic auto industry, where the Big Three have seen their share of U.S. light-vehicle sales (cars, SUVs, vans, pickup trucks) decline from 73 percent in 1995 to 53 percent in 2006.

The consequences of the changes in the auto industry are profound. Losses of jobs in the region's core industry are rippling through the economy and will be felt across many sectors, from retail to construction. Southeast Michigan has lost 128,000 jobs since 2000 and will not begin to gain total jobs until 2010. By 2035, the region's employment will have grown seven percent over 2005 levels (Figure 3-1).

³ University of Michigan, *Detroit Area Study 2001*, 2001.

**Figure 3-1
 Detroit River International Crossing Study
 Total Employment
 Southeast Michigan, 2001-2035**

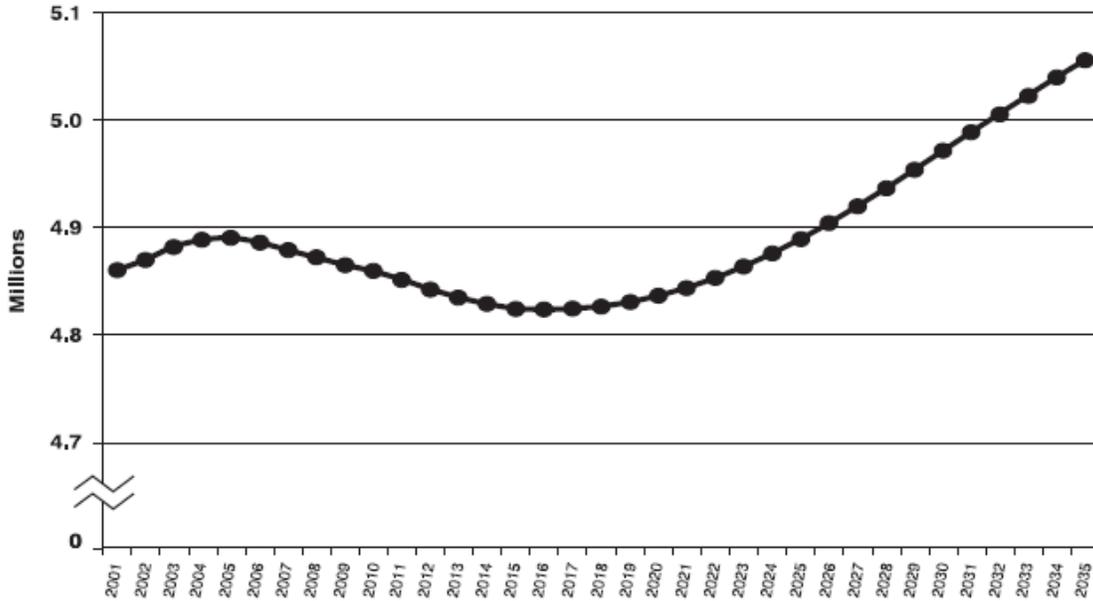


Source: SEMCOG

The other major factor that will affect the region in the long-term is the aging of the population. By 2035 Southeast Michigan will have 651,000 more people 65 or older and 296,000 fewer people of prime working age 25-64. This is a trend that will also be felt in the U.S. as a whole where, as in Southeast Michigan, the percentage of population 65 or older will increase dramatically. For the region, the percentage 65 or older will increase from 12 to 24 percent by 2035, and for the U.S. it will go from 12 to 20 percent.

Combined with more deaths in an aging population, increased out-migration is now causing Southeast Michigan's population to decline. The region will only recover enough, beginning after 2015, to add about three percent to the population over 30 years (Figure 3-2). Southeast Michigan's population will be 5.1 million in 2035.

**Figure 3-2
Detroit River International Crossing Study
Total Population
Southeast Michigan, 2001-2035**



Source: SEMCOG

With these observations as background, SEMCOG reduced its forecasts of future growth in population (Table 3-1) and employment between 2005 and 2030 by 75 percent and about 50 percent, respectively. Those changes have been disaggregated to the county level, but not to a smaller geographical unit. Nonetheless, the county-level changes in growth provide a glimpse of the dynamics of the region. From a population perspective (Table 3-1), Macomb County is expected to continue to grow at almost the same pace in the new forecast as in the previous forecast. The outer-ring counties – Livingston, Monroe and Washtenaw – are projected to experience a greater slowdown in growth. Wayne County is expected to experience the greatest loss by 2030 compared to the earlier SEMCOG forecast. But, the bigger issue is that it is the only county in the region projected to lose population, which continues a downward trend. And, while city-by-city forecasts are not available from SEMCOG, it is likely the loss will be especially felt in Detroit based on past trends.

From an employment perspective, the SEMCOG forecasts are not directly comparable because the new forecast uses the employment definition of the Bureau of Economic Analysis and the previous forecast used Bureau of Labor Statistics data as a base. Nonetheless, the new projections of employment growth by 2030 in the SEMCOG region are down by about 50 percent compared to the earlier forecast. The greatest impact will be felt in Wayne County and, by implication, Detroit, as a loss in jobs is forecast. All other counties, but Washtenaw, are still forecast to experience employment growth by 2030, albeit lower than projected before (Table 3-2).

Table 3-1
Changes in Forecast Growth in Population by SEMCOG
Detroit River International Crossing Study

County	Population			
	Year 2000	Previous Forecast 2030	Current Forecast 2030	Change in Forecast Growth
Livingston	156,951	282,405	210,359	-42.6%
Macomb	788,149	926,347	914,685	-8.4%
Monroe	145,945	191,500	159,797	-69.6%
Oakland	1,194,156	1,346,185	1,303,674	-28.0%
St. Clair	164,235	203,552	189,274	-36.3%
Washtenaw	322,895	433,205	369,474	-57.8%
Wayne	2,061,162	2,018,091	1,824,112	-118.2%
Total	4,833,493	5,401,285	4,971,375	-75.7%

Source: SEMCOG

Table 3-2
Changes in Forecast Growth in Employment by SEMCOG
Detroit River International Crossing Study

County	Employment			
	Year 2000	Previous ^a Forecast 2030	Current ^b Forecast 2030	Change in Forecast Growth
Livingston	59,186	102,378	95,274	-16.4%
Macomb	383,308	441,126	427,658	-23.3%
Monroe	54,375	74,268	63,278	-55.5%
Oakland	910,441	1,100,545	1,001,198	-52.3%
St. Clair	64,531	80,857	78,780	-12.7%
Washtenaw	230,212	285,543	289,059	+6.4%
Wayne	971,127	1,024,905	943,826	-150.8%
Total	2,673,180	3,109,622	2,899,073	-48.2%

^aBased on Bureau of Labor Statistics definition.

^bBased on Bureau of Economic Analysis definition.

Source: SEMCOG

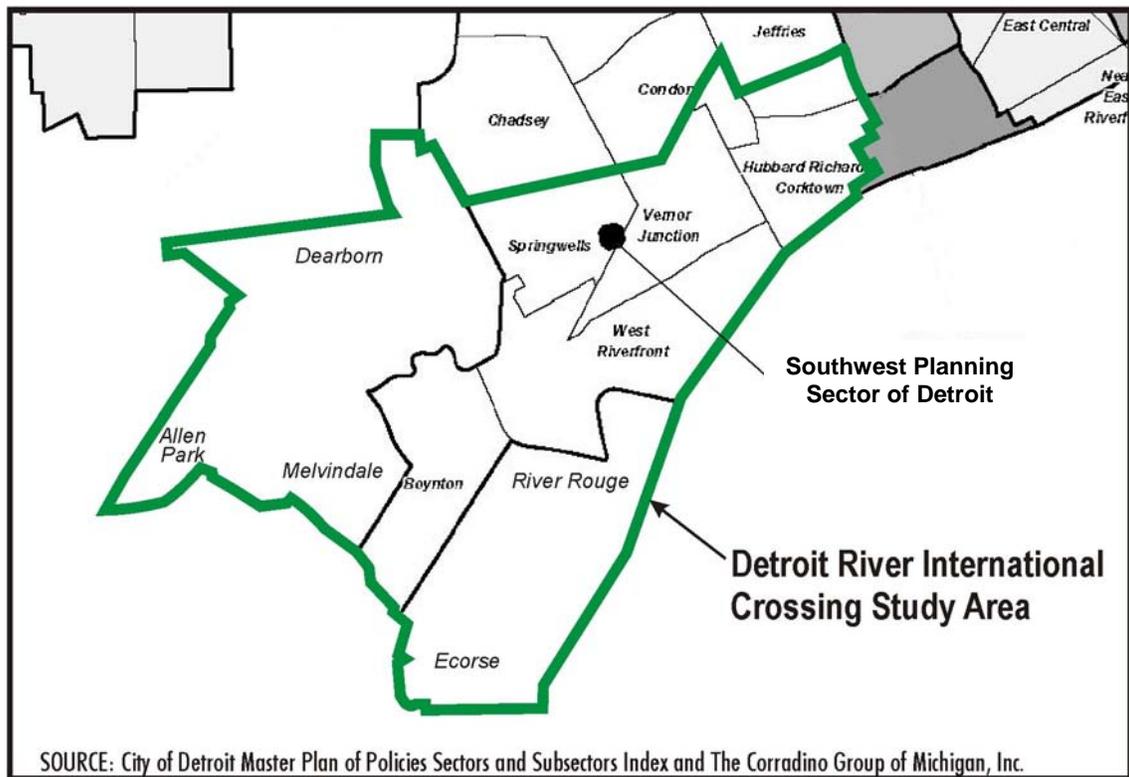
3.2 Study Area Land Use Trends

The City of Detroit's Master Plan of Policies is being updated and is a source of information included here. Master Plans for River Rouge (2002), Dearborn (1997), and Allen Park (1978) have been reviewed as they affect existing and future developments in the study area. The Ecorse Plan was not available after repeated attempts to obtain it.

3.2.1 Detroit

The DRIC study area has been overlaid on the sectors and subsectors found in the City of Detroit's Master Plan of Policies (Figure 3-3 as well as Figure 2-8). Those subsectors directly affected are: West Riverfront, Boynton, Springwells, Chadsey, Condon, Vernor-Junction and Hubbard/Richard/ Corktown; all are in the Southwest Sector.

Figure 3-3
Detroit River International Crossing Study
Relation of Detroit Master Plan of Policies and the Study Area
(Southwest Planning Sector and Subsectors)



The key policies/actions that apply to all of these areas are summarized here.

- Policy 202-1: Full employment for Detroit Residents.
 - Continue to assign the highest priority to attaining full employment for Detroit's Residents.
- Policy 202-16: Industrial Site Availability.
 - Assemble usable parcels by combining vacant, obsolete industrial with vacant and deteriorated residential use areas.

- Policy 203-3A: Relocation.
 - Assure that as many of the residents and businesses who are required to be relocated as a result of redevelopment projects and who desire to be relocated within the City of Detroit are able to do so.
- Policy 203-18: Relationship of industry to residence.
 - Establish green-space buffers and open areas between heavy industry and homes.
 - Rezone TM (transitional industrial) pockets of declining housing located within industrial areas.
- Policy 203-52: Air Quality.
 - Implement the fugitive dust program.
- Policy 203-40: Freight Transportation.
 - Maintain, and where feasible, upgrade Detroit’s freight transportation system as one of the major assets of the City.
 - Make intermodal transport connectors more efficient.
 - Upgrade railroads to remove obsolete trackage and market lands for development.
 - Keep freight transport facilities in good repair.
- Policy 204-17: Detroit’s Significance in Southeastern Michigan.
 - The City of Detroit, being the center city of the Southeastern Michigan region and the largest city in the State of Michigan, should retain and increase those uses, services, and facilities that are of special regional/State significance.
 - Make major improvements to the transportation system to ensure that Detroit remains the region’s distribution center, a State distribution center, and competitive in transportation with other cities in the nation and world.

The following planning issues apply to the City of Detroit Planning Subsectors in the study area. They are drawn from the City of Detroit Master Plan of Policies, as of June 2004.

3.2.2 Southwest Sector of City of Detroit

Southwest Detroit has two outstanding economic characteristics: an exceptional concentration of very heavy industry, and a unique convergence of freight transportation modes. Weaknesses of the Sector relate to economic obsolescence in both the industrial and commercial plants. Strengths include the Detroit River as a unique attraction, the fixed nature of the transport infrastructure, the availability of many sound industrial buildings, and the shopping habits of many local residents favoring neighborhood stores.

Detroit’s major concentration of ports, rail facilities, truck terminals, pipelines, international crossings and associated or support facilities and organizations occurs in the Southwest Sector. This remains unchanged despite the serious and continuing erosion of the Sector’s manufacturing base. Only to a limited extent can changing technology, changing corporate ownership patterns, or other evolutionary factors disperse Southwest Detroit’s highly significant concentration of freight facilities. In fact, prevailing economic forces favor continued concentration.

The Southwest Sector, therefore, will remain an area of primary economic importance and industrial activities, within the limits of sound planning and environmental protection.

Keys to the renewal of the Southwest Sector include an improved education system aimed at specific needs of the residents (including career training and the re-education of adults); a safe, secure, and healthy environment; good recreational facilities; and, improved public transportation.

The subsector characteristics are provided next.

3.2.2.1 West Riverfront Subsector: Summary of Planning Issues

The West Riverfront includes Southwest Detroit's major industrial corridor. As such, it will be the location for many of Detroit's reindustrialization activities. Vacant industrial plants and vacant industrial land are already available for expansion of industries. In certain areas, industrial corridors can be expanded into residential pockets.

One very important planning issue is the future of Delray as a residential community. The City advocates retention of Delray as a community, including housing, schools, churches, and commercial and retail services. Many changes may be needed. In Delray, the general goal of accommodating reindustrialization within existing industrial corridors is not entirely feasible because of the current intermixtures of land uses.

Fort Wayne is recognized as a key asset in this area, with the objective of preserving its buildings, connecting it with greenways to surrounding areas and making Fort Wayne a regional destination.

Port improvements are related to changing port functions and the Foreign Trade Zone (FTZ). Large-scale expansion of berthing space is unneeded unless current trends completely reverse. However, the Foreign Trade Zone and the container barge operations create a need for warehouse, outdoor storage, and container handling spaces, in other words, logistics support services. Much of this activity will occur inland from (north of) Jefferson Avenue.

3.2.2.2 Boynton Subsector: Summary of Planning Issues

The factor which may be most critical to Boynton is the economic decline of the Downriver region of southwest Michigan in nearby communities like River Rouge, Ecorse and Melvindale. Many Boynton residents are employees of Downriver chemical, steel, and automobile plants in these nearby cities, or else are on layoff or pension. Unless Downriver recovers, Boynton will share the economic difficulties.

3.2.2.3 Springwells Subsector: Summary of Planning Issues

One-story bungalows on small lots are one of the more common housing types in Springwells. These homes, now 70 years old or so, are in need of maintenance. Thus far, the degree of maintenance, overall, is very satisfactory.

There is a lack of separation between industry and homes in the Springwells Subsector, particularly in regard to truck traffic. The industrial area between Dix and the Junction Yard provides very little employment, considering the land area consumed. It is one of the largest sites in Detroit that could be assembled with very little relocation for job-producing industrial development.

Springwells includes Conrail's Livernois-Junction intermodal yard and many other transport facilities. This makes the subsector an ideal location for food industries currently occupying cramped facilities, or inappropriate locations such as residential streets. Being close to major southwest and Downriver pollution sources, Springwells is deeply affected by environmental problems.

3.2.2.4 Vernor-Junction Subsector: Summary of Planning Issues

Neighborhoods near the industrial corridor (generally near or north of Toledo Avenue) have been showing signs of deterioration. This area accounts for most of the subsector's housing-related problems and most of the subsector's recent population losses and demolition.

Many of the scattered, small industrial plants (whether in operation or vacant) along the Conrail railroads are directly adjacent to housing. Whether or not reoccupancy of the vacant plants should be encouraged is questionable.

Other than Clark Park, the area is short of recreation facilities; this need should be addressed to the extent possible.

3.2.2.5 Hubbard-Richard/Corktown Subsector: Summary of Planning Issues

Much of the Hubbard-Richard/Corktown Subsector is part of a development project (West Side Industrial #1 and #2, Hubbard-Richard, and Corktown), or else is considered a possible development location by virtue of riverfront location or proximity to the Detroit Central Business District. Almost every portion of this subsector presents issues related to land use or development. Zoning issues tend to be more prominent and important in this subsector compared to elsewhere in the City. Traffic problems are also present, particularly along Michigan Avenue and Rosa Parks. Truck traffic impacts residential areas.

Preston Elementary School has been closed. Children must cross I-75 to attend Webster School.

The Ambassador Bridge facilities have presented many issues as the bridge plaza and associated public and private facilities are in the middle of the Hubbard-Richard community and there are numerous traffic and land use conflicts. The fact that the bridge is a major international truck route has contributed to this condition. The U.S. General Services Administration is completing a major expansion and renovation project at the U.S. Cargo Inspection Facility. The bridge owner is pursuing approvals for a second bridge next to the existing one.

Automobile-oriented facilities near the Bridge include, or are proposed to include: duty-free shops both to the east and to the west of I-75 and a welcome center next to the bridge.

The Michigan Avenue corridor, including the Tiger Stadium area, is seen as a potential development site because of its location near Corktown and the downtown area and along a major thoroughfare. It is envisioned that the Michigan corridor will be gradually upgraded with new development; deteriorated, under-utilized, or inappropriate development will be replaced.

Infrastructure improvements are needed to alleviate flooded streets, alleys, and basements; provide better street lighting; repair streets, alleys and sidewalks; and, replace worn utilities. Improvements are needed to provide more and better open space. Improved convenience shopping is also an expressed need in certain parts of this subsector.

A major issue underlying many of the problems in this area is the loss of population over the past two decades. While this has been a problem for Detroit generally, it is acutely perceived here as the root cause of housing abandonment and loss, declining levels of services, loss of shopping facilities and general deterioration of the community.

3.2.3 Allen Park

Relevant excerpts from the City of Allen Park's Comprehensive Development Plan (dated 1978) are presented here.

"The City of Allen Park is located in the southeast portion of Wayne County near the Downriver communities of the County which are industrially oriented and constitute an industrial corridor in this portion of the County.

"The City of Allen Park is basically a high quality residential area that developed as the result of commercial and industrial activity undertaken beyond its boundary. Therefore, the City as a suburb of Detroit is very much a part of the Detroit Metropolitan Area and is not a self-contained city which is able to provide the bulk of the employment and consumer needs of its residents. Since Allen Park has not been able to depend on industrial and commercial values within its jurisdiction to establish its economic base, it has been supported mainly through its ability to attract residential development of high value and to maintain among its residents a relatively high family income.

"Firms classified in either one of two categories, Manufacturing or Wholesale Trade, generally occupy most of the sites in the industrial area of Allen Park.

"Wholesale Trade establishments are usually either supplier or market oriented, and are typically established near major transportation arteries. Warehouses are one of the primary types of Wholesale Trade firms found in the industrial area of Allen Park. One primary reason many of these firms chose their present location was undoubtedly due to the junction of the I-94 Freeway and the Southfield Freeway (M-39), two major thoroughfares in the Detroit Area.

"This street system in Allen Park allows direct access to three major freeways which lead to all major places of employment in the region as well as to major cities to the south and west. There are three regional trafficways leading to Downtown Detroit, I-94, I-75 and Fort Street, which feeds from Allen Road and Oakman Boulevard. In short, the City is very convenient to all parts of the region and major employment centers. From the standpoint of accessibility, the City is an extremely attractive residential, commercial and industrial area."

3.2.4 Dearborn

The following excerpts are from the Dearborn Master Plan updated in 1997 as they relate to the Detroit River International Crossing project. The section of the Master Plan presented below discusses land use in terms of its surroundings based upon the officially adopted master plan of each community.

"The Dearborn Master Plan proposes continuation of an extensive belt of general industrial land which follows the railroad lines along the entire eastern side of Dearborn.

Within this large industrial corridor are located the Ford Motor Company, the Detroit Water Board, and many other large industrial installations. The only exceptions to this large industrial corridor on the city's east side are the older residential neighborhoods, which exist in the vicinity of Dix Road and Wyoming Avenue. The Detroit Master Plan proposes a similar band of general industrial use along Detroit's boundary with Dearborn. The adjoining Dearborn and Detroit industrial areas form one of the major heavy manufacturing corridors in southeast Michigan. The continued vitality of this industrial corridor will depend on the need to rebuild and improve the obsolete I-94 Industrial Freeway and the need to introduce newer forms of multimodal transportation. The railroad line which previously served that portion of the industrial corridor between Ford Road and Tireman Avenue has been recently abandoned. Interstate 94 is an antiquated expressway which was never designed to carry the high volumes of traffic which it now carries. The interface of this expressway with Dearborn's major street pattern and the design of the ramping system need to be completely redesigned and rebuilt to serve modern needs. Along its southeast boundary, Dearborn and Detroit share Patton Park, a major urban park, which is adjacent to the Woodmere Cemetery in Detroit. The park and cemetery are very compatible adjoining land uses to the older residential neighborhoods which exist in Dearborn in the Dix Road/Wyoming Avenue area. Both the Dearborn and Detroit Master Plans indicate a continuation of lower-density single-family neighborhoods on both sides of Tireman Avenue on Dearborn's northernmost boundary. Both Dearborn and Detroit indicate a strip commercial development in their master plans along the common boundary which they share along Greenfield Road. In general, the City of Detroit's Master Plan indicates low-density single-family development throughout those neighborhoods which are north of Ford Road. There are no problems of land use compatibility between the two cities."

3.2.5 Melvindale

Excerpts of Melvindale's Comprehensive Development Plan, last updated in 1980, pertinent to the analysis of the direct, indirect and cumulative impacts potentially caused by a new Detroit River crossing are cited below.

"The City of Melvindale is located southwest of Detroit in central Wayne County. It is bounded by the Interstate 75 Freeway on the southeast, Schaefer Road on the northeast, the Rouge River and part of the municipal limits of Dearborn on the north, the Detroit, Toledo, and Ironton Railroad from the north to the southwest, and Outer Drive Road and the Allen Park city limits from the southwest to the southeast.

"Perhaps the most pressing problem the City possesses is that of incompatible land usage. The large amount of land devoted to heavy industrial usage has had an obvious impact upon other land uses in adjacent areas.

"The second greatest use of land area in the City is that of industrial. Not only has Melvindale devoted a greater portion of its land to this purpose than it did in 1965...it also has a much greater proportion of its land uses for industrial facilities than some of its neighboring communities.

"A large portion of land in the City is owned by two railroads...both of which possess rights-of-way and property in Melvindale, that totals approximately 166 acres or 9.5 percent of the total land area. This is considerably less than that which was classified

under this use in 1965. Since that time, much of the land adjacent to the (railroads) rights-of-way has been converted to other uses.

“Though Melvindale possesses a potential for some development, the bulk of the land in the City is developed. In that the community developed rapidly during the 1940s and 1950s, it was built at a time when there were less stringent land use controls. As a result of these early trends, currently City officials have inherited several major land use problems. Some of these problems are described below.

“A principal problem found in Melvindale is that of incompatible or mixed land uses. The normal result of this land use occurrence is a deteriorating effect on the surrounding area.

“The primary example of this condition is found in the northeast section of the City in an area delineated by Schaefer Highway on the east, Oakwood Boulevard to the north, Dix Avenue on the west and the...railroad to the south. This area experiences a problem in that oftentimes industrial uses are located across the street from residential uses (Francis Avenue being the primary example); also, streets in the area are regularly traveled by non-residential traffic. Directly north of this area, is a triangular region bordered by Schaefer Highway, Oakwood Boulevard and Raupp Avenue which experiences similar problems.

“On the City’s south side, industrial facilities along Meginnity and Rialto Avenues appear to be a potential problem to those residential areas which are located west of them. Without proper screening and transition, the area faces the danger of repeating the same situations experienced in the older areas described above.

“Oakwood Boulevard west of Allen Road experiences a problem with incompatible land uses in that industrial facilities as well as commercial and multiple family developments are found on those frontages.”

3.2.6 River Rouge

The following excerpts are from the River Rouge Master Plan updated in 2002.

“The City of River Rouge occupies approximately 1,770 acres of land or 2.8 square miles. It shares a common boundary with the City of Detroit to the east and north and a common boundary with the City of Ecorse to the south. The Detroit River forms the City’s eastern boundary for a distance of approximately two (2) miles. The northern boundary is formed by the Rouge River.

“The amount of land used for industrial purposes exceeds residentially developed land by a margin exceeding 2-to-1. This is a characteristic unique to River Rouge and not shared universally with other southeast Michigan communities. Industry is the dominant land use in the community with roughly 42% of the land utilized for this purpose. Industry blankets the community on the north and east boundaries and bisects the two residential areas of the City along the railroad right-of-way.

“Incompatible non-residential uses surround and encroach into River Rouge’s residential areas. In most cases, the residential homes are not adequately buffered from the impacts associated with the incompatible use. Noise, light, traffic, dust, odor and

general blight often negatively impact the quality of living and thus the housing values in the area. In many cases, these homes become rental properties and suffer from lack of maintenance and upkeep. As industrial and commercial uses further infiltrate the residential areas, the ring of negative influence becomes greater. The City recognizes the ‘domino effect’ on quality of housing and quality of life.

“It should further be noted that the continued encroachment of incompatible land uses on the single-family residential districts has contributed strongly to property value stagnation as well as a reduction in the quality of life for those residents.

“The compatible land uses, to include multiple family dwellings, need to provide heavy screening and buffering so as to prevent and/or diminish further deterioration of the single-family districts.

“Most of the industrial land uses in the City lack any type of screening. Outdoor storage and parking are all visible from roads.

“Buffering is absent in many cases. Such techniques as walls, landscaping, berms and combinations of the three should be required between industrial uses and any other type of use.

“Whenever possible, residential neighborhoods should be protected from the intrusion of incompatible land uses and through-traffic movements. There is a need to maintain circulation patterns that route traffic around, as opposed to through, these neighborhoods.”

3.3 Upcoming Development Projects

Development projects, other than the DRIC, now foreseen that affect the study area are listed on Table 3-3. The study area is largely built-out. Much new development/redevelopment focuses along the Detroit River in the City of Detroit. There, and near the proposed Practical Alternatives, are plans to reclaim brownfield sites for condominiums, reuse chemical storage tanks, continue expansion of Springwells Industrial Park for businesses, particularly those requiring waterfront access. Upcoming developments in Ecorse also focus on the riverfront. The same is the case in Allen Park.

Three important and proposed transportation projects include the proposed Ambassador Bridge Enhancement Project, which is a six-lane replacement span of the four-lane bridge; a new truck tunnel between Detroit and Windsor; and, a new interchange directly connecting the Ambassador Bridge into the freeway system. The last project is part of the analysis of the direct effects of the DRIC project as the Ambassador Bridge Gateway Project is included in SEMCOG’s Regional Transportation Plan. The first two projects are considered as part of the indirect and cumulative impacts analysis discussed next.

**Table 3-3
Expected Developments in Study Area
Detroit River International Crossing Study**

Southwest Detroit	Allen Park	Dearborn	Ecorse	Melvindale	River Rouge
<ul style="list-style-type: none"> • Ambassador Bridge Gateway Project • Mercado/Welcome Center • The Detroit River Tunnel Project • West Riverfront Greenway Initiative • Bagley Housing Condominium Development • Reuse of the Tiger Stadium area • Housing along Michigan Avenue, east of West Grand Blvd. • Combined sewage overflow facility at Patton Park • Combined sewer overflow facility at the Revere Cooper property • “Greenway” at Romanowski Park • Bowtie area (Vernor/Livernois) redevelopment • Stabilization of housing conditions due to code enforcement and similar activities • Continued expansion of Springwells Industrial Park • Condominiums on the Revere Cooper site • Reuse of the tanks on the Mistersky site • Detroit Intermodal Freight Terminal Project • M-85 bascule bridge • Fort Street reconstruction (Schaeffer to Clark) 	<ul style="list-style-type: none"> • Veteran Memorial Park • Veterans Hospital Site Development • Allen Park Ford Clay Mine Development • Greenway’s Link 	<ul style="list-style-type: none"> • Truck City expansion to area bounded by Michigan, Southern, Wyoming and Stecker • Housing development in east Dearborn east of Wyoming served by Roberts Street • Hotel on Michigan Avenue • Montgomery Ward conversion to mixed-use redevelopment • West Village Commons • Industrial investments <ul style="list-style-type: none"> – Ford: \$240 million – Severstal: \$600 million 	<ul style="list-style-type: none"> • John Dingell Park Riverwalk 	<ul style="list-style-type: none"> • Marathon Oil Refinery - \$1.5 billion upgrade • New and renovated apartment building along Raupp Road • Proposed hotel on Dix Road • Proposed hotel on Oakwood Road at Dix • Residential (multi-family) expansion on Raupp Road 	<ul style="list-style-type: none"> • Greenway • Downtown revitalization • Jefferson Avenue streetscape

Source: The Corradino Group of Michigan, Inc.

4. ANALYSIS

4.1 Process

Figures 2-4, 2-6 and 2-8 each depict the “zone of influence” in which the neighborhood/community relationships to the proposed DRIC crossing and transportation facilities serving them will be felt directly and indirectly. This area was established based on transportation/land use, community facilities and services interactions. It was reviewed with the Local Advisory Council and Local Agency Group of the Detroit River International Crossing Study, then revised/finalized based on that input.

The issues by which indirect/cumulative effects can be measured in this area include:

- Traffic changes associated with creating the DRIC
- Economic Impacts – Jobs
- Community Effects
 - Conversion of land uses
 - Number of residential units and business properties potentially affected
 - Effects on community cohesion
 - Potential environmental justice issues
 - Change in aesthetics
- Air Quality
 - Regional air quality effect
 - Study area carbon monoxide air and particulate matter emissions
- Noise
 - Noise exposure of sensitive receptors (e.g., schools, places of worship, residential properties)
- Cultural Resources
 - Impacts to in historic/archaeologic resources
 - Impacts to parklands
- Water
 - Water quality
 - Quantity of wetlands affected

Table 4-1 summarizes those issues. Also included in this section is a discussion of transboundary impacts of the proposed project in Canada. Those issues are summarized on Table 4-2.

4.2 Indirect Impacts – U.S. and Transboundary

The direct impacts on the areas discussed below are covered in a series of technical reports and in the Draft Environmental Impact Statement. The indirect effects are cited here. Cumulative impacts are reviewed in Section 4.3. Impacts on each side of the border are presented in each section of the report.

Table 4-1A
Summary of U.S. Indirect Impacts
The No Build Condition Versus the Build Condition
Detroit River International Crossing Study

Category	No Build	All DRIC Build Alternatives
Traffic	Domestic traffic increases are expected to be relatively small. Positive effects will be experienced in Mexicantown and along Fort Street (M-85) with completion of Ambassador Bridge Gateway Project.	Domestic traffic increases are expected to be relatively small. Positive effects will be experienced in Mexicantown and along Fort Street (M-85) with completion of Ambassador Bridge Gateway Project. The community north and south of I-75 will experience negative and positive indirect effects. <u>Negative:</u> More difficult for traffic to gain access to I-75 and move across it. <u>Positive:</u> Fewer trucks penetrating the area would reduce noise levels and improve air quality.
Economic Impacts	A continued jobs loss is expected in the SEMCOG region until about 2015 with relatively small net growth by 2030 compared to current conditions. In Wayne County and Detroit, a net loss in jobs can be expected, not just a loss of job growth.	A continued jobs loss is expected in the SEMCOG region until about 2015 with relatively small net growth by 2030 compared to current conditions. In Wayne County and Detroit, a net loss in jobs can be expected, not just a loss of job growth. The change in accessibility associated with a new bridge would create 1,800 new jobs in Wayne County, with a small number of these locating in Southwest Detroit near the I-94/Wyoming Avenue interchange in the vicinity of the Livernois-Junction Yard intermodal (truck/rail) terminal. Oakland County could stand to gain 900 jobs near Novi. The SEMCOG region could gain 3,350 jobs (including those noted above). All these jobs would come from outside Michigan.
Land Use	Existing land use patterns are expected to continue with little change in the region. Expected losses of population and jobs in Wayne County and Detroit could lead to abandonment of some current land uses.	Existing land use patterns are expected to continue with little change in the region. Expected losses of population and jobs in Wayne County and Detroit could lead to abandonment of some current land uses. Slightly offsetting this trend could be development associated with new jobs, noted above. They would require about 120 acres of land. There is enough brownfield space in Wayne County to accommodate the development. Other locations that could see additional jobs, like the I-96/I-696/I-275 interchange area in Oakland County, could absorb the development with no negative consequences foreseen. The possibility that a "Welcome Center" will be part of this project has been mentioned at several public meetings. At this time a decision as to whether a "Welcome Center" will be included has not been made, and is subject to further study. If a Welcome Center is to be included, it will be addressed as part of the FEIS.
Air Quality	Pollution from mobile sources is expected to decrease because of cleaner engines and fuels. The forecast loss of jobs may close some polluting industries.	Pollution from mobile sources is expected to decrease because of cleaner engines and fuels. The forecast loss of jobs may close some polluting industries. Sensitive receptors in the study area are not expected to be negatively impacted if development is properly located consistent with planning/zoning rules. Additional areas, particularly north of I-75 and near the Ambassador Bridge at Mexicantown, would benefit because of less truck traffic there.
Community Effects	Some housing rehabilitation can be expected to continue. Industrial/commercial uses will continue to be mixed with residential uses. Both uses may degrade as forecast loss in jobs and population over the next eight to ten years can be expected to result in property abandonment in spots.	Some housing rehabilitation can be expected to continue. Industrial/commercial uses will continue to be mixed with residential uses. Both uses may degrade as forecast loss in jobs and population over the next eight to ten years can be expected to result in property abandonment in spots. Other indirect community effects of the proposed DRIC alternatives are discussed throughout this table.
Noises/Vibrations	No perceptible increases in noise and vibrations are expected overall. Some improvement is expected in Mexicantown with completion of Ambassador Bridge Gateway Project in 2009. Blasts from nearby room-and-pillar salt mining will continue to cause vibrations at annoyance levels in the area.	No perceptible increases in noise and vibrations are expected overall. Some improvement is expected in Mexicantown with completion of Ambassador Bridge Gateway Project in 2009. Blasts from nearby room-and-pillar salt mining will continue to cause vibrations at annoyance levels in the area. The introduction of noise-attenuating walls along I-75, where none exist now, would benefit the nearby community. No vibrations from the project would affect the area.
Cultural Resources	Continuation of past trends expected with some older structures being abandoned. Potential exists in West Delray and in the area north of I-75 to protect the area's historical integrity and open an avenue to grant/loan programs for improving properties in historic districts identified in those two locations.	Continuation of past trends expected with some older structures being abandoned. Potential exists in West Delray and in the area north of I-75 to protect the area's historical integrity and open an avenue to grant/loan programs for improving properties in historic districts identified in those two locations. A positive and, at the same time, possibly negative indirect effect is possible on aboveground cultural resource sites in the study area that are on or recommended eligible for listing on the <i>National Register of Historic Places</i> . While several of these would not be directly impacted by the DRIC, care must be taken that "ripple-wave" development in the area not create a negative indirect impact on them. The FEIS will document the analysis and proposed mitigation for the Preferred Alternative. Another by-product of the DRIC is the identification of two historic districts in West Delray and another north of I-75. The recognition of the districts will help protect the area's historical integrity and open an avenue to grant/loan programs for improving properties in them.
Water Quality, Wetlands, Threatened and Endangered Species	Status quo is expected to be maintained, while recognizing some additional wetlands may form due to human activities at abandoned sites.	Recognizing no negative indirect effects are anticipated on wetlands, nor threatened and endangered species, some additional wetlands may form due to human activities. Further, government approvals of development that could be stimulated by building a new border crossing would avoid water quality impacts, ensuring proper treatment of water runoff/wastewater. Surface water runoff would decrease as there would be less total roofed/paved area.

Source: The Corradino Group of Michigan, Inc.

Table 4-1B
Summary of U.S. Cumulative Impacts
The No Build Condition Versus the Build Condition
Detroit River International Crossing Study

Category	No Build	All DRIC Build Alternatives
Mobility	Completion of the Gateway Project, which will directly connect the Ambassador Bridge to I-75, will favorably alter circulation patterns in a large portion of the study area.	Completion of the Gateway Project, which will directly connect the Ambassador Bridge to I-75, will favorably alter circulation patterns in a large portion of the study area. Negative effects could occur if induced development is not guided by proper government approvals. If properly guided, a mix of compatible uses and no congestion is foreseen.
Land Use	A continuation of past trends is expected, at best. Potential for population and employment decline in Detroit and Wayne County may lead to continued abandonment of land uses.	A continuation of past trends is expected, at best. Potential for population and employment decline in Detroit and Wayne County may lead to continued abandonment of land uses. Land use change associated with “ripple-wave” development of the DRIC will likely be minimized by applying planning principles that exist in all communities to ensure they are compatible with neighborhood uses.
Air Quality	Pollution from mobile sources is expected to decrease. Continued loss of jobs and population throughout region over next eight to ten years could lead to closing of polluting industries.	Pollution from mobile sources is expected to decrease. Continued loss of jobs and population throughout region over next eight to ten years could lead to closing of polluting industries. Proper location of new development, consistent with existing planning/zoning rules, would also help control pollution as a cumulative effect of the DRIC project.
Cultural Resources	A continuation of past trends is expected with some older structures being abandoned.	A continuation of past trends is expected with some older structures being abandoned. Adverse impacts with new development stimulated by the DRIC will likely be prevented by applying local controls and proper planning.
Community Effects	Communities are expected to be challenged as the continued slump in the economy will likely cause businesses and homes to be left vacant as jobs and related income are lost. Even so, some housing rehabilitation can be expected to continue.	Communities are expected to be challenged as the continued slump in the economy will likely cause businesses and homes to be left vacant as jobs and related income are lost. Even so, some housing rehabilitation can be expected to continue. A new crossing can be expected to stimulate some development. There are large and small tracts of land throughout the study area in locations compatible with industrial, logistics and transportation-related land uses. This re-use would minimize, if not totally avoid, negative impacts on community cohesion of such development. Housing rehabilitation would likely continue.
Noise	No perceptible increases are expected, overall. Some change could occur in spots if the downturn in the economy causes continued abandonment of noise-generating industrial/commercial uses.	Traffic volumes and noise levels would increase if economic development conditions improve with a new crossing. Negative community impacts can be avoided with care by the developer/builder and government agencies in locating this development away from sensitive uses. Blasts from nearby room-and-pillar salt mining will continue to cause vibrations at annoyance levels in the area.
Water Quality, Wetlands, Threatened and Endangered Species	A continuation of past trends is expected. Some wetlands may develop incidental to human activity on abandoned sites.	A continuation of past trends is expected. Some wetlands may develop incidental to human activity on abandoned sites. Nonetheless, no negative wetlands and/or water quality impacts are foreseen. Some positive effects could occur if brownfield sites are remediated for new development.

Source: The Corradino Group of Michigan, Inc.

Table 4-2
Summary of U.S. Transboundary/Canadian Impacts
The No Build Versus Build Condition
Detroit River International Crossing Study

Category	No Build	DRIC in Canada
Mobility	Acceleration of negative consequences is expected as congestion in the Huron Church Road corridor causes spillover traffic to disrupt surrounding communities.	All alternatives would improve overall traffic operations for Huron Church Road and the surrounding area without need for local infrastructure improvements. The new crossing would reduce by almost 30 percent the amount of international truck traffic in the Huron Church Road corridor north of E.C. Row Expressway.
Economic Impacts	A continuation of past trends due to the economic downturn of auto and related industries is expected.	Changes in accessibility would benefit the Windsor/Essex County area. These changes would influence development as guided by local governing bodies.
Land Use	A continuation of past trends is expected but with acceleration of negative consequences as congestion in the Huron Church Road corridor causes spillover traffic to disrupt surrounding communities.	Land use conversion to respond to increased economic development would be expected with improved accessibility in Windsor/Essex County. Local municipalities will determine the nature and extent of such development.
Air Quality	Changes in engines and fuels are expected to, at least, partially offset possible air pollution increases in communities surrounding Huron Church Road that will realize increased spillover traffic from a congested corridor to the Ambassador Bridge.	Increases in particulate matter are forecast in the vicinity of all proposed plazas. But, all DRIC alternatives would likely have no discernible difference in air quality among them in residential areas of Sandwich Towne.
Cultural Resources	No impacts to designated heritage features. Possible future development in Brighton Beach Industrial Park could impact (displace or disrupt) one cultural landscape.	No impact to designated heritage features. Potential impact to the area of high archaeological potential (Petit Cote French Settlement) and potential of displacement/disruption to cultural landscapes (Brighton Beach and Sandwich Towne).
Community Effects	<p>Pedestrian movements along/across Huron Church Road, where schools, senior housing, shopping and a host of other community attractions exist, will be impacted by the increased traffic/congestion.</p> <p>Noise increases are expected in sensitive areas as spillover traffic from Huron Church Road infiltrates surrounding communities.</p>	<p>Plaza traffic is not expected to cause high noise impacts. Homes are usually 600 feet or more from all plazas. Crossing X-11 will impact 100 households with increased noise. Mitigation will be defined once a Preferred Alternative is chosen.</p> <p>The areas of south and west Windsor and LaSalle would benefit from having international traffic removed from local streets.</p> <p>The new access road would have an aesthetic impact on the surrounding community. Plaza A and Crossing X-11 are expected to have the greatest effect on neighborhoods.</p>
Water Quality, Wetlands, Threatened and Endangered Species	Continuation of past trends is expected, including positive efforts to protect wetlands and threatened and endangered species. Also, unwanted and often unexpected pollution impacts on water bodies as associated with industrial operations are to be expected.	<p>Continuation of past trends is expected, including positive efforts to protect wetlands and threatened and endangered species. Also, unwanted and often unexpected pollution impacts on water bodies as associated with industrial operations are to be expected.</p> <p>Plaza C/Crossing X-11 is expected to have a relatively low impact. Plaza B1/Crossing X-10B, Plaza A/Crossing X-10A and Plaza B and B1 via Ojibway Parkway are expected to have a moderate impact. Crossing X-10 and Plazas B and B1 would encroach on the Ojibway Black Woods Environmentally Sensitive Area.</p> <p>Plaza A/Crossing X-11 via Brighton Beach, Plaza A/Crossing X-11 and Plaza A/Crossing X-10A are expected to displace more provincially rare vegetation communities and species.</p> <p>Plaza A/Crossing X-11 via Ojibway Parkway would have fewer impacts to natural features than Plaza A/Crossing X-11 via Brighton Beach.</p>

Source: The Corradino Group of Michigan, Inc.

4.2.1 Traffic Changes

4.2.1.1 U.S.

The community north of I-75 will experience both positive and negative indirect effects as a result of the DRIC. Changes in access will occur as follows (Figure 4-1).

Clark Street now provides access to Maybury Elementary School, Webster Elementary School, Clippert Academy, Earhart Middle School and Western International High School. It also serves Clark Park. Clark Street with the DRIC would likely draw more neighborhood traffic because it will be the only east-side connector to I-75. But, access directly to and from southbound I-75 will be eliminated in all DRIC Practical Alternatives but #16. On the other hand, Clark Street will experience a significant reduction of international truck traffic with the completion of the Ambassador Bridge Gateway Project.

Junction Street now borders dense residential uses with significant investment in refurbished homes. Holy Redeemer Elementary School and Church is located at Junction and Vernor. Access across I-75 will be eliminated with all DRIC Practical Alternatives but one (Alternative #14). Access to northbound I-75 will remain by way of Clark Street. Southbound access would be via the I-75 service drive. In some cases, motorists would be required to travel more than a mile to Springwells Street to gain access to southbound I-75.

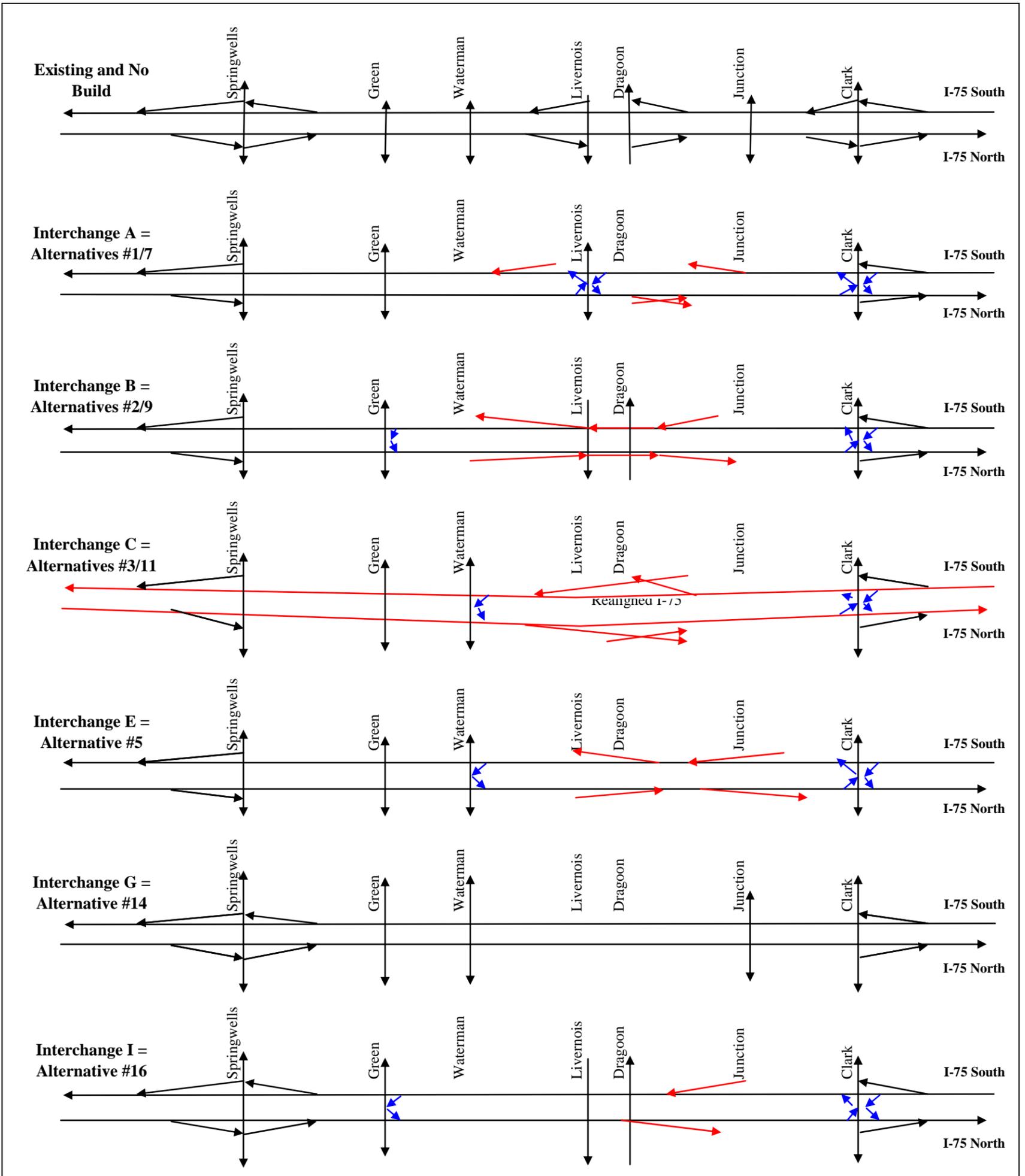
Livernois/Dragoon now border dense residential uses (much of it near I-75 is in poorer condition than farther north) plus the Livernois-Junction Yard Intermodal (Truck/Rail) terminal north of Vernor. The reduction of truck traffic on these two streets has long been an issue of the community north of I-75. For all DRIC Practical Alternatives, the Livernois/Dragoon interchange with I-75 will be eliminated. And, for a number of alternatives (#3, #5, #11 and #14) both Livernois and Dragoon will not cross I-75 as they do today. This will cause traffic to be redirected to as far east as Clark Street or as far west as Green to cross I-75.

Waterman serves another dense residential-property area and provides a direct connector to the CSX entry gate of the Livernois-Junction Yard. Access across I-75 via Waterman will be eliminated by several Practical Alternatives (#1, #2, #7 and #9). This will cause travel over I-75 to be redirected to Green, immediately to the west.

Springwells now borders commercial uses for several blocks north of I-75, then a mix of commercial and residential land uses as it meets the Vernor Avenue commercial corridor, a regional attraction for Hispanics. As with Livernois/Dragoon, the community along Springwells north of I-75 has long requested the reduction of truck traffic in this area. This will likely occur as all DRIC Practical Alternatives, but Alternatives #14, and #16, which would eliminate I-75 direct access to and from the north.

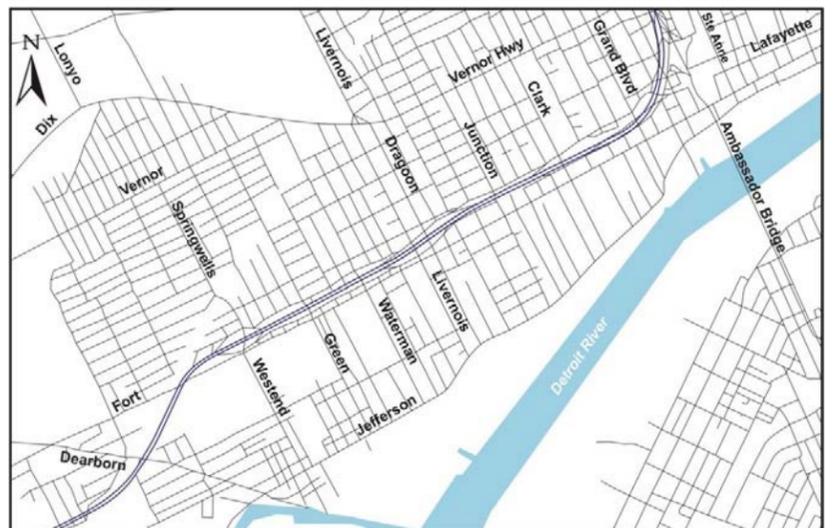
The Springwells interchange changes that accompany all DRIC Practical Alternatives but #14 and #16 will also negatively affect Arvin Meritor, a large auto supplier located at Fort and Waterman Streets and the continued development of Springwells Industrial Park between the Rouge River and Fort Wayne along the Detroit River. They now rely on a full interchange at Springwells.

Figure 4-1
Detroit River International Crossing Study
Local Road and Ramp Closures and Additions
with Practical Alternatives



If a link is gone, it is not in future scenario
 = new or revised ramp
 = new crossover u-turn

Source: The Corradino Group of Michigan, Inc.



4.2.1.2 Canada

Currently, the Huron Church Road/Highway 3 corridor is generally operating with some congestion and acceptable levels of service during the peak hours, primarily because of the addition of U.S.-bound border processing capacity. But, due to the projected growth in the corridor, particularly in the international trucks (130% increase by 2035) traffic operations are expected to deteriorate significantly by 2015 and beyond, particularly for southbound/eastbound traffic during the PM peak hour at the 17 intersections along Huron Church Road.

The growth in local, regional and international traffic and associated levels of congestion on the corridor will force cross-border Ambassador Bridge traffic to spill into adjacent roadways rather than use Huron Church Road. Several intersections throughout the entire corridor are expected to operate at or near full capacity for peak direction through-movements by 2015, and beyond, particularly during the PM peak hour. For a corridor such as Huron Church Road/Highway 3, even one poorly performing intersection has the capability to significantly reduce throughput to and from the Ambassador Bridge, and the effects of one intersection can quickly move upstream to adjacent intersections. When multiple intersections are at or near the point of failure, it indicates that isolated improvements at select intersections will not be sufficient to address the traffic problems of the entire corridor and overall traffic breakdown will occur.

With a new border crossing serving the U.S., analyses of the transboundary traffic impacts in Canada indicate all of the DRIC alternatives will significantly improve overall traffic operations and meet overall road transportation system needs. The alternatives will also serve to improve or maintain existing levels of service at most intersections for the area around Huron Church Road. All users of the roadway will be able to move more efficiently and effectively through the corridor. Most international traffic will use the new mainline facility, either to the new crossing or rejoining Huron Church Road in the vicinity of the E.C. Row Expressway. The new crossing will provide commercial operators with another route to and from the United States, reducing the proportion of international truck traffic in the corridor by almost 30 percent north of the E.C. Row Expressway. This will result in significant reductions in congestion and delay without the need for local infrastructure improvements. The details of the analyses supporting these impacts can be found in the report entitled, *Practical Alternatives, Evaluation Working Paper, Level 2 Traffic Operations Analysis*, prepared by URS/Canada in January 2007 and available on the project Web site (www.partnershipborderstudy.com).

4.2.2 Economic Impacts

4.2.2.1 U.S.

The economic analysis done as part of the DRIC Study determined that, if more border crossing capacity is not built over the next 20 years between Detroit and Windsor, Michigan would fail to capture 25,000 jobs and Ontario 16,500 jobs in 2035. Almost all these jobs would be in the manufacturing and related sectors.⁴ At the same time, the introduction of new transportation facilities changes the accessibility of an area and impacts population and employment growth. The DRIC induced demand analysis examined the shifts in growth associated with building a new river crossing between Detroit and Windsor.⁵

⁴ HLB, *Detroit River International Crossing Study Regional and National Economic Impact of Increasing Delay and Delay-Related Costs at the Detroit River Crossings Draft Report*, August 9, 2006.

⁵ The Corradino Group of Michigan, Inc., *Detroit River International Crossing Study Induced Demand Analysis Technical Report*, October 2007.

Table 4-3 shows the 2005 base year, the 2035 baseline population forecasts and the population shifts in the SEMCOG region expected to be induced by a new border crossing. Figure 4-2 depicts those shifts in 2035 in the SEMCOG region.

A new border crossing is forecast to cause population shifts resulting in a net increase of 4,600 people in the SEMCOG region, all coming from outside Michigan, because of changes in accessibility only. This reflects a change of less than one percent of the region's growth because a new border crossing is constructed. In the DRIC study area, there will be virtually no change in population induced by a new crossing.

Table 4-4 and Figure 4-3 present the accessibility-induced employment impact of the border crossing expressed as net employment change. Concentrations of net positive changes are located along I-275 and I-75 in Wayne County. The latter route is a major part of an interstate "auto alley" that serves the North American auto industry through the U.S. to southern states such as Kentucky, Tennessee and Georgia. Inside the study area, the area in Detroit and Dearborn closest to the I-94 interchange at Wyoming Avenue, near the Livernois-Junction Yard intermodal (Truck/Rail) terminal, is expected to see a small increase in employment due to this change in accessibility.

Changes in accessibility with the proposed new border crossing will shift about 3,350 jobs into the SEMCOG region, all from outside Michigan. Most of these (1,800 jobs) would be to Wayne County, along the I-75 corridor that comes out of Ohio, Kentucky, and points south, as noted above. Overall, this represents less than one percent of the region's forecast employment growth from 2005 to 2035.

4.2.2.2 Canada

The U.S. induced demand analysis is based on a bi-national network which allows an understanding of the change in accessibility on both sides of the border. Figure 4-4 presents changes in accessibility between 2005 and 2035 assuming a new border crossing. The improvement in accessibility is most significant in the Windsor area (i.e., Essex and Chatham-Kent Counties). This is largely due to extending the limited-access facility (Hwy. 401) to the new bridge; currently direct access to the Detroit River crossings is via arterial streets, as noted earlier. This accessibility change will influence development in the Windsor area, as guided by local governing bodies.

4.2.3 Land Use Changes

4.2.3.1 U.S.

If the DRIC crossing is built, land use changes are likely to reshape the pattern of vacant/underutilized land. Figures 4-5 and 4-6 indicate the future possibilities of development in the "host" community, Delray, if the project is not implemented. Figure 4-5 indicates a continuation of past practices/trends by which Delray has increasingly been changed from a residential enclave to industrial uses or abandoned, the former largely associated with manufacturing and transportation logistics (refer to Figure 2-10). On the other hand, Figure 4-6 depicts the community's view of the future also without a new crossing. It differs from Figure 4-5 in that revitalizing the area on the west side of Delray is more of a focus of the community, not incremental conversion to industry. Figure 4-7 illustrates the desire of the community with a DRIC crossing in place. Simply stated, the vision of the Delray community for this condition is:

Table 4-3
Detroit River International Crossing Study
Impact of DRIC on Redistribution
of 2005-2035 Population Forecasts

	2005 Base Year Population	2035 Baseline Population Forecast	2005 - 2035 Population Change	Net Population Impact of New Border Crossing
City of Detroit	928,587	853,004	-75,583	244
Balance of Wayne Co.	1,118,830	1,140,842	22,012	1,584
Livingston County	178,422	301,799	123,377	0
Macomb County	810,096	960,283	150,187	196
Monroe County	157,241	204,130	46,889	786
Oakland County	1,225,470	1,385,106	159,636	1,638
St. Clair County	170,702	211,976	41,274	9
Washtenaw County	349,459	469,640	120,181	106
Wayne County	2,047,417	1,993,846	-53,571	1,828
SEMCOG Region	4,938,807	5,526,780	587,973	4,563

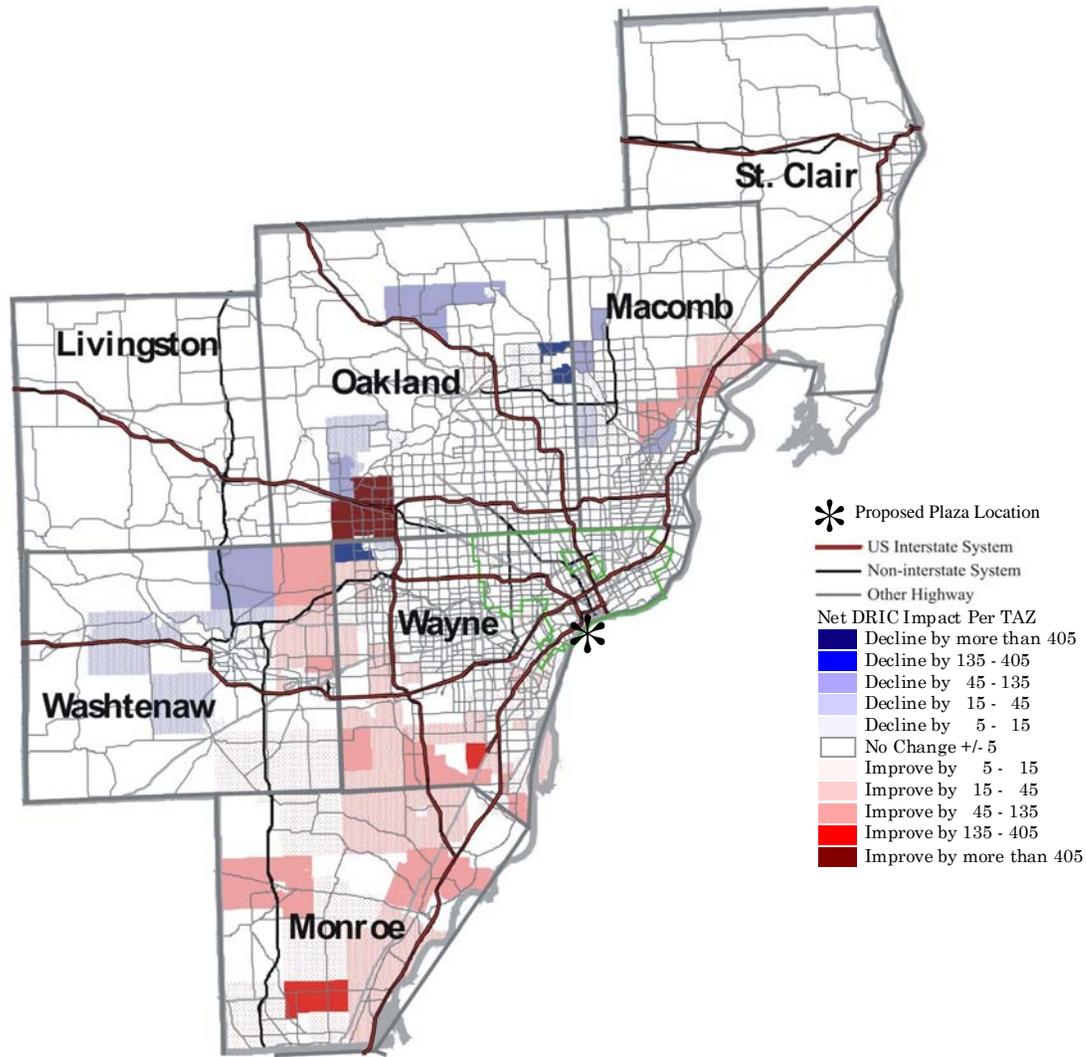
Source: The al Chalabi Group

Table 4-4
Detroit River International Crossing Study
Impact of DRIC on Redistribution
of 2005-2035 Employment Forecasts

County	2005 Base Year Employment	2035 Baseline Employment Forecast	2005 - 2035 Baseline Employment Change	Net Employment Impact of New Border Crossing
City of Detroit	330,282	305,203	-25,079	106
Balance of Wayne Co.	660,699	744,134	83,435	1,726
Livingston County	70,537	111,116	40,579	0
Macomb County	393,675	447,577	53,902	132
Monroe County	57,903	80,234	22,331	364
Oakland County	955,886	1,144,257	188,371	886
St. Clair County	66,995	85,504	18,509	60
Washtenaw County	244,185	302,707	58,522	78
Wayne County	990,981	1,049,337	58,356	1,832
SEMCOG Region	2,780,162	3,220,732	440,570	3,352

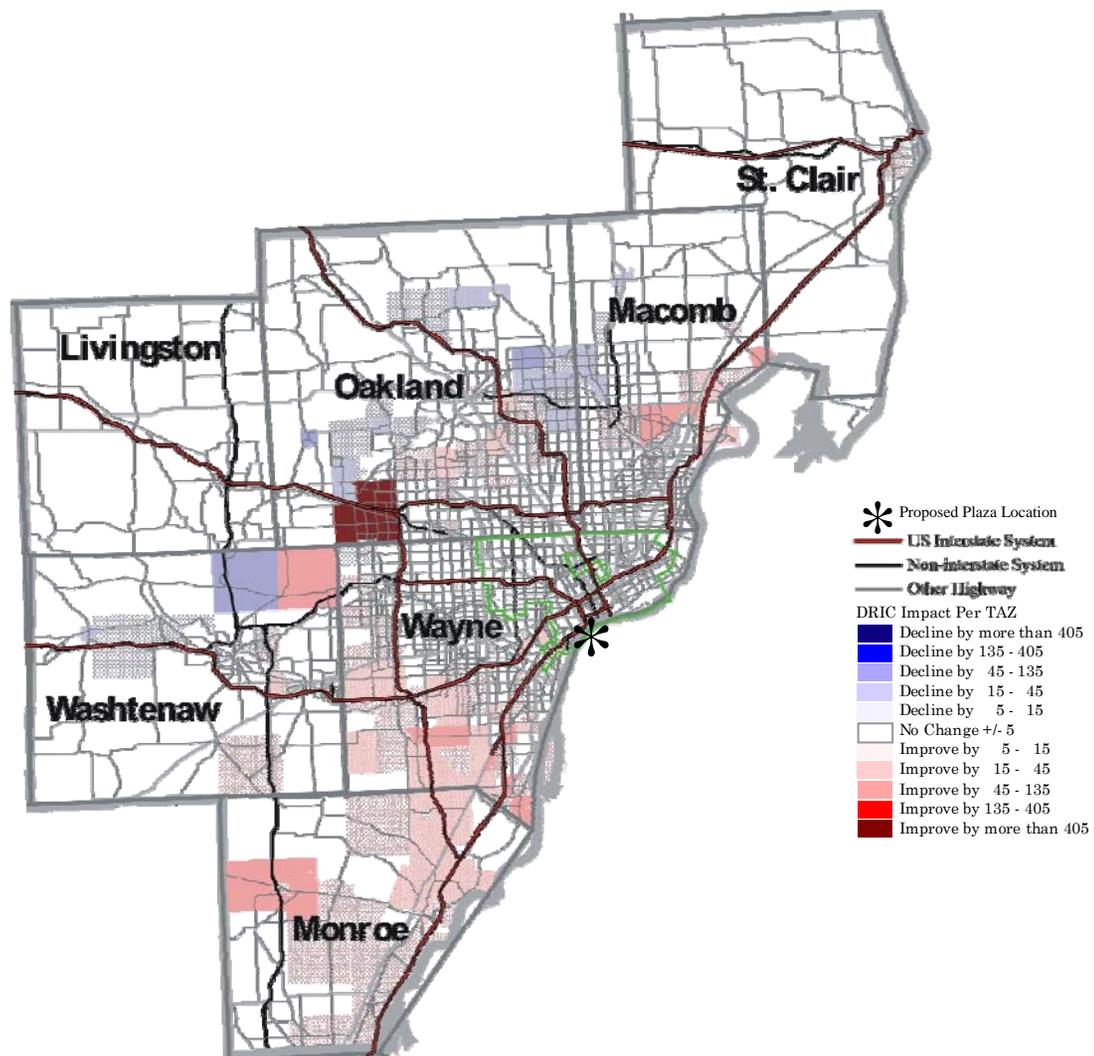
Source: The al Chalabi Group

Figure 4-2
Detroit River International Crossing Study
Population Redistribution
Net Impact per TAZ



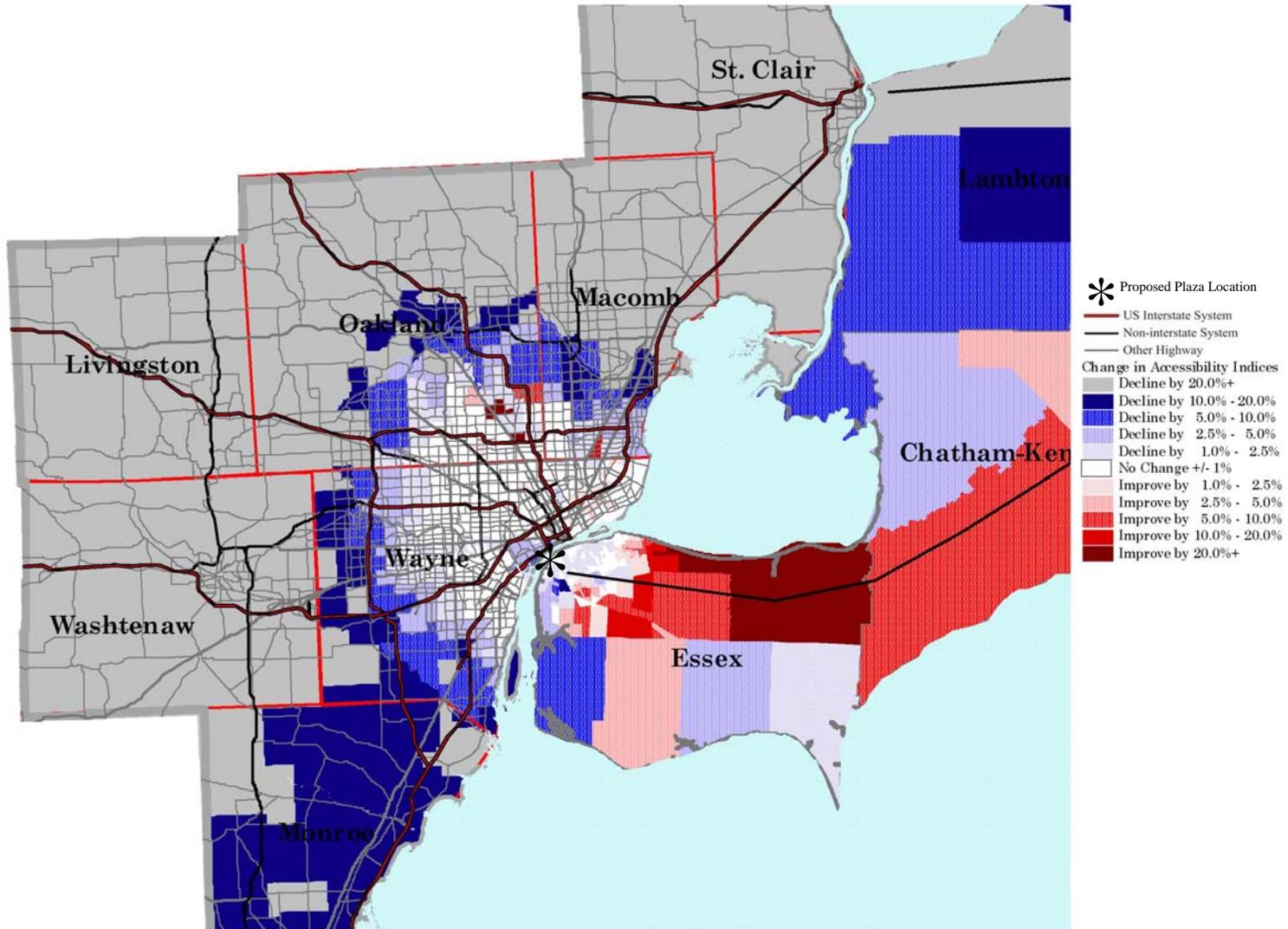
Source: The al Chalabi Group in association with The Corradino Group of Michigan, Inc.

Figure 4-3
Detroit River International Crossing Study
Employment Redistribution (Access-Induced)
Net Impact per TAZ



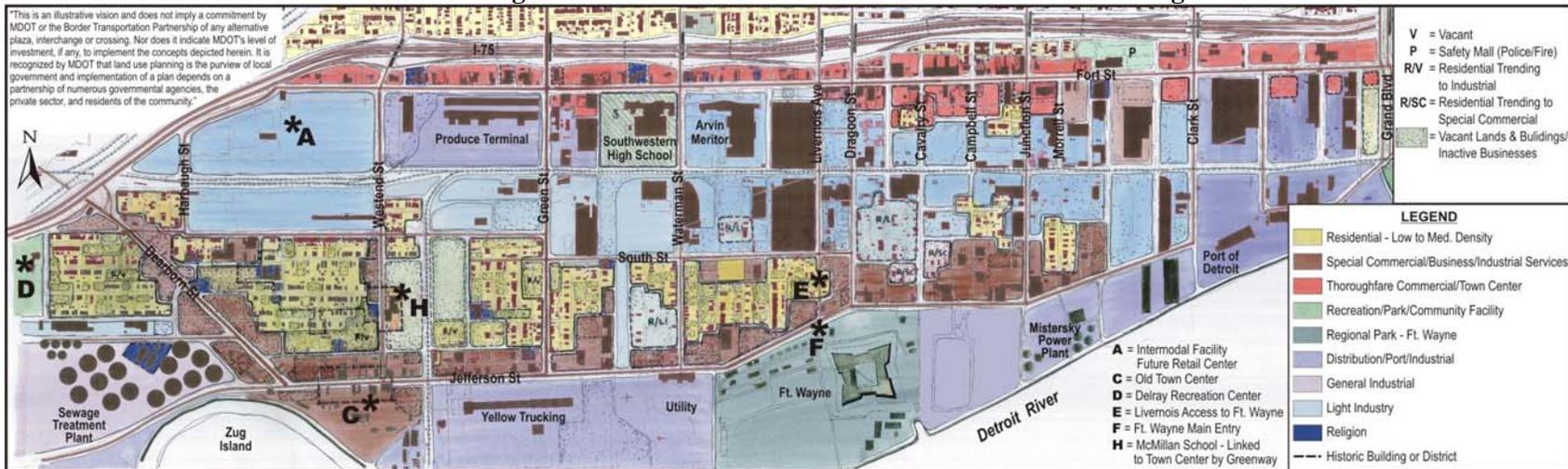
Source: The al Chalabi Group in association with The Corradino Group of Michigan, Inc.

Figure 4-4
Detroit River International Crossing Study
Changes in Accessibility Indices
2005-2035 Build Scenario



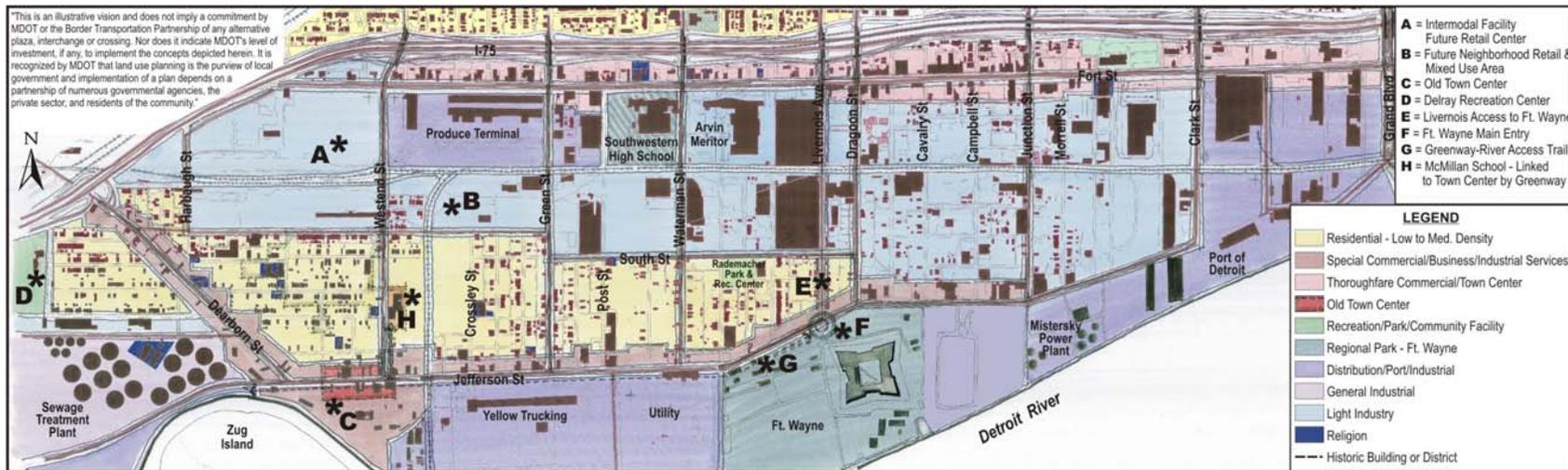
Source: The al Chalabi Group in association with The Corradino Group of Michigan, Inc.

Figure 4-5
Detroit River International Crossing Study
Continuing-Trends Land Use Pattern without a New River Crossing



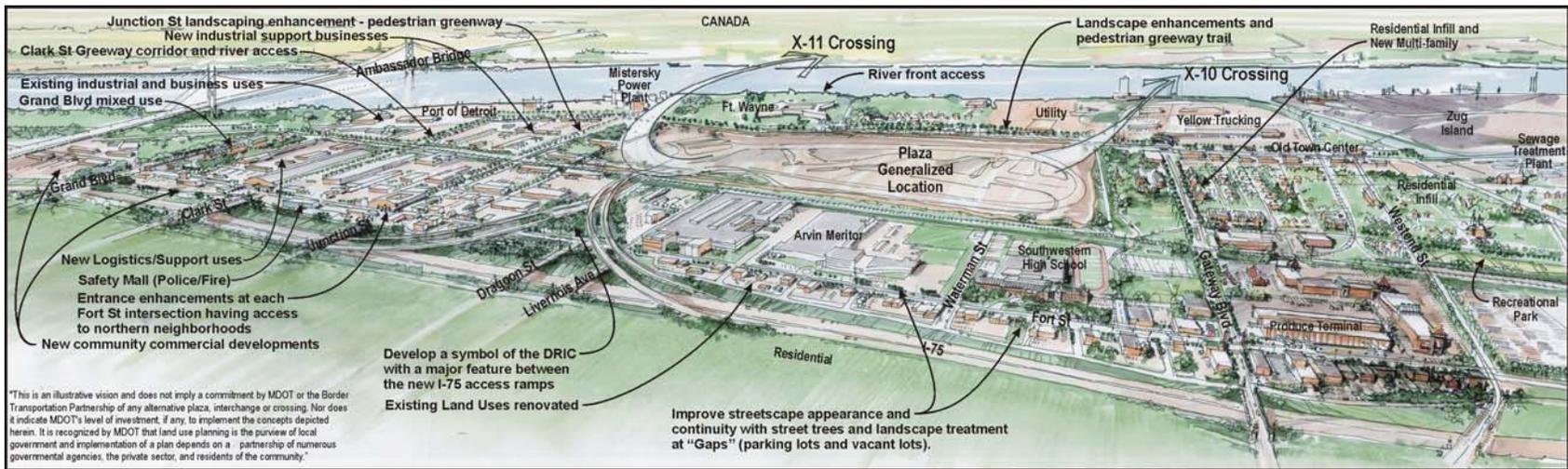
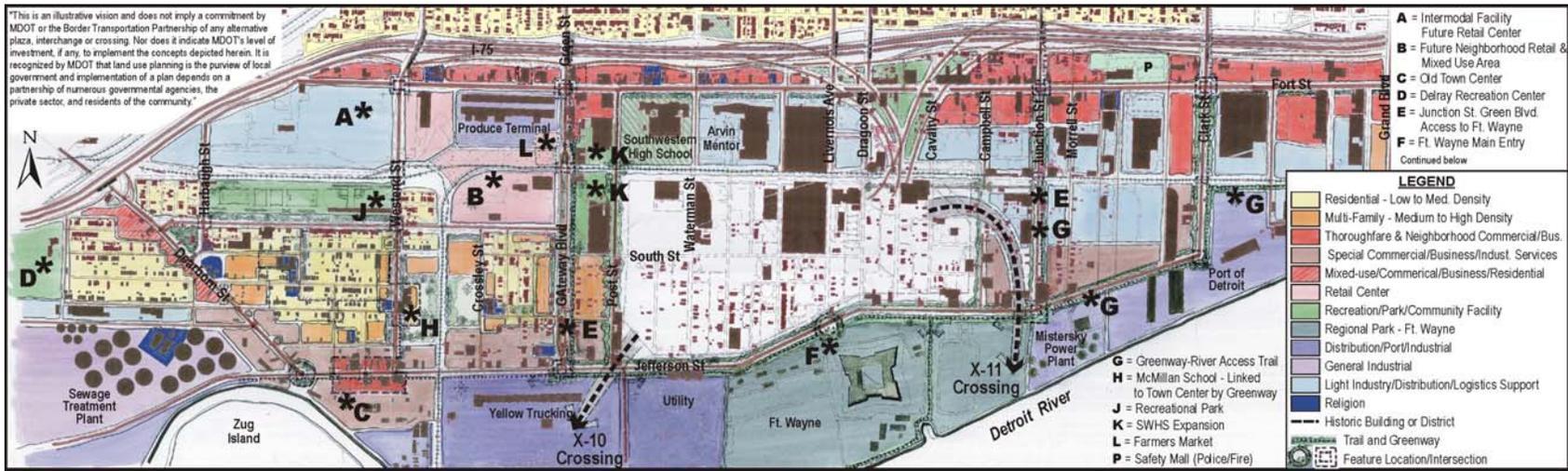
Source: The Corradino Group of Michigan, Inc.

Figure 4-6
Detroit River International Crossing Study
Community-based Delray Land Use Pattern without a New River Crossing



Source: The Corradino Group of Michigan, Inc.

Figure 4-7
Detroit River International Crossing Study
Community-based Delay Land Use Pattern with a New DRIC Crossing



Source: The Corradino Group of Michigan, Inc.

The area between Zug Island and the foot of the Ambassador Bridge, known as the “host community” of a new river crossing, is experiencing an ever-improving quality of life.

The West Delray neighborhood is intact with no relocations because of the new river crossing, which is publicly owned and operated. Free housing has been provided to those few who were relocated. Improvements to housing and small businesses in the area are financed through a special fund designed to benefit the “host community” of the new river crossing. And, programs like the Neighborhood Enterprise Zone (NEZ) control the taxes of those who have remained in, and others who moved to, the area. Development that occurs in and around the new crossing supports good paying jobs for the local residents. The City of Detroit supports this growth in a number of ways, including providing significant police and fire protection. Further support of the area, including its air quality and the health of its residents, is caused by routing heavy trucks around the area over designated routes that are built to last.

It is noted that the plan in Figure 4-5 is the more likely outcome than the concept shown in Figure 4-6, if a new crossing is added without a strong state/federal/local partnership plus private sector investment. The plan shown in Figure 4-7 is based on such a proposed partnership(s) and would potentially allow West Delray to house a compatible mix of jobs and residences, growing the population from about 1,500 people to 4,000± over the next 20 years.

At a broader level than Delray, and as noted earlier, building more border crossing capacity in Southeast Michigan will change accessibility in the bi-national metropolitan area. Those accessibility changes alone would create about 1,800 jobs in Wayne County. If all of those were to locate in the study area, about 120 acres would be required to accommodate them, or an average of about six acres per year for each of the next 20 years. An inventory of vacant/brownfield space in the study area indicates many more than 120 acres are available for redevelopment. Therefore, there are no negative consequences expected with such development/redevelopment. An additional 900 jobs can be expected to be induced in Oakland County, if the DRIC project were implemented due just to improved accessibility. Oakland County can absorb this growth; it is only two percent of its forecast job growth.

4.2.3.1 Canadian Impacts

In Canada, accessibility improvements with a new crossing system, including a new six-lane freeway connection from Highway 401 to the new bridge, are projected to be more significant than in the SEMCOG part of the bi-national metropolitan area (refer to Figure 4-4). This could lead to increased development including more jobs, if local governing bodies so choose. Specifically, from a trade perspective, it is estimated that the Windsor-Essex region accounts for more than three percent, or \$7.5 billion, of Ontario’s international export GDP. Any improvement to the speed and efficiency of goods and services crossing the border will have a major positive impact on the economy of the Windsor-Essex region as well as the economy of the Province of Ontario. This expected improvement in trade would benefit numerous industrial businesses, improving gross revenues and increasing employment. Furthermore, there would be much greater opportunity for future industrial development along the 401 corridor.

For commercial and tourism-travel related businesses the benefits will also be positive. Principally, the new border crossing and highway connection will increase the speed and ease of travel for people, increasing the number of people traveling through the Windsor-Essex region

and southern Ontario. This will, in turn, enhance business and future opportunities for numerous commercial and tourism-travel related businesses in these areas, especially along Highway 401, such as hotel/motels, restaurants, gas stations, retail stores, and tourist attractions. The improved movement of goods will also positively affect these businesses, as supplies will be able to be transported more quickly and efficiently.

4.2.4 Air Quality

4.2.4.1 U.S.

The direct air quality effects of the proposed DRIC alternatives are included in the *Air Quality Impact Analysis Technical Report*. Indirect effects focus on sensitive receptors, like Southwestern High School, located on Fort Street (M-85), a state trunkline highway to the west of the proposed plaza area. The school fronts directly onto Fort Street. It would be separated from the project's plaza by ball fields, tennis courts, a railroad track, and a buffer zone around the plaza. Between the proposed project and the Ambassador Bridge on the north side of I-75 are the Amelia Earhart Middle School and Daniel Webster Elementary School. Farther west at Waterman is the Beard Early Childhood Center. The project will not increase traffic on I-75 until the period 2020 to 2025. So, there is little difference among the DRIC Practical Alternatives, from one another, or between them and the No Build condition with respect to sensitive receptors in the area of I-75 and south in Delray.

North of I-75 there is an opportunity to reduce truck traffic on the Livernois/Dragoon one-way pair that serves a dense residential area. These streets carry a substantial volume of trucks today and serve the Livernois/Junction Yard intermodal terminal one mile to the north. A proposed project, called the Detroit Intermodal Freight Terminal, would reorient the major entrance to the intermodal yard to restrict use of the Livernois/Dragoon one-way pair. All DRIC Practical Alternatives offer the best opportunity to virtually eliminate direct access by heavy-duty diesel trucks via Livernois/Dragoon to this intermodal terminal, and the residential area south of it, by modifying the ramp system on I-75. This would improve air quality conditions in a section of Southwest Detroit.

The Ambassador Bridge plaza has a cluster of relatively dense residential units immediately to its east. This area, which is around Ste. Anne's Catholic Church, has seen strong redevelopment and infill housing in the last decade. The DRIC would divert traffic from this area, reducing pollution concentrations in another area of Southwest Detroit.

The changes associated with the proposed DRIC Alternatives would shift traffic in such a way that the congestion at all intersections would be better than Level of Service D. Levels of traffic service are like grades in school. A is excellent; F is failing; D is acceptable. Level of Service C is more than acceptable. Under these conditions, carbon monoxide concentrations at sensitive locations are not forecast to violate federal standards.

For example, the highest one-hour and eight-hour carbon monoxide (CO) concentrations are found at the residence along the north side of I-75 on Campbell. Forecasts of one-hour CO concentrations for 2013 – the year the DRIC project is to open – and 2030 – the year that SEMCOG uses in the Conformity Determination – are 2.9 and 3.8 parts per million (ppm), respectively, compared to the standard of 35 ppm. Eight-hour values are 2.1 and 2.8 ppm, respectively, compared to the standard of 9 ppm. The analysis of the residence on Campbell Street addresses the closest approach of the DRIC Practical Alternatives to a dwelling unit

combined with the highest ramp volume of any of the alternatives. Conditions at all other intersections in all years under all scenarios are less likely to aggravate CO concentrations.

In terms of Mobile Source Air Toxics (MSATs), analysis indicates while the total vehicle MSAT values for formaldehyde, 1, 3-butadiene, and acetaldehyde would increase slightly in 2030 as compared to 2013, diesel exhaust would be significantly reduced. Further, the data reflect MSATs in the local Southwest Detroit area near the proposed new river crossing system would be offset by a corresponding decrease in MSATs at the Ambassador Bridge compared to the No Build condition.

The conclusion of a qualitative particulate matter $PM_{2.5}$ and PM_{10} hot-spot analyses is that the proposed project will not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS. This applies to both the 24-hour and annual standards. It is based on the following:

- SEMCOG and MDEQ have been moving aggressively to address air quality concerns, in general, and $PM_{2.5}$, specifically.
 - This includes programs such as diesel locomotive retrofits, and
 - Controls on consumer products.
- EPA is addressing the non-local component of $PM_{2.5}$ pollution through programs such as the Clean Air Interstate Rule, stricter controls on vehicle emissions, and the low-sulfur fuel introduced in 2007.
- A number of major polluters that were believed to be significant contributors to the $PM_{2.5}$ emission problem have closed. Enforcement controls are being applied at other local industries such as Severstal Steel and Marathon Oil and improvements are planned at U.S. Steel.
- On a local, on-road basis in Southwest Detroit, provision of a new bridge to Canada will split on-road $PM_{2.5}$ between the Ambassador Bridge and a new bridge. This will occur after the time frame of the need to reach attainment for the $PM_{2.5}$ standards in 2010. If the State Implementation Plan (SIP) is successful, the SEMCOG region will be in attainment for the $PM_{2.5}$ 24-hour and annual standards before DRIC project implementation is complete.
- Information demonstrates that vehicular activity in Southeast Michigan can occur without violation of standards. The Livonia monitor is in close proximity to some of the heaviest truck movements in the region and is not violating the $PM_{2.5}$ standards. And, this is occurring before the 2007 elimination of sulfur from fuels and more stringent diesel engine requirements.
- Efficiencies can be expected from increased enrollment in the NEXUS and FAST dedicated-lanes programs when a clear lane through the border area becomes available with the DRIC. Such improvement will also occur with the Ambassador Bridge enhancement project, when implemented.

4.2.4.2 Canada

The transboundary impacts in Canada of the proposed DRIC alternatives are cited as follows based upon analysis included in the report Practical Alternatives Evaluation Working Paper, Air Quality Impact Assessment prepared by URS/Canada in August 2007. Reference to Figure 4-8 will aid this discussion.

- Analysis indicates increases in the predicted maximum PM_{2.5} and NO_x concentrations in the vicinity of all proposed plazas (refer to Figures 1-3 and 4-8). These increases are experienced up to 800 feet away from the property boundaries of each plaza.
- None of the plaza options would result in a discernible difference in the maximum predicted concentrations of PM_{2.5} and NO_x for Sandwich Towne.
- All alternatives would result in an increase in concentrations over the No Build alternative for the Armanda Street area (Figures 4-9A, B and C). The potential to mitigate these changes would need to be further examined.
- Plaza A results in marginally higher concentrations for Armanda Street than Plaza B due to the alignment of the connecting access road under certain conditions.
- Only the X-11 crossing has the potential for slight increases in air pollutant concentrations, relative to the No Build option, for portions of Sandwich Towne within 800 feet of the crossing under worst-case meteorological conditions, which usually occur between dusk and dawn or in cloudy conditions with light wind speeds.

4.2.5 Community Effects

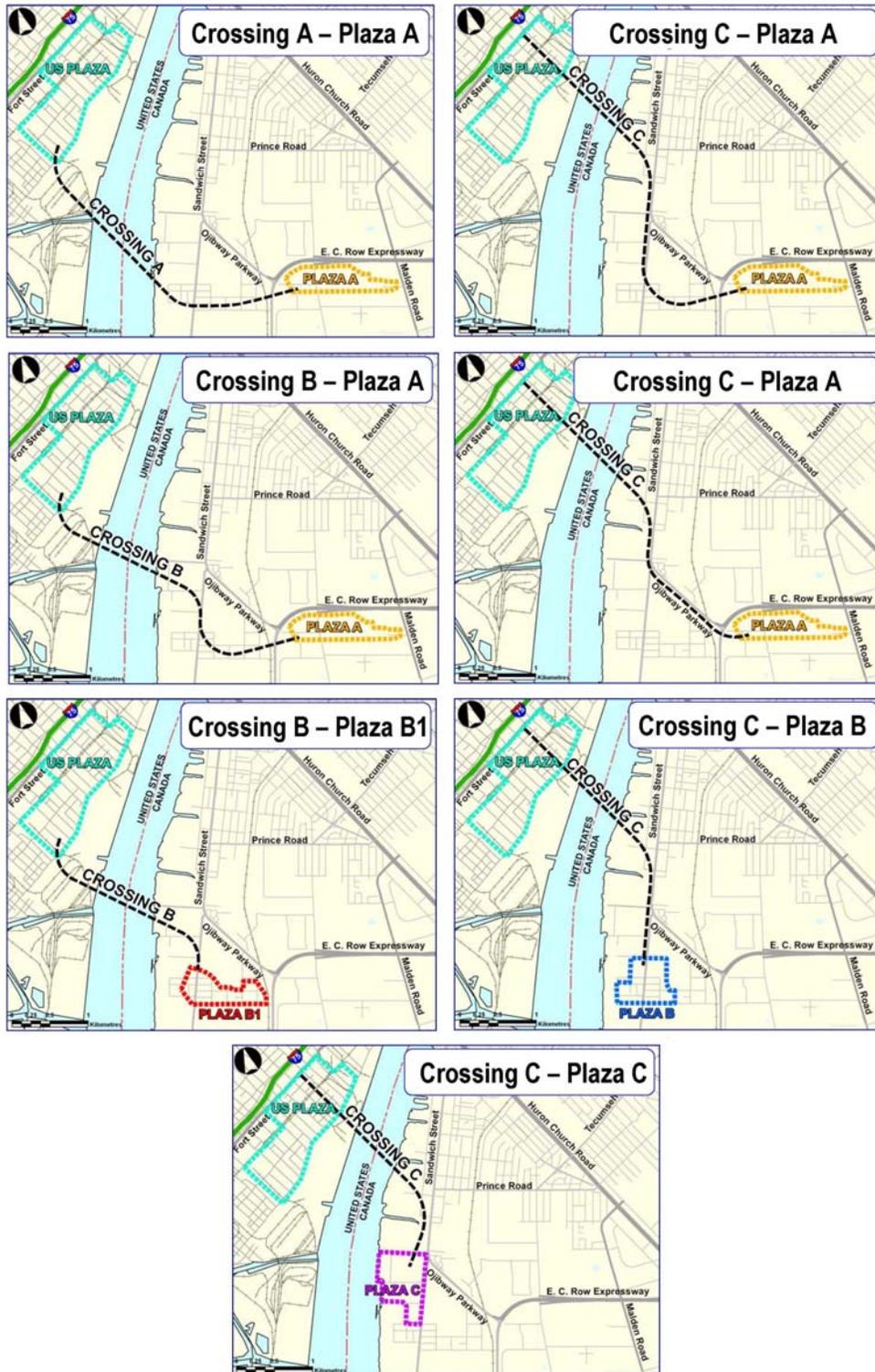
4.2.5.1 U.S.

If the land use plan shown in Figure 4-7 is implemented, the Delray community's cohesion will likely be restored. Nonetheless, to arrive at that point by building the new border crossing system 324 (Practical Alternative #3) to 414 (Practical Alternative #5) dwelling units will be acquired. This includes 100 units in two apartment buildings, one north of I-75 with 36 units and the other south of I-75 with 64 units. Many of the occupants of these dwelling units are renters. The 41 (Practical Alternative #14) to 56 (Practical Alternative #11) businesses to be acquired, if the project is approved, are small operations, employing a total of 685 to 920 people.

The Build Alternatives would have an adverse effect on all EJ or Title VI population groups, particularly when added to past intrusions in the area of I-75 and the Detroit Water Board's expansion of a sewerage treatment plant in Delray. The potential impacts are:

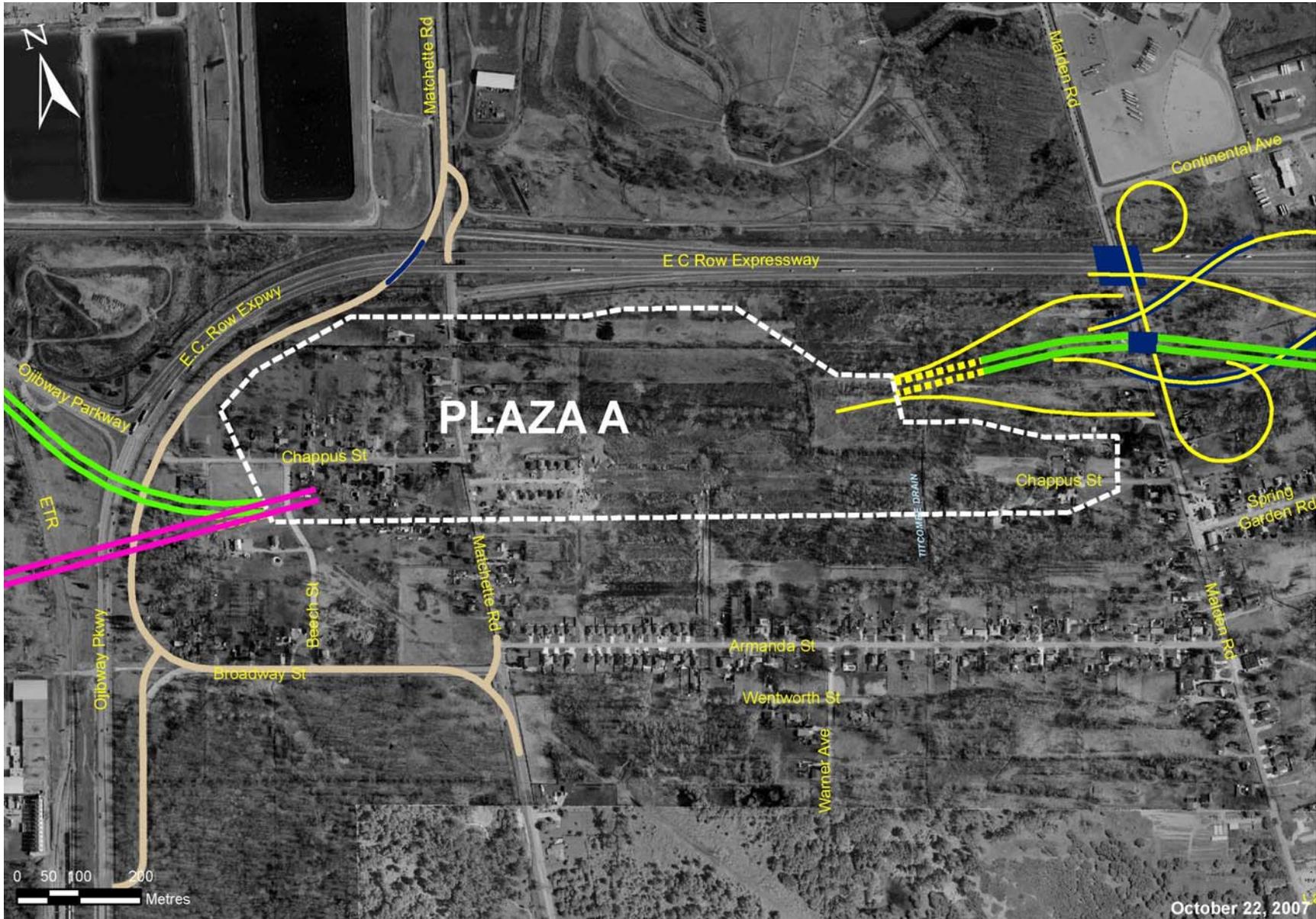
- Between 324 and 414 households would be relocated.
- Between 685 and 920 jobs may be relocated from the Delray area. Some are held by minorities and low-income people. This is particularly true for those businesses taking advantage of the Empowerment Zone, which allows them to gain tax credits when they employ people from the local area.
- Three cultural resources, such as the St. Paul African Methodist Episcopal Church, would be lost.

Figure 4-8
Detroit River International Crossing Study
Canadian Crossings and Plazas



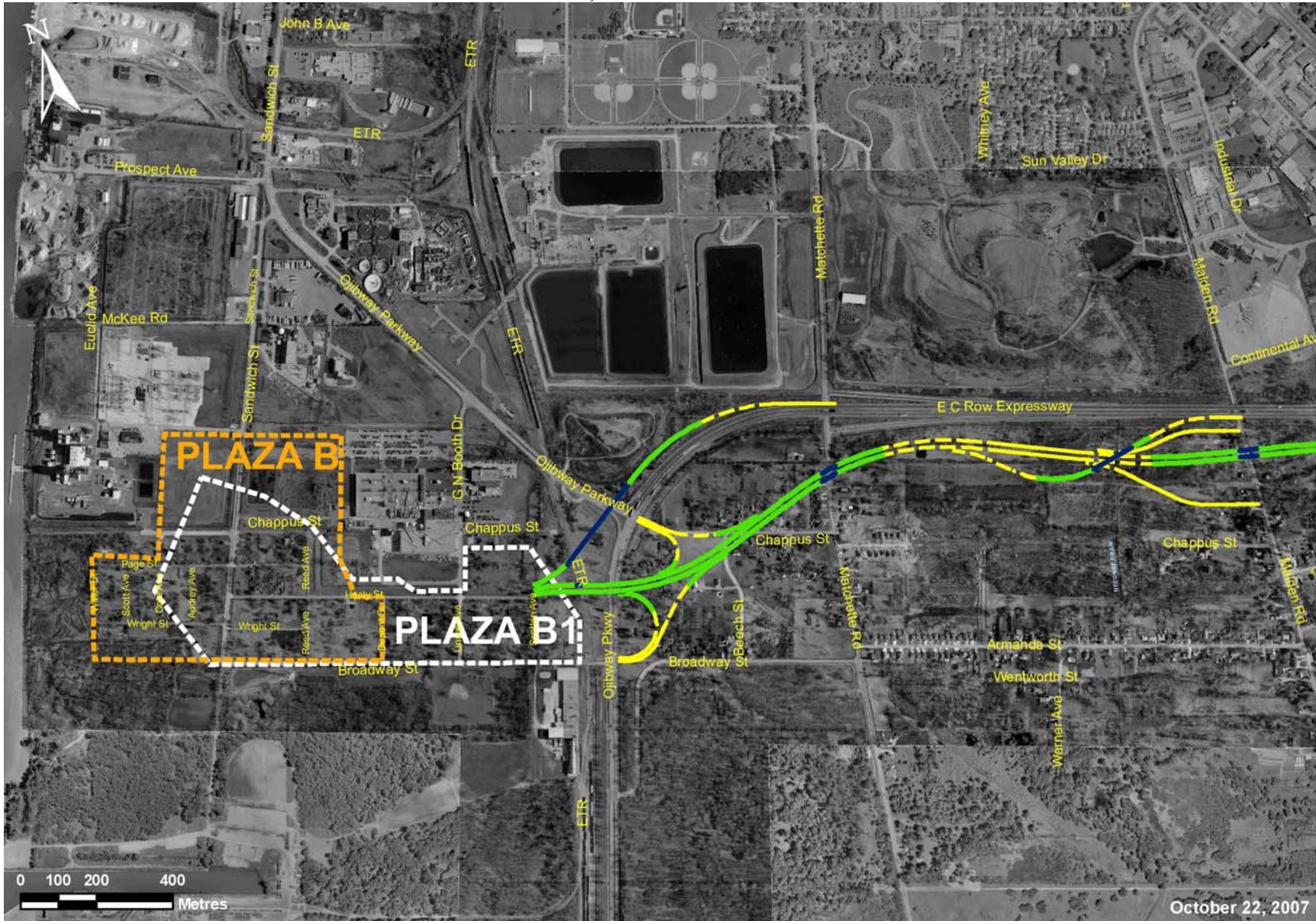
Source: URS Canada

Figure 4-9A
Detroit River International Crossing Study
Armanda Street Area of Windsor
Plaza A and Access Roads



Source: URS Canada

Figure 4-9B
Detroit River International Crossing Study
Armada Street Area of Windsor
Plaza B, B1 and Access Roads



Source: URS Canada

Figure 4-9C
Detroit River International Crossing Study
Armanda Street Area of Windsor
Plaza C and Access Roads



Source: URS Corporation

- Up to six other places of worship would be lost.
- The Rademacher Park and Recreation Center, although now closed, would be eliminated. So would one small playlot.
- Normal traffic patterns would be disrupted and travel made more difficult because interchanges with I-75 would be closed/modified. A number of streets crossing I-75 would also be closed.
- Three bus lines would be rerouted. The population affected has relatively low access to an automobile.
- Between two and four of the five pedestrian crossings of I-75 would be removed. MDOT will work with the community to re-establish pedestrian access in the area.

The introduction of the new crossing will affect the aesthetics of the Delray area. A new bridge, plaza (150+ acres) and interchange will have a significant impact. To minimize the impact of this new infrastructure, the community engaged in six meetings to address the “look and fit” of the crossing system into their community. Those results for the two bridge types, cable-stayed and suspension, are illustrated in Figures 4-10 and 4-11, respectively. Likewise, the effects on the land use/urban design of the area are shown in Figures 4-7 as well as Figures 4-12 through 4-15. The latter conditions will likely only occur if a joint federal/state/local government and private sector partnership(s) is established. It is noteworthy that, the land use plan shown on Figure 4-7, associated with building a new DRIC crossing, has been developed with both community involvement and coordination with the City of Detroit’s Planning and Development Department, Planning Commission Staff and Economic Growth Corporation, the official agencies responsible for land use planning and implementation in Detroit. Implementation of this proposed plan could have a positive impact on other parts of Detroit and nearby communities that are outside Detroit because Delray revitalization will stimulate increased property values in a broad area. Additionally, if the relocatees choose to move outside the study area, it will have a negative effect on many social service and religious organizations that will lose a good portion of their constituents, and with them, their funding.

Based on these conditions, minority and non-minority population groups will be equally impacted by the Practical Alternatives. The proposed Practical Alternatives will not have a disproportionately high and adverse effect on minority population groups in Delray. However, as the Practical Alternatives are further evaluated there may be disproportionately high and adverse effects on low-income population groups in Delray. Such impacts may include, but not be limited to, disruptions to community cohesion, possible isolation, and loss of economic vitality. These impacts will be further evaluated during the public comment period, and addressed in the FEIS.

4.2.5.2 Canada

The Canadian analysis, documented in the report Practical Alternatives Evaluation Working Paper, Social Impact Assessment, prepared by URS/Canada in August 2007, and available on the project Web site (www.partnershipbordersstudy.com). It indicates the following transboundary impacts (Refer to Figures 1-3 and 4-8).

Figure 4-10
Detroit River International Crossing Study
Cable-stayed Bridge Concept Developed through Context Sensitive Solutions Workshop
Views from U.S. Looking Towards Detroit River

Crossing X-10



Crossing X-11



Figure 4-11
Detroit River International Crossing Study
Suspension Bridge Concept Developed through Context Sensitive Solutions Workshop
Views from U.S. Looking Towards Detroit River

Crossing X-10



Crossing X-11



Figure 4-12
Detroit River International Crossing Study
Urban Design Treatments along the Proposed Gateway Boulevard South of Fort Street



Birdseye ~ Looking South

Proposed Gateway Blvd ~ View Looking South

Source: The Corradino Group of Michigan, Inc.

Figure 4-13
Detroit River International Crossing Study
Urban Design Treatments along Fort Street near Southwestern High School



Fort Street at Southwestern H.S. ~ Looking Easterly

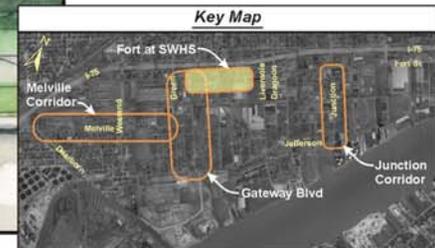


Figure 4-14
Detroit River International Crossing Study
Urban Design Treatments along Melville near Westend Street



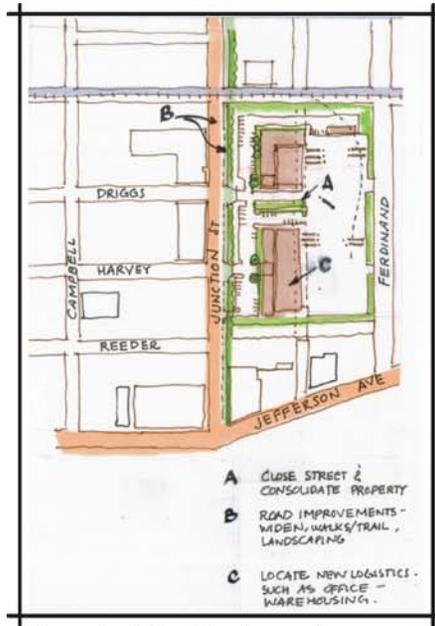
Plan ~ Melville St. Corridor

Existing View to West

Proposed View ~ Melville Street Corridor

Source: The Corradino Group of Michigan, Inc.

Figure 4-15
Detroit River International Crossing Study
Urban Design Treatments along Junction near the Delray Rail Line

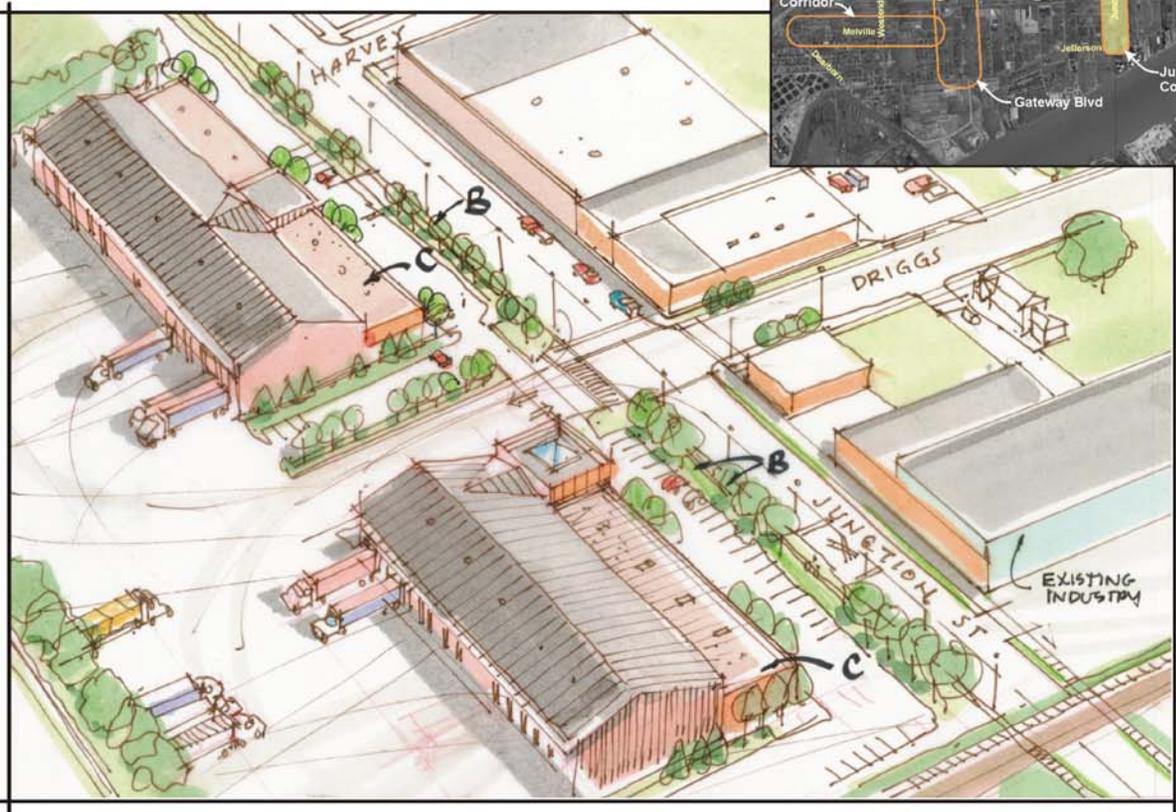


- A CLOSE STREET & CONSOLIDATE PROPERTY
- B ROAD IMPROVEMENTS - WIDEN, WALKS/TRAIL, LANDSCAPING
- C LOCATE NEW LOGISTICS - SUCH AS OFFICE - WAREHOUSING -

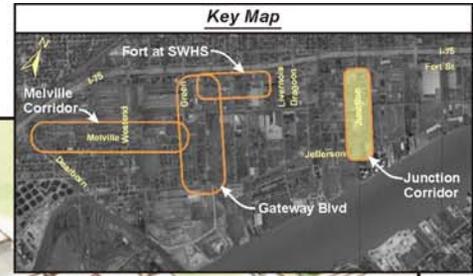
Plan ~ Logistics Development East Delray - Along Junction St.



Source: The Corradino Group of Michigan, Inc.



East Delray ~ Logistics Development Along N-S Corridors Such as Junction St.



- Plaza A, located within the Spring Garden Planning Area, an area with residential and natural open space uses, is not consistent with existing and planned land uses. It has the potential to conflict with the neighborhood characteristics of the area and may disrupt the manner in which this area functions.
- Plazas B, B1 and C and Crossings X-10A and X-10B are situated primarily in the industrial and related areas of west Windsor and are considered to be more consistent with existing and planned land uses. Plaza C would disrupt a water-dependent land use (Southwest Sales).
- Plaza C and Crossing X-11 are located closest to the Sandwich residential community. Recently, the City of Windsor adopted the *Olde Sandwich Town Community Planning Study Report*, which provides direction for residents and business owners to actively participate in the plan-making and priority-setting process for the community. According to the study, Crossing X-11 would be located on lands designated for waterfront industrial uses. Crossing X-11 would disrupt a water-dependent use (marine fueling station) by going over it, requiring modifications in operator procedures to ensure safety of the DRIC crossing and the plant.

4.2.6 Noise and Vibrations

4.2.6.1 U.S.

A detailed noise analysis of operations of the proposed DRIC bridge, plaza and interchange, plus I-75 between Springwells Street and Clark Street, examined walls for traffic noise mitigation (Figure 4-16). A subset of these walls that satisfy established criteria would be refined for the Preferred Alternative. Walls around plazas will be related to security of U.S. Customs and Border Protection operations. The walls will reduce noise levels at nearby sensitive receptors so that they are below MDOT noise abatement thresholds. Today, there are no sound-reducing devices along I-75 in the study area. This would be a positive change in part of the area. But, noise from nearby industry, which affects the area 24 hours a day will remain.

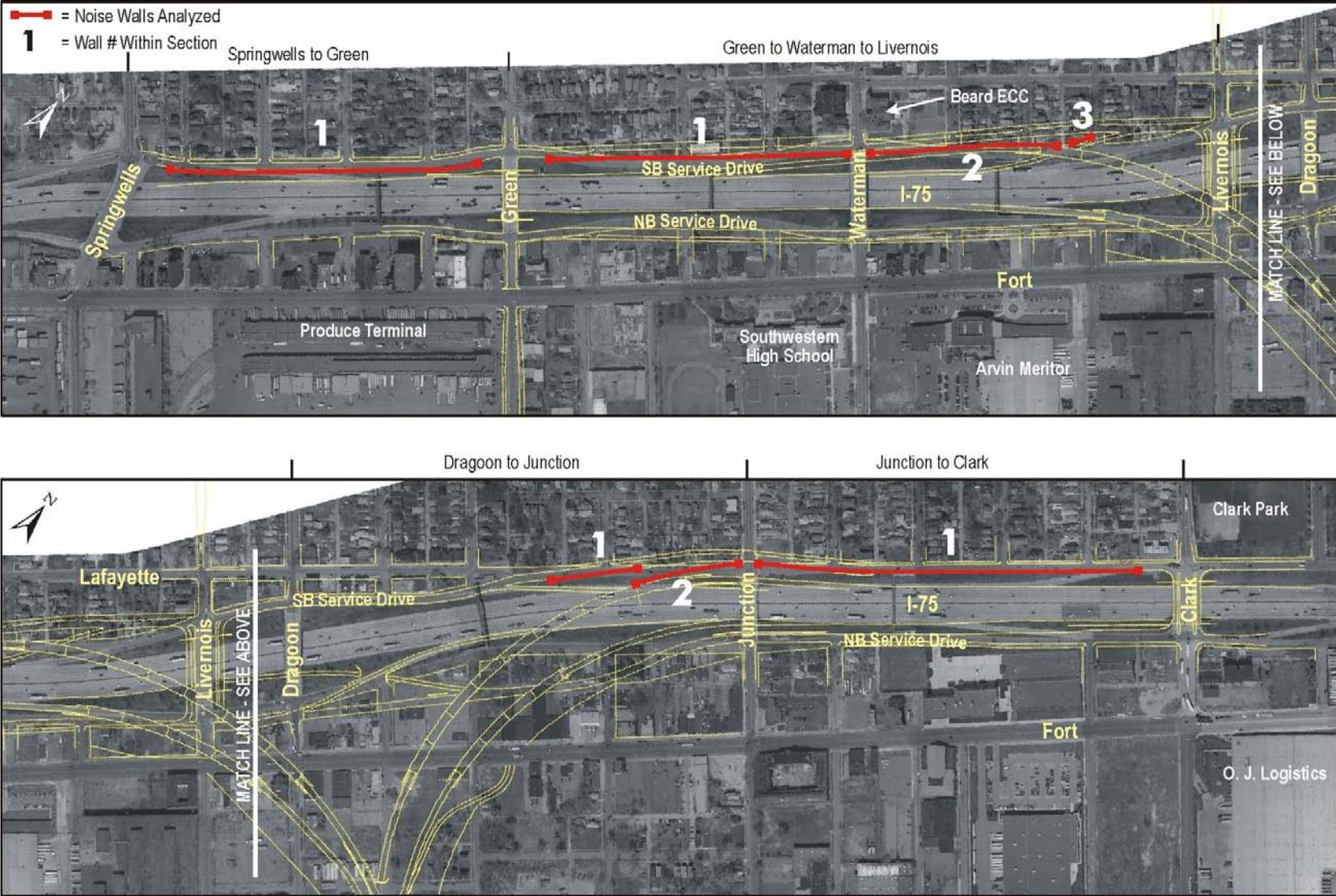
Vibration analysis indicates the activity associated with the DRIC will not create a significant difference compared to 2035 No Build conditions. Therefore, no mitigation for vibrations is proposed for any DRIC alternative. Salt mining occurs far west of the plaza area but does generate perceptible vibrations, on a regular basis, as salt is blasted loose below ground. The DRIC project will neither affect nor be affected by the salt mining.

4.2.6.2 Canada

The transboundary noise impacts in Canada are documented in the report titled Practical Alternatives Evaluation Working Paper, Noise and Vibration Assessment, prepared by URS/Canada in July 2007, and available on the project Web site. The report indicates:

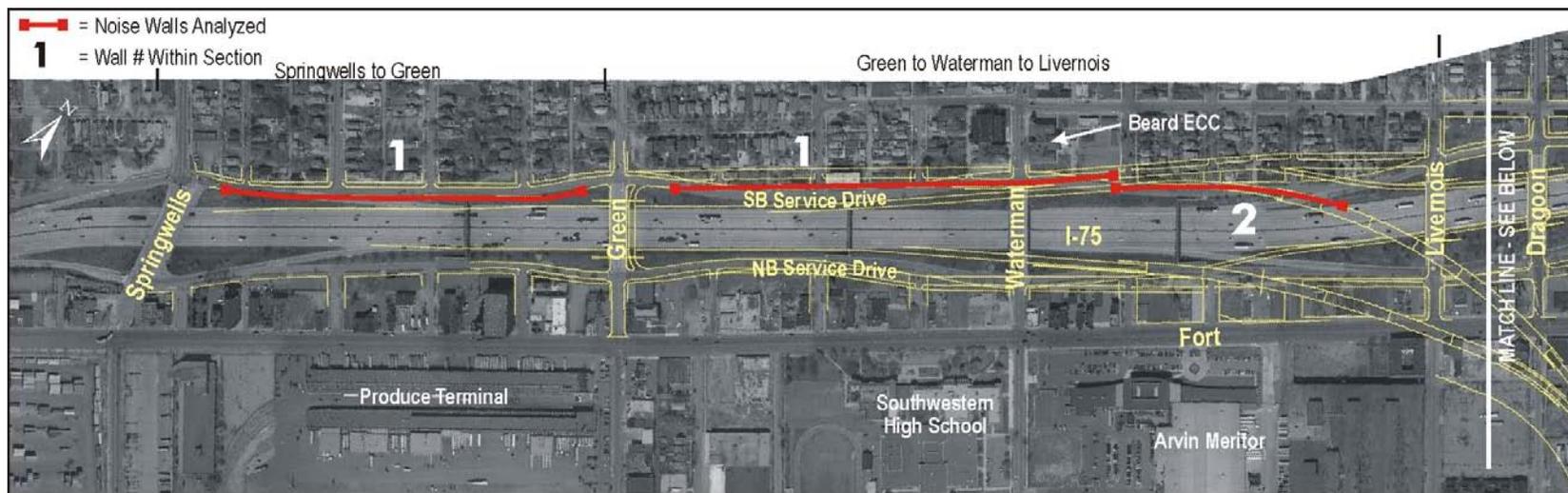
- The noise generated from all plazas is not expected to cause high noise impacts for areas closest to the plazas. In most cases, homes are more than 165 feet away from the plazas.
- With Crossing X-11 alternatives, more than 100 households are predicted to have a change in noise levels less than five dB. Noise level changes of three dB are barely discernible. The cost-effectiveness of a barrier to reduce the change in noise levels for these households and other mitigation measures requires further study.

Figure 4-16A
Detroit River International Crossing Study
Noise Walls Analyzed
Interchange A – Alternatives #1 and #7

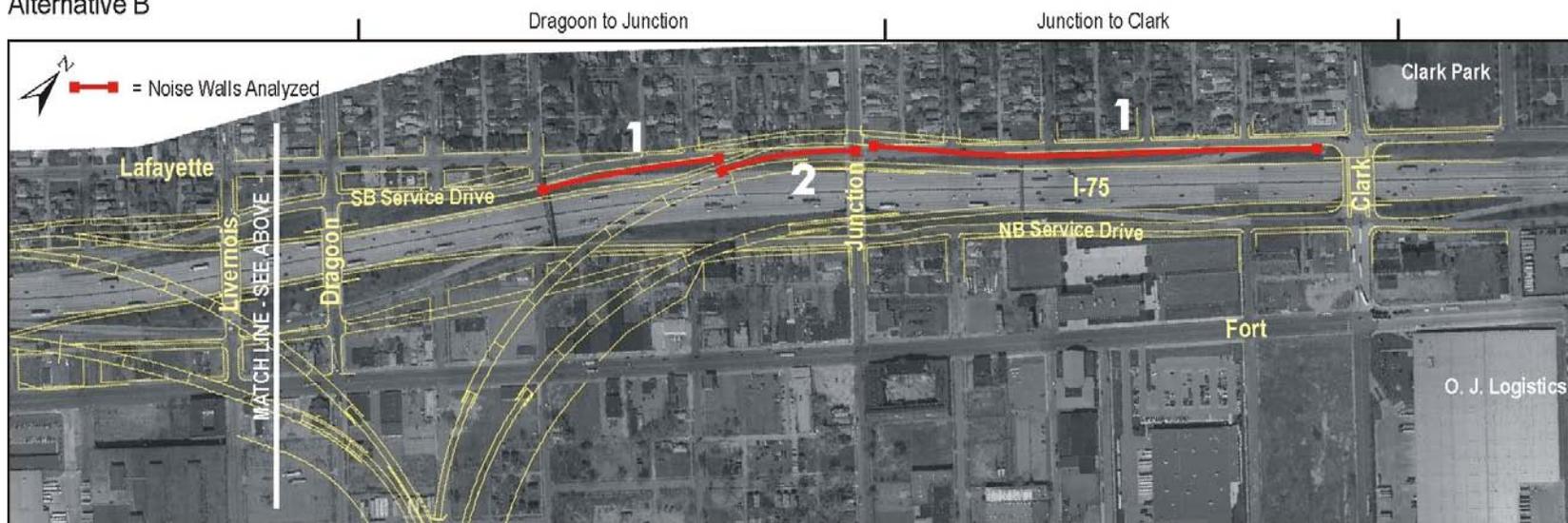


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 Source: The Corradino Group of Michigan, Inc.

Figure 4-16B
Detroit River International Crossing Study
Noise Walls Analyzed
Interchange B – Alternatives #2 and #9

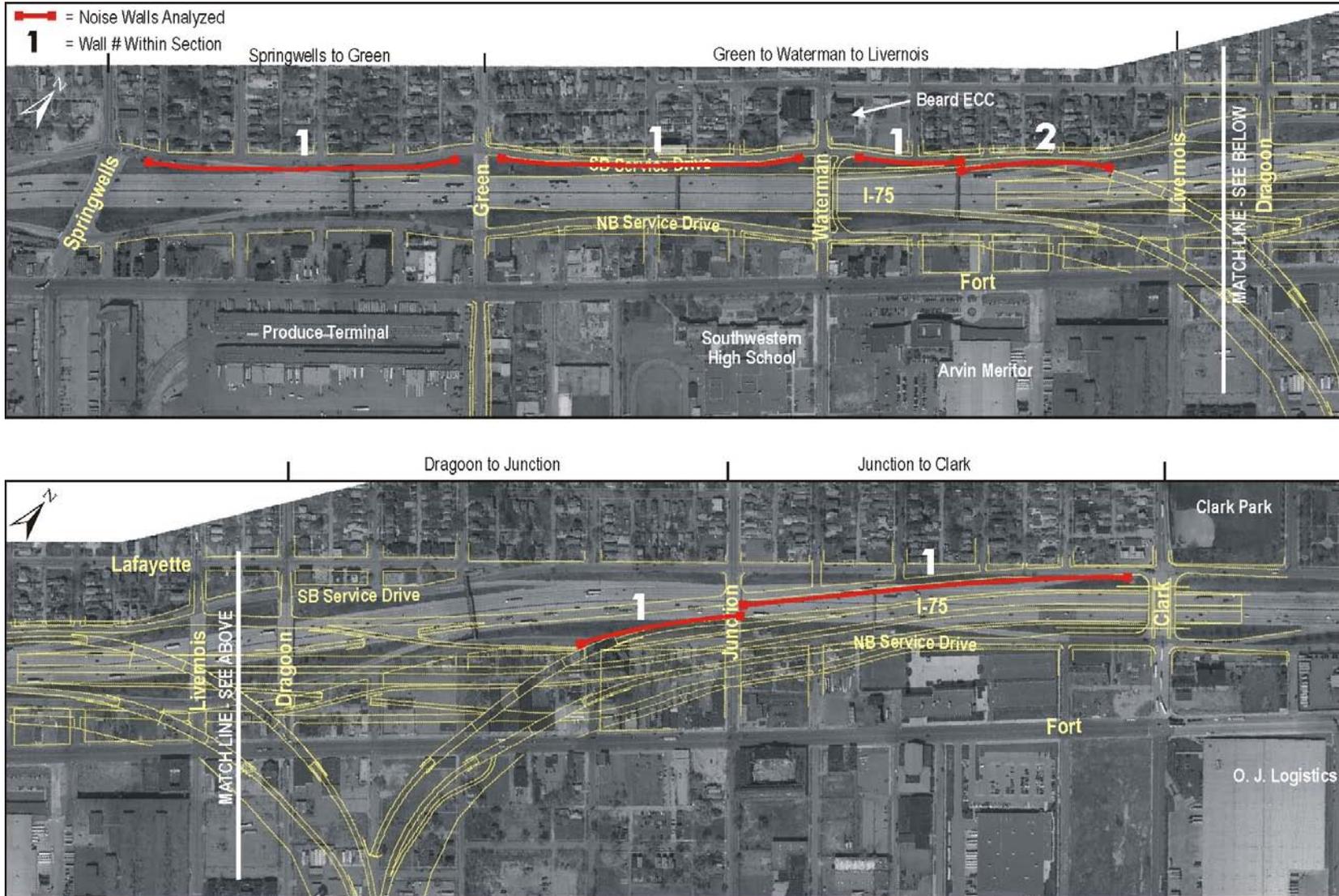


Alternative B



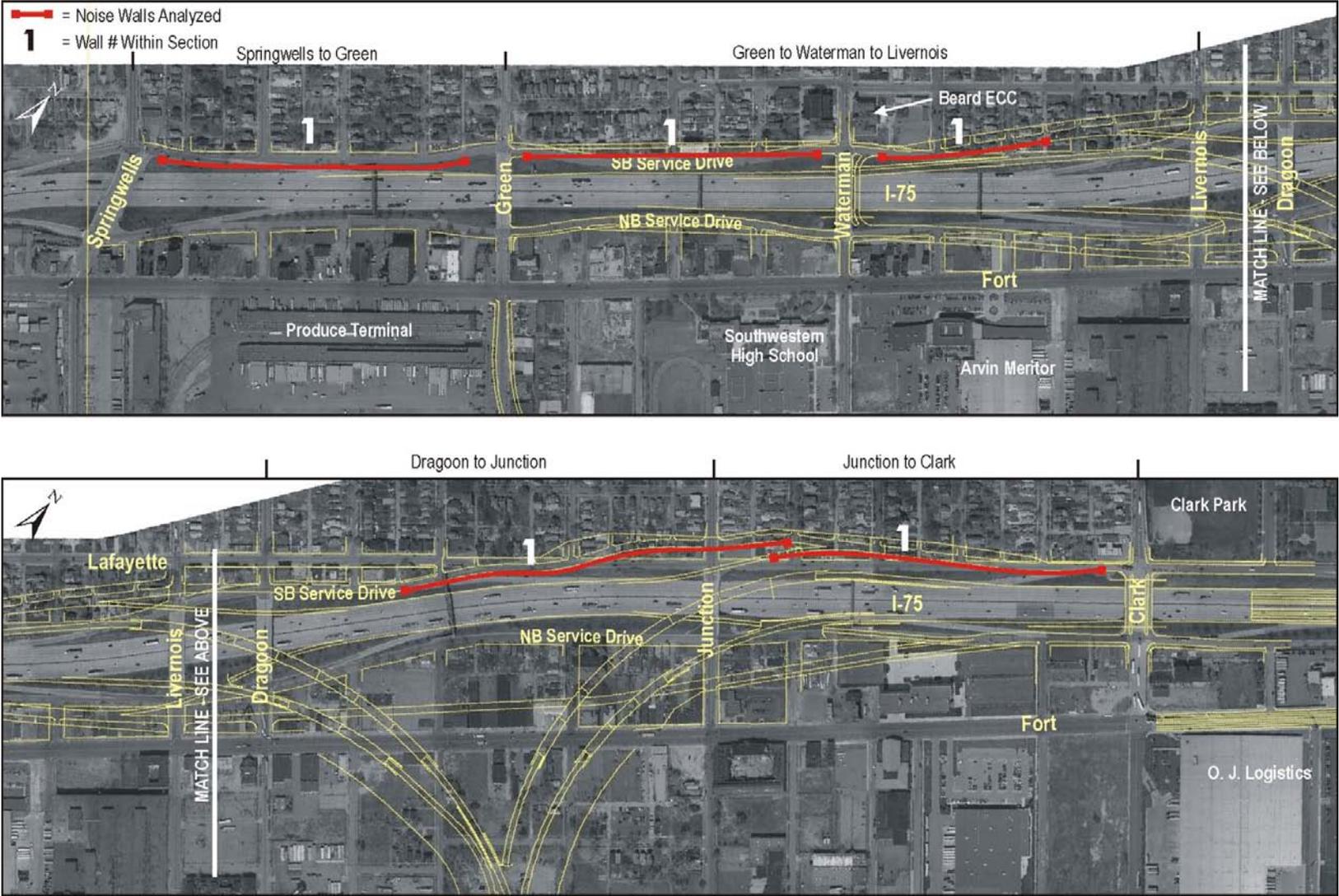
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Figure 4-16C
Detroit River International Crossing Study
Noise Walls Analyzed
Interchange C – Alternatives #3 and #11



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 Source: The Corradino Group of Michigan, Inc.

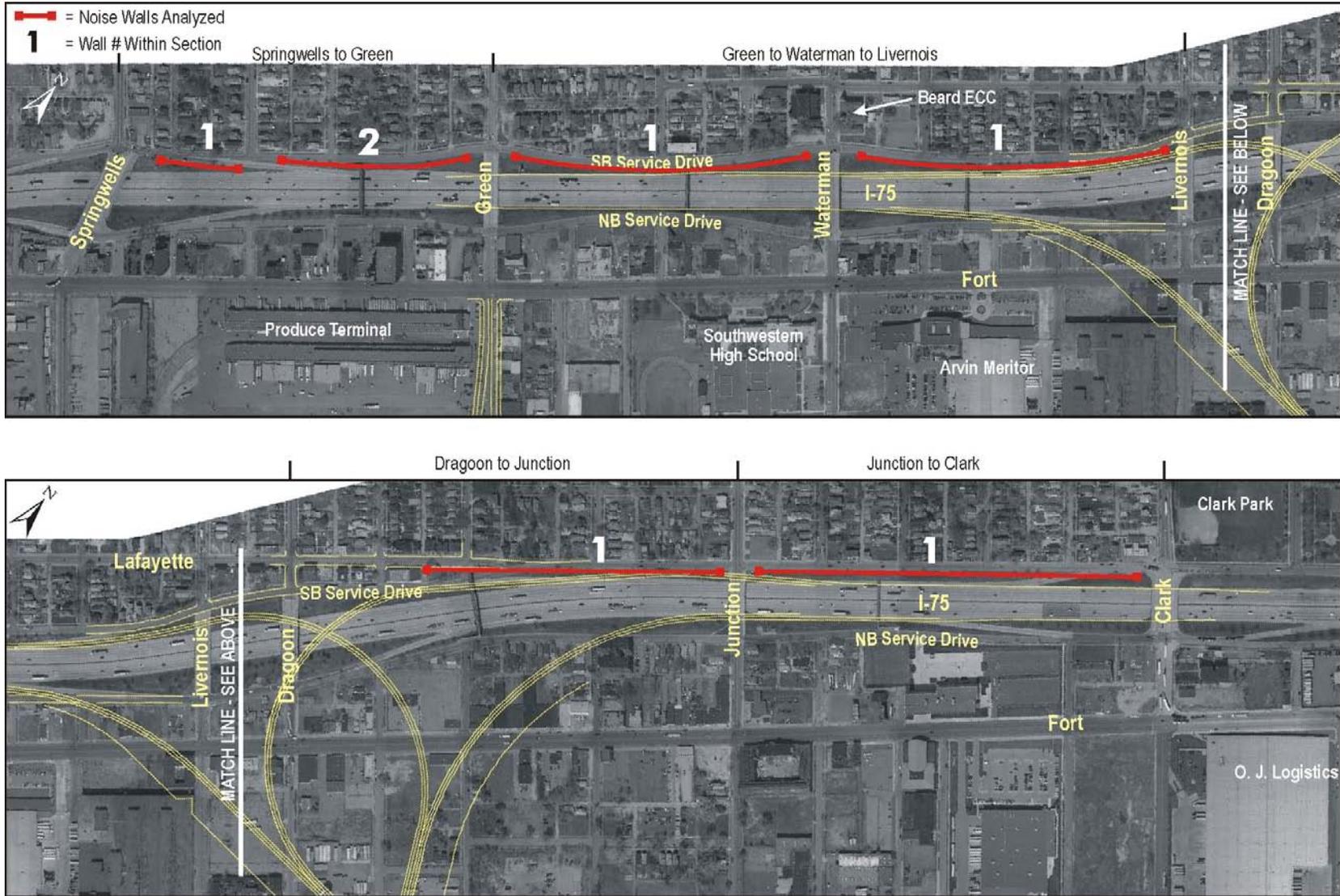
Figure 4-16D
Detroit River International Crossing Study
Noise Walls Analyzed
Interchange E – Alternative #5



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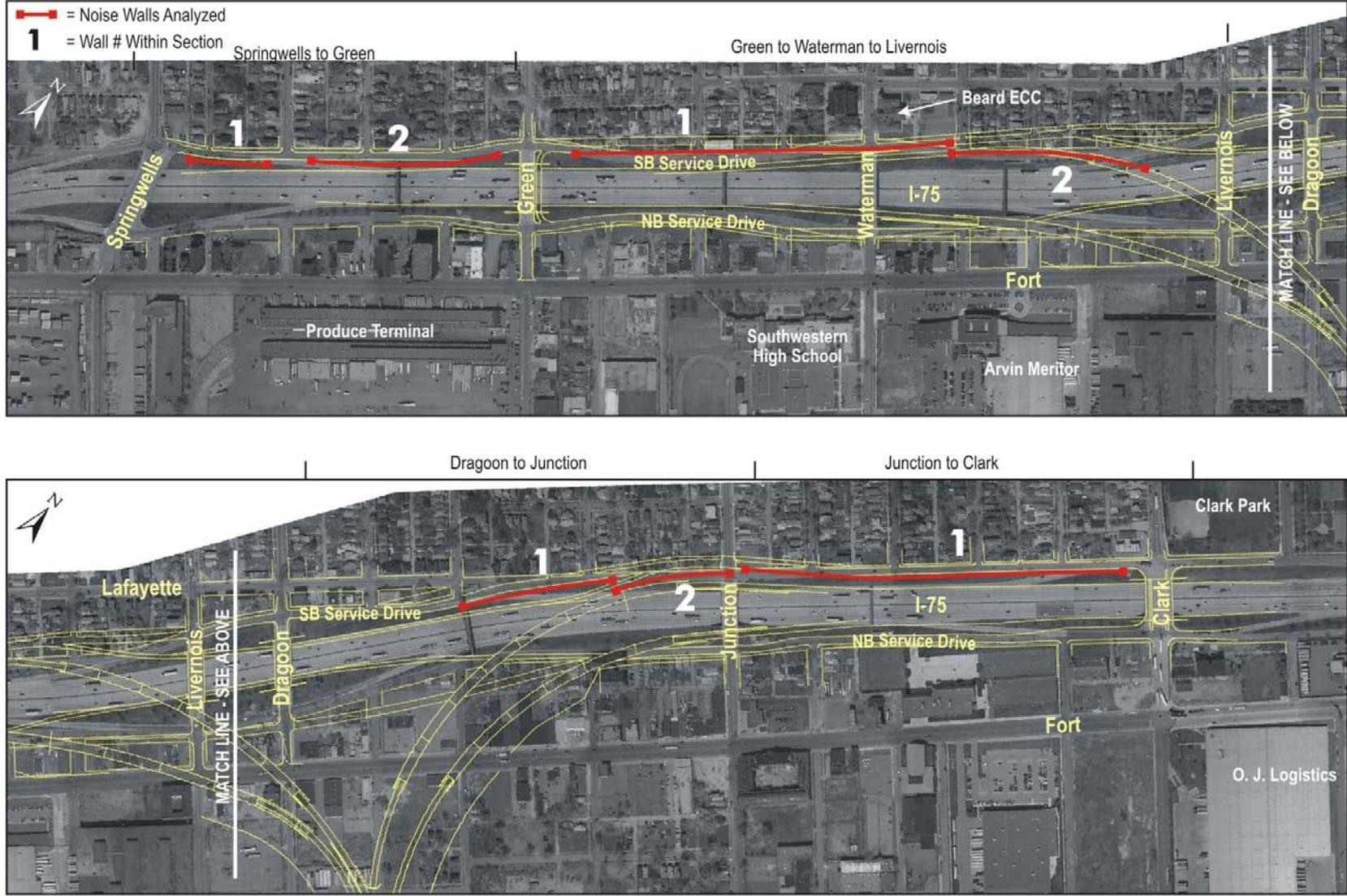
Source: The Corradino Group of Michigan, Inc.

Figure 4-16E
Detroit River International Crossing Study
Noise Walls Analyzed
Interchange G – Alternative #14



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 Source: The Corradino Group of Michigan, Inc.

Figure 4-16F
Detroit River International Crossing Study
Noise Walls Analyzed
Interchange I – Alternative #16



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 Source: The Corradino Group of Michigan, Inc.

4.2.7 Cultural Resources

4.2.7.1 U.S.

Study Team historians conducted an analysis to identify properties within the study area that potentially meet the minimum criteria of eligibility for listing on the *National Register of Historic Places* (NRHP). The NRHP has established criteria for determining historic significance. These criteria require a property to have integrity of location, design, setting, materials, workmanship, feeling, and association. To be eligible, properties typically must be at least 50 years old, remain fairly unaltered, and meet one or more of the *National Register* criteria for significance:

- A) Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B) Property is associated with the lives of persons significant in our past.
- C) Property represents the distinctive characteristics of a type, period, or method of construction; or represents the works of a master; or possesses high artistic values; or represents a significant and distinguishable entity whose components lack individual distinction.
- D) Ability to yield information important in prehistory or history (usually archaeological sites).

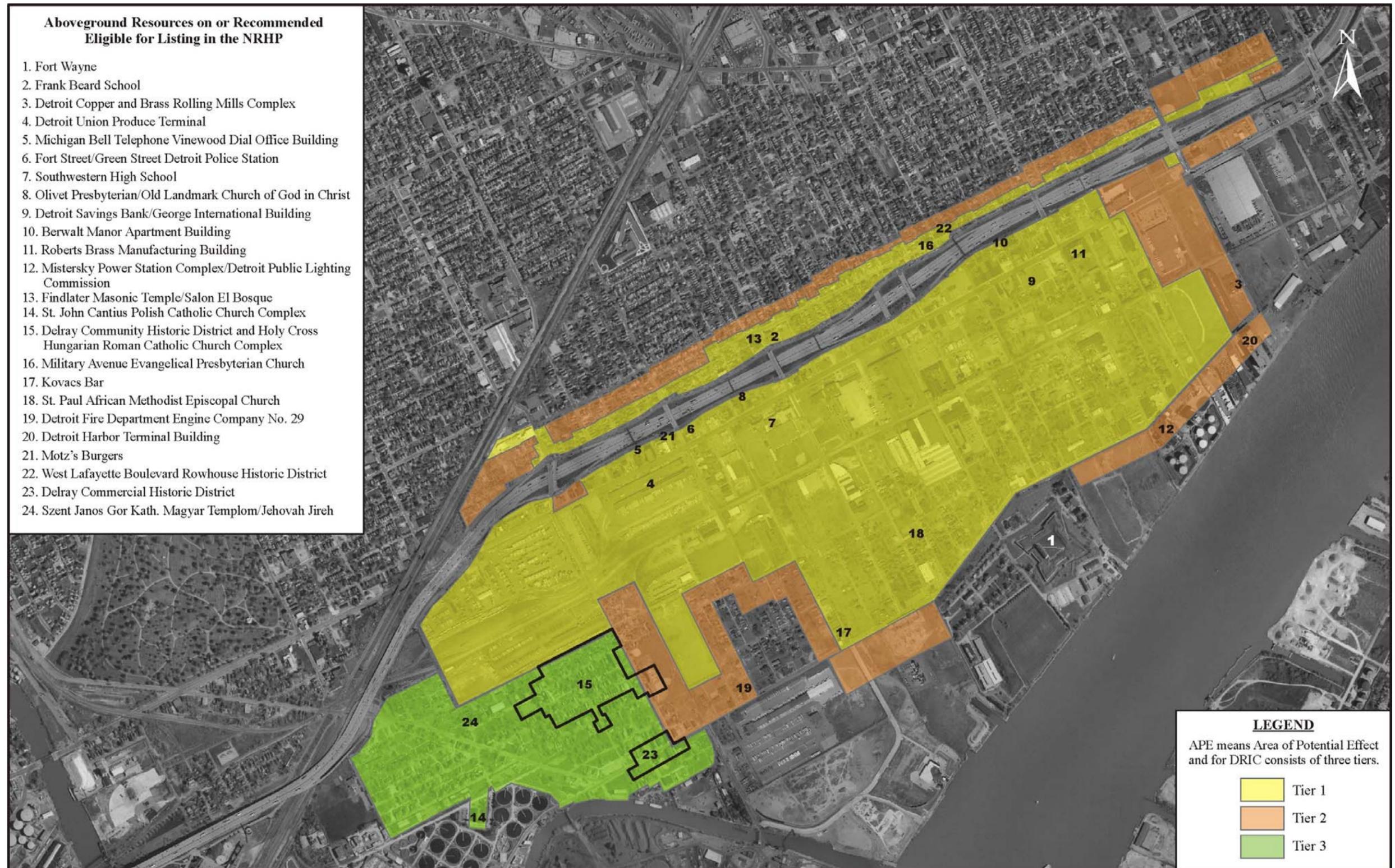
Surveys of historic and archaeological resources took place within the Area of Potential Effect (APE) in 2006 and 2007. Figure 4-17 identifies the recommended historic aboveground sites eligible for the *National Register* within the APE. Archaeological sites are not shown on Figure 4-17 to prevent looting.

The survey found no evidence of prehistoric sites inside or outside the project footprint. One historic and archaeologic site (20WN1134) was located outside the project footprint. The State Historic Preservation Office has been notified of its existence.

The following are recommended eligible for the *National Register* and within the APE but outside of the project footprint. No property from these sites would be used by the project. Nonetheless, the SHPO has been made aware of them. Implementing any of the DRIC alternatives is expected to have no effect or no adverse effect on these sites. Nonetheless, care must be taken so that “ripple-wave” development in the area does not create a negative indirect impact on them.

- Fort Wayne at 6053 West Jefferson Avenue.
- The Detroit Copper and Brass Rolling Mills Complex at 174 South Clark Street.
- The Detroit Union Produce Terminal at 7210 West Fort Street.
- The Michigan Bell Telephone Building at 7420 West Fort Street.
- The Fort Street/Green Street Detroit Police Station at 7140 West Fort Street.
- Southwestern High School at 6921 West Fort Street.
- Olivet Presbyterian/Old Landmark Church of God in Christ at 6908 West Fort Street.
- Roberts Brass Manufacturing Building at 5436 West Fort Street.
- Findlater Masonic Temple/Salon El Bosque at 6701 West Lafayette Boulevard.
- St. John Cantius Polish Catholic Church Complex at 844 South Harbaugh Street.

Figure 4-17
Detroit River International Crossing Study
Aboveground Resources on or Recommended Eligible for Listing in the *National Register of Historic Places* (NRHP)



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 Source: Commonwealth Cultural Resources Group, Inc. and The Corradino Group of Michigan, Inc.

- Delray Community Historic District generally bounded by West End Street to the east, Melville Street to the south, Leigh Street to the west, and Thaddeus Street to the south (includes the Holy Cross Hungarian Roman Catholic Church Complex at 8423 South Street which is also eligible for the *National Register* as an individual resource).
- The Detroit Fire Department Engine Company No. 29 at 7600 West Jefferson Avenue.
- The Detroit Harbor Terminal Building at 4468 West Jefferson Avenue.
- Motz’s Burgers at 7208 West Fort Street.
- Delray Commercial Historic District generally along West Jefferson Avenue between West End Street and Sloan Street.
- Szent Janos Gor Kath. Magyar Templom/Jehovah Jireh at 441 South Harbaugh Street.

A byproduct of the DRIC Study is the identification of two potential historic districts in West Delray and another north of I-75. Recognition of these districts will help protect the area’s historical integrity and open an avenue to grant/loan programs for improving properties in them.

4.2.7.2 Canada

The Canadian analysis indicates there are no significant differences among the options in terms of impacts to historical and archaeological features. Nonetheless it is known there are no provincially-designated features impacted by any of the crossing and plaza alternatives. Two cultural landscapes are potentially impacted: the Brighton Beach area (Crossing X-10A, Plazas B and B1 and Plaza A/Crossing X-10C via Brighton Beach). An area of high archaeological potential (Petit Cote French Settlement) would potentially be disrupted by Plazas B and B1.

4.2.8 Water Quality, Wetlands and Threatened and Endangered Species

4.2.8.1 U.S.

Development indirectly stimulated by the project is not likely to affect wetlands in Delray as the entire footprint, for the combination of all alternatives, was examined for wetlands. There would be an effect only on 0.01 acres. Likewise, a search for wetlands on another MDOT project north of I-75 (the Detroit Intermodal Freight Terminal Study) found no wetlands. So, indirect impacts in the study area are not expected. On the other hand, induced development in downriver Wayne County or in Monroe County along the I-75/auto alley could affect wetlands. Any wetland loss must be mitigated.

Threatened and endangered species are protected at the state and federal levels in the U.S. The Michigan Natural Features Inventory records species and potential habitat to support protection. In Southeast Michigan and Wayne County, which are largely urbanized, various government agencies are aware of sensitive areas, and so would review development plans in that context. There is little likelihood that a threatened or endangered species (U.S. or Michigan, which keeps its own lists) would be “discovered” during project development without prior knowledge of its potential presence. The conclusion is that, while habitat loss in general is ongoing, there is a low likelihood in urbanized area Southeast Michigan that there would be a cumulative loss of threatened and/or endangered species.

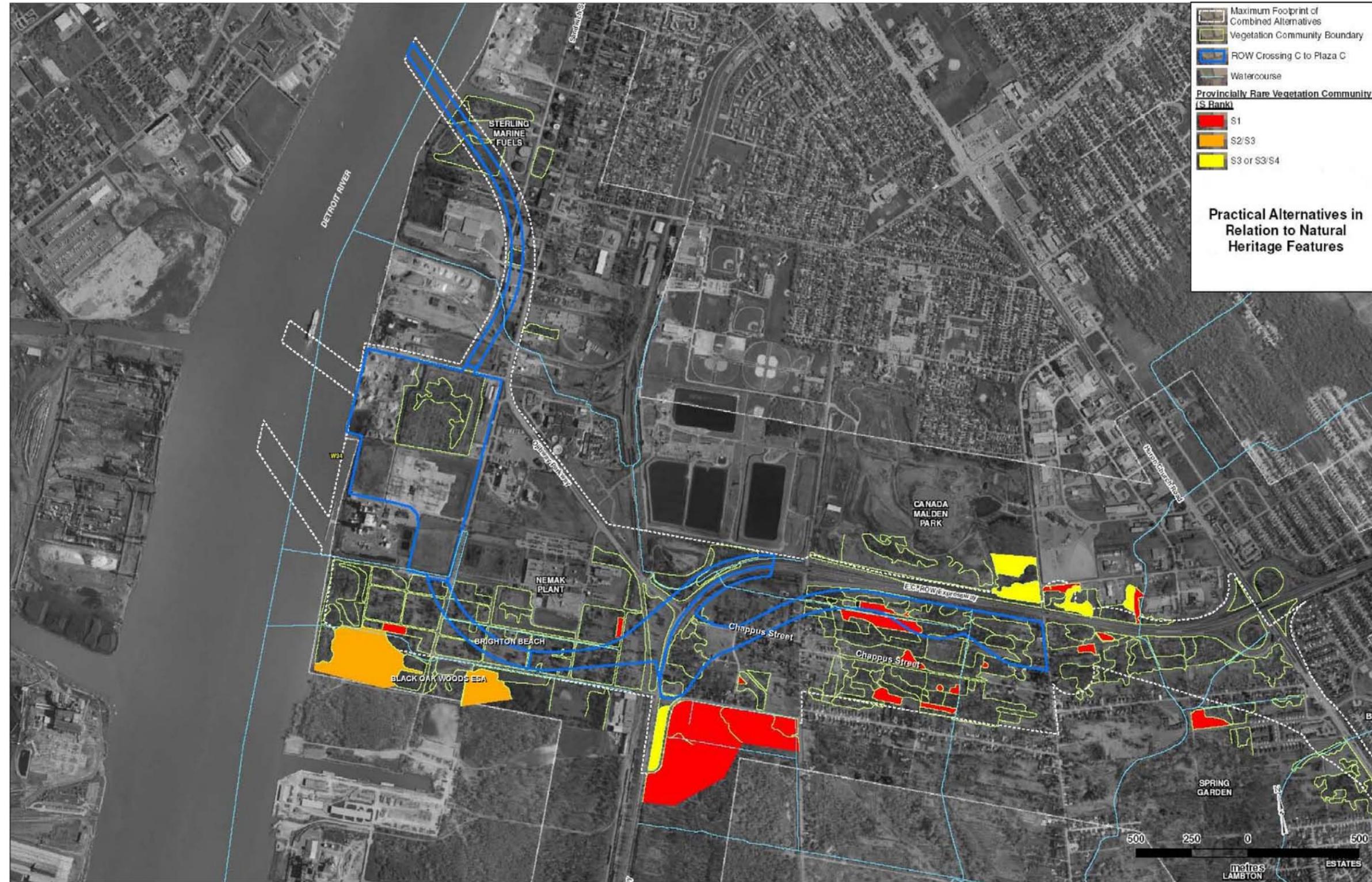
4.2.8.2 Canada

The transboundary impacts in Canada are presented in the report titled *Practical Alternatives Evaluation Working Paper, Natural Heritage Assessment*, prepared by URS Canada in July 2007, and available on the project Web site. It indicates that:

- Crossing X-10A/Plaza A (refer to Figure 4-9A) is considered to have the potential to displace more provincially rare vegetation communities and species at risk in the Brighton Beach area and the area north of Chappus Street.
- Crossing X-10B/Plaza A (refer to Figure 4-9A) would affect the area north of Chappus Street.
- Crossing X-10B/Plaza B1 (refer to Figure 4-9A) is considered to have a relatively moderate impact.
- Plaza C/Crossing X-11 is considered to have a relatively low impact because this combination avoids the natural heritage features associated with the Brighton Beach area and the area north of Chappus Road (Figure 4-18).
- Plaza B1/Crossing X-10B (Figure 4-19A), Plaza B/Crossing X-11 (Figure 4-19B), and Plaza A/Crossing X-11 via Ojibway Parkway (Figure 4-19C) are considered to have a relatively moderate impact. Crossing X-10A and Plazas B and B1 encroach on the Ojibway Black Oak Woods, an environmentally sensitive area.
- Plaza A/Crossing X-11 via Brighton Beach (Figure 4-20A), Plaza A/Crossing X-11 (Figure 4-20B), and Plaza A/Crossing 10-A (Figure 4-20C) are considered to have the potential to displace more provincially rare vegetation communities and species at risk in the Brighton Beach area and the area north of Chappus Road.
- Plaza A/Crossing X-11 via Ojibway Parkway (Figure 4-21A) has fewer impacts to natural features than Plaza A/Crossing X-11 via Brighton Beach (Figure 4-21B).

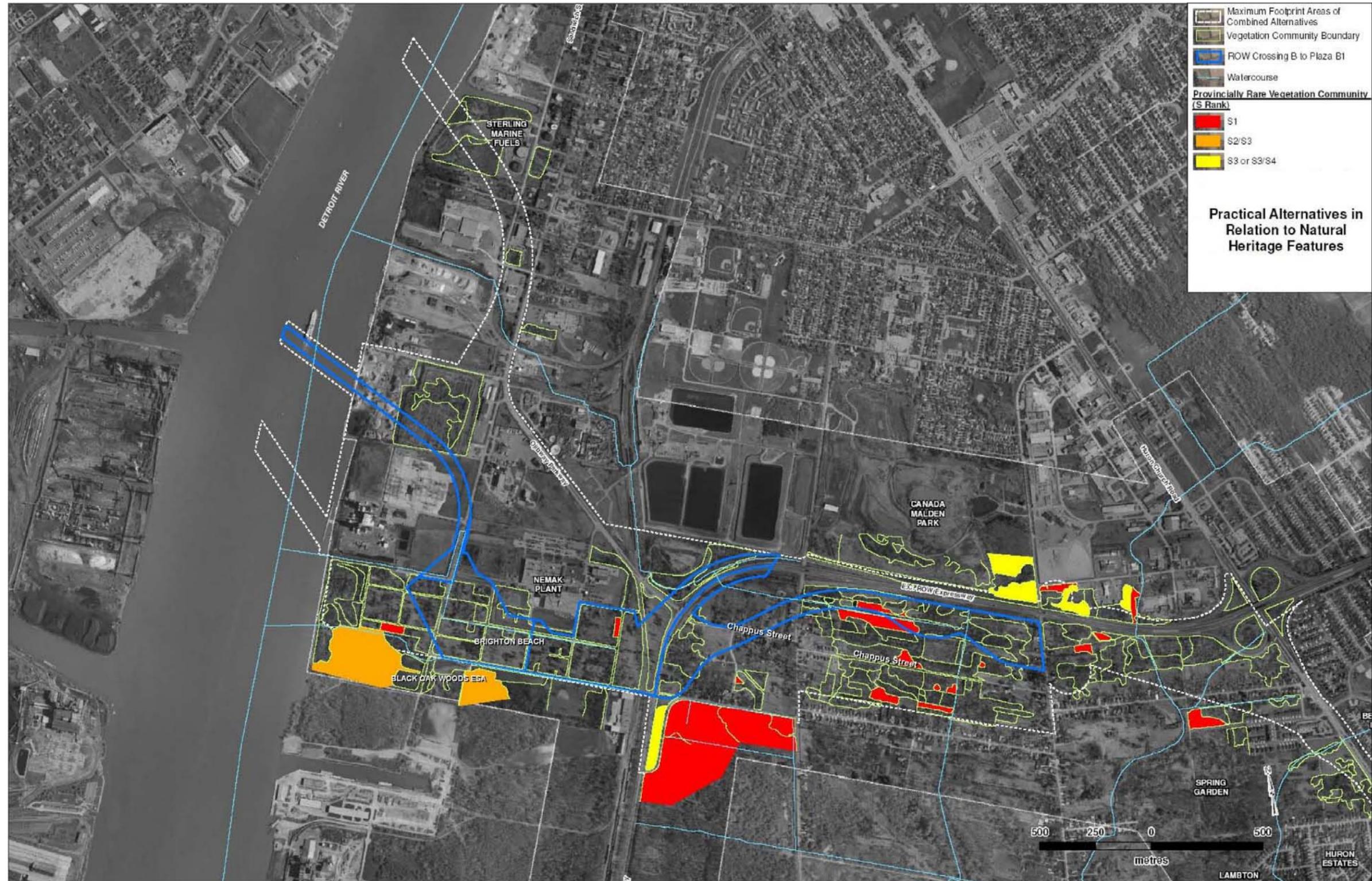
All crossings, plazas and access roads will result in the displacement of provincially rare vegetation communities, wildlife habitat and species at risk. Because total avoidance cannot be achieved, environmental protection measures will be required to address the impacts of displacement and disturbance of natural heritage features. Several mitigation strategies are available to address the loss of provincially rare vegetation communities including: enhance existing natural remnants; enlarge existing natural remnants; and, establish new tallgrass prairie communities. Mitigation strategies for species at risk will be discussed with Canadian regulatory agencies and comply with species-at-risk legislation.

Figure 4-18
 Detroit River International Crossing Study
 Natural Features Impacts of Plaza C/Crossing X-11
 in Canada



Source: LGL Limited

Figure 4-19A
Detroit River International Crossing Study
Natural Features Impacts of Plaza B1/Crossing X-10B
in Canada



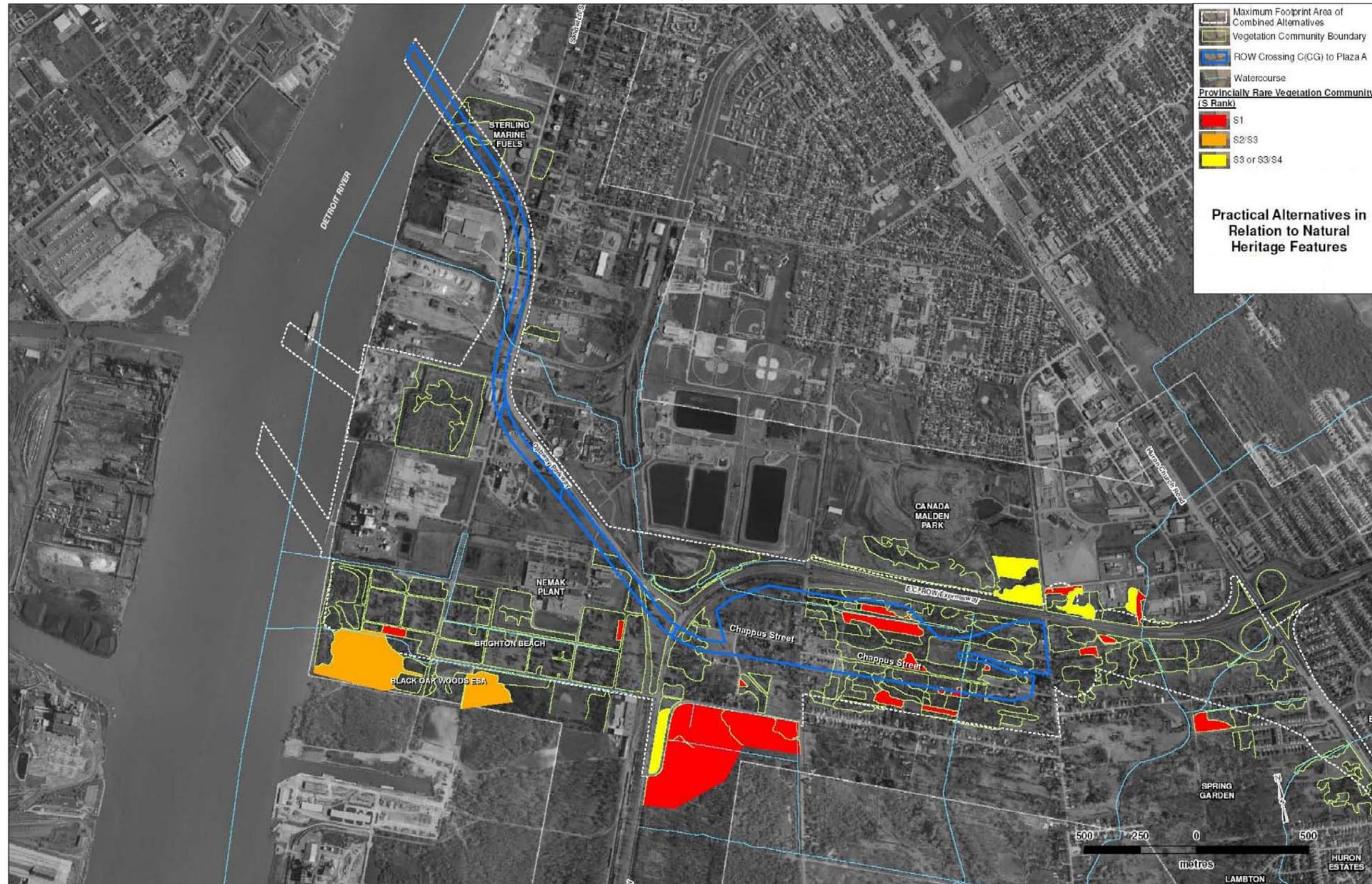
Source: LGL Limited

Figure 4-19B
Detroit River International Crossing Study
Natural Features Impacts of Plaza B/Crossing X-11
in Canada



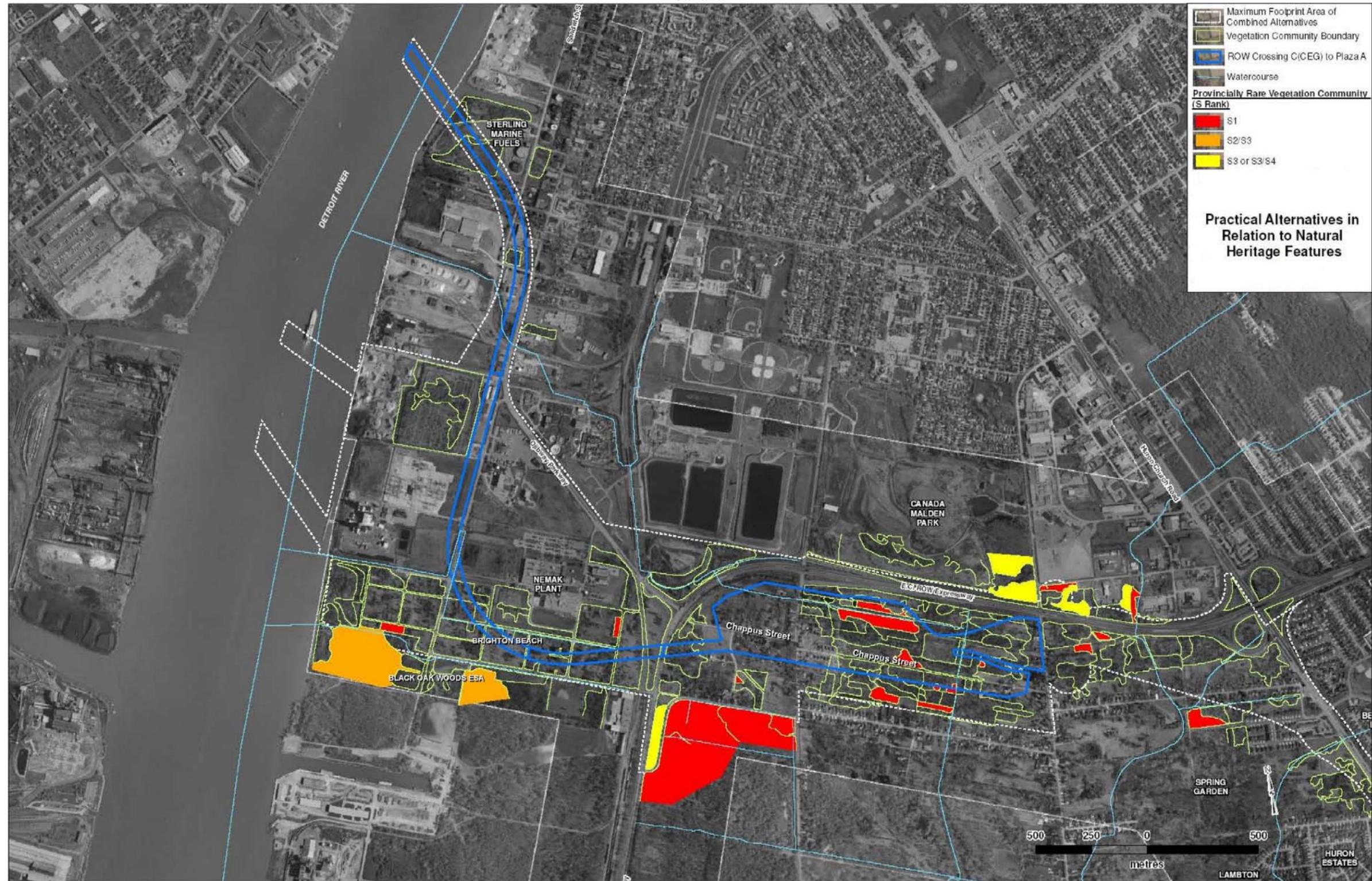
Source: LGL Limited

Figure 4-19C
Detroit River International Crossing Study
Natural Features Impacts of Plaza A/Crossing X-11 via Ojibway Parkway
in Canada



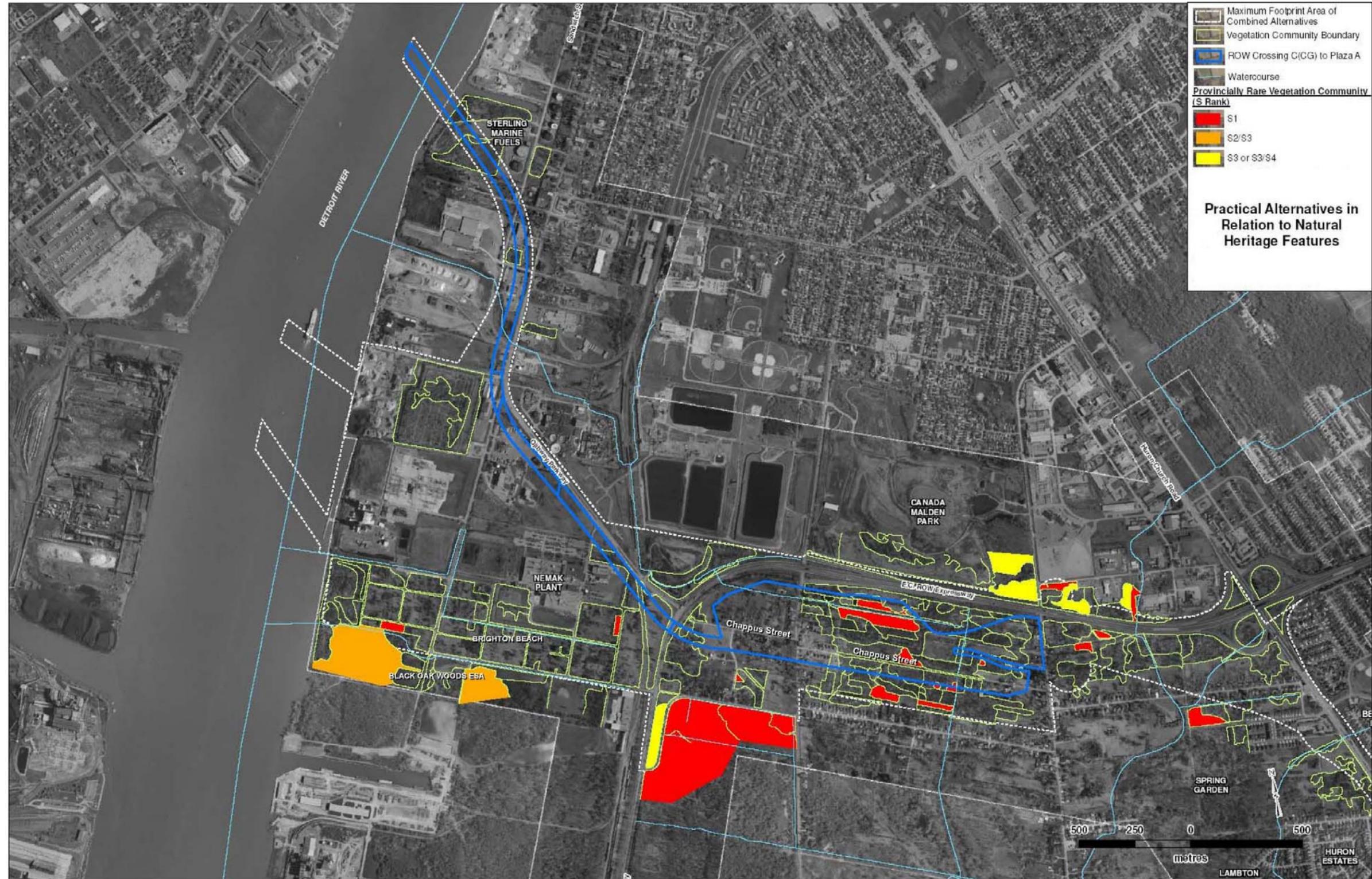
Source: LGL Limited

Figure 4-20A
Detroit River International Crossing Study
Natural Features Impacts of Plaza A/Crossing X-11, via Brighton Beach
in Canada



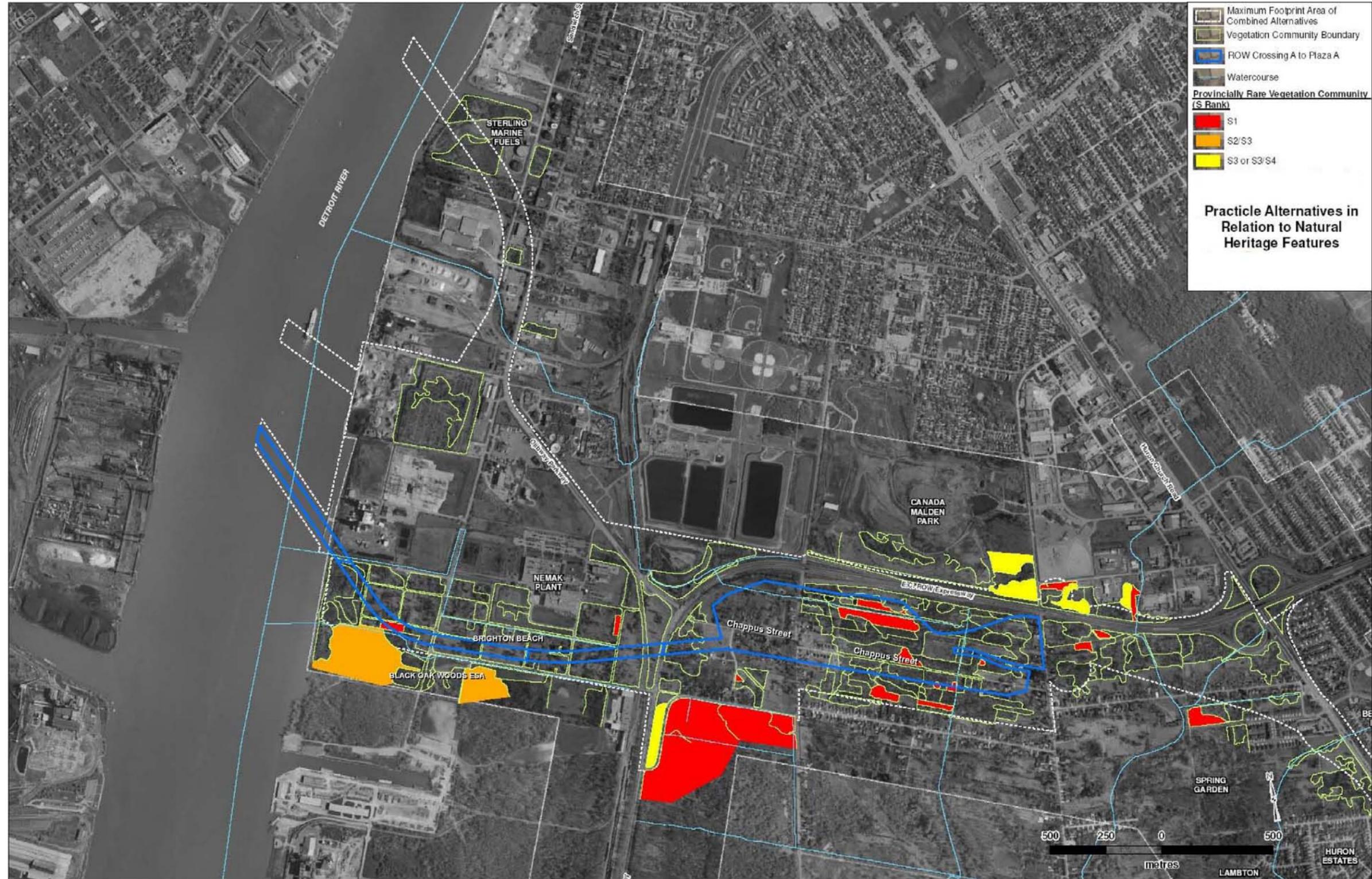
Source: LGL Limited

Figure 4-20B
 Detroit River International Crossing Study
 Natural Features Impacts of Plaza A/Crossing X-11
 in Canada



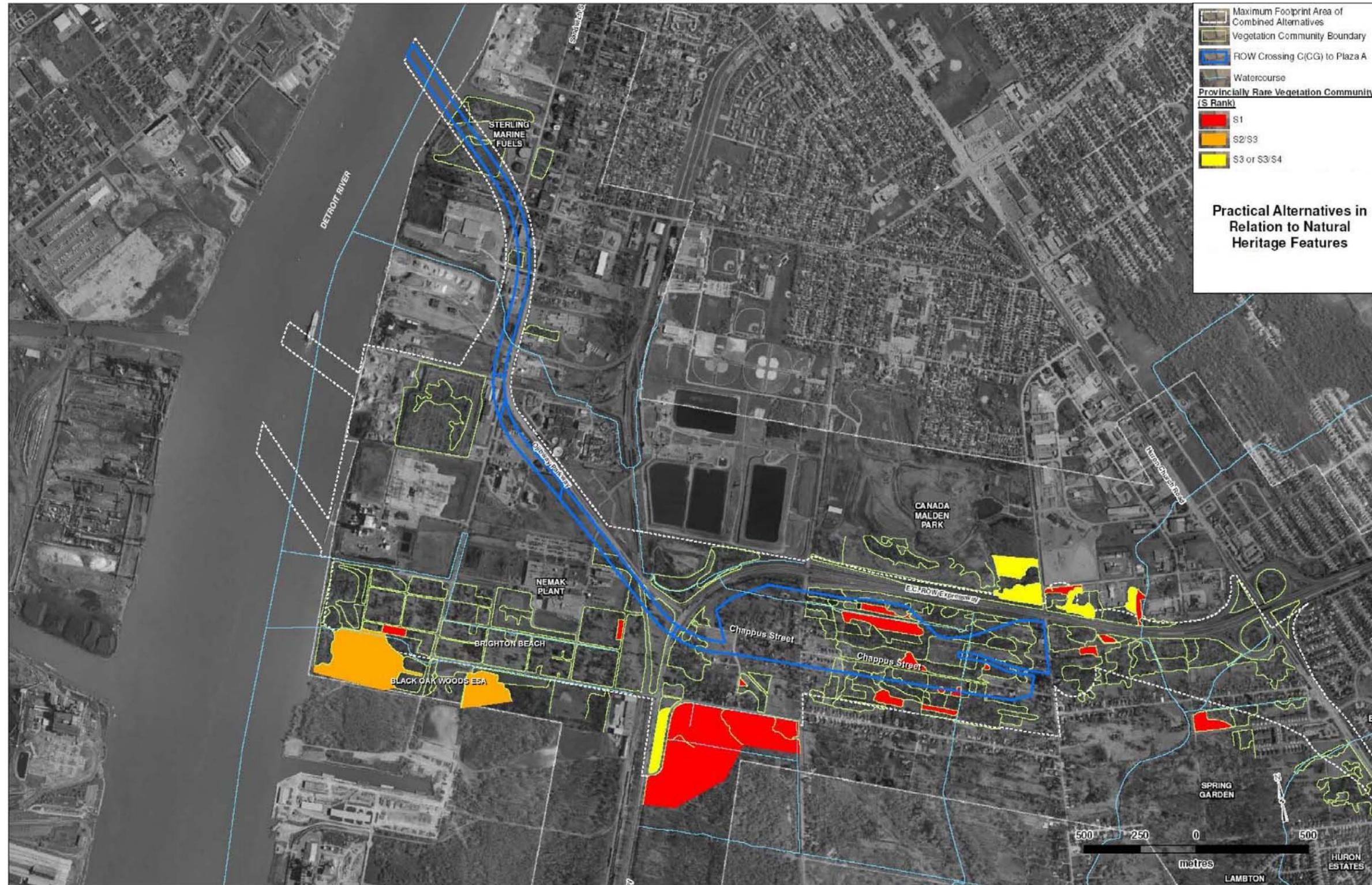
Source: LGL Limited

Figure 4-20C
Detroit River International Crossing Study
Natural Features Impacts of Plaza A/Crossing 10-A
in Canada



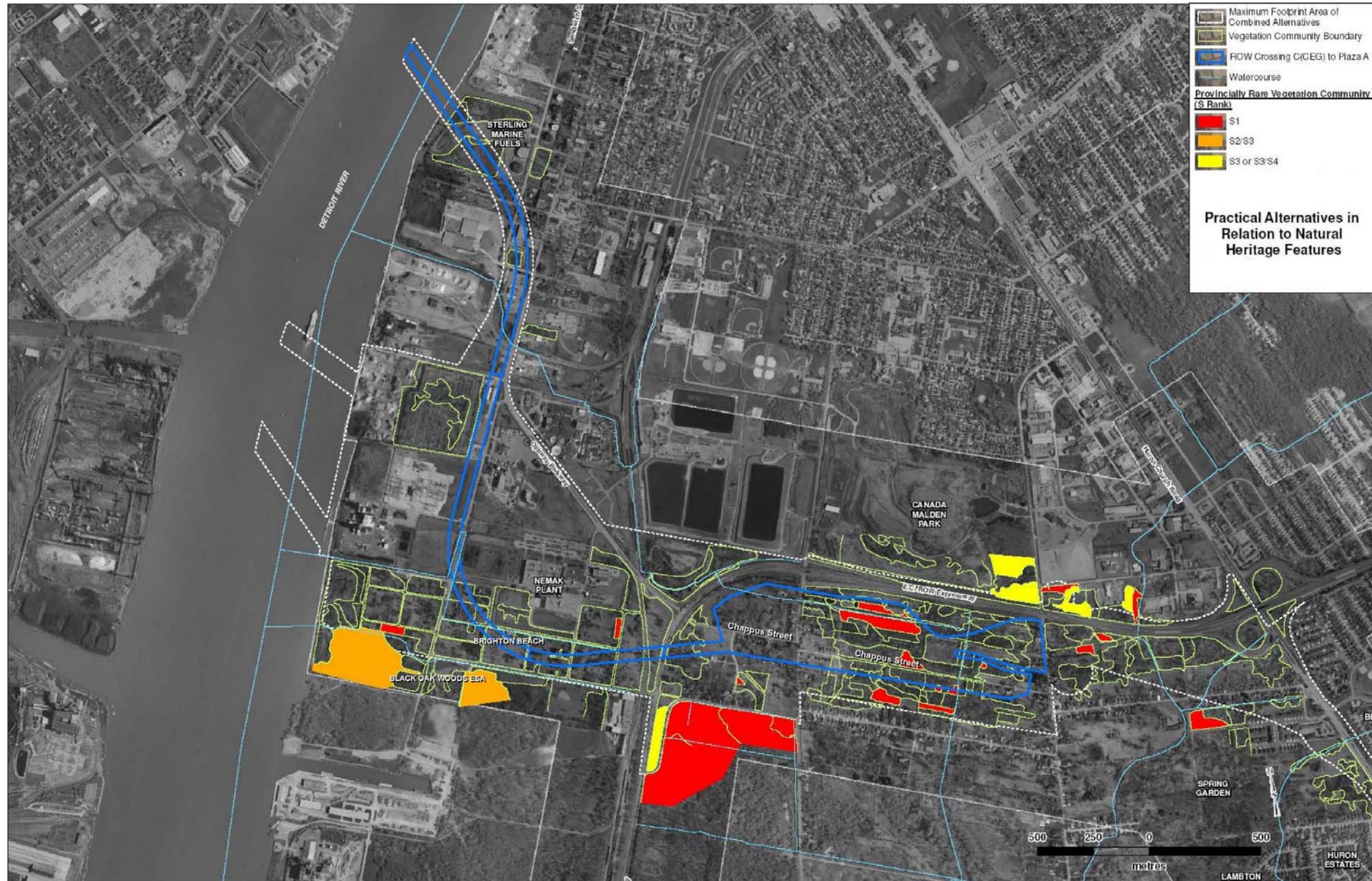
Source: LGL Limited

Figure 4-21A
Detroit River International Crossing Study
Natural Features Impacts of
Plaza A/Crossing X-11 via Ojibway Parkway
in Canada



Source: LGL Limited

Figure 4-21B
 Detroit River International Crossing Study
 Natural Features Impacts of
 Plaza A/Crossing X-11 via Brighton Beach
 in Canada



Source: LGL Limited

4.3 Cumulative Effects – U.S. and Transboundary

The most significant past, present and reasonably foreseeable future impacts that affect areas related to the proposed DRIC alternatives are presented here. As a matter of background, it is noted that historic (past) urbanization of the study area is directly linked to the opening of Michigan's northern mineral ranges beginning in the 1850s. Transportation developments reinforced this urbanization, first with an elaborate (by 19th Century standards) railroad system. The railroad tunnel to Windsor was built in 1909. Highways followed. The Ambassador Bridge was opened in 1929. The Detroit-Windsor Tunnel opened in 1930. Construction of I-75 began in 1962 and was completed in 1972. It cuts through the study area. I-94, built in the 1950s, lies on the north edge of the study area. M-10 (the Lodge Freeway) and M-39 (the Southfield Freeway) are along the east and west edges of the area, respectively. The sections of these freeways affecting the study area, when built in the 1960s, and still today, are considered intrusions on otherwise tightly-knit neighborhoods.

A primary factor in the development of the study area was the creation of Ford Motor Company's Rouge Plant in 1918/1919. Housing development in the study area is dated primarily between 1900 and 1929. But, since its heyday, this part of Southeast Michigan has been affected by outmigration of corporations, then people, first to surrounding counties, then states, and now nations. Notable exceptions in the study area are Ford Motor Company's \$2 billion investment in re-engineering its Rouge Plant and Arvin Meritor's facility at Fort and Waterman Streets. But, Ford, GM and Chrysler are all retooling in order to return to their former competitiveness which affects all of Michigan. Companies that support the auto industry, including Arvin Meritor, are also struggling. This downturn in economic fortunes has led to the recently-revised projection of population and employment in the SEMCOG region discussed in Section 3.1.1 of this document.

Nonetheless, ongoing (present) revitalization in the area includes:

- West Riverfront Greenway Development/Romanowski Park.
- Bagley Housing Condominium Development.
- Re-use of Tiger Stadium property.
- Housing along Michigan Avenue, east of West Grant Boulevard.
- Continued redevelopment along Vernor Highway, including the Bowtie area at the Vernor/Livernois Avenue intersection.
- Continued housing stabilization due to code enforcement and related activities.
- Housing development in east Dearborn east of Wyoming served by Roberts Street.
- A new Museum of Arab Culture opposite the Dearborn City Hall
- Expansion of Truck City in an area bounded by Michigan, Southern, Wyoming and Stecker.
- A combined sewage overflow facility at Patton Park.

- A direct connection between the Ambassador Bridge’s plaza and the interstate highway system, known as the Gateway Project.
- Continued reinvestment in the Hubbard Richard/Mexicantown neighborhoods.

Future developments include those listed on Figure 2-8 and Table 3-3 with particular note of the following key transportation proposals:

- A possible new border crossing, or three.
- Rehabilitating I-94, from east of the I-94/I-96 interchange to west of Conner Avenue in Detroit.
- Passenger rail service between Detroit and Ann Arbor as well as Metro Airport proposed to pass through the Livernois-Junction Yard area.
- Rapid bus, rapid rail or commuter rail transit service in almost one dozen other corridors, including along Michigan Avenue and Fort Street.
- A proposed conversion by a private venture of the Detroit-Windsor railroad tunnels to truck and construction of a new rail tunnel or just construction of a new rail tunnel.

Of particular note here are the two proposals for new border crossings other than that proposed by the Detroit River International Crossing Study. They are: 1) the Detroit River Tunnel Partnership (DRTP) Jobs Tunnel;⁶ and 2) the Ambassador Bridge Enhancement Project. The DRTP project is proposed as a one-lane in each direction truck tunnel that would use the DRTP-controlled railroad right-of-way on each side of the Detroit River. Based on analysis of international travel in the 2035 afternoon peak hour, the DRTP truck-only tunnel proposal, when added to the existing Ambassador Bridge and the Detroit-Windsor tunnel and a new DRIC crossing that “lands” in Delray, would carry less than three percent of all Detroit River international traffic (Table 4-5). The viability of the DRIC proposed crossing is not affected by the DRTP proposal.

Table 4-5
Detroit River International Crossing Study
Analysis of DRTP with DRIC X-11 Crossing + Ambassador Bridge
+ Detroit-Windsor Tunnel
2035 PM Peak Hour Traffic

New Crossing at X-10		DRIC	DRTP	AMB at Four Lanes	DW Tunnel
U.S.-Canada	Cars	1,213	0	1,038	975
	Trucks	650	154	166	41
Canada-U.S.	Cars	257	0	503	360
	Trucks	343	15	70	1
Both Directions	Cars	1,470	0	1,541	1,335
	Trucks	993	169	236	42
Total		2,463	169	1,777	1,377

Source: The Corradino Group of Michigan, Inc.

⁶ The DRTP Truck-only Tunnel proposal has been withdrawn by the proponents.

The Ambassador Bridge Enhancement Project is defined by its private owners – The Detroit International Bridge Company – as a six-lane cable stayed bridge over the Detroit River, just west of the existing Ambassador Bridge. The new bridge will connect directly into the existing plazas in both Windsor and Detroit. Once the proposed new structure is completed, the existing Ambassador Bridge will be used to provide for bridge internal operational needs and also to provide for pedestrian and bicyclist amenities as indicated in an Environmental Assessment submitted by the Bridge Company to the U.S. Coast Guard.⁷ Table 4-6 illustrates the change in traffic between a new crossing as included in the Detroit River International Crossing Study and the proposed enhanced six-lane Ambassador Bridge replacement structure, as compared to previous analyses that assumed a four-lane Ambassador Bridge that now exists. Traffic on the new crossing would change little. So, the cumulative effects of the proposed six-lane replacement span on the viability of DRIC proposal is considered negligible.

Table 4-6
Detroit River International Crossing Study
Analysis of DRIC Crossing Traffic
with Ambassador Bridge at Four Lanes and Six Lanes
2035 PM Peak Hour Traffic

New Crossing @ X-10		DRIC Crossing		Ambassador Bridge	
		AMB at Four-lane	AMB at Six-lane	Four-lane	Six-lane
U.S. – Canada	Cars	1,155	1,133	1,072	1,105
	Trucks	734	738	229	230
Canada – U.S.	Cars	250	250	502	500
	Trucks	358	358	70	70
Both Directions	Cars	1,405	1,383	1,574	1,605
	Trucks	1,092	1,096	299	300
TOTAL		2,497	2,479	1,873	1,905

Source: The Corradino Group of Michigan, Inc.

Other cumulative effects foreseen, if the DRIC were implemented, are discussed next. These conclusions are based on an examination of the information included in the DRIC Study, including examination of past, present and reasonably foreseeable future trends/events, to the extent practical.

- **Mobility**

- U.S.: There may be an increase in traffic due to stimulated additional development, both direct and induced by the new border crossing. But, negative congestion effects are not expected either on major arteries or local neighborhood streets in the study area as analyses for the Detroit Intermodal Freight Terminal Study and the DRIC covered all of Southwest Detroit and East Dearborn indicating there is virtually no congestion now nor expected in the 25-year future. Roads built to serve this area in the first half of the 20th Century accommodated more traffic, by far, than now. Developments outside the study area will be guided by local regulations aimed at mitigating negative traffic impacts.

⁷ Detroit International Bridge Company/Canadian Transit Company, *Draft Environmental Assessment*, submitted to U.S. Coast Guard, April 2007.

- Canada: With a new border crossing serving the U.S., analyses of the transboundary traffic impacts in Canada indicate all of the DRIC alternatives will significantly improve overall traffic operations and meet overall road transportation system needs. The alternatives will also serve to improve or maintain existing levels of service at most intersections for the area around Huron Church Road. All users of the roadway will be able to move more efficiently and effectively through the corridor. Most international traffic will use the new mainline facility, either to the new crossing or rejoining Huron Church Road in the vicinity of the E.C. Row Expressway. The new crossing will provide commercial operators with another route to and from the United States, reducing the proportion of international truck traffic in the corridor by almost 30 percent north of the E.C. Row Expressway. This will result in significant reductions in congestion and delay without the need for local infrastructure improvements. The details of the analyses supporting these impacts can be found in the report entitled, Practical Alternatives, Evaluation Working Paper, Level 2 Traffic Operations Analysis, prepared by URS/Canada in January 2007 and available on the project Web site (www.partnershipborderstudy.com).

- **Economic Impacts**

- U.S. and Canada: It is expected that local businesses may develop or expand in several sectors related to a new border crossing. Likewise, such change should be associated with an increase in local jobs. This should then help grow the local tax base. But, it is recognized that much of the cross-border trade in the Detroit-Windsor area is tied to the auto industry. The U.S. demand in 2035 for new automotive vehicles is forecast at 26 million,⁸ a 53 percent increase from the 17 million current annual U.S. consumption of autos/trucks. This growth is similar to that which occurred over the last 20 years, when 15 new auto plants were built in North America, eight of which were built in “northern” locations (e.g., Ohio, Indiana, and Ontario, Canada). The implication is another dozen auto manufacturing plants will be built in the U.S. and Canada in the next 20 to 30 years to meet this increased demand. With a new border crossing, Michigan/Ontario will be in a position to gain 25,000 to 35,000 new jobs. A sketch planning analysis that is the basis of this forecast is included in the *DRIC Induced Demand Technical Report*.

- **Land Use Changes**

- U.S.: Land use changes can be expected to be accelerated with a new border crossing. Such growth could be associated with the mixing of land use types that are unwanted, i.e., industrial/commercial with residential. This can be avoided by applying: land use/zoning principles like those in the City of Detroit’s Master Plan of Policies; the land use concepts defined in Figure 4-7 and Figures 4-11 through 4-14; and, the master plans and zoning laws of Allen Park, Dearborn, Ecorse, Melvindale and River Rouge.
- Canada: The induced demand analysis indicates improved accessibility will be realized in the Canadian portion of the study area (refer to Figure 4-4). With this will come increased pressure to create land uses that accommodate jobs. Such

⁸ Center for Automotive Research, *Economic Contribution of the Automotive Industry to the U.S. Economy: An Update and The Contribution of the International Auto Sector to the U.S. Economy: An Update*, 2003.

development can be positive if properly handled by adhering to updated land use planning and zoning regulations. If not, unwanted mixes of land uses will occur.

- **Air Quality**

- U.S.: It is noted that the air quality analysis by the U.S. is different from that performed in Canada. And, as noted earlier, the qualitative analysis of particulate matter PM_{2.5} and PM₁₀ hot-spots concludes the proposed DRIC will not cause new air quality violations or delay timely attainment of the NAAQS. To gain approval and advance to implementation, the Preferred DRIC Alternative must be included in SEMCOG's Regional Transportation Plan. The DRIC will be tested together with all the other Plan elements to ensure that they collectively do not cause a worsening of air quality or a delay in the region's timely attainment of national air quality standards. Nonetheless, increased development that could occur with building a new border crossing may increase local pollution. But, results of the analysis of air quality impacts indicate that such increases should not cause standards to be violated, if the development is properly located and because of federal controls on vehicle engines and fuels, as well as on industry.
- Canada: Increases in particulate matter are forecast in the vicinity of all proposed plazas. But, all DRIC alternatives would likely have no discernible difference in air quality among them in Sandwich Towne. Only Crossing X-11 has the potential for slight increases in air pollutant concentrations for portions of Sandwich Towne compared to the No Build condition.

- **Cultural Resources**

- U.S.: Historic districts/properties may experience adverse effects from new development associated with a new border crossing that could occur adjacent to their boundaries. If already-existing local controls and proper planning principles are applied, compatible development will occur.
- Canada: No nationally- or provincially-designated cultural features would be impacted. The Brighton Beach area is a cultural landscape that is presently zoned industrial; this landscape could be negatively impacted by future development in this industrial park or by several plaza/crossing combinations. Historic Sandwich Towne is another cultural landscape which could be disrupted by Crossing X-11C. An area of high archaeological potential is potentially impacted by the Plaza B/B1 alternatives. Mitigation will be developed if Crossing X-11C is chosen as the Preferred Alternative.

- **Community Cohesion**

- U.S.: Development stimulated by a new border crossing may create opportunities for positive reuse of underused residential parcels (the City of Detroit owns thousands of such parcels as a result of tax delinquencies). This development could lead to unwanted mixing of land uses if controls in the master plans of various cities are not implemented. For example, tracts large enough to hold logistics businesses to support the new border crossing could locate at numerous places in residential areas that were once occupied by industry created at the turn of the 20th Century. The increased truck activity associated with such development could have a negative

effect on the nearby neighborhoods. But, that doesn't have to occur if proper planning and land use controls are applied.

- Canada: The areas of south and west Windsor and LaSalle will benefit from having international traffic removed from local streets and separated from local traffic. Businesses displaced that serve the local neighborhoods will potentially cause a change in social patterns and community function. The displacement of businesses along the proposed access road will have limited overall economic impact. Despite the immediate loss of revenue and employment, the loss of businesses will be offset by gains in other businesses, or the displaced businesses will relocate to other suitable areas. The new access road will have an aesthetic impact on the community. It will impact the residential area between Matchette Road and Ojibway Parkway. Plaza A has the greatest potential effect from a community and neighborhood features perspective due to the displacement of residences and proximity to the adjacent Armanda Street area. Similarly, Crossing X-11 has the greatest potential for effects from a community and neighborhood features perspective, due to its proximity to Sandwich Towne. Plaza B1 and Crossing X-10B are considered to have the fewest overall impacts to the community, including displacement of residents and businesses, in comparison to the other alternatives. Appropriate mitigation will be developed once a Preferred Alternative is chosen.

- **Noise**

- U.S.: Traffic volumes and ambient noise levels will increase as economic conditions improve with a new border crossing and could exceed annoyance levels at sensitive uses like residential areas or institutions (e.g., churches/schools). But, negative effects can be avoided with care by the developer/builder and local government-approving agency in locating this increased development away from sensitive uses. Under federal and state noise policies, local communities are discouraged from locating new sensitive noise receivers near highway noise sources.
- Canada: The communities most affected by the plazas and crossings are the southern portion of Sandwich Towne and the residential communities near Matchette Road and E.C. Row Expressway. The noise generated solely from the plaza locations is not expected to cause a high noise impact for areas closest to the plazas. In most cases, homes are more than 165 feet away from the plazas. There is one social feature displaced with all the plaza and crossing alternatives – the Erie Wildlife Rescue facility. Appropriate mitigation will be developed once a Preferred Alternative is selected.

- **Water Quality and Wetlands**

- U.S.: Increased development could lead to more impervious surface runoff and pollutant load, if local jurisdictions and Drain Commissions do not apply appropriate controls on development to prevent sedimentation, changes in stream hydrology and geomorphology, and potential impacts to aquatic species. Reclaiming properties now affected by hazardous materials to accommodate increased economic activity is very possible. Thousands of such properties exist, are abandoned, and have NOT been remediated. Use of the property by DRIC-stimulated activities should cause remediation which will improve the quality of the runoff into surface and subsurface drainage infrastructure compared to the No Build Alternative.

No cumulative impacts on wetlands are anticipated as the study area is highly built up. However, if development were to move down I-75 into Monroe County, wetlands impacts could be possible. They would have to be mitigated consistent with laws and regulations.

- Canada: Plaza A/Crossing X-11 is expected to have a relatively low impact. Plaza B1/Crossing X-11, Plaza B/Crossing X-11 and Plaza A/Crossing X-11 via Ojibway Parkway are expected to have a moderate impact. Crossing X-10 and Plazas B and B1 would encroach on the Ojibway Black Oak Woods ESA.

Plaza A/Crossing X-11 via Brighton Beach, Plaza A/Crossing X-11 and Plaza A/Crossing X-10, are expected to displace more provincially rare vegetation communities and species.

Plaza A/Crossing X-11 via Ojibway Parkway would have fewer impacts to natural features than Plaza A/Crossing X-11 via Brighton Beach.

Appropriate mitigation will be developed once a Preferred Alternative is chosen.

5. FINDINGS

The indirect and cumulative effects discussed in this report are those expected in the area around the host community of Delray. Precise quantity and location of broader regional effects are virtually impossible to define. Nonetheless, it is important to recognize what effects may occur in one key regional area: wealth distribution/redistribution, which is associated with shifts in population, employment and tax base discussed earlier.

For both the Build and No Build Alternatives, it is noted that market-driven actions and supporting public policy decisions underlie the dynamics of the wealth distribution pattern in the Detroit-centered region. All these decisions operate separately from the DRIC alternatives. These dynamics include, as cited by SEMCOG in a report entitled *Land Use Changes in Southeast Michigan, Causes and Consequences*, "...residential segregation by race and income, federal tax subsidies for home mortgage interest and property taxes, school funding and quality, crime and public safety, societal ideals of lifestyle and urban design, constitutional protections of private property rights, infrastructure financing policies, and extent of personal vehicle ownership and use."

MDOT, in partnership with FHWA, is exploring a number of concepts by which enhancements may be made to the study area for the DRIC project. These concepts include partnering with the private sector and with other government agencies in areas such as job training, small business development, improving and replacing housing stock, and other community enhancing amenities. Depending on comments from stakeholders and community leaders, these concepts may continue to be studied and refined as the DRIC process moves toward the selection of the Preferred Alternative, which will be addressed in the FEIS. This can occur regardless of the proposed Ambassador Bridge Enhancement Project, which is a six-lane replacement span of the existing four-lane bridge or by the construction of the Detroit River Tunnel Partnership proposed truck-only tunnel. Neither project nor both projects would measurably diminish the traffic on the proposed DRIC crossing and neither is associated with a program to enhance the community which hosts the crossing.

