REGIONAL MUNICIPALITY OF OTTAWA-CARLETON REPORT
MUNICIPALITÉ RÉGIONALE D'OTTAWA-CARLETON RAPPORT

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DATE 16 September 1996

TO/DEST. Co-ordinators, Planning and Environment Committee and Transportation Committee

FROM/EXP. Planning and Development Approvals Commissioner
Environment and Transportation Commissioner

SUBJECT/OBJET **REGIONAL PLAN REVIEW: PROPOSED REGIONAL DEVELOPMENT STRATEGY**

DEPARTMENTAL RECOMMENDATION

That Planning and Environment Committee and Transportation Committee recommend that Council endorse the Regional Development Strategy Principles set out in Table 1 as the basis for detailed policies in the new Regional Official Plan and the Transportation and Water and Wastewater Master Plans.

EXECUTIVE SUMMARY

The Regional Development Strategy (RDS) sets the basic direction for development in Ottawa-Carleton for the next 25 years (to 2021). The proposed strategy has been developed as part of an integrated planning effort involving the Regional Official Plan Review, the Transportation Master Plan, and the Water and Wastewater Master Plans.

The RDS was developed in two phases. In Fall 1995, the Strategic Evaluation Phase concluded there were advantages to more housing inside the Greenbelt, and Council directed staff to test a range of 60,000 to 100,000 new dwelling units inside the Greenbelt during the next phase.

Results of the second phase, the Detailed Evaluation, are presented in this report. The recommendation asks Council to approve the RDS Principles in Table 1 (below) as the basis for detailed policies in the new Regional Official Plan and Master Plans.

The Detailed Phase consisted of establishing a preferred Regional Development Pattern which is used to indicate the most appropriate balance of urban growth inside and outside the Greenbelt. An accompanying evaluation of roads, water and sewer systems to service such growth was then conducted and the best alternative chosen. A strategy to "phase in" new infrastructure has also been drafted.

The pattern found most beneficial on a wide range of criteria is summarised as:
- locate 80,000 new units inside the Greenbelt over the 1991-2021 planning period (almost half of all residential growth).
- give priority outside the Greenbelt to urban areas to the West, Southwest and East, and slow development in the Southeast.
- maintain a steady share of growth in the rural area through the Rural Development Strategy now in progress.
- do not expand the currently-designated urban area.

Benefits of the recommended pattern include:
- wide choice of housing locations and types of housing
- more use of transit, and more cycling and walking trips
- strong economic development opportunities
- better balance of jobs and housing
- support for Central Area and suburban Town Centres
- cost-effective use of infrastructure and servicing funds

A draft of the report was issued for comment to area municipalities, major community groups, landowners and other interested parties in early June. To date about 60 responses have been received. Major issues identified from responses and discussed in the report are:

- Choice - is there enough choice in areas and housing type provided for in the Strategy?
- Residential Potential Inside the Greenbelt - is there sufficient capacity for the 80,000 units the Strategy aims for in existing urban areas inside the Greenbelt?
- Costs and Phasing - how were costs estimated and how was the proposed phasing arrived at? Particular questions were raised regarding Leitrim and the Nepean South Urban Centre (SUC).
- Economic Development - does the strategy make sufficient provision for this?
- Requests for Expansion of the Urban Area - so far, six requests have been received, all in the Kanata/Stittsville area.
- Transit Emphasis - the strategy emphasizes use of transit, walking and cycling rather than private vehicles. Are these goals achievable?
- Lower Level of Service for Roads - strategy proposes level “E” (90% use of capacity) rather than level “D” in the 1988 Plan.
- Rural Issues - the Regional Development Strategy does not discuss rural issues. Comments sought more detail on rural issues.

Many more detailed issues were raised by the comments, and will be considered when preparing policies for the new draft Official Plan to be released for comment in January 1997. It is expected that the new Plan will go to Council for adoption in June 1997.

TABLE 1
Regional Development Strategy Principles

These principles should be interpreted in balance with each other and in an integrated manner which considers relevant economic, social and environmental factors.

Land Use and Development

1. **Recognising that significant investment has already been made in sewer, water and transportation systems in Ottawa-Carleton, plan land use to take advantage of capacities in existing systems;**

2. **Encourage denser, more compact development on lands designated for urban purposes and do not increase the size of the currently-designated urban area;**

3. **Gradually increase the proportion of new dwelling units built inside the Greenbelt, recognising long term demographic trends and the need to provide for more efficient urban development;**

4. **Recognise the federal Greenbelt as publicly owned land which structures the area into a main urban centre and three major suburban centres;**

5. **Facilitate a choice of housing types both inside and outside the Greenbelt over the planning period to 2021;**

6. **Maintain and enhance the Central Area as the region's focus for economic, cultural and political activities;**

7. **Strengthen selected transitway stations, including the town centres outside the Greenbelt, as locations of employment in combination with retail, service, entertainment and residential uses;**

8. **Maintain opportunities for a long term balance of 1.1 jobs per household in each urban area outside of the Central Area;**

9. **Improve the balance of jobs and housing by encouraging new housing in areas outside the Greenbelt with high employment growth and by supporting new housing inside the Greenbelt, particularly in the Central and Inner Areas of Ottawa-Carleton;**

10. **Clearly state in the Plan that the designation of land as "Urban Area" does not obligate Council to provide infrastructure within the time frame of the Plan and that the order of sequence for development of land within the Urban Area is within the discretion of Council, subject to phasing policies in the Plan;**

11. Support a high quality of greenspace and natural environment to bolster the economic, social and environmental health of the Ottawa-Carleton region;

12. Preserve the integrity of natural systems by directing land use development in a way that maintains ecosystem values over time;

13. Encourage a mix of land uses and community design in new and redeveloping areas which reduces the need to travel and facilitates the use of walking, cycling and transit;

Economic Development

1. Recognise job creation and associated industrial and business development as a primary objective of the Regional Official Plan;

2. Facilitate economic development by ensuring that servicing is responsive to areas of employment demand and that servicing priorities reflect the expansion of demand in areas associated with emerging technological and business hubs;

3. Recognising that the cost of municipal services affects economic development competitiveness, regularly compare the cost of the Region's municipal services with those of comparable metropolitan areas;

4. In order to minimise costs, encourage alternative development standards, and consider pilot projects for new technologies;

Water and Wastewater

1. Implement a comprehensive strategy to reduce, over time, the significant effect of wet weather flows on the capacity of the wastewater system;

2. Adopt a system-wide approach to combined sewer overflows (CSO) control;

3. Ensure that the existing reliable high quality water system is maintained or enhanced in the future;

4. Focus on a water efficiency strategy which is based on the wise use of water and which concentrates on reducing peak day demand;

5. Make decisions on pipe-sizing in the context of requirements for the 2021 planning period, considering the following: The build-out potential of designated urban land not required in the planning period; downstream capacity constraints; operation and maintenance concerns, and; long term land use and transportation implications;

6. **Maintain approximately a five-year supply of vacant urban residential land on a region-wide basis provided with trunk sewer and water services. The supply should be distributed to favour more cost-effective areas and to slow development in more costly areas;**

7. **Reserve sufficient sewer and water servicing capacity to vacant employment lands to allow for at least 1,000 jobs in lower density employment areas and at least 1,000 jobs at higher densities in each major suburban centre and at selected locations inside the Greenbelt;**

<u>Transportation</u>

1. **Implement a transit, walking, cycling first policy in order to provide a balanced transportation system, which accommodates all users and minimises environmental and social impacts;**

2. **Take action to increase the transit share of trips in peak periods from 15% to 20% by extending the Transitway when required, and by giving transit priority on the arterial road system, e.g. signal priority, queue-jumping, and bus and/or HOV lanes. Target the following markets for increased ridership:**

   a) Work trips to/from Central Area - retain or increase transit peak period market share;
   b) Work trips to/from employment centres at transitway stations;
   c) Trips to/from colleges and universities by improving services;
   d) Work trips to/from extensive employment areas by making service available with only one transfer;
   e) Rural-origin trips by increasing the provision of park and ride lots;
   f) Inter-provincial trips by, for example, introducing transit-priority measures on some bridges;

3. **Retain options for rail transit in east-west (CNR) and north-south (CPR) corridors;**

4. **Approve new transit share guidelines listed in Table 4 of this report;**

5. **Minimise demand for new regional roads by increasing the person-carrying capacity of existing facilities:**
   - **a) Implement a reduced level of service in planning and provision of roads - from "D" to "E" (utilisation of 0.9 of capacity);**
   - **b) Implement the walking/cycling/transit first policy outlined above;**

6. **Increase trip making by walking and cycling. Implement initiatives to achieve, at a minimum, a peak period walk trip mode share of 10% and a cycle mode share of 3%;**

7. Assume a trip demand reduction of 7% in peak period work trips due to growth in telecommuting and home-based business;

8. Achieve a 5% capacity increase through traffic signal timing optimisation and other system management measures;

Financial

1. Priorise servicing of areas based on minimising all costs (capital, operating and maintenance) of piped and transportation services required for growth;

2. Encourage residential growth in areas which are most cost-effective to service, and discourage growth in more costly areas.

1.0 PURPOSE OF THE REPORT

This report describes the principles of the Regional Development Strategy (RDS) prepared as part of the Official Plan Review and the Transportation, Water and Wastewater Master Plans and the process by which these principles were developed.

The RDS comprises a preferred pattern of settlement within Ottawa-Carleton, an affordable strategy for infrastructure to service this growth, and a phasing plan to 2021. The RDS principles recommended in this report will provide the basis for the preparation of detailed policies in the draft Official Plan and the Master Plans to be released in early 1997. Four technical background reports on land use, water, wastewater and transportation provide additional information about the detailed assessment underpinning the proposed Regional Development Strategy.

2.0 BACKGROUND

2.1 Why Review the Official Plan?

The Regional Official Plan is Council's blueprint for the long term development of Ottawa-Carleton. It was last updated in the mid 1980s, based on a planning horizon up to the year 2011. Since then a number of important changes have occurred, including:

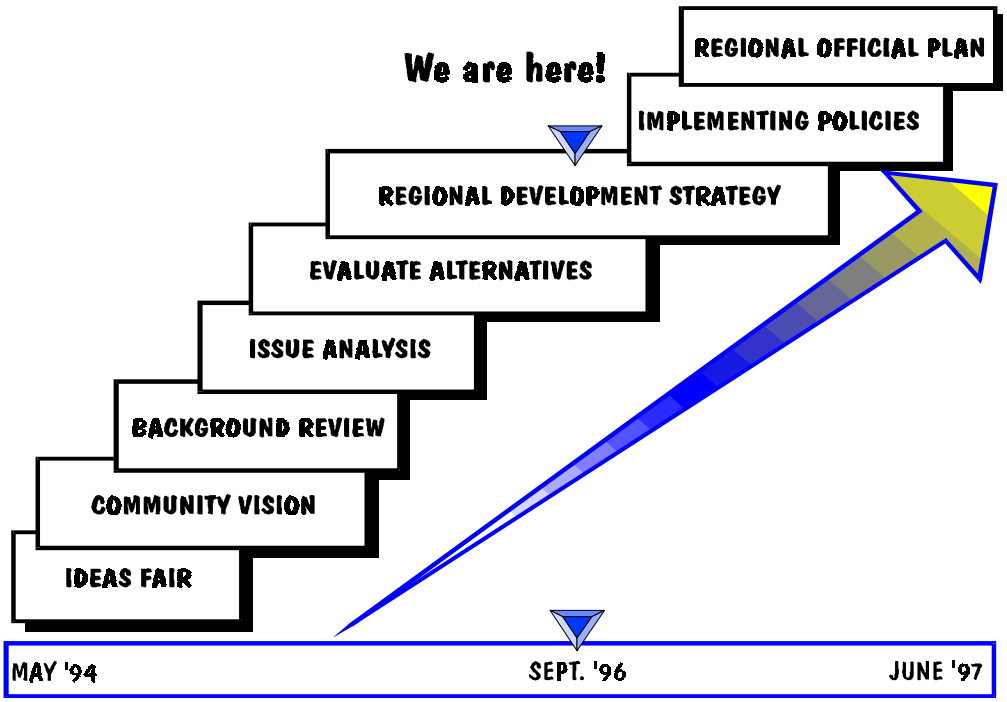
- changes in the economic outlook of the region, with less dependence on the federal government and more emphasis on high-technology and tourism as the engines of economic prosperity;
- changes in the provincial fiscal and policy environment;
- changes in our demographic situation, particularly the long term effects of aging of the post-war babyboom which will be pronounced in the decade after 2011.

The time has come to start planning for the next quarter-century, up to the year 2021.

2.2 Process

The Official Plan Review process is summarised in Figure 1. Release of the draft Regional Development Strategy is the culmination of several stages of consultation and analysis and is a major step leading to the new Regional Official Plan to be released as a draft for discussion in January 1997.

Figure 1
Where We Are in the Official Plan Review



The Regional Development Strategy process involved two major phases. First, the Strategic Phase evaluated the implications of alternative growth scenarios across the region. A Framework and evaluation criteria for screening the scenarios were developed from four sources: 1) the Community Vision; 2) the Comprehensive Policy Statements of the *Planning Act*; 3) *From Principles to Practice* (RMOC document developed through consultation for Phase 1 of the environmental review); and, 4) three community workshops held in July 1995 to seek input on the scenarios and criteria. The Framework and criteria were approved by Regional Council in September 1995.

Five key principles underpin the Framework:

1. Adopt an ecosystem approach to planning, within which the other principles will be applied, by:
   - focusing on process and interactions
   - maintaining options for the future

- recognising there are limits to stress
- adapting to change over time

2. Contribute to the health and well-being of Ottawa-Carleton residents through planning;
3. Protect ecological features and functions which support all life;
4. Pursue an effective, comprehensive and affordable strategy to manage change;
5. Implement the plan and undertake planning in a way that is open and yields fair and timely decisions.

Results of the Strategic Phase evaluation were summarised in the report *How Should We Grow?*, issued in October 1995, and detailed in a series of technical background reports. Generally, the Strategic Phase concluded that there were a number of advantages to encouraging more growth inside the Greenbelt relative to growth in suburban areas outside the Greenbelt.

The second step is the Detailed Evaluation Phase. This was initiated on 28 February 1996, when Regional Council approved a set of Guidelines (listed in Annex A) for testing distributions of population and jobs and the infrastructure required to serve these alternatives.

3.0 DETAILED EVALUATION PHASE

3.1 How It Was Done

The detailed phase has three distinct components: 1) establishing a preferred Regional Development Pattern (how much development where); 2) determining the infrastructure required to service the preferred pattern; and 3) a plan for phasing development and the associated infrastructure that is affordable to the Region. The results of the three components together form the basis for the new Regional Development Strategy.

The main purpose of the Regional Development Pattern component of the detailed phase is to recommend a preferred alternative that provides the most appropriate balance between development on urban land inside the Greenbelt and outside the Greenbelt. As established in the Guidelines, the balance was sought by testing levels of development inside the Greenbelt in a range that varied from a low assumption of 60,000 new dwelling units during the 1991-2021 period to a high of 100,000 units.

Alternatives were evaluated according to infrastructure requirements and a range of other criteria developed last year based on the Community Vision and the results of public workshops. Evaluation criteria were grouped under the headings of “Natural Environment”, “Caring and Healthy Communities” and “Economy”. Details of the evaluations are discussed in the technical background reports.

3.2 Preferred Regional Development Pattern

The detailed analysis supports a moderate level of development inside the Greenbelt of approximately 80,000 additional dwelling units above the number in the 1991 Census. Overall, the moderate alternative provides the best balance at meeting all of the evaluation criteria. This development pattern allows for slightly more than half of all new units in the region to occur in urban areas outside the Greenbelt and in the rural area during the 1991-2021 period. The preferred pattern puts approximately 25,000 additional units inside the Greenbelt over the thirty year period compared with what could be expected if the current Official Plan continued to apply. The preferred pattern is described by area in Table 2 (dwelling units) and in Table 3 (population). Areas referred to in the tables are shown on Figure 2.

Table 2
Preferred Regional Development Pattern:
Dwelling Unit Distribution in 2021

	1991 Dwelling Units	2021 Dwelling Units	Increase 1991-2021
Inside Greenbelt	197,000	277,000	80,000
Orleans EUC	20,800	38,000	17,200
Gloucester SUC	0	8,000	8,000
Nepean SUC	6,600	27,000	20,400
Kanata WUC	11,000	32,000	21,000
Stittsville	2,800	8,000	5,200
Leitrim	0	2,500	2,500
Rural	22,000	39,000	17,000
Total RMOC	260,000	431,000	171,000
Sub-totals:			
Inside Greenbelt	197,000	277,000	80,000
Urban Outside GB	41,200	115,500	74,300
Rural	22,000	39,000	17,000

Note: dwelling units refer to occupied units only; totals may not add due to rounding.

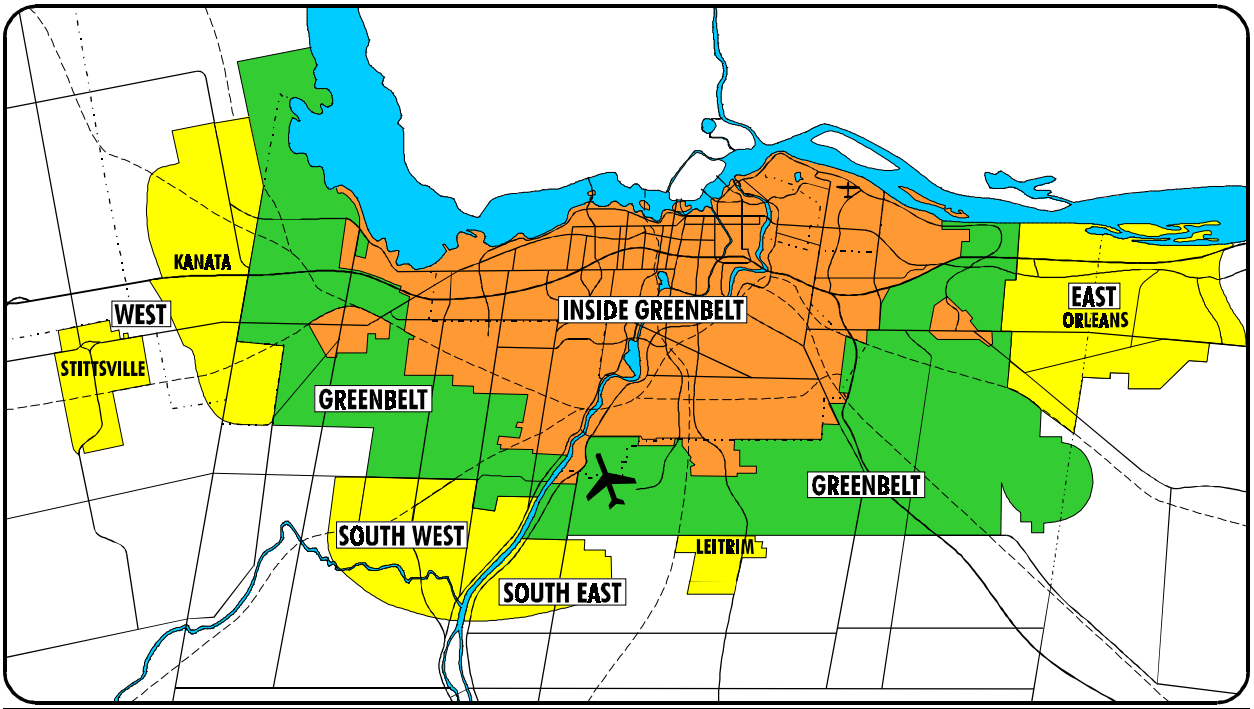
Table 3 is an alternative view of Table 2, showing population rather than dwelling units.

Table 3
Preferred Regional Development Pattern:
Population Distribution at 2021

	1991 Population	2021 Population	Increase 1991-2021
Inside Greenbelt	476,200	575,000	98,800
Orleans EUC	69,200	115,000	45,800
Gloucester SUC	0	23,000	23,000
Nepean SUC	21,200	77,000	55,800
Kanata WUC	35,400	90,000	54,600
Stittsville	8,400	22,000	13,600
Leitrim	0	7,300	7,300
Rural	67,800	105,000	37,200
Total RMOC	678,200	1,014,000	335,800
Sub-totals:			
Inside Greenbelt	476,200	575,000	98,800
Urban Outside GB	134,200	334,000	200,000
Rural	67,800	105,000	37,200

Note: totals may not add due to rounding.

Figure 2
Urban Areas in Ottawa-Carleton



Arriving at a preferred development pattern involves a number of judgements between the benefits and disadvantages of more compact development inside the Greenbelt. As noted in the conclusions of the strategic phase analysis, there is probably a threshold level for growth inside the Greenbelt, beyond which the disadvantages start to outweigh the advantages. The infrastructure benefits of more compact development have to be weighed against other planning and land use considerations, as discussed in the following sections. The preferred pattern strikes a balance across the range of criteria. More detailed analysis can be found in the background reports.

Planning and Land Use

From the planning perspective, the moderate alternative best supports the goals of the Community Vision for a healthy environment, caring communities, and strong economic opportunities.

In terms of key planning criteria, the moderate alternative maintains the ratio of greenspace to population at reasonable levels throughout the urban area. Additional units would not require that existing greenspace be developed, and the amount of formal parkland would actually be added to by more residential development inside the Greenbelt. The moderate alternative also supports more efficient use of existing community facilities such as schools. Some expansion of recreation facilities will likely be required both inside and outside the Greenbelt, but less so than would placing more housing outside of the Greenbelt. In addition, the moderate alternative provides the best balance of housing choices by type in both inner and suburban areas. A healthy downtown and strong support for town centres outside the Greenbelt is also provided with a balanced alternative.

Water and Wastewater

From the perspective of the Water and Wastewater Master Plan, two conclusions are clear. First, there are advantages to both the water and wastewater system in locating more development inside the Greenbelt. More compact development requires a less extended system and makes effective use of existing capacity. Pipe capacity inside the Greenbelt is available. Upgrades required to service the proposed development are cost effective. Improvements to serve projected development inside the Greenbelt also allows the Region an opportunity to address existing capacity problems. The incorporation of the central storage tunnel is the key component for a system-wide approach to the control of combined sewer overflows. The approach is based on work underway jointly between the Region and the City of Ottawa.

Secondly, the cost of extending additional sewer and water services to areas outside the Greenbelt was relatively similar on a per unit basis for the east, southwest and west. Costs per unit were highest in the southeast (Leitrim and the Gloucester South Urban Centre). Discussion of costs is in Section 3.5 of the report.

Transportation

From a Transportation Master Plan perspective it was concluded there was an overall preference for the high inside the Greenbelt alternative. This reduces road capacity needs, primarily in the suburbs, but transit costs increase due to higher transit ridership inside the Greenbelt. Since travel by transit is more efficient than automobile usage from a total community cost perspective and is in keeping with the Transportation Vision and Principles adopted by Council, more housing inside the Greenbelt is recommended. Development inside the Greenbelt is also more supportive of walking and cycling trips.

Stormwater

Stormwater issues were not evaluated as part of the detailed analysis. Stormwater is currently under the jurisdiction of the area municipalities, using surface water quality guidelines set by the province. Infrastructure to support stormwater varies across the region due to geography and the receiving water body that it impacts. For instance, in the Rideau River Watershed effluent water quality requirements are higher than in the Ottawa River Watershed. In addition, the management of stormwater is changing such that there will be more emphasis on source control. As such, stormwater was not considered as one of the factors in deciding an appropriate pattern of regional development.

The review of the Regional Official Plan, however, will include new policies related to stormwater which recognises the need for a consistent approach to regional stormwater issues using a watershed planning approach.

3.3 Infrastructure Requirements

The second step of the Detailed Evaluation Phase is the development, evaluation and choice of infrastructure alternatives to serve the preferred Regional Development Pattern. This work, when completed, will feed into the individual Master Plans. When these plans are completed at the end of 1996, a list of projects will be filed for public review as having met at least early phases of provincial Environmental Assessment (EA) Act requirements.

Infrastructure required to serve the preferred Regional Development Pattern is summarised below. Detailed information is provided in the technical background reports.

Water

The basis for all water system alternatives were the objectives approved by Council. Meeting or ensuring we are better than the current high water quality standards and providing a sufficient quantity of drinking water were key components of these objectives.

A number of servicing alternatives were considered for the water system to support the Regional Development Pattern. These included different combinations of storage, pumping and transmission mains in various parts of the service area. Several water efficiency strategies were also considered.

A water efficiency programme targeted to reduce outdoor water use in the region is recommended. This program should begin as soon as possible and should educate the public and businesses on the benefits of using water wisely. The resulting peak day demands should be monitored closely to verify that the projected decreases are indeed occurring.

Wastewater

Inside the Greenbelt, development is largely serviced by sewer systems designed 40 to 100 years ago that are now at capacity. There is, however, available capacity in major collectors to the south inside the Greenbelt. Diverting flows from the outer limits of the older areas to these major collectors frees up room in the core systems for new development. In this way, capacity for new growth inside the Greenbelt is achieved by effectively utilising existing capacity in two systems rather than being constrained to the old sewer systems alone.

The old core system was modified in the 1950s to intercept all sanitary flows during dry weather and the majority of wet weather flows. The intercepted flows were redirected to the treatment plant. Prior to construction of the interceptor, all sanitary flows (and all storm flows during wet weather) went untreated into the rivers. However, the interceptor sewer was not designed to capture all flows. During severe wet weather, excess flows (combined sanitary and stormwater flows) still overflow to the rivers untreated (as “combined sewer overflows”, or CSOs). Ways to reduce overflows include replacing the entire combined sewer system, an expensive option, or capturing and storing peak flows until capacity is available in the interceptor sewer system to convey them to the treatment plant. As an alternative the City of Ottawa’s sewer renewal program, a central storage option has been proposed. By adding additional capacity to this tunnel a system-wide approach to reducing CSOs can be cost-effectively achieved. This additional capacity will be included in the Wastewater Master Plan. The captured flows will be conveyed to the Pickard Centre for treatment during off peak hours.

In urban areas outside the Greenbelt, the sewer system is completely separated (i.e. separate sanitary and stormwater systems) except for a small area in Stittsville. However, even these relatively new systems experience leaks (extraneous flow) into the sanitary system under severe wet weather conditions. This leakage dominates the sanitary flow and limits the effective capacity of major collectors under severe conditions.

A sewer management program is being implemented to address wet weather flow problems in both the old and new wastewater systems. This is crucial to the wastewater component of the Master Plan.

Transportation Requirements

A series of assumed changes, which in accordance with Council's Transportation Vision focused on reducing peak period travel by private vehicles, were adopted as the basis for determining the Regional infrastructure to serve the development pattern. These were:

- Achieve a reduction in p.m. peak hour travel demand, through a 7% reduction in work trips due to increases in home-based work and telework;
- Increase transit share of peak hour travel;
- Increase walking and cycling share of peak hour travel;
- Achieve a 5% capacity increase for existing facilities through traffic signal timing optimisation and other system management measures;
- Assume a reduced quality of service for vehicular travel on Regional arterials; and
- Where necessary, identify modifications/additions to the road and transit networks.

The overall transportation strategy places an emphasis on **transit, walking, cycling, first**. This is consistent with the Transportation Vision and Principles approved by Council. For transit, a number of key markets have been identified and individual strategies developed to increase transit ridership in each target market. To provide an attractive and reliable transit service at minimum cost, transit priority measures will be implemented on the arterial road system, in addition to the continued implementation of rapid transit. Walking and cycling will be supported by more compact development, a mix of land uses and sensitive community design.

The peak hour transit share guidelines in the 1988 Plan have been re-evaluated based on experience since the last OP Review and on consumer research on levels of auto and transit "captivity", i.e. how many people drive their cars or take transit because they have no choice versus those who have options ("choice" riders). It was found that about half of all auto drivers and passengers and half of all transit passengers are choice riders. New transit share guidelines are based on attracting about one of every six work and school-related auto choice trips to transit.

The new 2021 transit modal shares by screenline are compared to the guidelines in the existing plan in Table 4. In most cases the 2021 transit shares are lower, but the difference is exaggerated by the fact that the 1988 Plan guidelines were based only on auto and transit trips, while the 2021 guidelines are for the transit share of total trips including walking and cycling trips.

Table 4
1988 Official Plan Transit Split Guidelines and
Recommended 2021 Transit Share Guidelines

Screenline (see Figure 3)	1988 Plan Transit Split Guidelines for 2011	Recommended 2021 Transit Share Guidelines
Eagleson Road	35%	25%
CNR West	30%	25%
CNR East	30%	25%
Green's Creek	40%	30%
Rideau River Central	45%	40%
Rideau River North	25%	25%
CPR Line	45%	30%
Rideau R. South/ Manotick	20%	15%
Leitrim	25%	15%
Fallowfield	30%	20%
Inter-Provincial	30%	30%

These new transit share guidelines are based on the direction from the Strategic Phase to determine new transit share targets "which are as high as is practical and affordable."

The strategy also calls for increasing walking and cycling trips. For the first time the Official Plan will contain target mode shares for walking and cycling. The recommended target mode shares, utilised in the analysis of transportation requirements, are shown in Table 5 below, with the 1995 shares from the Origin-Destination (O-D) Survey shown for comparison purposes.

Note that the transit share in this table is an overall guideline for total trips in the p.m. peak hour, and is consistent with attainment of the screenline specific guidelines in Table 4. Similarly the walk and cycle shares are overall averages. These shares vary by location and are higher inside the Greenbelt than in the urban centres and higher still in the Central Area. For example, walk shares are highest in the Central Area at 23% and then decline to 10% inside the Greenbelt, 6% in the urban centres, and 2% in the rural area.

Table 5
Peak Hour Mode Share of Travel

Mode	1995 Mode Share (O-D Survey results)	Recommended 2021 Mode Share
Walk	9.6%	10%
Cycle	1.7%	3%
Transit	15.2%	20%
Auto	73.5%	67%

It is proposed that the quality of service standard on regional roads be reduced from that utilised in previous analyses of transportation requirements, a key difference. Previously the planning of

roadways in Ottawa-Carleton has been based on providing service levels at a Demand to Capacity (D/C) ratio of 0.8 (a combination of a 0.9 demand to capacity ratio and a 0.9 screenline distribution factor). The present planning exercise is using a D/C ratio of 0.9, which is consistent with the operational design standard for traffic signals in the region. The change in service standard is consistent with the principle of effective utilisation of existing capacity and results in a reduction in roadway requirements.

Quality of service standards are also assumed to vary by location. In the past, a D/C ratio of 0.9 was considered acceptable for the Central Area (versus a standard of 0.8 elsewhere). It is proposed that a differential standard now be applied to the Inner Area (defined by the Ottawa River, the Rideau River and the CPR line) and be 1.0 (versus a standard of 0.9 elsewhere). The difference in standard for the Inner Area is based both on a generally higher tolerance for peak period congestion in and next to the Central Area and on the high social, environmental and economic costs of additions to road capacity in this densely developed area.
The net result of the assumptions on trip reductions due to telework and home-based business, increased capacity from system management measures, and changes in mode share guidelines and quality of service standards is a reduction of almost two-thirds in roadway capital requirements compared to the 1988 Plan, despite the addition of 10 years to the planning horizon and 143,000 persons to the population forecast. The Vanier Parkway Extension, the Champagne Arterial, the Queensway Collector Lanes, and the Ottawa River Parkway (East) are some of the proposed roads which would no longer be required in the planning period if the assumptions on development pattern and key future transportation parameters come to fruition.

3.4 Phasing of Development

The third and final step of the Detailed Evaluation Phase is the development of a phasing plan for infrastructure and development to serve the preferred Regional Development Pattern.

A preliminary phasing plan is described in the following pages. At this point the phasing should only be considered as a general concept. A more refined and detailed phasing plan will be recommended in the draft Regional Official Plan and master plans.

Phasing policies in Part 10 of the 1988 Plan set out Council's sequence for extending sewer and water infrastructure to specific areas outside the Greenbelt. The 1988 Plan does not contain phasing policies relating to transportation infrastructure. With the completion of sewer and water services under the Rideau River to the Gloucester South Urban Centre, all phasing requirements in the 1988 Plan have been satisfied, and a new series of priorities needs to be established.

The proposed phasing is most important and relevant over the next five and ten years, but takes account of longer-term implications. In the coming decade, the Region's capital budget forecast is severely constrained by provincial funding reductions, the transportation capital and operating budgets being most severely affected. If we borrow more to undertake a larger capital program, taxes will go up to pay interest costs, which conflicts with the desire to keep taxes level or reduce

them. During the next 5-10 years, the demographic structure of Ottawa-Carleton will also support continuing demand for lower and medium density units in suburban growth areas, although at lesser rates of development than experienced in the 1980s. Thus it will be important to spend limited funds wisely.

Significant increases in the demand for higher-density units, which include a range of housing types from townhouses to low-rise and taller apartments (see Annex C), and can therefore more readily be accommodated inside the Greenbelt, are not anticipated until after 2006, although some increase is evident already. In another decade, the Region will likely have again reviewed its development strategy, future growth prospects, demand for housing, services, financing and other factors. Given the anticipated demographic changes and related shifts in the housing market, the Region should watch the situation carefully and not over-commit the servicing of suburban land even if it is designated "urban" in the official plan. There are opportunities to adjust the RDS to suit circumstances as they evolve, but careful monitoring will be critical.
The recommended phasing seeks to minimise the need for new servicing expenditures while recognising that trade-offs are required to provide for consumer choice, a competitive housing and land market, and economic development opportunities.

Preliminary phasing is based on servicing thresholds discussed in the results of the detailed analysis and planning objectives including support of economic development and provision of a range of choice in housing locations.

The phasing analysis reviews three stages of development, described as Existing Capacity, Phase 1, and Phase 2. In all cases, capacity is measured according to the infrastructure type which would experience constraints first (i.e. if an area has enough water and transportation capacity for 10 years, but sewer capacity for only five years, the effective capacity is five years).

Existing Capacity represents the amount of development that can be supported by the transportation and major water/wastewater infrastructure which is now in place or under construction. Existing capacities do not take into account internal pipe servicing requirements except for major trunks. Also capacity availability is very dependent on the location within a given area, meaning that not all lands within a specific area have services available. Generally, existing capacity is sufficient to meet projected demand for between 5 and 10 years in each area, except the Gloucester SUC. If further development is to occur after this point, one or more major services (sewer, water, or transportation) must be upgraded to provide acceptable levels of service.

In Table 6 the column entitled "Existing Capacity" reports total built housing units plus potential units for which there is capacity in services built or under construction (trunk sewer and water facilities and transportation) as of 1996. As elsewhere in the report, capacity is reported according to the service which is in shortest supply, which in most cases is either a water or wastewater constraint. Preliminary Phase 1 thresholds are summarised in the last column of the table.

Table 6
Current Dwelling Unit Capacity by Area

	1996 Estimated Built Units	Existing Capacity * (1996)	Constraining Service to Existing Capacity	Phase 1 Capacity (year varies)
Inside Greenbelt **	205,000	217,000	Wastewater	240,000
Orleans EUC	22,750	25,000	Water	29,000
Gloucester SUC ***	0	0	Transportation	1,500
Nepean SUC	9,500	17,500	Combination of all	22,000
Kanata WUC	14,500	18,000	Wastewater	22,500
Stittsville	3,750	4,500	Wastewater	6,000
Leitrim	0	0	Water and wastewater	0
Urban RMOC	255,500	280,000		321,000
Sub-totals:				
Inside Greenbelt	205,000	217,000		240,000
Urban Outside GB	50,500	63,000		81,000

* Existing capacity inside the Greenbelt reflects only current Regional servicing of inventoried vacant urban residential land.

** There is no existing wastewater capacity in some areas, including the downtown core.

*** There is virtually no transportation capacity to serve growth in the Gloucester SUC, but existing agreement allows an initial phase of 1,500 units, now underway.

Phase 1 capacities shown in Table 6 represent effective capacity at the next service ceiling. This is generally in the 10 to 15 year horizon, but it varies due to differences in capacity and demand between areas. Phase 2 represents a further series of service ceilings which are expected to be reached at the end of the planning period (2021). Although expressed as exact numbers in the discussion which follows, it is anticipated that 2021 dwellings units for each urban area will be expressed in ranges in the draft official plan, as is done in the current Plan.

The following sub-sections discuss phasing in order of recommended priority. Priorities indicate where potential servicing bottlenecks need to be resolved to maintain an adequate supply of serviced land and choice of locations. They should not be construed to mean, for example, that constraints in the west will be completely addressed before additional servicing is provided elsewhere. The details of proposed servicing priorities are contained in the background reports on water, wastewater and transportation.

For information and in order to clarify the intent of the phasing, major projects by area up to 2006 are summarised in Table 7. Projects have been assigned to the period in which construction commences; no priority within each time period is implied by the order in which they are listed.

Table 7
Preliminary Infrastructure Phasing to 2006
per RDS Detailed Evaluation Phase Technical Reports *
(*Subject to change following further analysis)

Period	Wastewater	Water	Transportation
1996-2001			
Inside Greenbelt	• 3 Diversions • CSO Tunnel and Regulators	• Ottawa South Pumping Station- add pumps • Watermain (Hurdman to Billings) • Expand Hurdman Bridge Pumping Station • Internal Watermains	• West Transitway • Mackenzie King Bridge Transitway Station • Baseline • Hawthorne • Airport Parkway/Hunt Club ramps
West	Tri-Township Collector rehab	• New elevated tank • Internal watermains	Queensway shoulder bus lane
Southwest	Gravity sewer extensions	• New elevated tank • Internal watermains	
Southeast		Internal watermains	Park & Ride
East	• Orleans-Cumberland Collector (pumping station and forcemain) • Gloucester-Cumberland rehab • Cumb. gravity sewer extensions	Internal watermains	Queensway shoulder bus lane
2001-2006			
Inside Greenbelt	• Cave Creek Collector replacement • Alvin Heights Collector replacement	• Internal watermains • Expand Carlington Heights Pumping Station	• Southwest Transitway • Conroy Road widening (Hunt Club to Walkley)
West	• Hazeldean pumping station -add pumping capacity and forcemain • March area gravity sewer	Internal watermains	
Southwest	Pumping station and forcemains	Internal watermains	• Southwest bus only lanes • Park & Ride
Southeast		• Expand So. Gloucester pumping station • Internal watermains	River Road widening (Limebank to Hunt Club)
East	• Forest Valley-pumping station, forcemain, gravity sewers • Cumberland gravity sewer extensions	• Internal watermains	Innes widening (Orleans to Jean d'Arc)

Current Capacities and Phase 1 Priorities:

Kanata/Stittsville The west currently has sewer and water capacity for about 5,000 additional dwelling units (although sewer capacity is quite limited in some areas) and transportation capacity for 3-4,000 new units. Given the concentration of growing high-technology firms in this area, Phase 1 priority should be given to continued upgrading of the sewer system so as not to limit economic growth opportunities.

Inside the Greenbelt Although there is existing capacity inside the Greenbelt for about 12,000 units, the sewer systems servicing the core area are at capacity. As a result, all development in this area has been constrained. The diversion of flows away from the major systems serving the core to other systems in which there is capacity resolves these existing problems and supports growth opportunities inside the Greenbelt. Phase 1 transportation priorities are shown in Table 7.

Nepean SUC The completion of Highway 416 will provide transportation capacity for approximately 8,000 additional units in South Nepean, for a total of about 17,500 built plus potential units. Sewer and water capacity is available with some system extensions internal to the SUC. Analysis of a Phase 1 threshold of 22,000 units identified a need for an additional 1-2 arterial road lanes, which could be provided in either the Woodroffe or Hwy 16 corridors. The Southwest Transitway will also be required, with the initial stages likely consisting of sections of combination of grade-separated transitway, exclusive bus lanes at grade and a park and ride lot.

Orleans The current transportation and sewer network allows for about 6,000 additional units in Orleans, but the water system is limited to 2-3,000 new units until extension of a major watermain internal to the community is undertaken. To take advantage of spare transportation and sewer capacity, water system upgrades should be undertaken up to 29,000 units. This threshold is partly dependent on the capacity of local sewers in the Cumberland area. Upgrading of Innes Road through Orleans will also be required.

Gloucester SUC Transportation capacity south of the airport is limited by the pattern of existing arterial roads, attributable to the barrier of the airport itself and the northeasterly angle of the Rideau River. Even allowing for anticipated substantial job creation in the vicinity of the airport, the adequacy of the transportation system will continue to be a problem as this area develops in future. Given this issue and the relatively low level of housing demand expected over the next few years, the best phasing strategy would be to delay the need for major road improvements for at least ten years by approving little or no development in the first phase. It is recognised, however, that the existing commitment to allow up to 1,500 units will likely require the upgrading of River Road, at least between Limebank and Hunt Club, over the next 5-10 years.

Leitrim This area does not have sewer and water services, other than a small watermain (without additional capacity) designed to serve existing rural development. Given the high per unit costs of extending these services to Leitrim (see Section 3.5 of this report) and given that there is a more

than adequate supply of serviced urban land in Ottawa-Carleton, it is recommended postponing servicing commitments to this area.

Phase 2 Priorities (in order of recommended priority)

As noted earlier, 2021 dwelling units for each urban area are likely to be expressed in ranges in the draft official plan rather than the precise numbers in Table 8 below, which approximate the numbers used in the modelling of water, sewage and transportation flows. Based on results of the analysis, 2,000 units were reallocated from inside the Greenbelt to Orleans for the preferred Regional Development Pattern. This results in a 2021 distribution of 38,000 total units in Orleans instead of 36,000, and 80,000 additional units inside the Greenbelt. These changes are reflected in Table 8. Transportation requirements are detailed in the transportation background report.

Inside the Greenbelt Phase 2 needs are mainly transportation-related, since Regional water and wastewater system issues were resolved in phase 1.

Nepean SUC A servicing threshold of about 27,000 units is identified by 2021, at which point roadway capacity is expected to be depleted. All of these units can be accommodated north of the Jock River.

Kanata/Stittsville After the completion of Phase 1 works in the west, the primary requirement is for improvements to the transportation system. However, provided that transportation service to areas of economic growth is adequate, some of the additional housing demand in the west of the region might be more cost-effectively provided in the western areas inside the Greenbelt. However, even with this assumption and an ambitious transit market share, additional road capacity will be needed to provide for growth up to 40,000 units by 2021.

Orleans Significant growth in Orleans above about 29,000 units depends on the provision of additional transportation capacity. Phasing of up to 38,000 units is proposed by 2021.

Gloucester SUC The phasing analysis indicates that up to 8,000 units total in the Gloucester SUC could be accommodated by 2021. Growth beyond this point triggers the need for additional infrastructure which results in high per unit servicing costs (see Section 3.5).

Leitrim An initial phase of 2,500 units is proposed when piped services are extended. Even before reaching this point the need for additional transportation works could be triggered, which drives up per unit costs (S. 3.5 refers).

Preliminary Phase 2 capacities by area are summarised in Table 8. The last column of the table represents the range of maximum development in each suburban growth area. Generally this extends from the maximum number of units now permitted in the current (1988) Plan up to the estimated physical potential of each suburban growth area if all lands within current urban boundaries were built-out at a gross density of 10 units per hectare of urban land. This includes all lands in Stages 2 of Stittsville and Leitrim, Kanata North (ROPA 41), and an estimate for an

extension of the South Urban Centre (SUC) to all lands now designated conceptually in the Regional Official Plan. The upper end of the build-out range in each area was tested for evaluation purposes only. Depending on the results of the evaluation, some ranges may be reduced. This issue will be addressed in the draft Regional Official Plan.

The recommended RDS proposes maintaining all currently designated urban land as "Urban Area" even though some lands will not be required until after 2021, provided that it is understood there is no commitment to servicing all urban-designated land within the 2021 timeframe of the new Plan.

It is anticipated that the draft official plan will show a range of dwelling unit capacities in each urban area. The range will be based on refinements of the phasing analysis presented here.

Table 8
Preliminary Phase 2 Capacity by Area and Build-Out Ranges

Area	1996 Estimated Units	Phase 2 Capacity (2021) *	Build-out Range **
Inside Greenbelt	205,000	277,000	n/a
Orleans EUC	22,750	38,000	44-48,000
Gloucester SUC	0	8,000	11-16,500
Nepean SUC	9,500	27,000	27-36,000
Kanata WUC	14,500	32,000	35-38,000
Stittsville	3,750	8,000	8-10,000
Leitrim	0	2,500	4-5,200
Urban RMOC	255,500	395,500	n/a
Sub-totals:			
Inside Greenbelt	205,000	277,000	n/a
Urban Outside GB	50,500	115,500	129-156,000

* 277,000 units inside the Greenbelt in 2021 is 80,000 units above 1991 Census.
** build-out range applies only to suburban growth areas.

Approach to Phasing Policies in the Official Plan

Phasing policies in the current plan set out the sequence in which key pieces of infrastructure are to be constructed (eg. facility "x" will be built before facility "y"). It is envisaged that a similar approach would be workable in the new plan. This allows for the timing of works to be undertaken based on the future situation of the demand for the project and the Region's ability to finance the expenditure in any given year. With a comprehensive phasing and affordability analysis completed, Council will also be much better informed as to the potential risks and rewards of agreeing to any "early servicing" proposals that may be put forward by landowners or municipalities.

A more detailed consideration of how phasing policies would be implemented will be provided in the draft official plan.

3.5 Total Costs of Infrastructure and Build-Out Analysis

A preliminary analysis of estimated total infrastructure costs and costs per additional dwelling unit for different areas of the region is presented in this section. Costs were assessed to the 2021 planning horizon and for build-out of each of the urban areas outside the Greenbelt.

Approximate relative total costs for different areas are summarised in Table 9 based on the preferred Regional Development Pattern for 2021. Transportation costs are based on attributing 50% of downstream costs to the area which it logically serves. The table shows water and wastewater costs separately from transportation costs in the fifth and sixth columns, total costs by area in the last column.

Table 9
Estimated Costs per Additional Dwelling Unit, 1996-2021
(water and wastewater, transitways and roads)

Area	New Units 1996-2021	Total Water and Waste-water Costs ($M 1996)	Total Transitway & Road Costs ($M 1996)	Per Unit Water and Wastewater Costs	Per Unit Transitway & Road Costs	Per Unit Total Costs
Inside Greenbelt	72,000	68	472	$900	$6,600	$7,500
Kanata +Stittsville	21,800	55	240	$2,500	$11,000	$13,500
Gloucester SUC	8,000	23	89	$2,900	$11,100	$14,000
Nepean SUC	17,500	38	218	$2,200	$12,500	$14,500
Orleans EUC	15,300	23	204	$1,500	$13,300	$15,000
Leitrim	2,500	8	38	$3,300	$15,200	$18,500

Notes: Figures are approximate and do not include common infrastructure such as water and wastewater plants; per unit costs rounded to nearest $100, except last column rounded to nearest $500; costs do not include works built or under construction as of 1996; water and wastewater facilities located entirely inside the Greenbelt are attributed only to this area although they may serve a region-wide function..

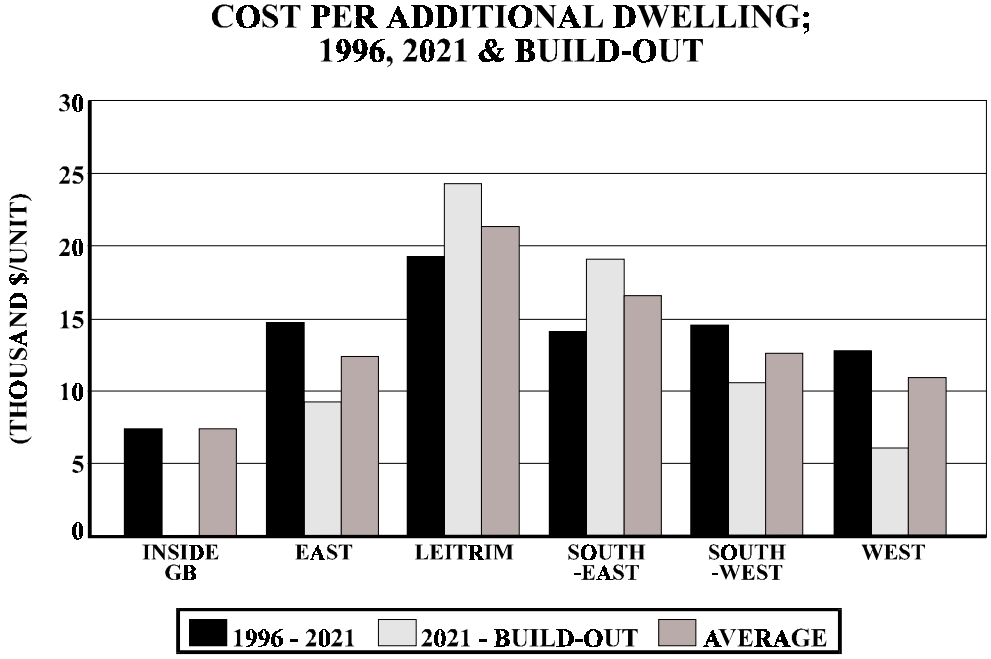
Per unit costs are lowest inside the Greenbelt and highest in Leitrim. This conclusion is consistent for transportation and water/wastewater costs whether assessed independently or together. Overall costs in the west, southwest, southeast and Orleans are relatively similar, although there are variations between areas in order of cost between transportation and piped services. This conclusion underpins the preferred Regional Development Pattern and proposed phasing which seeks to provide choice and flexibility within a cost-effective development envelope. The development potential in each area is designed not to exceed thresholds which would trigger the need for new infrastructure in higher cost/unit areas.

It should be emphasised that the costing analysis itself is not the primary reason for recommending the Regional Development Strategy described in this report. It is one of many important criteria which include environmental, social and economic considerations.

Approximate costs to 2021 and for build-out of each of the urban areas outside the Greenbelt are shown in Figure 4. Costs to build-out for Leitrim and the Gloucester SUC areas increase significantly above 2021 costs, because a transitway extension is needed between 2021 and build-out. Over the entire period from 1996 to build-out, Leitrim and the Gloucester SUC are more costly per unit than other urban areas. It can be seen that the most expensive option would be to build-out Leitrim and the Gloucester SUC areas. On a pure cost basis it would be most efficient not to permit any development at all in Leitrim and place this growth either inside the Greenbelt or in one of the other less costly suburban areas. A similar but less marked situation exists in the Gloucester SUC if development proceeds beyond Phase 2 to build-out. For reasons of equity and choice the preferred Regional Development Pattern did not suggest removing either of these areas from urban designation, but instead seeks to limit their development to thresholds below the point of triggering the need for even more costly infrastructure improvements.

It should be understood that the costing analysis in this section is preliminary, and depends in part on the number of units assumed in each area and how costs for different facilities are attributed by area and by time period. For example, costs for transitway extensions to the east, southwest and west are attributed entirely to the pre-2021 period, even though they will serve growth beyond this point.

Figure 4



Costs are preliminary estimates for water, wastewater, road and transit facilities
Build-out results apply only to suburban growth areas

3.6 Municipal Financial Impact

One of the key objectives of the RDS is to design a strategy for required infrastructure expansion that can be afforded by the municipality. Specifically, can the levels of required capital investment and future operating costs related to the RDS be sustained by expected revenues, assuming revenue sources and levels of taxation comparable to those that exist today?

To test the success of the proposed RDS against this objective, computerised financial models were developed for the water, sewer, transit and region wide (roads only) funds. A review of the financial analysis and conclusions is provided by the Finance Department in a separate report entitled "RDS - Municipal Financial Impact Update", September 1996. The report discusses the effects of the recent change in provincial policy to subsidise only 50% of eligible transit capital expenditures.

This report updates the municipal financial impact analysis previously provided in June of 1996 by assessing the impact of:

a) the reduction in public transit subsidy from 75% to 50% for capital expenditures
b) the effects of a 2% (versus 1%) inflation rate on the "affordability" of the RDS, and
c) a development plan that focused less growth inside the Greenbelt and more outside.

The report concludes that, assuming a 2% inflation rate, funding gaps over the planning period exist for all services when comparing required funding to the funding that would be generated at current mill rates and user fees. The funding gap for public transit is extremely large as a result of the reduction in provincial subsidy.

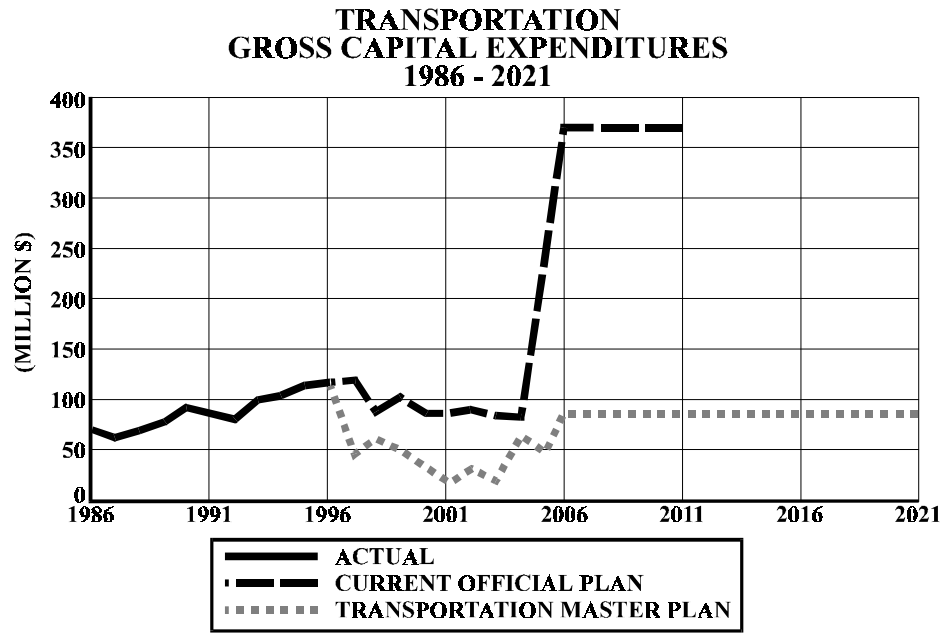
In the case of the road, water and wastewater models, increases in mill rates and user fees at rates less than the assumed rate of inflation would be necessary to address the funding gaps. In the case of public transit, a funding gap would continue to exist even if transit fares and the mill rate were to be indexed at the assumed rate of inflation.

A development pattern that placed 40,000 new units inside the Greenbelt rather than the 80,000 proposed was estimated to require approximately $400 million more in capital costs than the preferred pattern. This creates a much more significant funding gap than that already noted for transit.

Construction of the infrastructure identified (or implied in the case of water and sewer) in the current Official Plan would require a significant increase in capital spending in the period 2005 to 2011 (over the capital spending contained in the Capital Budget Forecast to 2004). The illustration of this ("the wall") became one of the major issues of the Official Plan Review, and it has been understood that the new Regional Development Strategy would be developed with full regard to its affordability. Figure 5 shows the capital spending implied for transportation under the assumptions of the current (1988) Plan compared to the capital spending requirements of the proposed new Regional Development Strategy and Transportation Master Plan. Figure 6 shows

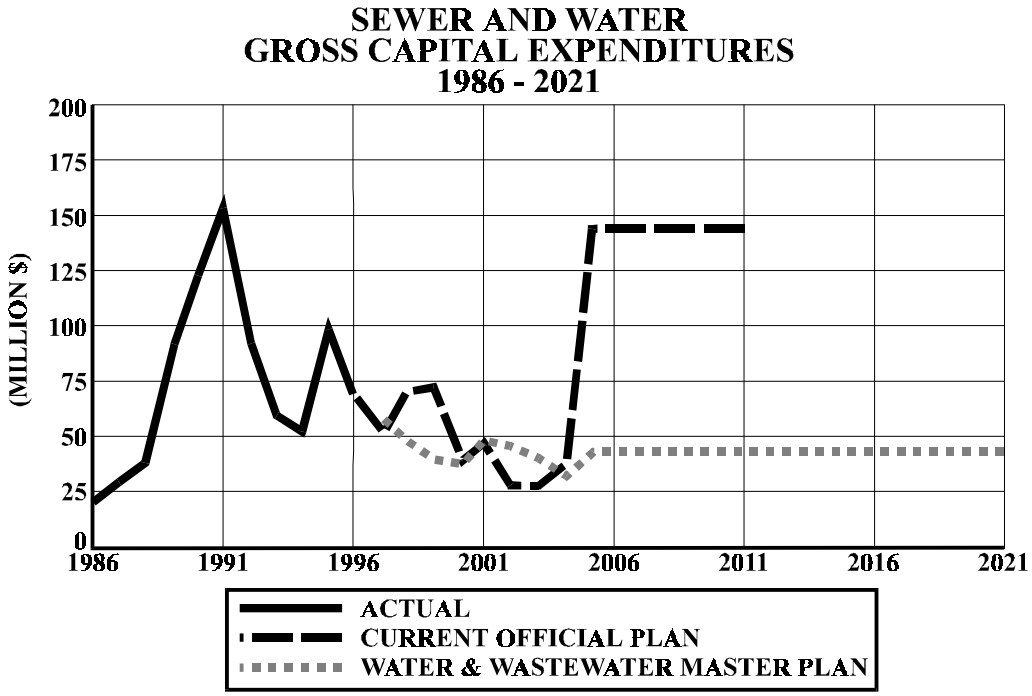
the same information for the Water and Wastewater Master Plan. In each case the large increase in capital spending ("the wall") has been eliminated.

Figure 5



Note: Based on preliminary cost estimates for road and transit capital works.

Figure 6



Note: Expenditures during 1989-1992 were mainly due to expansion of ROPEC treatment plant; expenditures after 1996 are based on preliminary estimates.

4.0 REGIONAL DEVELOPMENT STRATEGY PRINCIPLES

The proposed Regional Development Strategy (RDS) is different in nature from the strategy set out in Section 2.2 of the current (1988) Plan. Section 2.2 defines a set of urban land designations and associated minimum and maximum levels of dwelling units and jobs for each urban area outside the Greenbelt. It assumes a relatively low level of new housing inside the Greenbelt and by extension a continuation of the then existing trend to suburban growth outside the Greenbelt. In contrast, the most important components of this proposed RDS are:

- the setting of a long-term direction and strategy to encourage more residential development inside the Greenbelt, and;
- policies on phasing sewer, water, and transportation infrastructure to provide a logical and affordable sequence for servicing growth both inside and outside the Greenbelt.

The recommendations of this report refer to a set of RDS Principles derived from the detailed evaluation phase. These are presented in Table 1.

The basis for the key RDS principles is elaborated in the following points, cross-referenced to the related principle in Table 1. (LU is a Land Use and Development principle; ED is Economic Development; WW is Water and Wastewater; T is Transportation, and F is Financial.)

4.1 Discussion of Key Principles

1. The need to produce an "affordable" plan. The region is undergoing significant change to its economy which, in the short term, has slowed housing starts and raised unemployment. At the same time, major cuts are being made to provincial transfer payments. The Region needs to find ways to tailor expenditure and infrastructure plans to available funding, while providing those services on which the community and economy depend. Phasing of infrastructure and development is proposed to meet regional needs in the most cost-effective manner. (Relates to principles LU 1 and 2; F 1 and 2.)

2. The need to recognise and promote economic development opportunities. The current (1988) Plan contains no explicit policies for economic development. One of the most important economic measures the new RDS can take is to recognise that not all parts of the urban area offer the same economic advantages and to focus our resources on the most promising. The economic future of the region clearly lies no longer with the federal government but in the high-technology sector, and the most significant concentration of high-tech firms is in Kanata and western parts of Nepean and Ottawa. In this regard it is not an issue of Orleans or Ottawa "against" the west part of the region, but of Ottawa-Carleton facing competition from other regions across the continent and around the world. Growth in the high-technology sector benefits everyone in the region. With limited resources efforts should be focused on ensuring that those areas with the best "bang for

the buck" receive priority for scarce servicing dollars. (Relates to principles LU 6 and 7; ED 1-4.)

3. The need to allow for choice and balance in the housing market. The new RDS seeks to put areas inside the Greenbelt on a more "level playing field" with suburban growth areas. However, the strategy also maintains choice for those wishing to live outside the Greenbelt in either an urban or rural environment. This balanced approach to development will best serve the long term interests of regional residents and businesses.

   Additional residential development inside the Greenbelt is projected to increase over the planning period as the population ages and the demand for multiple-unit housing closer to services and amenities grows. The share of units built inside the Greenbelt has changed remarkably little since 1981 (Table 10). It is suggested that one objective of the new RDS should be to strive for a five per cent increase in the share of units built inside the Greenbelt in each period, as set out in Table 10. This recognises that current demographics still favour suburban areas outside the Greenbelt, but allows for the gradual increase in development inside the Greenbelt supported by long-term demographic trends. (Relates to principles LU 1,2,3,5 and 10.)

Table 10
Past and Proposed Additional Dwellings by Area, 1976-2021

Area	1976-81	1981-86	1986-91	1991-96	1996-2001	2001-06	2006-11	2011-21
Inside Greenbelt	64%	46%	45%	42%	40%	45%	50%	55%
Urban Outside GB	30%	42%	44%	48%	50%	45%	40%	35%
Rural	6%	12%	11%	10%	10%	10%	10%	10%
Total RMOC	100%	100%	100%	100%	100%	100%	100%	100%

* 1996 onwards based on preliminary phasing.

4. The need to recognise the long term effects of demographic change. One of the few factors of which we can be certain up to and past 2021 is the aging of the babyboom. While there is some debate as to the location and type of housing which this generation will opt for as they grow older, there is an emerging consensus that, compared to the past quarter century, the demand for various forms of multiple-unit housing will grow while the market for the traditional suburban single-detached home will shrink. This indicates a likely take-up of demand in areas inside the Greenbelt, and since there are a number of inherent advantages to such a trend, the Region should be prepared to facilitate this shift in the market, rather than make it more difficult through lack of preparedness in servicing capacity or development policy. (Relates to principle LU 3.)

5. The need to recognise that Ottawa-Carleton is part of a larger economic area. A quarter of people in the Ottawa-Hull metropolitan area live in the province of Quebec, which for many years has attracted a steady share of the metro housing market due mainly to much cheaper house prices. In recent years, Ontario municipalities adjacent to Ottawa-Carleton (OMATOC), such as Rockland and Carleton Place, have also attracted a growing share of the regional housing market. The proposed strategy recognises that not only does the

RMOC compete with other regions globally, but we also operate within a larger regional economy. Hence the strategy allows for a choice of locations in both urban and rural areas of Ottawa-Carleton while at the same time seeking to minimise our future capital and operating costs (and hence taxes and development charges) required to pay for more infrastructure. Other policies may also be required to address the issues raised by growth outside the region, but they are beyond the scope of this report. (Relates to principles LU 1,2,3 and 5, and T 1e) and f.)

6. The need to balance the adequate provision of costly infrastructure with affordability and a "just in time" approach. One of the Region's prime responsibilities is the servicing of urban land with sewer, water and transportation facilities. The current (1988) Plan had a policy for a region-wide 10 year supply of land serviced with sewers and water. The Region has never achieved this objective, but the actual supply of between 4 and 6 years since 1988 appears not to have caused any problems of a shortage of serviced land. The new approach recognises that a certain minimum is needed, suggested as five years, but to service significantly in advance of need is not an efficient use of limited funds. (Relates to principle WW 6.)

7. The need to keep open options for the future. The future, perhaps more than ever, is fraught with uncertainty. The direction of growth both regionally and globally, the future housing market, technological change, where jobs will locate, and governmental and political change at all levels are a just a few of the forces which may prove choices made in the next decade to be either opportune or unwise in the long term. The best way to cope with uncertainty is to not preclude options for future changes in direction, if there is a choice. To this end the proposed RDS recommends a "one step at a time" approach. This involves making only those commitments that are necessary to ensure adequate functioning of the region's economy and land markets over the foreseeable future of such actions. In an era of limited finances, therefore, we need the knowledge and courage to identify those choices which provide the best overall chance of success. By doing so we can likely avoid the worst outcome - which would be to saddle ourselves with financial obligations and expenditure timeframes for services for which there is no demonstrated need. (Relates to principles WW 5 and LU 11.)

8. The need to balance economic, social and environmental considerations in a long term development strategy. The present Regional Plan Review originated with an environmental review of official plan policies. This evolved into a broader review of the Plan when it was realised that many policies have interconnected effects on a range of issues and it was impractical to look only at "environmental" issues in isolation. Subsequently, due to the change in the region's economic circumstances, issues of affordability and economic development have moved more to the fore. The point to be taken is that, in our present concern with economic issues, sight should not be lost of important social and environmental issues facing the region. For example, a healthy economy benefits social objectives; a healthy environment aids economic objectives, and so on. The recommended RDS principles attempt to address all these areas of concern in

considering matters of servicing, phasing, rates of development and other issues. (Relates to principles WW 1, 2 and 3; and LU 12.)

9. The need to assess the total cost of services and take advantage of capacity in existing systems. Some past decisions on where to allow development and the amount and timing of such development have been strongly influenced by the availability of sewer and water services, often to the neglect of considering the long term costs for Regional roads and transit and other services. The new strategy should be based on affordable and realistic standards for all major services, including operating and maintenance costs. The most cost-effective strategy for infrastructure is to make fuller use of investments we have already made. The Region should weigh all practical alternatives before committing additional services to a particular area. This must be tempered by the need to provide a reasonable choice of serviced locations for housing and employment. (Relates to principles LU 1 and 6, WW 5, and F 1.)

The need to try to maintain a balance of jobs and housing. The strategic phase of the transportation analysis concluded there were significant benefits to a balanced job and housing distribution. The development strategy of the 1988 Plan sought to locate new jobs outside of the Greenbelt in proportion to the housing planned for each suburban area. In practice, the policy has not been greatly successful because, partly for reasons of local politics, it did not distinguish between areas with more job potential versus those with less. The RDS principles recommend favouring areas with demonstrated economic growth potential - specifically areas inside the Greenbelt and in the Kanata area. The recommended policy also recognises that Hwy 416 is likely to generate jobs in South Nepean, but it should be acknowledged that currently this area has the worst balance of jobs to housing of anywhere in the region (only 1 job for every 10 households) - hence there is considerable ground to be made up before even approaching a balance. The recommendation is to provide opportunities for 1.1 jobs per household in each urban area outside of the Central Area. This is derived from the average number of jobs and households projected by 2021 for the urban area excluding the Central Area. It is lower than the 1.3 jobs per household balance implied in the current plan, primarily due to population aging after 2011 and hence fewer people working. (Relates to principles LU 8, 9 and 10 and WW 7.)

11. The need to integrate transportation, water and wastewater, and financing with land use planning decisions. For example, the Region now sets the same Regional Development Charge (RDC) across all urban areas of the region. In areas inside the Greenbelt with insufficient sewer capacity, developments must pay the set RDC (now $8,000 per single detached unit) plus pay, at the developers' expense, the cost of creating sewer capacity required for the subject development. The Region should revise its RDC and financing policies so that developments inside and outside the Greenbelt are treated similarly. (Relates to principles LU 1, and WW 5.)

4.2 The Rural Area

More work remains to be done on a development strategy for the rural area. The strategic analysis recognised servicing costs per unit to the rural area are high for either extensions of central sewer and water services or for communal systems. However, it is desirable to provide choices for those seeking a rural lifestyle, especially as to not do so would only drive more growth to Ontario municipalities adjacent to Ottawa-Carleton (OMATOC). Development of a rural communal servicing strategy will occur over time as different technologies are applied and evaluated (as per Official Plan Amendment 47 on rural servicing).

5.0 ENVIRONMENTAL ASSESSMENT REQUIREMENTS

The work undertaken as part of the integrated planning process for the Official Plan Review, the Transportation Master Plan and the Water and Wastewater Master Plan has followed the key principles of successful environmental assessment planning. These principles include; consultation with affected parties early on; consideration of a reasonable range of alternatives; identification and consideration of all aspects of the environment; systematic evaluation of alternatives, and; clear and complete documentation of the planning process.

The detailed phase of the Regional Development Strategy is one component of work which fulfils early phases of environmental assessment (EA) planning. To ensure complete traceability for EA purposes, the planning process leading to the individual component work such as background studies and the detailed and strategic evaluation background reports will be summarised in an overall report in the fall of 1996. When the individual Master Plans are completed at the end of 1996, it is intended that a list of projects will be filed for public review as having met at least early phases of EA planning under the Environmental Assessment Act. This includes the identification of need and evaluation of alternatives. These projects will also be identified in the draft Official Plan or Master Plans as having met these early phases of environmental assessment planning.

6.0 CONSULTATION

The public consultation for the detailed phase of the Regional Development Strategy is following the Integrated Consultation Strategy approved by Council in May 1995 for the Official Plan Review, the Transportation Master Plan, and the Water and Wastewater Master Plan. This Integrated Consultation Strategy was a follow-up to the initial consultation plan for the Official Plan Review that was distributed for consultation in the fall of 1994 and the Scoping Document for the Water and Wastewater Master Plan in January 1993.

Consultation activities for the detailed phase have included:

- a public workshop dealing with the development of criteria for use in the detailed evaluation of infrastructure alternatives;

- targeted briefing with area municipal planners and engineers on the approach for the detailed phase;
- publication of the *Daily Plan-It* and advising the public of the components and schedule for the detailed phase;
- special notification to the public on the revised schedule by means of newspapers and letters
- meetings with a "Business Sounding Board" consisting of area business people;
- meetings with the area homebuilders, area municipal staff and developers to assess market trends;
- transportation consumer research consisting of a region-wide telephone survey;
- water consumer research consisting of a mail-in questionnaire published in the Daily Plan-It;
- informal meetings and discussions with area municipalities and interest groups on specific issues.

A special edition of the *Daily Plan-It* summarising the proposed Regional Development Strategy was circulated to over 3,000 individuals and groups. In addition, this draft RDS report and executive summaries of the background technical reports for land-use, transportation, water and wastewater were sent to 500 stakeholder groups and associations including area municipalities, developer representatives, major community groups, business associations and other concerned parties. The Daily Plan-It and English and French summaries of the background reports were also made available on the InterNet and FreeNet and at locations accessible throughout the region. Copies of the draft Regional Development Strategy report and background reports were made available to the public at area municipal clerk's offices and public libraries throughout the region. In addition, copies of the background reports were available form the Region's Planning and Property department for a modest fee.

Briefings were held with Regional Councillors, area municipal planners and engineers as well as individual briefings with area municipal councils through June of 1996. An open house and public meeting on the draft was held on June 20 at the Ottawa-Carleton Centre. Over the summer Regional staff were available for informal consultation and other briefings as required.

Transportation Master Plan Consultation Activities for Next Phase

The Integrated Consultation Strategy has undergone some modifications to reflect changes in the process. The Strategy originally recommended that a milestone consultation event occur in October 1996 to present and obtain feedback on Transportation and Servicing Recommendations. A program review showed that these recommendations have been, for the most part, rolled into the proposed Regional Development Strategy and thus discussed in the RDS milestone consultation. Therefore, the October consultation milestone is not considered necessary.

However, over the next four months, there will be a number of transportation reports developed as part of the Transportation Master Plan (TMP). In keeping with the goal and objectives of the Integrated Consultation Strategy we will be looking for input from interested stakeholders on these transportation reports. This feedback will be used to complete the draft TMP which will be

released in January 1997, in conjunction with the draft Official Plan and the draft Water and Wastewater Master Plans.

To ensure that people are aware of the transportation reports and have an opportunity to provide comments, a letter will be sent to key stakeholders who have expressed an interest in the TMP. This letter will identify when and where the reports will be available for review and the length of the review period. It will also reiterate the availability of Transportation staff to discuss any comments or concerns. The interest level for these reports is expected to vary significantly, thus full public meetings/presentations are not identified for these reports. Instead meetings/ discussions with specific interest groups are anticipated as the main mechanism to get feedback on the reports. For those reports where significant interest is expected, a sounding board review involving a number of different interest groups will be organized. Other meetings/discussions will be held as requested.

Rural Consultation

Also ongoing over the next few months, in preparation for the drafting of rural policies to be included in the Official Plan, are consultation activities in the rural area. These include:

- the distribution to rural residents of a special issue of the *Daily Plan-It* covering land use planning issues in the rural area;
- an information booth at local fairs;
- workshops to discuss rural issues in four different locations throughout the rural area;
- the publication of a "rural workbook" which highlights important issues for discussion and debate, and suggests how residents can provide feedback.

A draft Official Plan, and draft Master Plans are expected to be released in January 1997. The release of these draft reports will be followed by a period of formal and informal consultation. Volume 2, Number 4 of the *Daily Plan-It*, to be published in November 1996, will outline the consultation activities of this next and final phase of the Planning Our Region Program.

Summary of Comments Received

As of the writing of this report, almost 60 written submissions on the proposed Regional Development Strategy have been received. Additional submissions are expected after the date this report was prepared. These will be distributed to Committee members separately as an addendum to the report.

A list of all groups and individuals who submitted comments to date is contained in Annex B of this report. A separate volume containing copies of all correspondence received is on file with the Regional Clerk.

The issues raised have been grouped into several major headings and are discussed below. Other more minor comments will be considered by staff when drafting the new official plan.

RDS Principles

Virtually all comments which mentioned the RDS Principles (Table 1) supported their intent. Disagreement tended to centre on how they should be applied to given situations, not with the Principles themselves. Minor revisions were made to the Principles in response to comments from OCEDCO and others.

Choice

Many briefs from suburban municipalities and land developers have expressed concern that the proposed RDS limits choice and will result in development occurring in neighbouring Ontario municipalities or Quebec. The brief from the Ottawa-Carleton Home Builders Association refers to "providing flexibility and a range of choice so that the industry can appropriately respond to the community's housing needs." It interprets the RDS as making intensification and infilling the primary direction for growth.

In fact, the proposed RDS seeks to expand the degree of choice available to residents and businesses. At present, development inside the Greenbelt in many locations, including the central area, is restricted by lack of sewer capacity. The RDS provides a cost-effective means to resolve constraints which increases choice in areas where development will be of most benefit to the region as a whole. At the same time, the strategy addresses the need for cost-effective expansion of services to suburban areas outside the Greenbelt.

The proposed strategy will provide choices in five major urban growth areas (inside the Greenbelt, Kanata/Stittsville, South Nepean, Gloucester's River Ridge and Orleans). By comparison, during some periods of the development boom of the 1980s only three areas provided locational choices (some areas inside the Greenbelt, Kanata/Stittsville, and Orleans). During some years, for example the mid 1980s and early 1990s, no sewer capacity was available to South Nepean (Barrhaven) and development was virtually halted. The strategy also aims to continue to provide a choice of rural living environments within the region.

Residential Potential Inside the Greenbelt

While many comments supported the goal of more residential activity inside the Greenbelt, several questioned the feasibility of the proposed target of locating almost half of all new dwellings in this area over the 1991-2021 period. Submissions on the proposed RDS by Gloucester, Cumberland, the Ottawa-Carleton Home Builders Association (OCHBA) and others have questioned what housing types and locations will be preferred by the aging baby-boom generation. Many of these comments also question whether the demand for lower density dwelling units and consequently serviced urban land outside the Greenbelt has been under-estimated.

The study *A Summary of Residential Potential Inside the Greenbelt* by FoTenn Consultants Inc concluded that there was potential for between 59,000 and 87,000 additional units inside the Greenbelt over the 1991-2021 planning period. The objective for 80,000 new units over this period may be viewed by some as an ambitious share of the projected region-wide housing market, but it is considered an appropriate target for a long term plan.

It is important not to judge the future quarter-century on the basis of the current market, which is the perspective that many developers and suburban municipalities appear to have. The objective for more housing inside the Greenbelt is long term and we believe demographic change will result in significant shifts in housing demand. In the early 1970s, for example, the majority of new housing was apartments. This was consistent with the demographic situation at that time, when the baby-boom was first entering the housing market. Present demand for apartments is at its lowest point of the baby-boom's whole passage through the market, which is again consistent with the current 30 to 49 age span of today's boomers. Hence it is not surprising that some sites originally planned for apartments are being developed for unit types currently more in demand. In future, when demand for apartments picks up as boomers age, it is probable some sites now planned for other uses will instead be built for apartments. As David Foot says, "let's not wait to be surprised by the inevitable again".

The "apartments" of the next 25 years will not be the typical high-rise of the 1970s, but more likely lower profile, upscale developments appealing to a more mature and better-off segment of the population. Assumptions used to evaluate infrastructure impacts estimated that new housing inside the Greenbelt would be, on average, at mid-range densities of about 75 units/net ha (30 units/acre). This is lower than several recent townhouse projects which exceed these densities while providing low profile, ground-oriented housing. A list of recent housing projects inside the Greenbelt, including a short description of the type and density of each development, is attached as Annex C.

The amount of new housing needed in future is another factor which may change. Recent trends in the housing market suggest lower rates of household formation than expected. Over the 1991-96 period projections suggested the region would grow by an additional 30,000 households. In fact, slightly less than 20,000 new housing units appear to have been built during the last five years, even though population growth has been close to projected levels and rental vacancy rates have increased. Factors contributing to the dip in household formation likely include the costs of running a separate household at a time when many are feeling the effects of cutbacks and employment uncertainty, and recent changes to the welfare system. Similar trends are occurring elsewhere.

If this pattern continues we may see significantly fewer new households added over the 1991-2021 period than the 171,000 that is currently being planned for. This means that even if the 80,000 unit figure inside the Greenbelt is not achieved, there may be no additional demand outside the Greenbelt beyond that proposed in the draft RDS. In other words, the Region would be wise not to overcommit to services for which there may be no need.

The debate on the strategy to provide more residential growth inside the Greenbelt has focused primarily on the numbers issue and not enough on the benefits of this strategy. The analysis concluded there are advantages to having more growth in more central areas and that there is the physical potential to accommodate such growth. Whether it happens or not will depend on a combination of government policy and market forces. Current policies tend to make it easier to develop outside the Greenbelt rather than inside, so the Strategy proposes to create a more "level playing field" by, for example, resolving servicing constraints inside the Greenbelt.

It is not proposed to reduce the currently-designated area of urban land. It is, however, recommended to give servicing priority to areas which offer the best overall advantage to the Region and its businesses and taxpayers. The result of the proposed strategy will be to provide a supply of serviced land and breadth of locational choice unparalleled in the region's history. If the objective for residential activity inside the Greenbelt is not achieved, the new official plan will be flexible enough to adapt to changed circumstances by accelerating the Region's servicing program for land outside the Greenbelt. There is enough urban land already designated to allow for this.

Several of the demographic-related comments also referred to David Foot's theories. In his best-selling book *Boom, Bust and Echo*, Professor Foot argues that the suburban housing boom of the 1980s is past. "The real estate boom is over", he says, but "the cores of Canadian cities will remain healthy for four reasons": 1) the large echo generation will move from the suburbs into the city centres in the first decade of the next century; 2) high levels of immigration, a younger population, will settle in the inner city; 3) some aging boomers will trade in their large homes for downtown condos; and 4) younger Generation X boomers will be attracted to affordable downtown housing which can be fixed up. He also notes the growing realisation that Canadians cannot afford the 1980s type of suburban development any longer:

> "In a 1995 report called *Economics of the Urban Form*, Pamela Blais, a Toronto economist, said roads, utilities, and other public services used in suburbs are paid for with billions of dollars in subsidies from provincial governments and urban taxpayers. Developers take advantage of these invisible subsidies to build inefficient communities, raising taxes and service costs throughout the area and driving away businesses." (p. 133)

The future emphasis of the housing market, Foot says, will be in rural and small town properties, as baby-boomers return to their "roots". The RDS aims to compete with this by allowing continued growth in the rural area of Ottawa-Carleton, but recognises there will be continued growth in OMATOC.

Some comments (Nepean, West Carleton) suggested the RDS should include provisions on how to deal with the possibility that more units than planned would have to be provided for outside the Greenbelt. The analysis of build-out scenarios for each urban area outside the Greenbelt provides a basis for addressing this issue in the new Regional Official Plan. Total build-out capacity beyond the 2021 preferred development pattern amounts to almost 40,000 additional units with no expansion of the existing designated urban land supply. The build-out analysis provides an

indication of the relative merits and disadvantages of allocating further growth to specific areas, which generally concluded that areas to the west, east and southwest were preferable to the southeast.

Any decisions on how to allocate future growth outside the Greenbelt beyond the 2021 preferred development pattern identified in this report should be made consistent with the Principles in Table 1. However, to make such a decision now is premature. As noted, there is sufficient land already designated to allow for substantial further growth outside the Greenbelt. Which area(s) would be best suited to accommodate growth depends on many technical factors previously noted, and also includes the future balance of jobs and housing in particular areas, transportation mode shares, and so on that affect demands for Regional services. To pre-commit capacity would limit flexibility to make the best decisions in the future.

Regarding comments received from Gloucester, Cumberland and landowner representatives, the build-out range would provide close to the total number of new dwelling units required outside the Greenbelt if the strategy were to assume only 40,000 new units inside the Greenbelt rather than the 80,000 proposed (build-out provides 38,300 units outside the Greenbelt, while the comments suggest an additional 40,000 units). The capital cost of providing services to the additional 38,300 units outside Greenbelt under the build-out scenario are estimated to be approximately $400 million., or more than $10,000 extra for each dwelling unit placed outside rather than inside the Greenbelt. (Annex E lists specific projects required to serve this additional development.) This is 22% higher than the estimated $1.8 billion total capital costs of the recommended Regional Development Strategy for the same amount of development.

A major increase to the number of units outside the Greenbelt results in the creation of another "affordability wall". Almost all extra costs are for transportation since additional development outside the Greenbelt will make it more difficult to achieve objectives for transit, walking and cycling. The costs could not be supported financially except through increases in funding sources such as development charges, property taxes, transit fares, or the possible introduction of innovative funding sources such as local gas taxes, licence plate fees, or other user-pay measures.

Comments by the Community Round Table on the RDS, comprised of representatives of various community associations, housing and alternative transportation groups, expressed strong support for the emphasis on additional housing inside the Greenbelt. Most of the specific suggestions proposed by the Round Table apply to a level of detail outside of the general direction intended to be provided by the RDS and will be addressed in draft policies for the new ROP.

Costs and Phasing

Many of the comments questioned how estimated costs per dwelling unit by area used in the draft report were developed and how these related to the proposed phasing. Section 3.4 of the report, Phasing of Development, has been revised to explain in more detail how the analysis was done and what it implies for specific areas.

Comments from Cumberland, Gloucester, Ottawa and others questioned the effect of the proposed strategy on local municipal infrastructure and related costs. The RDS analysis did not quantify local costs, but staff from the Region and local municipalities inside the Greenbelt did meet to review the strategy to see whether difficulties were anticipated. Co-ordination will be required and some costs will be incurred, however, there is significant lead time (10 to 15 years) before the majority of development inside the Greenbelt occurs. It is therefore understood from discussions with area municipalities that growth requirements can be cost-effectively co-ordinated with rehabilitation and replacement requirements.

Another point on the costs and phasing issue concerns a misconception held by some parties that the proposed RDS entails a massive diversion of servicing funds from suburban areas to areas inside the Greenbelt. This is not the case. For example, most wastewater expenditures on facilities inside the Greenbelt are to address existing needs. Many water projects fall in the same category or act to improve overall system reliability. Similarly, transportation projects located inside the Greenbelt usually serve a multiplicity of needs both inside and outside the Greenbelt.

Many comments related to specific areas, discussed as follows.

i) Leitrim

Residents and businesses in the Leitrim area commented that they have been promised services for the past 20 to 30 years, that they have already paid taxes to provide for these services, and that they want services extended as soon as possible.

Leitrim was approved as part of the urban area only in 1989, and prior to this time had never received any approval for urban development on central sewer and water services. (In the late 1970s a small water line was extended to south Gloucester to address a health problem but this system has been near its full capacity for several years since it was never intended to support any significant amount of growth.) Regional tax rates in the rural area are adjusted according to whether the area receives specific services, such as central sewers. Rural areas such as Leitrim do not contribute to sewers through the Regional portion of their property taxes since they do not receive those services. Water is metered and on a user-pay basis separate from property taxes.

It is recognised, as pointed out in several submissions, that Leitrim does have a number of community facilities (arena, police and fire station). However it lacks key services such as sewer and water facilities, and schools. Phase 1 development in all the other urban areas will respect the principle of utilising the capacity of existing services, where that capacity is evaluated on the basis of the service whose capacity is most constrained. Leitrim is the only urban area where development requires a Regional investment in new services before any urban development is possible. Extension of piped services will require approximately $8 million simply to begin development. Given the Region's limited servicing funds for the future, Leitrim does not provide as much benefit to the regional economy or housing market compared to investing the same money in other areas of the region. The detailed evaluation phase concluded that Leitrim was the

most expensive of all urban areas to service on a per unit basis ($18,500 per unit for the first 2,500 dwellings and even higher costs per unit for build-out). Ample opportunity for jobs related to the airport is already available on lands within and abutting the airport boundaries. Similarly, housing opportunities for any future employees are available in Ottawa to the north and in the Gloucester SUC. On this basis it is recommended that services for Leitrim be postponed.

ii) Nepean SUC

Nepean Council requested that the dwelling unit figure for 2021 in South Nepean be changed from 27,000 to 36,000 units "to ensure that Regional infrastructure is planned and sized to accommodate the ultimate community design goals approved for South Nepean by City Council."

Development significantly above the 27,000 unit level identified at Phase 2 (2021) for the Nepean SUC has several implications:

1) By pre-committing the full use of the Regional sewer, it restricts flexibility for long term options whose benefits may not be apparent now.
2) It may exceed the capacity of the West Rideau Collector, allowing for 1.1 jobs/household in the SUC. In the longer term, monitoring will be able to ascertain the effect of changes to the plumbing code and a more comprehensive flow management strategy on future capacity.
3) Above about 29,000 units it requires development south of the Jock River, which likely means eventually going to build-out of 36,000 units in South Nepean. Several major transportation projects are identified at build-out, including a new bridge across the Rideau River and associated road widenings, widenings of Greenbank Road and Cambrian Road south of the Jock. At build-out of both the Nepean and Gloucester SUC, the need for a transitway link between the two areas was also identified.
4) The proposed Phase 2 threshold level of 27,000 is 5,000 more than the maximum now permitted by the ROP, and allows for many years of future development in South Nepean. There is no benefit to the Region in allowing what amounts to premature development south of the Jock.

Wastewater system capacity is largely defined by existing major collectors. There is no need for any additional major systems to support growth through to 2021. However, whether there is sufficient capacity to service the total population and land use identified for build-out depends on a number of variables. Under the worst case assumptions, there is not sufficient capacity to address all build-out requirements. Under more optimistic assumptions there is adequate capacity. Since there is more than enough capacity for 25 years the 2021 allocations can be confidently confirmed. However, there should not be allocation beyond the 2021 forecast.

The West Rideau Collector, the major sewer to the SUC, does not simply serve areas in the City of Nepean. To accommodate 36,000 units in Nepean, additional capacity would likely have to be secured by allowing fewer units in the Gloucester SUC, or by not providing services to Manotick, or by finding a cost-effective way to provide additional capacity to South Nepean. At present, none of these alternatives are recommended, and therefore 27,000 units appears to be a

reasonable development threshold for this area up to 2021. It is still proposed that the area south of the Jock be shown as second phase urban land in the new Plan.

Economic Development

In response to comments from the NCC and Kanata, Principle LU 6 in the June draft has been split into LU 6, dealing specifically with the Central Area, and LU 7, dealing with transitway stations and clarifying that this includes the suburban town centres. OCEDCO suggested specific principles to deal with economic development. Some were outside the purvue of an official plan, but several new principles are added under a new Economic Development section in Table 1.

Comments by Cumberland criticised the lack of policies to encourage employment growth, and believe the RDS focuses too much on residential growth. In fact, economic development was an integral part of the proposed Regional Development Strategy. It is based on recognition that federal employment is falling, that the future of the region's economy lies in expanding its high-technology industries, and proposes policies to support growth in that sector. Key ingredients in this objective are maintaining the region's high quality of life, ensuring that taxes and development charges are at competitive levels, and providing services as a priority to areas with a demonstrated record of high-tech employment growth. Tourism, another important component of the region's economy, is encouraged by the emphasis on quality of life and support for the Central Area.

However, the Strategy continues to provide for employment opportunities in all major urban areas of the region through servicing polices (e.g. Principle WW 8) and the requirement to plan land use to balance housing with employment (Principle LU 9). Kanata commented that the principle (WW 7) to maintain servicing capacity for at least 1,000 low density jobs and 1,000 high density jobs was insufficient for major employers. However, the principle of 1,000 jobs in each category is a <u>minimum</u> requirement, which could be made higher where appropriate.

The strategy also recognises the importance of the Macdonald-Cartier International Airport. The transfer of airport management to a locally-appointed board significantly expands the opportunity to exploit the airport's economic development potential. The airport itself encompasses a large area of some 2,000 ha. Including lands made surplus by the closure of CFB Ottawa, there are over 400 ha of land available for employment uses within and adjacent to the airport boundaries. Most of the land at the north end of the airport now has sewer and water service and so offers an ample supply of prime development opportunities for airport-related jobs. Serviced lands on airport property are an inherently more attractive location for development than presently unserviced employment lands in Leitrim or the Gloucester SUC.

It is also important to realise that the Regional Plan is only one of many tools available to promote economic development. OCEDCO, OCTCA, the new airport authority, business groups such as the boards of trade, area municipalities, and the economic planning unit to be established within Regional government all have important roles to play. In fact OCEDCO will be preparing a Strategic Economic Development Plan that will address many issues, not just those associated with the Region's Official Plan.

Requests for Expansion of the Urban Area

A number of requests for expansion of the urban boundary are on file with the department. To date, all of these are located in the west area of the region. The requests are described in Annex D of this report. The recommended Regional Development Strategy, in Land Use Principle 2, does not support any expansion of the urban area and the analysis shows no need for additional urban land for the next 25 years and beyond.

The merits of specific proposals will be discussed in the staff report on applications which comes before Planning and Environment Committee for approval under the Planning Act. It is suggested they be dealt with at a public meeting of Planning and Environment Committee in conjunction with the draft Regional Official Plan next spring.

Transit First Policy

The "transit first" phrasing in the first Transportation principle of the draft report generated a variety of responses. They can be summarized as follows:

1) Some (e.g. King Edward Avenue Task Force, Township of Cumberland) question the realism of the proposed increase in transit mode share from 15 to 20% of total trips in the p.m. peak hour.
2) A number of groups and local municipalities (Business Sounding Board, Kanata) worry about the implications of the policy for the level of road investment.
3) Others support the transit mode share target but stress the need for effective implementation strategies, including recognition of the role of land use and community design in facilitating non-car transportation.

Transit is an essential component of achieving the Community Vision. It is critical to the health of the central area, where there are few opportunities to increase road capacity without unacceptable social costs. It is a vital ingredient in maintaining the attractive neighbourhoods and healthy environment which are major components of the high quality of life which make this Region attractive.

The proposed transit mode share is based on a thorough re-examination of the factors which affect transit ridership. It has taken into account the demographic and economic factors which contributed to recent declines in transit ridership and the likely impact of projected demographic, economic, technological and land use changes on the prospects for future transit ridership. This has resulted in screenline transit share guidelines (Table 4) that are in most cases lower than the targets in the 1988 Regional Official Plan, but are considered to be more realistic and attainable than previous targets since they reflect real experience over the last decade.

The proposed "transit first" policy is a re-affirmation of the policy in the 1974 Regional Official Plan that public transit would be given precedence over road widenings or road construction as the preferred way to meet travel needs. However it was always recognized that both transit and roadway facilities are required to meet varying travel needs and that is still the case in the

proposed Regional Development Strategy. Proposed roadway and transitway capital spending for the period 1996 to 2021 are almost equal.

The RDS reports acknowledge that it will be a challenge to attain the proposed transit share. It is clear that new strategies are needed. However, the trend of declining transit ridership must be reversed. An unsuccessful transit system is even more expensive to operate on a per passenger basis than a successful one.

Those who support the transit mode share target (Community Round Table, Citizens for Safe Cycling) stress the need for effective implementation strategies to achieve it and specifically suggest incorporating the province's *Transit Supportive Land Use Planning Guidelines*. Transportation Principle 2 provides some indication of the transit strategies under consideration. More detail will be forthcoming in the Mass Transit and Rapid Transit modules of the Transportation Master Plan and eventually in the Transportation Master Plan itself. Staff agree that land use and community design can either facilitate or impede the use of transit (and walking and cycling). A new Land Use principle (LU 12) has been added to recognize this, "Encourage a mix of uses and community design in new and redeveloping areas which reduces the need to travel and facilitates the use of walking, cycling and transit." Staff will re-examine the Transit Supportive guidelines during drafting of official plan policies. Many of the guidelines have been standard practice in Ottawa-Carleton for years.

Level of Service

A number of briefs express concern that the change in level of service standards from a demand to capacity ratio (D/C) of 0.8 to a D/C of 0.9 will result in levels of congestion that adversely affect economic development efforts. It should be noted that the D/C ratio applies to the p.m. peak hour and is not reflective of traffic conditions throughout the day. To avoid congestion most goods movement trips already occur between the a.m. and p.m. peak periods. Special attention will be paid to minimizing the effects of increased congestion on goods movement. However, the new level of service standard is simply more realistic than the previous one. The level of expenditure required to provide facilities to meet the previous level of service was unaffordable, without major tax increases or new sources of funding for transportation infrastructure. Moreover, the new level of service is unlikely to make Ottawa-Carleton less competitive. Most other urban areas have been dealing with such levels of service for years.

Several briefs (King Edward Avenue Task Force, Community Round Table) felt the proposed D/C ratio of 1.0 for the area bounded by the CPR, Queensway, Rideau River and Ottawa River was inconsistent with the desire for a healthy downtown and for more housing in and around the central area. The proposed D/C acknowledges present and future realities. Many of the intersections in the area already operate at capacity during the p.m. peak and little can be done to change this (only a couple of these intersections are in residential parts of the central area). Again it should be noted that not every intersection in the area will be operating at this capacity and that this is a peak hour situation, not an all day problem. The volume of car traffic into the central area has changed little over the past 20 years. Instead increases in peak period travel have been

accommodated primarily by transit; this will continue to be the case in the future. Shoppers and tourists typically arrive after the a.m. peak and do not encounter this level of congestion.

Cycling and Walking

Several briefs consider the target mode share for cycling in Transportation Principle 6 to be too low, while others consider it unrealistically high. Those who think the target is too low argue that the existing cycling share has been understated, resulting in too low a target. The existing cycling share is taken from the 1995 Origin-Destination Survey, which was conducted from September to December 1995. It also reflects screenline counts, which are done in the summer months. More important than the specific number is the clear intent in the RDS to increase the share of trips by cycling and to continue to take actions which would contribute to an increase in cycling share. No change to the target is proposed.

Past official plans have explicitly acknowledged roles for both transit and roads in meeting travel needs. The role of walking and cycling should also be acknowledged. This revised report suggests that the first Transportation Principle be "Implement a transit, walking, cycling first policy in order to provide a balanced transportation system, which accommodates all users and minimizes environmental and social impacts." This replaces the reference to "transit first" previously stated in this principle.

Concerns were also expressed by cycling groups about the implications of a transit first policy for situations where the Cycling Transportation Network and roads with transit lanes overlap. This is addressed in the Bicycle Integration report, but, in brief, the proposed approach will be to accommodate cyclists in low volume transit lanes and, if this cannot be done safely, to identify an alternative cycling route.

Central Area Truck Traffic

Several briefs (City of Ottawa, University of Ottawa, King Edward Avenue Task Force) referred to the need for a solution to the truck traffic problem in the Central Area, especially on King Edward Avenue. This is not an RDS issue, but it will be addressed in the official plan and Transportation Master Plan. Proposals to improve the situation include a possible night-time ban on truck traffic on King Edward, making the rehabilitation of King Edward a priority to reduce vibration and noise, restricting truck traffic to inner lanes, treating King Edward as a gateway, and the construction of another interprovincial bridge by the end of the planning period.

Rural Issues

Several comments have noted the lack of detail on rural issues. Scenarios for a higher share of future development in the rural area were tested during the Strategic Phase of the review. The analysis concluded that there were significant additional costs associated with this choice, due to costs of transportation and village servicing. However, it was also recognised that it is desirable to provide for the choice of rural living within the region, and this lead to the recommended

guideline that 11% of population growth occur in the rural area. At present, a Rural Development Strategy and consultation program is in progress, and so it is premature to propose in any detail how this growth would best be accommodated in the rural area.

Request for Deferral

Cumberland has requested that consideration of the Regional Development Strategy be deferred while staff examine the merits of placing an additional 40,000 units outside the Greenbelt rather than inside. As discussed above, the build-out analysis already undertaken provides enough information to answer this question. To undertake additional work at this stage would require more costs for consultants and mean that adoption of the new Official Plan would be delayed until after the current term of Council.

7.0 NEXT STEPS

When the Regional Development Strategy Principles (Table 1) have been endorsed by Council, they will be used by staff as a guide for drafting detailed policies in the new Regional Official Plan. The draft Plan will be released for public consultation in January 1997.

8.0 FINANCIAL CONSIDERATIONS

This report has no direct financial implications.

Approved by
N. Tunnacliffe, MCIP, RPP
Planning and Development Approvals Commissioner

Approved by
M..J.E. Sheflin, P. Eng
Environment and Transportation Commissioner

ANNEX A

Guidelines for the detailed evaluation phase approved by Regional Council, 28 February 1996:

GUIDELINES FOR TESTING DISTRIBUTIONS OF POPULATION & JOBS
DETAILED EVALUATION PHASE

1. Begin by testing development levels of an additional 60,000 to 100,000 dwelling units (corresponds to a total population of 530,000 to 630,000 population) inside Greenbelt. Refine range through an iterative analysis.

2. 11% of population growth is assumed to locate in the rural area (similar to historic share).

3. Assume no development on parkland, lands in Ottawa's Greenway System, on NCC corridors currently designated NILM (National Interest Land Mass), provincially significant wetlands, and significant natural features within existing urban boundaries.

4. Test potential (through higher densities and/or redesignations of land to residential use) and desirability of additional units within approved boundaries for each suburban centre (including all of the SUC in Nepean as designated on Schedule B of the Regional Official Plan).

5. Evaluate servicing thresholds for piped services and transportation to identify development potential and to assist in distributing development to urban areas.

6. Build-out of all currently-designated urban land within 2021 planning period is not assumed. Depends on capacity inside Greenbelt and detailed assessment of phasing.

7. Maintain choice of housing and bear in mind "market forces".

8. Minimise regional infrastructure costs.

9. Assume the "trend" employment distribution as a starting point, but utilise every opportunity to move toward a balanced employment distribution.

10. Testing of development levels and distributions will consider the resulting effects, positive and negative, on the health of the environment as well as on the quality of life and the health and safety of the citizens of the RMOC.

ANNEX B

LIST OF RESPONDENTS
96/09/13

Copies of submissions are on file with the Regional Clerk.

No.	Name
1.	Angie Todesco
2.	Chris Bradshaw
3.	Maureen Kemp
4.	Alayne McGregor
5.	Marianne Wilkinson
6.	Leitrim Industrial Park Inc.
7.	Phil Dawes, Ottawa Board of Education
8.	Ted Fobert, FoTenn Consultants
9.	Carrie Howard
10.	Steve Cunliffe, Township of Cumberland
11.	Pedro London
12.	Township of West Carleton, Staff Report
13.	Township of West Carleton, Staff Report
14.	Dave McNicoll
15.	Pierre Mercier, United Counties of Prescott & Russell, Planning Committee Report to Council
16.	F.R. Berry, DS-Lea Associates Ltd.
17.	Pierre Dufresne, Tartan Development Corporation
18.	William S. Holzman, Simmering & Associates
19.	Nav Aggarwal, Sagar Oil Inc.
20.	Karen Milligan-Vata
21.	Cameron B. McEwen
22.	Ernest Plante
23.	Cornelius J. Jaenen
24.	James E. Howes
25.	T. Seth Cwinn, Gloucester Equestrian Centre
26.	Township of Goulbourn, Staff Report to Planning Advisory Committee and Council
27.	Township of West Carleton, Staff Report and Council Motion
28.	Dr. Louis DiRaimo
29.	A. Bruce Benson
30.	G.W. Powell
31.	R.G. McCullagh, Gloucester Hydro
32.	Jeffrey W. Peters
33.	Alain Migueles, Archie Campbell, Community Roundtable on the RDS
34.	Angie Todesco, King Edward Avenue Task Force
35.	Robert G. Kemp, Kemp Service Centre Ltd.
36.	Ron Rathwell, Triangle Pump Service
37.	Brian Santor
38.	City of Nepean, Council Motion No. 141-96 and Planning and Development Report No. 070-96
39.	City of Ottawa, Council motion and Staff Report
40.	Constantine Pezoulas, Tanglewood Ottawa Limited
41.	Planning Our Region Business Sounding Board, Meeting Notes, August 7, 1996
42.	Brett Delmage, Citizens for Safe Cycling
43.	Claudio Brun del Re, University of Ottawa

44. George Hollinworth, Regional Cycling Advisory Committee
45. Bruce McNabb Ltd.
46. Daniel Paquette, Minto Developments Inc.
47. City of Vanier, Planning Committee Resolution No. 96-34 and Staff Report
48. Barbara Konyi, Ministry of Municipal Affairs & Housing
49. City of Kanata, Staff Report to Council
50. Richard Lee, Ottawa-Carleton Home Builders Association
51. Sandra G. Burns, Urbandale Corporation
52. Pierre Dufresne, Tartan Development Corporation
53. D. Warren-Maxwell, Carleton Board of Education
54. Township of Cumberland, Staff Report to Planning Committee
55. Milan Bratin, Remer Holdings Inc./Gestions Remer Inc.
56. Gerd W. Rehbein, Gloucester Chamber of Commerce
57. Ted Phillips, Richcraft Homes Ltd.
58. Wilbrod Leclerc, Regroupement des gens d'affaires
59. Curry Wood, National Capital Commission/Commission de la Capitale nationale
60. City of Nepean, Council Motion No. 143-96
61. City of Nepean, Planning and Development Report No. 083-96
62. City of Nepean, Council Motion No. 162-96
63. Brian Barge, Ottawa-Carleton Economic Development Corporation

ANNEX C

Recent Examples of Housing Development Inside the Greenbelt

Net Density (units/hectare)	Address/Builder	Year	Units
93.2 units/ha	328 Somerset at Kent (Claridge)	1996-97	17 townhouses (freehold)
138 u/h	Gramercy Place 300 Gloucester St. (Minto)	1996-97	54 stacked TH and lofts
128.9 u/h	76 Park Ave (C. Colaiacoco)	1995	15 apts. (3 storeys)
168.3 u/h	645 King Edward (Candy International Ltd.)	1995	12 apts. (4 storeys)
116 u/h	Parkdale Mews Forward Ave. & Lyndale (Claridge Homes)	1995-96	30 “court” TH
212.8 u/h	380 Frank St.	1995-96	9 apts. (4 storeys)
71.3 u/h	3340-80 Southgate Rd. (Zlepnig Holdings)	1996	24 TH (freehold)
108.2 u/h	88-90 Templeton St. (Chelsea North Homes)	1995	10 TH (freehold)
84.0 u/h	Kilkenny Place 593-597 Somerset W.	1996	12 apts. (3 storeys, above retail)
118 u/ha	Lisgar Station Lisgar at Bay Street (Minto)	1995	26 stacked TH
54.3 u/h	63-79 Echo Dr. & 10-16 Concord St. N	1995	19 TH (f-h)
61.1 u/h	406 Bank & 7 Florence (Mrs. Leung)	1995-96	8 apts. (above residential)
91.0 u/h	166-244 Briston Priv. (Richcraft)	1995	40 stacked TH
118 u/h	Lisgar Mews, s/e corner Lisgar St. at Kent. (Claridge Homes)	1995-96	30 TH

Net Density (units/hectare)	**Address/Builder**	**Year**	**Units**
326 u/h	Wallis House block (Rideau and Wurtemburg) (Andrex Holdings & others)	1995-96	24 TH and 109 apts.
551 u/h	CS-COOP complex (proposed) block bounded by Albert/Lyon/Slater/Bay + offices/retail		260 condo apts.
72 u/h	Sunnyside Ave east of Bank (Routeborne Urban Dev. Inc.)	1995-96	24 freehold stacked TH
71.4 u/h	294-96 Main Street (Revelstoke Developments)	1996	2 semi- detached
37.7 u/h	585 Tweedsmuir Ave. (proposed)		11 single detached
890 u/h	456 Cooper Street (between Bank & Kent) (Cartier Square Co-op)	1995	61 apts.
35.4 u/h	1577 Fisher Ave. (M. Urbisci)	1995	4 semis
384 u/h	Kent and Lisgar streets (former Ault Dairy site) (City Living)	1995-96	104 apts.
180 u/h	Jefferson Hall Apartments 130 Glebe Ave (proposed) (Charlesfort Developments)		18 apts. (3 storey)
571 u/h	455 Lisgar St. At Kent (CCOC)	1995-96	104 apts.
138 u/h	Cornerstone Square (corner Lewis & Robert) (Domicile Developments)	1995-96	11 condo THs
78 u/h	Radcliffe Village (Lassiter Terrace & Ogilvie) (Minto)	1995-96	67 condo stacked TH
150 u/ha	Lisgar Square (Lisgar btwn Bay & Percy)	1994	14 TH

ANNEX D

Urban Expansion Applications as of 6 September 1996

1. Westpark Estates, ROPA 65
Municipality: City of Kanata
Area of the site: 222 ha
Purpose: To redesignate Agricultural Resource Area to General Urban Area to permit mixed use development of 2,200 to 2,500 dwelling units, and research and employment uses.
Status: Incomplete application

2. Fernbank Estates
Municipality: Goulbourn
Area of the site: 192 ha
Purpose: To redesignate 151 ha of Agricultural Resource and 38 ha of General Rural to General Urban Area for primarily residential development.
Status: On hold

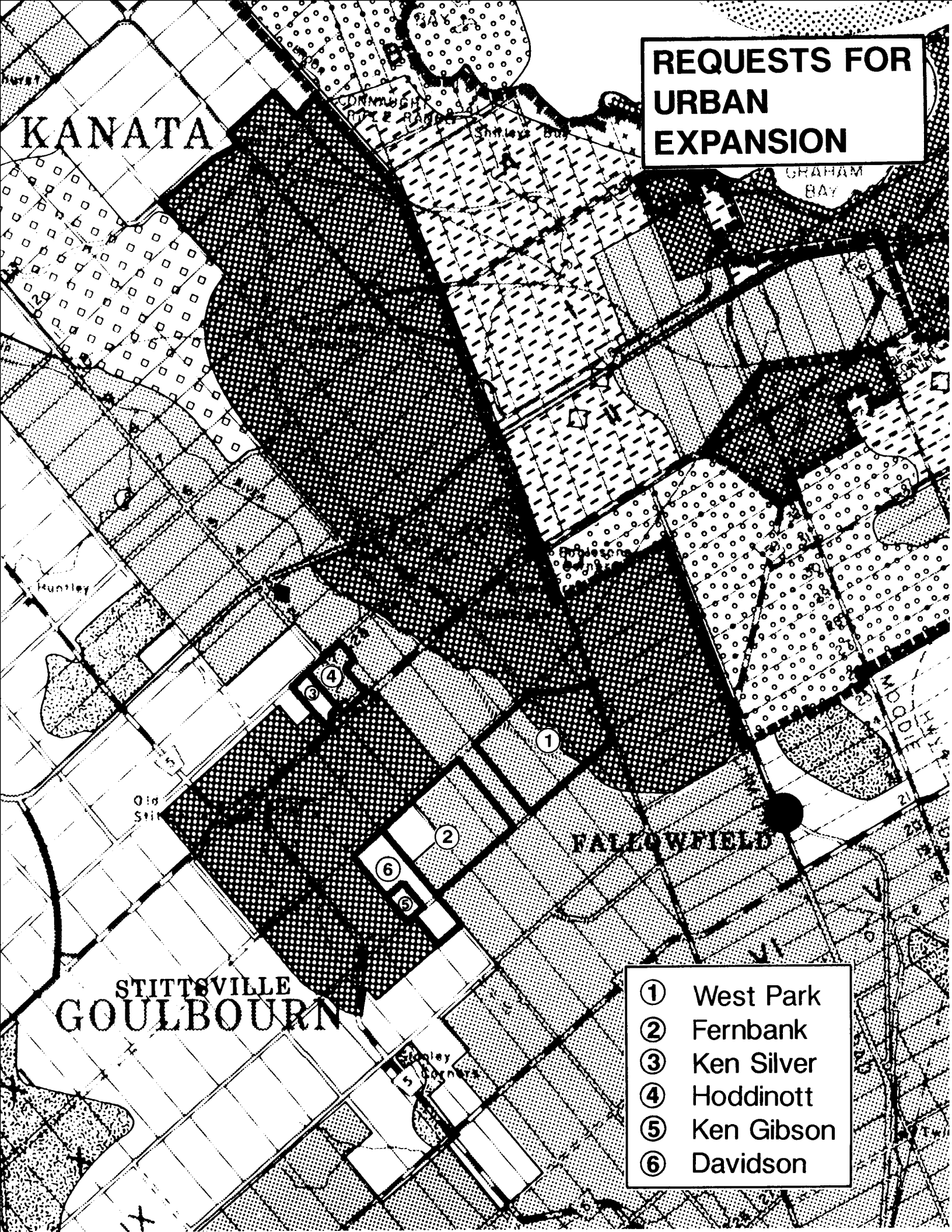
3. Ken Silver
Municipality: Goulbourn
Area of the site: 26.3 ha
Purpose: to redesignate General Rural to General Urban Area for primarily residential uses.
Status: Deferred

4. Hoddinott Holdings, ROPA 52
Municipality: Goulbourn
Area of site: 50.6 ha
Purpose: To redesignate Agricultural Resource Area to General Urban Area and Extensive Employment Area to permit industrial and commercial development.
Status: Incomplete Application

5. Ken Gibson, ROPA 48
Municipality: Goulbourn
Area of site: 8.3 ha
Purpose: To redesignate General Rural Area to General Urban Area to permit a proposed school.
Status: Deferred

6. Davidson
Municipality: Goulbourn
Area of Site: 93 ha
Purpose: To redesignate General Rural Area to General Urban Area for residential use.
Status: Incomplete Application

Other:
Kanata North (ROPA 41): The OMB decision on ROPA 41 required that a study of the area to meet certain requirements specified by the Board be completed by the time of adoption of the new Regional Official Plan. For information, Kanata Council recently decided not to fund the study.


REQUESTS FOR URBAN EXPANSION
KANATA
STITTSVILLE
GOULBOURN
FALLOWFIELD
1 West Park
2 Fernbank
3 Ken Silver
4 Hoddinott
5 Ken Gibson
6 Davidson

Annex E

Additional Facilities Required for Build-out (40,000 Additional Units Outside the Greenbelt)

(needs are in addition to those identified for the preferred Regional Development Pattern)

Transportation

Area	Facility
West	Terry Fox (Richardson Side Road to March Rd.) - 2 lanes Timm Drive (Eagleson to Richmond Rd.) - 2 lanes
Southeast-Southwest links	Rideau River Bridge (Cambrian Rd. to Rideau Rd) - 4 lanes South Transitway (SW Transitway to SE Transitway)
Southwest	Cambrian Road (416 to Rideau River) - build/widen to 4 lanes Greenbank (Strandherd to 417) - widen to 6 lanes Highway 16 (Cambrian to Woodroffe) - widen to 4 lanes Highway 416 - build ramps at Cambrian Rd. Jockvale (Cambrian to Jock River) - widen to 4 lanes Merivale (Highway 16 to Amberwood) - widen to 4 lanes Strandherd (Greenbank to Highway 16) - widen to 6 lanes
Southeast	Armstrong (Rideau River to Limebank) - widen to 6 lanes Armstrong (Bowesville to Highway 31) - widen to 6 lanes Blais (Highway 31 to Hawthorne) - widen to 4 lanes Bowesville (Airport Parkway to Rideau Rd.) - widen to 4 lanes Hawthorne (Armstrong to Hunt Club) - widen to 4 lanes Hawthorne (Hunt Club to Walkley) - widen to 6 lanes Limebank (Rideau Rd. to Armstrong) - widen to 4 lanes Rideau Rd. (Rideau River to Limebank) - build 4 lanes River Rd. (Limebank to Hunt Club) - widen to 6 lanes River Rd. (Rideau Rd. to Limebank) - widen to 4 lanes
East	Blackburn Hamlet Bypass (Walkley to Navan Rd.) - widen to 8 lanes Blackburn Hamlet Bypass Extension (Navan Rd. to Trim Rd.) - widen to 4 lanes Highway 17 (Montreal Rd. to Trim Rd.) - widen to 6 lanes Navan Road (BBHBP to BBHBP extension) - widen to 6 lanes Tenth Line (Wall Rd. to Innes Rd.) - widen to 4 lanes Trim Road (BBHBP extension to Innes Rd.) - widen to 4 lanes Walkley (417 to BBHBP) - widen to 4 lanes

Note: BBHBP = Blackburn Hamlet Bypass

Water & Wastewater

Below is a list of factors considered in designing the water and wastewater system for build-out, followed by a list of works. It should be noted that the sizing of works built between 1997 and

2021 will address the build-out considerations. With that understanding, any rehabilitation or new facilities constructed between 1997 and 2021 will be sized with due consideration of all factors including build-out needs. The following list of works should be reviewed with that understanding.

Design of Water & Wastewater System

The following is the approach taken for sizing water and wastewater infrastructure:

1. Design the system to meet projected demand at the end of the planning horizon of 2021

2. Consider over-sizing infrastructure in the context of the following:
   a) build-out potential (development) of available urban land as defined in the Official Plan but not required within the planning horizon
   b) downstream capacity constraints
   c) operational and maintenance concerns
   d) long term transportation and land use implications

Experience to date supports the need to balance the cost-effectiveness of oversizing facilities with flexibility in future planning opportunities, including the long term land use and transportation implications of the development potential from oversizing, and operational concerns while maintaining a reliable system that provides high quality water. This requires careful judgment of the implications of each of the factors.

Water Works Required

Area	Facility
West	Internal watermains Pumping Station upgrade: Glen Cairn
Southwest	Internal watermains
Southeast	Elevated tank Internal watermains Pumping Station upgrades: River Ridge & Ottawa South
East	Internal watermains Pumping Station upgrades: Orleans or Forest Ridge
Inside the Greenbelt *	Internal Watermains Pumping Station upgrades: Carlington Heights, Billings Bridge
* Note: works inside the Greenbelt after 2021 are solely to service growth areas outside the Greenbelt.	

Wastewater Works Required

Area	Facility
West	Pumping Station Upgrades: Acres Road, Richmond & Hazeldean Carp pumping station and forcemain - Booster station on forcemain, additional pumps or storage at station Tri-Township Sewer - replace capacity constraining pipe segments (if determined to be needed would be incorporated with rehabilitation identified in 1997 to 2021 proposed works)
Southwest	Upgrade pipe sizing of 1997 to 2021 works Pipe extensions
Southeast	Upgrade pipe sizing of 1997 to 2021 works Pipe extensions
East	Upgrade pipe sizing of 1997 to 2021 works Pipe extensions
Inside the Greenbelt *	Albion Road - replace capacity constraining pipe segments
* Note: works inside the Greenbelt after 2021 are solely to service growth areas outside the Greenbelt.	

Total capital costs for the above works are estimated at over $400 million. This figure is a net increase above infrastructure required for the preferred development pattern, taking account of some works that would not be required with 40,000 fewer units inside the Greenbelt. All but approximately $30 million of the additional cost is for transportation infrastructure.