Windsor Annexed Lands Master Planning Study - Background Reports Summary

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Windsor Annexed Lands Master Planning Study - Background Reports Summary

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1.0 Introduction

1.1 BACKGROUND

The City of Windsor retained Stantec Consulting, in association with Pryde Schropp and McComb in 2003 to complete the Annexed Lands Master Planning Study in conjunction with Class Environmental Assessments to address long-term servicing needs for the annexed lands. The subject lands were annexed by the City of Windsor from the Town of Tecumseh in 2002 to accommodate future growth, particularly employment growth as a shortage of industrial lands for potential larger scale manufacturing industries loomed. To address the requirements of the Provincial Policy Statement at that time, the Master Planning Study was initiated to identify the land needs requirements for various uses to justify the redesignation of lands from agriculture to other uses. Specific objectives of the Master Planning Study were to:

- Identify the land needs requirements for future residential, industrial and associated uses;
- Investigate opportunities and constraints which may affect the location or availability of land for future development and land use designations;
- Determine the amount of land needed for expansion of the urban area;
- Identify suitable land use designations for the Annexed Area;
- Provide the basis for an Official Plan Amendment and accompanying schedules and policies for the annexed area.

A number of draft reports were prepared between January and June 2003, including the following:

- Population Projections
- Housing Demand Analysis
- Employment Projections
- Land Needs Requirements

In addition to these reports, studies relating to natural heritage and the airport were also completed. However, the study was put on hold in the latter part of 2003 as a result of larger scale transportation issues associated with border crossings and the potential extension of Lauzon Parkway. While these issues were not fully resolved, the study was reactivated in April 2006 due to increasing development pressure and the continuing and increasing shortage of both residential and industrial lands. Given the three-year gap since completion of the previous
draft reports, some updating was required to integrate new information. In addition, the Provincial Policy Statement was revised in 2005 with additional emphasis placed on the need for ‘comprehensive review’.

1.2 DESCRIPTION OF ANNEXED LANDS

The annexed lands, comprising approximately 2,532 hectares, are situated at the east limits of Windsor as shown in Figure 1. They are generally bound by Highway 401 to the south, 7th Concession to the west, the EC Row Expressway to the north and the midpoint of County Road 17 and the 11th Concession to the east. The lands are largely used for agricultural purposes at the present time, with the exception of the airport in the northwest quadrant of the study area, which takes up approximately 790 hectares. Also within the study area are a small number of existing small-scale industrial and service commercial uses primarily along County Road 42 and Baseline Road. Small pockets of residential subdivision development also exist within the area. Figure 2 illustrates existing uses within the Study Area.

The majority of the area is currently designated Agricultural in the former Township of sandwich South Official Plan. Small areas of Hamlet Residential, Low Density Residential and Business Park also exist as shown in Figure 3.

1.3 PURPOSE OF STUDY

1.3.1 Provincial Policy Framework

The 2005 Provincial Policy Statement contains a number of policies that identify the need to undertake the Annexed Area Master Planning Study. Section 1 1.2 states that municipalities shall have available sufficient land through intensification, redevelopment and if necessary, designated growth areas to accommodate an appropriate range and mix of employment opportunities, housing and other land uses to meet projected needs for up to twenty years (unless an alternative time frame has been established through other planning processes). The City of Windsor identified a number of years ago a growing shortage of employment lands in the immediate future, with a need for additional residential land over the twenty-year planning period. This formed the basis for the transfer of lands from the Town of Tecumseh to the City of Windsor.

At the present time, the transferred lands are primarily designated agricultural and are therefore not yet available for development for employment, residential or other purposes. To exclude these lands from ongoing agricultural uses, it is necessary to undertake sufficient comprehensive review in accordance with the policies of Section 1.1.3.9, which includes a review of population and growth projections and the consideration of opportunities for intensification and redevelopment.

1.3.2 Municipal Policy Framework

The City of Windsor Official Plan contains policies pertaining to the completion of various types of ‘Support Studies’. The Annexed Lands Master Planning study, while not identified as a
specific support study in Section 10, is required as part of the development and infrastructure approval process to address provincial policies. It also has similarities to a Secondary Plan Study, but is at a broader level of detail that will be refined through future Secondary Plans.

1.4 FORMAT OF REPORT

This report is intended to provide a summary of the various background studies that were completed in order to determine the land needs requirements for the annexed area prior to the preparation of concept plans. Most of the component studies had been completed in 2003. However, as a result of the study being put on hold, new information needed to be obtained, reviewed and integrated into the various background studies. This report provides a summary of the following background studies and identifies changes that have occurred since 2003 where applicable:

- Population Projections
- Housing Demand Projections
- Employment Projections
- Land Needs Requirements
- Sanitary Servicing Class EA
- Natural Heritage Study
- Airport Investigation

Additional sections pertaining to transportation and opportunities and constraints are also included in this Summary Report, and conceptual land use plans are presented.

A summary of public and stakeholder input is provided along with the Preferred Land Use Plan and associated draft policies for the Annexed Lands to guide more detailed planning studies in the future.
2.0 Population Projections

Population projections were completed by the City of Windsor in 2003, with input from Stantec, based on Statistics Canada data available from the 2001 census. Although a new census was undertaken by Statistics Canada in May 2006, no data will be released for quite some time, therefore the 2001 data is the most recent available.

Windsor’s population has increased gradually since 1991, and generally parallels population growth activity in the CMA and County, although at a slightly lower rate of increase.

However, population growth between 1996 and 2001 exceeded previous projections by nearly 5,000 people with an average growth rate of 1.1%. Contributing factors to the population increase were likely related to a number of factors including:

- Better than anticipated economic conditions which attracted new residents to the City and region;
- Relatively affordable housing and other lifestyle factors;
- Higher rates of immigration and internal migration.

The population projections prepared considered fertility rates, survival rates, immigration and internal migration. Key information and assumptions regarding these factors included:

Source: Statistics Canada
• Total fertility rates have remained relatively stable in recent years, with some declines for women under 30 and corresponding increases in women over 30, mirroring demographic changes in child bearing;

• Survival rates have improved over the past 40 years due to healthcare advancements and lifestyle factors, but with an aging population, they are expected to remain relatively stable during the planning period;

• Immigration is playing an increasingly important role in population growth and the labour force, with immigrants increasingly moving to larger urban areas rather than small towns or rural areas.

• The City of Windsor is attracting a steadily increasing share of immigration within the CMA, with nearly 94% of the immigrants to the CMA settling in Windsor from 2002-2005.

• Internal migration appears to show more people leaving Windsor than moving in, although the level of out migration was lower than expected. However, combined with immigration, net migration was estimated to result in an increase of well over 6,000 people between 1996 and 2001.

Based on the foregoing information and assumptions, three population scenarios were developed by the City of Windsor with the medium case scenario adopted by Council in 2003 as the ‘reference scenario. This anticipated a population of 244,811 by 2021. Given that three years have passed since these population figures were originally prepared, the projection has been extended to 2026 to reflect a twenty year planning horizon. No other changes were considered necessary to underlying assumptions. As a result, the projected population for 2026 is close to 252,000 with a total projected increase of 43,492, as shown in Table 2.1. This represents an annual average increase of 0.83%.

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2006</th>
<th>2011</th>
<th>2016</th>
<th>2021</th>
<th>2026</th>
<th>Total Increase</th>
<th>% Increase</th>
<th>Average Annual Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Scenario</strong></td>
<td>208,425</td>
<td>215,448</td>
<td>221,838</td>
<td>226,843</td>
<td>230,823</td>
<td>233,968</td>
<td>25,543</td>
<td>12.26%</td>
<td>0.49%</td>
</tr>
<tr>
<td><strong>Medium Scenario</strong></td>
<td>208,425</td>
<td>218,467</td>
<td>228,263</td>
<td>236,948</td>
<td>244,811</td>
<td>251,917</td>
<td>43,492</td>
<td>20.87%</td>
<td>0.83%</td>
</tr>
<tr>
<td><strong>High Scenario</strong></td>
<td>208,425</td>
<td>220,614</td>
<td>232,902</td>
<td>244,348</td>
<td>255,205</td>
<td>265,445</td>
<td>57,020</td>
<td>27.36%</td>
<td>1.09%</td>
</tr>
</tbody>
</table>
3.0 Housing Demand Projections

Housing projections were also prepared by the City of Windsor in 2003 in consultation with Stantec Consulting, based on the approved population scenario. Steps used in determining housing demand followed the province’s Projection Methodology Guideline document and included:

- Identification of the proportion of households maintained by specific age groups;
- Determination of household demand propensities for those age groups by housing structure type;
- Application of the household demand propensities to the forecasted population by five-year projection periods, to determine the projected housing demand by dwelling structure types.

Specific trends and assumptions used for the housing demand projections included the following:

- Headship rates by age groups tend to be very stable over time so were assumed to remain constant over the projection period.
- Household demand propensities (i.e. – the demand for certain types of housing by people within various age groups) are assumed to remain relatively constant over the projection period. For example, it was assumed that there is a higher demand for apartments and other multiple dwellings by younger adults (i.e. – under 30) and seniors, whereas the demand for single-family dwellings is highest during and after child rearing periods.
- Household size declined from 2.7 to 2.5 persons per household between 1981 and 2001. This is attributed to a number of factors including lower birth rates, an increase in single person, lone parent and childless families, and a larger proportion of seniors. Household sizes are expected to continue to decline marginally over the next twenty years to an average of approximately 2.3 to 2.4 persons/household by 2026.
- Home ownership continues to be a goal aspired to by many people, with the proportion of owned dwellings increasing slightly to approximately 65% in 2001. This proportion may be higher now, as CMHC indicated a shift from renting to owning as a contributing factor to higher vacancy rates in 2004 and 2005.
- There continues to be a strong preference for low density housing (single family and semi-detached) in Windsor, as in most other cities. The overall proportion of occupied single family and semi-detached dwellings is approximately 66%, however building permit data indicates that approximately 74% of the dwellings constructed over the past 10 years have been single and semi-detached units as shown in Table 3.1.
### Table 3.1

**BUILDING PERMIT SUMMARY – RESIDENTIAL CONSTRUCTION (NUMBER OF UNITS)**

<table>
<thead>
<tr>
<th>Dwelling Type</th>
<th>1996</th>
<th>1997</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>TOTAL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Detached</td>
<td>799</td>
<td>900</td>
<td>755</td>
<td>846</td>
<td>911</td>
<td>971</td>
<td>875</td>
<td>815</td>
<td>778</td>
<td>610</td>
<td>8,260</td>
<td>62.63%</td>
</tr>
<tr>
<td>Semi-detached</td>
<td>115</td>
<td>158</td>
<td>160</td>
<td>218</td>
<td>198</td>
<td>136</td>
<td>222</td>
<td>140</td>
<td>124</td>
<td>62</td>
<td>1,533</td>
<td>11.62%</td>
</tr>
<tr>
<td>Duplex</td>
<td>9</td>
<td>12</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>31</td>
<td>0.24%</td>
</tr>
<tr>
<td>Double Duplex</td>
<td>20</td>
<td>0</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>20</td>
<td>8</td>
<td>16</td>
<td>100</td>
<td>52</td>
<td>232</td>
<td>1.76%</td>
</tr>
<tr>
<td>Row Housing</td>
<td>64</td>
<td>24</td>
<td>130</td>
<td>192</td>
<td>106</td>
<td>167</td>
<td>178</td>
<td>176</td>
<td>182</td>
<td>100</td>
<td>1,319</td>
<td>10.00%</td>
</tr>
<tr>
<td>Apartment</td>
<td>267</td>
<td>209</td>
<td>195</td>
<td>146</td>
<td>55</td>
<td>121</td>
<td>190</td>
<td>229</td>
<td>105</td>
<td>39</td>
<td>1,556</td>
<td>11.80%</td>
</tr>
<tr>
<td>Other</td>
<td>46</td>
<td>64</td>
<td>15</td>
<td>2</td>
<td>35</td>
<td>40</td>
<td>5</td>
<td>12</td>
<td>2</td>
<td>36</td>
<td>257</td>
<td>1.95%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,320</td>
<td>1,367</td>
<td>1,267</td>
<td>1,408</td>
<td>1,309</td>
<td>1,455</td>
<td>1,480</td>
<td>1,388</td>
<td>1,293</td>
<td>901</td>
<td>13,188</td>
<td></td>
</tr>
</tbody>
</table>

Source: Infrastructure Services Building Unit / Building Department Annual Reports (1998 through 2005)

Note: ‘Other’ includes additional dwelling units and accessory apartments in new or existing buildings.

Based on the assumptions and trends identified, the housing demand projections for the approved population scenario indicated a total need for 109,200 dwelling units by the year 2026 as shown in Table 3.2. The corresponding number of additional units by five-year period is shown in Table 3.3. It indicates a continuing need for a higher proportion of single and semi-detached dwellings, although the proportion is lower than what has actually been constructed over the previous 10 years.

### Table 3.2

**HOUSING DEMAND PROJECTION SUMMARY**

<table>
<thead>
<tr>
<th>Year</th>
<th>Single detached</th>
<th>Semi-detached</th>
<th>Row house</th>
<th>Detached duplex / Apt.</th>
<th>Apartment&lt; 5 storeys</th>
<th>Apartment&gt; 5 storeys</th>
<th>Projected Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>52,590</td>
<td>3,335</td>
<td>4,485</td>
<td>3,255</td>
<td>11,820</td>
<td>8,290</td>
<td>83,775</td>
</tr>
<tr>
<td>2006</td>
<td>56,481</td>
<td>3,546</td>
<td>4,766</td>
<td>3,399</td>
<td>12,428</td>
<td>8,624</td>
<td>89,244</td>
</tr>
<tr>
<td>2011</td>
<td>60,061</td>
<td>3,724</td>
<td>4,994</td>
<td>3,521</td>
<td>13,038</td>
<td>8,920</td>
<td>94,258</td>
</tr>
<tr>
<td>2016</td>
<td>63,336</td>
<td>3,877</td>
<td>5,259</td>
<td>3,666</td>
<td>13,813</td>
<td>9,267</td>
<td>99,219</td>
</tr>
<tr>
<td>2021</td>
<td>66,612</td>
<td>4,030</td>
<td>5,469</td>
<td>3,812</td>
<td>14,743</td>
<td>9,621</td>
<td>104,287</td>
</tr>
<tr>
<td>2026</td>
<td>69,784</td>
<td>4,167</td>
<td>5,638</td>
<td>3,935</td>
<td>15,759</td>
<td>9,913</td>
<td>109,200</td>
</tr>
</tbody>
</table>
Table 3.10
PROJECTED NUMBER OF ADDITIONAL DWELLING UNITS REQUIRED BY TYPE PER FIVE YEAR PERIOD

<table>
<thead>
<tr>
<th>Period</th>
<th>Single detached -</th>
<th>Semi-detached</th>
<th>Row house</th>
<th>Detached duplex / Apt.</th>
<th>Apartment&lt; 5 storeys</th>
<th>Apartment≥ 5 storeys</th>
<th>Projected Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-2006</td>
<td>3,891</td>
<td>211</td>
<td>281</td>
<td>144</td>
<td>608</td>
<td>334</td>
<td>5,469</td>
</tr>
<tr>
<td>2006-2011</td>
<td>3,580</td>
<td>178</td>
<td>228</td>
<td>122</td>
<td>610</td>
<td>296</td>
<td>5,014</td>
</tr>
<tr>
<td>2011-2016</td>
<td>3,275</td>
<td>153</td>
<td>265</td>
<td>145</td>
<td>775</td>
<td>347</td>
<td>4,960</td>
</tr>
<tr>
<td>2016-2021</td>
<td>3,276</td>
<td>153</td>
<td>210</td>
<td>146</td>
<td>930</td>
<td>354</td>
<td>5,069</td>
</tr>
<tr>
<td>2021-2026</td>
<td>3,172</td>
<td>137</td>
<td>169</td>
<td>123</td>
<td>1,016</td>
<td>292</td>
<td>4,909</td>
</tr>
<tr>
<td>TOTAL</td>
<td>17,194</td>
<td>832</td>
<td>1,153</td>
<td>680</td>
<td>3,939</td>
<td>1,623</td>
<td>25,421</td>
</tr>
<tr>
<td>%</td>
<td>67.64%</td>
<td>3.27%</td>
<td>4.54%</td>
<td>2.67%</td>
<td>15.50%</td>
<td>6.38%</td>
<td></td>
</tr>
</tbody>
</table>

Note – Numbers may not add up exactly due to rounding
Employment projections prepared for the Annexed Lands Master Planning Study were based on information, reports and trends available from Statistics Canada data, the City of Windsor, the Windsor-Essex County Development Commission (WEDC) and other readily available sources. The purpose of the employment projections is to estimate the potential growth in employment that can reasonably be expected to occur over the 20-year planning horizon. In order to determine the land needs requirements for various employment uses. The projections are not intended to be a detailed economic analysis or employment strategy.

Windsor’s economy is strongly influenced by the North American automotive industry with Ford and Daimler Chrysler plants located in the City along with numerous associated employers and industries. A large proportion of the population is employed by the automotive sector, with an estimated one in five jobs in Windsor directly or indirectly related to the automotive sector. Consequently, its success or failure affects many other aspects of the City’s economy. A breakdown of 2001 Statistics Canada data reveals that approximately 28% of the experienced labour force is in the manufacturing sector, by far the largest proportion of the various industry categories as shown in Table 4.1. The total number of employed persons grew by approximately 8.7% from 1996 to 2001, and the estimated participation rate of both males and females continued to grow between 2001 and 2005, as shown in Table 4.2.

### Table 4.1

**CITY OF WINDSOR EXPERIENCED LABOUR FORCE BY SECTOR**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Agriculture / Forestry</td>
<td>640</td>
<td>0.65%</td>
<td>480</td>
<td>0.46%</td>
</tr>
<tr>
<td>Mining / Oil and Gas</td>
<td>205</td>
<td>0.21%</td>
<td>130</td>
<td>0.12%</td>
</tr>
<tr>
<td>Utilities</td>
<td>1,790</td>
<td>1.83%</td>
<td>510</td>
<td>0.49%</td>
</tr>
<tr>
<td>Construction</td>
<td>4,760</td>
<td>4.85%</td>
<td>4,765</td>
<td>4.55%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>26,350</td>
<td>26.87%</td>
<td>29,030</td>
<td>27.69%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>2,845</td>
<td>2.90%</td>
<td>2,615</td>
<td>2.49%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>11,770</td>
<td>12.00%</td>
<td>11,315</td>
<td>10.79%</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>2,220</td>
<td>2.24%</td>
<td>3,740</td>
<td>3.57%</td>
</tr>
<tr>
<td>Information and cultural industries</td>
<td>n/a</td>
<td>n/a</td>
<td>1,155</td>
<td>1.10%</td>
</tr>
<tr>
<td>Finance and insurance</td>
<td>1,940</td>
<td>1.98%</td>
<td>2,280</td>
<td>2.17%</td>
</tr>
<tr>
<td>Real estate &amp; retail &amp; insurance</td>
<td>1,405</td>
<td>1.43%</td>
<td>1,280</td>
<td>1.22%</td>
</tr>
<tr>
<td>Professional / scientific / technical</td>
<td>n/a</td>
<td>n/a</td>
<td>4,415</td>
<td>4.21%</td>
</tr>
<tr>
<td>Management of companies</td>
<td>n/a</td>
<td>n/a</td>
<td>70</td>
<td>0.07%</td>
</tr>
<tr>
<td>Administrative &amp; support</td>
<td>5,010</td>
<td>5.11%</td>
<td>4,035</td>
<td>3.85%</td>
</tr>
</tbody>
</table>
Educational services &nbsp; 6,000 &nbsp; 6.12% &nbsp; 5,835 &nbsp; 5.57%
Health care & social assistance &nbsp; 9,530 &nbsp; 9.72% &nbsp; 9,140 &nbsp; 8.72%
Arts / entertainment / recreation &nbsp; n/a &nbsp; n/a &nbsp; 4,730 &nbsp; 4.51%
Accommodation / food services &nbsp; 8,245 &nbsp; 8.41% &nbsp; 9,495 &nbsp; 9.06%
Other Services &nbsp; 9,150 &nbsp; 9.33% &nbsp; 4,400 &nbsp; 4.20%
Public Administration &nbsp; 3,195 &nbsp; 3.26% &nbsp; 3,170 &nbsp; 3.02%
Industry - not applicable &nbsp; 3,035 &nbsp; 3.09% &nbsp; 2,250 &nbsp; 2.15%
Total Experienced Labour Force &nbsp; 98,100 &nbsp; &nbsp; 104,845 &nbsp; &nbsp;
Employed Labour Force 15 & Over &nbsp; 89,275 &nbsp; &nbsp; 97,040 &nbsp; &nbsp;
Participation Rate &nbsp; 62.1% &nbsp; &nbsp; 63.5% &nbsp; &nbsp;
Unemployment Rate &nbsp; 9.0% &nbsp; &nbsp; 7.5% &nbsp; &nbsp;

Source: Statistics Canada

### Table 4.2

<table>
<thead>
<tr>
<th>Sector</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006 (to date)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation Rate (Male)</td>
<td>71.7%</td>
<td>70.5%</td>
<td>70.7%</td>
<td>72.2%</td>
<td>74.6%</td>
<td>74.2%</td>
</tr>
<tr>
<td>Participation Rate (Female)</td>
<td>54.5%</td>
<td>55.3%</td>
<td>55.5%</td>
<td>57.0%</td>
<td>58.2%</td>
<td>58.4%</td>
</tr>
</tbody>
</table>

Source: Financial Post Markets – Canadian Demographics as supplied by Windsor-Essex Development Commission.

Manufacturing is expected to remain the dominant employment sector over the twenty year planning horizon, despite some slowing of the North American automotive industry in the past couple of years. Other indicators of economic stability include industrial land consumption and building permit activity. The dollar value of industrial building permits has ranged from $21 million to $120 million dollars per year, averaging approximately $52.6 million per year.

Various studies prepared for the Windsor-Essex County Development Commission further highlight some of the needs and expectations related to future employment in Windsor:

- The Ford Centre of Excellence in Manufacturing (FCEM) at St. Clair College is expected to have a positive impact on the manufacturing sector as it will train employees that are needed to service the primary industry in Windsor\(^1\). With a skilled and available workforce, new plants / industry are more likely to establish in the Windsor area creating increased demand for industrial lands.

- Growth in jobs related to Windsor’s exports expanded by approximately 87% between 1990-1997 and is expected to double over the next decade provided that there is

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\(^1\) Windsor –Essex Regional Analysis
sufficient infrastructure development in the region. Key growth industries are automotive, machinery and electronic equipment.

- Employment in machine, tool, die and mold (MDTM) shops doubled between 1991 and 1999 and is a strong component of the automotive business development strategy.

- Greater stability is forecast in the automotive industry as a result of the macro-environment with fewer drastic fluctuations.

- Overall prosperity in the automotive sector is expected to create opportunities to attract new parts manufacturing and machine, tool and die investment.

Despite recent slowdowns in the North American auto industry, employment is still expected to increase for most sectors of the automotive and automotive parts manufacturing industry. Feasibility studies are also being undertaken related to the establishment of multi-modal facilities in Windsor, to seek better integration of rail, road and air transport opportunities in conjunction with existing or new manufacturing facilities. The development of such facilities would also likely generate additional investment and employment in the City.

Windsor also plays a substantial role as an employment centre for the region as well as the City. It was estimated in 2001 that approximately 70% of all jobs within the Windsor-Essex area were located in Windsor, and furthermore that at least 65% of new jobs in the region would be located in the City of Windsor. Information from the Windsor Essex County Development Commission indicated that there were approximately 111,400 jobs in Windsor in 2001, leading to a jobs to labour force ratio of 1.31 meaning that a substantial number of the jobs in Windsor are held by people who live outside the City.

Based on the foregoing factors, employment projections were generated based on three scenarios:

- Low growth scenario, assuming an annual growth rate of 0.5%, similar to the poorest 10 year average annual increase in employment between 1981 to 2001;

- Medium growth scenario, assuming an annual growth rate of 1.0%, reflecting the approximate 20 year average from 1981 to 2001;

- High growth scenario, assuming an annual growth rate of 1.75%, reflecting the highest 10 year average occurring from 1981 to 2001.

The results of these employment projections are summarized in Table 4.3.
Table 4.3
EMPLOYMENT GROWTH PROJECTIONS (TOTAL EMPLOYMENT)

<table>
<thead>
<tr>
<th>Employment Scenario</th>
<th>Annual Increase</th>
<th>2001 Employed</th>
<th>2026 Estimate</th>
<th># of New Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Growth</td>
<td>0.50%</td>
<td>111,410</td>
<td>126,205</td>
<td>14,795</td>
</tr>
<tr>
<td>Medium Growth</td>
<td>1.00%</td>
<td>111,410</td>
<td>142,876</td>
<td>31,466</td>
</tr>
<tr>
<td>High Growth</td>
<td>1.75%</td>
<td>111,410</td>
<td>171,903</td>
<td>60,493</td>
</tr>
</tbody>
</table>

Source: 2001 base data reflects Statistics Canada place of work data provided by Windsor-Essex Development Commission

The medium growth scenario was recommended as the reference scenario for the purposes of determining land needs requirements, for a number of reasons, including:

- The importance of Windsor’s role in the automotive sector at a regional, provincial and national scale combined with its role as an international trade gateway;

- Windsor’s economy, while expected to still rely on the automotive industry to a large extent, is becoming more diversified and less likely to experience drastic fluctuations due to economic cycles;

- Land absorption and building permit activity for industrial and other uses was relatively strong in recent years and is indicative of the general health of the Windsor economy;

- The medium growth scenario is based on a relatively long term (twenty-year) average growth rate, which is less likely to be influenced by specific economic events and fluctuations than shorter term growth rates;

- It is similar to employment projections identified in the Development Charges Background Study in 2004.

The employment projections for the growth scenarios were also further subdivided into three categories – primary jobs (agriculture and resource industry), employment land jobs (manufacturing, construction, trades, wholesale) and population jobs (business, education, government, finance, etc.) to recognize that there are typically different land requirements associated with different types of employment.

Prior to determining the number of additional jobs that will likely require land, adjustments were also made to reflect the fact that some workplace intensification will occur where new jobs will be accommodated within existing office and industrial buildings or on underdeveloped parcels. This was estimated to be approximately 2% of the additional future employment. As well, it was estimated that approximately 25% of future ‘population jobs’ would likely be located in the downtown core of Windsor and would not need to be accommodated on additional land either in the annexed area or on other vacant lands within the former City boundaries. After these adjustments, the projected employment that will need to be considered for the land needs analysis was estimated to be slightly over 26,000 as shown in Table 4.4.
Table 4.4
SUMMARY OF ADJUSTED PROJECTIONS BY TYPE OF EMPLOYMENT (2026)

<table>
<thead>
<tr>
<th></th>
<th>LOW</th>
<th>MEDIUM</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Jobs</td>
<td>84</td>
<td>179</td>
<td>345</td>
</tr>
<tr>
<td>Employment Land Jobs - Heavy</td>
<td>1,406</td>
<td>2,990</td>
<td>5,748</td>
</tr>
<tr>
<td>Employment Land Jobs - Light</td>
<td>4,217</td>
<td>8,969</td>
<td>17,244</td>
</tr>
<tr>
<td>Population Jobs</td>
<td>6,594</td>
<td>14,023</td>
<td>26,960</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12,301</td>
<td>26,162</td>
<td>50,297</td>
</tr>
</tbody>
</table>
5.0 Land Needs Requirements

Suitable land and locational attributes are required for various land uses to accommodate the projected residential and employment growth over the twenty year planning period. Determination of the specific needs is also required to comply with the Provincial Policy Statement (Section 1.1.3) which states that the expansion of settlement area boundaries can only occur at the time of a comprehensive review, and must demonstrate that sufficient opportunities for growth are not available through intensification, redevelopment and designated growth areas to accommodate the projected needs over the identified planning horizon.

The determination of land needs requirements for various uses included the following steps:

- Identification of applicable density assumptions and/or targets for residential and employment uses;
- Estimate vacant land availability and capacity for general land use categories;
- Review recent building/approval data to determine amount of housing that has been constructed since the completion of the census;
- Consider the potential impact of recent trends/events on projected land needs requirements.

5.1 RESIDENTIAL LAND NEEDS

The housing projections component of this study established that approximately 25,421 additional dwellings units would be required to accommodate the additional population growth anticipated to occur by 2026. Of this, approximately 68% of the additional housing was expected to be single or semi-detached, approximately 20% would be apartments, and the remainder would be multiple forms of housing such as duplexes and rowhousing based on the housing demand propensities.

To further refine the actual housing need prior to determining land requirements, adjustments were made for availability of existing and recently constructed (2002-2005) housing stock and vacancy rates that resulted in an adjusted figure of approximately 19,423 units being required between the present and 2026.

Infill and intensification opportunities within the built-up areas of Windsor, and estimated residential development capacity for vacant lands in greenfield/developing areas of the City were then considered. For the greenfield areas, development potential was calculated based on existing zoning to which net density assumptions were assigned. This analysis concluded that there was potential for approximately 7,570 units in the greenfield areas.

With respect to infill and intensification, it was estimated that at least 20% of the overall housing demand could be accommodated in this manner (7% low density, 50% medium density, 65%
Based on the housing demand and mix defined by the housing projections portion of this study combined with a moderate increase in the assumed density of future development, and taking into consideration the adjustments made to account for vacancy rates, infill and intensification and vacant land development potential, the estimated land needs to accommodate future residential development that should be accommodated in the Annexed Lands is approximately 550 hectares, as shown below in Table 5.1.

### Table 5.1
**TOTAL RESIDENTIAL LAND NEEDS REQUIREMENTS – HOUSING DEMAND SCENARIO**

<table>
<thead>
<tr>
<th></th>
<th>Total Housing Demand</th>
<th>New Housing Demand</th>
<th>Demand to be Met by Infill &amp; Intensification</th>
<th>Vacant Land Capacity (Greenfield)</th>
<th>Net Housing Need</th>
<th>Assumed Gross Density</th>
<th>Land Area Requirements (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Density</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>76,539</td>
<td>14,061</td>
<td>984</td>
<td>6,194</td>
<td>6,883</td>
<td>13</td>
<td>529</td>
</tr>
<tr>
<td><strong>Medium Density</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apartments</td>
<td>9,908</td>
<td>838</td>
<td>419</td>
<td>1,010</td>
<td>0</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>113,018</td>
<td>19,423</td>
<td>4,344</td>
<td>8,098</td>
<td>542</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Recommended Contingency Factor to Accommodate a Full Range of Housing (10%) | 55

TOTAL RESIDENTIAL LAND REQUIREMENTS 597

* After adjustments for vacancy rates and building construction since 2001

Two other scenarios were also identified for comparison purposes for the residential land needs, as follows:

- ‘Business as usual’ scenario, with housing mix and densities based on building permit activity and general development trends over the past 10 years;
- Compact scenario, where a higher proportion of housing was assumed to be met through infill and intensification, along with a shift in the housing mix and higher densities for future development.
These scenarios resulted in the following land need requirements, after all adjustments for vacancy rates, building activity since 2001 and vacant land development potential were made:

### Table 5.2

**RESIDENTIAL LAND NEEDS REQUIREMENTS – ‘BUSINESS AS USUAL’ SCENARIO**

<table>
<thead>
<tr>
<th></th>
<th>Housing Mix</th>
<th>New Housing Demand</th>
<th>Intensification Assumption</th>
<th>Demand Met by Infill</th>
<th>Vacant Land Capacity (Greenfield)</th>
<th>Net Housing Need</th>
<th>Assumed Gross Density</th>
<th>Land Area Requirements (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Density</td>
<td>76%</td>
<td>14,061</td>
<td>5%</td>
<td>738</td>
<td>6,194</td>
<td>7,830</td>
<td>11</td>
<td>712</td>
</tr>
<tr>
<td>Medium Density</td>
<td>12%</td>
<td>2,331</td>
<td>25%</td>
<td>583</td>
<td>1,010</td>
<td>738</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Apartments</td>
<td>12%</td>
<td>2,331</td>
<td>75%</td>
<td>1,748</td>
<td>368</td>
<td>214</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19,423</td>
<td>3,069</td>
<td>7,572</td>
<td>8,782</td>
<td></td>
<td></td>
<td></td>
<td>739</td>
</tr>
</tbody>
</table>

### Table 5.3

**RESIDENTIAL LAND NEEDS REQUIREMENTS – COMPACT SCENARIO**

<table>
<thead>
<tr>
<th></th>
<th>Housing Mix</th>
<th>New Housing Demand</th>
<th>Intensification Assumption</th>
<th>Demand Met by Infill</th>
<th>Vacant Land Capacity (Greenfield)</th>
<th>Net Housing Need</th>
<th>Assumed Gross Density</th>
<th>Land Area Requirements (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Density</td>
<td>60%</td>
<td>11.654</td>
<td>7%</td>
<td>816</td>
<td>6,194</td>
<td>4,644</td>
<td>15</td>
<td>310</td>
</tr>
<tr>
<td>Medium Density</td>
<td>20%</td>
<td>3,885</td>
<td>60%</td>
<td>2,331</td>
<td>1,010</td>
<td>544</td>
<td>35</td>
<td>16</td>
</tr>
<tr>
<td>Apartments</td>
<td>20%</td>
<td>3,885</td>
<td>75%</td>
<td>2,913</td>
<td>368</td>
<td>603</td>
<td>150</td>
<td>4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19,423</td>
<td>6,060</td>
<td>7,572</td>
<td>5,791</td>
<td></td>
<td></td>
<td></td>
<td>329</td>
</tr>
</tbody>
</table>

### 5.2 INDUSTRIAL AND EMPLOYMENT LAND NEEDS

Suitable land and locational attributes are required for the automotive sector, typically including relatively large tracts of serviced, unencumbered and contiguous land to provide good proximity between existing / future suppliers and manufacturers. Warehousing and distribution centres often desire locations close to Highway 401 for efficient and economical operations. Without suitable land availability, opportunities to attract new investment will be seriously curtailed. At the same time, it is essential that sufficient land is also provided to accommodate non-automotive industry and employment to promote diversification and stability in the local economy. Currently, the Windsor-Essex County Development Commission estimates that there are only approximately 25 hectares of serviced and zoned vacant, uncommitted industrial land available for immediate consumption. This is woefully inadequate to attract new industry and, if not addressed, may seriously impact the City’s economy.
The employment projections component of this study recommended that the medium growth scenario be selected as the reference case for future employment. This was based on an average employment growth rate of approximately 1% per year over the planning horizon, and resulted in a projection of approximately 31,000 new jobs. After adjustments for future workplace intensification, downtown office workers and categorization of employment jobs, it was estimated that there would be a need to accommodate just over 26,000 employees by 2026 as previously shown on page 4.5 of this report.

Determination of land needs for these future employees included the following:

- Assignment of average employee densities per hectare;
- Estimation of available vacant land for industrial and other employment purposes;
- Inclusion of an allowance for large-scale manufacturing / multi-modal facilities.

The following assumptions were used for employee density, derived from information provided by the City of Windsor Planning Services Division.

<table>
<thead>
<tr>
<th>Employment Category</th>
<th>Land Area (employees/ ha)</th>
<th>Additional Assumptions / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Jobs</td>
<td>0</td>
<td>Primary jobs are assumed to be agricultural, forestry, resource, etc. based without an urban land requirement.</td>
</tr>
<tr>
<td>Employment Land Jobs – Heavy</td>
<td>100</td>
<td>Assumed to be approximately 25% of the total employment land jobs. Assumes 2/3 build out of heavy industry at moderate to peak levels of operation. Assumes at least two shifts and sometimes three.</td>
</tr>
<tr>
<td>Employment Land Jobs – Light</td>
<td>18</td>
<td>Assumed to be approximately 75% of employment land jobs. Assumes 2/3 build out at moderate to peak levels of operation. Assumes at least two shifts and sometimes three.</td>
</tr>
<tr>
<td>Population Jobs</td>
<td>65</td>
<td>Indicative of commercial / retail sector jobs</td>
</tr>
</tbody>
</table>

Source: City of Windsor Planning Department, Stantec Consulting

Using these assumptions, it was determined that approximately 528 hectares of land would be required for employment jobs (see Table 5.5), resulting in average densities of approximately 22.6 persons/ha for manufacturing, construction, transportation, warehouse, etc. types of jobs. This is relatively similar to the previous density assumption of 22.9 persons/ha used by the City of Windsor in 1996 and is consistent with information provided by the Windsor Essex County Development Commission that indicated industrial employee densities are declining slightly due...
to technological changes and advancements. It is also similar to employee density assumptions used in a number of other communities.

Table 5.5

PROJECTED LAND AREA REQUIREMENTS FOR FUTURE EMPLOYMENT

<table>
<thead>
<tr>
<th>Land Area Requirements</th>
<th># of Jobs</th>
<th>Employee Density</th>
<th>Land Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Jobs</td>
<td>179</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Employment Land Jobs - Heavy</td>
<td>2,990</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>Employment Land Jobs - Light</td>
<td>8,969</td>
<td>18</td>
<td>498</td>
</tr>
<tr>
<td>Sub-Total (Employment Land)</td>
<td>11,959</td>
<td></td>
<td>528</td>
</tr>
<tr>
<td>Population Jobs</td>
<td>14,023</td>
<td>65</td>
<td>216</td>
</tr>
<tr>
<td><strong>Total Land Requirements</strong></td>
<td><strong>26,162</strong></td>
<td></td>
<td><strong>744</strong></td>
</tr>
</tbody>
</table>

*Note - Figures may not add up due to rounding

In addition to the land needs identified above, interest has also been expressed by large scale manufacturing companies as well as CP Rail for large tracts of unencumbered land for potential new manufacturing/assembly plants and multi-modal facilities. Both the City and Windsor-Essex County Development Commission have indicated that some consideration should be given to allocating and designating additional industrial land to accommodate such uses. While the actual land area that could be required for such uses ranges from approximately 200 to 800 hectares for manufacturing facilities (with most being at least 400 hectares), and approximately 200 hectares for a multi-modal facility, it would be difficult to justify designating the full amount of land potentially needed for both types of potential future uses. However, it is recommended that approximately 250-350 hectares be provided in addition to the land needs identified above to facilitate the potential development and/or attraction of such uses. This would likely allow for the initial phases of such facilities to be developed, with potential reallocation/re-designation of other lands within or outside the Annexed Lands to accommodate the full area requirements (depending on when such development occurred). If lands are not specifically designated for such uses at this time, they should at least be identified as Industrial Reserve areas.

With the addition of these specialized needs, the total amount of land required to accommodate future employment jobs would be approximately 878 hectares. A review of existing vacant land data provided by the City of Windsor indicated that there were approximately 125 hectares of land designated Industrial and 55 hectares designated Business Park that were larger than 1 hectare available in the main Planning Districts intended for industrial development. Additional review of this data by the Windsor-Essex County Development Commission (WEDC) revealed that a number of these parcels are already committed for expansions or otherwise unavailable. Of particular note was that the two largest areas of vacant industrial land identified in the Ojibway Planning District are viewed as being ‘frozen’ at the present time, until decisions have been made for a future border crossing for Highway 401 and these parcels are not considered
'available' by the WEDC. As a result, the WEDC estimated that, in actuality, there were only approximately 22 hectares of vacant land actually suitable, available and zoned for industrial purposes. However, given that the parcels in Ojibway may be available in the future, for the purposes of land needs requirements these parcels will still be considered as vacant. It is therefore estimated that there are approximately 100 hectares of vacant industrial land in the former City of Windsor boundaries. Based on this data, the net land requirements for employment lands were estimated to be approximately 723 hectares. To convert this figure to gross requirements, the land area was increased by 12% to allow for streets and other public infrastructure, with a resulting total of approximately 810 hectares as shown in Table 5.5.

Table 5.5

<table>
<thead>
<tr>
<th>NEW ADDITIONAL LAND AREA REQUIRED FOR INDUSTRIAL PURPOSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Area (ha)</td>
</tr>
<tr>
<td>'Employment Jobs' Land Requirements (Net Area)</td>
</tr>
<tr>
<td>Existing Industrial Lands Available (over 1 ha)</td>
</tr>
<tr>
<td>Existing Business Park Lands Available (over 1 ha)</td>
</tr>
<tr>
<td>TOTAL INDUSTRIAL LAND NEEDS (ADDITIONAL LANDS-NET)</td>
</tr>
<tr>
<td>Employment Land Requirements (Gross Area)</td>
</tr>
</tbody>
</table>

5.3 OTHER LAND NEEDS REQUIREMENTS

Land needs requirements for other land uses, including ‘population jobs’ (commercial, office, arts and entertainment, health care, etc.) indicated that approximately 216 hectares would be required. Based on vacant land estimates, this figure was further refined to be approximately 153 hectares (gross).

Additional land requirements for open space and natural heritage, infrastructure (major transportation and utility corridors, stormwater management facilities), district parks, etc. were proposed to be approximately 15% of the overall land requirements recommended for residential, industrial and commercial/office uses.

A summary of the total land area requirements for various uses is provided in Table 5.6. As shown, the projected total land needs requirements are estimated to be approximately 1,794 hectares (gross) for the general land use categories including the 350 hectare allowance for potential large scale manufacturing and/or multi-modal facilities. With the addition of existing land uses, airport requirements and a small contingency factor, the overall land needs are approximately 2,474 hectares. This required land is slightly less than the total land area that exists within the annexed land boundaries. However, as the remaining area would be quite small relative to the overall area, it would be logical to identify Official Plan designations for the entire area rather than establish an urban growth boundary within the annexed lands that excludes a small portion.
Table 5.6
SUMMARY OF TOTAL PROJECTED LAND NEEDS REQUIREMENTS

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Gross Area Required (ha)</th>
<th>% of Total Land Req.</th>
<th>Existing City</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>597</td>
<td>24.1%</td>
<td>5,919</td>
<td>50.4%</td>
</tr>
<tr>
<td>Industrial</td>
<td>810</td>
<td>32.7%</td>
<td>2,807</td>
<td>23.9%</td>
</tr>
<tr>
<td>Commercial / Office</td>
<td>153</td>
<td>6.2%</td>
<td>1,042</td>
<td>8.9%</td>
</tr>
<tr>
<td>Other (Open Space, Infrastructure, Institutional)</td>
<td>234</td>
<td>9.5%</td>
<td>1,983</td>
<td>16.9%</td>
</tr>
<tr>
<td><strong>SUB-TOTAL</strong></td>
<td><strong>1,794</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency (5% of Sub-total)</td>
<td>90</td>
<td>3.6%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Existing Land Uses</td>
<td>170</td>
<td>6.9%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Airport</td>
<td>420</td>
<td>17.0%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>TOTAL LAND REQUIREMENTS</strong></td>
<td><strong>2,474</strong></td>
<td><strong>100.0%</strong></td>
<td>11,751</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Notes:
- ‘Other’ land uses represent 15% of total area required for Residential, Industrial and Commercial /Office uses.
- Industrial includes 350 ha for large scale manufacturing and/or multi-modal facilities
- Residential includes contingency factor to allow for full range of housing choice
6.0 Natural Heritage

Stantec Consulting undertook a scoped natural heritage study and evaluation of the airport woodlots in 2003 as part of the overall Annexed Lands Master Planning study. The main objective of the study was to assess the woodlots and potential corridors for their significance, identify environmental opportunities and constraints, delineate appropriate boundaries and provide recommendations regarding appropriate land use designations and/or policies for the natural features and adjacent lands. These woodlots are located in the easterly part of the airport property, which was part of the overall area transferred to the City of Windsor from the Town of Tecumseh. The three woodlots are in the drainage area of the Little River and represent the largest wooded areas within the watershed.

Additional information from a report titled Windsor Airport Woodlot Assessment undertaken by Riverside Tree Care in March 2005 was also reviewed. This report focused on the potential impacts of an Emerald Ash Borer infestation.

The Essex Region Conservation Authority (ERCA) is also undertaking an update of Candidate Natural Heritage Sites for the City of Windsor, including the gathering of additional floral and faunal data for a number of sites within the Annexed Area. Some information was received from ERCA in late August 2006 and has also been incorporated into this summary section of the report.

6.1 NATURAL HERITAGE POLICIES AND STRATEGIES

The Provincial Policy Statement includes a number of policies in Section 2.1 pertaining to the protection and preservation of natural heritage features and areas. Included in these policies is the protection of significant woodlands south and east of the Canadian Shield.

The City of Windsor Official Plan also addresses the need to, among other things, protect and enhance natural heritage features and functions, protect biological diversity, improve urban forestry and establish recreational and natural linkages between open space and natural areas in Section 5.3. Suitable natural heritage and open space features are identified within their Greenway System which includes natural heritage designations, waterfront recreation areas, community and regional parks, water corridors, recreation ways and natural and/or recreational corridors. Woodlands would typically be identified within the Natural Heritage designation which provides for the protection and conservation of Windsor’s most significant natural features or as an Environmental Policy Area, should it be determined that the feature can tolerate appropriately designed development.

The Essex Region Conservation Authority also completed a Biodiversity Conservation Strategy in 2002 that addressed the restoration of core areas and connecting linkages for the entire region. Most recently, the City of Windsor adopted an Environmental Master Plan at the end of July 2006 which provides further support and recommendations relating to enhancing the
quality, condition and linkages of the Greenway System, protecting natural heritage areas, and increasing tree cover by 5% by 2011.

6.2 ASSESSMENT OF WOODLOTS

Evaluation of the woodlots was undertaken with consideration for various federal, provincial and Conservation Authority criteria. Of specific relevance was the Natural Heritage Reference Manual for Policy 2.3 of the Provincial Policy Statement (PPS) which provides criteria for the determination of significance of woodlands. The recommended criteria for evaluating significance are:

- woodland size,
- ecological functions,
- uncommon characteristics, and
- economic and social values.

Evaluation of the woodlots based on Essex Region Conservation Authority and City of Windsor criteria was also undertaken. Following is a summary of the key features and functions identified for the airport woodlots.

6.2.1 Woodland Size

The airport woodlots are a group of three woodlots in public and private ownership

- Jefferson Woodlot (nearest the airport terminal buildings) - 21.05 acres;
- Shooting Range Woodlot (the central woodlot) - 22.9 acres;
- East Perimeter Woodlot (at the eastern boundary of the airport property) - 30.32 acres;
- St. Louis Bush (30.23 acres) is a privately owned woodlot, directly adjacent to and contiguous with the East Perimeter woodlot.

The combined area of the airport woodlots is approximately 43 hectares, including the adjacent St. Louis Woodlot. Where woodland cover is less than 5% of the land cover, woodlands 2 ha in size or larger should be considered for significance. Woodlands in Essex County comprise less than 4% of the land area. Therefore as each of the woodlands is greater than 2 ha (4.93 acres), they qualify individually as meeting the minimum size criterion for being considered significant by the Province of Ontario, the City of Windsor and ERCA.

6.2.2 Ecological Function

There are three suggested factors of importance in assessing ecological function:
6.2.2.1 Woodland Shape and Proximity
Each of the woodlots is generally rectangular in shape. The Shooting Range and East Perimeter woodlots are in relatively close proximity to each other, and the East Perimeter and St. Louis woodlots are directly adjacent to each other with little separation between with the exception of a boundary fence and the airport’s perimeter road. At present, there are about 3.0 ha of interior habitat in the three woodlots. As well, the woodlots are located in close proximity to the Little River corridor.

6.2.2.2 Linkages
The airport woodlots act as a core natural area and provide a significantly large node along the Little River corridor. Drainage ditches, many of which are flanked by native trees and shrubs, provide a linkage system for movement of amphibians and reptiles between the woodlots as well as other small animals. As well, the Shooting Range Woodlot, being located between the East Perimeter and Jefferson Woodlots, provides a natural linkage for animals to move between them.

The Little River corridor also passes in very close proximity to the southerly limits of the East Perimeter and St. Louis woodlots. The provision of buffer areas and enhancement of natural habitats on both sides of the Little River could improve the habitats and hydrologic conditions in the watershed. A buffer width of 30 metres is recommended for all watercourses and would offer opportunities to contribute to linkages and enhancements within the overall natural heritage system.

The airport lands are also located on the convergence of the Mississippi and Atlantic flyways. The area is part of a significant spring and fall migration corridor and the woodlots provide a valuable resting and feeding location for many neotropical migrants as well as raptors.

6.2.2.3 Woodland Diversity
A detailed comparative study of the woodlot plant communities was not undertaken but they would all be considered to be variants of Fresh – Moist Oak – Maple – Hickory Deciduous Forest Ecosite (FOD 9) (Lee et al., 1998). The following general descriptions are based on field visits in May 2003.

1. Jefferson Woods
This woodlot generally consists of two communities: (1) Silver Maple (Acer saccharinum) moist forest located in the southern half of the woodlot, characterized by an open physiognomy, uneven structure and significant presence of Hawthorn (Crataegus spp.), which indicate its past disturbance history; and (2) Red Ash (Fraxinus pennsylvanica) swamp with admixtures of White Elm (Ulmus americana), Swamp White Oak (Quercus bicolor) and Big Shellbark Hickory (Carya laciniosa). There are signs of water ponding throughout the woods. The age of stands is about...
40 to 50 years. The forest was likely used as grazing area for cattle and no recent signs of wood cutting were observed.

2. Shooting Range Woods

This is a young and homogeneous woodlot in terms of structure and composition. It is a moist stand dominated by Red Ash and White Elm, with co-dominant hickories (Shagbark (*Carya ovata*) and Big Shellbark) and oaks 2003.

3. East Perimeter Woods

The major community in this woodlot is a moist red ash-white elm community, with several swampy areas which contain signs of vernal pools and wet meadow openings. The trees are medium aged, homogeneous and display little disturbance. Along the northern edge of the woodlot the principal tall shrub species is hawthorn, but most of it is dying or already dead.

These woodlots have limited representation in Canada, Ontario and Essex County based on the mixture of Carolinian and southern deciduous woody plants. As well, when considered in conjunction with vegetation associated with the adjacent Little River riparian communities and connecting drainage ditches, there is a substantial diversity of plant communities overall.

6.2.3 Uncommon Characteristics

Woodlands that are uncommon in terms of composition, cover type, quality and age composition should be protected. The airport woodlots are considered unusual in their current isolation and lack of disturbance.

Also contributing to ‘uncommon characteristics’ is the unconfirmed sighting of Butler’s Garter Snake on the airport lands in 1999. There is also the possibility of the Eastern Fox snake on the airport lands as it is listed as occurring in the area. Wildlife inventories were not part of the scope of the natural heritage investigation for this study; however, more detailed inventories should be undertaken to establish or confirm the presence of these reptiles. A more detailed inventory for other VTE species listed by the Natural Heritage Information Centre should also be undertaken.

6.2.4 Economic and Social Values

The woodlots provide social value by offering visual relief from the very flat topography of the City and the developed areas that exist on much of the area to the north. They also have provided educational and research value in the past for University of Windsor students, and may have the potential for further research and education work.

6.3 PRELIMINARY EVALUATION

Stantec’s initial consultation with the Conservation Biologist with ERCA indicated that based on previous investigations the airport woodlots did not meet the requirements for Environmentally Significant Areas. The additional investigation completed by Stantec’s ecologists in 2003.
suggested that, with consideration of all factors, the woodlots could potentially be considered as Environmentally Significant Areas, and proposed that they be designated as such. However, additional detailed study by ERCA in 2006 regarding flora and fauna indicated that the woodlots would not likely qualify as Environmentally Significant Areas, but would certainly qualify as Natural Heritage Areas. The additional investigation by ERCA in 2006 also indicated that two other wooded areas south of the County Road 42 (Division Road) should also be identified as Natural Heritage Areas (Sites # 40 and 41 on attached map, Figure 4). Four other patches were also investigated, but were deemed not to meet Natural Heritage Area criteria.

A number of restoration opportunities were also identified including reforestation between the woodlots, the creation of wooded stormwater management facilities, and restoration of stream channels and buffer areas. Reforestation of the lands between two or three of the airport woodlots would be a logical location to implement one of the City of Windsor’s goals of increasing the area of woodland within the City, as well as creating additional linkages. The creation of wooded stormwater management facilities would permit the storage of stormwater runoff and at the same time would not attract waterfowl that are a potential hazard in airport lands. A SWM facility would also do much to improve both the water quality and flow rates to the Little River. More detailed investigation of SWM facilities will need to be undertaken as development proceeds within the Annexed lands, and specific attention and consideration should be given to identifying opportunities for appropriate SWM facilities to increase the function and habitat potential of the woodlots.

Information from Riverside Tree Care indicated that Emerald Ash Borer infestation is most pronounced in the Jefferson woodlot, with some indication of activity in the Shooting Range Woodlot. No firm signs were detected in the East Perimeter Woodlot. Riverside indicated that tree decline and death could be expected within the year in all three woodlots, but indicated that “there is enough species diversity in all of the woodlots to ensure that other trees will grow in the newly created open space. The stocking of the woodlots is sufficient to maintain the forest cover even with the absence of the Ash”. Riverside concluded that although the woodlots may undergo dramatic changes in the near future, the woodlots would survive but the species composition would change.

6.4 CONCLUSIONS AND RECOMMENDATIONS

The preservation of existing natural habitats and the creation of significant additional natural habitats are essential to meet the commitments of the various levels of government. Woodlands are a rare habitat in the City of Windsor and the County of Essex and should be preserved wherever possible. The airport woodlands are significant woodlands when evaluated using provincial, regional and local government criteria and should be protected as Natural Heritage Areas in their entirety. Additional considerations and recommendations relating to land uses and policies for the woodlot areas include the following:

- The preservation of the airport woodlots and their integration into a natural heritage network in the Little River Watershed should be a priority during the planning of the Annexed Lands. Potential opportunities for a natural heritage network are shown in Figure 5.
SITES

<table>
<thead>
<tr>
<th>Site</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td># 9</td>
<td>6.26</td>
</tr>
<tr>
<td># 10</td>
<td>3.48</td>
</tr>
<tr>
<td># 13</td>
<td>4.74</td>
</tr>
<tr>
<td># 14</td>
<td>2.74</td>
</tr>
<tr>
<td># 18</td>
<td>1.41</td>
</tr>
<tr>
<td># 24</td>
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</tr>
<tr>
<td># 26</td>
<td>6.10</td>
</tr>
<tr>
<td># 29</td>
<td>4.77</td>
</tr>
<tr>
<td># 31</td>
<td>14.58</td>
</tr>
<tr>
<td># 33</td>
<td>74.10</td>
</tr>
<tr>
<td># 34</td>
<td>49.00</td>
</tr>
<tr>
<td># 39</td>
<td>29.04</td>
</tr>
<tr>
<td># 40</td>
<td>6.34</td>
</tr>
<tr>
<td># 41</td>
<td>0.87</td>
</tr>
<tr>
<td># 42</td>
<td>2.79</td>
</tr>
<tr>
<td># 43</td>
<td>0.67</td>
</tr>
<tr>
<td># 44</td>
<td>2.52</td>
</tr>
<tr>
<td># 45</td>
<td>3.25</td>
</tr>
</tbody>
</table>
- The lands around the woodlots would be considered adjacent lands. The Province recommends that land development proposals must address their compatibility with the woodland and suggests that a buffer of 50 metres may be appropriate. Identification of actual buffers should be undertaken through Environmental Evaluation Reports (Environmental Impact Studies) at the time of development and should consider tree species, tree height, age and closure, water tables, etc., as well as wildlife movements and hydrologic connections.

- There are a large number of ash trees within the woodlots. Emerald ash borer (EAM) (*Agrilus planipennis*) is a threat to the ash population and a management plan should be developed for dealing with this potential problem.

- A long-term management plan should also be developed for the woodlots which addresses goals and objectives for dealing with other non-native species within them.

- The woodlands should be further evaluated with regard to their significance on the basis of the presence of Vulnerable, Threatened and Endangered (VTE) Species, and the presence of the woodlands as habitat for wildlife.

- The woodlots should be considered in relation to aircraft movements as they are in proximity to the main runway, as well as to other transportation corridors in the area. The woodlots have tracks within them that have been maintained for airport safety access. The maintenance of these tracks should be discussed and evaluated in terms of the overall use of the woodlots in the future, once they are no longer part of the lands required by the airport for their long-term operations.

- The potential presence of Butler’s Garter Snake in the area should be confirmed and the protection of habitat and suitable corridors for their movement should be preserved.
7.0  Sanitary Servicing

7.1  INTRODUCTION

In December of 2002 the Province of Ontario approved the transfer of approximately 2,600 hectares of land (Annexed Lands) from the Town of Tecumseh and Essex County to the City of Windsor. The dominant existing use of the land at that time was rural agricultural, with small areas of residential and industrial uses. The City of Windsor initiated a Utility Servicing Study (i.e. sanitary, storm and drainage, water, roads, other utilities, etc.) as a result of the land transfer which was later broadened to include the remaining components of the Master Planning Study. While the Master Planning Study relating to land needs requirements and potential designations was on hold, the Sanitary Sewer Service Study component continued to proceed.

An agreement between the City of Windsor and the Town of Tecumseh dated November 1, 2004, requires the City to provide a trunk sanitary sewer on Banwell Road to service adjacent Town of Tecumseh lands. **The trunk sanitary sewer will accommodate a maximum flow of 1308 L/s from the Town of Tecumseh. From this maximum flow 983 L/s will be introduced on Banwell Road south of the EC ROW Expressway, and 325 L/s will be introduced from the Oldcastle Hamlet Service Area.** A cost sharing plan has also been agreed upon by all parties to pay for the additional capital costs of over sizing the trunk sewers, plant expansions, and treatment of sewage. The Annexed Lands require sanitary sewer services prior to any new development occurring.

The City of Windsor has faced considerable development pressure from adjacent lands in the Town of Tecumseh as well as developers within the Annexed Lands. In an attempt to accommodate the sanitary sewer servicing component of these development pressures, Stantec Consulting Ltd. was commissioned to review various alternatives.

A separate Schedule ‘B’ Environmental Assessment was also undertaken for expanding the Lou Romano Water Reclamation Plant Sanitary Sewer Service Area by an additional 110 hectares, with a summary provided in Section 7.3.

7.2  ANNEXED LANDS SANITARY SEWER SERVICE STUDY CLASS EA

7.2.1  Problem Identification

Adjacent landowners in the Town of Tecumseh and owners of lands recently annexed by the City of Windsor require servicing by sanitary sewers before any development can proceed.

Based on the foregoing, the City of Windsor recommended that a Class Environmental Assessment be carried out to evaluate all viable alternative solutions to the aforementioned problem and to recommend the most suitable option.
7.2.2 Alternatives and Selection of Recommended Alternative

Option 1 – Do Nothing

In the “Do Nothing” Option, no improvements or changes would be made, and the existing treatment and collection systems would remain as they presently exist. This option will not address the identified problem since it will prevent future growth in the immediate area, and fail to address the requirements of the existing legal agreement between the City of Windsor and the Town of Tecumseh. This option was not considered appropriate.

Option 2 – Expand the Lou Romano Water Reclamation Plant (LRWRP) Sanitary Service Area

Under this option, sanitary sewage from the Annexed Lands, as well as the areas in the Town of Tecumseh and the Oldcastle Hamlet would come be collected and conveyed to the LRWRP for treatment. Expansion of the Lou Romano Plant would have to take place, and as well new trunk sanitary sewers would have to be constructed, approximately 32.4 kilometers. Additional manpower would be required to operate and maintain the expanded plant and the expanded collection system.

The preliminary construction estimate for Option 2 is $133.7 million, including sanitary sewer construction costs of $103.7 million and treatment plant expansion costs of $30.0 million. Due to the high capital costs, construction phasing, the requirements of the Servicing Agreement between City of Windsor and Town of Tecumseh, and development pressures in the Annexed lands and the Town of Tecumseh, this option is not being recommended as the preferred alternative.

Option 3 – Construction of New Sewage Treatment Plant within the Annexed Area

In this option, sanitary sewage from the Annexed Lands, as well as the areas from the Town of Tecumseh and the Oldcastle Hamlet would be conveyed through a collection system to a new sewage treatment plant within the Annexed Lands, once the design and construction of the plant was complete. New staff would be hired and trained to operate and maintain the treatment plant, and the City would be required to maintain the additional sanitary sewers, approximately 20.0 kilometers.

The preliminary estimate for Option 3 is $136.4 million, including sanitary sewer construction costs of $24.4 million and the construction of a new treatment plant for $112.0 million. Due to the high capital costs, the significantly longer construction time required for a new plant, construction phasing, the Servicing Agreement between City of Windsor and Town of Tecumseh, and existing development pressures, this is not being considered as the preferred alternative.

Option 4 – Expand the Little River Pollution Control Plant (LRPCP) Sanitary Service Area

In this option, sanitary sewage from the Annexed Lands, as well as the areas from the Town of Tecumseh and the Oldcastle Hamlet would be conveyed to the LRPCP for treatment.
Expansion at the plant would have to take place, as well as construction of new trunk sanitary sewers, approximately 25.2 kilometers. Additional manpower would be required to operate and maintain the plant expansion.

The preliminary estimate for Option 4 is $111.7 million, including sanitary sewer construction costs of $43.9 million and treatment plant expansion costs of $67.8 million.

7.2.3 Conclusions

Option 4 is the lowest cost option of all of the options considered, other than the “Do Nothing” option. This option allows construction to be phased in an orderly and efficient manner. Issues in the Servicing Agreement between City of Windsor and Town of Tecumseh, as well as existing development pressures can also be properly addressed by this option. Consequently, Option 4, Expansion of the Little River Pollution Control Plant Sanitary Service Area, is the RECOMMENDED ALTERNATIVE.

Construction phasing would allow for development to begin in the northeast corner and proceed towards the southwest, with construction of the first three (3) phases beginning within the next couple of years, as shown in Figure 6.

7.3 LOU ROMANO WATER RECLAMATION PLANT CLASS EA

7.3.1 Introduction

As part of the Annexed Area Master Planning Study, Stantec Consulting Ltd. was commissioned to review the capacity of existing trunk sanitary sewers near the western limit of the annexed lands to the Lou Romano Water Reclamation Plant (LRWRP). A detailed study and report was completed which indicated that a 110 hectare area of the annexed lands could be serviced by the LRWRP.

7.3.2 Problem identification

Development pressures from the Windsor Christian Fellowship Church existing church and from owners of adjacent lands recently annexed by the City of Windsor require servicing by sanitary sewers before any development can proceed. Although there is sufficient capacity in the existing sanitary sewer system to accommodate 110 hectares of additional development under certain conditions, the lands that are proposed to be developed are outside of the current sanitary sewer service area, and as a result, the sanitary sewer service area needs to be expanded.

It has been determined that the existing sanitary sewer service area for the Lou Romano Water Reclamation Plant (LRWRP) could be expanded to include the Windsor Christian Fellowship Church as well as approximately 110 hectares of annexed land in the immediate area. The sanitary sewer system west of the CN railway has approximately 95-litres/second capacity to accommodate additional development east of the CN tracks in the area recently annexed from the Town of Tecumseh and the County of Essex. This extra capacity would allow 110 hectares
of the annexed lands as well as the Windsor Christian Fellowship Church Expansion to be developed without compromising the existing system.

7.3.3 Alternatives and Selection of the recommended alternative

Option 1 – Do Nothing

In the “Do Nothing” Option, no improvements or changes would be made, and the existing treatment and collection systems would remain as they presently exist. This alternative will not address the problems identified and will limit future growth in the immediate area, and was not considered appropriate.

Option 2 – Utilize Package Treatment Plants within the 110 ha Area

Package Treatment Plants would be constructed within the 110 hectare study area as needed to service any new development. The City of Windsor would have to own, operate, and maintain any of these new facilities. This alternative is a possible solution. However, due to the increased operating costs and significant man-hours required for operating package plants, the existence of capacity in the existing Lou Romano Water Reclamation Plant (LRWRP) treatment system, and the likelihood that numerous package plants would need to be constructed as development progresses this is not the recommended alternative.

Option 3 – Expand Little River Pollution Control Plant (LRPCP) Collection System

The Little River Pollution Control Plant would be expanded, and sanitary sewers constructed from the study area, through the Annexed Lands to the plant. There is currently a Schedule ‘B’ study underway for servicing the entire Annexed Lands apart from the 110 hectare area. This option would have significant capital costs, and would have a longer design and construction time. This alternative is a possible solution. However, due to the high capital costs and the significantly longer time frame required to implement this alternative, it is not recommended to address the problems identified.

Option 4 – Expand Lou Romano Water Reclamation Plant (LRWRP) Collection System

The existing sanitary collection system would be extended by constructing sanitary sewers in the 110 hectare area as required, for treatment at the Lou Romano Water Reclamation Plant. This planning alternative represents the most viable solution to the problems identified and will be considered as the RECOMMENDED ALTERNATIVE for the sanitary sewer servicing issues for the 100 hectare Study Area.

7.3.4 Conclusions

The recommended alternative (Option 4) is not considered to have any serious impact on existing land uses, cultural activities, heritage resources or any other community program except to the extent that it will permit the ongoing implementation of development and other activities as envisaged in planning documents which have positive impacts on the socio-economic environments.
8.0 Windsor Airport Considerations

Airports and surrounding land use planning requires a very special balance between matters of federal and provincial jurisdiction. It also requires a delicate balance between planning needs of the airport and those of the surrounding community. The airport can and should be recognized within land use planning documents for its inherent benefits to the socio-economic environment of a community. As part of the Annexed Lands Master Planning Study, Pryde Schropp and McComb undertook a Windsor Airport Considerations Study to identify opportunities, issues and constraints associated with airport operations. A summary of this study is outlined below.

The focus of all land use decisions should be the health and welfare of the public, a provincial matter. The fundamental issue here is to ensure a clear distinction between matters of federal (aeronautical) and provincial jurisdiction. In simple terms, matters concerning the safe operation of aircraft and safety of operations at airports are clearly federal matters.

The concept of an airport operating area may be beneficial as part of any planning initiative in raising the awareness of airport related planning issues within its surrounding community that go beyond matters of provincial authority. The boundary would represent an area in which the municipality should be aware that aeronautical issues apply (federal airport zoning regulations for example) that are beyond their jurisdiction. This would serve as a “flag” and would trigger additional review under the appropriate authority. Figure H has been developed to overlay various airport related advisory and protection boundaries developed for the Windsor Airport. The outer limits of these overlays could be used as the boundary of an airport operating area for the airport.
Within this airport operating area boundary, this study specifically considered matters of both provincial and federal authority as follows:

- Aircraft Noise and Land Use Recommendations – Provincial Authority
- Airport Zoning Regulations (Obstacle Limitation Surfaces) – Federal Authority
- Airport Zoning Regulations - Protection of Telecommunication and Electronic Systems – Federal Authority
- Airport Zoning Regulations - Bird Hazards – Federal Authority
- Restrictions to Visibility – Recommended Land Use – Federal Authority

In general, the ultimate authority in regulating airport noise in Canada rests with Transport Canada. This authority is given through the Federal Aeronautics Act and by incorporation by reference, the associated Canadian Aviation Regulations (CAR). Section 4.9 of Canada’s Aeronautics Act enables the “…the Governor in Council to make regulations respecting aeronautics and, without restricting the generality of the foregoing, may make regulations respecting…….(f) noise emanating from aerodromes and aircraft;…”

However, land use planning and control is a provincial responsibility. As such Transport Canada cannot regulate land use around airports. Transport Canada has however developed guidelines and a process to assist local governments and provinces in developing compatible land use plans around airports. For this purpose, the official noise metric in Canada is the Canadian Noise Exposure Forecast (NEF) used for airport noise assessment. As part of the NEF system, Transport Canada publishes the document entitled TP1247E – Land Use in the Vicinity of Airports which provides guidelines for dealing with land use compatibility issues. It should be noted that regulation or any other authority does not mandate the development of NEFs. The NEF system is designed only as a guideline for encouraging compatible development in the airport vicinity.

Recognizing the importance airports, the Ontario provincial government issued the following the provincial policy related to airport noise and new residential development and other noise-sensitive land uses under the Planning Act. This policy statement was issued on February 1, 1997 as follows:

To protect airports from incompatible development:

1. New residential development and other sensitive land uses will not be permitted in areas near airports above 30 NEF/NEP as set out on maps (as revised from time to time) approved by Transport Canada; but

2. Redevelopment of existing residential uses and other sensitive land uses or infilling of residential an other sensitive land uses may be considered above the 30 NEF/NEP if it has been demonstrated that there will be no negative impacts on the long-term function of the airport.
“Airports” means all Ontario airports, including designated lands for future airports, with Noise Exposure Forecast (NEF)/Noise Exposure Projection (NEP) mapping. (Section 1.1.3g) of PPS)

This policy statement was consistent with Transport Canada’s recommendations as amended in May 1996 which states the following:

No new residential construction or development should be undertaken above the 30 NEF. In addition, annoyance caused by aircraft noise may begin as low as NEF 25. It is recommended that developers be made aware of this fact and that they undertake to so inform all prospective tenants or purchasers of residential units. In addition, it is suggested that development should not proceed until the responsible authority is satisfied that acoustic insulation features, if required, have been considered in the building design.

Various airport noise exposure forecast (NEF) scenarios were developed for Windsor Airport including:

- 2002 Noise Exposure Planning Contour (Existing Conditions)
- 2022 Noise Exposure Projection Contour – Low Growth Scenario
- 2022 Noise Exposure Projection – High Growth Scenario (Practical Capacity)

It is acceptable practice to review and model various potential future situations to better understand the impacts of changes in airport infrastructure, air traffic patterns, aircraft types and technology. As such the projected 2022 Noise Exposure Projection developed for this study was recommended as the preferred NEF contour for long-term planning decisions. Figure H above shows the 30 NEF contour for this scenario. This contour represents the line within which no residential development is permitted. Residential land use was considered one of the most noise-sensitive land uses in this study.

Beyond aircraft noise impacts, Airport Zoning Regulations and zoning for aviation belong to the exclusive domain of Federal Jurisdiction. This study recommended that no attempt be made to incorporate aeronautical criteria as part of municipal land use planning. It may be considered as part of a decision making process but should not be the sole consideration. As such, figures were developed for reference purposes and are contained in the primary report showing the limits of height restricting boundaries around the airport that could impact land use planning decisions.

As with Airport Zoning Regulations, protection of telecommunication and electronic systems at airports also fall within federal jurisdiction. No attempt should be made to incorporate aeronautical criteria as part of municipal land use planning. It can be considered as part of a decision making process but should not be the sole consideration. The same jurisdictional limitations apply to zoning for bird hazards and provincial authorities may not zone for airport related bird hazards. Again, figures were developed for reference purposes and are contained...
in the primary report to show restriction areas that could impact some land use planning decisions.

Transport Canada makes further recommendations related to potential visibility impairment as related to proposed land use specifically related to the safe operation of aircraft in the vicinity of the airport. These impairments may be caused by smoke, dust and steam generation from industry should be considered during the approval of new industrial land uses in close proximity to an airport. In particular it should be reviewed from the perspective of inclement weather. Many local factors are involved in determining the impact of industrial uses on visibility at the airport. In particular, wind direction, especially during periods of inclement weather. Examples of some industries that may impact visibility include: pulp mills, steel mills, quarries, municipal or other incinerators, cement plants, sawmills and refineries.

In summary, when considering land use compatibility issues in the vicinity of airports, the primary reference document is Transport Canada’s TP1247 - Land Use in the Vicinity of Airport. This document is available electronically via the web at [http://www.tc.gc.ca/CivilAviation/Aerodrome/Environment/TP1247E/menu.htm](http://www.tc.gc.ca/CivilAviation/Aerodrome/Environment/TP1247E/menu.htm). This document should be read in conjunction with the various figures developed in this study which present regulatory and advisory protection boundaries specifically developed for Windsor Airport. These boundaries have been developed taking into consideration a reasonable long-term 20 year growth and development scenario for the Windsor Airport.
9.0 Transportation

The scope of the Annexed Area Master Planning Study did not include a detailed Transportation Study as other transportation studies were underway for the City and County at the time that the Master Planning Study was initiated. The direction given from the City of Windsor at the beginning of the Study with respect to transportation was that the Project Team was to assume that there would be an extension of Lauzon Parkway from the EC Row Expressway / Baseline Road section to Highway 401. However, it became apparent later in 2003 that larger scale transportation issues existed within the City of Windsor, and these were the primary reason that the study was put on hold in October of that year.

In the intervening time frame, some additional transportation studies were completed. As a result, when the Master Planning Study was reactivated in spring 2006, these and other related documents were obtained and reviewed to identify their implications on the Master Planning Study. This section of the report provides a summary of some of the key transportation considerations, opportunities and constraints as they relate to the annexed lands. It is important to note that this is not intended to be a detailed transportation plan for the annexed lands. However, it is intended to give some general guidance and recommendations for the preparation of land use concepts and associated policies.

9.1 OVERVIEW OF RELEVANT TRANSPORTATION POLICIES AND STUDIES

9.1.1 City of Windsor Official Plan

The Official Plan refers to the following components of the transportation system as they relate to roads:

- **Controlled Access Highway**—designed to carry high volumes of passenger and commercial urban, intra-urban and long-distance traffic at high speeds with four or more travel lanes divided by a median. Intersections with Class I and Class II Arterials are provided at interchanges. Intersections with Class I and Class II Collectors and Local Roads, direct property access and bike lanes are not permitted.

- **Class I Arterial Road**—designed to carry high volumes of passenger and commercial traffic for intra-city travel at moderate speeds with four or more divided or undivided travel lanes in right-of-ways up to 36 m wide. Intersections with Class I and Class II Arterial Roads, Scenic Drives and Class I Collector Roads are permitted. Direct access is not permitted where other alternatives exist. Bike lanes are not permitted, however, off-road bikeways may be permitted.

- **Class II Arterial Road**—designed to carry high volumes of passenger and commercial traffic for intra-city travel at moderate speeds with four undivided travel lanes in right-of-ways up to 30 m wide. Intersections with Class I and Class II Arterial Roads, Scenic Drives and Class I and Class II Collector Roads are permitted. Direct access near
intersections with Class I and Class II Arterials and Class I Collectors is not permitted. Bike lanes are permitted.

- Scenic Drives—designed to carry moderate volumes of predominantly passenger traffic adjacent to major scenic areas or historic routes at low to moderate speeds on two to four undivided lanes with right-of-way widths of 20 to 24 m. Bikeways will be considered. Traffic calming may be implemented to discourage use by commuter and high-speed traffic in residential areas.

- Class I Collector Road—designed to carry moderate volumes of passenger traffic, except in industrial areas where they may carry passenger and commercial traffic at low to moderate speeds on two to four undivided lanes with right-of-way widths up to 24 m. Direct access is permitted. Bike lanes are permitted. Traffic calming may be implemented if problems exist.

- Class II Collector Road—designed to carry passenger traffic in predominantly residential areas at low to moderate speeds on two undivided lanes with right-of-way widths up to 22 m. Direct access is permitted. Bike lanes are permitted. Traffic calming may be implemented if problems exist.

- Local Roads—designed to carry low volumes of passenger traffic short distances at low speeds on two undivided lanes with right-of-way widths from 15 to 20 m. Direct access is permitted. Bike lanes are permitted. Traffic calming may be implemented if problems exist.

The Official Plan directs Council to develop a more balanced transportation system with strategies and programs to increase public transportation use, cycling and walking. Land use policies are intended to provide for a more compact urban form to reduce the growth in home-based trip making. Expansion of the road network is to progress in association with transportation demand management strategies. Traffic calming is required in new neighbourhoods. The adverse effects of truck traffic is to be minimized by discouraging truck traffic in residential and pedestrian-oriented areas.

Infrastructure is to be provided for pedestrians that give them safe and convenient passage while walking along and crossing streets. Sidewalks are to be provided in new developments on both sides of Class I and Class II Arterial Roads, Class I and Class II Collector Road and Scenic Drives, and on at least one side of Local Roads, along with implementing various Recreation ways.

All proposed developments are to provide for cycling movement. Bikeways are to be provided on and off-road with connections to the Greenway System, although separation is to be provided between commuter cyclists and pedestrians to avoid potential conflicts.

New development patterns are to be supportive of public transportation, along with roadways to accommodate public transportation, and sidewalks and other pedestrian facilities to connect major traffic generators to public transportation services.
Rail transportation policies include maximizing the development potential provided by rail transportation by promoting the development of Employment uses, including multi-modal facilities, at appropriate locations within Windsor. New residential development is not permitted within 300 m of a designated Rail Yard.

Air transportation policies include maximizing the development potential provided by Windsor Airport by promoting the development of Commercial and Employment uses, including multi-modal facilities, in the vicinity of the airport.

### 9.1.2 Windsor Area Long-Range Transportation Study

The Windsor Area Long Range Transportation Study (WALTS) was completed in 1998. It recommends implementing a planning strategy, transportation demand management strategies, improving pedestrian mobility through design guidelines, undertaking the Bicycle Use Master Plan, a transit ridership growth plan, roadway system improvements, truck route planning and management, and a traffic calming process.

The roadway system improvements, illustrated on Figure 7, that are near the Annexed Area include:

- Walker Road widening from E.C. Row Expressway to Talbot Road
- Cabana Road/Division Street/County Road 42 widening easterly to Lauzon Parkway
- Lauzon Parkway widening from E.C. Row Expressway to County Road 42
- A new road extension of Jefferson Boulevard from E.C. Row Expressway to County Road 42
9.1.3 Schwartz Reports

The City of Windsor retained Sam Schwartz Engineering to recommend an approach to the Detroit-Windsor border crossing commercial and passenger traffic issues. Conclusions are as follows:

- The Industrial Crossing alternative (also known as the Mich-Can or Central Crossing or E.C. Row Extension) is preferred, likely operational in 2020.
- The Industrial Crossing must be linked to Highway 401 via a fully controlled, new roadway.
- A new rail tunnel is needed to accommodate double-decked trains, targeting 2010 for start of service.
- Commercial and passenger rail lines should be rationalized.
- A multi-modal facility linking air, rail and road transportation should be developed at the airport.
- The capacity and attractiveness of the Truck Ferry should be increased from 50-80 vehicles a day to 1,000 trucks a day within a year (or sooner).
- An ITS system should be implemented to balance traffic between the Windsor-Detroit and the Sarnia-Port Huron border crossings, including a special queue control signal (QCS) to allow for metering of truck traffic onto Huron Church Road to prevent queuing on city streets, and a traffic management plan.
• The operation of the Detroit-Windsor Tunnel should be improved within a year (or sooner)

• Capacity and operational improvements at the Ambassador Bridge should continue, with completion within a year (or sooner)

The Industrial Crossing without a direct, new link from Highway 401 would require widening of the E.C. Row Expressway to eight lanes, and the extension of Lauzon Parkway between E.C. Row Expressway and Highway 401, including a new interchange at Lauzon/E.C. Row. Sam Schwartz Engineering considered the widening of E.C. Row Expressway and Lauzon Parkway extension as “serious flaws” attached to the Industrial Crossing alternative with 35 right-of-way takings required, major disruption to Windsor traffic, 1,039 residences within 200 m of the roadways impacted, and significant air and noise impacts adjacent E.C. Row.

Any rationalization of rail lines, given the CP rail line through the Windsor Annexed Area, may have an impact on the study area. A multi-modal terminal at the Windsor Airport would also affect the Windsor Annexed Area.

9.1.4 Essex-Windsor Regional Transportation Master Plan

The Essex-Windsor Regional Transportation Master Plan (EWRTMP, April 2005) recommends Regional roadway capacity enhancement projects to 2021 as illustrated on Figure 8. Near the Windsor Annexed Area, these include:

• Widening of Walker Road to 4 lanes plus turn lanes from Tecumseh Road to south City limit in the 0 to 5 year time frame (compatible with the WALTS)

• Widening of County Road 42 (Cabana/Division Road) to 4 lanes from Huron Church Road to east City limit in the 5 to 10 year time frame (compatible with WALTS)

• Widening of Lauzon Parkway to 4 lanes from E.C. Row Expressway to County Road 42 (Division Road) in the 5 to 10 year time frame (compatible with the WALTS)

• Extending Lauzon Parkway as a new 4-lane arterial from County Road 42 (division Road) to Highway 401 with an interchange at Highway 401 in the 5 to 10 year time frame

• Widening of E.C. Row Expressway to 6 lanes from Huron Church Road to Banwell Road/County Road 43 in the 10 to 20 year time frame
In addition, the recommendations include a capacity optimization strategy (including requiring new traffic signals to be spaced at least 215 m), an access management strategy, and a transportation demand management strategy including land-use planning measures such as intensification and mixed land uses.

The existing and planned roadways near and within the Annexed Area based on the City of Windsor Official Plan, WALTS (approved by the City) and EWRTMP (approved by Essex County) are illustrated on Figure 9.

### 9.1.5 Bicycle Use Master Plan

The City of Windsor Bicycle Use Master Plan (BUMP) was completed in April 2001. Highway 401, E.C. Row Expressway, Walker Road and railway corridors were identified as major barriers to cycling. The Recommended Cycling Network includes Division Street bike lanes and Little River multi-use trail, both extending into the Annexed Area, as shown on Figure 10.
9.1.6 Municipal Roadway Class Environmental Assessments

The City of Windsor and Essex County have completed the following Class Environmental Assessments for roadway projects in or near the Annexed Area:

- Cabana Road and Division Road from Huron Church Road to east of Walker Road—This roadway consists of generally two lanes with left-turn lanes at signalized intersections. It is identified as a Class II Arterial road. The preferred design is a four-lane cross-section with bike lanes, curbs and gutters within a 30 m wide right-of-way.

- Walker Road, Riverside Drive to Provincial Road, and Grand Marais Road East, Walker Road to Central Avenue—The preferred design of the southern section (Grand Marais Road East to Division Road) includes a five-lane cross section, grade separation at the St. Lawrence & Hudson Railway crossing, various intersection improvements, extension of Foster Avenue to provide access to the Airport lands and to the Walker Industrial Park, and a parallel cycling route. An Addendum to the 1995 ESR includes extending the five-lane section to Provincial Road, and various intersection improvements and a parallel cycling route from Division Road to Provincial Road.

Figure 10 - Bicycle Use Master Plan Recommended Cycling Network near the Annexed Area
9.2 CONSULTATION

Comments submitted to date regarding the transportation system in the Annexed Area include the following:

From Steve Kapusta, Policy Analyst, Public Works—Transportation Planning, City of Windsor:

Road Network Issues:

Lauzon Parkway Extension—A general area should be identified to place this corridor, and identify as a future Expressway, fully controlled and protected from all Private and Local Road access. It may initially be built as a Class I Arterial Road as a staging measure. Locations of interchanges should include E.C. Row Expressway, County Road 42, Highway 401 and possibly one additional interchange between County Road 42 and the Highway 401 provided that their is sufficient room and such a connection is deemed to be worth while. The right of way width for this extension should be 110 m and should include reserve lands where interchanges are planned.

Furthermore, any corridor studied should take into account plans currently being made by the County to connect this Lauzon Parkway Extension south beyond Highway 401 to connect with Highway 3, which is expected to be twinned in the future.

County Road 42—As this road is an extension of Division Road/Cabana Road, it should be maintained as a Class II Arterial Road with moderate access restrictions to prevent driveways from having a negative impact on its ability to accommodate regional traffic volumes. At the same time, this corridor should also have on-road commuter bike lanes.

County Road 17—This corridor may or may not become redundant, depending on the decision of where to locate the Lauzon Parkway Extension. Pending that decision, at least provide for a north-south link that would connect this road to the Banwell Road corridor north to the Town of Tecumseh and/or Riverside Drive East in the City of Windsor. The function and connections with this road need to be assessed.

New Arterial Roads—Outside of County Road 42, there is a distinct lack of an east-west connection from Walker Road at Provincial Road to the Annexed Area. An east-west connection is envisioned from Walker Road/Legacy Drive/7th Concession to 8th Concession, then turning northerly to County Road 42. There may also be a need for an additional east-west corridor south of Baseline Road. The new east-west corridor south of Baseline should connect
with the future Lauzon Parkway extension and easterly. Consultation with the Town of Tecumseh should be undertaken to ensure their plans are compatible with this concept. Using the existing road right-of-ways is an issue due to the existing residential and industrial land uses that may be negatively affected by the necessary right-of-way expansion. Therefore, it is suggested that these corridors be placed on new alignments outside the current road right-of-ways.

Adjacent Area Road Corridors—Development in the Annexed Area is expected to result in increased traffic on roads adjacent to the area. The impacts to roads such as Division Road, Walker Road, Provincial Road, Lauzon Parkway, Banwell Road, etc should be reviewed and recommendations made regarding improvements to these corridors to ensure that they can handle the increased traffic.

Bike Lanes—While the Bicycle Use Master Plan (BUMP) does not cover the Annexed Area, development in this area should rely heavily on bicycle use including multi-use trails, on-road bike lanes and signed bike routes, where appropriate. Cycling access should also connect with the current termination of a multi-use trail near Twin Oaks industrial park (Little River corridor).

Transit Use—Development should support transit throughout the Annexed Area, including special transit corridors, bus stations where required, shelters, on-street high occupancy vehicle lanes, transit priority signalization and infrastructure to give transit the priority. Furthermore all transit corridors should including matching and supportive land uses that are "transit oriented" by means of density, and positioning and offer reasonable pedestrian linkages. As per Transit Windsor's concerns, the existing road infrastructure requires upgrading prior to development to ensure that these new areas can be served by low floor accessible transit service including curbs and sidewalks throughout the area on all roads.

Roundabouts—Roundabouts are supported in place of traditional signalized intersections to help reduce air pollution by reducing vehicle delay and idling. Roundabouts should be implemented at intersections between Arterial Roads, Collector Roads or wherever signalization is typically warranted.

Traffic Calming—All new residential areas shall employ traffic calming based on the requirements in the Official Plan.

Pedestrian Issues—Similar to issues tied in with transit and cycling use, the needs of the pedestrian must be addressed. Front yard setbacks should be eliminated on transit corridors or in areas where there is neighbourhood commercial to encourage walking. Parking at rear, building at front designs should be required for all developments in this area.

Land Use Issues:

Transportation and land use go hand in hand. Therefore policies for this area should include provisions that support reduced vehicle trips and trip lengths by increasing land-use density and by positioning places of work and shopping within reasonable reach by walking, cycling or transit service.
Residential—Higher density residential development is supported along major corridors with transit service. Lower density homes and mid density residential areas should also have decent linkages to these corridors via wide pedestrian/cyclist paths and corridors.

Commercial—Street commercial development with parking at rear of the development to give priority to sustainable transportation modes such as walking, cycling and transit is supported. There should be provisions for strong neighbourhood commercial areas within residential areas to encourage use of sustainable modes of transportation. Comments put forward by developers regarding the possibility of a "Big Box" retail area near Highway 401 should be investigated to ensure that development in this area does not force area residents to travel exclusively by car to access retail establishments. Too often, these areas are so auto focused that their design precludes reasonable transit service due to increased walking distances to and from these retail facilities and furthermore the sheer size and scope of these developments increases overall seat time, running time and therefore impact the overall cost to serve these areas effectively and efficiently by transit. "Big Box" or similar developments are suggested to be positioned so that they can be reasonably accessed by transit, pedestrians and cyclists adjacent to major public right-of-ways with strong pedestrian linkages to, from and between them.

Industrial—It is understood that industrial developments have different land footprint requirements and transportation requirements. These developments should have reasonable access to transit service and other sustainable modes of transport, however their location within the Annexed Area may not afford the same access that could be provided to commercial areas because of their inherent incompatibility with residential land uses. It is suggested that industrial lands be within close proximity of major arterial roads such as County Road 42 and the future Lauzon Parkway extension to prevent the infiltration of unnecessary truck traffic into residential areas.

Natural Heritage—The use of natural areas or newly regenerated natural areas to act as buffers between sensitive land uses, industrial lands and major road corridors is supported. There is a need for interconnectivity between these natural areas to ensure continuity for species that require larger areas in order to sustain their populations. These corridors and connections can be enhanced to include cycling trails that connect with other multi-use trails at the former City boundary's periphery.

Airport—The consultant should review the Airport Lands study to ensure compatibility with proposed land uses adjacent to the airport.

Community Based Strategic Rail Study—The City of Windsor is currently undertaking a rail rationalization study to create a preferred framework for what the City would like to see in terms of rationalization of the rail network. This study is also reviewing the potential for a multi-modal/inter-modal facility on or adjacent to the airport lands adjacent to Lauzon Parkway. While this facility is by no means a given; compatible land uses adjacent to the airport to support such a facility are preferred. The output of this study will point to land use needs and benefits of rationalization, the multimodal terminal and the transportation needs and benefits of such undertakings.
9.3 GENERAL RECOMMENDATIONS AND CONCLUSIONS

Planning for the future roadways of various classifications in the Annexed Area requires an understanding of the desirable roadway characteristics including right-of-way width, connections permitted, intersection/interchange spacing, and minimum horizontal curve radius based on design speed. In addition, the type of vehicle permitted on the roadways, the bikeway type permitted and the need for traffic calming will affect the planning area study. Recommended roadway characteristics are based on the Transportation Association of Canada’s Geometric Design Guide for Canadian Roads and the City of Windsor Official Plan. These characteristics are summarized in Table 9.1.

Table 9.1

<table>
<thead>
<tr>
<th></th>
<th>Local Roads</th>
<th>Class II Collectors</th>
<th>Class I Collectors</th>
<th>Class II Arterials</th>
<th>Class I Arterials</th>
<th>Controlled Access Highways</th>
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<td>Right-of-way width</td>
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<td>Passenger and commercial traffic</td>
<td>Passenger and commercial traffic</td>
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<tr>
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<td>Land access, Local, Class I and Class II Collectors</td>
<td>Land access, Local, Class I and Class II Collectors</td>
<td>Land access but not near major intersections, Class I and Class II Collectors, Class I and Class II Arterials, Controlled Access Highways</td>
<td>Class I Collectors, Class I and Class II Arterials, Controlled Access Highways</td>
<td>Class I and Class II Arterials, Controlled Access Highways</td>
</tr>
<tr>
<td>Desirable intersection/interchange spacing</td>
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<td>Min. 60 m*</td>
<td>Min. 60 m*</td>
<td>Min. 200 m**</td>
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<td>Min. radius horizontal curves†</td>
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## Transportation

### September 13, 2006

<table>
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<th>Sidewalks required</th>
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<tr>
<td>At least one side</td>
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<td>Both sides</td>
<td>Both sides</td>
<td>Both sides</td>
<td>Both sides</td>
<td>None</td>
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</table>

| Traffic calming polices apply | Yes | Yes | Yes | No | No | No |

**Notes:**

* minimum desirable spacing on Arterial between interchange and Collector intersection is 400 m
** minimum desirable spacing on Arterial between interchange and Arterial intersection is 600 m
† based on reverse crown (+0.02 m/m, $e_{max} +0.06$) for low speeds, and $e_{max} +0.06$ m/m for high speeds (Class II Arterials and Controlled Access Highways)

The freeway function of the E.C. Row Expressway and Highway 401 improve service but limit accessibility. The possibility of new interchanges to service the Annexed Area needs to be considered carefully in the context of the overall spacing and function of the existing and planned interchanges. There is a new interchange planned at Highway 401/6th Concession, and existing interchanges at Highway 401/Provincial Road and Highway 401/Manning Road/County Road 19. Two to three kilometer desirable interchange spacing would result in future interchanges on Highway 401 near 9th Concession and 11th Concession.

Assuming industrial land-use designations for some of the Windsor Annexed Area, critical to serving the traffic destined to and from this area will be the truck links with the proposed Detroit-Windsor border-crossing infrastructure. Land-use options should continue to consider the importance of connections to E.C. Row Expressway and Highway 401, perhaps through the Lauzon Parkway extension or a similar facility. However, Sam Schwartz Engineering has assessed the impact of these links as “serious flaws”. The location of a multi-modal facility at the airport will also warrant appropriate links to the cross-border infrastructure, perhaps viewed as having the same “serious flaws”.

The classification of the existing roadways based on their existing function and potential for expansion will assist in determining the need for additional new Arterial roadways. Given the existing residential development along 8th Concession, 9th Concession and County Road 17 south of County Road 42, and Lauzon Road north of County Road 42, and portions of Baseline Road and County Road 42 at the easterly and westerly ends within the Annexed Area, their function is likely more suitable as Class I or Class II Collectors than as Arterials. New Arterial roadways on new alignments are recommended to service new land uses in the Annexed Area.

Given that future Arterials on new alignments are recommended, there is likely a need to develop at least one north-south and one east-west to service the industrial lands so that a good level of service is provided to commercial traffic and trucks do not impact future residential areas. Potential connections to Highway 401 and E.C. Row Expressway via the Lauzon Parkway and the planned extension of Jefferson Boulevard (WALTS) are recommended.
Commercial/residential areas will also require Class II Arterials to connect them to the Controlled Access Highways.

The Lauzon Parkway extension will be subject to a future environmental assessment, however, the planning study for the Annexed Area should consider potential corridor locations. For major roadways, the more even distribution of traffic on connecting roadways and the benefit to adjacent lands is best realized if the roadway can be “double loaded”, i.e. serve urban areas on both sides of the roadway versus being the boundary between rural and urban development. However, the Lauzon Parkway extension is limited by the potential interchange spacing on Highway 401 as noted above (2 to 3 km recommended). Interchange locations would likely need to be located on Highway 401 between 9th and 11th Concession Roads. The Parkway itself best serves the area by being contained within the Annexed Area as opposed to being on the boundary. Again, new alignments should be considered to reduce the impact on existing residential development on the existing roadways (County Road 17 and 11th Concession). Although Lauzon Parkway is designated a Class I Arterial, it should be planned as a Controlled Access Highway in the Annexed Area, possibly staged with at-grade intersections upgraded to full interchanges, with a right-of-way of 110 m.

Existing adjacent Class II Arterials include Walker Road, Division Road, and Provincial Road. The layout and configuration of these roadways at odd angles will limit the location of intersections with future Arterials in the Annexed Area. A potential connection to Walker Road may lie between Division Road and Provincial Road, providing appropriate Arterial intersection spacing (minimum 400 m). This could include an extension of the future Arterial across Walker Road to Provincial Road. However, potential impacts on existing land uses in this location require review.

The provision of bike lanes and sidewalks should be compatible with the roadway classifications as noted in Table 9.1. The potential to expand the cycling and pedestrian networks with connections to multi-use trail corridors supports increase cycling and walking for health, recreation and utilitarian purposes. A potential multi-use corridor includes the Little River in the north-south direction, connecting to the existing trail in the Twin Oaks area. Opportunities for an east-west recreationway should be explored.

Roundabouts have been suggested as an alternative intersection type to signalized intersections. The benefits of roundabouts to the traveling public and adjacent community are many due to their induced low operating speeds, resulting in low crash rates, less severe crashes, less delay, reduced noise and air pollution, plus improved aesthetics through landscaping of the central island (an essential component of their operating characteristics). The application of single lane roundabouts on Local and Collector roadways in other communities throughout North America is well accepted. The application of double lane roundabouts on Arterials and at interchanges is being tested in various communities with success, although some agencies consider lack of acceptance by the general public to be a barrier. Regardless, this type of intersection, which requires slightly more right-of-way at the intersection but less on the approaches, should be considered in the Annexed Area as plans progress beyond the land use planning stage.
As per the Public Works—Transportation Planning comments, the *Community Based Strategic Rail Study* is “…reviewing the potential for a multi-modal/inter-modal facility on or adjacent to the airport lands adjacent to Lauzon Parkway. While this facility is by no means a given; compatible land uses adjacent to the airport to support such a facility are preferred.”

Our preliminary recommendations regarding transportation in the Annexed Area are illustrated on Figure 11.
10.0 Opportunities and Constraints

The land needs requirements component of this study has identified the estimated amount of land that will be required within the annexed area to accommodate future population and employment growth. To assist in determining the most appropriate locations for various types of future development, other opportunities and constraints which exist within the Annexed Lands Study Area are also being taken into consideration to ensure long-term compatibility and functionality. These include existing land use and natural heritage considerations as well as the implications of the servicing and airport investigations undertaken for the Annexed Area Master Plan Study. Major opportunities and constraints that exist are summarized below and illustrated on Figure 12.

10.1 EXISTING RESIDENTIAL LAND USES

There are two areas that currently contain more concentrated residential development located directly south of the airport, along Baseline Road and County Road 42, between 7th and 8th Concessions Roads (Baseline Road Hamlet) and slightly south of Baseline Road, on the east side of Eighth Concession Road. These small hamlet and residential subdivision areas contain approximately 65 and 70 lots, respectively. A number of relatively closely situated lots and residences are also located along County Road 42 near its intersection with Banwell Road and at the easterly limits of the study area. These areas present the following opportunities and constraints:

Opportunities:

- Existing residential development provides a locational rationale for establishing future residential and associated community-oriented uses to ensure compatibility.

- Existing residential uses are generally located well away from the Highway 401 corridor, so will have little impact on potential industrial development along the 401.

- Existing service and industrial uses located within the planning area provide opportunities for locating additional employment uses in those areas and could be considered as potential employment / mixed use nodes in proximity to future residential uses to minimize transportation demands.

- Higher residential densities in close proximity to existing commercial / industrial uses can provide appropriate transitions between uses and promote efficient use of land and services.

Constraints:

- Existing residential development will need to be integrated with future development, and may create some limitations for future design flexibility in these areas.
• Existing pockets of light industrial development along County Road 42 creates some limitations for potential land uses with respect to transition and compatibility.

• Where non-residential uses are proposed in proximity to existing residential development, appropriate buffering and mitigation measures or policies may be required.

• Some existing residential development is located in close proximity to the airport, within the NEF 30 contour. The area directly to the south is still above NEF 25, therefore is less suitable for residential and sensitive land use purposes. As a result, non-sensitive (i.e. – non-residential) land uses may be more appropriate in this area, which may be less desirable to existing residents.

**10.2 AGRICULTURAL OPERATIONS**

At the present time, the Study Area is composed of primarily agricultural lands, with the exception of the Windsor Airport and small pockets of residential development as outlined in the previous section. The majority of farm homesteads are located along the north-south concession roads. In total, based on aerial mapping, there appear to be approximately 150 farm residences and/or rural lots/residences within the study area. Farm parcels generally range in size from approximately 10 to 60 hectares (25 to 150 acres).

**Opportunities:**

• The Study Area is directly adjacent to existing development therefore will allow for contiguous development in the City of Windsor.

• As the Annexed Area develops over time, farmers will likely sell their lands to developers for future residential, industrial and commercial development. Existing buildings will likely be demolished as development proceeds, or in some cases, residences may be integrated into new development patterns.

• The addition of more residents in close proximity to existing agricultural lands may provide new markets for produce such as vegetables, fruit, flowers, etc.

**Constraints:**

• New development will need to consider Minimum Distance Separation criteria so as not to impact any active livestock operations outside of the boundary.

• Should the entire area not be required to accommodate growth within the 20 year planning horizon, agricultural policies will need to be added to the Official Plan.

**10.3 RECREATIONAL, INSTITUTIONAL AND CULTURAL**

Within the planning area, a number of existing recreational, cultural and institutional uses exist. These include:
• Windsor Christian Fellowship Church (Walker Road)
• Croatian Cultural Centre (8th Concession, north of Highway 401)
• Sikh Church (County Road 42 and Lauzon Road)
• Recreational campground (north of Highway 401 and west of the 9th Concession).

Opportunities:
• The Christian Fellowship Church includes facilities for special events (meetings, receptions, special events, etc.). As such, it provides an opportunity for an active focal point for future residential development in this area.

Constraints:
• The Croatian Cultural Centre is located directly adjacent to Highway 401, a prime location for future industrial uses. Appropriate buffering should be considered for any future industrial uses to minimize their impact on the Cultural Centre.
• The Christian Fellowship Church is accessed from 7th Concession, and is in close proximity to Highway 401. As Walker Road provides the only current transportation access point from the Study Area to Highway 401, this southwest corner of the study area is a prime area for higher intensity uses (commercial, mixed use, industrial) in the future. Such uses may have some negative impact on church functions, and appropriate buffering between higher intensity uses and the church may be necessary.

10.4 ACCESS AND TRANSPORTATION

A number of Transportation Studies have been undertaken in the City and Region to deal with various long range transportation issues as summarized in Section 9. Roads within and at the boundaries of the Study Area are currently classified as follows:
• Lauzon Parkway – Class 1 Arterial Road;
• Highway 401 – Controlled Access Highway;
• County Roads 17 and 42 – Arterial Road;
• Baseline Road, Ninth Concession Road, Eleventh Concession Road – Local Road
• Eighth Concession Road – Collector Road.

In addition, the CP rail corridor traverses the northern portion of the annexed area in an east-west direction.
Opportunities:

- Highway 401, as the main corridor for moving goods across Ontario, offers a prime opportunity for locating future industrial lands that are both visible and easily accessible from the 401.

- There are a number of existing north-south and east-west transportation corridors within the study area that can provide a framework for future transportation movement.

- Lauzon Parkway currently connects to the EC Row Expressway, and offers a significant opportunity to extend to Highway 401 to provide a direct transportation link between the 401 and the EC Row Expressway.

- Proximity to airport, railway and Highway 401 corridors provides substantial opportunities for the integration of transportation needs and multi-modal facilities.

- Opportunities to facilitate non-vehicular modes of traffic exist along the Little River corridor through the development of future cycling and pedestrian linkages.

- Opportunities exist to plan for public transit at the outset of development applications to ensure that public transit needs are appropriately integrated with transportation and land use planning decisions.

Constraints:

- At present, only one access from the Study Area is provided to Highway 401. To facilitate future development, at least one additional access point will be required. Given planned and existing interchanges, new interchange locations would likely have to be located somewhere between the 9th and 11th Concessions.

- There are only two east-west transportation corridors at the present time. Additional east-west connections may need to be established as development proceeds, particularly to facilitate the movement of industrial traffic to the 401.

- Capacity and structural limitations will occur as development proceeds in this area, and upgrades will be required. More detailed transportation studies / Class EA’s will be necessary prior to development proceeding to identify corridor protection requirements.

- High traffic volumes and speeds along Highway 401 result in significant noise impacts that would require mitigation such as noise walls for any type of sensitive land use (e.g. – residential, school, institutional, etc.) along the 401 corridor.

10.5 NATURAL ENVIRONMENT

The Annexed Lands contain few natural heritage features based on a review of Official Plan schedules and policies, zoning information and aerial photography as well as the Natural Heritage Study undertaken as a component of this study. The only areas of interest are
woodlots located on the airport lands, and the Little River corridor. Opportunities and constraints identified by the Natural Heritage Study and additional analysis of the overall areas include:

**Opportunities:**

- Outside of the airport lands and the Little River corridor, there are no significant natural heritage features located within the Annexed Lands planning area that will be negatively impacted as a result of future development in the area.

- Opportunities exist to improve the linkages between the three airport woodlots through reforestation and appropriate stormwater management / drainage corridor improvements.

- Protection / recreation of natural habitat on both sides of the Little River corridor would help improve the habitats and hydrologic conditions in the watershed.

- Opportunities also exist to replace drainage ditches with restored stream channels within and adjacent to the study area.

- The development of pedestrian and cycling trails (separated where possible) along the Little River corridor would allow for the extension and continuation of existing recreational trail systems in Windsor and facilitate the use of alternative modes of transportation.

- The Little River corridor creates a physical boundary that could potentially be used for buffering and/or transition between residential and non-residential or transportation corridor areas.

**Constraints:**

- The woodlots are located in close proximity to the airport. Appropriate management and containment of birds and wildlife within and around the woodlot areas is important for airport safety.

- All three airport woodlots have a significant proportion of red ash trees, ranging from 33 to 69%, and already have been or likely will be affected by emerald ash borer infestations.

- The size and location of the woodlots may constrain site design flexibility for potential industrial users on the airport lands.

- Any works within the Little River Corridor may require further assessment to determine the need for Fisheries Act approval, compensation plans or restrictions on when work can be conducted to ensure that fish habitat is not disrupted.
• A relatively large area (approximately 275 hectares) on either side of Lauzon Parkway is also within a Floodplain Development Control Area, as identified on Schedule “B” of the Township of Sandwich South Official Plan. These lands are subject to fill and construction regulations of the Essex Region Conservation Authority, and the development of buildings and structures is prohibited within certain areas or subject to additional floodproofing and permit requirements (Section 3.12).

### 10.6 WINDSOR AIRPORT

The Windsor Airport, located in the northwest quadrant of the site, presents constraints related to airport noise, obstacle limitations (i.e. - building height), protection of telecommunications and electronic systems and restrictions to visibility. Planning guidelines pertaining to these airport protection needs both on and off the airport property are found in Transport Canada documents on land use in the vicinity of airports, and aerodrome standards and recommended practices.

In terms of airport noise, sensitive land uses such as residences, schools, churches and hospital are generally restricted to those areas outside of the 30 NEF (Noise Exposure Forecast) contour. Other uses, such as industrial and business park, are not restricted in this manner. At the Windsor Airport, almost all of this 30 NEF contour is contained within the airport property west of Lauzon Parkway and north of County Road 42, with a minor extension into Walker Road area off Runway 02, so has virtually no impact on the study area beyond the airport property.

Additional opportunities and constraints, including those identified by the Airport Study undertaken by Pryde Schropp and McComb include the following:

**Opportunities:**

- The extensive area of land not required for airport purposes provides an excellent opportunity for large scale non-residential uses, particularly industrial.

- The proximity of the airport to the CP railway, Lauzon Parkway and EC Row Expressway creates opportunities for multi-modal transportation facilities.

- Relocation of the glidepath antenna has been encouraged by Nav Canada which may reduce some constraints regarding future land uses on some portions of the excess airport lands.

- Decommissioning of the VHD/DF antenna would reduce the land use restrictions associated with this antenna, allowing greater flexibility for other land uses in the vicinity of the airport.

**Constraints**

- Height restrictions will apply to a portion of the Study Area within the aircraft approach and departure surface areas.
• Restrictions exist within and around the airport property with regard to crop planting activities and open water bodies to minimize potential bird conflicts. Future stormwater management facilities within or near the airport will need to be appropriately designed to ensure that all safety criteria are met.

• Industrial development / operations adjacent to the airport must not generate excessive electromagnetic interference or smoke, dust or steam that would interfere with airport visibility. As a result, some types of industrial activities may not be appropriate in close proximity to the airport.

• NEF 30 contour lines (high growth scenario) extend to just south of Baseline Road, into the area occupied by existing residential and light industrial / business park development. New residential development cannot occur within this area.

• VHF/DF protection areas (for electronic systems) should be clear of metal structures and be protected from built-up areas. VHF towers could potentially be relocated, but cost / feasibility is unknown.

• Special height regulations also affect part of the Study Area, west of County Road 17 and north of Highway 401.

10.7 NATURAL HAZARDS

A ‘Flood Development Control Area’ exists on either side of the Lauzon Parkway, at the north portion of the study area. This area presents some constraints to development. Certain portions of it (i.e. – areas within the floodway) preclude the construction of any buildings or structures, whereas portions within the flood fringe may require appropriate floodproofing measures. Based on Official Plan policies and information from the Essex Region Conservation Authority, development would be prohibited within 15 metres on either side of the top of bank, at a minimum. The remaining area of this floodplain is expected to be developable to a large extent with the appropriate floodproofing and stormwater management controls.

10.8 ARCHAEOLOGY

The City of Windsor Archaeological Master Plan identifies areas where there is a high potential for archeological resources. Within the annexed area, the greatest potential for archaeological resources lies within the airport lands and directly east of the airport, between Lauzon Parkway and Banwell Road. Only a small area of the remainder of the annexed lands is identified as having high archaeological potential.

10.9 SERVICING

A Class EA for the Sanitary Sewer Servicing component of the Annexed Area Master Planning Study was completed in 2005. Opportunities and constraints associated with servicing, identified through the Class EA, included:
Opportunities:

- Expansion of the Little River Pollution Control Plant, along with construction of new trunk sanitary sewers, will allow the annexed area to be serviced as the most cost effective option.

- Construction phasing will allow for development to begin in the northeast corner and proceed to the southwest, with construction of the first phases able to be initiated within two years.

- Expansion of the Lou Romano Treatment Plant will allow approximately 110 hectares of land at the southwest corner of the annexed area to be developed in the near future.

Constraints:

- Sanitary servicing is required for the annexed lands before any development can proceed, as sanitary sewers are not available within the study area.

- Cost of providing servicing to the annexed areas ranges from approximately $112 to $136 million dollars, depending on the option pursued.

- Stormwater / drainage master plans have not yet been completed or the study area. As a result, the location and approximate area requirements for such facilities cannot be determined and incorporated into the land use requirements for the annexed area.

10.10 LINKAGES AND GATEWAYS

The annexed lands will offer travelers their first glimpse of Windsor as they approach from the east and the visual impact of development along the Highway 401 corridor may play a strong role in how travelers perceive the City of Windsor. As a result, there is an opportunity to create a positive impression for visitors and residents through appropriate urban design in this area. Specific opportunities and constraints related to urban design include the following:

Opportunities:

- The development of urban design guidelines for industrial (or other) development along Highway 401 could assist in creating an identifiable and cohesive visual statement.

- Large-scale landscaped entrance features and signage should be created adjacent to Highway 401 at the southeastern City boundary to welcome visitors.

Constraints:

- Residential or other more sensitive land uses, if located along the Highway 401 corridor would require noise walls to mitigate the impacts of substantial vehicle volumes with a high ratio of truck traffic. Extensive use of noise walls can create a bland or unattractive visual appearance.
11.0 Land Use Concepts

Revised concept plans were prepared to reflect updated information collected and analyzed since 2003, as well as further input from the City and stakeholders. These concept plans (Figures 13 through 16) illustrate potential options for the major land use designations that have been identified as requiring additional land. They are intended to obtain input from the public and other interested parties regarding preferences for the location and configuration of future land use designations and were presented at a Public Open House on September 7, 2006. It is important to note the following facts about the preliminary concept plans:

- They are intended to be conceptual in nature to illustrate general proportions and schematic representations of the various land uses.
- Individual property boundaries have not been taken into consideration as Official Plan land use designations are intended to be general in nature.
- All alignments for potential future roads are preliminary and conceptual. The ultimate location of future roads will be determined by Municipal Class Environmental Assessments at the appropriate time.
- Further identification and refinement of the location and extent of all land uses will be determined during the preparation of secondary plans in the future, outside the scope of this study.

11.1 GENERAL FEATURES OF CONCEPT PLANS

General features and assumptions that have been incorporated into all of the preliminary concept plans include the following:

- Integration of existing residential subdivisions into new development.
- Assumption that farm properties will be redeveloped over time for new uses. Individual farm residences themselves may or may not continue to exist in the future, depending on the design and configuration of future subdivision and site plans.
- Road alignments for potential new transportation routes are very conceptual with regard to location, alignment and size. Further delineation of these corridors will occur during Class Environmental Assessments for individual projects if / when they proceed.
- Land area identified for future airport lands is based on information provided by documents / discussions undertaken as part of the Airport Study component of this project.
Proposed Natural Heritage Areas incorporate the airport woodlots, the Little River corridor as well as other woodlots evaluated and recommended as Natural Heritage Areas by the Essex Region Conservation Authority.

Intervening lands between woodlots where reforestation / appropriate stormwater management facilities may be suitable, as well as an existing drainage corridor south of Baseline Road and recommended recreation /greenway linkages are identified as Open Space.

Industrial designations are located on the airport lands to provide opportunities to accommodate potential large scale manufacturing and/or multi-modal facilities or other industrial development. Industrial designations are not affected by noise impacts associated with airport operations.

An extension of Lauzon Parkway from its existing termination to Highway 401 to accommodate future transportation generated from the Annexed Lands.

An east-west arterial is proposed to offer service to the newly developing area and is generally located where it will provide access to and a physical separation between residential and industrial or other land uses.

Open Space designations are proposed to act as opportunities for cycling / recreational links from the Little River Corridor to major employment and commercial areas and to function as buffers between potentially conflicting land uses.

A Business Park designation is located at the northwest corner, south of Baseline Road between 7th and 8th Concessions. This location suffers impacts due to airport operations and is less suitable for residential development, but is appropriate for Business Park uses. The Business Park designation in this location provides a buffer between airport / industrial uses and residential development and is complementary to industrial uses.

A Regional Park is proposed adjacent to the Little River corridor to serve future recreation needs and would also act as a buffer between residential and industrial uses.

### 11.2 CONCEPT 1

The majority of the Residential designation is concentrated in a central ‘band’ from the west to east limits of the annexed lands to provide maximum separation from the airport and Highway 401, and to integrate existing residential areas into future development.

Residential designations are located adjacent to a large portion of the Little River Corridor to maximize exposure to green space.

Mixed Use Centres are proposed adjacent to both commercial areas to offer opportunities for higher density, multi-functional, pedestrian oriented development in close proximity to the commercial and employment areas. The Mixed Use designation also offers a transition between these higher intensity uses and residential uses.
• Industrial designations along Highway 401 maximize exposure and access potential.

• Industrial designations are also located between County Road 42 and Baseline Road to provide access and support to larger scale use industrial uses located on the airport lands.

• The Industrial designation located between the CP Rail corridor and County Road 42 offers proximity to the railway for industrial uses and is also adjacent to existing Industrial uses.

• A Commercial Centre designation is proposed at the southwest corner, adjacent to Highway 401 to provide good visibility for larger scale commercial / office and related uses. It would function as a regional node.

• A second smaller Commercial Centre designation is proposed at the intersection / interchange of Lauzon Road and County Road 42 to service the northeasterly quadrant of the Annexed Lands. It is proposed to be relatively small scale so as not to detract from, or negatively impact the commercial function of the adjacent Town of Tecumseh downtown area.

• A Business Park designation is provided in the northeast corner, consistent with the existing designation from the former Township of Sandwich South Official Plan.

• Another Business Park designation is proposed adjacent to Highway 401 and the Little River corridor. This site offers a very visible, high profile location for prestige business park uses.

• Lauzon Parkway is proposed along the Little River corridor to minimize impact on existing property owners, and to allow for large contiguous land parcels to the east for future development (residential and industrial).

• A new north-south arterial is proposed to link Jefferson Boulevard to the new east-west arterial through the Annexed Lands.

• A large Open Space area is identified east of Lauzon Parkway, in the area identified as being a Floodplain Development Control Area to create a significant greenway feature connecting the Little River Corridor to the airport woodlots.

**11.3 CONCEPT 2**

• The majority of the Residential designation is situated on either side of Baseline Road, from the west limit to the Little River corridor to provide good access to employment areas while offering substantial separation from Highway 401.

• Residential designations are also proposed along the northeastern boundary adjacent to the boundary, in recognition of potential adjacent future residential development in the
Town of Tecumseh. This also provides good connections and maximum exposure to green space and proposed recreation ways along the Little River corridor.

- Mixed Use Centres are proposed adjacent to both commercial areas to offer opportunities for higher density, multi-functional, pedestrian oriented development in close proximity to the commercial and employment areas. The Mixed Use designation also offers a transition between these higher intensity uses and residential uses.

- A Mixed Use centre is also proposed at the intersection of Baseline Road and 9th Concession to create a high intensity node / focal point for the surrounding residential area.

- An extensive amount of Industrial designation is situated along Highway 401 to maximize exposure and provide opportunities for highly visible, larger scale manufacturing / industrial developments.

- A smaller Industrial designation is proposed directly east of Lauzon Parkway, given the visibility offered from Lauzon. This area is also directly adjacent to the CP Rail line for potential users who require rail access.

- An Industrial designation replaces the current Business park designation in the northeast corner, as a means of providing a direct extension of the current Twin Oaks area.

- A Commercial Centre designation is proposed at the southwest corner, adjacent to Highway 401 to provide good visibility for larger scale commercial / office and related uses. It would function as a regional node.

- A second smaller Commercial Centre designation is proposed at the intersection / interchange of Lauzon Road and County Road 42 to service the northeasterly quadrant of the Annexed Lands. It is proposed to be relatively small scale so as not to detract from, or negatively impact the commercial function of the adjacent Town of Tecumseh downtown area.

- A Business Park designation is provided on the south side of Baseline Road at the east limits of the Annexed Lands. It is directly adjacent to a proposed Industrial designation and would be highly visible at a proposed interchange on the Lauzon Road extension.

- Lauzon Parkway is proposed along the Little River corridor to minimize impact on existing property owners, and to allow for large contiguous land parcels for future development (residential, business park and industrial).

- A new north-south arterial is proposed to link Jefferson Boulevard to County Road 42.
11.4 CONCEPT 3

- A Residential designation is situated south of Baseline Road, from the west limit to the Little River corridor to provide good access to employment areas to the north and to integrate an existing residential subdivision east of 8th Concession.

- Residential designations are also proposed along the northeastern boundary, in recognition of potential adjacent future residential development in the Town of Tecumseh. This also provides good connections to potential recreation corridors along the Little River corridor to maximize exposure to green space.

- Mixed Use Centres are proposed adjacent to both commercial areas to offer opportunities for higher density, multi-functional, pedestrian oriented development in close proximity to both commercial and employment areas. The Mixed Use designation also offers a transition between these higher intensity uses and residential uses.

- A large Mixed Use Centre is proposed between County Road 42 and Baseline Road, directly west of the Little River corridor. This location would provide for a high intensity node / focal point for the overall planning area in close proximity to larger scale employment areas. In this location, it could provide a range of higher density housing development, office and retail uses, service commercial and entertainment uses to service the surrounding residential and employment areas. It is also adjacent to the Little River corridor and airport woodlots, offering good proximity to major open space/natural heritage areas.

- An extensive amount of Industrial designation is situated along Highway 401 and the Lauzon extensions to maximize exposure and provide opportunities for highly visible, larger scale manufacturing / industrial developments.

- An Industrial designation replaces the current Business Park designation in the northeast corner, as a means of providing a direct extension of the current Twin Oaks area.

- A Business Park designation is shown directly east of the Lauzon Parkway and south of the CP Rail corridor, where there is good visibility from Lauzon and the opportunity to provide complementary uses to the Industrial designation on the airport lands. This area would require flood protection as it is within a Floodplain Development Control Area.

- A second Business Park designation is provided on the south side of Baseline Road at the east limits of the Annexed Lands. It is directly adjacent to a proposed Industrial designation and would be highly visible at a proposed interchange on the Lauzon Road extension. It would also provide a buffer / transition area between Industrial uses to the south and existing residential development.
A third Business Park designation is located adjacent to Highway 401 and 8th Concession, where there is excellent visibility. In this area, it provides a transition between Industrial uses and the Mixed Use designation.

A second smaller Commercial Centre designation is proposed on the south side of the intersection of Lauzon Road and County Road 42 to service the northeasterly quadrant of the Annexed Lands. It is proposed to be relatively small scale so as not to detract from, or negatively impact the commercial function of the adjacent Town of Tecumseh downtown area.

Lauzon Parkway is proposed along the existing Highway 17 corridor as a way of utilizing existing infrastructure. In this location, it offers the opportunity for ‘double loading’ and provides good visibility for land uses on either side.

Jefferson Boulevard is proposed to link through the airport to County Road 42 at the 9th Concession.

11.5 CONCEPT 4

The majority of the Residential designation is concentrated in a central ‘band’ from the west to east limits of the annexed lands to provide separation from the airport and Highway 401, and to integrate existing residential areas into future development.

Residential designations are also located east of the Little River corridor, north of Baseline Road in recognition of potential adjacent future residential development in the Town of Tecumseh. This also provides good connections to potential recreation corridors along the Little River corridor to maximize exposure to green space.

A Mixed Use Centre is proposed at the centre of the Annexed Lands adjacent to a new arterial and regional park. It offers an opportunity to create a higher density, multi-functional, pedestrian oriented development node in close proximity to employment areas and a small Commercial designation to the south.

A Mixed Use Centre designation is also proposed at the northeast corner, adjacent to Banwell Road and EC Road Expressway, and at the intersection of Lauzon Road and County Road 42 to provide opportunities for multi-functional, higher intensity uses adjacent to the Business Park and Industrial designations.

A large Industrial designation occupies the majority of the eastern portion of the Annexed Lands east of the future Lauzon Parkway extension, extending from County Road 42 south to near Highway 401. This provides extensive exposure and access to the future Lauzon.

A smaller Industrial designation is located between the 8th Concession and the Little River corridor, with some visible exposure to Highway 401.
• A Commercial Centre designation is proposed at the southwest corner, adjacent to Highway 401 to provide good visibility for larger scale commercial / office and related uses. It would function as a regional node.

• Smaller Commercial Centre designations are proposed at the intersection of Lauzon Road and County Road 42 to service the northeasterly quadrant of the Annexed Lands, as well as at the centre of the Annexed Lands, adjacent to 9th Concession to provide opportunity for a central community focus in this area.

• A Business Park designation is provided for most of the northeast corner bound by Banwell Road, EC Row and the CP Railway, consistent with the existing designation from the former Township of Sandwich South Official Plan.

• A large Business Park designation is proposed adjacent to Highway 401 to the easterly limits of the Annexed Lands, offering extensive visibility for high profile business park uses.

• Lauzon Parkway is proposed along the Little River corridor to minimize impact on existing property owners, and to allow for large contiguous land parcels to the east for future development (residential and business park).

• A large Open Space area is identified east of Lauzon Parkway, in the area identified as a Floodplain Development Control Area to create a significant greenway feature.
12.0 Public and Stakeholder Consultation

Public and stakeholder consultation was obtained during the Annexed Lands Master Planning Study through the following means:

- A public meeting and questionnaire in June 2003 regarding preliminary concept plans;
- Meetings, correspondence and communication in 2003 and/or 2006 with specific stakeholders including CP Rail, Windsor Essex Development Commission, Town of Tecumseh, Ministry of Municipal Affairs and Housing, Essex Region Conservation Authority;
- A Stakeholder Roundtable in June 2006;
- A Public Open House and questionnaire on September 7, 2006 to present revised concept plans.

As a result of this consultation, a number of issues and concerns have been identified and comments received. Following is a summary of some of the key themes, concerns and comments.

12.1 TRANSPORTATION ISSUES AND COMMENTS

Issue: Lauzon Road Extension

The primary concerns related to a potential extension of Luzon Parkway appear to focus on its potential location. Based on verbal and questionnaire responses at the public meetings in both 2003 and 2006, it appears that a preferred location for a future extension of Lauzon Parkway is along the east side of the Little River corridor rather than along an existing road alignment (i.e. – County Road 17) as it would have less impact on existing property owners and would also allow for larger, more contiguous development parcels in the future. An extension along County Road 17 is viewed as creating too much traffic, noise and danger for existing residents. However, it appears to be generally acknowledged that an extension of Lauzon Parkway is necessary to accommodate future development and traffic access to Highway 401 for the annexed lands.

Response: The ultimate location of the Lauzon Parkway extension cannot be determined by the Annexed Master Planning Study as a Municipal Class Environmental Assessment will need to be completed, either as a stand-alone study or integrated into a future project under the Planning Act. However, it can be identified on Schedule F of the Official Plan (Roads and Bikeways) as a future Class I Arterial or Controlled Access Highway in the generally preferred location, with policies that make it clear that the ultimate alignment is to be determined through the Class EA process.
**Issue: Arterial Roads**

A number of residents expressed concern regarding the potential traffic impact of future development on existing roads, particularly on the 8th and 9th Concessions. It was indicated that these roads already experience high speeds and truck traffic that conflicts with school buses and other traffic. Some suggestions were also received that an interchange should be located at the 9th Concession and Highway 401.

**Response:** Upgrading of existing roads, along with the identification of additional collector and arterial road systems, will be required as development plans are further defined throughout the Annexed Area. The addition of an east-west arterial is expected to be required and has been shown on all concept plans. Its logical connection to the existing road network is at Walker Road near the Windsor Christian Fellowship Church, where The City has already acquired a right-of-way. In addition, consideration could be given to a potential new north-south arterial between the 8th and 9th Concessions, as shown on one land use concept, as a means of accommodating some of the future development traffic. If included on the Preferred Land Use Plan, they should also be shown as a conceptual line Class I Arterials on Schedule F of the Official Plan. More detailed identification of transportation corridors, classifications and mitigation measures will be required through Class EA and/or Secondary Plan processes. It is unlikely that both an interchange at 9th Concession and an interchange near Little River for the Lauzon Parkway extension can both be accommodated due to interchange spacing requirements on Highway 401, however, the feasibility of new interchanges on Highway 401 would be determined in subsequent Class EA or integrated Planning processes.

**Issue: Extension of Jefferson Boulevard**

Some comments and concerns were expressed regarding the extension of Jefferson Boulevard that was shown on the various concept plans, as it crosses the airport operating area and could conflict with any future extension of the longest runway. Questions were also raised about whether an extension of Jefferson Boulevard would have to be located under the runway, and what implications new Transport Canada policies might have on roads near runways.

**Response:** The extension of Jefferson Boulevard was included in the concept plans as it is identified as a future transportation corridor in the WALTS study previously adopted by Council. It is recognized that its location may conflict with airport operations. However, until such time as more detailed transportation studies are undertaken to determine the need for this extension or alternatives to it, or a decision is made by Council that the WALTS recommendations should be modified to remove the Jefferson Boulevard extension, it is recommended that it be shown as a potential road on the Preferred Land Use Concept.

**Issue: Multi-use Trail Connections/Linkages**

Existing multi-use trails exist at or near the boundary to the study area, including the Twin Oakes/Little River greenway and the Old Castle greenway. There was a desire expressed that these trails should be linked through the study area including a crossing of the Highway 401,
perhaps tied into the design of a new interchange for the future extension Lauzon Parkway. Such connections would result in a greenway from Old Castle through to the Detroit River.

**Response:** What a great idea! A portion of the lands adjacent to the Little River corridor could be designated as Open Space to create an opportunity for a substantial greenway linkage through the study area. Appropriate means of acquisition will have to be determined by the City for any lands that do not warrant an Open Space designation based on natural heritage or natural hazard features.

**Issue: On-road Bikeways**

The existing roadways in the study area are narrow and cycling with the high speed traffic is uncomfortable. The shoulders should be paved to accommodate cyclists.

**Response:** The Official Plan indicates which roadway classifications can accommodate on-road bike lanes. Pedestrian and cycling networks are an important component of the overall transportation system. On-road bike lanes shall be provided on Class 2 Arterials, Class 1 and Class 2 Collectors and local roads where they provide continuity to the overall bikeway network.

**Issue: Public Transit**

The need to plan for public transit from the outset of development was identified. One of the dilemmas of public transit is providing accessibility for the mobility-impaired. Public transit representatives suggested that an urban cross section is required for roads rather than a rural cross section in order to accommodate low floor buses.

**Response:** Public transit has been identified as an item to consider from the outset of development in the proposed policies, to encourage appropriate built form, densities and integration of uses. However, specific transit routing or other recommendations are outside the scope of the Master Planning Study and will need to be addressed during future secondary plans.

### 12.2 LAND USE ISSUES AND COMMENTS

**Issue: Impact of New Development / Designations on Existing Residents**

Existing property owners, particularly those who own small parcels of land, are understandably concerned about the impact of future Official Plan designations and development on their property and its value. In general, most property owners object to potential uses that are non-residential, and are particularly concerned about or opposed to potential industrial designations on or adjacent to their property.

**Response:** It is impossible to locate future residential development adjacent to all existing residential development, as this would not provide the range of land uses in appropriate locations that have been identified as being required over the planning horizon. However, where there are larger pockets of existing residential development, such as the subdivision located directly east of the 8th Concession and south of Baseline Road, it is appropriate to try
and integrate that development into future residential development. Where possible, future industrial and business park uses should be located where the fewest residents area affected. Policies should also be included that speak to the need to appropriately consider and integrate existing uses with future development, should those existing uses be expected to remain for the longer term, as well as indicate the need for suitable buffering and transition between existing and future uses. However it must also be recognized that as development proceeds over the next 20 to 25 years, individual properties will likely be purchased by larger development interests in order to prepare larger scale secondary and subdivision plans for residential and industrial uses.

**Issue: Business Park Designation at Baseline Road / 7th Concession Area**

A number of residents currently living in a small residential area located along Baseline Road between the 7th and 8th Concessions expressed concern about a Business Park designation proposed directly to the south, and its potential impact on their property values. A clear preference for residential development was identified by these residents.

**Response:** Residential development was not proposed in this area as it is subject to noise impacts from the airport. A portion of the property directly south of existing residences (and overlying the existing residents) is within the NEF 30 contour where residential development is not permitted. Other portions are within the NEF 25-30 contours, where some noise impacts can be expected and additional noise studies, noise mitigation measures and warning clauses would be required. Consequently, less sensitive land uses are proposed in that area to minimize potential conflicts related to airport operations and future development. The Business Park designation was proposed as it would allow for such uses as research, development and information processing, business offices and services, and selected industrial uses which do not create nuisances such as noise, dust, vibration, odour or require outdoor storage. A small Business Park designation in this area also provides the opportunity for additional employment in close proximity to existing and future residential and industrial uses and can facilitate non-vehicular modes of transportation.

**Issue: Multi-Modal Facility Requirements and Location**

Some questions and comments were provided during the Open House session regarding the potential for a multi-modal facility on the airport lands. It appears to be generally recognized that the airport lands would be a suitable location for a multi-modal facility, from a land-use compatibility standpoint, however, the accessibility from a multi-modal facility to the CP railway and associated connections to Highway 401 were considered to be potentially problematic due to the airport operating area resulting in limited exposure to the railway. Some questions were also raised regarding the potential size of such a facility, with the suggestion that the area shown on the concept plans was too large.

**Response:** Situating a multi-modal facility on the Concept Plans is consistent with what was previously proposed by CP Rail, as well as a Council resolution that directed a multi-modal facility to be considered for the airport lands. CP indicated their interest in the airport lands was because their railway line passes along the north boundary of the airport site and connects all...
the way to major US railways, it is a large, relatively non-fragmented parcel, and presents opportunity for other manufacturing / industrial uses in immediate proximity. Specific requirements for the multi-modal facility, as provided by CP in 2003, included an area of approximately 500 acres (200 ha) and connections to CP railway and Lauzon Parkway / 401 corridor.

The Concept Plans have not identified a specific location or area for such a facility, but rather have taken the approach that the whole of the airport lands not required for airport operations could be reserved for a multi-modal facility and associated industrial / manufacturing uses. Specific issues relating to access to Lauzon Parkway and/or other transportation corridors as well as access to the railway would need to be addressed during more detailed planning for the area. It is our understanding that further evaluation of the general feasibility and requirements of a multi-modal facility is currently being undertaken by the City of Windsor. Once that study has been completed, further refinements and / or reconsideration of the airport lands for the multi-modal facility would be warranted.

**Issue: Smart Growth**

Comments from a number of agencies and City departments emphasize the need for efficient, pedestrian-oriented development patterns that optimize land use, infrastructure and the potential for viable public transit. Related input was also provided regarding the need to consider energy conservation for future growth. This is consistent with provincial policies.

**Response:** The Annexed Area Master Plan fully supports the desire and need for efficient, pedestrian-oriented development that provides a full range of residential and employment opportunities. The Annexed Area Master Plan has assumed that higher levels of intensification and residential density will occur than have occurred in previous years. As well, proposed policies in the Annexed Area Master Planning Study encourage the development of identifiable, walkable neighbourhoods with central focal points in close proximity to employment areas. Detailed planning and design initiatives to achieve smart growth objectives will be required during future secondary planning processes that will be required prior to development.

**Issue: Industrial Lands**

The need for industrial land was one of the driving forces for annexation of land from the Town of Tecumseh. Comments received from the Windsor Essex Development Commission indicated that there was very little land available for industrial or business park purposes in the City of Windsor. Key locations for additional industrial land were identified as being along the Highway 401 corridor and on the airport lands. Preferred features for industrial land are large, contiguous, unencumbered blocks of land with good access to road and/or rail transportation corridors. The Chamber of Commerce recommended that a serviced industrial park of at least 300-400 acres should be provided that is adjacent to, or has easy access to Highway 401, and that industrial park capacity be provided to accommodate various kinds of industry from small to large operations.
Some input suggested that there was a need to allocate and preserve at least 1,000 acres (405 hectares) of land to help attract large scale automotive uses, with the preferred location for that land in the area bound by Highway 401, Baseline Road and the westerly limits of the Annexed Lands.

Concerns regarding industrial land designations were also identified by a number of residents, fearing that such designations would negatively impact their property values.

**Response:** Based on the employment projections, combined with available data regarding employee densities, vacant land availability, etc. it was determined that approximately 810 hectares of land will be required over the next 20 years for business park and industrial purposes, including an allowance of 350 hectares for multi-modal and/or larger scale manufacturing facilities. The concept plans generally identified potential industrial and business park uses for the area along Highway 401, on the airport lands, and in close proximity to the airport area. These locations optimize access and visibility from major transportation corridors, make use of lands that are unsuitable for more sensitive land uses due to airport noise and operations and impact fewer people. Although there were one or two suggestions to locate a large amount of industrial land directly east of the 7th Concession between Baseline Road and Highway 401, this area is viewed as less desirable given an existing residential subdivision located directly east of the 8th Concession as well as the Windsor Christian Fellowship Church located at the westerly limits of the Annexed Lands.

Policies are also proposed to ensure that appropriate buffering and transition is implemented to address concerns related to future development of industrial uses adjacent to existing residential uses, should that occur.
Issue: Property at Corner of Banwell Road and EC Row Expressway

Property owners in this area indicated a desire for commercial and/or mixed use designations, indicating that the existing zoning permitted retail development.

Response: The property is currently zoned Business Park in the former Township of Sandwich South Official Plan. A Business Park designation was proposed in one concept plan to retain the current designation; other concept plans considered this area for an industrial designation to provide for a potential extension of the Twin Oaks Industrial Park, given its location directly adjacent to the existing industrial area and EC Row Expressway. Given that the current zoning permits a number of commercial / retail uses, and that some investment decisions may have been premised on the permitted uses, it is reasonable to consider a commercial or mixed use designation for a portion of the site. However, the majority of it is recommended to be in a Business Park or Industrial designation to provide for such uses in the short term given the existing severe shortage of employment lands in the City of Windsor.

12.3 NATURAL HERITAGE / HAZARD LAND ISSUES AND COMMENTS

Issue: Natural Heritage Area Coverage

The Essex Region Conservation Authority has identified a target of 12% natural area cover in the Annexed Area to help ensure a healthy, sustainable future. The potential to link natural heritage features, watercourses and recreational corridors with stormwater management facilities and public open space is also viewed as a rare opportunity. The Windsor Essex County Environment Committee (WECEC) recommended an environmental standard of 30% natural area coverage instead of 12% for all the Annexed Lands in the Master Planning Study. Conversely, other stakeholders expressed a concern with a goal of 12%, suggesting that it was too high and would make land too expensive.

Response: Establishing a target of 12% is laudable, but establishing mechanisms to acquire that amount of land may be more difficult given that the Annexed Lands have relatively few identifiable natural heritage features with the exception of the airport woodlots. The Planning Act also states that a maximum of 5% parkland dedication may be taken for residential purposes, and 2% for commercial and industrial purposes. However, for the purposes of determining land needs requirements, a factor of 15% of the required residential, commercial and industrial lands was added to the overall land needs to accommodate ‘other’ land uses such as open space (e.g. - natural area cover), large scale infrastructure (e.g. – stormwater management ponds, transportation corridors, etc.), regional parks, institutional uses, etc. While this may not provide adequate land for a full 12% natural area cover, it does allow for opportunities above and beyond the typical parkland dedication requirements. Specific locations for and mechanisms to acquire additional natural area cover will need to be developed by the City in consultation with landowners as development proceeds.

A standard of 30% natural area cover is considered unrealistic for the entire annexed lands, as it would result in approximately 750 hectares being dedicated for natural area purposes. There is no mechanism to acquire this large percentage and it is unlikely that the City would be willing
to pay for the acquisition of this much land along with the costs of creating natural habitat on it given that the vast majority of the land does not currently contain natural heritage features.

**Issue: Airport Woodlots**

Input regarding the airport woodlots has been mixed. On one hand, there is substantial support for the retention of the airport woodlots in their entirety as a key feature of the natural heritage system. Opportunities have also been identified to enhance the woodlot feature through reforestation and/or creation of stormwater management facilities to create linkages between the individual woodlots. Others have expressed concern that mandatory retention of the woodlots will be detrimental to the ultimate functionality of the airport lands for future multi-modal and/or large scale manufacturing facilities. Some comments suggested that consideration should be given to purchasing land and ‘re-creating’ or replacing the woodlots through reforestation in a more appropriate location as a compromise. However, this was not viewed as being an appropriate suggestion by others as the temporal loss of woodlot function would be about 100 years.

**Response:** Based on the natural heritage investigation completed for the Annexed Lands Master Planning Study, as well as additional input from ERCA, the woodlots meet municipal, county and provincial criteria for being protected. As a result, all concept plans proposed that they be designated as natural heritage features, with an Open Space designation between them to link the easterly woodlots. Policies are also proposed to confirm the intent to retain them in their entirety. While it is acknowledged that they may create some challenges for site layout in the future, they also present considerable visual and functional amenity opportunities for future employees and residents of the area. Specific means of integrating the woodlots into future development, as well as determining appropriate buffers and linkages, should be undertaken at the secondary plan / development stage.

**Issue: Natural Hazards**

ERCA has identified that portions of the Study Area are regulated under the Conservation Authorities Act as they are within a floodplain development control area. In some municipalities, such areas are identified as Open Space until such time as sufficient study and/or appropriate permits have been obtained to justify a change in the mapping. ERCA has expressed a preference for this area to be designated as Open Space, but has indicated that that this is not mandatory.

**Response:** This area should be identified on a Schedule, as was previously done in the former Township of Sandwich South Official Plan, and applicable policies should be included or referenced regarding the floodplain development constraint. Identification of these lands, or at least a portion of them adjacent to the Little River corridor, as Open Space would create an opportunity for a substantial greenway / natural heritage feature in the northeast area of the plan in close proximity to the airport woodlots. This would also assist in achieving ERCA’s target of 12% natural cover. However, appropriate means of acquisition would have to be determined by the City given that the lands do not appear to require an Open Space designation based on natural heritage or natural hazard features.
12.4 INFRASTRUCTURE COMMENTS

Issue: Stormwater Management

ERCA has suggested that multi-purpose lineal storage facilities running east-west south of Baseline Road should be considered. Issues have also been identified regarding the hydrology of the Little River watershed due to intense modification of drainage patterns, with the suggestion that future stormwater management facilities could be used to augment baseflows to the Little River. It is also anticipated that stormwater management will be required on or in the vicinity of the airport lands, however, caution must be exercised to ensure that stormwater management facilities do not create any issues (i.e. – attraction of birds and wildlife) that could impact airport operations.

Response: A Stormwater Master Servicing Strategy was not included within the scope of the Annexed Area Master Planning Study. However, it is anticipated that a stormwater study will be completed in the near future to address specific stormwater management needs for the Annexed Lands. It should also be noted that some allowances were made in identifying the land needs requirements for the Annexed Lands to accommodate stormwater management facilities. As well, proposed policies encourage the location of stormwater management facilities along the Little River corridor and linear facilities along Baseline Road or other transportation corridors where technically appropriate as a means of creating linkages, buffers and natural area. Open Space ‘bands’ have also been included on the Preferred Land Use Concept to indicate the general intent to create linkages / corridors where stormwater facilities could potentially be located. However, specific locations and sizing for such SWM facilities will need to be determined through the appropriate technical studies prior to any development.

12.5 CONCEPT PLAN COMMENTS AND PREFERENCES

In addition to the foregoing summary of comments, issues and concerns identified at various points in the planning process, a number of comments were received from questionnaires provided at the Open House on September 7, 2006. It is estimated that well over 100 people attended the Open House, but only 24 questionnaires were retuned, along with a small number of written comments. In general, Concepts 2 and 3 were preferred for their mix of land uses, compatibility and road alignment. Additional comments included in the questionnaires included the following:

- Make business area residential on Concept 2.
- Make business area behind Baseline residential.
- 8th Concession should be used solely for residential traffic. Heavy truck traffic should be re-routed.
- Change 103 ha of Industrial on Concept 1 to Business Park as in Concept 4 and add more natural heritage on the south side of the new east-west artery proposal.
Natural area needs to be preserved and reforested. WECEC recommends 30% green space/open space.

Multi-modal proposal does not connect to the rails - why not?

Concept 4 has the best use of land - logical mix of use based on what's adjacent to each section.

Concerned about the Banwell/EC Row corridor. There is no mention of what is planned for the Banwell /EC Row intersection and the northeast and southeast corners.

Concerned about 8th Concession between County Road 42 & 401. Keep the business and industrial and heavy transportation concepts away from previous existing residential areas, because of young kids and existing school bus routes. Traffic is heavy as is with fast moving vehicles and transports.

Consider interchange at 9th Concession and Highway 401.

Put an interchange at 9th Concession and 401.

The City should keep in mind that some of the lands have been allocated sewage capacity and that these lands should not be held up if there are other issues with other lands not associated with the ones allocated sewage capacity. These lands will create a bigger tax base for the City, and jobs with all the work that will then take place.

Corner of Banwell & EC Row should be commercial usage as it is high profile, good tax base.

Best industrial space is next to 401 - pollution would be minimal, few homes. Move the scrap recycling yard and Ford Modular Iron Foundry to Area No 2.
13.0 Preferred Land Use Plan

The Preferred Land Use Plan (Figure 17) has been prepared based on input and information obtained during the overall study process as well as at the Public Open House held on September 7, 2006. A concerted effort has been made to provide a balance between conflicting positions and requirements with respect to proposed land use designations, transportation and servicing opportunities and constraints, and the conclusions and recommendations of the background studies. The Preferred Land Use Plan also has attempted to take into consideration existing land uses within the study area to the extent possible.

The Preferred Land Use Plan for the Annexed Lands is shown on the following page. It contains the following land uses, some of which already exist within the area:

- Industrial
- Business Park
- Residential
- Mixed Use
- Commercial
- Natural Heritage
- Open Space

Table 13.1 summarizes the approximate area of the various land uses proposed in the Annexed Lands, in comparison to what was identified as being required based on the Land Needs Requirements component of this study.
### Table 13.1

**PREFERRED LAND USE CONCEPT SUMMARY**

<table>
<thead>
<tr>
<th>Proposed Land Use</th>
<th>Approximate Area (ha)*</th>
<th>%</th>
<th>Required Area**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>742</td>
<td>29.5%</td>
<td>810</td>
</tr>
<tr>
<td>Business Park</td>
<td>167</td>
<td>6.6%</td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>696</td>
<td>27.6%</td>
<td>597</td>
</tr>
<tr>
<td>Mixed Use</td>
<td>100</td>
<td>4.0%</td>
<td>153</td>
</tr>
<tr>
<td>Commercial</td>
<td>55</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Natural Heritage / Open Space / Other</td>
<td>338</td>
<td>13.4%</td>
<td>234</td>
</tr>
<tr>
<td>Airport</td>
<td>420</td>
<td>16.7%</td>
<td>420</td>
</tr>
<tr>
<td>Contingency</td>
<td>Included in above figures</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>Existing Land Uses</td>
<td>Included in above figures</td>
<td></td>
<td>170</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,518</strong></td>
<td><strong>100%</strong></td>
<td><strong>2,474</strong></td>
</tr>
</tbody>
</table>

General characteristics of the Preferred Land Use Concept Plan are described below.

**Industrial and Business Park**

The Preferred Land Use Plan is characterized by industrial and business park designations adjacent to major transportation corridors (Highway 401, Lauzon Parkway, CP rail line) and on the airport lands to maximize accessibility and visibility as well as provide a buffer between Highway 401 and residential uses. Industrial designations along Highway 401 provide for potential development parcels ranging from approximately 80 to 260 ha (200 to 600 acres). The areas identified for industrial and business park uses were also intended to affect as few existing residents as possible. A business park designation has also been identified for the whole area within the NEF 30 contour.

**Residential**

Residential uses are proposed for the central portion of the study area south of County Road 42 and north of a future arterial, as well as east of a substantial section of the Little River corridor. These locations best integrate existing residential development clusters and also provide exposure to the recreational amenity that can be provided by future recreation ways along the Little River corridor. The residential uses are separated from Highway 401 by other uses to minimize their exposure to noise and traffic impacts. As well, residential uses are located adjacent to the Town of Tecumseh ‘Hamlet Development’ designation, as it is anticipated that most of the hamlet development area will eventually be residential, based on discussions with the Municipality.
Mixed Use

Mixed Use designations are identified at four key locations:

- Highway 401 and 8th Concession
- Intersection of Baseline Road and 9th Concession
- Intersection of County Road 42 and Lauzon Road
- Banwell Road between EC Row and CP Rail.

These locations have been identified for Mixed Use designations as they provide for higher intensity, transit oriented, mixed-use development in immediate proximity to commercial and employment areas. They also offer opportunities for transition between land uses and can establish community focal points at key locations. The specific form, size, function and design features of the Mixed Use areas should be a key consideration during the preparation of future Secondary Plans.

Commercial

Two Commercial designations have been identified; one at the southwest corner of the study area, adjacent to Highway 401 and 7th Concession, and the other at the intersection of Lauzon Road and County Road 42. These locations would function as the primary, larger scale commercial areas east and west of the Little River corridor. Additional, smaller scale commercial development is expected to be included within both residential and industrial / business park designations to serve specific neighbourhood and employment area needs and would be defined during more detailed planning stages.

Natural Heritage and Open Space

Natural Heritage designations incorporate the airport woodlots and the Little River corridor, as well as two other smaller woodlots identified by ERCA. Open Space designations are proposed to provide for linkages between the Shooting Range and East Perimeter Woodlots and the Little River corridor, as well as to indicate the intent for east-west open space / recreation linkages to facilitate potential stormwater management, pedestrian and cycling routes and land use buffers. Again, the specific location, extent and function of these open space corridors would need to be determined at the detailed planning and design stages.

Transportation

The transportation system includes an extension of Lauzon Parkway on the east side of the Little River corridor, as well as an east-west arterial connecting from the west limits of the Annexed Lands to County Road 17, with a proposed intersection / interchange with the Lauzon extension. Jefferson Boulevard is identified given its inclusion in the WALTS study, however, future investigation regarding its feasibility in context with airport operations will be required. Additional collector roads and local roads for the Annexed Lands, as well as the appropriate
classification and upgrades for existing roads will need to be determined through more detailed transportation studies for the Annexed Lands.

It is important to note that the Preferred Land Use Plan is intended to identify the approximate locations and general area to be allocated for major land use designations in the Annexed Lands, with the intention that the overall area for various uses be generally consistent with those identified by the land needs requirements earlier in this report. The Preferred Land Use Plan is intended to act as a guide for further refinement as future planning and design studies are undertaken.
14.0 Recommended Policies for Annexed Lands

The Windsor Annexed Lands Master Planning Study provides the justification for redesignation of certain lands transferred from the Town of Tecumseh to the City of Windsor in 2002 from primarily Agricultural designations to a range of residential, employment and related designations. The component studies summarized earlier in this report identify the approximate land needs that are projected to be required over the twenty-year time frame to 2026. The policies contained in this section are intended to provide a framework for future secondary plans and other supporting studies that will need to be undertaken prior to development proceeding.

14.1 DEVELOPMENT GOALS, OBJECTIVES AND PRINCIPLES

14.1.1 Goals:

- The Annexed Lands Master Plan is intended to identify sufficient land to meet employment, residential and associated land needs for the twenty year planning horizon to 2026.

- The Annexed Lands Master Plan principles and policies seek to establish vibrant and sustainable communities in east Windsor where people can live, work and play at any stage of their life and career.

14.1.2 Development Objectives

The Windsor Annexed Lands Master Planning Study has taken a comprehensive approach that considers future population and employment needs in conjunction with the locational attributes, transportation corridors and existing uses of the area. The main objectives of the Windsor Annexed Area Master Plan and policies are:

- To develop a plan and general land use designations that are consistent with the principles and policies of the City of Windsor Official Plan.

- To provide a general framework for future development by identifying the general pattern and configuration of major land uses and natural areas, transportation corridors and servicing phasing.

- To protect, maintain and appropriately integrate the natural heritage features that exist into future development.

- To address and accommodate existing uses (i.e. – existing residential, light industrial, airport) in the plan.

- To ensure implementation of the Master Plan in a logical and efficient manner.
14.1.3 Development Principles

Development principles for the Annexed Lands have been established to guide the preparation and development of future Secondary Plans and other planning studies or processes that will need to be undertaken prior to development proceeding. These principles for the Annexed Lands are intended to be consistent with the overarching principles contained in the City of Windsor Official Plan while also reflecting the specific nature of the Annexed Lands. Key development principles for the Annexed Lands are:

- Create attractive, compact and adaptable neighbourhoods that provide a range of housing choices.
- Provide diverse employment opportunities that capitalize on existing and future major transportation corridors and forms (air, road and rail).
- Provide a balanced, interconnected transportation system that integrates the needs of vehicles, public transit, pedestrians and cyclists.
- Preserve and enhance natural areas.
- Develop pedestrian friendly neighborhoods.
- Plan for efficient and appropriately phased infrastructure.
- Create spaces and places for active living.
- Recognize and celebrate local geography, climate and history in the design and development of the area.
- Respect and appropriately integrate existing land uses into the fabric of new neighbourhoods and developments.

14.2 RECOMMENDED POLICIES

14.2.1 Community Design and Development Policies

The Annexed Lands provide a long-term opportunity to develop a high standard of community design and development, and to provide a range of housing forms and associated uses that are appropriate to different income levels and household needs. The following policies are intended to assist in designing and developing communities that are sustainable and have a sense of place.

- Neighbourhoods should be planned at a scale that is sufficiently large enough to incorporate a range of housing forms (low, medium and high profile) to meet diverse economic and demographic needs as well as other land uses that allow for some basic daily needs to be satisfied within the neighbourhood.
- Each neighbourhood should have a defined centre or focal point that attracts people and activity. Focal points could include such uses as parks, schools, community / recreation centres, convenience commercial uses, cultural / entertainment facilities and other amenities, preferably in some combination to encourage multi-functional use.

- Establish an identifiable character and sense of place for each neighbourhood through the use of signage, gateways, landscape and open space features, architectural style and materials, public art, community focal points and identifiable streetscapes and boundaries.

- Develop walkable neighbourhoods through the provision of safe, attractive and connected streets. Consider grid or modified grid streets and other linkages that provide the most direct pedestrian and cycling routes possible to activity areas and focal points.

- Establish an interconnected Greenway System that incorporates existing features such as the Little River corridor and airport woodlots with new features such as neighbourhood and district parks, linear buffers, utility easements and corridors, stormwater management facilities and other opportunities that may present themselves during future planning and design. Provide convenient access and views to the Greenway System from adjacent areas.

- Employment areas should be well connected to the transportation system and, while in close proximity to an employee base in the residential areas, should also be adequately buffered to minimize any potential visual, noise or transportation impacts.

- Safety and security should be considered through the application of Crime Prevention Through Environmental Design (CPTED) principles. Integration of suitable lighting, wayfinding features, open views, appropriate landscaping and other features during neighbourhood and site design is encouraged.

- Encourage the design and construction of energy efficient buildings and landscapes to reduce air, water and land pollution and environmental impacts of energy production and consumption.

- Development should occur in a logical and contiguous manner that facilitates the efficient and cost effective extension of necessary services.

### 14.2.2 Natural Heritage and Open Space Policies

Protection and appropriate integration of natural heritage features into future development in the Annexed Lands offers opportunities for preservation and enhancement of ecological features and functions, passive recreation, visual relief and a more sustainable environment. Primary natural heritage features in the Annexed Lands are the woodlots located on the airport lands and the Little River corridor. The following policies provide guidance for the protection and integration of these features as development proceeds.
• The Airport Woodlots (Jefferson Woodlot, Shooting Range Woodlot, East Perimeter Woodlot and St. Louis Woodlot) are to be protected in their entirety. Environmental Evaluation Studies are to be undertaken for development adjacent to the woodlots, in accordance with the Official Plan.

• Opportunities to create environmental linkages between the woodlots should be explored through the use of reforestation, stormwater management facilities or other mechanisms to increase the overall forest and vegetation cover in this area and contribute to their diversity and habitat potential.

• The Little River Corridor is to be preserved. A minimum corridor width of 30 metres should be provided on either side of the Little River to retain any riparian vegetation that exists, and to provide opportunities for revegetation and enhancement. Recreational cycling and pedestrian corridors may be located within this area, when deemed appropriate in accordance with Environmental Evaluation Studies as prescribed by the Official Plan.

• A Regional Park should be located along the Little River Corridor to allow integration of both active and passive recreational activities. The precise location and size of this park will be defined at the time of Secondary Plans or other recreational facility planning processes. The Regional Park is also intended to function as a buffer and transition area between residential and employment lands.

14.2.3 Residential Area Policies

The Annexed Lands are necessary to provide sufficient land to accommodate residential demand in the City of Windsor throughout the twenty-year planning horizon. It is projected that at least 8,100 residential units will be needed in the Annexed Lands, housing a population of at least 20,000 people. The provision of attractive and varied housing is necessary to meet our fundamental needs for shelter. The following policies are intended to provide guidance for Residential designations.

• Residential areas in each neighbourhood or Planning District should provide a full range of housing choices to accommodate varying incomes, household structures and needs.

• Medium and higher density forms of housing are encouraged to locate near transportation corridors, transit routes and commercial or employment nodes to increase the viability of public transit and minimize internal traffic generation.

• The creation of attractive residential streetscapes is encouraged through the use of rear lanes, architectural design that reduces the visual dominance of front drive garages, planting of street trees and other features.

• Residential designations shown on the Annexed Land Preferred Land Use Plan are intended to indicate the general area and configuration for those uses. Detailed neighbourhood planning for the Residential designation will be undertaken through the
preparation of Secondary Plans to further delineate the specific location, configuration and form of housing intended for individual planning areas.

14.2.4 Employment Land Policies

The Annexed Lands provide for an extensive amount of future employment land to meet the needs of both large and small scale manufacturing, industrial and business park uses over the next twenty years to 2026. Employment lands are identified as either Industrial or Business Park designations and are generally situated where there is high visibility, good access for trucks and relatively large, unencumbered sites. Additional land was also allocated to facilitate potential multi-modal and/or large scale manufacturing uses. The provision of employment lands in close proximity to residential areas and major transportation corridors is intended to provide an employee base and facilitate the movement of people and goods in the most efficient manner possible. Final delineation of the precise location and configuration of employment areas will be undertaken through Secondary Planning processes and should be in accordance with the following policies.

- Industrial and Business Park designations are located primarily on the airport lands east of the Airport Operating Area, north of the Highway 401 corridor and adjacent to Lauzon Parkway (existing and future alignments).

- Large scale manufacturing and/or multi-modal facilities should be encouraged to locate on the airport lands, east of the Airport Operating Area or east of Lauzon Parkway, between the EC Row Expressway and County Road 42 to facilitate the interconnectivity of air, rail and road transportation systems.

- A high standard of architectural and landscape design is required for Industrial and Business Park uses, particularly for those located along the Highway 401 corridor given its visibility along an international gateway.

- High quality streetscape and entrance features in the Industrial and Business Park designations are also encouraged to enhance the visual presence and sense of identity of employment areas.

- Public transit routes and facilities should be integrated with employment facilities from the outset of their planning and development to encourage alternative modes of transit for workers. These routes should have direct links to new neighbourhoods within the Annexed Lands as well as to the rest of the City.

- Woodlots, vegetation and drainage corridors present on employment lands should be retained whenever possible and integrated into development plans to provide amenity areas for employees and create a positive visual image of industry in Windsor.

- Where employment lands are situated adjacent to residential or other sensitive land uses, appropriate setbacks and buffering are required. The creation of landscaped ‘green buffers’ between these uses and along transportation corridors is encouraged,
through the 2% parkland dedication requirements or other mechanisms, as a means of providing additional cycling and pedestrian linkages, increasing the amount of natural environment coverage, and enhancing visual appeal.

14.2.5 Mixed Use Area Policies

Mixed Use areas are intended to accommodate a greater range of uses, including residential, commercial, office, entertainment and related uses in a compact, pedestrian oriented form. Mixed Use designations are generally located adjacent to or between employment designations (Business Park, Industrial), commercial designations and residential designations. In these locations, they are intended to provide opportunities for higher density, transit oriented development as well as act as a transition between employment lands and residential lands. The following policies provide further guidance regarding the intention of the Mixed Use designation on the Annexed Area Master Plan.

- The Mixed Use designation is intended to provide a range of supporting land uses and functions for both employment and residential areas. These include affordable housing, small-scale employment, office and commercial uses, recreation, entertainment and cultural facilities.

- Attractive, pedestrian oriented higher density housing forms are encouraged to locate around central transit facilities in Mixed Use areas to improve the accessibility to and viability of public transit in the Annexed Lands.

- Consideration should be given to locating public services such as libraries, community centres, arenas and recreational facilities, police services and similar uses in Mixed Use Areas.

14.2.6 Commercial Centre Policies

Commercial Centres are intended to provide for larger scale, multi-purpose retail and commercial development to meet community and regional shopping needs. Commercial Centre designations have been proposed in two locations – at the southwest corner adjacent to Walker Road/7th Concession and Highway 401, and in the northeast quadrant, at the junction of Lauzon Parkway and County Road 42. Specific polices that provide guidance for future planning of these areas are as follows.

- Development within the Commercial Centre designation is to provide a high standard of urban design given the visibility of these areas from major transportation corridors.

- Large scale, big box forms of development should be oriented to the major transportation corridors. Smaller scale commercial development should be located nearer Residential and Mixed Use designations to provide suitable transition between uses.
Safe and convenient pedestrian and cycling linkages from surrounding residential and employment areas are to be integrated into the design of Commercial Centres from the outset to provide alternatives to vehicular access.

A public transit node should be located in all Commercial Centre designations from the outset, and shall be appropriately connected to the pedestrian and cycling network for the area.

14.2.7 Transportation System Policies

An integrated system of transportation is crucial for the Annexed Lands to manage the movement of goods and people in a balanced and sustainable manner. The area contains a number of existing transportation corridors that will require upgrading, but will also need new infrastructure to accommodate future employment and residential development. Incorporation of public transit, cycling and pedestrian modes of transportation is also needed to provide alternatives to vehicle traffic. The following policies are intended to provide guidance for the planning and development of the transportation system and secondary plans.

- An extension of Lauzon Parkway is necessary to provide a link between the EC Row Expressway and Highway 401 to accommodate future traffic within the area. The location of this extension will be required to undergo a Municipal Class Environmental Assessment. It should be initiated prior to consideration of, or integrated with, secondary plans for the area bounded by Baseline Road, the Little River Corridor, Highway 401 and the eastern limits of the Annexed Lands.

- Proper phasing of the extension of Lauzon Parkway must be identified at the Class EA stage (or other appropriate planning stages) in order that Lauzon Parkway provides an appropriate level of service for development within the Annexed Lands while minimizing the impact of its extension on the existing transportation system and land uses.

- An east-west arterial is required through the Annexed Lands between Baseline Road and Highway 401. The specific location of this arterial should also be determined through a Class Environmental Assessment in advance of, or integrated with, secondary plans for this area. This arterial should also form the boundary between the larger areas of residential and employment uses.

- Planning and design of internal transportation networks, including various classes of collector and local roads, will be determined through Secondary Plans. Internal road systems should reflect the individual character of future development and meet the specific needs of each neighbourhood as well as the objectives of the City’s overall transportation system.

- Primary transit routes to employment areas should be planned from the outset so they are appropriately integrated into future development. Opportunities to initiate transit service early in development should also be provided.
• Transit service should be provided within 400 metres walking distance from the majority of dwelling units and should incorporate attractive and well designed transit stops and waiting areas.

• Pedestrian and cycling networks must be considered during future secondary and subdivision planning processes. These networks should integrate on-road and greenway systems in a safe and efficient manner, and should provide direct links to major employment, commercial and activity nodes.

• Provide a multi-use trail system along the Little River Corridor that links the Annexed Area to the City’s existing multi-use trail system. The trail system shall incorporate appropriate signage and way-finding devices and should also include various rest stops and activity locations along it that encourage social interaction.

• For major transportation corridors to large employment centres, consideration should be given at the outset of facility and corridor design to integrating transportation management demand programs, including High Occupancy Vehicle (HOV) lanes, transit only lanes in peak hours, staggered shifts and other programs to reduce peak hour traffic.

• Jefferson Boulevard extension south of EC Row Expressway to County Road 42 is identified as a future arterial to accommodate future traffic within and around the area. The specific need and location for this arterial, and its implications on airport operations, should be determined through a Class EA or integrated into projects under the Planning Act for any multi-modal or industrial facilities on the airport lands.

• Pedestrian and cycling networks are an important component of the overall transportation system. On-road bike lanes shall be provided on Class II Arterials, Class I and Class II Collectors and local roads where they provide continuity to the overall bikeway network.

14.2.8 Infrastructure Policies

• Servicing infrastructure should be planned in a coordinated, efficient and cost effective manner throughout the Annexed Lands.

• Sanitary servicing for the annexed lands should generally proceed from the northeast to the southwest, with the exception of a 110 hectare area in the southwest corner boundary by Highway 401, 7th Concession and Baseline Road that can be immediately serviced.

• Where technically appropriate, stormwater management facilities should be located along the Little River corridor to increase the size and function of the corridor and offer opportunities to increase the proportion of natural area coverage in accordance with Essex Region Conservation Authority goals.
• Any stormwater management facilities required on the airport lands should be designed in such a manner that they minimize the potential for attracting birds or other wildlife that could be detrimental to airport operations.

• Linear stormwater management facilities are encouraged along Baseline Road and other transportation corridors, where technically appropriate, to provide additional opportunities for recreational linkages, visual relief and buffering between residential and non-residential uses.

14.2.9 Airport Policies

Portions of the Annexed Land in the northwest are influenced by their proximity to the Windsor Airport and, as a result, are impacted by aircraft movement and noise. Aircraft noise is regulated through Noise Exposure Forecast (NEF) contours, with associated regulations and restrictions on development depending on the extent of the NEF contour. Specific policies pertaining to land uses in proximity to the airport are provided below.

• New residential and sensitive land uses are not permitted where NEF contours are 30 or greater.

• Where NEF contours are between 25 and 30, noise studies must be completed for residential and other sensitive land uses prior to development to determine what type of noise mitigation measures (if any) are required.

14.3 IMPLEMENTATION

14.3.1 Secondary Plans

Prior to the approval of development applications in the Annexed Lands, Secondary Plans will be required to ensure the appropriate and orderly use of land and efficient provision of infrastructure. They will further refine the limits and locations of specific land uses, infrastructure requirements, transportation corridors and classifications, parks, schools and open space systems, natural heritage features and other similar components. Secondary plans will also take into consideration those existing land uses within the Annexed Area that are expected to remain for the long-term. Secondary Plans will conform to the Official Plan policies contained in Section 11.3 as well as the policies of the Annexed Area Master Plan. Approval of subdivision plans, site plans or other planning applications will not be given prior to completion of a Secondary Plan unless it is determined that the proposed development is beneficial and appropriate for the City and will not compromise future development in the Annexed Lands. Planning District boundaries should be established by the City of Windsor prior to initiating Secondary Plans.

Timing of Secondary Plans will be determined by the City of Windsor on the basis of such factors as:

• Availability of land supply within former City boundaries
14.3.2 Zoning

The majority of the Annexed Lands are zoned for Agricultural uses, inappropriate for the intended long term use of the lands. Amendments to the zoning by-law will be required to implement the Master Plan. Zoning By-law Amendments will normally be considered when received from property owners at the time development applications (e.g. – subdivision plans, site plans, etc.) are proposed. However, there may be instances where it is appropriate for the City to initiate or process zoning by-law amendments if it is determined that the proposed zoning is beneficial and appropriate for the City and will not compromise future development in the Annexed Lands.

For those areas which contain existing land uses, or where the former Town of Tecumseh Zoning By-law afforded certain development rights, the City of Windsor should consider initiating zoning by-law amendments to re-zone those properties to comparable zones consistent with the City of Windsor Zoning By-law.

14.3.3 Class Environmental Assessments

A Municipal Class Environmental Assessment will be required for further extension of the Lauzon Parkway and other transportation corridors and infrastructure components. Where feasible and appropriate, the Class Environmental Assessment process should be integrated with the planning process.

14.3.4 Interim Uses

As the provision of servicing will be staged over a considerable period of time, there may be occasions where interim uses other than the existing agricultural or other uses may be appropriate. Consideration of interim uses would be done at the time of specific applications for Official Plan and/or zoning by-law amendments and should be based on the following:

- Compatibility with adjacent existing uses;
- Potential impact on intended long-term intentions and designations for the area;
- Ability to provide appropriate levels of transportation, water, sanitary servicing for the proposed interim use.

Interim uses would not normally extend beyond the time Secondary Plans are completed and implementing zoning by-laws, subdivision and site plans are anticipated.