DRAFT FINAL EVALUATION ANALYSIS
City of Kingston Urban Growth Strategy

1.0 Background

Six growth alternatives have been developed for the City of Kingston. The first alternative consists of land located within the built-up areas of the City and Development Area 1 / Stage 1 areas, as currently designated in the existing Official Plans of the former Townships of Pittsburgh and Kingston. It is based on the assumption that infill development and redevelopment of brownfields will occur wherever opportunities exist. As Alternative 1 was found to be insufficient to meet future land requirements to the year 2026, five alternatives were considered, which would add major vacant parcels to the urban area, concentrated at different locations. Alternative 1A consists of undeveloped or underdeveloped land in two locations inside the serviced urban area, owned by the federal government. These lands are not currently available for development purposes.* Alternatives 2, 3, 4 and 5 are located on the urban periphery (refer to attached **Figures 2 and 3**):

Alternative 1A: Collins Bay Penitentiary and CFB Kingston private married quarters which have potential for development and redevelopment.

Alternative 2: Urban Fringe – concentrated northwest of Princess Street and Bayridge Drive in the west; and the easterly part of the Rideau Community in the east.

Alternative 3: West – focused on the Mile Square property and Westbrook.

Alternative 4: East – focused on each side of Highway 2 east of CFB Kingston.

Alternative 5: North – concentrated primarily east and a small area immediately west of Division Street north of Highway 401.

2.0 Methodology

Criteria were developed to aid in the evaluation of the growth alternatives in consultation with the public, community groups, and municipal and utility staff in November 2002. The criteria were modified in response to various comments received, and were finalized in January 2003. Accompanying the criteria were a list of "indicators" to be used to help assess the relative merits of the alternative solutions. Since the wording of indicators was general in nature (e.g. "opportunities to use existing trunk services"), quantitative measurements (e.g. length of pipe) have been developed, where possible, and used to help with the comparative assessment of alternatives. Where appropriate, minor adjustments were made to some of the indicators to help ensure meaningful results.

A two-step approach was used in the evaluation of Alternatives 1A to 5. First, for each criterion, "pair-wise ranking" was used to compare each alternative against the other four to determine a preference ranking, as illustrated in **Figure 1**.

* The Official Plan of the former Township of Kingston designates most of the Collins Bay Penitentiary land as Institutional on Schedule "A". Schedule "B" shows it is inside the "Service Area Boundary" but not within any "Development Area Boundary." An Official Plan Amendment would be required to assign a servicing priority to these lands.

FIGURE 1: Pair-Wise Ranking Example
Criterion *x*

Alternative	1A	2	3	4	5
1A	X	X	X	X	X
2	2	X	X	X	X
3	3	2	X	X	X
4	4	4	4	X	X
5	1A	2	3	4	X
Ranking	L	M	L	H	L

Figure 1 shows that, when compared one against the other under criterion *x*, Alternative 4 was consistently preferred over the other four alternatives, followed by Alternatives 2 then 3 and 1A, with Alternative 5 ranked least preferable under this criterion. This approach was applied for all seven criteria, with the rationale for the ranking documented at each decision-point (e.g. why Alternative 4 was preferred to Alternative 2 under criterion *x*.)

Preference ranking does not reflect how much one alternative is preferred over another, or the degree or variability in impacts between the different solutions. Therefore, the second step involved grouping the alternatives according to their degree of overall preference based upon the analysis conducted. Continuing with the above example, while Alternative 4 was ranked most preferred, analysis indicated that Alternative 2 would result in only modestly greater negative impacts. By comparison, Alternatives 1A and 3 would result in significantly greater negative impacts than both Alternatives 4 and 2. Alternative 5 may have even greater negative impacts. Using this example, the alternatives would be grouped as follows: High Preference – Alternatives 4 and 2; and Medium Preference – Alternatives 1A and 3; Low Preference – Alternative 5 (which are illustrated graphically as high = green; medium = yellow; and low = red in the evaluation tables). This is illustrated in Figure 2.

FIGURE 2: Modified Pair-Wise Ranking Example
Criterion *x*

Alternative	1A	2	3	4	5
1A	X	X	X	X	X
2	2	X	X	X	X
3	3	2	X	X	X
4	4	4	4	X	X
5	1A	2	3	4	X
Ranking	M	H	M	H	L

Wherever possible, numeric values were used to assist in the comparative evaluations and groupings (e.g. the relative length of new sanitary sewer pipe required was used to help determine preference ranking and grouping under Criterion 2). This was not always possible and qualitative analysis based upon professional judgment was used where quantitative data was unavailable or unreliable.

Breaking the evaluation process down into a series of one-on-one comparisons enables transparent and replicable documentation of the decision-making process, and allows for informed discussion of the evaluation results. Section 4 presents the draft evaluation results of Alternatives 1A through 5, following the application of the above-described methodology.

3.0 Assumptions

It is assumed that the third crossing (Gore-Elliott Bridge) will be built for all alternatives. Existing and committed development already requires this infrastructure, according to the draft Transportation Master Plan. **This is a significant change from the April 8, 2003 Evaluation.** At that time, it was uncertain whether the third crossing would be essential for all Growth Alternatives.

For all of the Criteria, except No. 1, it is assumed that Growth Alternative 1 lands will be substantially developed first and that needed infrastructure and facilities would, therefore, be in place.

4.0 Draft Results

4.1 Criterion 1: Strategy facilitates enhanced use of the downtown

The indicator for this criterion was drafted on the assumption that one or more alternatives would present greater opportunities for "intensification" of the downtown, which was considered to be the main indicator of "enhanced use." Since all alternatives present equivalent opportunities for intensification, the measurements developed for this criterion assess the degree to which alternatives can support or "enhance" commercial activity and "use" of the downtown—a function of their proximity and accessibility to lower Princess Street. Accordingly, the following indicator was used in assessing the relative merit of growth alternatives under this criterion:

- Distance of new development from lower Princess Street (<4 km, between 4 and 8, and >8 kilometres)

Criterion 1: Enhanced Use of Downtown					
Alternative	**1A**	**2**	**3**	**4**	**5**
1A	X	X	X	X	X
2	1A	X	X	X	X
3	1A	2	X	X	X
4	-	4	4	X	X
5	-	5	5	-	X
Ranking	H	M	L	H	H

In summary, Alternatives 1A, 4 and 5 are considered preferable to Alternatives 2 and 3 because of their closer proximity to Lower Princess Street and the commercial core of Kingston. Refer to Table 1 in Attachment 1 for details.

4.2 Criterion 2: Strategy enables enhanced use of existing and planned water and sanitary sewer infrastructure

The following matters were considered in assessing the relative merit of growth alternatives under this criterion:

- Length of new trunk water and sewer mains and existing sewers to be twinned.
- Number of new pumping/booster stations and existing stations to be upgraded.
- Length of new forcemains and existing forcemains to be twinned.
- Triggers expansion of water and wastewater treatment plants.
- Additional water storage requirements.

Criterion 2: Enhanced Use of Water and Wastewater Infrastructure					
Alternative	**1A**	**2**	**3**	**4**	**5**
Sanitary	H	H	L	L	M
Water	H	H	L	M	L
Ranking	H	H	L	M	M

In summary, the least amount of water and sanitary infrastructure is required to expand into areas comprising Alternatives 1A and 2. Alternative 3 faired the worst, largely because of the greater length of watermain required to service that community and the length and magnitude of upgrades required to downstream receiving wastewater collectors and the Mona and Days Road Pumping Stations. Refer to Tables 2 and 3 in Attachment 1 for details.

4.3 Criterion 3: Strategy enables enhanced service delivery, public safety, and operational efficiencies

The following matters were considered in assessing the relative merit of growth alternatives under this criterion:

- Number of new or major expansions required to municipal facilities/operations that would not be needed otherwise.
- Number of new schools required that would not be needed otherwise.
- Distance of new development to existing waste and snow disposal facilities.

This criterion does not reflect the costs of these works; rather, it reflects the degree to which the public will feel the effects of development in their daily lives as a result of changes in access to facilities or to levels of service.

Criterion 3 – Service Delivery, Safety and Operational Efficiencies					
Alternative	**1A**	**2**	**3**	**4**	**5**
Libraries	L	L	L	H	M
Parks & Recreation	M	M	M	M	M
Schools	H	H	L	M	L
Operational Efficiencies	M	M	L	L	H
Ranking	M	M	L	M	M

In summary, Alternatives 1A, 2, 4 and 5 ranked well under this criterion because of their closer proximity to centralized services/facilities. Refer to Tables 5 through 8 in Attachment 1 for details.

4.4 Criterion 4: Strategy enables enhanced use of existing and planned roads

The following indicator was used to assess the relative merit of growth alternatives under this criterion:

- Increased opportunities for development where roadway capacity exists or is planned by the City.

Criterion 4: Enhanced Use of Roads					
Alternative	**1A**	**2**	**3**	**4**	**5**
1A	X	X	X	X	X
2	2	X	X	X	X
3	-	2	X	X	X
4	-	2	-	X	X
5	5	2	5	5	X
Ranking	L	H	L	L	M

All alternatives require road upgrades and will incur significant transportation system costs; however, comparatively speaking, the least road work is required with Alternative 2. Refer to Table 10 in Attachment 1 for details. In summary, Alternative 2 ranked the best due to the relatively smaller degree of upgrades needed to meet road capacity requirements.

4.5 Criterion 5: Strategy enables increased use of alternative modes of transportation

The following matters were considered in assessing the relative merit of growth alternatives under this criterion:

- Proximity of new development to an existing transit node or route.
- Opportunities for linear pathways between residential and ICI uses.
- Proximity to existing ICI employment opportunities for walking and cycling.

Criterion 5: Enhanced Use of Alternative Modes of Transportation					
Alternative	**1A**	**2**	**3**	**4**	**5**
1A	X	X	X	X	X
2	1A	X	X	X	X
3	1A	2	X	X	X
4	1A	2	-	X	X
5	1A	2	3	4	X
Ranking	H	M	L	L	L

In summary, all alternatives present opportunities for increased transit use and other modes of transportation. Alternatives 1A and 2 provide the greatest opportunities due to their proximity to major existing and proposed transit routes, other ICI employment areas, and are adjacent to an existing major transit population base (i.e. service to this area will increase service to others within the existing built-up area and increase potential gross ridership levels.) Refer to Table 11 in Attachment 1 for details.

4.6 Criterion 6: Strategy provides improved housing affordability and choice

The following indicator was used to assess the relative merit of growth alternatives under this criterion:

- Proximity to major arterials and ICI employment/service areas.

Criterion 6: Improved Housing Affordability and Choice					
Alternative	**1A**	**2**	**3**	**4**	**5**
1A	X	X	X	X	X
2	1A	X	X	X	X
3	1A	2	X	X	X
4	1A	2	-	X	X
5	1A	2	-	-	X
Ranking	H	M	L	L	L

In summary, all alternatives provide opportunities for increasing the affordable housing stock. However, Alternatives 1A and 2 also provide the best access to existing ICI areas for employment and consumer purposes and, thus, would better serve a population that may be more dependent upon public transit and non-automobile modes of transport.

4.7 Criterion 7: Cost

The following indicators were considered in assessing the relative merits of the growth alternatives under this criterion:

- Per capita cost based upon the total projected population.
- Comparison of taxpayer versus developer costs (i.e. water and sewer rates plus taxes versus Impost plus Development Charges)

Criterion 7: Cost					
Alternative	**1A**	**2**	**3**	**4**	**5**
Total Cost (present value) on a per capita basis for Total Population	M	H	L	M	M
Total Cost (present value) on a per capita basis for Growth Only	M	H	H	M	L
Cost per capita (Rates & Taxes)	L	H	H	L	M
Cost per capita (Development Charges & Imposts)	L	H	M	L	L
Ranking	L	H	M	L	L

Alternative 2 has lower present value per capita and total costs than Alternative 3 ($4970 vs $5118; $241.61 M vs $289.99 M). On a per capita basis, Alternatives 2 and 3 have essentially equal rate plus tax implications. However, Alternative 2 has lower developer cost implications ($3907 vs $ 4572). Therefore, Alternative 2 is preferred to Alternative 3. Alternatives 1A, 4 and 5 are more costly than Alternatives 2 and 3.

5.0 Summary Results

The following Table presents the ranking of the alternatives under all seven criteria.

Summary Results					
Criterion	**Alternative**				
	1A	**2**	**3**	**4**	**5**
1. Strategy facilitates enhanced use of the downtown.	H	M	L	H	H
2. Strategy enables enhanced use of existing and planned water and sanitary sewer infrastructure.	H	H	L	M	M
3. Strategy enables enhanced service delivery, public safety and operational efficiencies.	M	M	L	M	M
4. Strategy enables enhanced use of existing and planned roads.	L	H	L	L	M
5. Strategy enables increased use of alternative modes of transportation.	H	M	L	L	L
6. Strategy provides improved housing affordability and choice.	H	M	L	L	L
7. Cost	L	H	M	L	L

In summary, Alternatives 1A and 2 are preferred over the other alternatives under most criteria. Alternative 5 also demonstrates a moderate degree of preference, followed closely by Alternative 4. Least preferable is Alternative 3.

In discussing the comparison between Alternatives 1A and 2, it is important to note that the federal agencies which own these lands are not currently offering them for urban development. As long as this situation persists, **Alternative 1A cannot be considered a viable alternative on which to base the City's future growth.**

ATTACHMENT 1: DETAILED EVALUATION ANALYSIS

Criterion 1: Strategy facilitates enhanced use of the downtown.

Indicator:

- Distance of new development from Lower Princess (i.e. <4 km, between 4 and 8, and >8 kilometres.)

TABLE 1

Criterion 1						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	1A	X	X	X	X	Alternative 1A is preferable to Alternative 2 since it is closer to downtown (2 km (east) and 6 km (west) versus 5 km (east) and 8 km (west)). *
3	1A	2	X	X	X	Alternative 1A is preferable to Alternative 3 because it is much closer to downtown (2 km and 6 km versus 10.5 km). Alternative 2 is preferable to Alternative 3 since it is closer to downtown (5 km and 8 km versus 10.5 km).
4	-	4	4	X	X	Alternative 4 is considered equivalent to Alternative 1A because they are relatively equidistant from downtown (4 km versus 2 km and 6 km). Alternative 4 is preferable to Alternative 2 because it is closer to downtown (4 km versus 5 km and 8 km). Alternative 3 is much more distant than Alternative 4.
5	-	5	5	-	X	Alternative 5 is preferable to Alternatives 2 and 3 because it is closer to downtown (4 km versus 5 km and 8 km and 10.5 km). Alternatives 1A, 4 and 5 are considered equivalent because they are equidistant from downtown (4 km).
Ranking	H	M	L	H	H	

* Alternatives 1A and 2 each have both an easterly and a westerly component of growth.

Criterion 2: Strategy enables enhanced use of existing and planned water and sanitary sewer infrastructure.

Overall Indicator:

- Strategy enables enhanced use of existing and planned water and sanitary sewer infrastructure.

Sanitary Indicators:

- Length of new trunk sewer and existing sewer to be twinned.
- Number of new pumping stations (PSs) and existing PSs to be upgraded.
- Length of new forcemain (FM) and existing FM to be twinned.
- Triggers expansion of water pollution control plants (WPCPs).

TABLE 2

Criterion 2 – Sanitary						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	2	X	X	X	X	Alternative 2 is preferable to Alternative 1A. Alternative 1A requires less sewer and more forcemain than Alternative 2; one more sewage pumping station and the same number of PS upgrades. Both alternatives require WPCP upgrades that are similarly sized.
3	1A	2	X	X	X	Alternative 1A is preferable to Alternative 3 because it requires less sewer and forcemain and the same number of new PS and fewer PS upgrades. Both Alternatives require WPCP upgrades, with Alternative 3 requiring more total expansion than Alternative 1A. Alternative 2 is preferable to Alternative 3 because it requires less sewer and forcemain and fewer PSs and PS upgrades. Both Alternatives require WPCP upgrades.
4	1A	2	4	X	X	Alternative 1A is preferable to Alternative 4 because it requires less sewer and forcemain. Both Alternatives require 1 new PS and the same upgrades to 3 existing PSs. The alternatives require similarly sized WPCP expansions. Alternative 2 is preferable to Alternative 4 because it requires less sewer and forcemain and no new PS. Alternative 3 is less desirable than Alternative 4 because it requires more sewer and forcemain and more PS upgrades. All Alternatives require WPCP upgrades.
5	1A	2	5	5	X	Alternative 1A is preferable to Alternative 5 because it requires less sewer and forcemain. Both alternatives require a new PS and the same upgrades to 3 existing PSs. Both alternatives require WPCP expansion with Alternative 1A requiring slightly more total expansion. Alternative 2 is preferable to Alternative 5 because it requires slightly less sewer and forcemain and no new PS. Alternative 3 is less desirable than Alternative 5 because it requires more sewer and forcemain and more PSs and PS upgrades. Alternative 4 is less desirable than Alternative 5 because it requires more sewer and forcemain. Alternatives 4 and 5 require similar works for PSs.
Ranking	H	H	L	L	M	

Criterion 2: Strategy enables enhanced use of existing and planned water and sanitary sewer infrastructure.

Water Indicators:

- Length of new trunk WM.
- Additional water storage required.
- Number of new booster stations (BSs) and existing BSs to be upgraded.
- Triggers expansion of water treatment plants (WTPs).

TABLE 3

Criterion 2 – Water						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	-	X	X	X	X	Alternative 1A and Alternative 2 are similar. Both alternatives require the same amount of watermain, water storage, the same upgrades to BSs and to the Kingston West WTP.
3	1A	2	X	X	X	Alternative 1A is preferable to Alternative 3 because it requires less trunk watermain, less additional storage, fewer BSs and a smaller WTP expansion. Alternative 2 is preferable to Alternative 3 because it requires less trunk watermain, less additional storage, fewer BSs and a smaller expansion to the WTP.
4	1A	2	4	X	X	Alternative 1A is preferable to Alternative 4 because it requires less trunk watermain. Storage, WTP and BS requirements are similar. Alternative 4 is less desirable than Alternative 2 because it requires more trunk watermain. Storage and new BS requirements are similar. Alternative 4 is preferable to Alternative 3 because it requires less watermain, less additional water storage, one less BS and a smaller WTP expansion.
5	1A	2	5	4	X	Alternative 1A is preferable to Alternative 5 because it requires less trunk watermain, fewer BS, and less water storage. Alternative 5 is less desirable than Alternative 2 because it requires more trunk watermain, more water storage, and one more new BS. Alternative 5 is preferable to Alternative 3 because it requires less trunk watermain, less additional water storage. New BSs are the same. Alternative 5 requires slightly less trunk watermain than Alternative 4 but more water storage and one more new BS. Alternative 4 is slightly more preferable.
Ranking	H	H	L	M	L	

TABLE 4					
Criterion 2 - Overall Ranking					
Alternative	**1A**	**2**	**3**	**4**	**5**
Sanitary Infrastructure	H	H	L	L	M
Water Infrastructure	H	H	L	M	L
Ranking	H	H	L	M	M

Criterion 3 – Strategy enables enhanced service delivery, public safety and operational efficiencies.

Indicators:

- Number of new or major expansions required to municipal facilities/operations that would not be needed otherwise.
- Number of new schools required that would not be needed otherwise.
- Distance of new development to existing waste and snow disposal facilities.

TABLE 5						
Criterion 3 - Libraries						**Rationale / Analysis**
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	-	X	X	X	X	Alternative 1A is equivalent to Alternative 2 since both may require one new library.
3	-	-	X	X	X	Alternatives 1A, 2 and 3 have equal merit since all three require 1 new facility and increased capacity at existing facilities.
4	4	4	4	X	X	Alternative 4 is preferable to Alternatives 1A, 2 and 3 since it can be adequately serviced by the Highway 15/Gore Road Branch.
5	5	5	5	4	X	While Alternative 5 would necessitate a new library like Alternatives 1A, 2 and 3, it is preferred to those because the new library would allow for decommissioning of an existing library that is poorly located and under-utilized.
Ranking	L	L	L	H	M	

Parks and recreation refers to public natural spaces, landscaped parks and recreational facilities, such as pools, ice rinks and other public facilities used for leisure activities.

TABLE 6

Criterion 3 – Parks & Recreation						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	-	X	X	X	X	Alternatives 1A and 2 provide similar opportunities for natural recreational pathways along Little Cataraqui River (or, alternatively, through the Collins Bay Penitentiary site in accordance with the 2003 Cycling and Pathways Study) or along Collins Creek. Both also provide opportunities for locating new major community sports facilities.
3	-	-	X	X	X	Alternatives 1A, 2 and 3 all have merit: all of them provide opportunities for natural recreational pathways along Collins Creek or Little Cataraqui River.
4	-	-	-	X	X	Alternative 4 is considered equal in merit to Alternatives 1A, 2 and 3 since it could provide better boating access if parkland dedication is obtained in a suitable waterfront location, but would not provide the same opportunities for natural pathways.
5	-	-	-	-	X	Alternative 5 is considered equal to all other alternatives because, although it lacks the amenities of the other alternatives, it provides an opportunity for the siting of a major recreational facility, centrally located within the City, with excellent transportation access. Furthermore, it provides opportunities to provide recreational links to Cataraqui Region Conservation Authority lands.
Ranking	M	M	M	M	M	

TABLE 7

Criterion 3 – Schools*						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	1A	X	X	X	X	Alternative 1A is preferable to Alternative 2 because it has a larger area of potential development which would better support existing elementary school facilities located in the CFB Kingston portion of Alternative 1A and near the Collins Bay Penitentiary portion of Alternative 1A.
3	1A	2	X	X	X	Alternative 1A is preferable to Alternative 3 because it would better support existing elementary school facilities located in the CFB Kingston portion of Alternative 1A and near the Collins Bay Penitentiary portion of Alternative 1A. Alternative 2 is preferable to Alternative 3 because school facilities are already planned in the Greenwood subdivision to meet current growth projections in the existing urban area.
4	1A	2	4	X	X	Alternative 1A is preferable to Alternative 4 because it is closer to existing school facilities located in the CFB Kingston portion of Alternative 1A and near the Collins Bay Penitentiary portion of Alternative 1A. Alternative 2 is preferable to Alternative 4 because, while both areas require a new school, opening of a new school in Cataraqui North would allow for a school closure elsewhere in Kingston West. Alternative 4 is preferable to Alternative 3 since a school is already planned.
5	1A	2	-	4	X	Alternative 1A is preferable to Alternative 5 because it would better support existing elementary school facilities located in the CFB Kingston portion of Alternative 1A and near the Collins Bay Penitentiary portion of Alternative 1A. Alternatives 2 and 4 are preferable to Alternative 5 for the reasons noted above. Alternatives 3 and 5 have equal merit since both require new schools that are not currently planned, and would require extensive bussing until such schools were built.
Ranking	H	H	L	M	L	

*Both the public and separate school boards were contacted.

Operational Efficiencies refer to matters such as snow and garbage removal, road surface repairs and maintenance, street sweeping, parks maintenance, and proximity to fire stations.

TABLE 8

Criterion 3 – Operational Efficiencies						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	-	X	X	X	X	Alternatives 1A and 2 are considered equal in their proximity to the central maintenance facilities and to existing fire stations. They are also adjacent to existing residential areas which are already being serviced.
3	1A	2	X	X	X	Alternatives 1A and 2 are preferable to Alternative 3 because they are located closer to the central maintenance facilities and existing fire stations. They are also adjacent to existing residential areas which are already being serviced.
4	1A	2	4	X	X	Alternatives 1A and 2 are preferable to Alternative 4 because they are located closer to the central maintenance facilities and to existing fire stations. Alternative 4 is preferable to Alternative 3 because it is closer to existing facilities and because the City already services residential development in the area.
5	5	5	5	5	X	Alternative 5 is preferable to all other alternatives because it is closer to the central facilities including the proposed Division Street Civic Centre.
Ranking	M	M	L	L	H	

TABLE 9

Criterion 3 - Overall Ranking					
Alternative	**1A**	**2**	**3**	**4**	**5**
Libraries	L	L	L	H	M
Parks & Recreation	M	M	M	M	M
Schools	H	H	L	M	L
Operational Efficiencies	M	M	L	L	H
Ranking	M	M	L	M	M

Criterion 4: Strategy enables enhanced use of existing and planned roads.

Indicator:

- Increased opportunities for development where roadway capacity exists or is planned by the City.

TABLE 10

Criterion 4 – Road Capacity						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	2	X	X	X	X	Alternative 2 is preferable to Alternative 1A because it makes better use of existing and planned roads. About one-third of Alternative 1A's growth would be located at CFB Kingston and can all be accommodated on existing or planned roads. However, the two-thirds of the Alternative 1A growth that would be located on the Collin's Bay Penitentiary site requires improvements to Days Road and Bath Road, as well as the extension of Centennial Drive. Alternative 2 only requires the extension of one Collector Road (Cataraqui Woods Drive).
3	-	2	X	X	X	Alternatives 2 and 3 are similar since both require significant roadway widening/new construction. Alternative 2 is preferable because it makes better use of existing and planned roads.
4	-	2	-	X	X	Alternatives 1A and 4 make good use of existing roads but both require significant roadway improvements. Alternative 2 is preferable to Alternative 4 because it makes better use of existing and planned roads. Alternatives 3 and 4 present similar opportunities for development where roadway capacity exists or is planned. Both require substantial road work.
5	5	2	5	5	X	Alternative 2 is preferable to Alternative 5 because it requires very few new roads. Alternative 5 requires significant upgrades to Division Street, and the Division Street – Highway 401 interchange. However, Alternative 5 is preferable to Alternatives 1A, 3 and 4 because it makes good use of Highway 401 and would help to better distribute traffic on north-south streets and necessitate fewer network improvements.
Ranking	L	H	L	L	M	

Criterion 5: Strategy enables increased use of alternative modes of transportation.

Indicators:
- Proximity of new development to an existing transit node or route.
- Opportunities for linear pathways between residential and Industrial/Commercial/Institutional (ICI) uses.
- Proximity to existing ICI employment opportunities for walking and cycling.

TABLE 11

Ranking						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	1A	X	X	X	X	Alternative 1A is preferable to Alternative 2 (as well as 3, 4 and 5) because it directly abuts more existing and proposed transit routes and existing/proposed utilitarian focus cycling routes than any of the other alternatives. It also has at least equal proximity to ICI employment opportunities for walking and cycling.
3	1A	2	X	X	X	Alternative 1A is preferable to Alternative 3 for the reasons noted above. Alternative 2 is preferable to Alternative 3 because it immediately abuts the existing service area; is closer to Cataraqui Town Centre, a major transit node, and is closer to existing ICI employment areas for commuting purposes.
4	1A	2	-	X	X	Alternative 1A is preferable to Alternative 4 for the reasons noted above. Alternative 2 is preferable to Alternative 4 because there is already a large population base for which service could be improved by situating greater numbers in the west. While this is true in the east, the opportunity for increased ridership is significantly greater in the west. Alternatives 3 and 4 present relatively equivalent pathway opportunities. Alternative 4 is closer to ICI employment areas for commuting purposes, but Alternative 3 presents better ridership opportunities due to a greater concentration of population in the west. On balance, Alternatives 3 and 4 are considered equivalent.
5	1A	2	3	4	X	Alternative 1A is preferable to Alternative 5 for the reasons noted above. Alternative 5 presents equivalent ridership opportunities as 2 and 3 and could service a new Park & Ride north of Highway 401 on Division Street. Alternative 5 has comparable linear pathway opportunities as 3 and 4, but is cut off by the highway to ICI areas to the south. On balance, potential pedestrian and cycling access to existing ICI areas would not be as great with Alternative 5 and ranked moderately poorer than Alternatives 3 and 4 overall.
Ranking	H	M	L	L	L	

Criterion 6: Strategy provides improved housing affordability and choice.

Indicator:

- Proximity to major arterials and Industrial/Commercial/Institutional (ICI) employment/service areas.

TABLE 12

Ranking						Rationale / Analysis
Alternative	**1A**	**2**	**3**	**4**	**5**	
1A	X	X	X	X	X	
2	1A	X	X	X	X	Alternative 1A is preferable to Alternative 2 because it potentially abuts 3 arterial roads (Days Road, Front Road and Bath Road) compared to 1 arterial road (Princess Street) for Alternative 2. Both alternatives have similar proximity to ICI employment/service areas.
3	1A	2	X	X	X	Alternative 1A is considered preferable to Alternative 3 because it potentially abuts 3 arterial roads compared to 2 (Princess Street and Taylor Kidd Blvd.) for Alternative 3. It is also closer to ICI areas. Although Alternative 3 abuts 2 arterial roads compared to 1 arterial road for Alternative 2, Alternative 2 is considered slightly preferable to Alternative 3 because it has better access to existing ICI employment/service areas.
4	1A	2	-	X	X	Alternative 1A is considered preferable to Alternative 4 because it abuts 3 arterial roads compared to 1 (Highway 2) for Alternative 4 and it abuts far more ICI opportunities. Alternatives 2, 3 and 4 present similar opportunities for higher density housing adjacent to major arterials. However, Alternative 2 has better access to a diverse ICI market place both for employment and consumer purposes.
5	1A	2	-	-	X	Alternatives 1A and 2 are both considered preferable to Alternative 5 for proximity to arterial roads and ICI opportunities. Alternatives 3, 4 and 5 provide relatively equivalent opportunities for high density housing adjacent to major arterials and similar ICI opportunities.
Ranking	H	M	L	L	L	

Criterion 7: Cost (Refer to Table 16 for a Summary of Costs)

Indicator:

- Per Capita cost (present value (PV))

TABLE 13

Infrastructure Component	Alternative 1A	Alternative 2	Alternative 3	Alternative 4	Alternative 5
-Sanitary	$124,340,000	$124,000,000	$143,200,000	$128,260,000	$122,190,000
-Water	$31,285,000	$31,935,000	$47,075,000	$31,835,000	$36,715,000
-Roads	$167,600,000	$135,680,000	$175,380,000	$162,720,000	$143,230,000
Total Cost (Gross)	$323,225,000	$291,615,000	$365,655,000	$322,815,000	$302,135,000
Total Cost (Present Value)	$259,620,000	$241,610,000	$289,990,000	$262,710,000	$251,300,000
Total Population	148,549	148,549	156,599	149,009	145,617
PV Cost Per Capita (Total Population)	$1,748	$1,626	$1,852	$1,763	$1,726
Ranking	M	H	L	M	M
Estimated Population (Growth Only)	48,615	48,615	56,665	49,075	45,683
PV Cost Per Capita (Growth Only)	$5,340	$4,970	$5,118	$5,353	$5,501
Ranking	M	H	H	M	L

Indicator:

- Comparison of per capita taxpayer costs versus developer costs (ie water and sewer rates plus taxes vs. Imposts plus Development Charges)

TABLE 14

Infrastructure Component	Alternative 1A		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
	Rates & Taxes	Dev. Charges & Imposts	Rates & Taxes	Dev. Charges & Imposts	Rates & Taxes	Dev. Charges & Imposts	Rates & Taxes	Dev. Charges & Imposts	Rates & Taxes	Dev. Charges & Imposts
-Sanitary	$74,784	$49,556	$74,784	$49,216	$74,784	$68,416	$74,784	$53,476	$74,784	$47,406
-Water	$1,360	$29,925	$1,360	$30,575	$1,360	$45,715	$1,360	$30,475	$1,360	$35,355
-Roads	$32,288	$135,312	$25,530	$110,150	$30,466	$144,914	$31,757	$130,963	$26,323	$116,907
Total Cost	**$108,432**	**$214,793**	**$101,674**	**$189,941**	**$106,610**	**$259,045**	**$107,901**	**$214,914**	**$102,467**	**$199,668**
Total Population	148,549		148,549		156,599		149,009		145,617	
Estimated Population (Growth Only)		48,615		48,615		56,665		49,075		45,683
Cost Per Capita (Total Population)	$730		$684		$681		$724		$704	
Cost Per Capita (Growth Only)		$4,418		$3,907		$4,572		$4,379		$4,371
Ranking	L	L	H	H	H	L	L	L	M	L

Note values for Sanitary, Water, Roads, and Total Cost are in thousands (000's)

TABLE 15					
Criterion 7 - Overall Ranking					
Alternative	**1A**	**2**	**3**	**4**	**5**
Total Cost (present value) on a per capita basis for Total Population	M	H	L	M	M
Total Cost (present value) on a per capita basis for Growth Only	M	H	H	M	L
Cost per capita (Rates & Taxes)	L	H	H	L	M
Cost per capita (Development Charges & Imposts)	L	H	L	L	L
Ranking	L	H	M	L	L