

Region of Niagara Growth Management Strategy

Phase 3 – A Range of Options

DRAFT Evaluation Table

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Purpose of the evaluation process

Phase 3 of the Niagara GMS evaluates three alternative population, household and employment options for Niagara. The evaluation process is intended to inform the creation of a preferred growth option for Niagara. The purpose of the evaluation process is to examine a variety of implications and impacts associated with the growth three options. The following evaluation table features a mix of 58 individual qualitative and quantitative measures which are intended to highlight some of the economic, social, fiscal and environmental implications associated with urban growth.

How to read the evaluation table

The evaluation table is divided into eight categories:

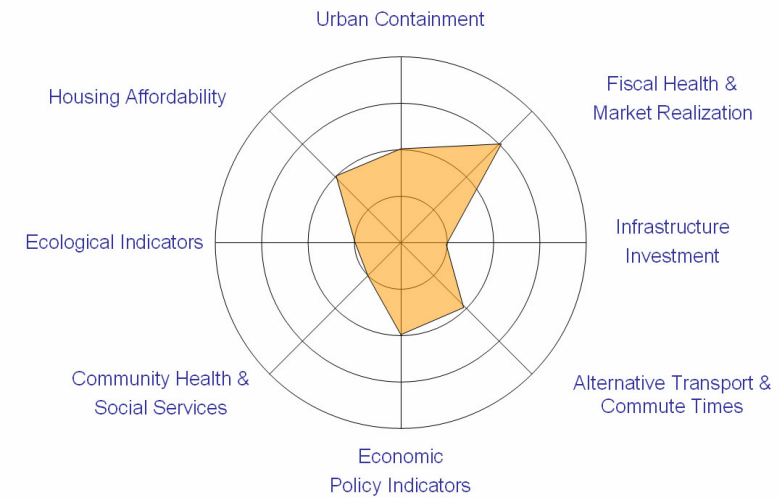
- Urban containment;
- Housing affordability;
- Ecological indicators;
- Community health and social services;
- Economic policy indicators;
- Fiscal health and market realization;
- Infrastructure investment; and,
- Alternative transport and commute times;

Each category contains a set of indicators. Each indicator features one or more measures. The overall rankings for each category are dependant on qualitative rankings of the individual measures and indicators. The options are ranked on qualitative scale, depending on how well the option supports a given indicator. The ranking scale is:

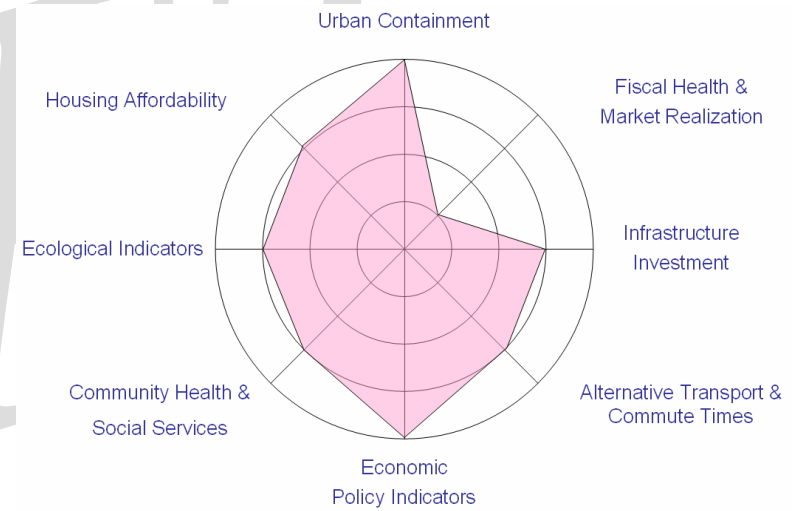
- Very Well;
- Well;
- Somewhat well; and,
- Not very well.

The overall rankings are graphically illustrated below in the three circle diagrams. Options which cover a larger surface area reflect positive outcomes in the detailed evaluation. The diagrams are intended to provide a simple means for understanding the various strengths and weaknesses of each option. The results of the analysis show that neither option is perfect and a fourth option will need to be created, one which melts some of the positive aspects of all options.

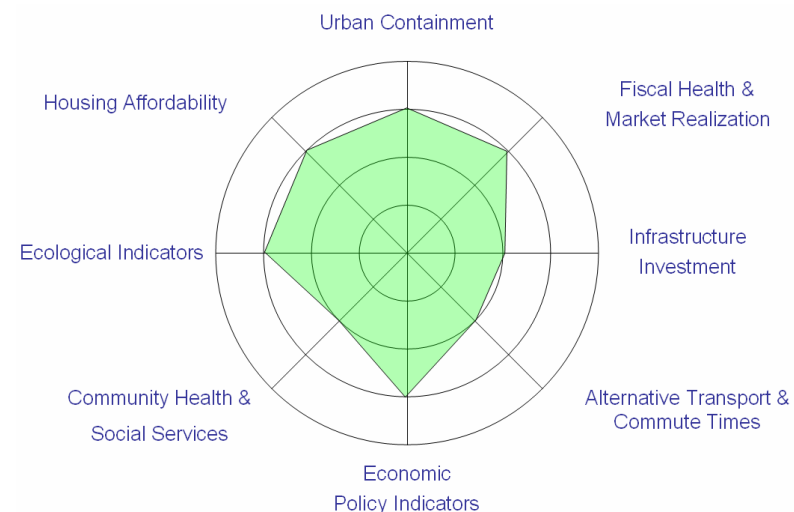
Option A: Current Trends



Option B: Grow South



Option C: Multi-Nodal



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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
Urban Containment				
<ul style="list-style-type: none"> How well does the option support the Places to Grow targets? 	<ul style="list-style-type: none"> The 40% intensification target The 50 people and jobs per hectare target for greenfield development¹ 	<ul style="list-style-type: none"> Option A assumes a residential intensification target of 40%, achieving the Provincial target across the Region. Option A is based on the upper limits of Official Plan densities and achieves an estimated 51 people and jobs per hectare on greenfield lands. Option A meets the Province's 50 people and jobs per hectare on greenfield lands target. 	<ul style="list-style-type: none"> Option B assumes a residential intensification target of 45% across the Region, exceeding the Province's target of 40%. Option B is based on higher densities on greenfield lands and achieves an estimated 56 people and jobs per hectare on greenfield lands. Option B meets the provincial target of 50 people and jobs per hectare on greenfield lands. 	<ul style="list-style-type: none"> Option C assumes a residential intensification target of 41% across the Region, exceeding the Province's target of 40%. Option C is based on higher densities on greenfield lands and assumes a higher level of brownfield redevelopment in Niagara Falls and achieves an estimated 60 people and jobs per hectare on greenfield lands. Option C meets the provincial target of 50 people and jobs per hectare on greenfield lands.
		<i>Very Well</i>	<i>Very Well</i>	<i>Very Well</i>
<ul style="list-style-type: none"> How well does the option contain urban growth 	<ul style="list-style-type: none"> Requirement for Urban Area Boundary expansion 	<ul style="list-style-type: none"> Option A requires urban boundary expansions for residential land in Niagara Falls and Smithville. 	<ul style="list-style-type: none"> Option B requires an urban boundary expansion for employment land purposes in Fort Erie. 	<ul style="list-style-type: none"> Option C requires an urban boundary expansion for residential purposes in Smithville.
		<i>Not Very Well</i>	<i>Somewhat Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well does the option support the Urban Growth Centre, Gateway Economic Zone/Centre concepts? 	<ul style="list-style-type: none"> By directing growth (people and units) to the Zone and Centres. For the purposes of this measure, the Gateway Zone is defined as Niagara Falls and Fort Erie and the Gateway Centre is defined as Welland and Port Colborne. 	<ul style="list-style-type: none"> Option A directs 57,057 people and 20,733 units to the Gateway Zone and Centre over the forecast period (2006-2031). 	<ul style="list-style-type: none"> Option B directs 80,470 people and 28,693 units to the Gateway Zone and Centre over the forecast period (2006-2031). 	<ul style="list-style-type: none"> Option C directs 65,266 people and 23,673 units to the Gateway Zone and Centre over the forecast period (2006-2031).
		<i>Somewhat Well</i>	<i>Very Well</i>	<i>Well</i>
<ul style="list-style-type: none"> How well does the option support the Niagara 'Grow South' strategy? 	<ul style="list-style-type: none"> By directing growth (people and units) along the Niagara Falls/Fort Erie and Thorold/Port Colborne axes². 	<ul style="list-style-type: none"> Option A directs 66,386 people and 24,050 units to the five "Grow South" municipalities. 50% of all urban population growth and 49% of unit growth is allocated to the Growth South municipalities. 	<ul style="list-style-type: none"> Option B directs 102,266 people and 35,942 units to the five "Grow South" municipalities. 77% of all urban population growth and 74% of unit growth is allocated to the Growth South municipalities. 	<ul style="list-style-type: none"> Option C directs 75,834 people and 27,422 units to the five "Grow South" municipalities. 57% of all urban population growth and 56% of unit growth is allocated to the Growth South municipalities.
		<i>Somewhat Well</i>	<i>Very Well</i>	<i>Well</i>
<ul style="list-style-type: none"> How well does the option conform to the Provincial Policy Statement? 	<ul style="list-style-type: none"> By directing growth to fully-serviced settlement areas By promoting intensification 	<ul style="list-style-type: none"> The overwhelming majority (94%) of projected future growth is allocated to fully serviced settlement areas. 	<ul style="list-style-type: none"> The overwhelming majority (94%) of projected future growth is allocated to fully serviced settlement areas. 	<ul style="list-style-type: none"> The overwhelming majority (94%) of projected future growth is allocated to fully serviced settlement areas.

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	opportunities including brownfields and greyfields? <ul style="list-style-type: none"> ▪ By promoting compact form and settlement patterns ▪ By providing a focus on downtowns 	<ul style="list-style-type: none"> ▪ Option A achieves residential intensification target of 40%, including some brownfield and greyfield redevelopment. ▪ Option A assumes existing Official Plan densities on greenfield lands. In some municipalities this promotes compact urban form and settlement patterns, but not in all. Option A is planned to achieve a region wide greenfield density of 24 units per gross hectare³. ▪ Niagara is home to 29 different fully serviced, urban settlement areas. The ability to shift portions of growth into the downtowns of the 29 settlement areas is influence, in part, by intensification targets assumed under each option. Option A assumes an overall residential intensification target of 40%. 	<ul style="list-style-type: none"> ▪ Achieves residential intensification target of 45%, including a higher portion of brownfield redevelopment in Niagara Falls. ▪ Option B assumes higher densities on greenfield lands. Promotes the compact urban development in all municipalities. Is planned to achieve a region wide average greenfield gross density of 25 units per hectare. ▪ Niagara is home to 29 different full serviced, urban settlement areas. The ability to shift portions of growth into the downtowns of the 29 settlement areas is influence, in part, by intensification targets assumed under each option. Option B assumes an overall residential intensification target of 45%. 	<ul style="list-style-type: none"> ▪ Achieves residential intensification target of 41%, including some brownfield and greyfield redevelopment. ▪ Option C assumes higher densities on greenfield lands. Promotes the compact urban development in all municipalities. Is planned to achieve a region wide average greenfield gross density of 26 units per hectare. ▪ Niagara is home to 29 different full serviced, urban settlement areas. The ability to shift portions of growth into the downtowns of the 29 settlement areas is influence, in part, by intensification targets assumed under each option. Option C assumes an overall residential intensification target of 41%.
		<i>Well</i>	<i>Very Well</i>	<i>Well</i>
<i>Overall Ranking – Urban Containment Indicators</i>		Somewhat Well	Very Well	Well
Housing Affordability Indicators				
<ul style="list-style-type: none"> ▪ How well does the option provide a range of housing choices? 	<ul style="list-style-type: none"> ▪ Estimated housing mix ▪ Assessment of affordable housing potential based on PPS definition of “affordable housing” (10% below the average resale price in regional market area)⁴. 	<ul style="list-style-type: none"> ▪ Region-wide housing mix is considered to be proactive and encourages a shift from historic trends. The Region-wide housing mix is the same for all options: <ul style="list-style-type: none"> ○ 64% Low density (singles, semi); ○ 24% Medium (towns and multiples); and, ○ 12% High (apartments). <p>The above noted unit mix may help to provide for a greater range of affordable housing options throughout Niagara.</p>	<ul style="list-style-type: none"> ▪ Region-wide housing mix is considered to be proactive and encourages a shift from historic trends. The Region-wide housing mix is the same for all options: <ul style="list-style-type: none"> ○ 64% Low density (singles, semi); ○ 24% Medium (towns and multiples); and, ○ 12% High (apartments). <p>The above noted unit mix may help to provide for a greater range of affordable housing options throughout Niagara.</p>	<ul style="list-style-type: none"> ▪ Region-wide housing mix is considered to be proactive and encourages a shift from historic trends. The Region-wide housing mix is the same for all options: <ul style="list-style-type: none"> ○ 64% Low density (singles, semi); ○ 24% Medium (towns and multiples); and, ○ 12% High (apartments). <p>The above noted unit mix may help to provide for a greater range of affordable housing options throughout Niagara.</p>

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		<ul style="list-style-type: none"> Under the PPS definition of affordable housing, Port Colborne and Welland are considered to be the two municipalities which offer affordable housing options within Niagara. Option A allocates 4,571 new singles to the Region’s two “affordable” housing markets. 	<ul style="list-style-type: none"> Under the PPS definition of affordable housing, Port Colborne and Welland are considered to be the two municipalities which offer affordable housing options within Niagara. Option B allocates 10,170 new single to the Region’s two “affordable” housing markets. It is also worth noting that in the long run this magnitude of growth may have the affect of reducing affordability in Port Colborne and Welland. 	<ul style="list-style-type: none"> Under the PPS definition of affordable housing, Port Colborne and Welland are considered to be the two municipalities which offer affordable housing options within Niagara. Option C allocates 5,711 new single to the Region’s two “affordable” housing markets.
		<i>Somewhat Well</i>	<i>Well</i>	<i>Well</i>
<ul style="list-style-type: none"> How well does the option support opportunities for residential intensification? 	<ul style="list-style-type: none"> Location and extent of potential intensification areas 	<ul style="list-style-type: none"> Land needs assessment assigns specific residential intensification targets to each lower tier municipality. Option A is planned to achieve the 40% residential intensification across the Region. 	<ul style="list-style-type: none"> Land needs assessment assigns specific residential intensification targets to each lower tier municipality. Option A is planned to achieve 45% residential intensification across the Region. 	<ul style="list-style-type: none"> Specific intensification areas to be defined by local municipalities. Option A assumes 41% residential intensification across the Region
		<i>Well</i>	<i>Well</i>	<i>Well</i>
<i>Overall Ranking – Housing Affordability Indicators</i>		Somewhat Well	Well	Well
Ecological Indicators				
<ul style="list-style-type: none"> How well does the option protect Niagara’s natural heritage system? 	<ul style="list-style-type: none"> Estimated area of Core Natural Heritage System containing or immediately adjacent to new urban land⁵ Estimated number of Potential Natural Heritage Corridors immediately adjacent to by new urban land 	<ul style="list-style-type: none"> Option A includes two urban boundary expansions, one in Smithville and the second in Niagara Falls. Conceptual expansions contain or are immediately adjacent to 40 hectares of the Core Natural Heritage System (including new Provincially Significant Wetlands). The conceptual urban expansion area is not immediately adjacent to any of the Potential Natural Heritage Corridors. 	<ul style="list-style-type: none"> Option B includes one urban boundary expansion for employment purposes in Fort Erie. Conceptual expansion is immediately adjacent to 10 hectares of Core Natural Heritage System. The conceptual expansion area is immediately adjacent to one Potential Natural Heritage Corridor. 	<ul style="list-style-type: none"> Option C includes one urban boundary expansion for residential purposes in Smithville. This conceptual expansion is adjacent to 0 hectares of the Core Natural Heritage System. The conceptual urban expansion area is not immediately adjacent to any of the Potential Natural Heritage Corridors.
		<i>Not Very Well</i>	<i>Somewhat Well</i>	<i>Well</i>
<ul style="list-style-type: none"> How well does the option protect Niagara’s agricultural areas? 	<ul style="list-style-type: none"> Estimated area of prime agricultural land lost to new urban land 	<ul style="list-style-type: none"> Option A includes urban boundary expansions in Smithville and Niagara Falls. The conceptual expansion could result in the loss of 390 hectares of good general 	<ul style="list-style-type: none"> Option B includes an urban boundary expansion for employment purposes in Fort Erie. The conceptual expansion could result in the loss of 20 hectares of good general 	<ul style="list-style-type: none"> Option C includes an urban boundary expansion for residential purposes in Smithville. The conceptual expansion could result in the loss of 35 hectares of good general agricultural land.

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		agricultural land.	agricultural land.	
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well does the option maintain the protection of Niagara’s groundwater? 	<ul style="list-style-type: none"> Estimated area of new urban land which falls within NPCA’s high intrinsic susceptibility areas⁶ 	<ul style="list-style-type: none"> 15 hectares of the conceptual urban expansion area fall within areas of high intrinsic susceptibility. 	<ul style="list-style-type: none"> 0 hectares of the conceptual urban expansion area fall within areas of high intrinsic susceptibility. 	<ul style="list-style-type: none"> 0 hectares of the conceptual urban expansion area fall within areas of high intrinsic susceptibility.
		<i>Not Very Well</i>	<i>Very Well</i>	<i>Very Well</i>
<ul style="list-style-type: none"> How well does the option help to reduce the Region’s carbon footprint? 	<ul style="list-style-type: none"> Estimated carbon footprint 	<ul style="list-style-type: none"> At a minimum estimating carbon footprint requires data on household energy consumption and vehicle kilometers traveled. Estimates for household energy consumption are primarily determined by unit type. Since all options result in the same overall unit mix, the outcomes of a carbon footprint analysis would show differences based on transportation related considerations, such as travel patterns, level of congestion and mode split. At the time of evaluation transportation modeling data was not available to estimate vehicle kilometers traveled. Based on the limitations described above, all options are considered to the same from a carbon footprint perspective. 	<ul style="list-style-type: none"> At a minimum estimating carbon footprint requires data on household energy consumption and vehicle kilometers traveled. Estimates for household energy consumption are primarily determined by unit type. Since all options result in the same overall unit mix, the outcomes of a carbon footprint analysis would show differences based on transportation related considerations, such as travel patterns, level of congestion and mode split. At the time of evaluation transportation modeling data was not available to estimate vehicle kilometers traveled. Based on the limitations described above, all options are considered to the same from a carbon footprint perspective. 	<ul style="list-style-type: none"> At a minimum estimating carbon footprint requires data on household energy consumption and vehicle kilometers traveled. Estimates for household energy consumption are primarily determined by unit type. Since all options result in the same overall unit mix, the outcomes of a carbon footprint analysis would show differences based on transportation related considerations, such as travel patterns, level of congestion and mode split. At the time of evaluation transportation modeling data was not available to estimate vehicle kilometers traveled. Based on the limitations described above, all options are considered to the same from a carbon footprint perspective.
		<i>Data Not Sufficient</i>	<i>Data Not Sufficient</i>	<i>Data Not Sufficient</i>
<ul style="list-style-type: none"> How well does the option support the provision of ‘green infrastructure’ solutions? 	<ul style="list-style-type: none"> Flexibility to incorporate ‘green infrastructure’ solutions. The term “green infrastructure” refers to human-designed devices that mimic nature in function, or strive to reduce their impact on ecological systems and functions⁷. 	<ul style="list-style-type: none"> The ability to implement green infrastructure solutions is not perceived to differ from one option to the next. Control over the attributes of any one given solution occurs at a design scale and are not heavily influenced by the distribution of population and employment. Incorporating green infrastructure solutions could be features of 	<ul style="list-style-type: none"> The ability to implement green infrastructure solutions is not perceived to differ from one option to the next. Control over the attributes of any one given solution occurs at a design scale and are not heavily influenced by the distribution of population and employment. Incorporating green infrastructure solutions could be features of any of the three options. 	<ul style="list-style-type: none"> The ability to implement green infrastructure solutions is not perceived to differ from one option to the next. Control over the attributes of any one given solution occurs at a design scale and are not heavily influenced by the distribution of population and employment. Incorporating green infrastructure solutions could be features of any of the three options.

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		any of the three options.		
		<i>Well</i>	<i>Well</i>	<i>Well</i>
<i>Overall Ranking – Ecological Indicators</i>		Not Very Well	Well	Well
Social Services, Community Health, and Cultural Indicators⁸				
<ul style="list-style-type: none"> How well does the option direct growth to locations with appropriate levels of social infrastructure and public service facilities? 	<ul style="list-style-type: none"> Potential to maximize benefits from existing investments in facilities and services 	<ul style="list-style-type: none"> The continued spread of population throughout the Region, as set out in Option A, creates a disconnect between spread of population and concentration of facility and service investments into urban centres and requires the Region and all local municipalities to replicate and distribute services and facilities throughout Niagara creating a financial burden that may not be sustainable. 	<ul style="list-style-type: none"> Option B most closely links urban development to locales with concentrations of existing facilities, services and higher density/affordable housing, especially in St. Catharines and Welland. 	<ul style="list-style-type: none"> In Option C, the focus of growth in urban centres along with 40% intensification requirement creates a moderate opportunity to maximize benefits of existing investments (i.e., taking advantage of existing investments in Niagara Falls is positive but expanding less well served centres such as Beamsville, Grimsby and Smithville offsets the advantage).
		<i>Not Very Well</i>	<i>Very Well</i>	<i>Somewhat Well</i>
	<ul style="list-style-type: none"> Potential to use co-location of facilities to effectively serve residents and achieve cost efficiencies 	<ul style="list-style-type: none"> Option A limits opportunities for and benefits of facilities re-use and makes co-location of small service units necessary but financially challenging. 	<ul style="list-style-type: none"> This option offers greater potential for co-location of facilities and services in close proximity to residents. 	<ul style="list-style-type: none"> Similarly to Option A, this option limits the opportunity for and the benefits of facilities re-use and makes co-location of small service units necessary but financially challenging.
		<i>Somewhat Well</i>	<i>Very Well</i>	<i>Somewhat Well</i>
	<ul style="list-style-type: none"> Potential to make effective reuse of vacant and underutilized public service facilities for emerging and expanding community needs 	<ul style="list-style-type: none"> The current level of opportunity will be extended into the future. See comment above on co-location. 	<ul style="list-style-type: none"> Concentration of growth into St. Catharines, Welland and also Port Colborne and Fort Erie promotes co-location opportunities and greater use/reuse of underutilized facilities 	<ul style="list-style-type: none"> There is a moderate positive impact achieved if the distribution of growth is limited to a smaller subset of urban centres (approx. 10) of the 28 urban settlement areas that exist in the Region.
		<i>Not Very Well</i>	<i>Well</i>	<i>Well</i>
	<ul style="list-style-type: none"> Potential to improve access to existing transit, child care spaces, social housing, and nursing homes 	<ul style="list-style-type: none"> This option limits the financial feasibility of transit and exacerbates accessibility issues for those who do not have transit available or can not afford personal automobile use. The 40% regional intensification target, that 	<ul style="list-style-type: none"> Concentrated urban development especially in a north-south corridor between Port Colborne and St. Catharines increases the opportunity for inter-city/regional transit as well as the feasibility of local transit in this corridor. 	<ul style="list-style-type: none"> The ability to offer more regional transit is limited by the spread of urban population.

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		is included in all options, partially offsets the impacts noted above.		
		<i>Not Very Well</i>	<i>Very Well</i>	<i>Not Very Well</i>
<ul style="list-style-type: none"> ▪ How well does the option promote healthy, active living? 	<ul style="list-style-type: none"> ▪ Potential to offer opportunities to improve access to recreational facilities, public spaces, trails, parks, and sports facilities 	<ul style="list-style-type: none"> ▪ Local municipalities will continue to maintain recreational facilities and offer recreational services throughout the Region. 	<ul style="list-style-type: none"> ▪ In Option B, Regional and local governments will be able to concentrate new recreational investments consistent with the concentration of new growth. 	<ul style="list-style-type: none"> ▪ This option provides the median impact between Options A & B. ▪ Local municipalities will continue to maintain recreational facilities and offer recreational services throughout the Region.
		<i>Somewhat Well</i>	<i>Well</i>	<i>Somewhat Well</i>
	<ul style="list-style-type: none"> ▪ Potential to support pedestrian-oriented community design 	<ul style="list-style-type: none"> ▪ This option necessitates greater time spent commuting to work, school, shopping and services which undermines an active lifestyle. ▪ Continued development of low density suburban neighbourhoods limits ability to achieve walkable communities and is not transit supportive. 	<ul style="list-style-type: none"> ▪ This option provides the greatest potential for active transportation and public transit to offset use of private automobile and the greatest potential to increase live-work opportunities. There is a need to address issues of air quality in urban areas and in transit corridors. 	<ul style="list-style-type: none"> ▪ Intensification targets may result in more walkable community design. Commuting to work, school, shopping and services will continue to undermine an active lifestyle.
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> ▪ How well does the option promote preservation of cultural heritage assets? 	<ul style="list-style-type: none"> ▪ Potential to enhance Niagara as a destination for tourists 	<ul style="list-style-type: none"> ▪ Continued urbanization based on current trends, as set out in Option A, undermines tourism potential in the Niagara Parkway and QEW corridors where factors such as traffic congestion and urban encroachment on tourism assets will continue. 	<ul style="list-style-type: none"> ▪ Option B encourages growth in the southern tier of the Region while limiting the impact of urbanization on tourism assets in locales such as the Niagara Parkway and Niagara-on-the-Lake. 	<ul style="list-style-type: none"> ▪ This option provides the median impact between Options A & B. Option C, which distributes growth to a larger number of urban centres, may threaten tourism assets in locales such as the QEW and Niagara-on-the-Lake and undermine tourism potential.
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
	<ul style="list-style-type: none"> ▪ Potential to protect Niagara's cultural heritage assets 	<ul style="list-style-type: none"> ▪ Cultural heritage assets are more heavily concentrated in the northern portion of the Region and along the Niagara Parkway and the Canal. While many of these assets are designated and/or publicly owned, the encroachment of urban development 	<ul style="list-style-type: none"> ▪ Option B directs development away from the northern portion of the Region where cultural assets are most heavily concentrated. While many of these assets are protected or publicly owned, the encroachment of urban development may be detrimental, especially 	<ul style="list-style-type: none"> ▪ Cultural heritage assets are more heavily concentrated in the northern portion of the Region and along the Niagara Parkway. While many of these assets are protected or publicly owned, the encroachment of urban development may be detrimental. Urban intensification also

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		may be detrimental. Urban intensification also must have regard to these assets and ensure their protection.	in the three largest cities. Urban intensification also must have regard to these assets and ensure their protection.	must have regard to these assets and ensure their protection.
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
	<ul style="list-style-type: none"> Potential to support diverse community identities 	<ul style="list-style-type: none"> Community identities may be negatively affected in the smaller urban centres by the introduction of new residents accommodated in an urban form not consistent with their small town images and lifestyles. 	<ul style="list-style-type: none"> This option promotes retention of small towns and villages across the Region. 	<ul style="list-style-type: none"> Community identities may be negatively affected in the smaller urban centres by the introduction of new residents accommodated in an urban form not consistent with their small town images and lifestyles.
		<i>Somewhat Well</i>	<i>Somewhat Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well is the option supported by Niagara's residents and businesses? 	<ul style="list-style-type: none"> Degree of favourable public response to option 	<ul style="list-style-type: none"> At the community workshops held in May 2008, Option A was least favoured. 	<ul style="list-style-type: none"> At the community workshops held in May 2008, Option B was most favoured by participants conditional upon addressing: increased attraction efforts for new industry and business to the South to match the intended increase in population; 'entice' buyers to the South with infrastructure and employment investments; ensure that location decisions favour the existing vacant, serviced industrial land base over greenfield development; intensify existing employment lands; include growth in West Lincoln which is in the South; and, ensure that new growth is not sprawling in form and does not infringe on environmentally sensitive areas and cultural heritage assets. 	<ul style="list-style-type: none"> At the community workshops held in May 2008, Option C was perceived as the compromise position between Options A & B and was favoured by some participants, especially in West Niagara.
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<i>Overall Ranking – Social Services, Community Health, and Cultural Indicators</i>		Not Very well	Well	Somewhat Well
Economic Policy Indicators				
<ul style="list-style-type: none"> How well does the option support growth of the Urban Growth Centre, Gateway Economic Zone, and Gateway 	<ul style="list-style-type: none"> Location of job growth in applicable urban areas (number and percent of new jobs): <ul style="list-style-type: none"> St. Catharines Urban 	<ul style="list-style-type: none"> St. Catharines, 8,507 jobs (17.9%); Gateway Economic Zone, 13,901 jobs (29.2%); Gateway Economic Centre 4,873 jobs 	<ul style="list-style-type: none"> St. Catharines, 8,896 (18.7%); Gateway Economic Zone, 15,733 jobs (33.1%); Gateway Economic Centre 8,974 jobs (18.9%); and, 	<ul style="list-style-type: none"> St. Catharines, 8,507 jobs (17.9%); Gateway Economic Zone, 14,841 jobs (31.2%); Gateway Economic Centre 5,859 jobs (12.3%); and,

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
Economic Centre?	<ul style="list-style-type: none"> ○ Growth Centre; ○ Gateway Economic Zone; ○ Gateway Economic Centre; and, ○ Total percent of overall job growth in St. Catharines, GEZ and GEC. 	<ul style="list-style-type: none"> ▪ (10.3%); and, ▪ 57.40%. 	<ul style="list-style-type: none"> ▪ 70.70%. 	<ul style="list-style-type: none"> ▪ 61.40%
		<i>Somewhat Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> ▪ How well does the option provide for projected employment numbers and sector trends? 	<ul style="list-style-type: none"> ▪ Potential to accommodate trends, by sector growth 	<ul style="list-style-type: none"> ▪ Overall growth by sector in the Region is same for each option (e.g. industrial growth is 7,163 at regional level in each option), so each option performs equally well in terms of accommodating projected employment growth. Each municipalities' share of sector growth is the same for Option A except for industrial (e.g. Fort Erie accounts for 8.2% of primary, 8.2% commercial, 8.2% institutional); Majority of new industrial growth is allocated to Fort Erie and St. Catharines (25% each), Niagara Falls (12%), and Welland (10%) 	<ul style="list-style-type: none"> ▪ Overall growth by sector in the Region is same for each option so each option performs equally well. Each municipalities' share of sector growth is the same except for industrial (e.g. Fort Erie accounts for 15.7% of primary, 15.7% commercial, 15.7% institutional, and 30% industrial). The key difference between this option and the others is the increased level of new employment growth in Welland and decreased role of Niagara Falls. Differs also for new industrial jobs: allocated a higher % of new industrial jobs to Welland (21%), Fort Erie (30%) and other southern urban areas (Thorold, Port Colborne), and lower portion to townships/small communities. Niagara Fall's share of new industrial employment is 4.5%. Option B is more suitable than the other two options taking into account sector trends/location factors - municipalities allocated a higher share of industrial employment are preferable to rural/small municipalities for additional industrial development; also lower levels of new industrial development in Niagara Falls may improve the attractiveness of the city for tourism. 	<ul style="list-style-type: none"> ▪ Overall growth by sector in the Region is same for each option so each option performs equally well; each municipalities' share of growth is the same for Option within each municipality except for industrial (e.g. Fort Erie accounts for 8.7% of primary, 8.7% commercial, 8.7% institutional Very similar to Option A: majority of new industrial growth is allocated to Fort Erie (25%) and St. Catharines (25%), Niagara Falls (12%) and Welland (11%).

Draft Evaluation Table – Phase 3, A Range of Options
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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
		<i>Well</i>	<i>Very Well</i>	<i>Well</i>
<ul style="list-style-type: none"> How well does the option provide for employment areas in close proximity to support infrastructure? 	<ul style="list-style-type: none"> Location of growth relative to existing transportation infrastructure (i.e. QEW, 406, international bridge crossings etc.) 	<ul style="list-style-type: none"> 78.5% new employment growth in proximity to support infrastructure 	<ul style="list-style-type: none"> 94.9% new employment growth in proximity to support infrastructure 	<ul style="list-style-type: none"> 82.6% of new employment growth in proximity to support infrastructure
		<i>Somewhat Well</i>	<i>Very Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well does the option support a ‘nodes’ approach to new development? 	<ul style="list-style-type: none"> Location of growth relative to node development opportunities (i.e. number of major office jobs) 	<ul style="list-style-type: none"> 1,112 Major Office jobs: 603 in Niagara Falls and 509 in St. Catharines 	<ul style="list-style-type: none"> 1,084 Major Office jobs: 524 in Niagara Falls and 561 in St. Catharines. 	<ul style="list-style-type: none"> 1,169 Major Office jobs: 658 in Niagara Falls and 510 in St. Catharines.
		<i>Somewhat Well</i>	<i>Somewhat Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well does the option support the Niagara Growth South Strategy? 	<ul style="list-style-type: none"> Number and % of new jobs in Niagara Falls/Fort Erie Corridor Number and % of new jobs in the Thorold to Welland Corridor Total 	<ul style="list-style-type: none"> 13,901 (29.2%) 9,402 (19.8%) 23,303 (49%) 	<ul style="list-style-type: none"> 15,733 (33.1%) 18,298 (38.5%) 34,031 (71.6%) 	<ul style="list-style-type: none"> 14,841 (31.2%) 11,431 (24.0%) 26,272 (55.2%)
		<i>Somewhat Well</i>	<i>Very Well</i>	<i>Well</i>
<ul style="list-style-type: none"> How well does the option provide for ‘complete communities’ from an economic perspective? 	<ul style="list-style-type: none"> Ratio of total number of jobs projected for fixed places of employment in 2031 relative to projected population Location of economic growth relative to residential growth 	<ul style="list-style-type: none"> The overall jobs to population ratio for 2031 is the same for each option: 0.44, which is slightly higher than the 2001 level. Generally regions/communities strive to a 0.50 level. Only two communities are projected at ratios of .50 or more: Niagara-on-the-Lake and St. Catharines. Niagara Falls projected employment to population ratio is 0.46. At the individual community level, not considerably better or worse than other options. Employment to population growth ratios are somewhat more balanced than in Option B, but this levels out when total employment to total population growth is considered. 	<ul style="list-style-type: none"> The overall jobs to population ratio is the same for each option: 0.44 in 2031, which is slightly higher than the 2001 level. Generally regions/communities strive to a 0.50 level. Only 2 communities are projected to be at the 0.50 ratio or over: St. Catharines at 0.51 and Niagara on the Lake at 0.69. Niagara Falls and Lincoln are 0.47. It is noted that the Niagara on the Lake employment to population ratio is .69 compared to .59 and .62 in Options A and C respectively (ratio in 2001 was 0.65). Ratios of other municipalities are not significantly different from other options. Higher jobs growth than population growth for some communities (Grimsby, Lincoln, Pelham, West Lincoln and St. Catharines) over the planning period compared to other 	<ul style="list-style-type: none"> The overall jobs to population ratio is the same for each option :0.44 in 2031, which is slightly higher than the 2001 level. Generally regions/communities strive to a 0.50 level. Only 2 communities at the 0.50 ratio or over: Niagara-on-the-Lake (0.62) and St. Catharines (.50) ; Niagara Fall's ratio is 0.46. . Employment to population growth ratios are somewhat more balanced than in Option B, but this levels out when total employment to total population growth is considered.

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
			options, but not significant differences for overall employment to population ratios.	
		<i>Somewhat Well</i>	<i>Somewhat Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well does the option support flexibility in employment opportunities? 	<ul style="list-style-type: none"> Potential to accommodate 'off trend' employment 	<ul style="list-style-type: none"> Cannot be determined at this level of analysis 	<ul style="list-style-type: none"> Cannot be determined at this level of analysis 	<ul style="list-style-type: none"> Cannot be determined at this level of analysis
		<i>Data Not Sufficient</i>	<i>Data Not Sufficient</i>	<i>Data Not Sufficient</i>
<ul style="list-style-type: none"> How well does the option support Niagara as a destination for tourists? 	<ul style="list-style-type: none"> Potential to accommodate tourism-related development 	<ul style="list-style-type: none"> Tourism development is accounted for in the Commercial/Retail sector of the Employment forecast. Each municipalities share of this sector is the same as its share of other sectors with the exception of industrial - for example, Niagara Falls' share of new growth in the Commercial/Retail sector is the same as its share of growth in primary and institutional sectors: Niagara Fall's share is 19.7% (6,026); Niagara on the Lake's share is 8.2% (2,508); Fort Erie's share is 8.2% (2,508), and Port Colborne's share is 3.7% (1,146). No specific tourism development areas noted in Option. 	<ul style="list-style-type: none"> Tourism development is accounted for in the Commercial/Retail sector of the Employment forecast. Each municipalities share of this sector is the same as its share of other sectors with the exception of industrial - for example, Niagara Falls' share of new growth in the Commercial/Retail sector is the same as its share of growth in primary and institutional sectors: Niagara Fall's share is 17.1% (5,237); Niagara on the Lake's share is 3.2% (977); Fort Erie's share is 15.7% (4,823), and Port Colborne's share is 5.9% (1,819) Greater concentration of retail/commercial (which includes tourism sector) in southern areas of Niagara Region may facilitate greater tourism development of area/spread of economic benefits to those areas. No specific tourism development areas noted in Option. 	<ul style="list-style-type: none"> Tourism development is accounted for in the Commercial/Retail sector of the Employment forecast. Each municipalities share of this sector is the same as its share of other sectors with the exception of industrial - for example, Niagara Falls' share of new growth in the Commercial/Retail sector is the same as its share of growth in primary and institutional sectors: Niagara Fall's share is 21.5% (6,584); Niagara on the Lake's share is 6.8% (2,071); Fort Erie's share is 8.7% (2,663), and Port Colborne's share is 4.8% (1,480). No specific tourism development areas noted in Option.
		Well	Well	Well
<i>Overall Ranking – Economic Policy Indicators</i>		Somewhat Well	Very Well	Well
Alternative Transportation Choices & Commute Times				
<ul style="list-style-type: none"> How well is the option likely to reduce commuting times? 	<ul style="list-style-type: none"> Qualitative assessment of the option's impact on commuting⁹ Qualitative assessment of the option's impact on goods 	<ul style="list-style-type: none"> Highest dispersion of population and employment growth of all options which increases need for auto use and potential for inter-city travel (poor live/work 	<ul style="list-style-type: none"> Highest concentration of population and employment growth in the three largest cities (St. Catharines, Welland, Niagara Falls). The rest concentrated in two neighbouring cities 	<ul style="list-style-type: none"> Second highest concentration of population and employment growth in the three largest cities (St. Catharines, Welland, Niagara Falls), while the rest is dispersed in other municipalities. The

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
	movement ¹⁰	relationship). <ul style="list-style-type: none"> In this option, 84% of industrial growth occurs in municipalities with major highway corridors. 	(Thorold, Fort Erie). These are well connected by the highway network and all have transit services. May create congestion issues on certain corridors. <ul style="list-style-type: none"> In this option, 89% of industrial growth in municipalities with major highway corridors. 	remaining growth focused on other rural centres (ie. West Lincoln). Dispersion of traffic may reduce congestion if live-work relationships are formed. <ul style="list-style-type: none"> In this option, 85% of industrial growth in municipalities with major highway corridors.
		<i>Somewhat Well</i>	<i>Very Well</i>	<i>Well</i>
<ul style="list-style-type: none"> How well does the option support a range of transportation choices? 	<ul style="list-style-type: none"> Potential to support a land use pattern, density and mix of uses that minimizes the length and number of vehicle trips¹¹ Potential to support public transit and other alternative transportation modes, including commuter rail, bus, cycling and walking. Potential to support these initiatives is based on a number of factors, including: <ol style="list-style-type: none"> Overall Density (particularly in municipalities with existing transit service); Level of intensification as opposed to greenfield development; Level of development occurring close to a potential commuter rail corridor (identified as the rail corridor connecting the City of Hamilton and Niagara Falls (including Grimsby, Lincoln, St. Catharines); and, Concentration of population/employment (live-work) in the three largest municipalities. The theory is that in larger municipalities, there is more opportunity to work near where 	<ul style="list-style-type: none"> 49% of the population growth and 47% of employment is allocated to municipalities with established transit systems. 15% of the high and 29% of the medium density unit growth is allocated to municipalities with established transit systems. Option A is planned to achieve a region wide intensification target of 40%. Commuter Rail – 50% of population growth on potential commuter rail corridor. Lowest concentration of live-work in three largest municipalities supports least amount walking and cycling trips. 	<ul style="list-style-type: none"> 57% of the population growth and 55% of employment is allocated to municipalities with established transit systems. 19% of the high and 33% of the medium density unit growth is allocated to municipalities with established transit systems. Option B is planned to achieve a region wide intensification target of 45%. Commuter Rail – 40% of population growth on potential commuter rail corridor. Highest concentration of live-work in three largest municipalities supports more walking and cycling trips. 	<ul style="list-style-type: none"> 54% of the population growth and 59% of employment is allocated to municipalities with established transit systems. 15% of the high and 27% of the medium density unit growth is allocated to municipalities with established transit systems. Option C is planned to achieve a region wide intensification target of 41%. Commuter Rail – 50% of population growth on potential commuter rail corridor. Second highest concentration of live-work in three largest municipalities supports more walking and cycling trips.

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
	you live (high choice of jobs), facilitating walking, cycling and transit use.			
		<i>Somewhat Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well does the option support integration of existing transit systems? 	<ul style="list-style-type: none"> Relative proximity of residents and employment to existing and future transit opportunities. Based on proposed growth (population and employment) in municipalities with: <ol style="list-style-type: none"> Established transit service (St. Catharines, Niagara Falls, Welland) Limited Transit service (Fort Erie, Port Colborne, Thorold, NOTL) No transit services (West Lincoln, Grimsby, Lincoln, Wainfleet, Pelham) Options with a higher percentage of growth in municipalities with transit were ranked favourably. 	<ul style="list-style-type: none"> Distribution of population growth to municipalities with: <ul style="list-style-type: none"> Established Transit: 49% Limited Transit: 26% No Transit: 25% Distribution of employment growth to municipalities with: <ul style="list-style-type: none"> Employment Growth: 47% Established Transit: 27% Limited Transit: 26% No Transit: 26% 	<ul style="list-style-type: none"> Distribution of population growth to municipalities with: <ul style="list-style-type: none"> Established Transit: 57% Limited Transit: 39% No Transit: 4% Distribution of employment growth to municipalities with: <ul style="list-style-type: none"> Employment Growth: 55% Established Transit: 33% Limited Transit: 12% No Transit: 12% 	<ul style="list-style-type: none"> Distribution of population growth to municipalities with: <ul style="list-style-type: none"> Established Transit: 54% Limited Transit: 27% No Transit: 19% Distribution of employment growth to municipalities with: <ul style="list-style-type: none"> Employment Growth: 59% Established Transit: 19% Limited Transit: 22% No Transit: 22%
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> How well does the option support transit supportive densities and/or a 'nodes and corridors' approach to development? 	<ul style="list-style-type: none"> Potential to provide a land use system integrated with transit options. Based on percentage of high, medium, and low density development in cities with established transit services (St. Catharines, Niagara Falls, Welland). Cities without transit service were not evaluated as high densities 	<ul style="list-style-type: none"> Distribution of density in established transit municipalities: <ul style="list-style-type: none"> High: 15% Medium: 29% Low: 56% Unit mix summary for established transit municipalities: <ul style="list-style-type: none"> High: 3,577 Medium: 6,842 	<ul style="list-style-type: none"> Distribution of density in established transit municipalities: <ul style="list-style-type: none"> High: 19% Medium: 33% Low: 48% Unit mix summary for established transit municipalities: <ul style="list-style-type: none"> High: 5,209 Medium: 9,152 	<ul style="list-style-type: none"> % Density in Established Transit municipalities: <ul style="list-style-type: none"> High: 15% Medium: 27% Low: 58% Unit mix summary for established transit municipalities: <ul style="list-style-type: none"> High: 3,797 Medium: 7,249 Low: 15,003

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
	would have little impact on existing transit options.	<ul style="list-style-type: none"> Low: 13,498 	<ul style="list-style-type: none"> Low: 13,333 	
		<i>Somewhat Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> Does the option support closer live-work connections? 	<ul style="list-style-type: none"> Qualitative assessment of impact of intensification opportunities. Based on intensification target of each option¹². Qualitative assessment of location of any new employment lands relative to existing or planned residential areas. Based on concentration of population/employment (live-work) in the three largest municipalities¹³. 	<ul style="list-style-type: none"> Intensification targets: <ul style="list-style-type: none"> Region-wide, 40% St. Catharines, 95% Niagara Falls, 40% Welland, 40% Lowest concentration of live-work in three largest municipalities supports least amount walking and cycling trips. 	<ul style="list-style-type: none"> Intensification targets: <ul style="list-style-type: none"> Region-wide, 45% St. Catharines, 95% Niagara Falls, 45% Welland, 45% Highest concentration of live-work in three largest municipalities supports more walking and cycling trips. 	<ul style="list-style-type: none"> Intensification targets: <ul style="list-style-type: none"> Region-wide, 41% St. Catharines, 95% Niagara Falls, 40% Welland, 40% Second highest concentration of live-work in three largest municipalities supports more walking and cycling trips.
		<i>Somewhat Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<i>Overall Ranking: Alternative Transportation Choices & Commute Time Indicators</i>		Somewhat Well	Well	Somewhat Well
Infrastructure Investment				
<ul style="list-style-type: none"> How well can the option be serviced using existing systems? 	<ul style="list-style-type: none"> Ability to use existing systems Estimated cost of new services to support the option (costing and capacity information is provided in Appendix B)¹⁴ 	<ul style="list-style-type: none"> Water – The existing water system, as a whole, is capable of meeting the long term demands with minimum investment in the treatment facilities. Distribution system may require some upgrades. Wastewater – Significant investment is required in the wastewater treatment facilities to meet future demand. Water facility upgrade cost < \$2M Wastewater facility upgrade cost > \$54M 	<ul style="list-style-type: none"> Water – The existing water system, as a whole, is capable of meeting the long term demands. Distribution system may require some upgrades. Wastewater – Significant investment is required in the wastewater treatment facilities to meet future demand. Water facility upgrade cost N/A Wastewater facility upgrade cost > \$40M 	<ul style="list-style-type: none"> Water – The existing water system, as a whole, is capable of meeting the long term demands. Distribution system may require some upgrades. Wastewater – Significant investment is required in the wastewater treatment facilities to meet future demand. Water facility upgrade cost N/A Wastewater facility upgrade cost > \$46M

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> ▪ How well does the option provide phasing opportunities for long-term investment? 	<ul style="list-style-type: none"> ▪ Investment required in 10/20/30 year capital programs ▪ Impact on debt capacity and 'affordability' 	<ul style="list-style-type: none"> ▪ Water – Investment is required in the long term to upgrade capacity at the Grimsby water treatment plant. 5yr N/A 10 yr N/A 25 yr <\$2M ▪ Wastewater – Immediate, intermediate and long term investment is required to meet future demands. 5yr < \$0.7M 10 yr > \$7M 25yr > \$54M <p>Option A has the highest short term and intermediate costs for wastewater infrastructure investment (\$.7-7\$ million).</p>	<ul style="list-style-type: none"> ▪ Water – Investment is not required to meet long term needs. 5yr N/A 10 yr N/A 25 yr N/A ▪ Wastewater – Immediate, intermediate and long term investment is required to meet future demands. 5yr < N/A 10 yr <\$2M 25yr > \$40M <p>Option B has the lowest short term and intermediate costs (\$0-\$2 million) for wastewater infrastructure, allowing more flexibility for financing the long term improvements.</p>	<ul style="list-style-type: none"> ▪ Water – Investment is not required to meet long term needs. 5yr N/A 10 yr N/A 25 yr N/A ▪ Wastewater – Immediate, intermediate and long term investment is required to meet future demands. 5yr N/A 10 yr < \$5M 25yr > \$46M <p>Option C has no short term costs and the second highest intermediate costs (\$5 million) for wastewater infrastructure, providing for limited flexibility for financing the long term improvements.</p>
		<i>Not Very Well</i>	<i>Well</i>	<i>Somewhat Well</i>
<ul style="list-style-type: none"> ▪ How does the option impact water/wastewater systems? 	<ul style="list-style-type: none"> ▪ Estimated average annual residential water use (based on unit mix) 	<ul style="list-style-type: none"> ▪ All options are considered the same. Estimated total residential demand is 251ML/d. The geographic location of population is not considered to be a major factor related to residential water consumption. Other factors such as residential water rates, metering, conservation education and rainfall can have significant impacts on volume of water consumed. Wastewater volumes are related to water consumption as well as the integrity of the collection system. Aggressive I&I reduction programs will reduce wet weather flows significantly. 	<ul style="list-style-type: none"> ▪ All options are considered the same. Estimated total residential demand is 251ML/d. The geographic location of population is not considered to be a major factor related to residential water consumption. Other factors such as residential water rates, metering, conservation education and rainfall can have significant impacts on volume of water consumed. Wastewater volumes are related to water consumption as well as the integrity of the collection system. Aggressive I&I reduction programs will reduce wet weather flows significantly. 	<ul style="list-style-type: none"> ▪ All options are considered the same. Estimated total residential demand is 251ML/d. The geographic location of population is not considered to be a major factor related to residential water consumption. Other factors such as residential water rates, metering, conservation education and rainfall can have significant impacts on volume of water consumed. Wastewater volumes are related to water consumption as well as the integrity of the collection system. Aggressive I&I reduction programs will reduce wet weather flows significantly.

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
		N/A	N/A	N/A
<ul style="list-style-type: none"> How does the option impact waste management systems? 	<ul style="list-style-type: none"> Qualitative assessment of impact on waste collection and diversion rates 	<ul style="list-style-type: none"> The Niagara-Hamilton Waste Plan identifies a diversion target of 65%. Niagara is currently achieving a rate of 47% diversion. With region-wide recycling services in all municipalities and the same overall unit mix for each option, the ability to meet the 65% diversion target is not perceived to significantly alter amongst the three options. Meeting the diversion target is dependent upon a variety of other factors external to population and employment distribution patterns¹⁵. 	<ul style="list-style-type: none"> The Niagara-Hamilton Waste Plan identifies a diversion target of 65%. Niagara is currently achieving a rate of 47% diversion. With region-wide recycling services in all municipalities and the same overall unit mix for each option, the ability to meet the 65% diversion target is not perceived to significantly alter amongst the three options. Meeting the diversion target is dependent upon a variety of other factors external to population and employment distribution patterns. 	<ul style="list-style-type: none"> The Niagara-Hamilton Waste Plan identifies a diversion target of 65%. Niagara is currently achieving a rate of 47% diversion. With region-wide recycling services in all municipalities and the same overall unit mix for each option, the ability to meet the 65% diversion target is not perceived to significantly alter amongst the three options. Meeting the diversion target is dependent upon a variety of other factors external to population and employment distribution patterns.
		Well	Well	Well
<i>Overall Ranking: Infrastructure Investment Indicators</i>		Not Very Well	Well	Somewhat Well
Fiscal Health Indicators				
<ul style="list-style-type: none"> How well does the option support improved fiscal health? 	<ul style="list-style-type: none"> Region-wide per capita costs for new water and waste water infrastructure for new growth (total infrastructure cost/total 2031 population) Region-wide per new household cost for new water and waste water infrastructure for new growth (2006-2031 household growth/total infrastructure costs)¹⁶ 	<ul style="list-style-type: none"> Region-wide per capita costs for new water and wastewater services is \$102 per person or \$251 per household. Region wide per capita cost for each new household unit is \$1,070. 	<ul style="list-style-type: none"> Region-wide per capita costs for new water and wastewater services is \$73 per person or \$181 per household. Region wide per capita cost for each new household unit is \$773. 	<ul style="list-style-type: none"> Region-wide per capita costs for new water and wastewater services is \$85 per person or \$209 per household. Region wide per capita cost for each new household unit is \$891.
		Not Very Well	Somewhat Well	Somewhat Well
<ul style="list-style-type: none"> How well does the option match growth with perceived 	<ul style="list-style-type: none"> Compares historical vs. forecasted housing and employment growth. 	<ul style="list-style-type: none"> Option A balances historic household demand with future household growth in 	<ul style="list-style-type: none"> Option B would require Fort Erie, Thorold Welland and Port Colborne to achieve 	<ul style="list-style-type: none"> Option C would require Fort Erie, Thorold, Welland and Port Colborne to achieve higher

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Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
<p>market demand? (In light of the identified growth drivers in Niagara Region, what is an acceptable “threshold test” with respect to forecast demand in comparison historical trends)</p>	<p>Based on historical trends (1981 to 2006) a 50% to 100% increase in annual housing and employment growth over then next 25 years has been identified as the “maximum threshold” for future growth to “South Niagara”. Appendix C provides additional detail.</p>	<p>accordance with the identified economic and demographic drivers for Niagara Region. Grimsby is the only municipality receiving less than its historic rate of growth, reflecting the limited availability of greenfield land.</p>	<p>significantly higher rates of annual household growth (1981-2006 vs. 2006 to 2031). On annual basis each of these municipalities would see the following increases in household growth beyond historic levels:</p> <ul style="list-style-type: none"> o Fort Erie - 125% o Port Colborne - 199% o Welland - 96% o Thorold - 284% o Total South Niagara - 146% <p>Several municipalities also receive less than historic rates, including Grimsby, Lincoln, West Lincoln, Niagara on the Lake, Pelham and Wainfleet. Similar development patterns are also identified for the non-residential sector.</p>	<p>rates of annual household growth (1981-2006 vs. 2006 to 2031). On annual basis each of these municipalities would see the following increases in household growth beyond historic levels:</p> <ul style="list-style-type: none"> o Fort Erie - 24% o Port Colborne - 144% o Welland - 33% o Thorold - 105% o Total South Niagara - 52% <p>Option C provides a more balanced distribution of household growth in comparison to Option B; albeit South Niagara would still receive a significant increase in annual growth in comparison to historical trends. Grimsby, and to a lesser extent, St. Catharines would experience less than historic growth rates. Similar development patterns are also identified for the non-residential sector.</p>
		<p><i>Very Well</i></p>	<p><i>Not Very Well</i></p>	<p><i>Well</i></p>
<ul style="list-style-type: none"> ▪ How well does the option support fiscal health and sustainability? 	<ul style="list-style-type: none"> ▪ Qualitative assessment of ability to finance each option. Each option is subject to similar financial sources associated with funding new development (i.e. development charges, taxes, other senior government sources of financing, etc.). For each scenario, market demand is considered to be the single most important factor in evaluating fiscal viability. It is important to note that a detailed fiscal impact analysis which quantifies the magnitude of difference between each of the three Growth Options has not been 	<ul style="list-style-type: none"> ▪ Per capita/household infrastructure costs associated with this development option are greater than Option B and C. However, perceived financial challenges and risks associated with this option are comparatively lower given the balance between the growth allocations and the perceived market demand for growth by local municipality. 	<ul style="list-style-type: none"> ▪ Option B would require significant policy intervention (assuming the policies are effective) in order to achieve long-term growth levels allocated to South Niagara. Significant challenges exist under Option B “Growth South” with respect to the market realization of growth and the associated fiscal impacts. These include, but are not limited to, the following: <ul style="list-style-type: none"> o Limitations of Development Charges to Finance Growth-Related Capital Costs -Under the Development Charges Act, 1997, the private sector is generally required to pay for internal infrastructure associated with new development i.e. local roads, 	<ul style="list-style-type: none"> ▪ Option C would pose relatively less challenges and risks associated with financial sustainability in comparison with Option B, given its more balanced growth allocation by local municipality. Comparatively, Option C may pose relatively greater challenges relative to Option A associated with financing new development given the higher proportion of growth allocated to the municipalities of South Niagara because Option C still provides higher than historic levels of growth in South Niagara.

Draft Evaluation Table – Phase 3, A Range of Options
 Region of Niagara Growth Management Strategy



Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
	<p>completed. Furthermore, an analysis of Regional vs. local fiscal impacts associated with each Growth Option has not been provided.</p>		<p>sewers, stormwater, and other soft services. Municipalities are generally required to finance “external” infrastructure i.e. water and sewer trunk mains, improvements to arterial roads, etc. Under Option B, achieving the aggressive growth targets in South Niagara may pose increased fiscal challenges/risks for municipalities which and have a smaller assessment base and are more fiscally sensitive with to funding “external” infrastructure.</p> <ul style="list-style-type: none"> o Front-End Financing Sources – DC’s can provide a potential stream of revenue, however; they do not provide a source of front-end financing. As such, municipalities generally debenture to pay for growth-related capital which is not DC eligible. Alternatively, a municipality may enter into front-end financing agreements with the private sector to pay for infrastructure associated with new development. Under Option B, the risk associated with public or private front-end financing arrangement would be greatest for the municipalities of South Niagara. If actual growth levels in South Niagara are significantly lower than forecast, these municipalities would not fully realize the DC revenues required to recover the capital costs associated with residential and non-residential growth. Furthermore, given the perceived weaker market for residential and non-residential 	

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Draft Evaluation Table – Phase 3, A Range of Options
 Region of Niagara Growth Management Strategy



Indicator	Measure	Option A: Current Trends	Option B: Growth South	Option C: Multi-Nodal
			development, it is questionable whether adequate opportunities would exist for public-private partnerships to fund required infrastructure improvements.	
		<i>Well</i>	<i>Not Very Well</i>	<i>Well</i>
<i>Overall Ranking – Fiscal Health Indicators</i>		Well	Not Very Well	Well

¹ Refer to Appendix A for a detailed summary of the 50 people and jobs calculation.

² Section 3.3 of the Region’s Policy Plan encourages development along “two discontinuous development corridors, one between Thorold and Port Colborne and the other between Niagara Falls and Fort Erie, through enabling public policies”. For the purposes of this measure, these corridor municipalities are intended to represent “Grow South”.

³ Net of any significant environmental features. Gross density includes unit, parcel, minor roads, servicing and neighbourhood parks. Population related employment land needs are treated separately.

⁴ The Provincial Policy Statement identifies criteria for defining affordability stating that affordability means “ in the case of ownership housing, the least expensive of: (a). housing for which the purchase price results in annual accommodation costs which do not exceed 30 percent of gross annual household income for low and moderate income households; or (b) housing for which the purchase price is at least 10 percent below the average purchase price of a resale unit in the regional market area”. Using the latter interpretation, Port Colborne and Welland are the only municipalities in Niagara with an average purchase price which is 10 percent below the regional average.

⁵The Core Natural Heritage System is defined by the Region of Niagara through Amendment 187 to Region Policy Plan. Impacts are determined to be any feature within the Core Natural Heritage System which intersects with the conceptual urban boundary expansion area.

⁶ Areas of High Intrinsic Susceptibility are based on Niagara Peninsula Conservation Authority Groundwater Study, Figure 3-1 “Shallow Intrinsic Susceptibility”.

⁷ For clarification purposes some examples of green infrastructure solutions are provided in this note. Examples of what would be considered green infrastructure solutions related to site development would be, but are not limited to the following: on-site power generation, district energy, green building certification through an accredited program such as LEED, green roofs and other heat island reduction measures, use of materials which increase site permeability and reduce run-off and the use of native species and plantings.

⁸ Health and social services and facilities are concentrated in the urban centres with a greater proportion of specialized and higher level services being located in the three cities of St. Catharines, Niagara Falls and Welland.

Similarly, publicly-funded educational services and facilities – especially, secondary schools, specialized services and post-secondary opportunities - are concentrated in the urban centres. School facilities that may become available for reuse or co-location are also more prevalent in the urban centres. A greater range and mix of housing as well as affordable and rent-geared-to-income housing is found in the urban centres. Cultural heritage sites, facilities and businesses/industries are heavily concentrated in the northern portion of the Region. Local social service agencies have noted accessibility issues associated with the limited availability of transit in the Region and the cost of personal automobile use or taxi. The health of Niagara residents has been recognized as a key issue and significant efforts are underway to promote a healthy, active lifestyle. Facility investments such as the Niagara Circle trail system are noted. The Region is well served with recreational, cultural and tourist facilities owned and operated by all levels of government and are found throughout the Region.

⁹ A more detailed assessment on commuting times using the Region’s transportation model would take into account existing and projected travel demand and capacity, average speed, and level of congestion. The following represents a qualitative assessment based on the theoretical impact of land use patterns on transportation demand and mode share.

¹⁰ Impact on goods movement was assessed based on access of new industrial lands to the 400 series highways. The assessment is based on the fact that higher levels of industrial development along highways reduces overall travel length and therefore time.

¹¹ Much of this is dependant on urban design and must be evaluated at the secondary and site plan level. From a broader perspective, ability to support transportation choices is based on ability to walk/cycle to destinations, a transit stop, or share a ride. This is based on overall level and density of development, level of intensification, and live/work relationship. Therefore, this category is measured based on:

1. Amount of development in established transit municipalities (St. Catharines, Welland, Niagara Falls);
2. Density in established transit municipalities (St. Catharines, Welland, Niagara Falls); and,

3. Level of intensification.

¹² Higher intensification targets reflect more development in built up areas with access to employment and amenities. This gives residents a higher opportunity to walk to their destination. Higher intensification targets in cities with transit (St. Catharines, Welland, Niagara Falls) also allows for easier transit use (which support closer live-work connections).

¹³ It is perceived that larger municipalities provide a greater opportunity for live-work developments.

¹⁴ Note that revised costing information does not include planned upgrades to the Baker Road Wastewater Treatment plant.

¹⁵ Consumer preferences, program design and implementation and education are some of the factors which will influence Niagara's ability to meet its diversion targets.

¹⁶ Note that costs for improvements are limited to plant explanations and upgrades. Additional analysis for new trunks is to be provided.

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Appendix A:

50 People and Jobs Calculation

Step 1 - Estimate the employment land employment needed.

Estimated Net Employment Land Need*			
Municipality	Option A	Option B	Option C
Fort Erie	76	104	77
Grimsby	20	10	18
Lincoln	36	12	33
Niagara Falls	60	40	63
Niagara-on-the-lake	27	11	20
Pelham	21	6	15
Port Colborne	15	29	20
Welland	45	89	52
West Lincoln	40	6	36
St. Catharines	80	76	81
Wainfleet	8	4	7
Thorold	21	50	23
Niagara Region	449	436	444

* EDP Consulting. "Net" represents the amount of land needed to satisfy projected industrial job growth.

Step 2 - Estimate the portion of the total employment land employment to be satisfied on greenfield lands.

Municipality	Estimated Gross Vacant Supply*	Estimated Portion of Vacant Employment Land Supply Located within Built Boundary**	Estimated Portion of Vacant Employment Land Supply Located outside Built Boundary
Fort Erie	110.0	55%	45%
Grimsby	60.0	62%	38%
Lincoln	62.2	65%	35%
Niagara Falls*	568.0	50%	50%
Niagara-on-the-lake	155.5	97%	3%
Pelham	120.0	17%	83%
Port Colborne	65.4	0%	100%
Welland	324.0	48%	52%
West Lincoln	62.2	75%	25%
St. Catharines	170.0	100%	0%
Wainfleet	NA	-	-
Thorold	294.0	35%	65%
Niagara Region	1991.3	-	-

*Net of any significant environmental features. Provided by lower tier municipalities.

**Estimated by Dillon Consulting.

Step 3 - Estimate the amount of net employment land employment which will be considered "greenfield".

Municipality	Option A	Option B	Option C
Fort Erie	34	47	35
Grimsby	8	4	7
Lincoln	13	4	12
Niagara Falls	30	20	32
Niagara-on-the-lake	1	0	1
Pelham	18	5	13
Port Colborne	15	29	20
Welland	23	46	27
West Lincoln	10	2	9
St. Catharines	0	0	0
Wainfleet	-	-	-
Thorold	14	33	15
Niagara Region	165	189	169

Derived by multiplying the "estimated portion of vacant employment land supply" by the net land need.

Step 4 - Estimate the number of employment land jobs yielded on greenfield lands

Municipality	Density*	Option A	Option B	Option C
Fort Erie	30	1026	1404	1040
Grimsby	25	191	95	172
Lincoln	25	315	105	289
Niagara Falls	35	1050	700	1103
Niagara-on-the-lake	25	22	9	16
Pelham	25	438	125	313
Port Colborne	30	450	870	600
Welland	30	700	1384	809
West Lincoln	25	250	38	225
St. Catharines	35	0	0	0
Wainfleet	25	-	-	-
Thorold	30	410	975	449
Niagara Region	-	4851	5705	5014

*Density provided by EDP Consulting.

Derived by multiplying employment density by area of greenfield employment lands.

Step 5 - Identify the gross land requirement for employment land jobs

Municipality	Option A*	Option B*	Option C*
Fort Erie	43	59	43
Grimsby	10	5	9
Lincoln	16	5	14
Niagara Falls	38	25	39
Niagara-on-the-lake	1	0	1
Pelham	22	6	16
Port Colborne	19	36	25
Welland	29	58	34
West Lincoln	13	2	11
St. Catharines	0	0	0
Wainfleet	-	-	-
Thorold	17	41	19
Niagara Region	206	237	211

*A net to gross factor of 20% is applied to account for roads and other infrastructure needs.

Step 6 - Estimate the amount of population related jobs on greenfield lands

Option A						
Municipality	Gross Area of Land	Population Related Jobs	Gross Density	Greenfield Land	Intensification Land	Number of Pop. Related Greenfield Jobs
Fort Erie	32.0	1,732	54	14.4	17.6	779
Grimsby	18.0	946	53	6.9	11.1	361
Lincoln	29.0	1,559	54	10.2	18.8	546
Niagara Falls*	63.0	4,092	65	31.5	31.5	2046
Niagara-on-the-lake	32.0	1,699	53	1.0	31.0	55
Pelham	23.0	1,214	53	19.2	3.8	1012
Port Colborne	14.0	780	56	14.0	0.0	780
Welland	40.0	2,146	54	20.7	19.3	1113
West Lincoln	27.0	1,433	53	6.8	20.3	358
St. Catharines	54.0	3,481	64	0.0	54.0	0
Wainfleet	8.0	438	55	-	-	-
Thorold	25.0	1,332	53	16.3	8.8	866
Niagara Region	365.0	20,852	57	140.9	216.1	8048

*Provided by Watson and Associates

	Option B					
Municipality	of Land Needed Population Related	Population Related Jobs	Gross Density	Greenfield Land	Intensification Land	Number of Pop. Related Greenfield Jobs
Fort Erie	61.0	3,304	54	27.5	33.6	1,487
Grimsby	7.0	363	52	2.7	4.3	138
Lincoln	6.0	334	56	2.1	3.9	117
Niagara Falls*	55.0	3,547	64	27.5	27.5	1,774
Niagara-on-the-lake	12.0	662	55	0.4	11.6	21
Pelham	5.0	282	56	4.2	0.8	235
Port Colborne	23.0	1,240	54	23.0	0.0	1,240
Welland	72.0	3,861	54	37.3	34.7	2,002
West Lincoln	4.0	222	56	1.0	3.0	56
St. Catharines	59.0	3,821	65	0.0	59.0	0
Wainfleet	4.0	201	50	-	-	-
Thorold	56.0	3,013	54	36.4	19.6	1,958
Niagara Region	364.0	20,850	57	162.0	198.0	9,280

	Option C					
Municipality	Needed Population Related Employment ha*	Population Related Jobs	Gross Density	Greenfield Land	Intensification Land	Number of Pop. Related Greenfield Jobs
Fort Erie	34.0	1,836	54	15.3	18.7	826
Grimsby	14.0	755	54	5.3	8.7	288
Lincoln	24.0	1,309	55	8.4	15.6	459
Niagara Falls*	69.0	4,470	65	34.5	34.5	2,235
Niagara-on-the-lake	26.0	1,402	54	0.8	25.2	45
Pelham	18.0	952	53	15.0	3.0	793
Port Colborne	19.0	1,006	53	19.0	0.0	1,006
Welland	49.0	2,617	53	25.4	23.6	1,357
West Lincoln	21.0	1,110	53	5.3	15.8	278
St. Catharines	54.0	3,488	65	0.0	54.0	0
Wainfleet	6.0	302	50	-	-	-
Thorold	30.0	1,605	54	19.5	10.5	1,043
Niagara Region	364.0	20,852	57	148.5	209.5	8,510

Step 7- Estimate the total number of population related and employment land jobs on greenfield areas

	Option A				
Municipality	Employment Land Greenfield Jobs	Population Related Greenfield Jobs	Total Number of Greenfield Jobs	Total Gross Area	Combined Jobs per hectare
Fort Erie	1026	779	1805	57.2	32
Grimsby	191	361	552	16.4	34
Lincoln	315	546	862	25.9	33
Niagara Falls*	1050	2046	3096	69.0	45
Niagara-on-the-lake	22	55	76	2.1	36
Pelham	438	1012	1449	41.0	35
Port Colborne	450	780	1230	32.8	38
Welland	700	1113	1813	49.9	36
West Lincoln	250	358	608	19.3	32
St. Catharines	0	0	0	0.0	0
Wainfleet	-	-	0	-	-
Thorold	410	866	1275	33.3	38
Niagara Region	4851	8048	12898	346.9	37

Step 7- Estimate the total number of population related and employment land jobs on greenfield areas

Option B					
Municipality	Employment Land Greenfield Jobs	Population Related Greenfield Jobs	Total Number of Greenfield Jobs	Total Gross Area	Combined Jobs per hectare
Fort Erie	1404	1,487	2891	86.0	34
Grimsby	95	138	234	7.4	31
Lincoln	105	117	222	7.4	30
Niagara Falls*	700	1,774	2474	52.5	47
Niagara-on-the-lake	9	21	30	0.8	36
Pelham	125	235	360	10.4	35
Port Colborne	870	1,240	2110	59.3	36
Welland	1384	2,002	3386	95.0	36
West Lincoln	38	56	93	2.9	32
St. Catharines	0	0	0	0.0	-
Wainfleet	-	-	0	0.0	-
Thorold	975	1,958	2933	77.0	38
Niagara Region	5705	9,280	14985	398.7	38

Step 7- Estimate the total number of population related and employment land jobs on greenfield areas

	Option C				
Municipality	Employment Land Greenfield Jobs	Population Related Greenfield Jobs	Total Number of Greenfield Jobs	Total Gross Area	Combined Jobs per hectare
Fort Erie	1040	826	1866	58.6	32
Grimsby	172	288	460	13.9	33
Lincoln	289	459	748	22.9	33
Niagara Falls*	1103	2,235	3338	73.9	45
Niagara-on-the-lake	16	45	61	1.6	37
Pelham	313	793	1106	30.6	36
Port Colborne	600	1,006	1606	44.0	37
Welland	809	1,357	2166	59.1	37
West Lincoln	225	278	503	16.5	30
St. Catharines	0	0	0	0.0	0
Wainfleet	-	-	0	-	-
Thorold	449	1,043	1492	38.2	39
Niagara Region	5014	8,510	13523	359.3	38

Step 8 - Identify Residential Unit Demand and Gross Densities

Municipality	Option A Gross Density Assumed			Option A - Unit Demand				Option B Gross Density Assumed			Option B - Demand				Option C Gross Density Assumed			Option C - Demand			
	Low	Med	High	Low	Med	High	Total	Low	Med	High	Low	Med	High	Total	Low	Med	High	Low	Med	High	Total
Fort Erie	20	46	82	3,332	489	416	4,237	20	46	82	7,370	512	266	8,148	20	46	82	3,546	507	446	4,499
Grimsby	13	30	60	1,060	905	387	2,352	20	30	60	459	322	119	900	20	30	60	859	704	312	1,875
Lincoln	15	35	100	3,101	631	142	3,874	20	35	100	661	134	30	825	20	35	100	2,601	529	119	3,249
Niagara Falls	25	50	125	7,183	2,509	490	10,182	25	50	125	4,076	3,886	886	8,848	25	50	125	7,847	2,741	536	11,124
Niagara-on-the-lake	15	30	30	2,488	1,007	742	4,237	20	30	30	1,055	364	231	1,650	20	30	30	2,070	811	618	3,499
Pelham	15	35	65	2,311	550	165	3,026	20	35	65	551	118	31	700	20	35	65	1,823	421	131	2,375
Port Colborne	20	70	100	1,158	689	90	1,937	20	70	100	2,374	648	52	3,074	20	70	100	1,515	867	118	2,500
Wendland	23	50	125	3,413	1,281	633	5,327	23	50	125	7,802	1,361	410	9,573	23	50	125	4,196	1,524	779	6,499
West Lincoln	25	40	60	2,887	333	333	3,553	25	40	60	461	48	41	550	25	40	60	2,235	251	260	2,746
St. Catharines	25	75	75	3,102	3,052	2,454	8,608	25	75	75	1,655	3,905	3,913	9,473	25	75	75	3,159	2,984	2,482	8,625
Wainfleet	20	46	82	917	110	63	1,090	20	46	82	500	0	0	500	20	46	82	633	74	43	750
Thorold	20	46	82	2,178	814	325	3,317	20	46	82	6,166	1,072	261	7,499	20	46	82	2,646	957	396	3,999
Niagara Region	-	-	-	33,130	12,370	6,240	51,740	-	-	-	33,130	12,370	6,240	51,740	-	-	-	33,130	12,370	6,240	51,740

*Density is net of any significant environmental features. Densities represent the upper limits of local official plans. Averages were used for plans which did not contain densities.

Step 9 - Identify the greenfield and intensification split and determine amount of greenfield units and area

Option A										
Municipality	Intensification Target*	Remaining Greenfield	Greenfield Units - Low	Greenfield Units - Med	Greenfield Units - High	Greenfield Units -Total	Greenfield Land - Low (ha)	Greenfield Land - Med (ha)	Greenfield Land - High(ha)	Greenfield Land - Total (ha)
Fort Erie	15%	85%	2,832	416	354	3,601	142	9	4	155
Grimsby	95%	5%	53	45	19	118	4	2	0	6
Lincoln	15%	85%	2,636	536	121	3,293	176	15	1	192
Niagara Falls	40%	60%	4,310	1,505	294	6,109	172	30	2	205
Niagara-on-the-lake	15%	85%	2,115	856	631	3,601	141	29	21	191
Pelham	15%	85%	1,964	468	140	2,572	131	13	2	146
Port Colborne	15%	85%	984	586	77	1,646	49	8	1	58
Welland	40%	60%	2,048	769	380	3,196	89	15	3	107
West Lincoln	15%	85%	2,454	283	283	3,020	98	7	5	110
St. Catharines	95%	5%	155	153	123	430	6	2	2	10
Wainfleet	15%	85%	779	94	54	927	39	2	1	42
Thorold	15%	85%	1,851	692	276	2,819	93	15	3	111
Niagara Region	-	-	22,182	6,401	2,750	31,334	1,140	148	46	1,333
						60.6%				

*Conceptual targets developed by Dillon Consulting. Targets consider a wide variety of development forms. See 40% conformity tables for more details.

Step 9 - Identify the greenfield and intensification split and determine amount of greenfield units and area

Option B										
Municipality	Intensification Target	Remaining Greenfield	Greenfield Units - Low	Greenfield Units - Med	Greenfield Units - High	Greenfield Units -Total	Greenfield Land - Low (ha)	Greenfield Land - Med (ha)	Greenfield Land - High(ha)	Greenfield Land - Total (ha)
Fort Erie	20%	80%	5,896	410	213	6,518	295	9	3	306
Grimsby	95%	5%	23	16	6	45	1	1	0	2
Lincoln	20%	80%	529	107	24	660	26	3	0	30
Niagara Falls	45%	55%	2,242	2,137	487	4,866	90	43	4	136
Niagara-on-the-lake	20%	80%	844	291	185	1,320	42	10	6	58
Pelham	20%	80%	441	94	25	560	22	3	0	25
Port Colborne	20%	80%	1,899	518	42	2,459	95	7	0	103
Welland	45%	55%	4,291	749	226	5,265	187	15	2	203
West Lincoln	20%	80%	369	38	33	440	15	1	1	16
St. Catharines	95%	5%	83	195	196	474	3	3	3	9
Wainfleet	20%	80%	400	0	0	400	20	0	0	20
Thorold	20%	80%	4,933	858	209	5,999	247	19	3	268
Niagara Region	-	-	21,949	5,414	1,644	29,007	1,043	112	21	1,176

*Conceptual targets developed by Dillon Consulting. Targets consider a wide variety of development forms. See 40% conformity tables for more details.

Step 9 - Identify the greenfield and intensification split and determine amount of greenfield units and area

Option C										
Municipality	Intensification Target	Remaining Greenfield	Greenfield Units - Low	Greenfield Units - Med	Greenfield Units - High	Greenfield Units - Total	Greenfield Land - Low (ha)	Greenfield Land - Med (ha)	Greenfield Land - High(ha)	Greenfield Land - Total (ha)
Fort Erie	15%	85%	3,014	431	379	3,824	151	9	5	165
Grimsby	95%	5%	43	35	16	94	2	1	0	4
Lincoln	15%	85%	2,211	450	101	2,762	111	13	1	124
Niagara Falls	40%	60%	4,708	1,645	322	6,674	188	33	3	224
Niagara-on-the-lake	15%	85%	1,760	689	525	2,974	88	23	18	128
Pelham	15%	85%	1,550	358	111	2,019	77	10	2	89
Port Colborne	15%	85%	1,288	737	100	2,125	64	11	1	76
Welland	15%	85%	3,567	1,295	662	5,524	155	26	5	186
West Lincoln	15%	85%	1,900	213	221	2,334	76	5	4	85
St. Catharines	95%	5%	158	149	124	431	6	2	2	10
Wainfleet	15%	85%	538	63	37	638	27	1	0	29
Thorold	15%	85%	2,249	813	337	3,399	112	18	4	134
Niagara Region	-	-	22,984	6,879	2,935	32,798	1,058	152	44	1,254

*Conceptual targets developed by Dillon Consulting. Targets consider a wide variety of development forms. See 40% conformity tables for more details.

Step 10 - Convert Units to People

Municipality	Option A - Units to People Conversion			Option B- Units to People Conversion			Option C - Units to People Conversion		
	Blended PPU	Total Number of Units	Total Number of People	Blended PPU	Total Number of Units	Total Number of People	Blended PPU	Total Number of Units	Total Number of People
Fort Erie	2.40	3,601	8,652	2.46	6,518	16,064	2.41	3,824	9,202
Grimsby	2.66	118	313	2.65	45	119	2.66	94	249
Lincoln	2.75	3,293	9,063	2.73	660	1,800	2.75	2,762	7,591
Niagara Falls	2.47	6,109	15,100	2.45	4,866	11,915	2.48	6,674	16,528
Niagara-on-the-lake	2.59	3,601	9,311	2.59	1,320	3,417	2.58	2,974	7,673
Pelham	2.69	2,572	6,907	2.64	560	1,476	2.68	2,019	5,402
Port Colborne	2.34	1,646	3,857	2.39	2,459	5,881	2.35	2,125	5,004
Welland	2.37	3,196	7,578	2.43	5,265	12,777	2.38	5,524	13,144
West Lincoln	3.01	3,020	9,101	2.97	440	1,306	3.01	2,334	7,016
St. Catharines	2.32	430	999	2.30	474	1,091	2.32	431	1,001
Wainfleet	2.72	927	2,521	2.65	400	1,059	2.71	638	1,725
Thorold	2.54	2,819	7,173	2.65	5,999	15,890	2.55	3,399	8,683
Niagara Region	-	31,334	80,574	-	29,007	72,796	-	32,798	83,219

Step 11 - Sum the number of people and jobs on greenfield lands

Municipality	Option A			Option B			Option C		
	Estimated Number of "Greenfield People"	Estimated Number of "Greenfield Jobs"	Combined People and Jobs	Estimated Number of "Greenfield People"	Estimated Number of "Greenfield Jobs"	Combined People and Jobs	Estimated Number of "Greenfield People"	Estimated Number of "Greenfield Jobs"	Combined People and Jobs
Fort Erie	8,652	1026	9,678	16,064	2891	18,955	9,202	1,866	11,068
Grimsby	313	191	503	119	234	353	249	460	709
Lincoln	9,063	315	9,379	1,800	222	2,022	7,591	748	8,339
Niagara Falls	15,100	1050	16,150	11,915	2474	14,389	16,528	3,338	19,866
Niagara-on-the-lake	9,311	22	9,333	3,417	30	3,447	7,673	61	7,734
Pelham	6,907	438	7,344	1,476	360	1,836	5,402	1,106	6,508
Port Colborne	3,857	450	4,307	5,881	2110	7,991	5,004	1,606	6,610
Welland	7,578	700	8,278	12,777	3386	16,164	13,144	2,166	15,310
West Lincoln	9,101	250	9,351	1,306	93	1,399	7,016	503	7,519
St. Catharines	999	0	999	1,091	0	1,091	1,001	0	1,001
Wainfleet	2,521	-	2,521	1,059	0	1,059	1,725	0	1,725
Thorold	7,173	410	7,583	15,890	2933	18,823	8,683	1,492	10,175
Niagara Region	80,574	4851	85,425	72,796	14985	87,782	83,219	13,523	96,743

Step 12 - Divide the combined number of people and jobs by the total greenfield area

Option A				
Municipality	Total Residential Greenfield Area	Total Employment Greenfield Area	Combined Greenfield Area	People and Jobs per Hectare
Fort Erie	155	57	212	46
Grimsby	6	16	22	23
Lincoln	192	26	218	43
Niagara Falls	205	69	274	59
Niagara-on-the-lake	191	2	193	48
Pelham	146	41	188	39
Port Colborne	58	33	91	47
Welland	107	50	157	53
West Lincoln	110	19	129	72
St. Catharines	10	0	10	101
Wainfleet	42	-	42	61
Thorold	111	33	144	53
Niagara Region	1,333	347	1,680	51

Step 12 - Divide the combined number of people and jobs by the total greenfield area

Option B				
Municipality	Total Residential Greenfield Area	Total Employment Greenfield Area	Combined Greenfield Area	People and Jobs per Hectare
Fort Erie	306	86	392	48
Grimsby	2	7	9	38
Lincoln	30	7	37	54
Niagara Falls	136	53	189	76
Niagara-on-the-lake	58	1	59	59
Pelham	25	10	36	52
Port Colborne	103	59	162	49
Welland	203	95	298	54
West Lincoln	16	3	19	73
St. Catharines	9	0	9	128
Wainfleet	20	0	20	53
Thorold	268	77	345	55
Niagara Region	1,176	399	1,575	56

Step 12 - Divide the combined number of people and jobs by the total greenfield area

Option C				
Municipality	Total Residential Greenfield Area	Total Employment Greenfield Area	Combined Greenfield Area	People and Jobs per Hectare
Fort Erie	165	59	223	50
Grimsby	4	14	18	40
Lincoln	124	23	147	57
Niagara Falls	224	74	298	67
Niagara-on-the-lake	128	2	130	59
Pelham	89	31	120	54
Port Colborne	76	44	120	55
Welland	186	59	245	62
West Lincoln	85	17	102	74
St. Catharines	10	0	10	100
Wainfleet	29	-	29	60
Thorold	134	38	172	59
Niagara Region	1,254	359	1,614	60

Percentage of Urban Area already considered as "Built Up"

Municipality	Total Designated Urban Land (ha.)	Total Area of Natural Heritage System within Designated Urban Area (ha.)	Total Built-Up Area (ha.)	Total Greenfield Area (ha.)	Percent of Natural Heritage System in Urban Area	Percent of Built Up Area	Percent of Greenfield Area
Town of Fort Erie	4,545	2,457	1,456	632	54%	32%	14%
Town of Grimsby	1,258	592	642	23	47%	51%	2%
Town of Lincoln	956	175	599	183	18%	63%	19%
City of Niagara Falls	8,233	2,523	4,396	1,314	31%	53%	16%
Town of Niagara on the Lake	1,025	451	369	205	44%	36%	20%
Town of Pelham	1,053	134	719	199	13%	68%	19%
City of Port Colborne	3,009	1,210	805	994	40%	27%	33%
City of St. Catharines	7,970	2,563	5,003	404	32%	63%	5%
City of Thorold	1,817	367	355	1,095	20%	20%	60%
City of Welland	4,808	1,353	2,883	572	28%	60%	12%
Township of Wainfleet	-	-	-	-	-	-	-
Township of West Lincoln	511	290	143	78	57%	28%	15%
Region of Niagara	35,184	12,115	17,371	5,699	34%	49%	16%

Appendix B:

Water and Wastewater Summary

Wastewater Summary Sheet

Facility	PERIOD	RESERVE CAPACITY ML/da			COST TO EXPAND (WHERE APPLICABLE)		
		OPTION A	OPTION B	OPTION C	OPTION A	OPTION B	OPTION C
Anger Avenue	5 YEARS	9.01	8.15	8.97			
	10 YEARS	7.76	5.92	7.66			
	25 YEARS	4.78	1.58	4.55			
Baker Road	5 YEARS	5.45	8.20	6.02			
	10 YEARS	2.02	7.48	3.01			
	25 YEARS	-6.08	3.44	-3.44	\$14,721,253		\$8,337,389
Crystal Beach	5 YEARS	2.93	2.56	2.92			
	10 YEARS	2.39	1.59	2.35			
	25 YEARS	1.10	-0.29	1.00		\$604,562	
Stamford	5 YEARS	12.73	13.28	12.44			
	10 YEARS	9.67	11.03	9.26			
	25 YEARS	1.19	3.69	-0.02			\$56,238
Niagara on the Lake	5 YEARS	-0.12	0.52	0.07	\$692,970		
	10 YEARS	-1.29	0.07	-0.86	\$7,154,194		\$4,774,532
	25 YEARS	-4.41	-1.91	-3.38	\$24,546,785	\$10,615,187	\$18,803,100
Port Dalhousie	5 YEARS	17.04	16.32	16.95			
	10 YEARS	15.11	13.72	14.92			
	25 YEARS	9.95	7.45	9.47			
Port Weller	5 YEARS	12.63	11.91	12.53			
	10 YEARS	10.71	9.32	10.51			
	25 YEARS	5.57	3.07	5.09			
Queenston	5 YEARS	0.21	0.21	0.21			
	10 YEARS	0.21	0.21	0.21			
	25 YEARS	0.21	0.21	0.21			
Seaway	5 YEARS	1.04	0.59	0.88			
	10 YEARS	0.43	-0.56	0.07		\$1,994,040	
	25 YEARS	-1.11	-2.88	-1.97	\$3,935,147	\$10,207,198	\$6,986,133
Stevensville	5 YEARS	1.20	1.13	1.18			
	10 YEARS	1.10	0.97	1.09			
	25 YEARS	0.89	0.66	0.87			
Welland	5 YEARS	5.42	4.50	5.30			
	10 YEARS	2.68	0.66	2.43			
	25 YEARS	-4.39	-7.79	-5.01	\$10,493,146	\$18,625,061	\$11,997,655

Water Summary Sheet

Facility	PERIOD	RESERVE CAPACITY ML/da			Unit Cost to Expand	COST TO EXPAND (WHERE APPLICABLE)		
		OPTION A	OPTION B	OPTION C		OPTION A	OPTION B	OPTION C
DECEW	5 YEARS	64.5	64.1	64.6	\$920,085			
	10 YEARS	59.1	58.5	59.3	\$920,085			
	25 YEARS	44.2	43.3	44.7	\$920,085			
ROSEHILL	5 YEARS	14.4	13.1	14.3	\$1,092,407			
	10 YEARS	12.6	9.8	12.5	\$1,092,407			
	25 YEARS	8.4	3.1	8.0	\$1,092,407			
GRIMSBY	5 YEARS	7.8	10.2	8.3	\$972,731			
	10 YEARS	4.9	9.6	5.8	\$972,731			
	25 YEARS	-1.8	6.8	0.6	\$972,731	\$1,733,760		
NIAGARA FALLS	5 YEARS	41.0	41.5	40.6	\$876,821			
	10 YEARS	37.8	39.0	37.3	\$876,821			
	25 YEARS	28.9	31.2	27.5	\$876,821			
WELLAND	5 YEARS	21.4	20.5	21.3	\$1,156,142			
	10 YEARS	18.7	16.7	18.4	\$1,156,142			
	25 YEARS	11.5	8.1	10.9	\$1,156,142			
PORT COLBORNE	5 YEARS	15.1	14.6	14.9	\$1,252,434			
	10 YEARS	14.5	13.5	14.1	\$1,252,434			
	25 YEARS	12.9	11.1	12.1	\$1,252,434			

Appendix C:

Market Demand vs. Historic Growth

TABLE 1
OPTION A: CURRENT TRENDS
ANNUAL HOUSING GROWTH, 1981-2006 VS. 2006-2031

	A	B	C (B/A)
	81-06	06-31	% Change
South Niagara	460	592	28.7%
Remaining Niagara	1,220	1,477	21.0%
Total Niagara	1,680	2,069	23.1%

Source: Watson & Associates Economists Ltd.

	A	B	C (B/A)
	96-06	06-31	% Change
Fort Erie	146	169	15.9%
Grimsby	191	94	-50.7%
Lincoln	126	155	23.3%
Niagara Falls	245	407	66.3%
NOTL	76	170	124.9%
Pelham	86	121	40.5%
Port Colborne	39	78	99.0%
St. Catharines	243	344	41.9%
Thorold	45	132	193.8%
Wainfleet	24	43	80.0%
Welland	167	213	27.9%
West Lincoln	70	142	104.6%
Niagara Region	1,456	2,069	42.1%

	A	B	C (B/A)
	81-06	06-31	% Change
Fort Erie	145	169	16.5%
Grimsby	144	94	-34.4%
Lincoln	129	155	20.2%
Niagara Falls	305	407	33.7%
NOTL	55	170	208.7%
Pelham	94	121	28.5%
Port Colborne	41	78	88.3%
St. Catharines	414	344	-16.8%
Thorold	78	132	69.5%
Wainfleet	20	43	116.0%
Welland	196	213	8.9%
West Lincoln	60	142	136.2%
Niagara Region	1,680	2,069	23.2%

Figure 1.1
Option A: Current Trends - South Niagara
Market Threshold - Housing Forecast

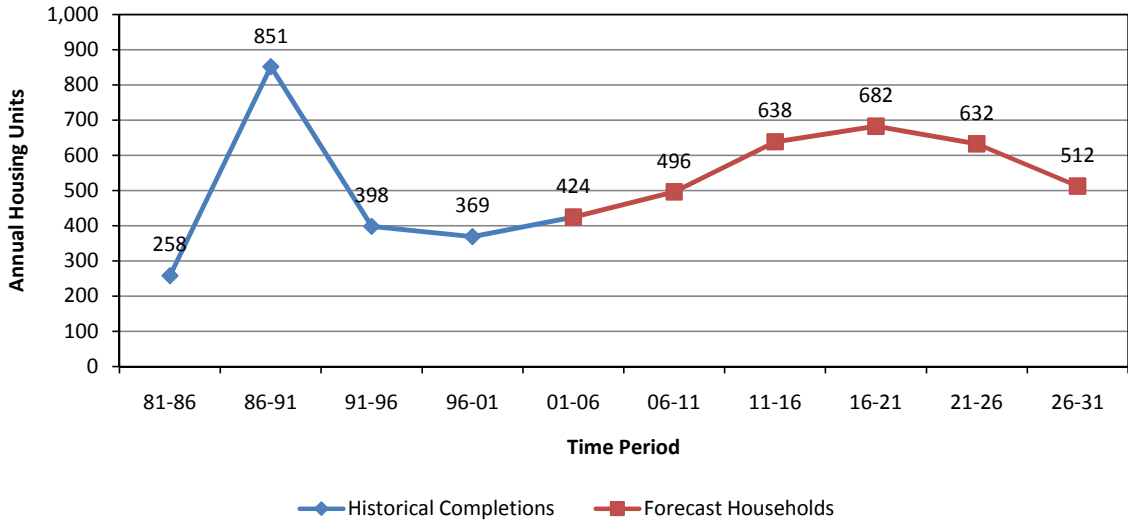


Figure 1.2
Option A: Current Trends - Remaining Niagara
Market Threshold - Housing Forecast

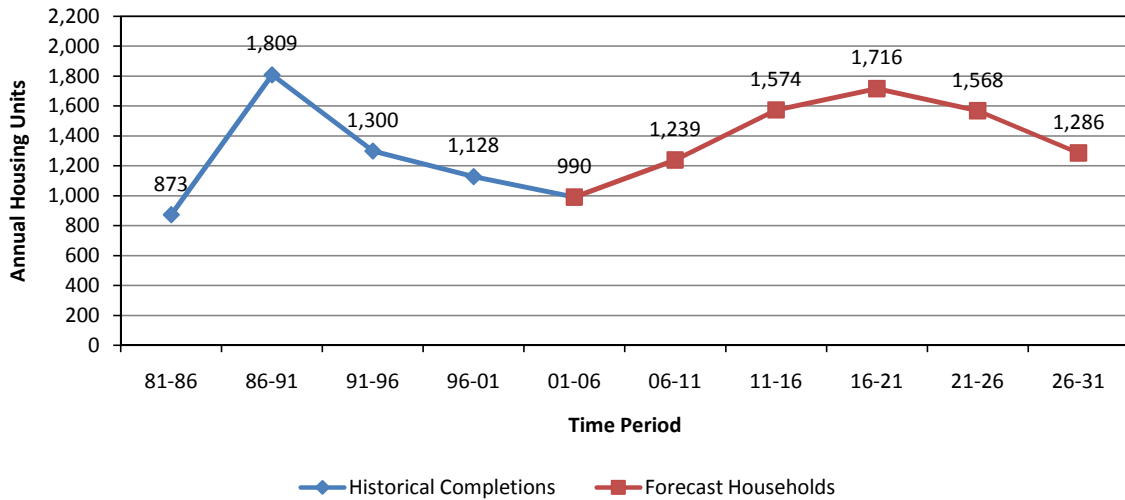


TABLE 2
OPTION B: GROW SOUTH/CITY FOCUS
ANNUAL HOUSING GROWTH, 1981-2006 VS. 2006-2031

	A	B	C (B/A)
	81-06	06-31	% Change
South Niagara	460	1,132	146.1%
Remaining Niagara	1,220	937	-23.2%
Total Niagara	1,680	2,069	23.2%

Source: Watson & Associates Economists Ltd.

	A	B	C (B/A)
	96-06	06-31	% Change
Fort Erie	146	326	123.3%
Grimsby	191	35	-81.5%
Lincoln	126	33	-73.9%
Niagara Falls	245	354	44.4%
NOTL	76	66	-12.3%
Pelham	86	28	-67.4%
Port Colborne	39	123	215.9%
St. Catharines	243	379	56.5%
Thorold	45	300	566.2%
Wainfleet	24	20	-18.3%
Welland	167	383	130.0%
West Lincoln	70	22	-68.6%
Niagara Region	1,456	2,069	42.2%

	A	B	C (B/A)
	81-06	06-31	% Change
Fort Erie	145	326	124.5%
Grimsby	144	35	-75.3%
Lincoln	129	33	-74.5%
Niagara Falls	305	354	16.2%
NOTL	55	66	20.4%
Pelham	94	28	-70.2%
Port Colborne	41	123	199.0%
St. Catharines	414	379	-8.3%
Thorold	78	300	284.4%
Wainfleet	20	20	-2.0%
Welland	196	383	95.8%
West Lincoln	60	22	-63.8%
Niagara Region	1,680	2,069	23.2%

Figure 2.1
Option B: Grow South/City Focus - South Niagara
Market Threshold - Housing Forecast

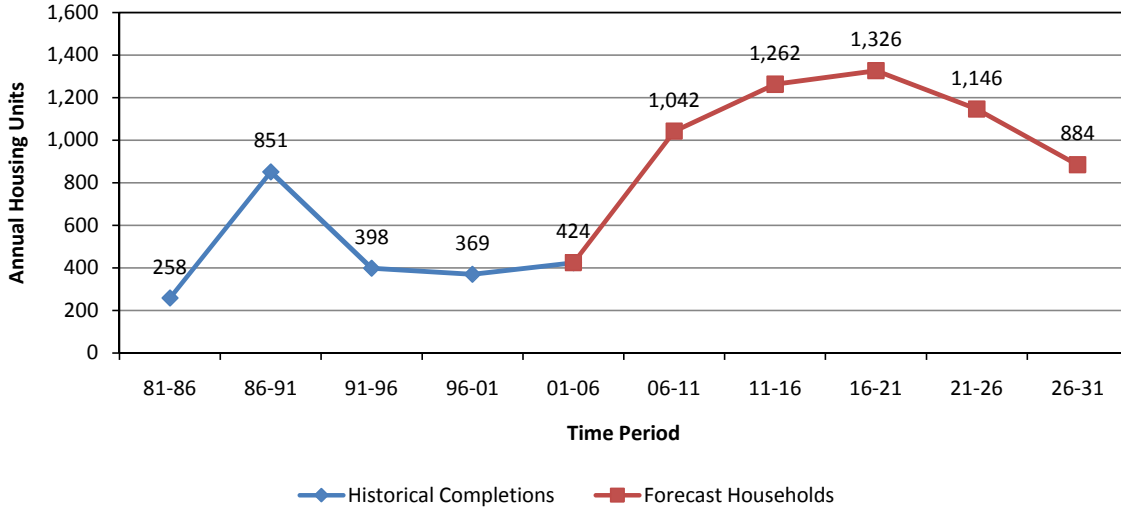


Figure 2.2
Option B: Grow South/City Focus - Remaining Niagara
Market Threshold - Housing Forecast

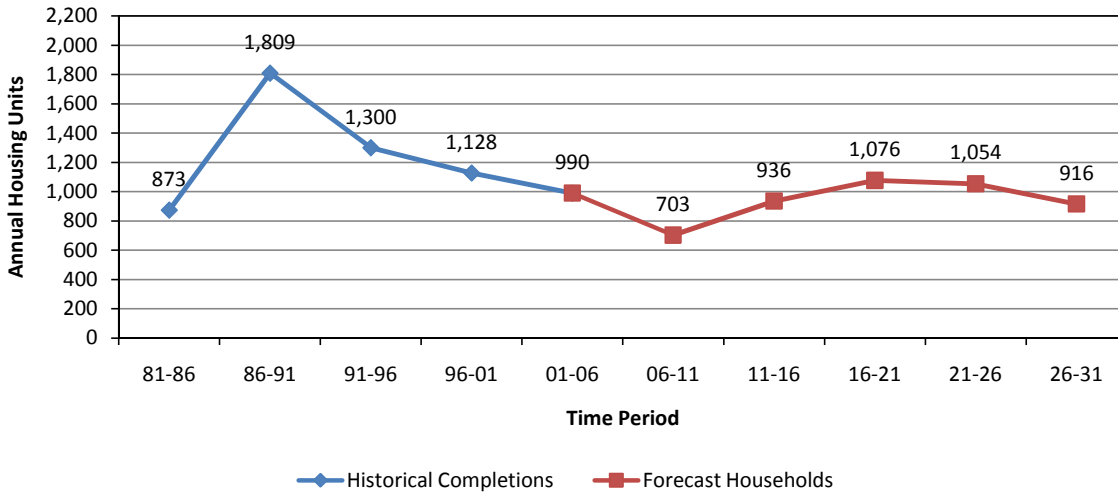


TABLE 3
OPTION C: NODAL GROWTH
ANNUAL HOUSING GROWTH, 1981-2006 VS. 2006-2031

	A	B	C (B/A)
	81-06	06-31	% Change
South Niagara	460	700	52.2%
Remaining Niagara	1,220	1,369	12.2%
Total Niagara	1,680	2,069	23.1%

Source: Watson & Associates Economists Ltd.

	A	B	C (B/A)
	96-06	06-31	% Change
Fort Erie	146	180	23.0%
Grimsby	191	75	-60.9%
Lincoln	126	130	3.6%
Niagara Falls	245	445	81.6%
NOTL	76	140	85.2%
Pelham	86	95	10.2%
Port Colborne	39	100	157.4%
St. Catharines	243	345	42.3%
Thorold	45	160	255.1%
Wainfleet	24	29	21.7%
Welland	167	260	56.3%
West Lincoln	70	110	58.6%
Niagara Region	1,456	2,069	42.1%

	A	B	C (B/A)
	81-06	06-31	% Change
Fort Erie	145	180	23.7%
Grimsby	144	75	-48.1%
Lincoln	129	130	0.9%
Niagara Falls	305	445	46.1%
NOTL	55	140	154.2%
Pelham	94	95	0.9%
Port Colborne	41	100	143.7%
St. Catharines	414	345	-16.6%
Thorold	78	160	104.9%
Wainfleet	20	29	46.0%
Welland	196	260	33.0%
West Lincoln	60	110	83.1%
Niagara Region	1,680	2,069	23.2%

Figure 3.1
Option C: Nodal Growth - South Niagara
Market Threshold - Housing Forecast

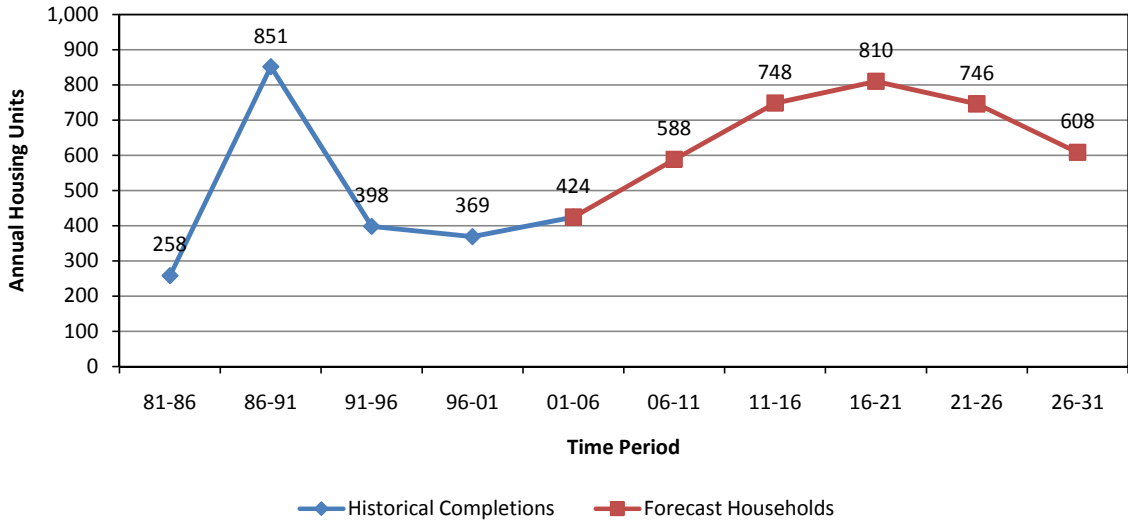


Figure 3.2
Option C: Nodal Growth - Remaining Niagara
Market Threshold - Housing Forecast

