

2

COMPARATIVE ANALYSIS OF GROWTH SCENARIOS

The Planning and Economic Development Committee recommends the following:

- 1. The presentation by Paul Bottomley, Manager, Growth Management Economy and Information Research, Long Range and Strategic Planning, and Cam Watson, Watson & Associates Economists Ltd., be received; and**
- 2. The recommendations contained in the following report dated April 8, 2008, from the Commissioner of Planning and Development Services, be adopted:**

1. RECOMMENDATIONS

It is recommended that:

1. Regional staff proceed to refine the Minimum 40% Intensification Scenario as the preferred growth scenario to be used as the basis for the Region's Growth Plan to 2031.
2. The Regional Clerk distribute this staff report to the Local Municipalities, the Ministry of Public Infrastructure Renewal (PIR) and to the Ministry of Municipal Affairs and Housing, for information purposes.

2. PURPOSE

The purpose of this report is to report on a comparative analysis of selected growth scenarios for their impacts or implications to human services, the environment, water and wastewater, transportation and 25-year fiscal and economic impacts.

This comparative analysis is intended to assist Regional Committee and Council in determining a preferred growth scenario for the Region.

Once Regional Council has chosen a preferred scenario, a more detailed evaluation of the preferred growth scenario against the five impact areas will be undertaken.

3. BACKGROUND

Analysis of impacts an important component of the Growth Management Initiative

Regional Council at its meeting of September 27, 2007, endorsed Clause 3 of Report 7 of the Regional Planning and Economic Development Committee which identified the next steps in the Region's growth management initiative. One of the key next steps involved a comparative analysis of growth scenarios considering human services, environmental, water and wastewater and transportation implications and 25-year fiscal and economic impacts.

The comparative growth management analysis work is being conducted in two phases: Phase 1 includes a comparative analysis of each of the scenarios under consideration. Phase 2 involves a more detailed assessment of a selected preferred growth scenario. The preferred growth scenario will be used as the basis for public consultation in the Fall of 2008 as outlined in a separate report on the June 11 Planning and Economic Development Committee agenda.

Four scenarios were developed

Regional staff developed four scenarios for assessment. Each scenario was based on identical amounts of total population (1.5 million) and total employment (796,000) growth for the Region by 2031. None of the examined scenarios considered the removal of lands within the Provincial Greenbelt, including the Oak Ridges Moraine Conservation Plan.

The scenarios build on the draft population and employment forecasts for each of the 9 local municipalities that was distributed in the Spring of 2007. These forecasts total 1.5 million population and 800,000 jobs by 2031.

Three scenarios (30%, 40%, 50% intensification) were prepared based on varying levels of intensification using the provincially defined built boundary. For example, in the 30% intensification scenario, 30% intensification of new growth would locate within the built boundary and 70% of new growth would locate in Greenfield areas that include both unbuilt lands within the existing urban area and additional Greenfield areas beyond the current approved urban area (i.e. Whitebelt lands). In all cases any Greenfield development would occur at minimum densities of 50 persons and jobs per hectare.

The fourth scenario (No boundary Expansion) assumed that there would be no urban expansion of the existing urban area for residential growth with all new growth locating within the remaining approved Greenfield areas and in intensification areas within the built boundary. However, the "No Boundary Expansion" scenario assumed there would be an urban area expansion to accommodate for employment growth.

The scenarios differ in terms of the residential unit mix and total additional household growth from 2006 to 2031 based on each level of intensification as identified in Table 1.

Table 1
Alternative Scenarios – Housing Unit Types

Scenario	Singles/Semis	Rows	Apartments	Total
30% Intensification	110,200	43,000	69,900	223,100
40% Intensification	99,700	43,000	88,000	230,700
50% Intensification	88,700	43,000	108,000	239,700
No Boundary Expansion	76,400	31,600	151,400	259,400

Employment growth from 2006 to 2031 was organized in four categories: major office (64,000 jobs), population based (47,000 jobs), employment area (178,000 jobs), and work at home (43,000 jobs). The scenarios have been defined such that there is no difference between them in employment growth within each category. However, there is significantly more population-related employment growth in Greenfield locations under the 30% and 40% intensification scenarios compared to the 50% intensification/No Boundary Expansion scenarios where population-related growth is largely concentrated in centres and corridors and other intensification areas within the built boundary.

The magnitude of the shift in intensification between each scenario equates to approximately 20,000 apartment units. Relative to the growth in total units (223,000 to 259,000 depending on the scenario) and to the 2006 total housing stock (275,000), this 20,000 shift of housing units within the built boundary is minor. Due to the minor quantum shift in household growth between each scenario, the human services, environmental, water and wastewater and transportation implications and the 25-year fiscal and economic impacts are also relatively minor.

In addition to the above mentioned scenarios, Regional staff identified a 2051 growth scenario, which anticipates the full build-out of the Whitebelt lands in the Region and a continuation of intensification at 40% located at available sites within Regional Centres and along Regional Corridors, in Urban Areas and in Towns and Villages. This 2051 scenario has not been examined in the analysis as part of phase 1, but will be considered as part of phase 2 in the more detailed analysis.

4. ANALYSIS AND OPTIONS

4.1 HUMAN SERVICES COST ANALYSIS

Human Services are vital to any successful community. Total human service costs (including health care and education) are very significant. Consequently, the provision of effective and efficient human services is an important consideration when designing the Region's community and urban structure.

The Centre for Policy and Program Assessment School of Public Policy and Administration, Carleton University has been engaged to analyse human services costs and implications. This in depth analysis of human services costs will be based on the selected preferred growth scenario. This analysis will be completed in the Fall of 2008 and will include an evaluation of the significant under funding of human services in York Region.

The underfunding of human services has been identified and detailed by the Region of York on a number of occasions over the last few years including the "Fair is Fair" Initiative in 2002. The level of underfunding was also detailed in the 905 United Way document entitled Growing Pains: An Urgent Message From The Strong Communities Coalition in 2006.

The population of the Region will increase significantly to 1.5 million persons by 2031 and the demographic structure will change primarily as the result of a aging in our society. These considerations and others will be examined as part of the human services analysis.

The costs and implications for human services of the forecasted growth rate and intensification levels specified in the Province's Places to Grow Plan will have to be investigated more thoroughly. This examination must consider the current underfunding of human services in York Region.

This exploration will involve the Planning and Development Services Department and the Community and Health Services Department. The study will be completed by the Centre for Policy and Program Assessment at Carleton University in the Fall of 2008.

4.2 COMPARATIVE ENVIRONMENTAL ANALYSIS

Analysis of environmental impacts was undertaken by staff of the Lake Simcoe Region Conservation Authority and Toronto and Region Conservation Authority. The results of the Lake Simcoe analysis is appended as *Attachment 2.1*, with the TRCA analysis appended as *Attachment 2.2*.

Not included in the environmental analysis, but worthy of comment is a comparative evaluation of the growth scenarios against retention of agricultural lands. In this regard,

the more intensive development scenario is better, as it conserves agricultural lands. Ensuring agriculture actually occurs on these lands is, however, an issue that must be addressed in a broader discussion of taxation and agricultural competitiveness.

Lake Simcoe and Lake Ontario Watersheds respond differently to additional growth

Whitebelt land areas occur within both the Lake Simcoe watershed (East Gwillimbury whitebelt) and the Lake Ontario watershed (Markham and Vaughan whitebelt)

The majority of anticipated development in the East Gwillimbury whitebelt is likely to occur in the East Holland River watershed. Reducing the Nitrogen (N), Phosphorous (P), and sediment loads is critical to improving the health of Lake Simcoe. Modelling for the East Gwillimbury whitebelt lands used the LSRCA Assimilative Capacity Study (ACS) model CANWET.

The Markham and Vaughan whitebelt lands are divided between three watersheds. Markham's lands are within the Rouge River and its tributaries. In Vaughan, the majority of the whitebelt lands are within the Humber River watershed with a small portion of the Don River watershed. In all of these areas, development has occurred in downstream areas and downstream flooding (water quantity) and erosion (volume and velocity) are already issues on some creek systems. None of the York Region growth scenarios anticipate development areas beyond those in current TRCA watershed modelling and even the 30% scenario (the most land extensive) assumes fewer acres developed in both the Humber and the Rouge River watersheds than does the watershed modelling.

The results of evaluations undertaken for all watersheds are discussed below.

Lake Simcoe Watershed

- Analysis of the growth scenarios in the Lake Simcoe watershed was undertaken with the Canadian ArcView Nutrient and Water Evaluation (CANWET) GIS tool to predict anticipated changes to sediment and nutrient (Nitrogen and Phosphorous) loads in runoff from changing land uses and the best management practices to mitigate expected changes in water quality.
- In general, lower Nitrogen (N) and Phosphorous (P) loads but greater sediment loads can be anticipated when lands are converted from agricultural to urban uses.
- The examined growth scenarios show a marginal decrease in N and P as a result of development and an increase in sediment loads from existing for lower intensification levels.

- In each case, best management practices for future development and remediation of existing urban and rural storm water and terrestrial and riparian systems will be required.

Phase 2 of the environmental evaluation is anticipated to:

- Provide greater details on impacts of the preferred scenario on Nutrient and sediment loading.
- Evaluate impacts of the preferred scenario on water balance and budgets and on terrestrial habitat and linkages.
- Quantify the investment required in remediation in upstream area storm water management facilities to reduce N, P and Sediment, based on a recent LSRC report on the subject entitled *Lake Simcoe Basin Storm water Management and Retrofit Opportunities 2007*.
- Evaluate the potential of target setting for N, P and Sediment reduction techniques on a catchment level.

Lake Ontario Watershed

- The Humber and the Rouge watershed plans prepared by the TRCA have included modelling which assumes a range of development scenarios all of which contain greater developable areas than do the York Region scenarios.
- Several tributaries, Berczy, Robinson and Eckhardt in the Rouge River are already exhibiting unacceptable increases in erosion from flow volumes. In the Berczy and Robinson creeks there is a potential for negative impacts on aquatic habitat. Even assuming the use of all best management practices in the future there are likely to be negative impacts from development in these subwatersheds.
- Within the Humber River watershed, Purpleville Creek and Rainbow Creek are subject to potential future development as part of the white belt area. Rainbow Creek is already exhibiting unacceptable increases in erosion from flow volumes.
- Any development scenario that slows or halts the expansion of development into Greenfield areas (greater intensification scenarios) gives scientists more time to study current impacts and devise remediation practices have long term efficiency.

Phase 2 of the environmental evaluation in the Rouge and Humber rivers will undertake water balance/budget calculations for the preferred scenario as well as assess impacts on terrestrial habitat and linkages.

Additional Best Practices and new development standards will be required

While the Lake Simcoe and Lake Ontario watersheds have a number of different sensitivities, there are a number of common best practices that will be required in all new growth scenario areas. Some of these practices may ultimately translate into conditions of development. These include development of communities in a substantially different manner than current or conventional subdivisions by:

- Building communities which embody sustainability practices and principles, such as walkability and closer live-work relationships and improved lot level water management and conservation.
- Protection, restoration and enhancement of the terrestrial natural heritage system and
- Provision of opportunities for remediation or retrofitting of downstream facilities.

In pursuit of this, specific best practices may include, among others:

- Minimum level 1 to advanced storm water management techniques for all existing and new urban runoff including aggressive on-going maintenance of facilities and remediation of existing.
- Adoption of LEED building practices including, but not limited to such elements as green roofs, rainwater harvesting and grey water re-use, infiltration trenches and use of permeable pavement.
- Stringent erosion, sedimentation and dust control during site preparation and Development.
- Maintenance, restorations and enhancement of riparian buffer areas and terrestrial natural heritage features and systems,
- Nutrient Trading as a funding/regulatory mechanism to reduce nutrient loading as part of the development process.
- Examination of alternative winter road maintenance programs to reduce sediments to surface waters, and municipal pesticide, fertilizer use bylaws to protect surface and groundwater.

4.3 TRANSPORTATION

Positive impacts as a result of Intensification

Regional staff, with some assistance from the consulting team from Marshall Macklin Monaghan Limited, analyzed each scenario for both roads and transit using York Region's strategic transportation demand model based on a number of key performance measurements derived from the Transportation Master Plan currently being updated. These key performance measurements are based on the Transportation Master Plan's sustainability principles and include modal split, transit trips per capita, vehicle kilometres travelled per capita and mean trip length for auto trips.

In order to undertake a comparative analysis, it was assumed that the capital cost programs for both roads and transit would remain consistent for each scenario.

As illustrated in *Attachment 3.2*, in general, minor positive impacts were recorded for each performance measure moving from the 30% intensification scenario to the more intensified scenarios. For example, vehicle km reduction compared to the 30% intensification scenario increased 2% in the 40% intensification scenario, 4% in the 50% intensification scenario and 8% in the “No Boundary Expansion” scenario, with estimated capital costs savings of the same proportions.

Similarly, reductions in vehicle hours travelled are anticipated compared to the 30% intensification scenario in the order of 3% for the 40% intensification scenario, 8% in the 50% intensification scenario and 16% in the “No Boundary Expansion” scenario. These differences translate into a significant amount of travel saved and corresponding reduction in greenhouse gases.

The reductions in distance and time will reduce road requirements (lane kilometres) and capital costs as indicated above and will also reduce the auto operating costs of York’s residents and businesses and provide additional non-commuting personal time to the Region’s population.

Relative to the 30% intensification scenario, small increases were recorded in YRT/VIVA transit peak period passenger kilometres to the order of 1% in the 40% intensification scenario, 2% in the 50% intensification scenario and 4% in the “No Boundary Expansion” scenario. Minor positive increases as illustrated in *Attachment 3.1*, were recorded in the modal split for each scenario as growth intensifies.

In general, the transportation analysis indicates that a more positive impact was recorded for each of the key performance measures evaluated, the more intensified a community becomes.

4.4 WATER AND WASTEWATER

Water/Wastewater costs vary little

Regional staff in infrastructure planning, in co-operation with their consultants (GENIVAR Ontario Inc. and XCG Consultants Ltd.), also analyzed the scenarios (*Attachment 4*) using their respective models considering the impact on the water supply and wastewater collection systems.

The 30%, 40% and 50% intensification scenarios all have the same capital costs for the water supply system (York Water system and Smaller Urban Systems) at \$212.75 million. The “No Boundary Expansion” would reduce those costs by \$8.5 million.

However, there may be lower water flow per capita associated with medium and high density development (one study indicates 35% less in apartments) compared to low density development which potentially translates into lower capital costs for supply.

The wastewater capital costs for the 30%, 40% and 50% intensification scenarios are almost identical. The “No Boundary Expansion” scenario is expected to be \$41.7 million less expensive than the 30% due to forgoing the need for the Northeast Vaughan collector.

There is very little change in costs for both the water supply and wastewater treatment systems because the total population and employment does not vary between the scenarios. The Region is responsible for the major trunk system and treatment facilities which do not differ for each scenario. It is quite possible that area municipal costs could differ substantially for each scenario because, in general, a less extensive local distribution system is required as the Region’s urban form becomes more compact.

4.5 FISCAL AND ECONOMIC IMPLICATIONS

Fiscal and Economic Benefits but also some Market Risks

A preliminary assessment of the fiscal and economic implications (*Attachment 5*) has been undertaken by Watson and Associates Economists Ltd. in conjunction with Regional staff from the Finance and Planning Departments.

The preliminary assessment consists of a relative fiscal and economic analysis between the four growth scenarios. The areas being considered in the preliminary analysis include:

- The market feasibility of each of the scenarios considering York Region’s apartment production outlook.
- The primary fiscal and economic differences between the scenarios:
 - Net tax-related operating impact by unit type
 - The effect of geographic location on capital costs
 - The effect of the type/amount of household growth on employment growth potential
 - The impact of the growth scenarios on the housing market with regard to undersupply of low density housing, house prices and rate of growth
- The significance of these fiscal and economic differences.
- The risks and uncertainties with each scenario.
- Conclusions that can be drawn from the evaluation.

Preliminary observations drawn from the preliminary analysis include:

- There are some fiscal and economic benefits in selecting the highest amount of intensification (i.e. “50% Intensification” and “No Boundary Expansion”), but there are also risks and uncertainties. There is a question as to whether the latter scenario and possibly the former represent a sound market basis for the Region’s Growth Plan.

- The potential fiscal benefits include small property tax benefits for the Region, both operating and capital, tax budget and user rate budget and development charge related.
- The capital infrastructure cost differences can be largely expected to translate into small variations in the Region's development charge quantum.
- The potential economic benefits include the attraction of a more diversified labour force with the potential to improve live/work and facilitate employment growth.
- The risks relate to a potential mismatch between residential unit supply and demand such that the sought after higher density growth is not achieved in accordance with the forecast. Specifically, the market feasibility of apartment production in the 50% intensification scenario and the "No Boundary" scenario is uncertain and risky in the context of the GTAH market.
- For the above reasons, the fiscal and economic evaluation favours the 30% and 40% intensification scenarios. The minimum 40% intensification scenario is a statutory requirement and is preferred as a result of the above referenced points and its potential for:
 - Better utilization of the Region's transit investment and creation of a more balanced transportation network.
 - Reduced environmental costs.
 - A higher contribution to the vibrancy and diversity of Regional centres.
 - Attraction of a more diverse labour force.

Phase 2 of the 25 year Fiscal Study will provide, an in-depth analysis of the preferred scenario including a long range capital expenditures and revenues, tax levy impacts, reserve fund and debt requirements.

4.6 PREFERRED SCENARIO NEXT STEPS

Evolving housing markets – Evolving intensification Policy

The Region's Official Plan as approved in 1994 identified 20% intensification targets as follows:

Policy 5.2.4 "To target a minimum of 20% of the Regions forecasted population increase to the centres and corridors structure of this Plan by redevelopment of under-utilized areas and areas in transition".

Between 1990 and 2003 it is estimated that 18-19% of new development was intensification. In January of 2005, as part of the Centres and Corridors Amendment 43,

the target was changed to a “minimum of 30%”. Emerging demographic shifts, changing housing preferences, economics and market trends point towards higher levels of intensification. In 2007, 41% of building permits in York Region were for apartment and town houses. In Markham Centre alone recent approvals and applications total over 14,000 housing units.

Minimum 40% Scenario is preferred

The previous sections (section 4.1 – 4.5) identify a number of fiscal, community and environmental benefits associated with a higher level of intensification. The work of Watson and Associates however, points out risks associated with the very high intensification scenarios (i.e. 50% and no boundary expansion). The GTAH housing market may not support this level of apartment production.

Housing market trends in the GTA and York Region are favouring apartment condos. Recent applications data, building permits and sales figures indicate changing housing preferences. Ongoing demographic shifts also support these alternative housing choices. Furthermore the Province’s Places to Grow Plan requires the Region to plan for a minimum of 40% intensification.

Achieving a minimum 40% intensification is possible but will be a challenge. The target has a number of benefits to the Region and supports the Centres and Corridors urban structure as well as the Region’s transit strategy.

Several local municipalities have developed intensification visions. Completion of Intensification Strategies by each local municipality will be a key step. It may be possible to achieve a higher intensification over time, this will very much depend on the market and the evolution of housing preferences. Progress will need to be monitored carefully.

Further Public Consultation and detailed analysis is required

The preferred minimum 40% intensification scenario as well as emerging policy directions will be the subject of an extensive public and stakeholder consultation in the Fall of 2008, as identified in a separate report on this agenda.

Furthermore, detailed examination of the Preferred Scenario will be completed in the Phase 2 evaluation in a number of areas: transportation, water/wastewater, human services, environment and 25 year fiscal/economic. Staff will report back on the consultation process and these evaluations in the Fall 2008.

4.7 RELATIONSHIP TO VISION 2026

Vision 2026 is York Region’s strategic plan for the future that establishes the overall vision and direction for Regional Council and the Region’s employees. Undertaking a detailed analysis of various growth scenarios from the perspective of their impacts or

implications to human services, the environment, water and wastewater, transportation and 25-year fiscal and economic impacts is an essential exercise for monitoring progress on Vision 2026's eight goal areas and for ensuring the programs and policies designed to achieve these goals are effectively implemented.

The preferred growth scenario that is selected will form the basis for many corporate strategic planning initiatives including transportation planning, sewer and water infrastructure, growth management, human services, housing needs and development charges.

5. FINANCIAL IMPLICATIONS

One of the key components in the comparison of the growth scenarios is the detailed 25 year fiscal and economic analysis. There are significant costs in transportation and water and sewer infrastructure investment and human services investment associated with the amount of growth anticipated to occur in the Region over the next 25 years. The 25 year fiscal and economic analysis is being undertaken to assess these costs. The funds required for this study are included in the 2007 and 2008 budgets for this project.

The preliminary analysis indicates some reduction in capital and on-going costs due to the higher intensification targets.

6. LOCAL MUNICIPAL IMPACT

A municipal technical advisory committee has been established under the Growth Management Public Information and Engagement Program. This group of municipal representatives has been meeting on a regular basis to discuss growth issues affecting the Region and to provide feedback on the components of the Growth Management Strategy.

York Region staff will be reviewing information on the observations and conclusions from this project with local municipal staff as part of the technical advisory committee.

7. CONCLUSION

An incremental shift of population towards more intensified development creates a marginal positive impact between each scenario. Generally, the higher intensification scenarios are more efficient; however, the market feasibility of apartment production in the 50% intensification scenario and the "No Boundary Expansion" scenario is uncertain and risky in the context of the GTAH market.

Therefore, the Minimum 40% Intensification Scenario or a variation thereof is recommended for the selected preferred growth scenario. Staff will make technical

adjustments to the preferred scenario to include recent Census data and area municipal input.

- There are a number of important benefits in selecting a modified 40% intensification scenario:
 - Is in keeping with planned regional urban structure.
 - Supports the significant investment the Region is making in transit.
 - Strengthens the Region's economy through the attraction of more diverse businesses in vibrant centres including major office employment.
 - Provides greater housing diversity and more affordable housing thereby attracting a more diverse and skilled labour force.
 - Reduces traffic congestion and promotes a more balanced transportation network, including a greater reliance on transit.
 - Successful regional centres provide an improved regional image and increased number of amenities including cultural attractions.
 - Is consistent with *Places to Grow* and Provincial legislation.

In selecting a modified version of the 40% intensification scenario, there are certain risks associated with this forecast as to whether the residential housing market will support the forecast increase in demand for apartments and row style housing. There is a possibility that the market demand for ground related housing could spike higher than the forecast which will have direct implications for the land budget as well as fiscal implications regarding the investment and timing of capital infrastructure. Careful monitoring and co-ordination of infrastructure supply in order to respond to market changes will be required.

Extensive public consultation on the preferred minimum 40% intensification scenario as well as emerging policy directions is proposed for September of 2008. Staff will report back on this consultation and further a more detailed examination of implications in the Fall of 2008.

For more information on this report, please contact Paul Bottomley, Manager of Growth Management, Economy and Information Research at Ext. 1530, or John Waller, Director, Long Range and Strategic Planning at Ext. 1526.

The Senior Management Group has reviewed this report.

(The four attachments referred to in this clause are included with this report.)