Executive Summary

The purpose of this report is to substantiate and compare the projected gross density of New Urbanism planned developments with the gross density of existing conventional suburban areas located in Markham, Ontario. The intent of the report is to determine if any differences exist between these two approaches.

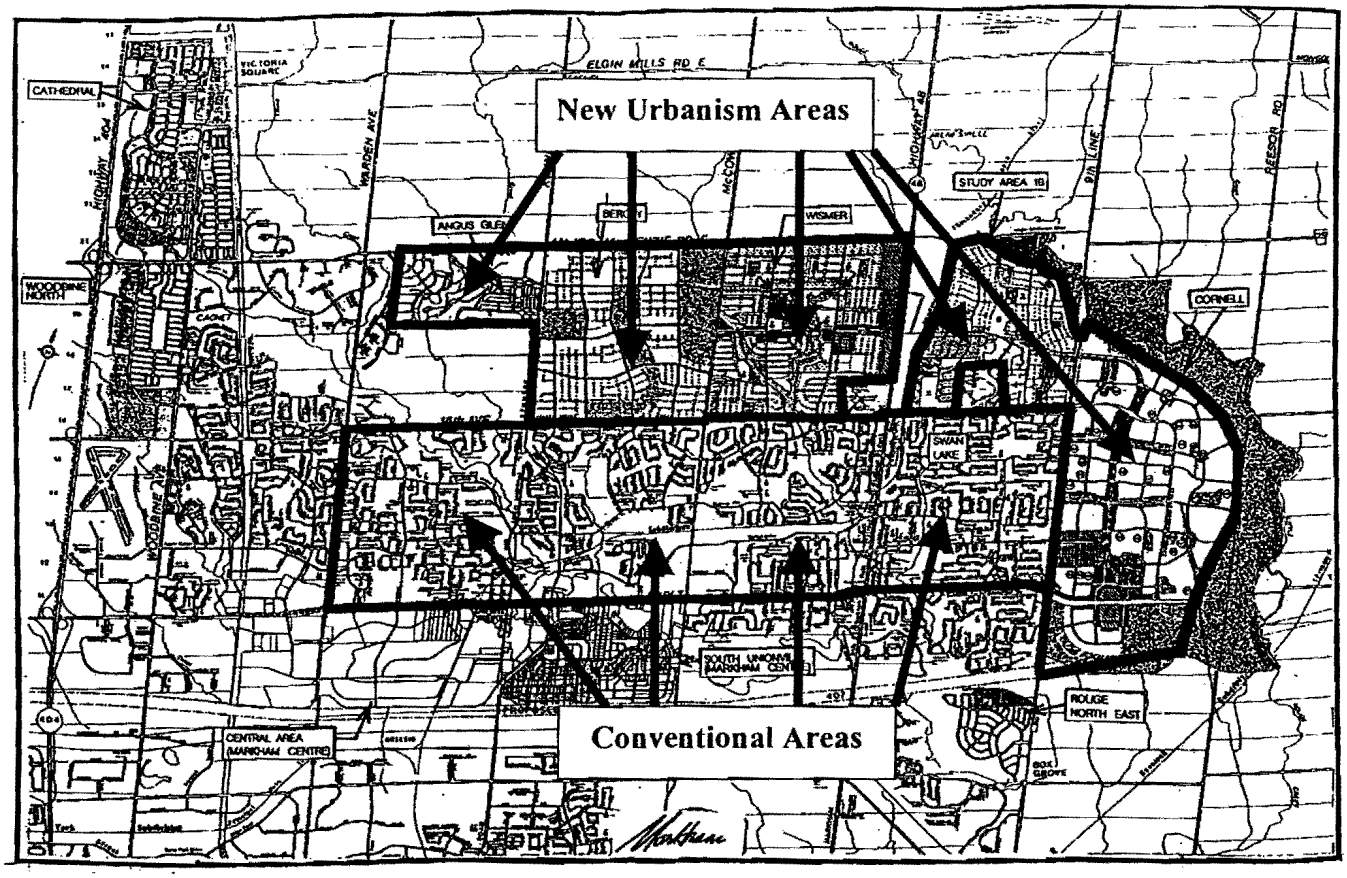
The study of residential density is important due to its wide reaching effect on future land reserves (much of it is ultimately supplied through suburban farmland on the urban fringe), the allocation of current and future municipal resources, and the effectiveness of public transit.

The sample study area for this report is in the Town of Markham Ontario, located on the northeast edge of the Greater Toronto Area (GTA) within the Region of York with a total population of approximately 173,380 (Canada Census, 1996). The total land area under study is approximately 4,280 hectares (10,575 acres). Of this total, 11 New Urbanism communities with approximately 2,645 hectares (6,536 acres) comprised one part of the sample. Of these 11 communities, five were studied in detail including 1,490 hectares (3,682 acres). The conventionally designed sample area is comprised of 1,635 hectares (4,040 acres).

Markham is an unusual study in planning due to the New Urbanism philosophy that pervades many of its secondary plans. In effect, this municipality and its landowners have committed a significant portion of its future land reserves to this philosophy. This suburban development is unique for an additional reason. These New Urbanism

suburban plans are in very close geographical proximity to earlier conventionally designed areas. This allows for side-by-side comparisons of density levels between the two planning approaches, even though the conventional areas represent planning criteria from 15 – 25 years earlier.

MAP iv - Location of Study Sample Area – Conventional and New Urbanism Areas



The five chosen secondary plans with New Urbanism principles have a proposed population of 84,919. When combined with the conventional areas, the total population of the entire combined Sample Study Area (both existing and proposed population) is approximately 136,000 people. However, if the all eleven New Urbanism communities are built out, the town's population will increase by approximately 83%. Above, map iv shows the location of the Study Sample Area.

Data analysis of 10 census tracts and 5 secondary plans were analyzed to estimate gross dwelling unit and population densities. In calculating these densities, hazard lands and industrial lands have been excluded from the total land area to determine the net development area. The gross density has been calculated by dividing the net development area by the total number of dwelling to determine the gross residential density. Population density, which has been calculated similarly, is expressed in persons per hectare. The following Table iv - *Summary of Conventional and New Urbanism Comparative Analysis*, provides a summary of the comparative density analysis for the *combined* conventional and New Urbanism areas.

Table iv - Summary of Conventional and New Urbanism Comparative Analysis

	NET DEVELOPMENT AREA		DWELLINGS	POPULATION	GROSS DENSITY		POPULATION DENSITY	
AREAS	Acres	Hectares	Total	Total	Units/ acre	Units/ hectare	Persons /acre	Persons /hectare
Conventional	2721	1,411	15,098	51,015	5.6	10.7	18.8	36.1
New Urbanism	3442	1,393	27,275	84,919	7.9	19.6	24.7	61
*differential						83%		69%

*differential percentage indicates the increase in density of New Urbanism areas over conventional areas.

The comparisons between the combined overall areas demonstrate that the mean gross residential density of the New Urbanism area (19.5 uph) has approximately 83% more gross density than the conventional area (10.7 uph). The population density differential has been calculated at approximately 69%. This appears to be a significant increase in density. The larger area comparison was useful in providing a broad understanding of the relationship between these conventional and New Urbanism areas. However, an analysis of individual blocks and smaller combined area comparisons, within the larger sample

areas, has also provided a more comprehensive picture of density levels. Results in these analyses show gross New Urbanism block areas exceeding conventional block areas by a range of approximately 1.3 to 2.3 times gross residential density. However, these results do not imply that New Urbanism plans necessarily exceed current conventional plans by a similar margin. Density can also be increased in conventional plans by reducing lot widths and depths.

To test this possibility, a comparative analysis was also completed of a recent conventionally designed secondary plan, *The Ajax Community Plan A6 (1999).* This analysis, which is shown in appendices 6.31 and 6.32, demonstrates that these combined Markham New Urbanism areas are getting at least 26% more gross residential density than the recent Ajax conventional areas.

In summary, the numbers clearly show that these New Urbanism areas in Markham are getting significantly higher gross residential and population density than the earlier conventional suburban curvilinear areas.