

2. BUILDING THE PLAN: INPUTS TO ANALYSIS

The Town's Transportation Model was developed to assess the impact of population and employment projections on the road network. The year 1996 was chosen to represent base year conditions since it was the year just prior to the start of development on OPA 5 lands. Extensive traffic data was available and was used to calibrate a computer model that divided Markham into a number of traffic zones.

Once the model accurately replicated 1996 traffic flows, population and employment forecasts were entered for the years 2003, 2006, 2011 and 2021. The vehicular demands generated for each horizon year were then assigned to the available road network.

Additional inputs to the study included travel patterns, major traffic generators, traffic volumes, modes of travel and public participation.

2.1 POPULATION AND EMPLOYMENT

The forecast population and employment estimates, illustrated in **Figure 2-1**, show the majority of growth occurring between 1996 and 2011.

Figure 2-2 illustrates the most current distribution of employment and population in York Region. The 1999/2001 data shows that significant percentages of the Region's employment and population are within the Markham area.

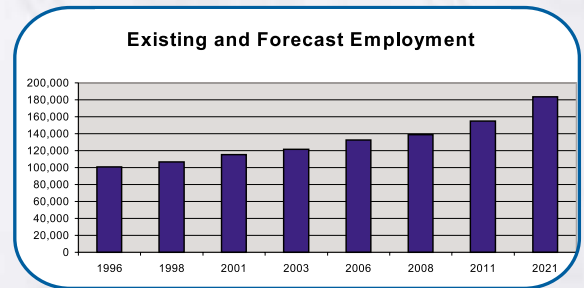
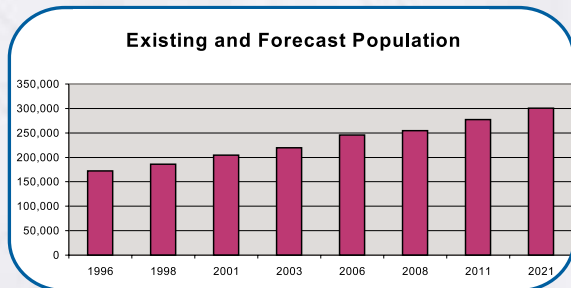


Figure 2-1 Town of Markham Population and Employment Forecasts

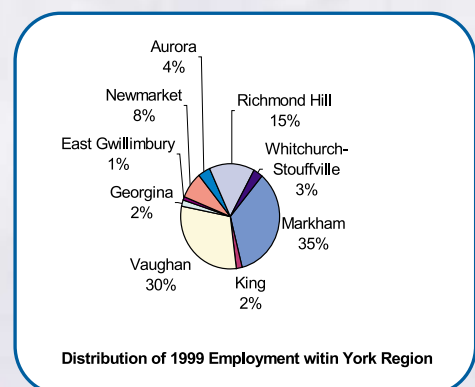
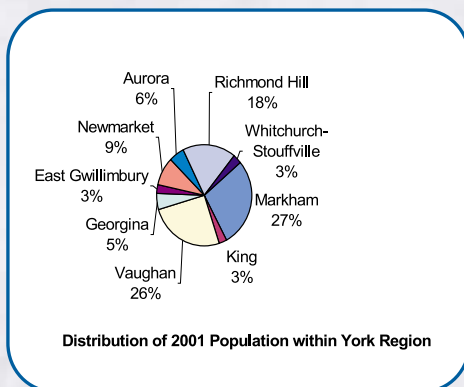


Figure 2-2 York Region Employment and Population Distribution
(ref.: York Region Transportation Master Plan)

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2.2 PLANNED ROAD IMPROVEMENTS

The roads network contains critical collector road links and connections initiated by the Town of Markham, plus significant improvements and additions to the arterial road network and Highway 407 interchanges.

The following are some of the key improvements now underway.

- ***The Rodick Road crossing of Highway 407 and its connection to Esna Park Drive.***

An environmental assessment, including detailed design, is now in process. At the time Highway 407 was being built, the Town of Markham advanced the funds necessary to protect for a grade separation.

- ***The protection of the Birchmount Road extension.***

Markham funded the Birchmount Road underpass construction at the time Highway 407 was built and purchased land to protect the route.

- ***The extensions of Clegg Road, Yorktech Road and Enterprise Drive.***

These extensions will play a key role in the future development of the Markham Centre lands and provide alternate east-west road links to Highway 7.

- ***The Markham By-Pass north of Highway 407.***

This has gone through the environmental assessment process and is now in detailed design. A staging program, which starts in 2002, has been put into place to continually upgrade the By-Pass until its ultimate cross section is built.

- ***Extension of the Markham By-Pass southerly to connect with Highway 401.***

The Region of York is currently undertaking the environmental assessment of this important link.

Markham had the foresight to allocate the funds necessary for the Rodick Road crossing and Birchmount Road underpass at the time Highway 407 was being built.



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2.3 TRAVEL PATTERNS

The Town of Markham is served by an extensive multi-modal surface transportation system:

- Local, collector and arterial roads and freeways;
- Local and regional transit services, including bus and rail;
- Sidewalks, off-street trails and bicycle paths.

As Markham's population and employment levels increase, travel patterns will change accordingly.

Work Trips Within the Town of Markham

Transportation Tomorrow Survey (TTS) data compiled for the Joint Program in Transportation by the Data Management Group, University of Toronto, indicates that prior to 1996, Markham was slowly becoming more self-contained in terms of the number of people who both lived and worked in the community. The data shows that the number of trips originating in Markham, and destined to employment locations within Markham, increased gradually to 26% in 1996 from 23% in 1986.

Extrapolating this trend indicates that the percentage will increase to approximately 31% by the year 2011. Given that significant employment and population growth is expected over the long term, this projection may be conservative.

Work Trips Outside the Town of Markham

Based on the TTS study, 58% of work trips originating in Markham were destined for the City of Toronto. More specifically, 34% traveled to Scarborough or North York as illustrated in **Figure 2-3**.

In the past, work trips between Markham and Toronto tended to be unidirectional (southbound in the morning and northbound in the afternoon). However, as illustrated in **Figure 2-4**, trips across the Steeles Avenue border are becoming more balanced with almost 70 trips travelling north from Toronto for every 100 trips travelling south from York Region.

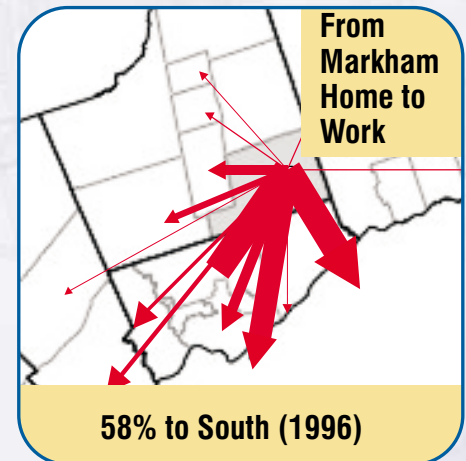


Figure 2-3

To	From Markham
Markham	26%
Toronto	21%
Scarborough	17%
North York	17%
Richmond Hill	6%
Other York	6%
Peel	3%
Other Toronto	3%
Durham	1%
Total Trips	63200

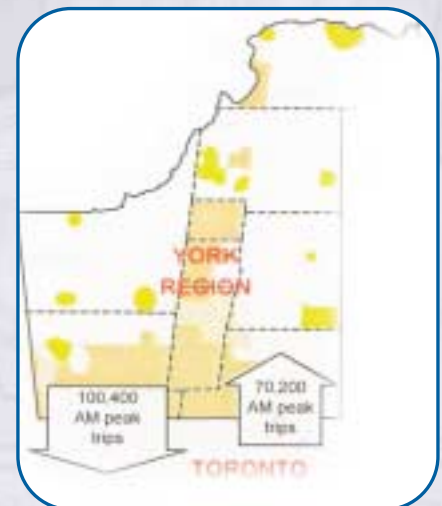


Figure 2-4

2. BUILDING THE PLAN: INPUTS TO ANALYSIS

Figure 2-5 shows Markham's travel characteristics between 1986 and 1996.

Major Traffic Generators

Although the business park and industrial-commercial areas located along the Highway 404 and Woodbine Avenue corridors between Steeles Avenue and Elgin Mills Road will continue to generate traffic, they will be surpassed in overall volume by the Highway 7 corridor.

The Highway 7 corridor already contains major office uses in the Leslie Street and Allstate Parkway areas. With the addition of trips to and from the planned Markham Centre, the corridor is expected to become the largest travel generator in the municipality.

An emerging significant travel corridor is 14th Avenue. Existing and new employment opportunities, including office and warehousing, will continue to make this corridor between Warden Avenue and Markham Road a major travel destination.

Small employment areas such as Cornell will continue to be located throughout Markham, but the magnitude of traffic to these areas will be less significant.

Existing and planned residential communities will continue to be major trip generators. The development within the OPA 5 lands north of 16th Avenue and east of 9th Line is based on the need for compact community design. The result is efficient land-use planning with densities two to three times greater than those to the south. This development is characterized by an increased mix of housing types including townhouses, semi-detached and single-family detached units instead of predominantly single family units.

Because of its significant residential and employment population, Markham Centre will also be a major traffic generator. This new "downtown" core has been planned to have significant transit ridership due to its proximity to the GO line, the planned rapid transit corridor, and mixed-use development which includes residential, retail and office uses.

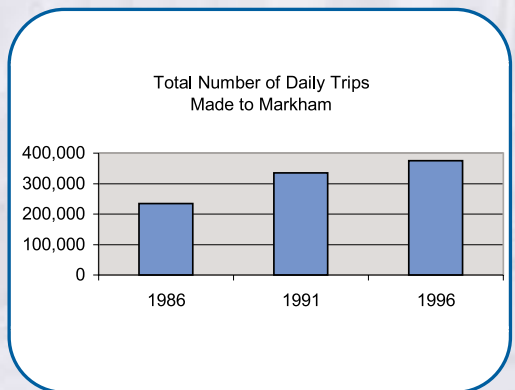
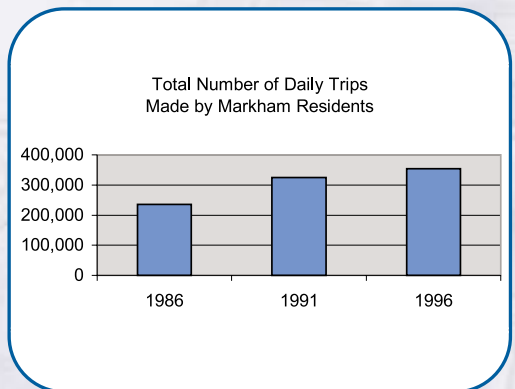


Figure 2-5

Markham Centre has been planned to have significant transit ridership.

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2.4 TRAFFIC VOLUMES

Not only did the base year 1996 represent stable traffic patterns prior to the development of OPA 5 lands, Highway 407 had not yet opened and Highway 404 had not been widened to its current condition.

In 1996, traffic counts for major intersections in Markham and average daily traffic counts for key roads were available, as were land use patterns, population numbers and employment statistics for each traffic zone in the community. This information was combined with GTA data from the *Joint Program in Transportation* and statistics from the *1996 Transportation for Tomorrow Survey* to structure and calibrate the Town's transportation model.

During the morning and afternoon rush hour periods in 1996, there was significant congestion on virtually all north-south and east-west arterial roads. Drivers

on collector roads (i.e. Carlton Road, John Street and Denison Road) and the north-south arterial roads parallel to Highway 404 were beginning to experience considerable delays.

Traffic data collected after 1996 and before 2001 includes non-typical traffic patterns as drivers became accustomed to the opening of various sections of Highway 407 and other new travel options and adjusted their travel routes accordingly.

Morning peak traffic volumes across key screen lines (the Town's east, west and south boundaries) were projected using the Town's transportation model for 2003, 2006 and 2011 horizon years. A comparison of the volumes across each of the screen lines indicates that although there continues to be considerable travel between Markham and Toronto, the east-west traffic volumes between Markham and the rest of York Region and Durham Region will increase as a result of changing employment opportunities.



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2.5 MODES OF TRAVEL

Markham residents and employees are highly dependent on automobiles. **Figure 2-6**, from the 1996 TTS, shows modes of travel utilized by residents of Markham during a typical weekday morning rush hour. The automobile, at 78%, continues to be the preferred choice. (66% of Markham households own more than one vehicle.)

The combined share of public transit, including GO Transit, totals approximately 10%. The “other” category at approximately 4% represents school bus activity. The remaining 8% is attributed to walking and cycling trips.

Of the people making trips to Markham, 83% use the automobile and only 5% use local transit.

Recognizing the important role that transit plays in the modeling and analysis process, a staged approach to increased transit modal split was established. The targets by horizon year are as follows:

- 2003 - A town-wide transit modal split of 10 % between local and GO Transit services;
- 2006 - A town-wide transit modal split of 12 % between local and GO Transit services;
- 2011-2021 - A town-wide transit modal split of 19 % between local and GO Transit services.

Between 2006-2021, non-automotive use in such key areas as Markham Centre and the Highway 7 corridor has been projected to increase further to 30%.

The *York Region Master Plan, January 2002* sets similar goals. An average transit modal split of 17% has been targeted, with a 33% transit modal split targeted for trips across Steeles Avenue to and from Toronto.

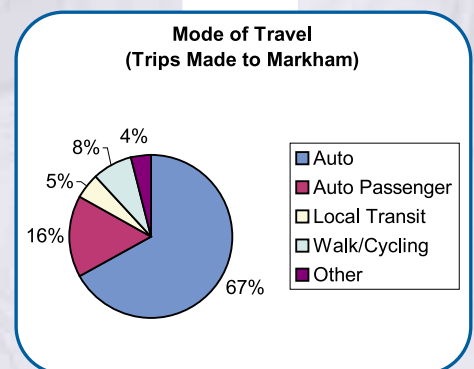
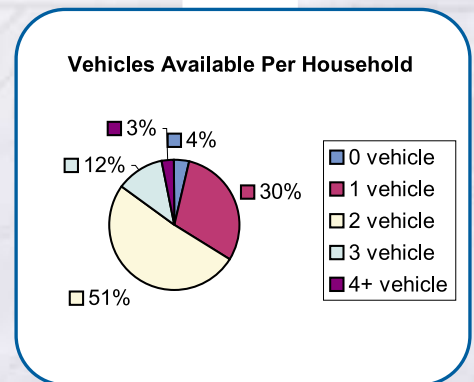
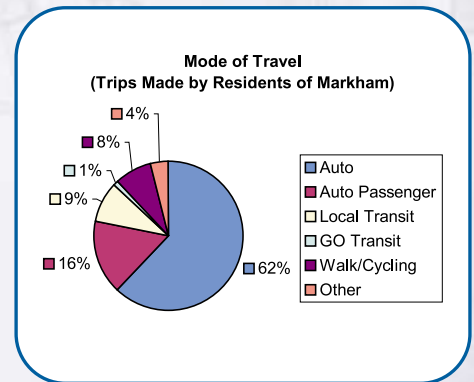


Figure 2-6

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2.6 PUBLIC PARTICIPATION

As part of the development of Markham's transportation strategy, a campaign to promote awareness was undertaken. The first step was a formal press conference on September 17, 2001 which generated local and regional coverage.

The second step was the "Great Transportation Debate" on October 15, 2002 which served as a venue to educate and solicit feedback on a rapid transit network from both the residents of Markham and the business community. The benefits of light rail versus bus rapid transit technology were debated and the audience was able to respond through interactive technology.

The third step included public meetings throughout the fall in each of Markham's four communities (Unionville, Markham, Thornhill and Milliken Mills) to present the proposed strategy and details of how it related to the community. Feedback was obtained through discussions and a comment form, and the Town website was utilized to provide additional opportunities for public input.

The Town also hosted a two-day session to provide businesses and other municipalities an opportunity to learn more about Parking Authorities and Transportation Management Associations. Various policies and programs, including those that could be used by Markham as part of its transportation strategy, were fully explored.

Public input showed that Markham was taking a proactive approach to managing projected growth. Feedback from the public meetings indicated that the majority felt the current transit system would require significant improvement before it could be considered a viable transportation option. The same participants agreed that an integrated rapid transit system, within a dedicated corridor and supported by a bus-feeder system, would attract riders during both peak and off-peak periods. It was noted that improved transit routes and increased service frequency are key elements to maintaining usage.

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