Corporation of the
City of Windsor

FINAL REPORT - VOLUME 1
ENVIRONMENTAL STUDY REPORT

CLASS ENVIRONMENTAL ASSESSMENT

TECUMSEH ROAD EAST IMPROVEMENTS - JEFFERSON BLVD TO BANWELL RD

OCTOBER 1996

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& ASSOCIATES LIMITED
WINDSOR - LONDON

CONSULTING ENGINEERS

CLASS ENVIRONMENTAL ASSESSMENT

TECUMSEH ROAD EAST IMPROVEMENTS

JEFFERSON BOULEVARD TO BANWELL ROAD

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Introduction

The Tecumseh Road East Corridor from Jefferson Boulevard to Banwell Road (east City Limits) is already a busy major arterial road. The area served by Tecumseh Road East also has a considerable amount of developable land, most notably the East Riverside Planning District, within which the East Riverside Community is now under construction. That area is expected to mirror the Forest Glade Community in size and population.

Recent studies of accident data, traffic data and estimated future traffic confirm that the noted Tecumseh Road East Corridor is already experiencing problems and that these problems will grow as the area develops and traffic increases. The following problem statement has been made:

> **The Tecumseh Road East Corridor has a severe capacity deficiency resulting in traffic congestion, travel delays and increased accidents. As development proceeds in the area, this condition will worsen. Corridor improvements are required immediately to alleviate this situation and provide appropriate arterial road service.**

The purpose of this project is to examine corrective solutions to those problems. The purpose of this Environmental Study Report is to document that process as it was conducted according to the requirements of the Class Environmental Assessment for Municipal Roads Projects (June 1993). This study was carried out as a Schedule C project.

The project was coordinated by the following:

- Mr. T. W. Szalay - Director, Roads Engineering, Department of Public Works
- Mr. M. Palanacki - Director of Traffic Operations, Traffic Engineering Department
- Mr. D. Caruso - Director of Current Operations, Planning Department
- Mr. B. Sherwood - LaFontaine, Cowie, Buratto & Associates Limited

Inputs from members of the Project Team were requested as required.

Existing Conditions

An inventory of the existing natural, social, economic and infrastructure environments was compiled for the project. This information was used to identify evaluation criteria for alternative solutions and design concepts. Generally, the inventory reflects an environment typical of a highly urbanized arterial corridor.

The Little River corridor was identified as a natural resource warranting protection and enhancement wherever possible. The City's linear park and bikeway system also parallels the Little River corridor. A secondary bikeway along Lauzon Road is included in the City's Official Plan.

Land use along the corridor fronting onto Tecumseh Road East is industrial/commercial. Existing residences are non-conforming uses and in the evaluation of alternative solutions and design concepts, it was assumed that those uses would be gradually removed by future development. However, just east of Little River, an apartment complex exists and a similar medium density development is pending in the area. The remainder of developable land fronting on Tecumseh Road East is designated for commercial/industrial uses. A significant area along the south side of the right-of-way is occupied by the Forest Glade subdivision where the homes back-lot onto Tecumseh Road East.

Traffic noise predictions were made at several locations along Tecumseh Road East in the area of Forest Glade. The MOEE/MTO Protocol Agreement used for Class EA's dictates that if there will be an increase in noise levels of 5 dBA or more, measures to mitigate the noise increase must be considered. For the 5 prediction locations, the 5dBA warrant was not satisfied. This information was provided at Public Information Centre #2 and is shown on Table 3.2 on Page 37.

Extensive infrastructure exists within the study corridor. Tecumseh Road East is basically a four lane undivided roadway through the study area. Between Roseville Garden Drive and Lauzon Parkway, 3 lanes exist in the eastbound direction and a raised median exists. Between Lauzon Parkway and Lauzon Road, a two-way-left-turn lane exists. On Tecumseh Road East west of Little River, all intersections are signalized and have provision for left turn storage. East of Little River, only the intersection with Forest Glade Drive is signalized and there is no provision for left turn storage. Intersections on Jefferson Boulevard at Rose Avenue and Lauzon Road at the entrance to the two shopping malls are signalized but

have no provision for left turn storage. The existing roadway conditions are shown on Figures 3.6 (a)-(f).

There is also substantial underground and aerial infrastructure along the corridor including storm sewers, sanitary sewers, watermains, gas mains, hydro distribution, street lighting and cable TV. These systems have been reviewed with their respective owners to ascertain current conditions as well as any plans for expansion. These services are shown on Figures 3.9 (a)-(j).

Public and Agency Involvement

The Class EA process requires that opportunities for public review be made at certain points in the project. The following indicates the points of public and agency contact included in this project:

- Newspaper announcement signalling commencement of the Class EA and soliciting comment (February 25, 1995)
- Contact letters sent to agencies assumed to have an interest or potential concern.
- Newspaper announcement signalling a date for Public Information Centre #1 (November 18, 1995) — Mandatory
- Contact letter mailed to all abutting owners/tenants (November 16, 1996)
- Contact letters and draft Phase 1 and 2 reports sent to agencies (November 27, 1996)
- Public Information Centre #1 to review alternative solutions (November 29, 1996) — Mandatory
- Responses made to individual requests for clarification or additional information

- Additional update synopsis sent to all abutting owners/tenants including a comment sheet, to ensure information had been received (January 1996)

- Newspaper announcement signalling date for Public Information Centre No. 2 — Mandatory

- Contact letters sent to all owners/tenants notifying of date for Public Information Centre

- Draft copies of ESR (partial) circulated to agencies

- Public Information Centre No. 2 held to review design concepts — Mandatory

- Individual and group meetings to clarify/discuss effects and resolve concerns

- Newspaper announcement signalling completion of Class EA and identifying opportunity for 30 day public review — Mandatory

Several concerns/issues were raised by residents and business operators. The following identifies many of the more important concerns (full documentation of comments and responses is included in Appendix A):

- Business negatively affected by raised median
- Direct property impacts - driveways, parking areas, business signs, fences
- Increase in traffic noise
- Safe left turns across 3 lanes of oncoming traffic
- Safe pedestrian crossings of Tecumseh Road East
- Provision of sidewalks
- Need to construct Lauzon Parkway extension first
- Access alternatives when raised median in place
- Turn-around options at signalized intersections and intra-parcel access.

Alternative Solutions

A range of alternative solutions to the problem were evaluated including do-nothing, intersection improvements, increased transit service and roadway widening. To guide the evaluation process it was agreed that reasonable options should satisfy the following objectives:

1. Improve roadway capacity to handle existing and estimated future traffic demands.
2. Reduce accident potential.
3. Minimize adverse impacts to adjacent land uses and communities.
4. Minimize impacts to the environment - social, natural, infrastructure.

Based on the traffic analysis, additional lanes are required on Tecumseh Road East; therefore the do-nothing alternative is not a reasonable option but was used as a benchmark for comparison. Intersection improvements and increased transit service would provide some benefits, but not sufficient to solve the problem. It was evident that only a widening solution would provide sufficient benefits to be considered reasonable.

Four widening alternatives were evaluated:

- 4 lanes with centre two-way-left-turn lane
- 6 lanes undivided
- 6 lanes with centre two-way-left-turn lane
- 6 lanes divided

Based on the evaluation summary shown in Table 2.2, only the 6-lane divided solution satisfies the project objectives, while minimizing negative impacts.

The 6-lane divided solution was identified at Public Information #1 as the preferred solution. The public response indicated support for the widening of Tecumseh Road East; however, concern was expressed regarding access to businesses when left turns are prevented by the raised median. Turn-around opportunities (u-turns) at intersections and private intra-parcel accesses were identified as mitigating measures.

The 6-lane divided solution was adopted by the Project Team as the Preferred Solution for further analysis in Phase 3 of the Class EA process.

Alternative Design Concepts

Early in the process of developing alternative design concepts based on the recommended solution, it was identified that there are minimal operational and cost differences between the various reasonable proposed design options. The key difference lay in the property impacts.

Therefore, roadway centreline alignments incorporating the adopted basic 36 m right-of-way were developed and property impacts were measured and tabulated, as shown in the evaluation tables in Chapter 4.

For the evaluation of design concepts for Tecumseh Road East, it became evident that local conditions regarding existing right-of-way width, existing land use and future land use created varying effects on the evaluation such that one design concept throughout the project was not desirable. The corridor was divided into 6 evaluation sections based on changes in the above-noted characteristics. Separate evaluations were carried out and a preferred design was identified for each section. The identified "composite" preferred alignment was developed using these individual preferences with transitions between. In no case were impacts increased as a result of the transition alignments. The Recommended Alignment is illustrated on Figures 4.6 (a)-(k).

The following alignment preferences were identified:

Jefferson Boulevard	-	Alternative 2
Tecumseh Road East		
- Section 1	-	Alternative 1
- Section 2	-	Alternative 2
- Section 3	-	Alternative 2
- Section 4	-	Alternative 3
- Section 5	-	Alternative 2
- Section 6	-	Alternative 3

For Lauzon Road, only one alternative was considered reasonable given the property controls on the east side of the right-of-way. The recommended alignment maintains the existing property line on the east necessitating a shift of the roadway to the west.

A widening of Tecumseh Road East requires improvements to the Little River bridge. In addition, a 6 m easement has been obtained on the east side of Little River for the purpose of extending the linear open space area which will be used ultimately as a primary recreationway (extension of the Ganatchio Trail). Both needs, that is a road bridge and a safe pedestrian/cyclist crossing of Tecumseh Road East, were developed together.

Development of the roadway bridge alternatives considered two approaches. The first was the widening of the existing road bridge and provision of a separate crossing structure (Alternatives 1 and 3) for pedestrians and cyclists. The second was the complete reconstruction of the existing bridge and the inclusion of a pedestrian/cyclist pathway under it (Alternative 2). The evaluation shown in Table 4.3 identified Alternative 1 - widen existing road bridge and construct pedestrian/cyclist overpass as preferred for personal safety and construction flexibility reasons.

Using the Recommended Alignment and the established design standards, the Recommended Design, as shown on Figures 4.8 (a)-(k), was developed. This design was presented to the public at Public Information Centre #2.

The development of the Recommended Design included consideration of residual impacts such as changes to existing access. Several examples were provided to illustrate alternative access potential where left turns in and out of abutting properties would be eliminated. These alternatives are shown on Figures 4.8 (a)-(k) and were presented to the public.

Following consideration of public comment together with the severity of the identified problems and need for improvements, the Project Team adopted the Recommended Design as the Preferred Design.

The Preferred Design was graphically documented (Figures 5.1 (a)-(k)) and preliminary property requirements were identified (Figures 5.3 (a)-(k)).

In total, this is a very large project and could not be constructed at one time. A construction staging strategy was prepared which split the project into manageable segments (in the order of $2.5 million) and identified a sequence of construction based on priority of need. Figure 5.4 illustrates the 12 potential contracts and their estimated values.

Priority for the first 4 to 5 contracts is clear at this time. The sequence for the remaining contracts was based on assumptions relative to development of the East Riverside Community. If some of the smaller contracts can be combined, the overall construction program can be shortened. The construction stages and approximate values are shown in the following table and Figure 5.4 is repeated here for clarification.

It is recommended that, following adoption of the recommendations in this report, the City initiate the preparation of a legal property plan to fully define the new corridor.

COST AND CONSTRUCTION STAGING SUMMARY

TECUMSEH RD. E. CLASS EA

JEFFERSON BLVD. TO BANWELL RD

STAGE	DESCRIPTION	ESTIMATED TOTAL VALUE(1) ($ MILL)	UTILITY RELOCATION(2) ($ MILL)
1	Tecumseh Rd. E. from sta. 2+730 to 3+120 including Lauzon Rd. from Yolanda St. to CNR	$3.43	$0.62
2	Tecumseh Rd. E. from sta. 2+310 to 2+730 including connection at Annie St.	$2.40	$0.58
3	Tecumseh Rd. E. from sta. 1+000 to 1+330 including Jefferson Blvd. from Empress St. to about 190 m. south of Tecumseh Rd. E.	$3.49	$0.52
4	Tecumseh Rd. E. from sta 1+330 to 1+800	$2.09	$0.46
5	Tecumseh Rd. E. from sta. 5+220 to 5+680 including connection to Banwell Rd.	$2.31	$0.40
6	Tecumseh Rd. E. from sta. 3+970 to 4+270 incuding connection to Forest Glade Dr.	$1.39	$0.31
7	Tecumseh Rd. E. from sta. 1+800 to 2+310 including connection to Lauzon Parkway	$2.53	$0.52
8	Jefferson Blvd. from about 190 m. south of Tecumseh Rd. E. to about 75 m. south of Rose Ave.	$1.50	--
9	Tecumse4h Rd. E. from sta. 4+610 to 5+220 including connections to Clover St. and Robinet Lane	$3.18	$0.57
10	Tecumseh Rd. E. from sta. 4+270 to 4+610	$1.63	$0.29
11	Tecumseh Rd. E. from sta. 3+490 to 3+970	$2.34	$0.44
12	Tecumseh Rd. E. from sta. 3+120 to 3+490 including widening of Little River Bridge and pedestrian/cyclist overpass	$2.38	$0.08
	TOTALS	**$28.67**	**$4.80**

(1) Estimated costs include new contruction, property, and engineering and contingencies. No allowance was made financing costs or applicable taxes.

(2) Cost sharing formulas have not been applied at this stage but will be negotiated before or during final design.

1.0 INTRODUCTION

1.1 Background

In 1838, the Tecumseh Trail, which followed the south shore of the Detroit River was replaced by Tecumseh Road (also known as the Back Road by the early settlers). It was set back considerably from the shoreline because of erosion concerns and its alignment determined the location of towns and villages such as Tecumseh, Pike Creek, Puce, and Belle River.

Since those early days, Tecumseh Road East has developed into one of the major east-west arterial roads in the City of Windsor. At one point it was designated as King's Highway No.39 but later reverted to local jurisdiction.

Tecumseh Road East currently stretches from Ouellette Avenue in Windsor to Brighton Road in St. Clair Beach, a distance of about 15 km (10 miles). Along its route, it serves typical strip commercial uses and residential neighbourhoods such as Forest Glade, Fontainbleu and Ford/Ferndale. Along with intersecting arterial streets, it serves major industry such as Chrysler Canada, the Ford Motor Company and the General Motors Trim Plant and associated industries.

There is also considerable undeveloped land along Tecumseh Road East between Jefferson Boulevard and the City's east limit particularly on the north side. The East Riverside Planning District in the northeast corner of the City will experience appreciable growth over the 20 year planning period for this study.

Normal traffic growth relative to the existing development places sufficient demand on Tecumseh Road East to maintain it as a major arterial in the City's network and is even now causing severe traffic congestion and associated accidents during certain times of operation. The development of the remaining vacant areas will increase the pressure on Tecumseh Road East. This situation is identified in the City's Strategic Transportation Improvement Priority Study in which improvements to Tecumseh Road East to increase capacity and safety are given a high priority.

Recently, the potential for development of vacant land in the East Riverside Planning District changed dramatically which would affect predictions of future traffic demand.

By Council Resolution 194/94 (February 21, 1994), and 104/95 (January 1995) LaFontaine, Cowie, Buratto & Associates Limited was retained to carry out a Class Environmental Assessment for these sections of Tecumseh Road East. The purpose of this study is to evaluate alternative solutions to the identified transportation problems in the study area, leading to the selection of a preferred solution.

1.2 The Environmental Assessment Process

In recent years, the need to more directly involve the public in the decision making process for public projects was recognized, and in some cases demanded by the public. The Environmental Assessment Act (EA Act) was passed in 1975 by the Province of Ontario to provide a mechanism for public participation in public projects. The EA Act has provided that an Environmental Assessment must be prepared for all municipal road projects.

The EA Act recognized that certain Municipal undertakings occur frequently, are small in scale, have a generally predictable range of effects or have a relatively minor environmental significance. To ensure that a degree of standardization in the planning process is followed throughout the Province for these types of projects, a process known as a Class Environmental Assessment has been approved for use by Municipalities for use on projects which require approval under the Act but which are not considered to be major environmental works. These procedures were developed by the Municipal Engineers Association (MEA) and are contained in a document called "Class Environmental Assessment for Municipal Road Projects, June 1993". It is a self-assessment process and the responsibility rests with the proponent, the City of Windsor, to ensure that the requirements of the Class EA process are met. Projects which follow this process do not require further approvals under the Environmental Assessment Act. This process applies to the type of project being considered to alleviate traffic congestion and reduce accidents in the Tecumseh Road East Corridor (Corridor) from Jefferson Boulevard to Banwell Road (City of Windsor east limits).

The Class EA process involves a sequence of activities which guide a proponent in the planning of a project such that the requirements of the Environmental Assessment Act have been met. That process involves 5 basic principles:

1. Involve all parties potentially affected by the project in cooperative planning and design early and throughout the process.

2. Consider a reasonable range of alternative solutions and alternative designs for the preferred solution including the "do nothing" option.

3. Identify the effects of the alternatives on appropriate elements of the environment, consistent with the importance of that element.

4. Conduct a systematic evaluation of alternatives identifying advantages and disadvantages, leading to a determination of net environmental impacts.

5. Provide clear and complete documentation of the process to allow "traceability" of the decision-making process.

The above principles are applied in a 5 phase process leading to preparation of an Environmental Study Report (ESR) and construction of the project, as shown in Figure 1.1 This ESR will cover the first four of those phases as follows:

Phase 1
- identify problem/deficiency

Phase 2
- identify alternative solutions taking into consideration important elements of the environment
- evaluate alternative solutions
- review with public and affected/interested agencies
- select preferred solution

Phase 3
- develop alternative designs for preferred solution
- evaluate alternatives and identify environmental impacts
- review with public and agencies
- resolve concerns/investigate environmental effects
- identify residual environmental affects
- select preferred design alternative

Phase 4
- prepare ESR to document above process
- place report on the public record and advertise completion of the study

The guidelines for conducting a Class EA define three categories of increasing involvement:

Schedule A - projects of limited scope with minimal adverse impacts
- considered approved without further review

Schedule B - larger projects with adverse impacts in limited areas
- "screening" of issues to determine if any concerns exist

Schedule C - projects have the potential for significant environmental effects and concerns
- must prepare an Environmental Study Report (ESR)

The range and potential impacts of alternatives to improve the Corridor in view of the perceived problem has led to the decision to designate this project as a Schedule C project. This decision will be confirmed at the end of Phase 2.

If there are unresolved concerns regarding the Class EA process followed by a proponent, affected individuals or agencies may request that a Schedule B project be elevated to a Schedule C or that a Schedule C be "bumped-up" to an individual environmental assessment.

1.3 Problem Definition

As traffic flow increases on a roadway, the vehicle density increases resulting in traffic congestion. Congestion causes delays at intersections and usually results in a higher number of accidents.

An earlier traffic analysis (1990-91) of the Corridor indicated that several of the intersection approaches were at or near capacity. This analysis was based on a modest increase in traffic volumes over a 20 year planning period as well as a planned expansion of the Tecumseh Mall and allowance for development of available vacant land (excluding the East Riverside Planning District). In 1994, the potential development of the East Riverside Planning District by CN Real Estate, dramatically increased the anticipated travel demands in the Corridor to the City's east limits (Banwell Road). The detailed traffic analysis

provided in a later section includes consideration of the estimated traffic generated by all new developments as well as an estimate of how much of that traffic would use Tecumseh Road East. Accordingly, many roadways will experience an approximate doubling of traffic over the next 20 years leading to an extreme deterioration of traffic service[1].

The analysis of accidents in the Corridor is based on data obtained for 1992 and 1993. The details are provided later but the major observations are as follows:

1. 50% of all accidents occur at mid-block locations (i.e. not related to turning conflicts at intersections).

2. Accident rates where left turns are controlled (i.e. raised median with appropriate openings) are only 25% of the uncontrolled locations.

3. 43% of all accidents are at intersections and 75% of that total occur at only 4 out of 10 intersections - Lauzon Parkway, Annie Street, Lauzon Road and Forest Glade Drive.

Based on the above, the problem can be defined as follows:

> **The Tecumseh Road East Corridor has a severe capacity deficiency resulting in traffic congestion, travel delays, and increased accidents. As development proceeds in the area, this condition will worsen. Corridor improvements are required immediately to alleviate this situation and provide appropriate arterial road service.**

1.4 Public Input

The discretionary public consultation identified in the Class EA guidelines was followed in the form of a newspaper announcement indicating the start of the project and providing

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[1] Traffic Analysis and Planning Report, August 1995, E. Fearnley Ltd.

an opportunity for input. Appendix A provides a copy of the announcement inviting public comment. Response to the ad was minimal. Only one business operator east of Little River on the north side of Tecumseh Road East inquired by telephone. Since that notice and prior to the first public meeting, several potential developers made contact with the Consultant through various City Departments. The main interests were in knowing the basic process being followed as well as the possibility of effects on access to the subject properties.

1.5 Study Area

Figure 1.2 shows the project study area examined for purposes of estimating future traffic demands on the Corridor. It is approximately defined on the north by the Detroit River and Lake St. Clair, on the west by Ouellette Avenue, on the east by the Tecumseh/Windsor boundary, and on the south by the City of Windsor boundary.

Also shown is the Improvement Corridor which contains the main east-west arterial serving the area as well as short sections of the intersecting roads. This is the area in which solutions to the problem and their effects, are concentrated.

1.6 Project Organization

This project was directed by a Project Team consisting of the following members:

Mr. T. W. Szalay, Public Works - Director of Roads Engineering
Mr. T. Murray, Public Works - Director of Sewers Engineering
Mr. M. Palanacki, Traffic Engineering Department - Assistant Traffic Commissioner
Mr. D. Caruso, Planning Department, Director of Current Operations
Mr. B. Sherwood, LaFontaine, Cowie, Buratto & Associates Limited - Project Manager
Mr. E. Fearnley, E. Fearnley Ltd. - Transportation/Traffic Sub-Consultant

Representatives of other departments provided technical input and assisted with public information centres as follows:

Mr. Mark Winterton	-	Public Works, Development Division
Ms. Faye Langmaid	-	Parks and Recreation Department
Mr. Mike Stamp	-	Property Department
Mr. Glen Adams	-	Public Works - Road Division
Mr. Larry Webb	-	Public Works, Sewers Division

The Class EA process requires that external agencies potentially affected or interested in the project be contacted. Table 1.1, External Involvement, identifies the agencies and interest groups notified of the study in Phase 1 and whether or not further participation was requested.

TABLE 1.1

EXTERNAL INVOLVEMENT

AGENCY	CONTACT	REPLY TO LETTER	COMMENTS
1. Ministry of Natural Resources	Ron Baldwin Fred Johnson	yes	- do have interest in project as it affects Little River watercourse
2. Ministry of Community & Social Services	Shari Cunningham	no	
3. Ministry of Housing	Stan Purves George Robson	yes	- No affect - Request further information
4. Ministry of Municipal Affairs	Dan Hammond	no	
5. Ministry of Transportation	Peter Ginn	no	
6. Essex Region Conservation Authority	Thom Hunt Planning Technician	yes	- do have interests including Little River watercourse and flood plain. (ie Water quality, stormwater drainage, flow, fish habitat and vegetation) - request to be kept informed throughout

AGENCY	CONTACT	REPLY TO LETTER	COMMENTS
7. Windsor Roman Catholic Separate School Board	James Molnar W. M. Lozinski Supt. of Education	yes	- requests further information
8. Windsor Board of Education Board	Stephen Payne Mr. A. Cook Plant Manager	yes	- requests further information
9. Transit Windsor	Bob Goody	yes	- noted bus routes through study area- noted possibility of future routes to Tecumseh Road - request further information
10. Windsor Architectural Conservation Committee	Sharon Amlin	yes	- no designated properties in study area
11. Windsor and District Chamber of Commerce	Mark Jacques President	yes	- no affect - does not require further info
12. Windsor Housing Authority	George Robson	Yes	- would like further information
13. Little River Enhancement Group	Mr. Naisbitt	yes	- interested in seeing that the Ganatchio Trail crosses Tecumseh Road near Little River
14. CN Rail Environmental Assessment	Mr. I. Waldensberger	no	
15. CN Real Estate	Mr. M. Kindrachuk Development Manager	yes	- interested in project, specifically the Banwell/ Tecumseh Road intersection
16. Town of Tecumseh	Mr. L. A. Lessard Administrator	yes	- requests further information
17. Windsor Bicycling Committee	Ms. Sharon Amlin Secretary	yes	- interested in project as it might affect the conceptual Bike Way Plan - suggest attending one of their meetings

AGENCY	CONTACT	REPLY TO LETTER	COMMENTS
18. Windsor Utilities Commission	Mr. Kent Edwards	no	
19. Union Gas	Ms. Karen Hockin	no	
20. Bell Canada	Mr. Keith Lumsden	no	
21. Trillium Cable	Mr. Ed Schaeffer	no	

1.7 Background Studies

The background studies which include consideration of Tecumseh Road East within the improvement Corridor are:

Windsor Urban Transportation Study, Report on Phase I, October 1972 by Deleuw Cather, Canada Ltd.

This study was the first phase of a long-range view of Windsor's transportation system needs based on a projected population of 356,000 for the greater Windsor area. The concepts for Phase 1 were investigated further in Phase II.

Windsor Urban Transportation Study, Report of Phase II, June 1980, by DeLCan, Canada Ltd.

This study consolidated the previous work on Phase I and identified the transportation system for the target year when the population reached 269,000 persons.

Little River Corridor Open Space Study, City of Windsor Department of Parks and Recreation, 1979, by Johnson, Sustronk, Weinstein and Associates Ltd.

The study examines the Little River Corridor from Lake St. Clair southerly to Sandwich South Township in relation to its ability to support a viable open space system.

Design Report, Lauzon Corridor Servicing Program, 1987, by N. K. Becker Associates Ltd.

This report documents the analysis of improvements to the Lauzon Parkway Corridor north of Tecumseh Road East including a part of Tecumseh Road East which is part of this study.

Little River Comprehensive Stream Study, 1992, by LaFontaine, Cowie, Buratto & Associates Limited, CH2M Hill Engineering Ltd. and the Great Lakes Institute

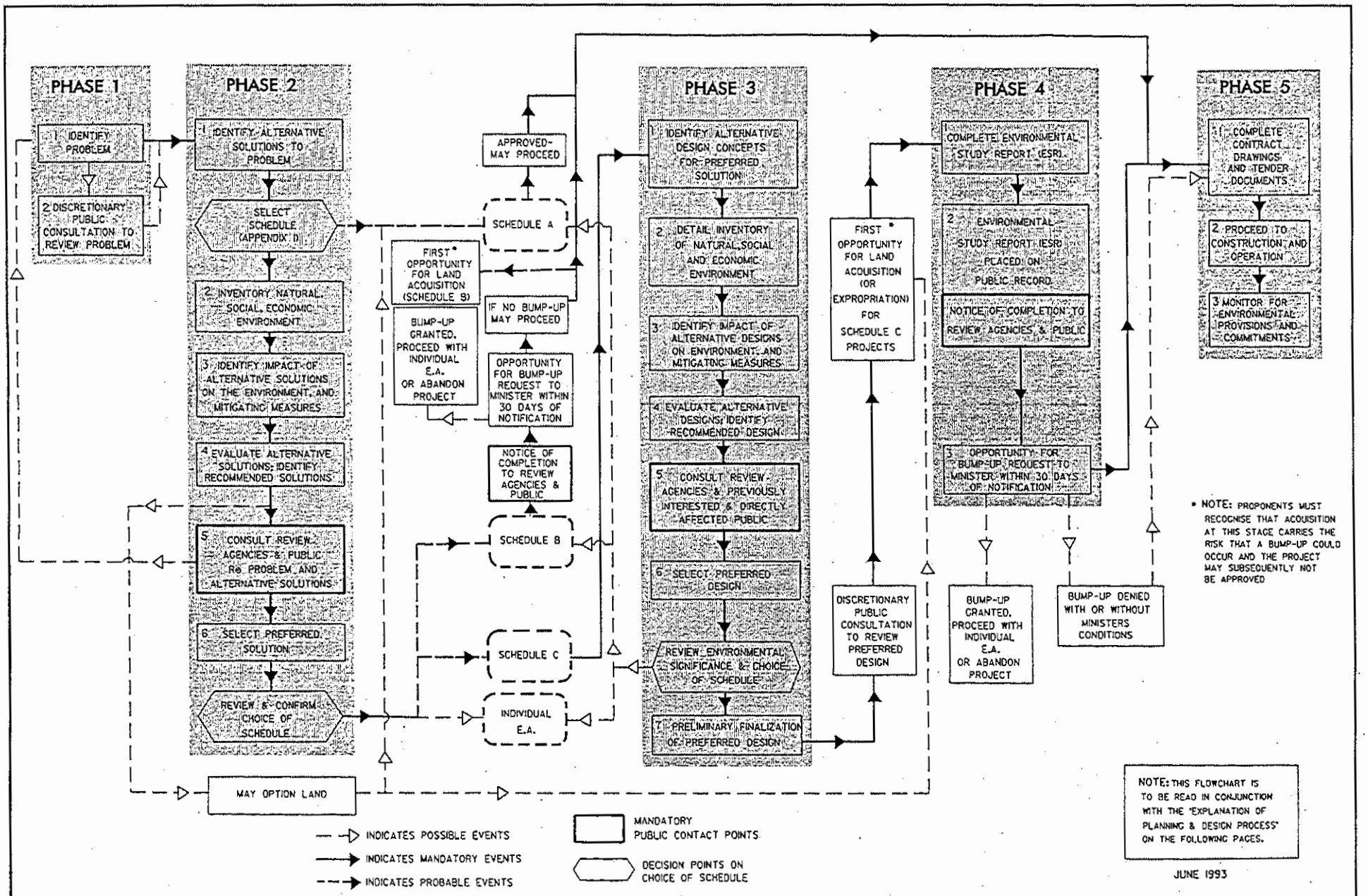
This report documents the preparation of a comprehensive data base for the assessment of environmental quality in the Little River Corridor. This study was also used as a secondary source, for natural environment data for the Tecumseh Road East Class EA in place of new field inventories.

Bicycle Use Development Study for the City of Windsor, December 1990, by Victor Ford and Associates Inc., LaFontaine, Cowie, Buratto & Associates Limited, E. Fearnley Ltd., Blair Martin Planning Consultant

This study provides recommendations for the promotion, education, planning and development of bicycle use in the City of Windsor

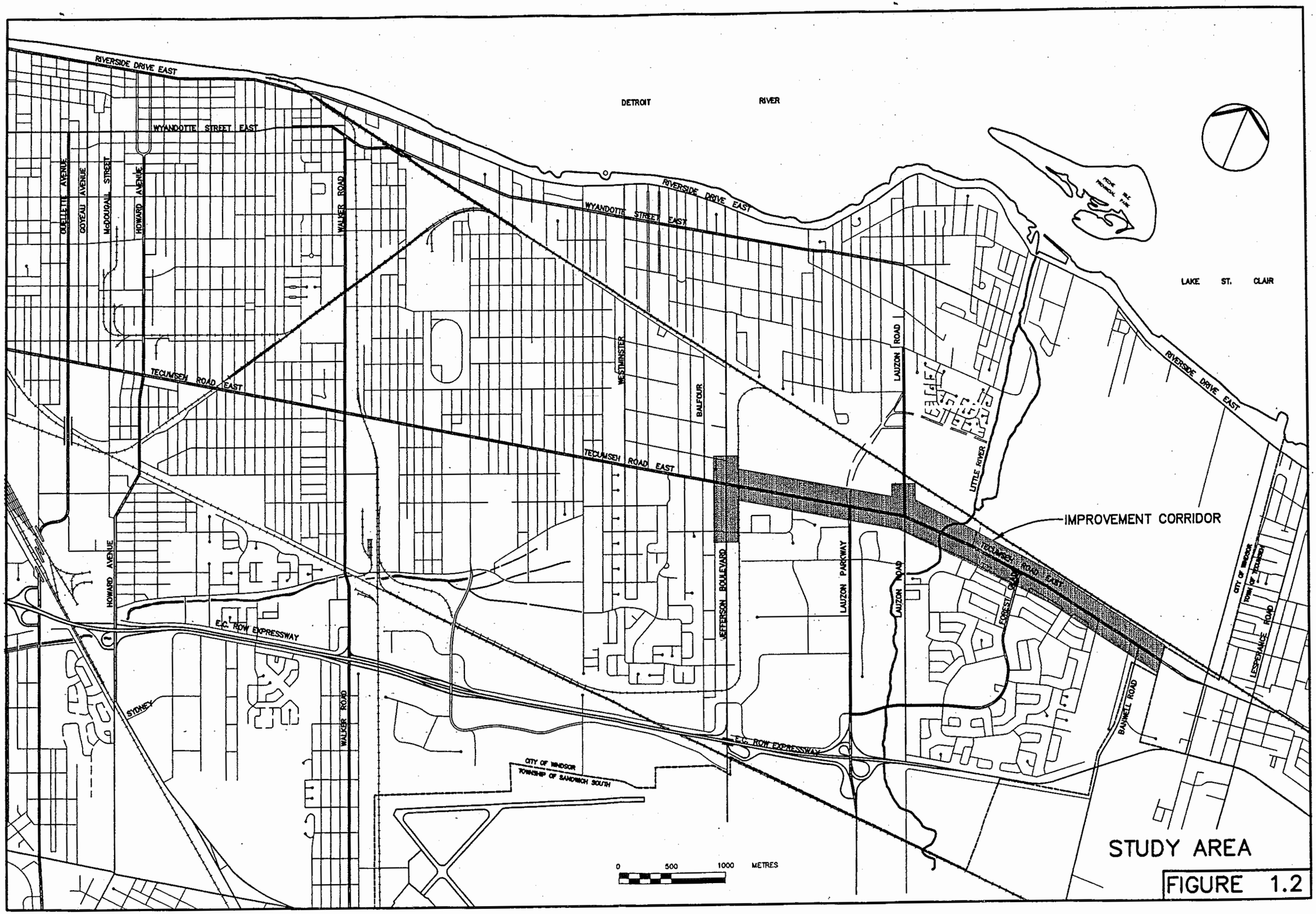
Little River Stewardship Study, Biological Inventory and Recommendations, 1994 by Environmental South Corps, Windsor Board of Education, and Windsor Department of Parks and Recreation

This report documents the inventory of the biological resources in the Little River Corridor in order to provide a baseline for further improvements and monitoring. This information was used in place of new field inventories to describe the limited natural habitat existing within the Tecumseh Road East Corridor.



PLANNING AND DESIGN PROCESS FOR MUNICIPAL ROAD PROJECTS

Figure 1.1


RIVERSIDE DRIVE EAST
WYANDOTTE STREET EAST
DETROIT
RIVER
OUELLETTE AVENUE
GOYEAU AVENUE
McDOUGALL STREET
HOWARD AVENUE
WALKER ROAD
WESTMINSTER
BALFOUR
LAUZON ROAD
LAKE ST. CLAIR
RIVERSIDE DRIVE EAST
TECUMSEH ROAD EAST
LITTLE RIVER
IMPROVEMENT CORRIDOR
HOWARD AVENUE
E.C. ROW EXPRESSWAY
JEFFERSON BOULEVARD
LAUZON PARKWAY
LAUZON ROAD
FOREST GLADE
CITY OF WINDSOR
TOWN OF TECUMSEH
LESPERANCE ROAD
BANWELL ROAD
STONEY
WALKER ROAD
CITY OF WINDSOR
TOWNSHIP OF SANDWICH SOUTH
0
500
1000
METRES
STUDY AREA
FIGURE 1.2

2.0 ALTERNATIVE SOLUTIONS

In Phase 2 of a Class EA, alternative ways of solving the identified problem(s) are investigated and evaluated against a set of project objectives.

A general review of the environment, the evaluation methodology and the evaluation of alternative solutions is presented to affected or interested agencies and the public. Following a review of comments, a preferred solution(s) is identified for further investigation in Phase 3.

2.1 General Description of the Environment

The environment traversed by the Corridor is typical of a major arterial roadway serving the functions of both adjacent access and through traffic. To provide a context for the problems and alternative solutions, the following provides a general description of the environment in the area. Additional information for some of the subjects is provided in the next section.

2.1.1. Natural

The subject Corridor is typical of a highly urbanized area. It crosses Little River just east of Lauzon Road. This is the only natural area in the Corridor and although severely stressed by the industries along its banks and its use as a storm drain, the Little River corridor in this area is identified as an important recreational asset. There are efforts underway to create or reclaim the section north of Tecumseh Road East as a naturalized parkland[2].

The vegetation along the corridor consists mainly of individual trees which are included in the Parks Department's inventory but none are considered significant. When tree removal is required for construction work, normal practice (required by the Official Plan) is to relocate trees to a suitable location or provide a replacement tree.

There are 3 candidates for natural heritage sites in the vicinity of the Corridor, but well outside the limits of any perceived improvement. The areas are described in more detail in the next chapter.

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[2] Little River Stewardship Study, 1994

2.1.2 Economic

All land immediately adjacent to the Corridor on the north side is used for or zoned for commercial or industrial purposes. On the south side, commercial or industrial uses are identified between Jefferson Boulevard and Little River and from Robinet Lane to the east City limits.

Lauzon Road north of Corridor to the CNR is fronted by a shopping centre on both sides.

Jefferson Boulevard south of the Corridor to Roseville Gardens is also zoned and used for commercial and industrial uses.

2.1.3 Social

Residential

Typically, where residential areas exist or are planned along the Corridor, they are buffered by a commercial/industrial strip not less than about 60 m. These neighbourhoods exist north and south of the Corridor, west of Jefferson Boulevard and south of the Corridor between Lauzon Parkway and Little River. Immediately east of Little River, small future residential areas will front onto the Corridor. Easterly to Robinet Lane is the Forest Glade area where houses adjacent to the Corridor back onto the Corridor right-of-way.

North of the Corridor on Jefferson Boulevard and south at Lauzon Road, residential uses exist beyond the commercial strips.

Several legal non-conforming residential uses exist in the commercial/industrial zoned area paralleling the north side of the Corridor.

Heritage Resources

The City of Windsor Heritage Properties Inventory identifies one property at 11662 Tecumseh Road East which is house build about 1880. As yet, it has not been designated under the Heritage Act.

Recreation

A limited amount of parkland fronts onto the Corridor at Little River where a 6m (20') easement follows Little River on the east side. This land is designated as parkland in the Official Plan and will be defined graphically in a later section.

A primary recreation way follows the Little River Corridor from Riverside Drive to the CNR, following the Penang Lane road allowance just north of the CNR and using the current authorized level crossing of the CNR at Penang Lane. From south of the CNR on Penang Lane, the route parallels the CNR easterly to the City owned property on the north side of the Corridor, where it swings south to intersect the Corridor. The route continues south on Forest Glade Drive as a secondary bikeway designation. The City's Parks and Recreation Department would prefer this route to follow the easement paralleling the east side of Little River across the Corridor; however, a pedestrian/cyclist crossing of the Corridor at the bridge over Little River is currently difficult to provide safely.

Another secondary bikeway parallels Lauzon Road and traverses the Corridor.

The City's Official Plan recognizes bicycles as "viable alternatives to recognized primary transportation modes....". Accordingly, it requires that arterial and major collector road upgrading projects evaluate the feasibility of providing wider curb lanes (4.25m) to accommodate bicycle traffic.

Noise and Air Quality

The function of a major arterial roadway is to carry large volumes of traffic, significant percentages of which is composed of heavy trucks. This Corridor is typical of such a facility and, as noted previously, is highly urbanized. Recent experience on similar studies involving a large growth in traffic eg. the reconstruction of Huron Church Road, has shown that the increase in noise between existing and predicted future levels is not sufficient to satisfy warrants for mitigation. Therefore, no detailed examination of existing noise levels has been carried out in Phase 2 of this project. However, a qualitative evaluation of alternatives relative to perceived noise increases has been made for comparative purposes. Similarly, field investigations of air quality have not been carried out but a qualitative comparison was deemed appropriate.

2.1.4 Infrastructure

The following is a general description of the infrastructure environment. A more detailed review is contained in later sections.

2.1.4.1 Transportation

Roadways

The following chart provides a summary of the physical road system as well as general traffic operations information in and around the Corridor.

ROAD CLASSIFICATION

Road	Classification	Lanes	Turn Lanes	Signals	Parking
Tecumseh Road East	Class 2 Art.	4[1]	Yes	-	No
Jefferson Boulevard	Class 2 Art.	2	Yes	Yes	No[2]
Roseville Garden Court	Local	2	Yes	Yes	No[2]
East Park Centre	Local	2	Yes	Yes	No
Lauzon Parkway	Local	6	Yes	Yes	No
Annie Street	Local	2	Yes	Yes	No
Lauzon Road	Class 2 Art (N) Class 1 Collector (S)	4 2	Yes Yes	Yes Yes	No No
Forest Glade Drive	Class 1 Collector	2	Yes	Yes	No[2]
Robinet Lane	Local	2	No	No	No[2]
Banwell Road	Local	2	Yes	No	No
Penang Lane	Local	2	No	No	No

Notes:

1. Between Roseville Garden Court and Lauzon Parkway, there is a 3rd eastbound Lane.
2. No parking within the area of the intersection affected by turning movements.
3. Three unopened road allowances intersect the Corridor - Parkview Avenue, Scarsdale road and Clover Street and an easement extends from the Corridor northerly to the CNR at the Forest Glade Drive intersection.

Observations of the existing traffic operation indicates periods of severe congestion in the improvement corridor, particularly at Jefferson Boulevard, Annie Street and Lauzon Road. This results because of insufficient left turn storage lengths which then affect local access left turns. The resulting left turn storage and left turn property access conflicts cause traffic spill-over into through lanes, thereby reducing capacity. Accident rates in these areas are higher. When the existing traffic information is adjusted for growth over the next 20 years and estimated traffic from possible development areas is superimposed, the existing capacity of the Corridor is greatly exceeded.

Cycling

While very few cyclists use the main roadways in and around the Corridor for safety reasons, available summer counts indicate that up to 500 - 600 cyclists/day use the north/south Ganatchio Trail. Although these counts cannot be used directly in this study, they indicate that when safe cycling facilities are provided, they are well used, in fact, more so than expected. A significant portion of the cyclist traffic are students travelling to Riverside High School from the Forest Glade area.

Pedestrians

Pedestrian traffic is highest at Annie Street, Lauzon Parkway and Lauzon Road. Seventy-five to 85% of the pedestrian traffic is in the north-south direction and consists mainly of students returning home from school[3]. A significant portion of the traffic at Annie is to/from the Tecumseh Mall. Increases in pedestrian traffic can be expected, consistent with adjacent land use; however, the main travel mode is the automobile and it is expected that pedestrian traffic can be accommodated in the signal timing.

Railway

The Canadian National Railway parallels the north limit of the improvement corridor. This section is known as the Chatham Subdivision and consists of two mainline tracks. Regular freight traffic has been removed from the line and traffic now consists of 4-5 VIA passenger trains each way per day. East of Jefferson Boulevard, an industrial spur heads south,

[3] Traffic Analysis and Planning Report, August 1995, E. Fearnley Ltd.

paralleling Jefferson Boulevard to the Ford Essex Aluminum Plant and then westerly to the Chrysler Pillette yard. The spur crosses the Corridor about 120 m east of Jefferson Boulevard. The train movements consist of only industrial freight shunting 2 - 3 cars per day, most of which is done on the night shift.

Transit

Transit Windsor provides service in the area on four routes:

Transway 1C
Transway 1C Express
Ottawa 4
Lauzon 10

Transway 1C Express provides direct service from Forest Glade to Downtown Windsor and to the University of Windsor. Transway 1C runs from Windsor Western Hospital, through Downtown Windsor to Forest Glade using the Corridor extensively. However, at Rivard, the route goes south to Rose Avenue, thence easterly onto Roseville Garden and back out to the Corridor where it continues easterly to Forest Glade Drive. The Ottawa 4 route follows the same path through the western portion of the study area but swings south on Lauzon Road to cover the Meadowbrook residential area. The Lauzon 10 route traverses the improvement corridor from north on Lauzon Road to Lilac Lane where it loops through Forest Glade and then returns north to connect with Transway 1C, Ottawa 4 and the Crosstown route. These routes are shown graphically in a later section.

Specific transit ridership for the Corridor is not readily available, however, it is known that Transway 1C is most heavily used with a peak ridership of 700 fares in the P.M. peak hour.[4] Based on the existing routes, it is difficult to compare vehicular travel with transit ridership in the Corridor as the routes are not continuous. It is expected that when the East Riverside Planning District is developed, it will be served by routes functionally similar to Transway 1C Express. Considering the factors which affect the modal split (i.e. the percentage of transit users of the total roadway users) - transit availability, automobile ownership, income, travel time, availability of inexpensive parking in employment areas,

[4] Traffic Analysis and Planning Report, August 1995, E. Fearnley Ltd.

shift work, proximity to major employment centres, transit marketing etc., a significantly large switch to transit to reduce roadway needs is not expected[5].

2.1.4.2 Sewers

Sanitary

The Corridor is fully served by sanitary sewers, except for a short stretch from Forest Glade Drive to Little River. This area is currently under design. No trunk sewers exist in the corridor.

Storm

The roadways in the Corridor generally have a semi-urban or urban cross section and local storm sewer systems exist to collect stormwater runoff. These local collection systems convey stormwater runoff to the Tecumseh Storm Trunk sewer a 1.8m x 1.5m (72" x 60") structure under the Tecumseh Road East pavement. Just west of Roseville Gardens Court, the size changes to 1.7m x 1.5m (66" x 60") and continues westerly to about Lloyd George Boulevard and out of the Corridor. This sewer outlets to Little River and has been sized for the fully developed state of the catchment area.

A 1.5m (60") combined sewer exists under the Jefferson Boulevard pavement which joins the Tecumseh Road Trunk sewer at Tecumseh Road East where the normal storm and sanitary flows are separated.

2.1.4.3 Utilities

Various aboveground and underground utilities exist within the corridor under the control of Windsor Utilities Commission (Water and Hydro Divisions), Bell Canada, Union Gas, Trillium Cable, Windsor Traffic Engineering Department, and the Windsor Police and Fire Departments. Specific locations as well as plans for future upgrading are included in

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[5] Traffic Analysis and Planning report, August 1995, E. Fearnley Ltd.

Chapter 4. Partial or full relocation of some utilities may be required by some alternative solutions and designs.

2.2 Project Objectives

Based on the problem definition, alternative solutions which address the following objectives were investigated:

1. Improve roadway capacity to handle existing and estimated future traffic demands.

2. Reduce accident potential.

3. Minimize adverse impacts to adjacent land uses and communities.

4. Minimize impacts to the environment - social, natural, infrastructure.

2.3 Alternative Solutions

The objective of improving corridor capacity to handle future estimated traffic volumes is critical in the selection of alternative solutions. The number of traffic lanes (or equivalent) required to carry the projected traffic flows establishes a benchmark to measure the effectiveness of alternative solutions.

The number of lanes required for a given roadway is based on the roadway's saturation flow, which is defined as the maximum number of vehicles passing a given point in one traffic lane per hour under ideal driving conditions. At intersections, the units used are "passenger car units per hour of green time".

Since flow on a given roadway only occurs when the signal is green. Typically, a value of 1550 passenger car units per hour of green time (pcuphg) is used; however, it is known that as congestion increases, saturation flows increase through more aggressive driving behaviour, resulting in reduced distances between vehicles. Therefore, a conservatively high saturation flow of 1800 pcuphg was used in the traffic capacity analysis for both through and left turn movements in the Corridor. The analysis carried out in Traffic Analysis

and Planning Report indicates that, using reasonable assumptions for intersection signal timing and operation, a single traffic lane will accommodate about 700 vehicles per hour per lane (vphpl). This is the benchmark used to identify alternative solutions and, in a comparative way, measure the effectiveness of all alternatives in satisfying the objectives.

Sample estimated traffic flows in vehicles per hour (rounded) for the PM peak hour, both now and at the end of the 20 year study period, including all proposed developments and an allowance for growth of existing traffic are as follows:

	EASTBOUND		**WESTBOUND**	
	Existing	**Future**	**Existing**	**Future**
East of Jefferson Blvd	1500	2800	1200	2300
East of Roseville Gardens	1600	3000	1300	2300
East of Lauzon Parkway	1500	2900	1200	2000
East of Lauzon Road	1200	3100	800	2000
West of Forest Glade Drive	1200	2600	800	1900
West of Banwell Road	1000	2200	700	1600

Alternative 1 - Do Nothing

The problem statement indicates that the level of traffic service provided in the Corridor is barely adequate now and will deteriorate to unacceptable levels when anticipated development is completed. If **nothing** is done, the status-quo is not maintained and deterioration of the level of traffic service is not the only negative effect. Social impacts increase in the form of increased delay, accidents, pollution and noise. As traffic flow increases, some traffic will naturally divert to other routes ie. Corridor problems are being deflected to other areas. Therefore, there is no expectation that the Do-Nothing alternative will prevail relative to project objectives; however, it is included in the evaluation to provide a benchmark against which other alternatives are compared.

Alternative 1A - Upgrade Other Arterial Corridors

This alternative solution involves the idea that improvement of other corridors would draw traffic away from the subject Corridor, thereby making improvements to this Corridor unnecessary.

The Traffic Analysis and Planning Report has included a complete analysis of the existing traffic growth in the Corridor as well as an analysis of the developable areas which will have an effect on the future traffic in the Corridor. For example, data estimates were supplied by the City regarding the land uses and densities envisioned for the East Riverside Planning District. Travel generated from this area in the form of vehicle trips was estimated and distributed across the Windsor area resulting in an origin destination matrix (see Traffic Analysis and Planning Report for greater detail). Based on the distribution of trips from the various development areas, the traffic was assigned to the most logical components of the arterial road network. In that process, assignments have been made to other corridors and no assignment arbitrarily overloads a particular arterial link. It is not considered a reasonable alternative to divert traffic from the logical route to which it was assigned. Therefore, the option of upgrading other routes is not considered reasonable and has not been considered further.

Alternative 2 - Traffic Operations/Transit Improvements

These options do not involve roadway construction. Traffic operations involve matters such as signal timing and progression, signage, parking pavement markings, etc. While the City's Traffic Engineering Department monitors signal timing regularly and makes periodic adjustments toward optimum, it would be impossible to achieve the magnitude of increase in level of service required for the predicted future traffic volumes using traffic operation measures. These measures are used to "fine-tune" the system. This type of non-structural alternative has not been considered further.

The transportation analysis carried out for this project contains a brief examination of Transit Windsor operations relative to the Corridor including an estimate of the change in the transit operation required to offset roadway improvements. That investigation indicated that a quadrupling of the existing service would be required for the afternoon period from about 3:00 p.m. to 6:00 p.m. This does not take into account additional transit buses required for connecting routes to get riders to the Corridor, nor the need for high occupancy vehicle (HOV) lanes to accommodate the buses and maintain an adequate level of traffic service. Although it is uncertain whether a significantly expanded transit system could attract new riders out of vehicles, the option has been included for comparison purposes.

Alternative 3 - Intersection Improvements

Traffic signals at intersecting roads allocate the "green" time available to the respective approach roadways. When traffic flow on both roads are high, the green time is split fairly evenly. Also, when intersections are spaced closely, as they are between Lauzon Road and Jefferson Boulevard, intersection capacity governs the corridor capacity. Therefore, a reasonable alternative solution might be to improve only the intersections and not the roadway midway between intersections.

But, standard taper lengths are used to develop new storage lanes, through lanes and right turn lanes, and when intersections are close, roadway tapers actually may overlap. Also, dropping a lane downstream of the signal would require a merge, which has a negative effect on lane capacity. This alternative is included in the evaluation.

Alternative 4 - Roadway Widening

The final alternative solution, which as several variations, involves the widening of the pavement to provide additional traffic lanes for through and/or turning movements.

As noted earlier, a single traffic lane carries in the order of 700 vphpl. Applying this criterion to satisfy the projected traffic flow in 20 years, as sampled previously, the roadway should include at least 3 through lanes in each direction, plus appropriate turn lanes. There may be a need ultimately to consider auxiliary lanes in some areas.

The transportation report provides an analysis of traffic accidents. The rear end and right turn accidents were deemed to be related to congestion on the roadway; i.e. improvements which increase capacity reduce congestion and therefore have a reducing effect on rear end and right turn accidents. However, the addition of traffic lanes may actually increase the other major category of accidents - left turns, because there would be a wider distance for motorists to cross as well as more judgement required to select an appropriate crossing opportunity. The design element which addresses left turns from the control perspective is a raised median separator. This would allow left-in and left-out turns only where provided by openings in the median. A second and less effective element would be provision of a two-way-left-turn lane (TWLTL). This allows full access to adjacent properties outside of intersection areas and provides a refuge area in which to wait for an appropriate gap in the apposing traffic without affecting through traffic. Left turn conflicts

at intersections are obviously not affected by this measure but provision of proper left turn storage lanes and signal timing should be adequate.

The widening variations based on incorporation of some or all of the above design elements are:

4.A Widening - 4 lanes + TWLTL (5 lane cross section)
4.B Widening - 6 lanes undivided
4.C Widening - 6 lanes + TWLTL (7 lane cross section)
4.D Widening - 6 lanes divided (raised median)

The Figure 2.1 shows a schematic illustration of the cross-section of the various widening alternatives showing their relationship to what exists and roadway lane capacities.

2.4 Evaluation Criteria

The objectives to be satisfied by the project were identified previously. In view of the general environment in the improvement corridor, the following comparison criteria and indicators were selected:

- Arterial Road Function
  - level of service
  - accidents
- Natural Impacts
  - vegetation
  - watercourses
- Social Impacts
  - effects on neighbourhoods
  - effects on recreation
  - noise impacts
  - effects on existing/proposed land use
  - effects on air quality
- Economic Impacts
  - effects on access
  - effects on business
- Project Cost
  - capital cost
  - social cost
- Benefit/Cost

Although, the natural environment in this urban arterial corridor is already significantly disturbed; it has been included in the evaluation of alternative solutions for comparative purposes.

The alternative solutions were evaluated relative to the indicators based on a comparative judgement. The following provides a brief overview of how the indicators show the relative qualitative advantages and disadvantages

Arterial Road Function

- Extent to which alternative can increase traffic flow and improve safety by reducing the potential for accidents.

Natural Impacts

- Extent to which existing vegetation and watercourses may be impacted by alternatives

Social Impacts

- Extent to which neighbourhood's access, development potential, aesthetic qualities, availability of or access to recreational areas, and property acquisition are affected.

Economic Impacts

- Extent to which adjacent businesses are positively or negatively affected by reduced access, safer access, property acquisition, parking reduction.

Project Cost

- Qualitative comparison of capital costs and social costs of delay and accidents.

Benefit/Cost

- Important indication that alternative provides benefits through satisfying the project objectives relative to cost.

The evaluation of alternatives is shown in Table 2.1.

2.5 Recommended Solution

The selection of a recomended solution to the problem was made first on the basis of the extent to which the problems would be solved by the alternative and second, where more than one solution solves the problems, on the basis of minimizing negative environmental impacts.

Based on a review of Table 2.1, Alternative 4D involving a widening to provide 6 through lanes separated by a raised median is the only alternative which fully satisfies the project's transportation objectives. In addition, at the end of the planning period, its benefits remain while those of Alternative 4C erode as traffic flow increases. As noted, the initial concerns regarding access effects are expected to be mitigated once motorists are accustomed to the new routing.

2.6 Public and Agency Review

The Class EA process requires that contact with affected parties be made to present the problem definition, a general description of the environment potentially affected and the evaluation of alternative solutions. This allows for an increased understanding of the problem and the identification and addressing of concerns regarding the process and decisions to date. Additional pertinent information is sometimes obtained through this public participation process.

A notice in the Windsor Star on 18 November 1995 announced the date, time and place of the first opportunity for the public to view the work to date and make comment.

EVALUATION OF ALTERNATIVE SOLUTIONS

TECUMSEH ROAD EAST CLASS EA
JEFFERSON BLVD TO BANWELL ROAD

ALTERNATIVE 2 TRANSIT	ALTERNATIVE 3 IMPROVE INTERSECTIONS	ALTERNATIVE 4 - WIDENING				COMPARISON CRITERIA
		4A 4 LANES + TWLTL	4B 6 LANES UNDIVIDED	4C 6 LANES + TWLTL	4D 6LANES DIVIDED	
						ARTERIAL FUNCTION
- moderate improvement - increased transit vehicles may reduce level of service	- only marginal improvement because of mid-block constrictions	- barely adequate initially, localized areas only - unacceptable soon	- improvement initially - improvements erode as traffic increases	- significant improvement initially - improvements erode as traffic increases	- significant improvement	- level of Service
- probable increase	- increased	- increase for high conflict areas - decrease in low conflict areas - increased ultimately	- little change - considerable increase ultimately	- reduction initially - increase ultimately	- significant reduction initially - moderate reduction ultimately	- accidents
						NATURAL IMPACTS
- no change	- isolated tree removal, relocated or replaced	- isolated tree removal, relocated or replaced	- trees requiring removal relocated or replaced	- trees removed but relocated or replaced - opportunity for general landscape plan	- trees removed but relocated or replaced - opportunity for general landscape plan	- vegetation
- no change	- no change	- no change	- additional construction activity may cause erosion, mitigating measures to minimize effects	- additional construction activity may cause erosion, mitigating measures to minimize effects	- most construction activity, erosion effects minimized by mitigating measures	- watercourses
						SOCIAL IMPACTS
- possible trend to higher densities adjacent to corridor	- no change to existing - low capacity may reduce future development	- no change to existing - capacity may reduce future development	- no change to existing - left turns limit capacity - still possible limitations to development	- no change to existing - probable future limitations	- no change to existing - least restrictive	- exist/future landuse
- valued area for transit users - neighbourhoods devalued, dangerous traffic corridor - diversion of traffic from arterial through neighbourhoods soon	- neighbourhoods devalued, dangerous traffic corridor - diversion of traffic from arterial through neighbourhoods soon	- minor improvement initially - devaluation ultimately - diversion of traffic from arterial through neighbourhoods soon	- some diversion probable by end of planning period	- better overall status - less need for diversion from arterial through neighbourhoods	- better overall status - less need for diversion from arterial through neighbourhoods	- neighbourhoods
- no opportunities	- no opportunities	- consideration for bikeways - possible bikeway paralleling Little River	- consideration for bikeways - possible bikeway paralleling Little River	- consideration for bikeways - possible bikeway paralleling Little River	- consideration for bikeways - possible bikeway paralleling Little River	- recreation
- increased, more traffic, more congestion, more stop/start	- increased, more traffic, more congestion, more stop/start	- increased, more traffic, more congestion, more stop/start	- increased, more traffic, more congestion, more stop/start	- increased, more traffic but less stop/start	- increased, more traffic but less stop/start	- noise
- reduced, more traffic incl. buses, more engines idling	- reduced, more traffic, more congestion, more engine idling	- reduced, more traffic, more congestion, more engine idling	- reduced, more traffic, more congestion, more engine idling	- some reduction, more traffic but less congestion and idling	- least reduction because of better traffic flow	- air quality
- minor requirements for essential bus bays	- some property required from frontages - confined to intersection areas	- isolated widenings required along right-of way	- isolated widenings required along right-of way	- some right-of-way widenings for most of length - slightly more at intersections	- some right-of-way widenings for most of length - slightly more at intersections	- property acquisition
						ECONOMIC IMPACTS
- left turns probably blocked by congestion	- some left turn access affected by intersection medians - left turns probably blocked by congestion	- some left turn access affected by intersection medians - left turns may be blocked by congestion	- some left turn access affected by intersection medians - left turns may be blocked by congestion	- some left turn access affected by intersection medians - left turns may be blocked by congestion	- all left turn access closed except at appropriate median openings - access alternatives may exist	- property access
- possible reduction - increased congestion and accidents - future growth limited - diversion of traffic soon	- slightly increased restrictions at intersections - possible reduction - increased congestion and accidents - future growth limited - diversion of traffic soon	- slightly increased left turn restrictions at intersections - possible reduction - increased congestion and accidents - future growth limited - diversion of traffic soon	- slightly increased restrictions at intersections - possible reduction, increased congestion and accidents - future growth limited - traffic diversion later in planning period	- slightly increased restrictions at intersections - possible reduction - increased congestion and accidents - possible increase - more traffic safer traffic flow	- little long term negative effect - possible increase ultimately - more traffic, safer traffic flow - access alternatives may exist	- effects on business
						PROJECT COST
- very high equipment cost	- low	- low to moderate	- moderate to high	- high	- highest	- capital
- cost of increased travel time and accidents	- cost of increased travel time and accidents	- cost of increased travel time and accidents	- slight improvement	- travel times improved or maintained, accident costs higher ultimately	- travel times improved initially, maintained ultimately - accident costs lowest	- social
						BENEFIT/COST
- extremely low, very high cost for little benefit	- very low, marginal benefit with some cost	- marginal, initial benefits, no long term benefits, with moderate cost	- marginal, no long term benefits for substantial cost	- moderate, reasonable long term benefit for high cost	- high, good short and long term benefits although at highest cost	
						SUMMARY
- little or no improvement of the problem for high cost and low probabiltiy of success - increased negative social and economic impacts	- positive effect on level of service and safety at intersections but not overall - increased negative social and economic impacts	- improves safety at some locations but not level of service - increased negative social and economic impacts	- improves initial level of service - increase in uncontrolled left turn accidents - increased negative social and economic impacts	- provides reasonable level of service through study period and reduction in accidents until ultimate stages - short term increase in negative economic impacts may be offset by positive long term impacts	- provides good level of service through study period and significant reduction in accidents - short term increase in negative economic impacts may be offset by positive long term impacts RECOMMENDED SOLUTION	

TABLE 2.1

Potentially affected external agencies and the public were notified directly by mail of the Public Information Centre as follows: (approximately 1200 notices)

Date: 29 November 1995
Time: 3:00 p.m. to 8:00 p.n.
Place: Serbian Centre
6770 Tecumseh Road East
Windsor, Ontario

Copies of the notice and sample letters are included in Appendix "A". Notices were also posted at the following locations: Forest Glade Library, Forest Glade Community Centre, The Town of Tecumseh Municipal Offices and N & D Supermarket.

The study process was documented in a draft report covering Phases 1 and 2 of the Class EA process for this project and was available for review at the Public Information Centre.

Additional information describing the study process to date was provided in the form of the following text and graphic displays:

1.	Schematic of the Class EA process	Graphic
2.	Why we carry out Class EA's	Text
3.	Principles followed in a Class EA	Text
4.	Schedules (levels of activity) involved in a Class EA	Text
5.	Detailed flow chart of the Class EA process	Graphic
6.	The problem definition	Text
7.	The Study Area	Graphic
8.	The area Land Use Plan	Graphic
9.	Aerial photo of the basic study area	Graphic
10.	Plan of the existing roadway showing existing and future traffic and current accident analysis	Graphic
11.	Schematic cross-sections of alternative solutions	Graphic
12.	Chart of evaluation of alterative solutions	Text
13.	The preferred solution	Text

Alternative 4D, a 6 lane divided roadway (raised median), was identified as the recommended solution.

The following individuals, representing the proponent, were available to provide information and receive public comment:

- Mr. Tedd Szalay, City of Windsor, Public Works Department
- Mr. Glen Adams, City of Windsor, Public Works Department
- Mr. Mike Palanacki, City of Windsor Traffic Department
- Mr. Mike Hynes, City of Windsor Traffic Department
- Mr. Doug Caruso, City of Windsor, Planning Department
- Mr. Mike Stamp, City of Windsor, Property Department
- Ms. Faye Langmaid, City of Windsor, Parks & Recreation Department
- Mr. Dino Buratto, LaFontaine, Cowle, Buratto & Associates Limited
- Mr. Barry Sherwood, LaFontaine, Cowle, Buratto & Associates Limited
- Mr. Steve Monks, LaFontaine, Cowle, Buratto & Associates Limited

2.6.1 Agency Input

A copy of the draft Phase 1 and 2 Report was circulated to interested or potentially affected external agencies for review and comment and representatives were invited to participate in the Public Information Centre. Table 2.2 summarizes the agencies receiving the draft report and a brief description of the responses.

TABLE 2.2

EXTERNAL INVOLVEMENT

AGENCY	CONTACT	REPLY TO LETTER	COMMENTS
1. Windsor Police Service	Barry Horrobin Director Planning and Physical Resources	Yes	- concur with problem definition and recommended solution - signal desirable at Banwell
2. Ministry of Natural Resources	Fred Johnson Acting Area Planner Chatham Area Office	yes	- interested in mitigating measures for erosion control at Little River - request further information

AGENCY	CONTACT	REPLY TO LETTER	COMMENTS
3. Ministry of Community & Social Services	Shari Cunningham	No	
4. Ministry of Housing	Stan Purves George Robson	No	
5. Ministry of Municipal Affairs	Dan Hammond	No	
6. Ministry of Transportation	Peter Ginn	No	
7. Essex Region Conservation Authority	Stan Taylor Water Management Supervisor	Yes	- need permit to do work in flood plain - concerned about construction impacts on water course - good opportunity for restoration in area
8. Windsor Separate School Board	James Molnar W. M. Lozinski Supt. of Education	No	
9. Windsor Board of Education Board	Stephen Payne Mr. A. Cook Plant Manager	No	
10. Transit Windsor	Bob Goody	No	
11. Windsor Architectural Conservation Advisory Committee	Sharon Amlin	No	
12. Ministry of the Environment and Energy	J. Drummond, P.Eng. Manager, Windsor District Office	No	
13. Windsor-Essex County Development Commission	Paul Bondy Commissioner	No	
14. Windsor Housing Authority	George Robson	No	

	AGENCY	CONTACT	REPLY TO LETTER	COMMENTS
15.	Little River Enhancement Group	Mr. Naisbitt	Yes	- concerned about safety of bicycle path crossing Tecumseh Road East and drainage to Little River
16.	CN Rail Line Operations	Ms. Karen Fraser	No	
17.	CN Real Estate	Mr. M. Kindrachuk Development Manager	No	
18.	Town of Tecumseh	Mr. L. A. Lessard Administrator	Yes	- request further information
19.	Windsor Bicycling Committee	Ms. Sharon Amlin Secretary	No	
20.	Windsor Utilities Commission	Mr. Kent Edwards	No	
21.	Union Gas	Ms. Karen Hockin	No	
22.	Bell Canada	Mr. Keith Lumsden	No	
23.	Trillium Cable	Mr. Ed Schaeffer	No	
24.	Essex County Field Naturalists	Mr. T. Hurst	No	
25.	Citizens Environmental Alliance	Mr. Rick Coronado	No	
26.	Windsor Air Quality Committee	Ms. Kimberly Telega	No	
27.	11477077 Ont. Inc.[6]	Ms. J. Visoche	No	
28.	Windsor Fire Department	Chief David Fields	No	

[6] Purchased CN Real Estate's Interest in East Riverside Planning District

2.6.2 Public Input

Visitors to the Public Information Centre were asked to record their attendance on a sign-in sheet and were given a handout which provided a brief synopsis of the project background and progress to date (copy provided in Appendix A). Attached to the handout was a comment sheet on which to record written comments.

The draft Phase 1 and 2 Report and the Traffic Analysis and Planning Report produced for this project were available for review.

Thirty individuals signed the Record of Attendance sheet (copies in Appendix A). Nine comment sheets were submitted at the Public Information Centre and 3 were received by mail or in person. (Copies provided in Appendix A). Written comments were acknowledged by a letter which also indicated the time frame for the next opportunity to review more detailed information (sample shown in Appendix A).

Generally, the traffic congestion and accident problems are well recognized by residents and business operations in the Corridor. Several visitors commented that, given the current problems, which will only get worse in the future, the identified recommended solution (Alternative 4D - 6 lanes divided) was the only realistic solution. However, business operators remained concerned about how the raised median would be introduced and how existing and new patrons would access their sites.

The response noted above, particularly because very few businesses provided comments, raised some concern from the Project Team. It was decided to issue a newsletter update to the residents and businesses which described the process briefly, identified the solution "preferred" by the Project Team and provided a comment sheet for written responses. The second mailing included approximately 870 notices and 44 responses.

Concern was expressed regarding future access to businesses when a raised median is constructed. The analysis of comments (summary in Appendix A), indicates that 17 businesses and 1 resident were opposed to the construction of a raised median. Some of the objections were from businesses where there is already a median on Tecumseh Road East or where a raised median was not envisioned eg. Jefferson Blvd. The objections are identified in Appendix A.

Other comments regarding construction details focused on matters such as sidewalks for pedestrians, drainage, how much property will I lose etc.? These questions/concerns will be addressed in the next study phase.

All written responses received letters of acknowledgement which also provided a time schedule for the next opportunity to review more detailed information and make additional comments. Copies of all written responses from the public are included in Appendix A.

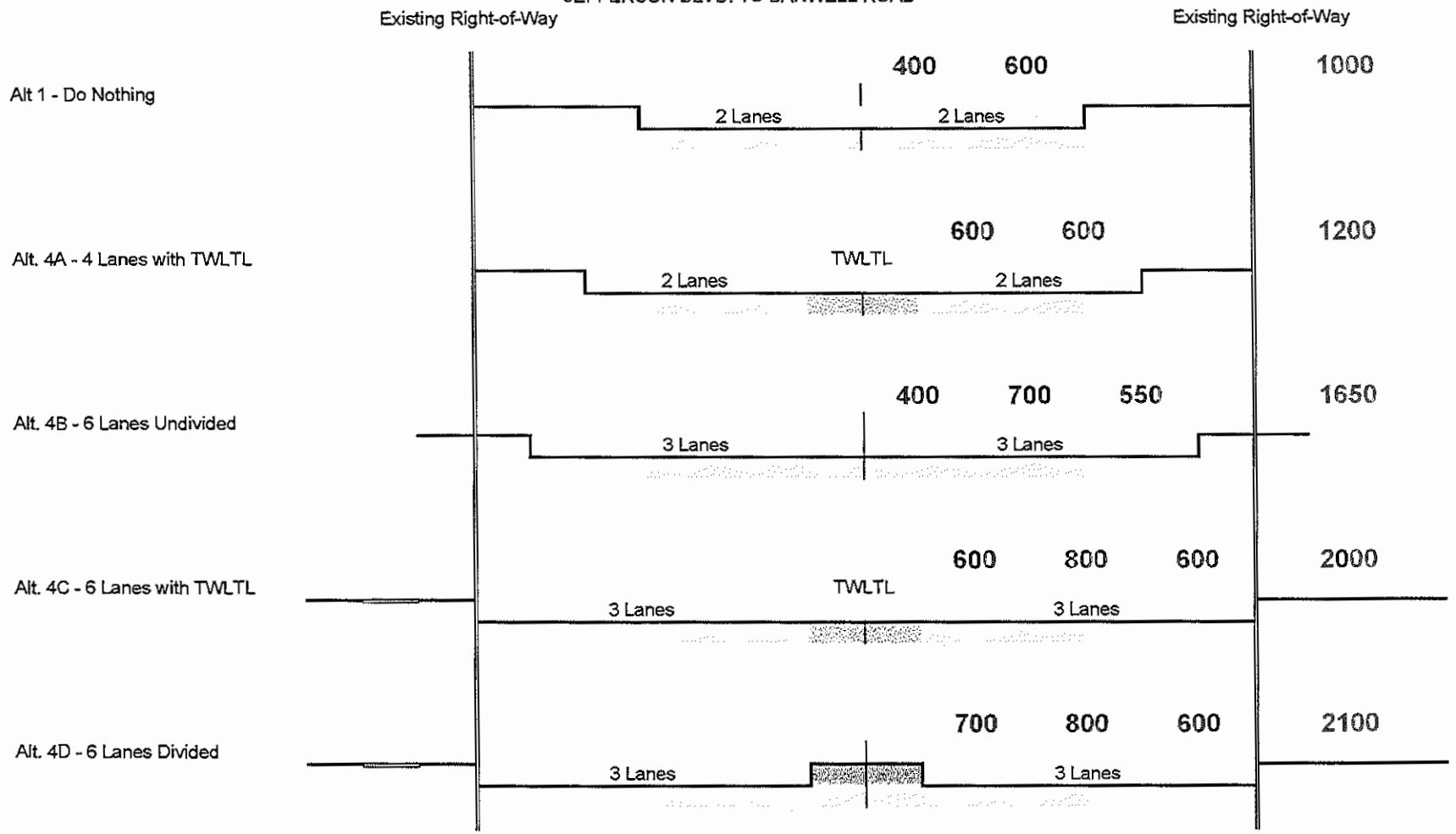
2.6.3 Preferred Solution

Section 2.5, Recommended Solution, of the report identified Alternative 4D, 6 lane divided roadway, as the recommended solution. A widening of the existing roadway to provide for 3 through lanes in each direction adequately addresses the traffic capacity requirements through the 20 year planning period. Incorporation of a raised median addresses the problem of mid-block accidents where left turns are not controlled, a problem which will worsen as traffic volumes increase.

Review of the process to date by the public and interested or potentially affected agencies shows general concurrence with the problems identified. Some of the concerns were not applicable or will be mitigated through the provision of alternative design opportunities.

The preferred solution - Alternative 4D, 6 lanes with a raised median, is therefore adopted for further development in Phase 3 of the Class EA process. The Class E.A. process requires confirmation that the schedule designation for the project remains appropriate. The earlier Schedule C designation for the project is considered appropriate and the remaining study activities will follow those requirements.

SCHEMATIC CROSS-SECTIONS
CLASS ENVIRONMENTAL ASSESSMENT
TECUMSEH ROAD EAST
JEFFERSON BLVD. TO BANWELL ROAD



INDICATES EXISTING PAVEMENT

TWLTL — Two Way Left Turn Lane

Raised Median

700 — Specific Lane Capacity (vehicles per hour, at mid-block, including intersection effects)

2000 — Total One-way Directional Capacity (vehicles per hour)

FIGURE 2.1