

**Viva Phase 1 Service Plan
and
Viva-YRT Service Integration Plan**

April 2005

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1 SERVICE OBJECTIVES AND PRINCIPLES

The York Rapid Transit Plan (YRTP or “Viva”) is a major transit improvement project being undertaken by York Region to plan and implement Rapid Transit (RT) in several stages in four major corridors in the urbanized part of York Region. The rapid transit corridors are Yonge Street, Highway 7 and two north-south connectors in Markham and Vaughan. These corridors are those identified in the York Region Transportation Master Plan, which would connect the designated York Regional Centres (Vaughan Corporate Centre, Richmond Hill Centre, Markham Centre and Newmarket Centre) and be the Regional “backbone” transportation corridors with sufficient densities and appropriate land use to support rapid transit.

The first stage of the overall rapid transit plan is Viva Phase 1 (formerly known as *Quick Start*), which is intended to introduce an initial phase of rapid transit in all four corridors of the overall Rapid Transit program. Viva Phase 1 will be “bus-rapid-transit”, but with RT vehicles operating in mixed traffic with traffic signal priority and right-turn-lane “queue jumpers”, rather than an exclusive transitway, which is planned to be the orientation of the later full-build phase. Other features will include off-board fare payment and limited stops (typically 1 km. spacing), which, along with the priority measures, will help ensure operating speeds considerably higher than conventional transit services. The vehicles will also be designed with wide doors and aisles to facilitate quick boardings and alightings, resulting in very short dwell times at stops. The off-board fare payment and “proof of payment” fare policy, in particular, will allow passengers to board at any door, further speeding up the service.

1.1 SERVICE DESIGN PRINCIPLES – RAPID TRANSIT SERVICES

The initial routing of Viva Phase 1 is designed to keep the RT services on the RT corridors. This is primarily intended to ensure high frequencies on all parts of the network, including some portions where two or more routes will overlap to provide a higher combined level of service than the individual routes. Viva Phase 1 does not include RT branches leaving the main alignments, primarily due to the need for ticket dispensing equipment at all RT stops to support the off-board ticketing and proof-of-payment fare policy. Also, neither overlaid express services nor other stopping variations are contemplated until ridership and service levels grow to a point where they can support multi-operational strategies while still maintaining high service frequencies on all service elements.

The service design, both for Viva Phase 1 and future phases, is intended to include a policy of operating rapid transit services frequently enough so that passengers have a high comfort level with the service and can arrive at stations without having to consult timetables or risk long waiting times. Frequent services along the rapid transit corridors are also important to facilitate convenient transfers with connecting local services, which typically are not of a high frequency. High service levels are particularly important during peak periods, but should also be in place at other times, including mid-day periods, evenings, and weekends.

1.2 SERVICE DESIGN PRINCIPLES – YRT ROUTES ON RT CORRIDORS

Since the RT services will be making limited stops, they will be complemented by local YRT services running in parallel on the RT corridors and making all local stops. These are intended primarily to provide service to local stops between the RT stations and to feed the RT stations where passengers may transfer to the higher speed RT service. Also, this Service Plan assumes that the GO Transit Yonge “B” route will continue to operate, although it is recognized that its operation and service levels may be modified by GO to reflect the overall transit needs on the Yonge corridor, once the RT service begins.

The existing YRT standards include both “core” and “feeder (local)” standards that were developed for the YRT 5-Year Service Plan in 2002, and these are described in Appendix A for reference. This section proposes amendments to existing YRT service standards related to the introduction of Rapid Transit, specifically for the YRT local services that will parallel and complement the RT services.

Since these routes will not be providing the “line haul” service and will not play a “core” role in the overall network, they should play a similar role to other feeder or local services and only need to be of a level of service sufficient to meet the local stop needs. These, however, also need to reflect the traditional levels of service on these established corridors, specifically for those areas that are not close to the RT stops.

Because of the strong transit orientation of the RT corridors, however, the local routes on these corridors should operate during the full spans of service normally used for core services, even though their minimum frequencies will be more similar to the standards for local services. On that basis, the local routes in the RT corridors are proposed to have the following standards:

- **Route Structure** – operate on the major RT corridors, primarily Yonge Street and Highway 7, making all local stops in parallel with the limited-stop RT service.
- **Service Levels** – minimum service frequencies on clock-face schedules and minimum spans of service as per the following:

Weekdays	30 minutes	6:00 am to 9:00 am / 3:00 pm to 7:00 pm
	30 minutes	9:00 am to 3:00 pm
	60 minutes	7:00 pm to 11:00 pm
Saturdays	30 minutes	6:00 am to 7:00 pm
	60 minutes	7:00 pm to 11:00 pm
Sundays/Holidays	60 minutes	9:00 am to 11:00 pm

- **Vehicle Loadings** – average maximum loads per vehicle will not exceed the following standards (frequencies will be increased if the loading standard is exceeded):

During peak periods	150% of seating capacity over maximum 60 minute period
During off-peak periods	100% of seating capacity over a 60 minute period

- **Performance Targets** – as for feeder routes, these are expected to meet or exceed the following performance levels:

Weekday Peak Hours	25 passengers per service hour
Other times	15 passengers per service hour

1.3 SERVICE DESIGN PRINCIPLES – YRT FEEDER ROUTES

The routings of many YRT services are also proposed to be modified where appropriate to effectively provide a feeder service between the RT stations and the adjacent residential and employment areas, while

also meeting other local needs. For the feeder services to be effective, the following service design principles are proposed:

- Ensure all built up urban parts of the Region that can support transit service are within 500 meters of a direct no-transfer connection to an RT stop (note that, in general, most of the built-up areas in the five urban municipalities of York Region are within 4 kilometres of one of the RT corridors).
- Generally orient local bus routings that are intended to connect with Rapid Transit to be geographically perpendicular to the RT corridors, that is, an east-west orientation along the Yonge corridor and a north-south orientation along the Highway 7 corridor.
- Provide a series of “core” services that generally follow the major arterials, typically, the 2-kilometre arterial street grid, and connect Rapid Transit with more intensive land uses that are likely to be more oriented to transit (commercial, institutional, higher-density residential and specific transit-oriented streets in newer higher-density developments); such core services would have higher levels of service, consistent with the YRT “core” service standards.
- Complement the core services with “local” routes that would penetrate other, less intensive residential and employment areas, such that all built-up areas that can support transit are within 500 metres of a direct bus connection to an RT stop; such local routes would typically have lower levels of service than core routes and would follow the YRT “local” service standards, although service levels could increase where warranted by ridership demand.
- For those areas close to a major destination point (e.g. Finch Station, York University), maintain the direct local transit connection in order to avoid forcing a transfer, as long as the service meets the required ridership performance and can support the minimum service standards.
- Maintain local connections to GO train stations and maintain schedule times to connect with GO train schedules.

2 RAPID TRANSIT SERVICE DESIGN

This section describes the service design for Viva Phase 1, scheduled for the fall of 2005. They generally follow the descriptions contained in the 2003 *Quick Start* Project Identification Report and provide the required detail for service scheduling and other service implementation activities.

2.1 ROUTINGS

The routings for the Viva Phase 1 services will generally follow the four YRTP corridors. To better serve the high demand areas in the south-central part of the Region, however, there will actually be 6 distinct RT routes during Monday to Friday peak periods, several of which will overlap with other routes on the busier parts of the corridors to provide both greater routing options and a higher level of service frequency. The 6 peak-period routes are shown in Exhibit 2.1.1 and are described as follows:

Yonge-Richmond Hill-Newmarket – From Finch Subway Station via Yonge Street and Yonge-7 Connector to the new Langstaff Terminal; then via Yonge-7 Connector, Yonge and Eagle to Newmarket GO Terminal. Return via Eagle, Millard, Yonge and same route in reverse.

Yonge-Richmond Hill – From Finch Subway Station via Yonge Street and Yonge-7 Connector to the new Langstaff Terminal; then via Yonge-7 Connector and Yonge to Bernard Terminal. Return via Bernard, Yonge and same route in reverse.

The schedules of the two Yonge routes would mesh so that a higher combined level of service would be provided between Finch and Bernard, where the demand is expected to be much higher.

Yonge-Markham (peak-period route only) – From Finch Subway Station via Yonge Street and Yonge-7 Connector to the new Langstaff Terminal; then via Yonge-7 Connector, Highway 7, South Town Centre, Cedarland, Warden, Enterprise, new connector road (unnamed), Helen to Unionville GO Station. Return via same route in reverse.

This route will follow the inner portions of the Yonge and Highway 7 routes where demand and per-vehicle ridership levels are expected to be high. It will also provide a no-transfer connection between Finch Station and the employment areas in Beaver Creek and the Allstate-Valhalla area (including the planned new Seneca College campus), which is currently a high-demand link serviced by YRT Route 1.

Highway 7 – From Martin Grove and Highway 7 via Highway 7, Interchange Way, Jane, Shoreham, Ian Macdonald Blvd. to the new terminal at York University; then via Ian Macdonald Blvd., York Blvd., Keele, Highway 7, Centre to Promenade Terminal; then via Centre, Bathurst, Bathurst-7 Connector, Highway 7, Yonge-7 Connector to the new Langstaff Terminal; then via Yonge-7 Connector, Highway 7, South Town Centre, Cedarland, Warden, Enterprise, new connector road (unnamed), Helen, Kennedy, Highway 7 to a new Viva/YRT terminal in the vicinity of Cornell and Markham-Stouffville Hospital (actual routing in the Cornell area will depend on the location of the terminal). Return via the same route in reverse, except routing from York University will be via Ian Macdonald Blvd., Founders, Steeles, Jane, and the looping at the west end of the route will be via Woodstream, Martin Grove to Highway 7.

Note that in the initial stages, the Cornell Terminal is not expected to be available and service would start and finish in the vicinity of Markville Mall, with an enhanced YRT Route 1 providing connections to and from points further east. This will be discussed further in the detailed Implementation Plan.

The route is primarily east-west along Highway 7, but includes a few significant diversions, especially to York University, Promenade Mall (and the high-density residential developments nearby) and the new

Planned Quick Start Routes

Peak Period Routings

LEGEND

Finch - Richmond Hill - Newmarket

Finch - Richmond Hill

Highway 7

Vaughan North - South Link

Markham North - South Link

Finch - Richmond Hill - Markham (Peak Only)

Roads

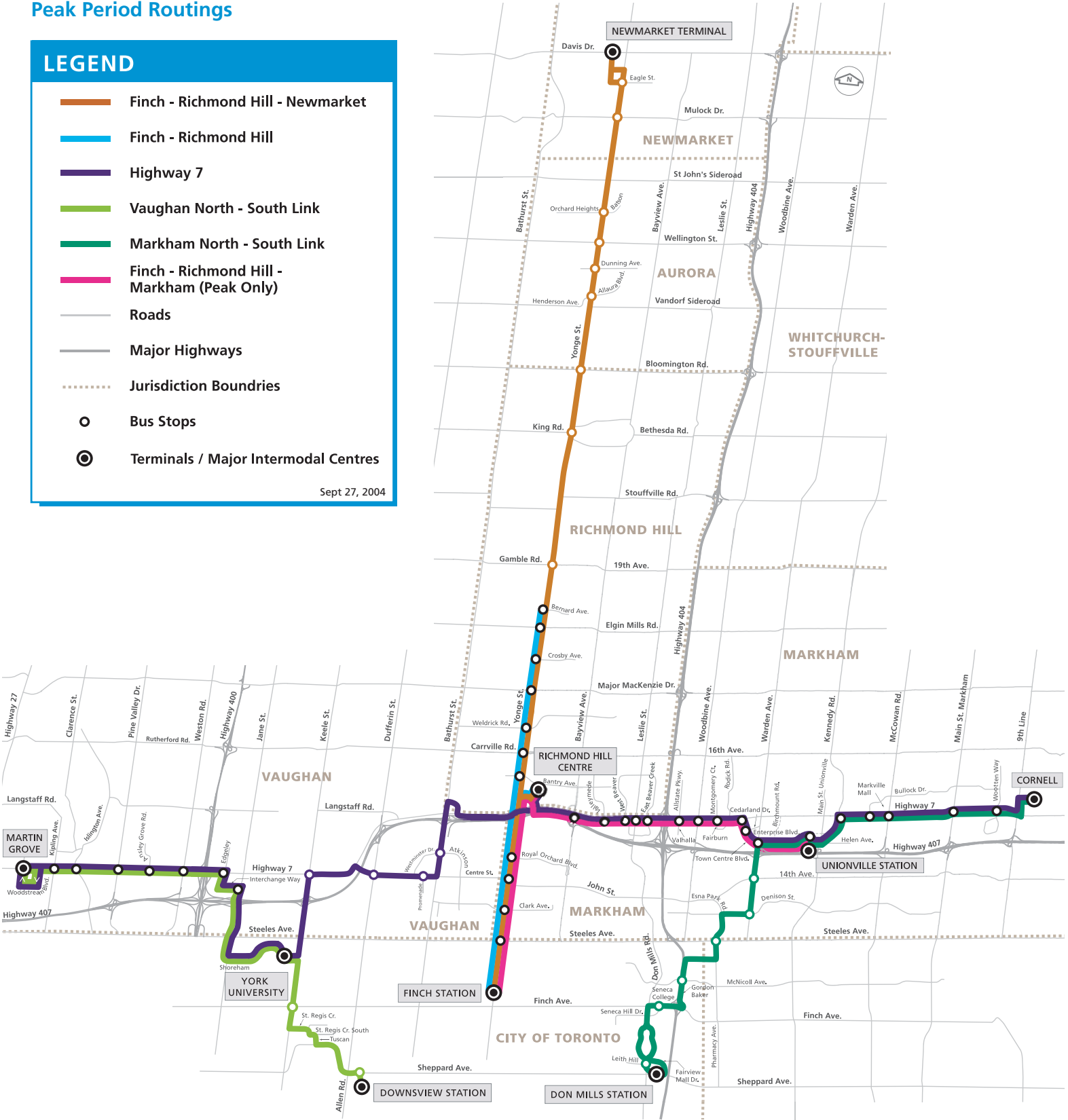
Major Highways

Jurisdiction Boundries

Bus Stops

Terminals / Major Intermodal Centres

Sept 27, 2004



Markham Centre (Enterprise Blvd. to be the primary commercial corridor). These diversions are expected to considerably increase the ridership potential on this route, as has been determined by the ridership model forecasts.

Markham North-South Connector – From Don Mills Subway Station via Don Mills, Finch, Gordon Baker, Pharmacy, Esna Park, Denison, Warden, Enterprise, new connector road (unnamed), Helen, Kennedy, Highway 7 to a new Viva/YRT terminal in the vicinity of Cornell and Markham-Stouffville Hospital (actual routing in the Cornell area will depend on the location of the terminal), or Markville Mall in the initial stages, as described above. Return via the same route in reverse, with the routing to Don Mills Station via Don Mills, Fairview Mall Drive and Sheppard.

The routing between Enterprise and Don Mills Station is designed both to be a quick connection (minimize traffic congestion) and to serve major employers and key destinations along the corridor, including Seneca College (Newnham Campus on Finch at Don Mills), IBM (Esna Park and Steeles), American Express (Warden north of Denison) and Motorola (Warden north of Highway 407).

Vaughan North-South Connector – From Downsview Subway Station via TTC access road, Sheppard, Tuscany Gate, St. Regis, Keele, York Blvd. to the new terminal at York University; then via Ian Macdonald Blvd, Founders, Steeles, Jane, Interchange Way, Highway 7, Woodstream, Martin Grove to Highway 7. Return direct via Highway 7 (eastbound) and same route in reverse, except that the inbound routing to York University would be via Jane, Shoreham and Ian Macdonald Blvd. to the terminal.

Similar to the Markham route, the Vaughan North-South Connector routing is designed primarily to minimize travel time between Highway 7 and York University and between York University and Downsview Station.

2.1.1 Peak-Period Route Overlays

During peak periods, several portions of the RT network (in addition to Yonge Street, described above) will have two routes operating on the same routing (as shown in Exhibit 2.1.1). This results in a higher level of service on these built-up portions of the corridors and provides a direct no-transfer service, typically, to two distinct destinations. The areas where this occurs are:

- ***Highway 7 corridor between Martin Grove and York University*** – provides service in Woodbridge to both Downsview Station (Vaughan North-South Connector) and the full Highway 7 corridor (Highway 7 route), including connections to Yonge at Langstaff;
- ***Highway 7 corridor between Warden and Cornell (or Markville Mall in the initial stages)*** – provides service in east Markham and Unionville to both Don Mills Station (Markham North-South Connector) and the full Highway 7 corridor (Highway 7 route), including connections to Yonge at Langstaff;
- ***Highway 7 corridor between Unionville GO Station and Yonge*** – provides service in the Highway 7 and 404 employment areas to both Finch Station (Yonge-Markham) and the Highway 7 corridor (Highway 7 route).

In all these cases, schedules would be meshed to provide a more frequent service overall (e.g. two 10-minute services combined for an overall 5-minute service).

2.1.2 Off-Peak Route Streamlining

Because of the relatively low demand expected outside of peak periods, it is proposed that the off-peak routings be adjusted to eliminate the areas where the peak routes overlap. This will result in significant economies by eliminate duplication of routes and better tailoring service to expected demand, while still retaining the minimum 15-minute service level throughout the network. As noted above, the combination of the RT routes and the parallel YRT local routes will still be a sizable increase in service levels overall.

The areas where these route modifications would take place are as follows:

- Truncating the west end of the Highway 7 route at York University, looping via Keele, Chimneystack, Ian Macdonald Blvd., to the Viva terminal location; returning via York Blvd., Keele and regular route beyond (timed connections would be provided with Vaughan North-South Connector for those travelling beyond, as described below under Off-Peak Service Design).
- Truncating the east end of the Markham North-South service at Unionville GO Station, connecting to the regular route via the Unionville GO station access road to/from Helen and the new connector road between Helen and Enterprise (timed connections would be provided with Highway 7 route for those travelling beyond, as described below under Off-Peak Service Design).
- Not operating the Yonge-Markham route outside of peak-periods;
- Not operating the Yonge-Bernard short-turn, as all Yonge trips would go to Newmarket.

The net result of these routings would be to have a full 15-minute service on all routes without overlap, as described below under Off-Peak Service Design. These would also be scheduled to have timed connections at the truncation points (York University and Unionville) as well as at Langstaff. The proposed off-peak route network is shown in Exhibit 2.1.2.

2.2 STOPPING POLICY

For Viva Phase 1, all RT services would stop at all RT stops, as illustrated in Exhibit 2.1.1 (i.e. there would be no “express” routes or route portions). This is to ensure reasonably frequent service throughout the network. In the longer term, when ridership grows further, there will likely be sufficient demand to provide express services or otherwise vary the stopping policy (e.g. when a 5-6 minute service can be provided on both an express and an all-stops operation).

The stop spacing will be that of a “rapid transit” service, typically about 1 km between stops (or more in relatively undeveloped areas). The RT services, however, will be complemented by YRT local routes on these corridors that will serve all local stops between the RT stops.

In Toronto, including stops at Steeles Avenue, the stopping policy would allow drop-off’s only in the southbound direction and pick-ups only in the northbound direction. Thus, Viva services would not accommodate trips that are wholly within the City of Toronto (these are provided exclusively by the TTC).

At the Downsview and Don Mills subway stations, a drop-off stop near the pedestrian entrance will be provided so that all passengers will be required to leave the RT vehicle, before the vehicle enters the station, which is a controlled “TTC fare-paid” zone. At each location, an additional pick-up stop will also be provided for those passengers who are not coming from the subway or other TTC service.

Planned Quick Start Routes

Off-Peak Period Routings

LEGEND

Finch - Richmond Hill - Newmarket

Highway 7

Vaughan North - South Link

Markham North - South Link

Roads

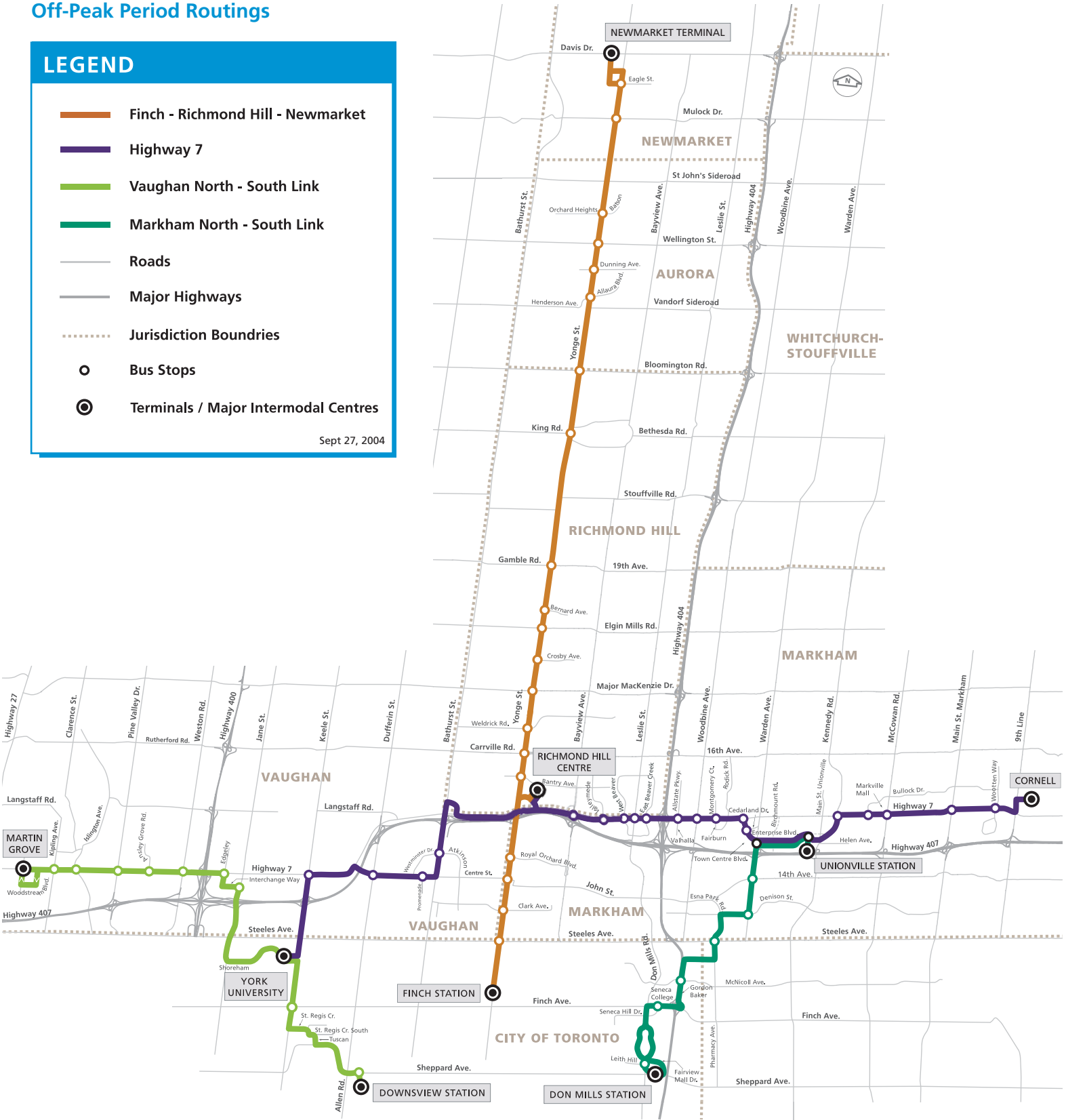
Major Highways

Jurisdiction Boundaries

Bus Stops

Terminals / Major Intermodal Centres

Sept 27, 2004



2.3 VEHICLE ALLOCATION

Because of the high demand forecast for the Yonge corridor and the two Yonge routes in particular, as described in the next section, the Yonge-Newmarket and Yonge-Bernard routes will be operated with 18-metre articulated vehicles.

Because of the relatively lower demand on the other lines and the need to provide frequencies high enough to make the service attractive (allow random passenger arrivals at stations with minimal waiting time), the other RT routes will be operated with 12-metre standard length vehicles, but the vehicles will still be of a high-quality advanced design.

2.4 SERVICE FREQUENCIES – PEAK PERIODS

Service levels generally have to be related to demand, especially during peak periods. Reasonably high service levels should be feasible on all of the RT corridors based on existing demand, existing service levels, anticipated growth (both population and employment), and an anticipated modal shift to rapid transit. Exhibit 2.4.1 summarizes the projected 2006 peak-direction ridership at the maximum load point on the RT routes during the morning peak hour. The projected ridership is based on modelling forecasts, derived from population and employment targets, the 2001 Transportation Tomorrow Survey data, and the proposed RT service levels detailed below. These figures are also for the “mature state” of the new services, which is expected to take one to two years to achieve.

Exhibit 2.4.1: 2006 Projected Ridership – AM Peak Hour, Peak Point, Peak Direction

Route	Ridership
Yonge-Richmond Hill-Newmarket (combined)	1150
Yonge-Markham (peak only)	300
Highway 7	270
Markham North-South Connector	270
Vaughan North-South Connector	210

These figures assume:

- Schedules on the Highway 7 and Yonge-Markham routes would be set to balance demand between the two routes in the section between Beaver Creek and Yonge; this results in the above figures being slightly closer to each other than in the original model forecast.;
- The ridership on the Yonge corridor includes that which would continue on the GO Transit Yonge “B” service, which is assumed to continue operation but with service levels less than those at present (8 to 10 minute service, with about 300 riders per peak hour at the peak point in the peak direction).

Based on the overall service objectives and principles noted earlier and the 2006 ridership forecasts, the minimum service frequencies proposed for Viva Phase 1 are shown in Exhibit 2.4.2, along with the

projected peak-point, peak-direction average passenger loads per vehicle. As noted above, these frequencies assume that 18-metre articulated vehicles would be used on the Yonge line (both to Richmond Hill and to Newmarket) and 12-metre standard vehicles would be used on the other lines.

Exhibit 2.4.2: Proposed Peak-Period Frequencies

Route	Routing	Frequency	Peak Load
Yonge-Newmarket	Finch Terminal to Newmarket Terminal	10 minutes	71 (combined)
Yonge-Bernard	Finch Terminal to Bernard Terminal	10 minutes	
Yonge-Markham	Finch Terminal to Unionville GO Station	10 minutes	50
Highway 7	Martin Grove to Cornell (or Markville Mall)	10 minutes	45
Markham N-S	Don Mills Station to Cornell (or Markville Mall)	10 minutes	45
Vaughan N-S	Downsview Station to Highway 7 & Martin Grove	10 minutes	35

In the Yonge Street corridor, the schedules of the Yonge-Newmarket trips and the Yonge-Bernard trips will combine to provide a 5-minute peak service between Finch and Bernard. On Yonge between Finch and Langstaff, the two Yonge services and the Yonge-Markham route will further combine for an overall combined frequency of about 3 to 4 minutes.

Similarly, the schedules for the Vaughan North-South Link, Markham North-South Link and Yonge-Richmond Hill-Markham services would be coordinated with the Highway 7 service in order to provide a combined 5-minute peak service on the overlapping portions of these routes (as described earlier).

In all corridors, the RT routes will be complemented by local YRT routes. These would be similar to the current YRT route structure, but at a lower frequency because of the addition of the RT routes. The Yonge local service (YRT Route 99) in particular would be significantly reduced from its current 3-to-4 minute frequency (see next section), as most of these passengers would likely shift to the RT service. Also, Route 99 currently goes only to Bernard, with the GO Transit Yonge “B” route serving the section between Bernard and Newmarket. The YRT Yonge service is to be extended along the entire length of the corridor (see next section) to provide a fully integrated local service as a complement to the RT service.

The above service levels assume the continuation of the GO Yonge “B” route, although the nature of the service and/or its service levels may be modified if deemed appropriate by GO Transit. For example, the combination of the new RT service and a local YRT service on Yonge may preclude the need for GO to serve all stops on Yonge and, thus, could provide the opportunity for the “B” route to become a true point-to-point express service and offer faster travel times for those making longer trips to Finch Station. Additionally, “B” trips could become extensions of existing trips from Barrie-Bradford or Keswick and provide those patrons with fast, no-transfer service to Toronto. All these possibilities, of course, would be the decision of GO Transit.

2.5 SERVICE FREQUENCIES – OFF-PEAK PERIODS

The off-peak service design is also intended to place a high emphasis on frequency of service, again to operate like true “rapid transit” and maximize passenger confidence of not having to plan trips or risk long waiting times. To achieve this during off-peak times, the frequencies will be set by policy rather than specifically tied to forecast demand. This means that ridership levels will typically be below capacity but should build as more new riders respond to the high quality of service. The proposed off-peak service levels are shown in Exhibit 2.5.

Exhibit 2.5: Proposed Off-Peak Frequencies

Route	Routing	Frequency
Yonge-Newmarket	Finch Terminal to Newmarket Terminal	15 minutes
Highway 7	York University to Cornell (or Markville Mall)	15 minutes
Markham North-South	Don Mills Station to Unionville GO Station	15 minutes
Vaughan North-South	Downsview Station to Highway 7 & Martin Grove	15 minutes

As it is for the peak design, the off-peak services on Yonge will be operated with 18-m articulated vehicles, while all other services will be operated with 12-m conventional vehicles.

In all corridors, as in peak periods, the RT routes will be complemented by local YRT routes. These would be similar to the current YRT route structure, which now includes a 15-minute service on Yonge (may likely change to a 30-minute service with the addition of Rapid Transit) and 30-minute services on both the east and west portions of Highway 7. Thus, the addition of the RT routes will be a significant addition of service although, again, the frequent and high quality of service is expected to increase off-peak ridership significantly.

As in the peak periods, the local YRT service on the Yonge corridor currently goes only to Bernard, with the GO Transit “B” route serving the section between Bernard and Newmarket. The YRT Yonge service is to be extended along the entire length of the corridor (see next section) to provide a fully integrated local service as a complement to the RT service.

For the purposes of this Service Plan, it is assumed that the GO “B” route would be designed to service the point-to-point demand from Newmarket and places further north, although the high level of service on the RT route may make it unnecessary to operate the “B” route outside of peak periods. That decision, of course, would be made by GO Transit.

2.6 HOURS (SPAN) OF SERVICE

The span of service for all Viva Phase 1 services is planned to be about 19 hours, or from about 5:00 a.m. to about 12:00 midnight. The finish times will be the same for all days of the week, while the start times will be slightly later Saturday and Sunday mornings. This span of service will apply to all RT services in order to ensure transfer opportunities at all times and to make the service consistent and understandable for passengers. Overall, the daily spans of service will be very similar to those now in effect on the existing Yonge services (Route 99 and the GO “B” route) as well as the TTC subway, to which most

routes connect, except for very late evenings and early weekend mornings where service will be provided by YRT local routes. These times are also consistent with rapid transit services in other Canadian cities.

Exhibits 2.6.1 and 2.6.2 show the spans of service by day of the week along with the times of service frequency changes. Morning times represent arrive times at Finch Station for Yonge services (with first/last trips on other routes being those that would connect with first/last Yonge trips), while afternoon and evening times represent leave times at Finch for Yonge services. Note that in all time periods where the frequency is 15 minutes, the “streamlined” off-peak routing applies, as described above.

Exhibit 2.6.1: Service Frequencies by Time of Day – Weekdays

Time Period – Monday-Friday	Yonge-Bernard Yonge-Markham	Other Routes
5:30 – 6:30		15 minutes
6:30 – 7:10		10 minutes
7:10 – 9:00	10 minutes	10 minutes
9:00 – 9:20		10 minutes
9:20 – 14:25		15 minutes
14:25 – 15:55		10 minutes
15:55 – 17:55	10 minutes	10 minutes
17:55 – 18:55		10 minutes
18:55 – 23:40		15 minutes

Exhibit 2.6.2: Service Frequencies by Time of Day – Weekends

Time Period – Weekends – All Routes	Saturday	Sunday
7:05 – 23:40 (Saturday), 8:50 – 23:40 (Sunday)	15 minutes	15 minutes

2.7 RT VEHICLE AND RESOURCE REQUIREMENTS

The total vehicle requirements for Viva Phase 1 are based on the estimated peak-period round trip times for each route along with the proposed peak service frequencies determined in Chapter 2. Exhibit 2.7.1 lists the RT route components and shows how the scheduled vehicle requirements for each component have been determined.

Exhibit 2.7.1: Scheduled Peak RT Vehicle Requirements

Route	Termini	Distance 1-way (km)	Round Trip (min)	Average Speed (kmh)	Frequency (min)	Sched. Peak Vehicles
Yonge	Finch-Bernard	13.9	70	23.8	10	7
Yonge	Finch-Newmarket	32.3	130	29.8	10	13
Yonge-Mkm	Finch-Unionville	18.1	100	21.7	10	10
Hwy 7	Martin Grove-Cornell	44.5	210	25.5	10	21
Vaughan N-S	Downsview-Martin Grove	18.5	100	22.2	10	10
Markham N-S	Don Mills-Cornell	21.7	110	23.7	10	11

These figures assume the full Highway 7 (and Markham N-S) routing to Cornell, even though a temporary terminus is planned near Markville Mall until a permanent facility is available at Cornell. The resource impacts of these arrangements will be detailed in the Implementation Plan.

For all routes except Finch-Newmarket, average travel speeds range from 25 to 29 kmh, excluding recovery, and 22 to 26 kmh, including recovery (which are those noted in the table above). The average speed for the Finch-Newmarket route is 33 kmh, excluding recovery, and 28 kmh, including recovery. These speeds are conservative for this analysis and are assumed to be only somewhat faster (15-20%) than current speeds. The faster speed assumes significant benefits from limited stops, short dwell times (due to off-board fare payment), queue jumpers and signal priority, but also recognizes the likely negative impact of increased congestion.

During off-peak times, the service would be 15 minutes on all routes, with the routings streamlined to avoid duplication, as described in Chapter 2. Also during off-peak times, running times would be reduced slightly and average speeds increased accordingly to reflect the reduced traffic congestion.

Exhibit 2.7.2 shows the scheduled off-peak vehicle requirements for the RT services by route.

Exhibit 2.7.2: Scheduled Off-peak RT Vehicle Requirements

Route	Termini	Distance 1-way (km)	Round Trip (min)	Average Speed (kmh)	Frequency (min)	Sched Off-peak Vehicles
Yonge	Finch-Newmarket	32.3	120	32.3	15	8
Hwy 7	York U.-Cornell	32.5	150	26.0	15	10
Vaughan N-S	Downsview-Martin Grove	18.5	90	24.7	15	6
Markham N-S	Don Mills-Unionville	13.6	60	27.2	15	4

Exhibit 2.7.3 shows the annualized vehicle hour breakdown for the RT services, based on the vehicle requirements for each time period and the duration of the time periods.

Exhibit 2.7.3: Projected Annual RT Vehicle Hours

Route	Daily Hours Mon.-Fri.	Daily Hours Saturday	Daily Hours Sunday	Annual Hours
Yonge-Newmarket	167	132	107	55,600
Yonge-Bernard (peak only)	39	0	0	9,800
Yonge-Markham (peak only)	50	0	0	12,700
Highway 7	245	166	138	78,900
Vaughan N-S	125	102	92	42,400
Markham N-S	104	68	61	33,400
TOTAL	730	468	398	232,800

3 YRT SERVICE CHANGES RELATED TO VIVA PHASE 1

With the new Viva Rapid Transit services becoming the “backbones” of the total integrated York Region transit network, the local routes will need to play a new and most important role of effectively feeding the RT services, as well as providing local service on RT corridors and continuing to meet other local service demands. The proposed changes to YRT services to facilitate the introduction of the Viva RT services follow the service design principles described in the first chapter of the Service Plan and have been developed in close collaboration with YRT staff.

The proposed changes to YRT services involve both routing changes and service level improvements. Routing changes will be needed to many YRT routes intersecting the RT corridors in order to facilitate this increased feeder role and extend the benefits of the new RT services to the adjacent residential and employment areas. Service level improvements on existing YRT routes, specifically in the vicinity of the RT corridors, will also be needed for the same reasons, especially to address service frequencies that currently do not meet the minimum service standards, especially during off-peak times.

In general, the YRT route structure follows a grid pattern, where “core” services are provided on the major arterials of the 2-kilometre street grid. In the areas adjacent to the RT corridors, reasonably good services are provided on most of these arterials, with east-west routes crossing the Yonge corridor and north-south routes crossing the Highway 7 corridor (many of these being TTC routes operated under contract to York Region). Service levels generally follow the “core” service standards described earlier and, thus, are of a fairly good quality, although there are many exceptions. Most improvements needed for the core arterial services relate to service levels that fall short of the core standards, especially off-peak service and in some cases, typically on weekends and evenings, where no service exists at all. There are also some routing issues to be addressed for the core routes, however, including the need to provide core services on major transit-oriented streets in new developments (e.g. Bur Oak).

Services between the major arterials are generally considered “local” services and follow the available streets, usually collector streets. Their routing alignments vary and often do not provide direct connections to the RT corridors. The routing changes proposed for local services are intended to follow the principles described earlier and primarily focus on re-aligning routings to more directly feed the RT corridors, that is, east-west routings along the Yonge corridor and north-south routings along the Highway 7 corridor. For service levels, local services follow the less frequent “local” service standards but many still fall short of even the local standards and will need improvement to provide adequate feeder service. Service level improvements proposed for the local services are designed to bring the most notable service deficiencies up to or closer to the service standards.

The changes proposed for YRT routes in this section will be preliminary in nature in that they will only include those routes that will be affected by the implementation of Viva services and will be described to the extent that they relate specifically to their support of the RT services. Proposed route changes will include general routing orientations but specific street-by-street routings will be subject to further review by YRT, including non-RT considerations and design elements that will ultimately have to be included. The operating resource estimates for all proposed changes will be based on this limited degree of detail and will be subject to further service design and detailed scheduling done by YRT, along with other non-RT-related changes that will also make up the final YRT Service Plan and budget.

The service change proposals in this section are organized by service area and orientation to RT corridors, typically by municipality or groups of adjacent municipalities. The core routes and local routes are addressed separately because of the different standards and the unique approaches that may be required for each. Existing service levels are shown in the tables in this section, followed by proposed improvements for Viva Phase 1 implementation.

3.1 YRT ROUTES ON RT CORRIDORS

With the introduction of Rapid Transit on the major York Region transit corridors, the YRT local routes on these corridors will no longer need to perform long-distance line-haul roles. Significant changes will be required to these YRT routes, recognizing that they will still play a key complementary role of providing local service between RT stops. Their service levels will generally need to be reduced, however, because of the role of Rapid Transit in providing the line-haul service. This will result in significant cost savings, especially the local service on Yonge Street (Route 99) which now is very frequent (up to 3-4 minutes) and much of which will be replaced by the RT service.

The YRT local routes proposed to complement the RT routes along the RT corridors are intended to be the existing YRT routes operating on these corridors. These are the current YRT Routes 1, 77 and 99. Also, the GO Transit Yonge “B” service currently provides local service between Newmarket and Bernard and changes in service levels and operating policy are currently under review by GO Transit.

3.1.1 Routing Changes

Only a few routing changes are proposed for the YRT local routes on the RT corridors related to the implementation of Viva, which are described as follows:

99 Yonge – would be extended to Newmarket, following the RT routing, although some trips would terminate at Bernard at certain times of the day or days of the week (as described in the next section).

1 Highway 7 (east) – would stay on Highway 7 essentially all the way between Yonge and Ninth Line, except for the current diversion to High Tech. This would require the following changes:

- Operating all trips to Yonge and eliminating the Route 1-Bayview routing, which provides better connections with the strategically important Langstaff focal point and allows the improved 91 Bayview route to meet Bayview’s service needs;
- Moving the diversion to High Tech from Silver Linden to Bayview, to provide an improved accessible transfer to the Bayview service;
- Operating both ways on Highway 7 between Markham Road and Ninth Line, removing service from Church Street.

3.1.2 Service Level Changes

To set service levels for the YRT local routes on the RT corridors, two criteria have been used, namely:

- Minimum service level standards (as noted above);
- Providing sufficient service to meet total corridor capacity requirements.

The following are proposed service levels for the YRT routes operating on the RT corridors:

Exhibit 3.1.1: YRT Local Routes on RT Corridors – Proposed Frequencies

Route	Peak Periods		Daytime (Mon.-Sat.)		Sundays / Late Eve.	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
99 – Yonge-Newmarket (existing provided by GO)	7-10	30	30	30	60	60
99 – Yonge-Bernard (including Newmarket trips)	3-5	10	15	30	20-30	30
1 – Highway 7 East	10-15	30	30	30	60	60
77 – Highway 7 West	15	15	15-30	30	30-60	60

For Route 99, some trips at certain times of the day would only go as far as Bernard to meet the higher service needs on the southern part of the route. At other times, all trips would go to Newmarket. The times when some trips would short-turn are as follows:

- Peak periods – 10-minute service to Bernard, 30-minute service to Newmarket;
- Sundays and late evenings – 30-minute service to Bernard, 60-minute service to Newmarket.

The proposed frequencies for the YRT local routes on the RT corridors generally follow the minimum service standards, but some exceed the standards. These, and the reasons for them, are as follows:

- Route 99 – 10-minute peak service between Finch and Bernard to meet the overall capacity requirements and to not overly lessen the quality of service at non-RT stops, which currently varies from about 3 to 5 minutes.
- Route 77 – 15-minute peak service retained, because Route 77 will be the only service on Centre Street between Yonge and Bathurst as well as west of Martin Grove to Brampton, where it is well utilized.
- Route 99 – 30-minute service south of Bernard on Sundays and late evenings because of the traditional good service and ridership on the southern Yonge corridor.

The following tables provide analyses of the overall corridor capacity requirements, particularly on the various sectors of the Yonge corridor, which traditionally has high ridership and where service levels are driven by demand. Note that the volumes for GO Yonge B are those that were in effect prior to April 2004 (which better reflect current demand on the corridor and were used for the Viva service design) and do not include the new semi-express services that were introduced at that time (and which are now not fully utilized in terms of ridership).

Exhibit 3.1.2: Screenline Capacity – Vehicles/Hour (40' bus equivalent) – Yonge at Steeles

Route	Peak Hour		Mid-Day	
	Existing	Viva Impl.	Existing	Viva Impl.

RT – Yonge (incl. Yonge-Markham)		24		6
Local – YRT Route 99	15	6	4	2
GO Yonge B (assumed for Viva impl.)	8	6	2	
Local – YRT Route 1	6	2	2	2
TOTAL	29	38	8	10
Increase		31 %		25 %

Exhibit 3.1.3: Screenline Capacity – Vehicles/Hour (40' bus equivalent) – Yonge north of Langstaff

Route	Peak Hour		Mid-Day	
	Existing	Viva Impl.	Existing	Viva Impl.
RT – Yonge		18		6
Local – YRT Route 99	15	6	4	2
GO Yonge B (assumed for Viva impl.)	8	6	2	
TOTAL	23	30	6	8
Increase		30 %		33 %

On Yonge Street, both at Steeles and north of Langstaff, the proposed service levels for RT and local service will provide a total capacity increase in the order of 30 percent, which is consistent with the forecast ridership increases for Viva Phase 1.

Exhibit 3.1.4: Screenline Capacity – Vehicles/Hour (40' bus equivalent) – Yonge north of Bernard

Route	Peak Hour		Mid-Day	
	Existing	Viva Impl.	Existing	Viva Impl.
RT – Yonge		9		6
Local – YRT Route 99		2		2
GO Yonge B (assumed for Viva impl.)	8	6	2	
TOTAL	8	17	2	8
Increase		113 %		300 %

North of Bernard, the total capacity of that portion of the Yonge corridor will more than double, but this is intended, because the RT vehicles will need to have considerable excess capacity so that they are able to also meet the rider demands of the busy part of the corridor through Richmond Hill and Thornhill. During the off-peak, the high capacity increase is due to the 15-minute base frequency required to provide true “rapid-transit” service on the RT routes.

Exhibit 3.1.5: Screenline Capacity – Vehicles/Hour (40’ bus equivalent) – Hwy. 7 east of Bayview

Route	Peak Hour		Mid-Day	
	Existing	Viva Impl.	Existing	Viva Impl.
RT – Highway 7 (incl. Yonge-Mkm.)		12		4
Local – YRT Route 1 (note that not all existing Route 1 trips go to Yonge)	6	2	2	2
TOTAL	6	14	2	6
Increase		133 %		200 %

On the eastern part of Highway 7, the peak capacity increase is due to the RT services providing both a Finch route and a full Highway 7 route. This corridor is projected to have considerable ridership increases, both because of these added service choices and the opening of the new Seneca College campus adjacent to Highway 7 and Allstate. The off-peak capacity increase will also better service the new campus and will provide a 15-minute “rapid-transit” frequency on the Highway 7 RT corridor.

The western part of Highway 7 will only have the new RT services added with no change to the Route 77 local service. As noted above, the retention of the current Route 77 service levels is because it will remain the only route to Brampton and on the eastern part of Centre Street and, thus, it is not being set by an overall corridor capacity requirement.

3.1.3 Resource Impacts

Exhibit 3.1.3 shows the estimated annualized resource impacts for the YRT services on the RT corridors affected by the implementation of Viva.

Exhibit 3.1.3: Projected Resource Impacts – YRT Routes on RT Corridors

	Route	AM Vehicles	PM Vehicles	Vehicle Hours
99	Yonge	-10	-7	-20400
1	Highway 7 East	-4	-7	-10800
77	Highway 7 West	0	0	-6200

3.2 **MARKHAM CORE ROUTES**

3.2.1 **Routing Changes**

The following routing changes are proposed for core routes in the Markham service area.

2 Milliken – 2A 14th Avenue – Add evening and weekend service to 14th Avenue (Route 2A) by integrating it with Route 2, such that the 14th Avenue and Denison routings east of Esna Park become branches of Route 2, with higher levels of service west of Esna Park and a no-transfer through service to Yonge for the 14th Avenue corridor. Note that Route 2A also provides the important link between the Milliken community and the Highway 7 corridor at Markham-Stouffville Hospital, even though its service is limited. To maintain reasonably good service on the east portion of the Denison route, the peak frequency would be increased to 10 minutes on the trunk and 20 minutes on the branches, while the mid-day frequency would be increased to 20 minutes on the trunk and 40 minutes on the branches. Note that this improvement can be done for minimal cost because of the more efficient design, as detailed below.

Woodbine – Allstate – Valhalla – Create a new YRT service to maintain the connection between the full Woodbine corridor and Don Mills Station (TTC has discontinued the 224 Victoria Park North service outside of peak hours, leaving only the 24 Victoria Park route in the area, which will not divert to Don Mills Station). The routing of the new YRT service in Toronto would be via Victoria Park, Gordon Baker, Finch, Don Mills and Fairview Mall Drive, which would link to both Don Mills Station and Seneca College (providing a direct link between Newnham Campus and the new Allstate Campus). The full service to Don Mills Station would also operate weekends, replacing the current YRT route that terminates at Steeles.

Also, the a.m. routing via Frontenac will need to be moved to Allstate-Valhalla to connect with the RT services on Highway 7.

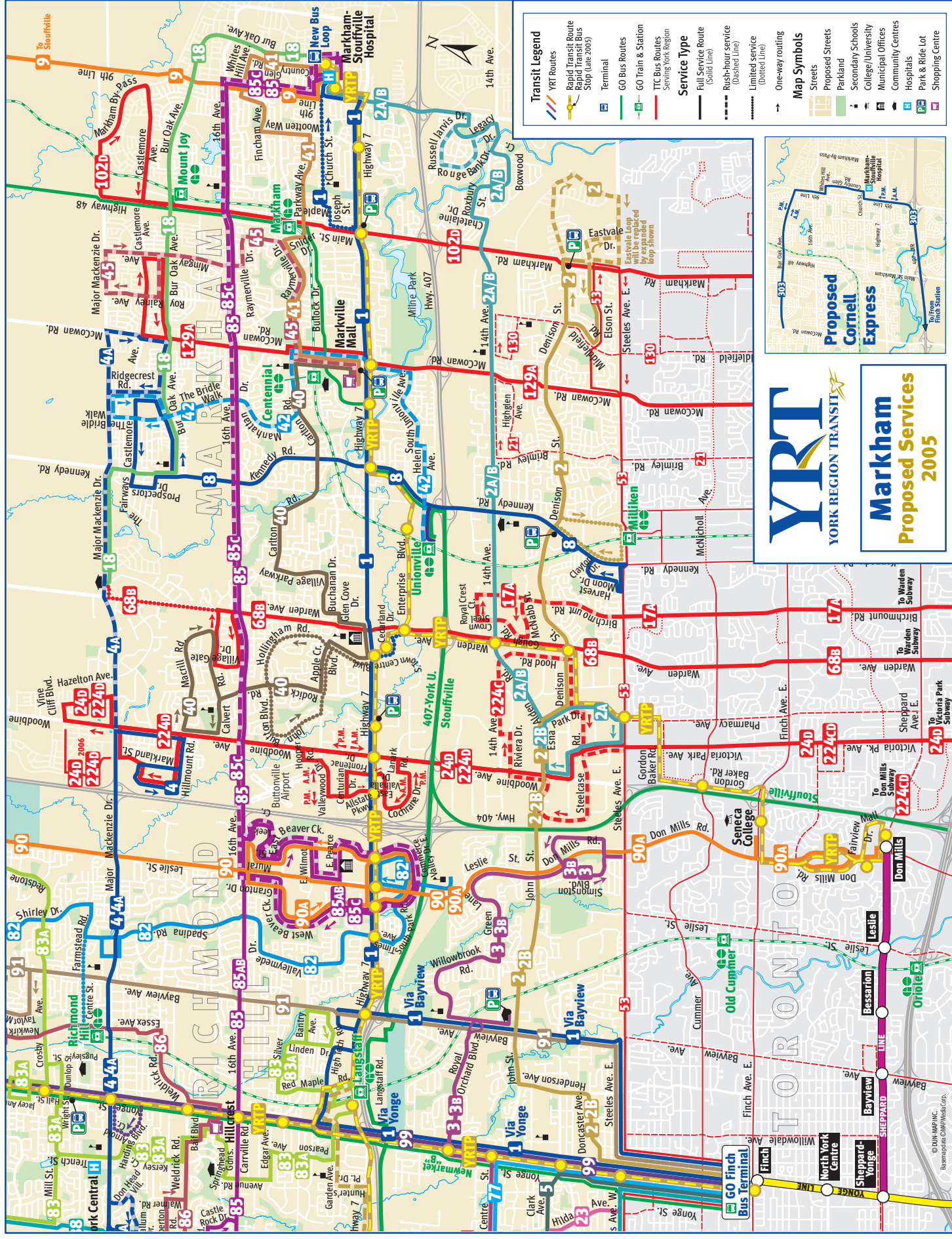
Kennedy – Replace YRT Route 8 with an extension of TTC Route 43 (Kennedy), to provide no-transfer service to and from Toronto. This will also offset much of the proposed transfer of the Don Mills and Woodbine routes from TTC to YRT, as the combination of these transfers will save a peak bus and have a minimal net cost (the Don Mills and Leslie changes are in the Richmond Hill section of this chapter).

All Routes – Extend and/or adjust routings at the outer ends of routes, as required, to serve new developments, including:

- Woodbine – north of Major Mackenzie, once development is complete;
- Warden – north of 16th Avenue to Major Mackenzie and new Community Centre (note that this route has reverted back to an extension of TTC Route 68, without direct connections to Don Mills Station);
- Kennedy – via Castlemore, Ridgecrest, Bur Oak;
- McCowan – via Castlemore, Mingay, Bur Oak;
- Markham Road – via Bur Oak to the east and looping via local roads to the north.

Exhibit 3.2 illustrates the core and local route changes proposed for the Markham service area (note that this map also includes other proposed YRT improvements unrelated to the implementation of Rapid

Exhibit 3.2



Transit). Exhibit 3.2.1 summarizes the estimated annualized resource impacts for the routing changes proposed for core routes in the Markham service area.

Exhibit 3.2.1 – Estimated Resource Impacts – Markham Core Routes Routing Changes

	Route	Peak Vehicles	Vehicle Hours
2	Milliken – 14 th Avenue (route integration)	0	1000
YRT	Woodbine (transfer from TTC to YRT)	1	1800
TTC	Kennedy (transfer from YRT to TTC)	0	0
68	Warden (TTC – route extension)	0	200

3.2.2 Service Level Improvements

Exhibit 3.2.2 summarizes the existing service frequencies for core routes in the Markham service area. Note that Route 224C primarily serves industrial areas and its level of service is thus suitably limited.

Exhibit 3.2.2 – Existing Service Frequencies – Markham Core Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
2	Milliken	15	30	60	60	30	30	60	60
2A	14 th Avenue	30	30	30					
224DB	Woodbine – Major Mac	33	30	30	35	60		60	
224C	Woodbine – 14 th Ave.	33							
68	Warden	21-24	40	40	40	40	40	40	40
8	Kennedy	15	30	30		60			
129	McCowan	15	25	25	40	27	40	40	40
102D	Markham Road	30	54	48	48	60			

The following service level improvements are proposed for core routes in the Markham service area.

Woodbine (new YRT route to Major McKenzie) – Improve weekday peak service to 15 minutes and Saturday daytime service to 30 minutes; add weekend evening service (60 minutes).

68 Warden – Improve weekday mid-day and Saturday daytime service to 30 minutes.

Kennedy – Improve Saturday daytime service to 30 minutes; add evening service (60 minutes all days) and Sunday service (60 minutes).

102 Markham Road – Improve weekday mid-day and Saturday daytime service to 30 minutes; add weekend evening and Sunday service (60 minutes).

Exhibit 3.2.3 summarizes the proposed service frequencies for core routes in the Markham service area.

Exhibit 3.2.3 – Proposed Service Frequencies – Markham Core Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
2	Milliken core	10	20	30	30	30	30	30	60
2-2A	Denison-14 th branches	20	40	60	60	60	60	60	120
YRT	Woodbine – Major Mac	15	30	30	35	30	60	60	60
224C	Woodbine – 14 th Ave.	33							
68	Warden	21-24	30	40	40	30	40	40	40
TTC	Kennedy	15	30	30	60	30	60	60	60
129	McCowan	15	25	25	40	27	40	40	40
102D	Markham Road	30	30	48	48	30	60	60	60

Exhibit 3.2.4 summarizes the estimated annualized resource impacts for the service level improvements proposed for core routes in the Markham service area.

Exhibit 3.2.4 – Estimated Resource Impacts – Markham Core Routes Service Improvements

	Route	Peak Vehicles	Vehicle Hours
	Woodbine (new YRT route)	2	4800
68	Warden (TTC)	0	1100
43	Kennedy (new TTC extension)	0	2400
102	Markham Road (TTC)	0	3400

3.3 MARKHAM LOCAL ROUTES (INCLUDING STOUFFVILLE)

3.3.1 Routing Changes

The following routing changes are proposed for local routes in the Markham service area.

40 Unionville Local – Adjust western part of route to operate two-way on Rodick north of Apple Grove (instead of the current one-way-only routings on John Button and Hollingham); also re-route eastern end to Unionville GO station via Carlton and Kennedy. This will also eliminate the need for a separate Unionville GO shuttle.

41 Markham Local – Eliminate large one-way loop by routing two-ways via Raymerville, Snider, Parkway, Wooten, Fincham, Tiers Gate, White's Hill, Country Glen to the Markham-Stouffville Hospital Terminus. This may also eliminate the need for a separate Markham GO shuttle.

Also, extend this route south of Markville Mall via McCowan and South Unionville, terminating at Unionville GO Station.

Bridle Walk (new) – From Markville Mall via the existing Unionville Local routing to Carlton and Manhattan, then via Manhattan and the Bridle Walk to Major Mackenzie and the new residential developments north of 16th Avenue. This, and the following route (Mingay) should also eliminate the need for a separate Centennial GO shuttle.

Mingay (new) – A western route from Markville Mall via the existing Markham Local routing to Raymerville and Snider, then two-way via Raymerville and Mingay to Major Mackenzie and the new residential developments north of 16th Avenue. This, and the preceding route (Bridle Walk) should also eliminate the need for a separate Centennial GO shuttle.

Business Express – Phase out the route, as the Highway 7 (east) employment areas will be well covered by the much more frequent RT services. Note that the service levels on this route would be reduced in phases as riders shift to Rapid Transit.

Exhibit 3.3.1 summarizes the estimated annualized resource impacts for the routing changes proposed for local routes in the Markham service area.

Exhibit 3.3.1 – Estimated Resource Impacts – Markham Local Routes Routing Changes

	Route	Peak Vehicles	Vehicle Hours
	Bridle Walk – Mingay (new local routes – interlined)	1 (am) 2 (pm)	5600
	Business Express (route phased out)	-1	-1800

3.3.2 Service Level Improvements

Exhibit 3.3.2 summarizes the existing service frequencies for local routes in the Markham service area. Note that Route 17 primarily serves industrial areas and its level of service is thus suitably limited.

Exhibit 3.3.2 – Existing Service Frequencies – Markham Local Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
40	Unionville Local	30	60	30	60	60	60	60	
41	Markham Local	20	35	35	60	60	60	60	
18	Bur Oak	30							
17	Birchmount	20							
New	Ninth Line (new service being added Fall 2004)								

Except for changes related to the new Unionville and Markham local routes (some service reductions to the Markham local to be consistent with other local routes), no additional service level changes are proposed for Markham local routes.

Exhibit 3.3.3 summarizes the proposed service frequencies for local routes in the Markham service area.

Exhibit 3.3.3 – Proposed Service Frequencies – Markham Local Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
40	Unionville Local	30	60	60	60	60	60	60	
41	Markham Local	30	60	60	60	60	60	60	
New	Bridle Walk	30	60	60		60		60	
New	Mingay	30	60	60		60		60	
18	Bur Oak	30							
17	Birchmount	20							
New	Ninth Line (new service being added Fall 2004)								

3.4 VAUGHAN CORE ROUTES

3.4.1 Routing Changes

The following routing changes are proposed for core routes in the Vaughan service area.

165 Weston – Extend and/or adjust routing at the outer ends of the route, as required, to serve new developments, especially the Vellore Woods and Vellore Village areas. Note that minor changes are expected to be done within the current round trip schedule with no additional cost. Any major extensions will be addressed as a “growth” item in the YRT Annual Service Plan.

3.4.2 Service Level Improvements

Exhibit 3.4.2 summarizes the existing service frequencies for core routes in the Vaughan service area. Note that Route 77 diverts to cover the eastern part of Clark on Sundays, resulting in no service on the western part of Clark and no direct connection between Finch and the eastern part of Centre. Route 4A supplements service on the central part of Route 4 between Bathurst and Bayview, resulting in service of 15 minutes in this central portion during peak periods. Also note that Route 107B primarily serves industrial areas and its level of service is thus suitably limited.

Exhibit 3.4.2 – Existing Service Frequencies – Vaughan Core Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
4	Major Mackenzie	30	30	40	40	30	40	30	40
4A	Major Mackenzie	30							
5	Clark	10	30	30	60	30			
160	Bathurst North	20	25	30	30	24		24	
105	Dufferin	15	60	60	60	60	60	60	60
107CD	Keele – Teston-M.Mac	17	30	30	40	30	40	40	40
107B	Keele – Rutherford	17	40						
New	Jane (YRT to Maple, being added Fall 2004)								
35D	Jane	11-17	25	30	30	27			
165D	Weston	20	36	30	35	30	47	48	
13	Islington	20	40	60	60	45	60		

The following service level improvements are proposed for core routes in the Vaughan service area.

5 Clark – Add Sunday (30 minutes) and weekend evening service (60 minutes) to the full route length and restore Route 77 to its usual routing.

105 Dufferin – Improve weekday midday and early evening, Saturday daytime and Sunday daytime service to 30 minutes.

165 Weston – extend Sunday evening service to about 11:00.

13 Islington – Improve weekday mid-day and Saturday daytime service to 30 minutes and Monday-Saturday evening service to 45 minutes; add Sunday service (45 minutes).

Exhibit 3.4.3 summarizes the proposed service frequencies for core routes in the Vaughan service area.

Exhibit 3.4.3 – Proposed Service Frequencies – Vaughan Core Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
4	Major Mackenzie	15	30	40	40	30	40	30	40
4A	Major Mackenzie	30							
5	Clark	10	30	30	60	30	60	30	60
160	Bathurst North	20	25	30	30	24		24	
105	Dufferin	15	30	30	60	30	60	30	60
107CD	Keele – Teston-M.Mac	17	30	30	40	30	40	40	40
107B	Keele – Rutherford	17	40						
New	Jane (YRT to Maple, being added Fall 2004)								
35D	Jane (TTC)	11-17	-	-	-	-			
165D	Weston	20	36	30	35	30	47	48	48
13	Islington	20	30	45	45	30	45	45	45

Exhibit 3.4.4 summarizes the estimated annualized resource impacts for the service level improvements proposed for core routes in the Vaughan service area.

Exhibit 3.4.4 – Estimated Resource Impacts – Vaughan Core Routes Service Improvements

	Route	Peak Vehicles	Vehicle Hours
5	Clark	0	1600
105	Dufferin (TTC)	0	1800
165D	Weston (TTC)	0	200
13	Islington	0	2600

3.5 VAUGHAN LOCAL ROUTES

3.5.1 Routing Changes

The following routing changes are proposed for local routes in the Vaughan service area.

11 Woodbridge – Extend Route 11 to follow the Martin Grove routing north of Woodbridge Avenue and operate Route 7 on a more limited basis (as described below). This would result in one good route providing full service to all of the built-up portion of West Woodbridge, including Woodbridge Village. The route extension would also yield a more frequent service, either 45 minutes (1 bus during evenings) or retaining the 30 minute service by interlining with Route 13.

7 Martin Grove – Extend Route 7 to Humber College and Woodbine Shopping Centre in Toronto. This would provide a connection from the end of the RT line to these important destinations. The service levels would be adjusted primarily to meet the needs of the College.

12 Pine Valley – Extend Route 12 via Chancellor, Aberdeen (two-way, replacing the Chancellor loop) Ansley Grove, Langstaff and Edgeley to the new Vaughan Mills shopping center.

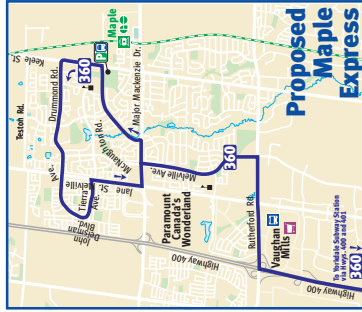
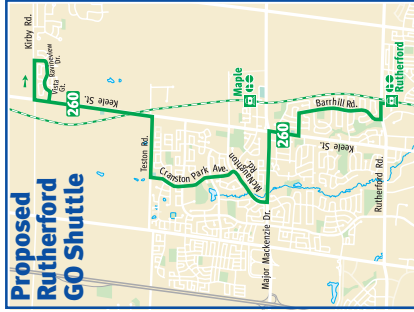
Ansley Grove (revised Route 10) – A new route from the Napa Valley loop (current Route 13 loop) via Islington, Langstaff, Ansley Grove and Highway 7, terminating at the commercial and entertainment complex on Colossus Drive and Famous Avenue, just east of Highway 7 and Weston. This will give the route a major destination terminus point and will include mid-day service, which will provide a more attractive replacement for the recently terminated Route 6 and the portion of Route 10 on Ansley Grove.

This route would also replace the existing Route 10, as the Woodbridge branch and the York University routing of Route 10 currently duplicate other routes, all of which will connect with the fast and frequent RT service to York University. It is also a long one-way loop, compared to the direct two-way routes (11 and 10) that will effectively replace it.

Exhibit 3.5 illustrates the core and local route changes proposed for the Vaughan service area (note that this map also includes other proposed YRT improvements unrelated to the implementation of Rapid Transit). Exhibit 3.5.1 summarizes the estimated annualized resource impacts for the routing changes proposed for local routes in the Vaughan service area.



Vaughan **Proposed Services** **2005**



Transit Legend	
	YRT Routes
	Rapid Transit Route
	Stop (Late 2005)
	Terminal
	GO Bus Routes
	GO Train & Station
	TTC Bus Routes
	Serving York Region
Service Type	
	Full Service Route (Solid Line)
	Rush-hour service (Dashed Line)
	Limited service (Dotted Line)
	One-way routing
Map Symbols	
	Streets
	Proposed Streets
	Parkland
	Secondary Schools
	College/University
	Municipal Offices
	Community Centres
	Hospitals
	Park & Ride Lot
	Shopping Centre

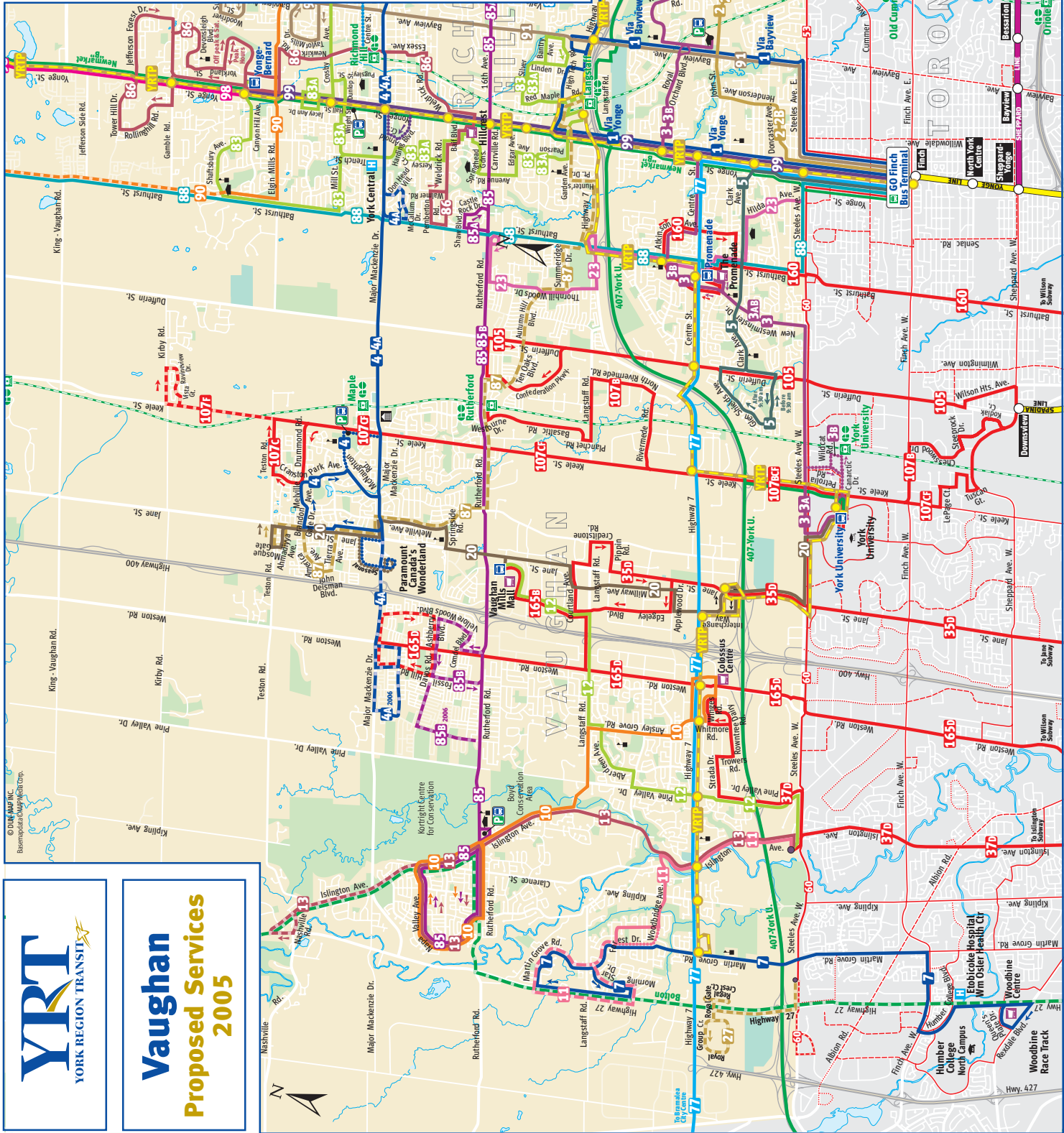


Exhibit 3.5.1 – Estimated Resource Impacts – Vaughan Local Routes Routing Changes

	Route	Peak Vehicles	Vehicle Hours
11	Woodbridge (extension)	1	3400
7	Martin Grove (extension to Humber College)	1	3200
12	Pine Valley (extension to Vaughan Mills)	1	2800
10	Ansley Grove (route reduction of existing Route 10)	0	2100
13	Islington (due to interlining with other local routes)	0	300

3.5.2 Service Level Improvements

Exhibit 3.5.2 summarizes the existing service frequencies for local routes in the Vaughan service area. Note that, when York University is in regular session (September to April), Route 3A supplements service on the central part of Route 3 between York U. and Promenade Mall, resulting in service of 10-20 minutes in this portion during the morning peak and 20 minute service in the mid-day. Also note that Routes 37D and 27 primarily serve industrial areas and their service is thus suitably limited.

Exhibit 3.5.2 – Existing Service Frequencies – Vaughan Local Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
3	Thornhill – York U.	20	40	40	40	40		40	
3A	York U. – Promenade	40 (am)	40						
11	Woodbridge	30	60	60		60	60		
7	Martin Grove	20	40	60		45	60		
12	Pine Valley	30	60			60			
10	Woodbridge – York U.	45							
37D	Islington (TTC)	30	30						
27	Highway 27	30			30	30	30		

The following service level improvements are proposed for local routes in the Vaughan service area.

3 Thornhill-York U. – Eliminate extra shuttle (3A) between York University and Promenade Mall.

11 Woodbridge – Add Sunday service (45 minutes) and provide full evening service all days.

12 Pine Valley (extended to Vaughan Mills) – Add weekday early evening and Sunday service (45 minutes).

Ansley Grove (restructured Route 10) – Add weekday early evening and Sunday service (45 minutes).

Exhibit 3.5.3 summarizes the proposed service frequencies for local routes in the Vaughan service area.

Exhibit 3.5.3 – Proposed Service Frequencies – Vaughan Local Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
3	Thornhill – York U.	20	40	40	40	40		40	
11	Woodbridge	30	30	45	45	30	45	45	45
7	Martin Grove	30	30	60		60	-		
12	Pine Valley	30	45	45		45		45	
10	Ansley Grove	30	45	45		45		45	
37D	Islington (TTC)	30	30						
27	Highway 27	30			30	30	30		

Exhibit 3.5.4 summarizes the estimated annualized resource impacts for the service level improvements proposed for local routes in the Vaughan service area.

Exhibit 3.5.4 – Estimated Resource Impacts – Vaughan Local Routes Service Improvements

	Route	Peak Vehicles	Vehicle Hours
3	Thornhill – York U.	-1 (am)	-1800
11	Woodbridge	0	2500
12	Pine Valley	0	1500
10	Ansley Grove	0	1500

3.6 RICHMOND HILL CORE ROUTES

3.6.1 Routing Changes

The following routing changes are proposed for core routes in the Richmond Hill service area.

Leslie – Don Mills – These important routes connect the Beaver Creek and Commerce Valley areas and the Leslie corridor with the TTC Don Mills Station and Seneca College. However, they do not perform this role consistently and the two routes are not well coordinated. At certain times of the day and days of the week, only one route operates while, at other times, only the other route operates. Also, the southbound buses of the two routes follow different routings and serve different stops, yet are generally serving the same area and routing to the same destinations (Don Mills Station, Seneca College).

To provide a more consistent and understandable service, the following are proposed:

- Replace the TTC Don Mills service with short-turned trips on the YRT Leslie route, so that all trips on this corridor would have the Leslie route designation and would be part of the YRT Richmond Hill operation;
- Only short-turn trips during peak hours; run all non-peak trips along the full Leslie route;
- Route all southbound trips on Leslie between 16th Avenue and Commerce Valley, so that all trips stop at the same location;
- Route the short-turn trips northbound via East Commerce Valley, East Beaver Creek and Mural (same as the current Don Mills service);
- Always route the southbound Leslie bus via Leslie south of Highway 7 (instead of the current peak routing via Highway 404);
- Route all trips on the Leslie bus all the way to Don Mills Station;
- Delete the Leslie extension to Seneca College King Campus; this would be replaced by a new and frequent Seneca Shuttle, connecting the college to the Yonge RT service, as described in the Newmarket-Aurora section.

88 Bathurst – Phase out the portion north of Shaftsbury to Seneca College, as this would also be replaced by the frequent Seneca Shuttle connection to the Yonge RT service. Note that the service levels on this northern portion of the route would be reduced in phases as riders shift to Rapid Transit.

Exhibit 3.6 illustrates the core and local route changes proposed for the Richmond Hill service area (note that this map also includes other proposed YRT improvements unrelated to the implementation of Rapid Transit). Exhibit 3.6.1 summarizes the estimated annualized resource impacts for the routing changes proposed for core routes in the Richmond Hill service area.

Exhibit 3.6

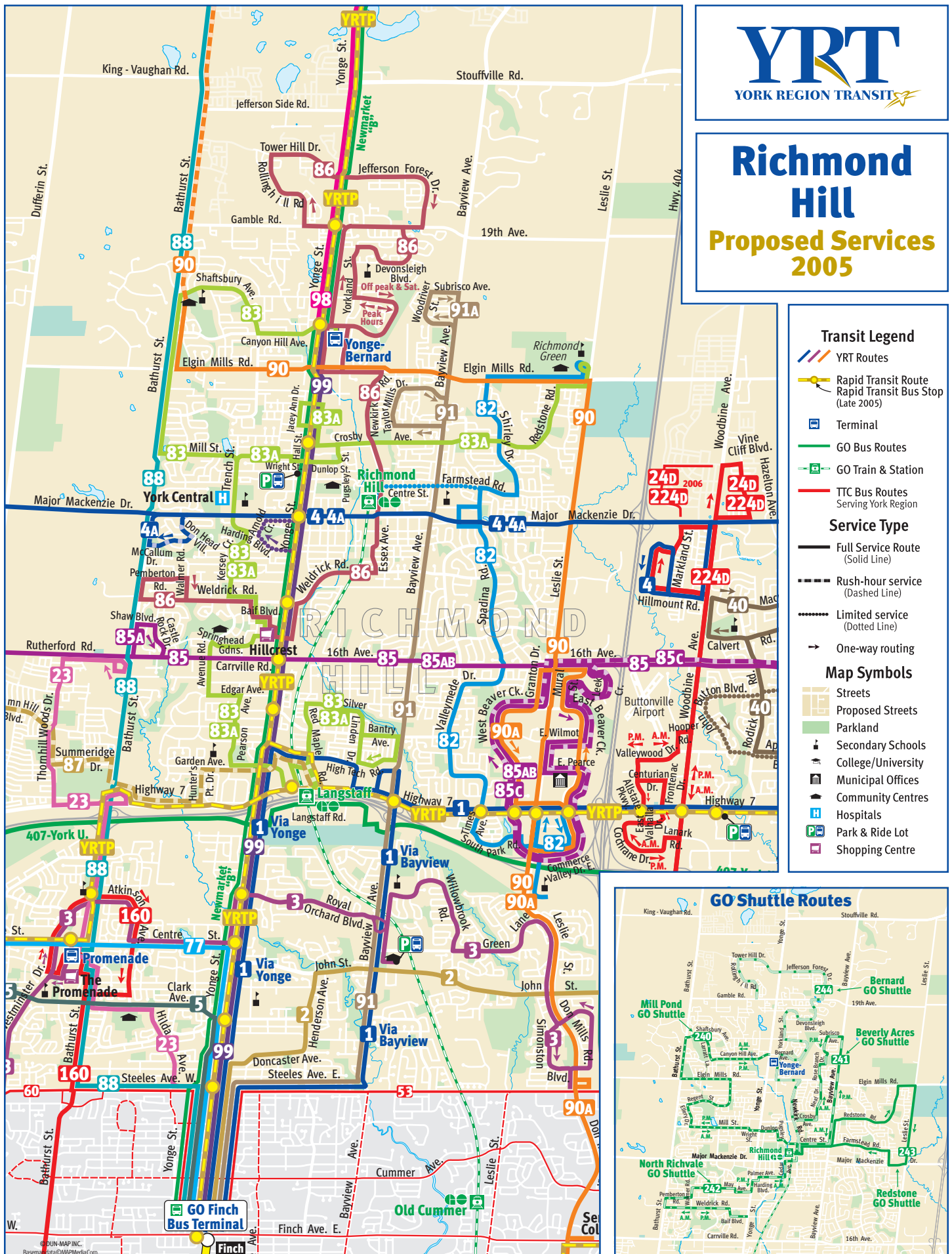


Exhibit 3.6.1 – Estimated Resource Impacts – Richmond Hill Core Routes Routing Changes

	Route	Peak Vehicles	Vehicle Hours
90	Leslie (including elimination of TTC Don Mills)	-2	800
88	Bathurst	-1	-1800

3.6.2 Service Level Improvements

Exhibit 3.6.2 summarizes the existing service frequencies for core routes in the Richmond Hill service area. Note that Route 85A supplements service on the central part of Route 85 between Bathurst and Leslie, resulting in service of 15 minutes or better in this central portion during peak periods.

Exhibit 3.6.2 – Existing Service Frequencies – Richmond Hill Core Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
91	Bayview	8-10	30	30	30	30	30	40	40
88	Bathurst	20	40	30	45	40		40	
90	Leslie	30	60	60		60		60	
25D	Don Mills	16	35	30	30				
85	Rutherford – 16 th Ave.	30	30	60	60	30		60	
85A	16 th Ave – Beaver Ck.	20	60	30		60			

The following service level improvements are proposed for core routes in the Richmond Hill service area.

88 Bathurst – Add weekend evening service (40 minutes).

90 Leslie – Extend weekend evening service and improve Saturday daytime service to 30 minutes. (Note that other deficiencies on Leslie and Don Mills would be rectified with the re-structuring and combining of these routes, as described in the previous section.)

85 Rutherford-16th Avenue – Extend evening service all days.

Exhibit 3.6.3 summarizes the proposed service frequencies for core routes in the Richmond Hill service area.

Exhibit 3.6.3 – Proposed Service Frequencies – Richmond Hill Core Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
91	Bayview	8-10	30	30	30	30	30	40	40
88	Bathurst	20	40	30	45	40	40	40	60
90	Leslie	30	30	30	45	30	45	45	45
	Leslie Beaver Ck. s/turn	30	-	-	-				
85	Rutherford – 16 th Ave.	30	30	45	60	30	60	60	60
85A	16 th Ave – Beaver Ck.	20	60	30		60			

Exhibit 3.6.4 summarizes the estimated annualized resource impacts for the service level improvements proposed for core routes in the Richmond Hill service area.

Exhibit 3.6.4 – Estimated Resource Impacts – Richmond Hill Core Routes Service Improvements

	Route	Peak Vehicles	Vehicle Hours
90	Leslie	0	1500
88	Bathurst	0	1300
85	16 th Avenue	0	1800

3.7 RICHMOND HILL LOCAL ROUTES

3.7.1 Routing Changes

The following routing changes are proposed for local routes in the Richmond Hill service area.

Valleymede-Spadina, Weldrick – Combine the Weldrick portion of Route 86 and the southern portion of Route 82 into one route, connecting at the Richmond Hill GO station (with the Spadina portion routing via Frank Endean, Farmstead, Centre and Newkirk, the same as current trips diverting to the GO station). This will connect the Weldrick and Spadina area to the Yonge corridor. The northerly portions of Routes 82 and 86 will be covered by a new route on Mill and Crosby, as described below.

83 Trench – Route all trips at the south end to the new Langstaff Terminal, to maximize connections and avoid duplicating the Highway 7 RT connection to Promenade (Route 87 will continue to serve the Hunter's Point area), and change the routing from Pearson Avenue to Denham Drive to get better service

penetration to the west. Also, extend the route to cover the portion of Route 87 east of Yonge, to provide off-peak service to this new and fairly dense residential area (Route 87 could terminate at Langstaff or could also continue to serve this area, depending on demand, time of day and available schedule time).

Route all trips at the northern end via Mill to Yonge and loop via Dunlop, Pugsley and Crosby (during peak hours, this route could interline with the eastern portion of the new Mill-Crosby route, allowing the western portion to extend to the Richmond Hill GO station and perhaps avoid the need for a separate Mill Pond GO shuttle). The portions of the current route on the western end of Mill and Shaftsbury will be covered by a new route on Mill and Crosby, as described below.

Mill, Crosby – Replace the northerly portions of Routes 83 and 86 with a route that will go from Devonsleigh (northern part of Route 86, including Tower Hill and Jefferson Forest loops) to Bernard Terminal, then via Canyon Hill, Shaftsbury, Bathurst, Mill, Yonge, Crosby and Redstone to loop in the Leslie and Elgin Mills area. This will re-orient local service in the area to an east-west direction to maximize connectivity with the Yonge RT service. As noted above, during peak hours, the westerly portion of the route could extend to the Richmond Hill GO station, possibly replacing the GO shuttle.

Note that the streamlining of the above three local routes will save at least 1 peak bus and 1 mid-day bus. It will also increase off-peak service on the new Mill-Crosby route to 60 minutes, compared to the 120 minute service now provided on the Route 83 branches.

Oak Ridges – Replace Route 84 with new local routes in Oak Ridges, operated in the Newmarket-Aurora service area (see next section).

Exhibit 3.7.1 summarizes the estimated annualized resource impacts for the routing changes proposed for local routes in the Richmond Hill service area.

Exhibit 3.7.1 – Estimated Resource Impacts – Richmond Hill Local Routes Routing Changes

	Route	Peak Vehicles	Vehicle Hours
83	Trench (restructure, eliminate Promenade routing)	-1	-3900

3.7.2 Service Level Improvements

Exhibit 3.7.2 summarizes the existing service frequencies for local routes in the Richmond Hill service area. Note that most of these routes are proposed for re-structuring, as described in the previous section. Route 84 is proposed to be replaced by new local routings in Oak Ridges (part of Newmarket-Aurora service area) connecting with the RT service, instead of operating on Yonge to Bernard.

Exhibit 3.7.2 – Existing Service Frequencies – Richmond Hill Local Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
82	Valleymede – Spadina	30	60	30					
83	Trench	30	45	90		45			
83A	Trench – branches	60	90	90		90			
86	Weldrick – Newkirk	30	60	45		60			
87	Langstaff – Maple	30		40					

The following service level improvements are proposed for local routes in the Richmond Hill service area.

Valleymede (restructured) – Add Saturday and Sunday service (60 minutes).

Trench (restructured) – Add Sunday service (60 minutes).

Mill-Crosby (restructured) – Add Sunday service (60 minutes).

87 Langstaff-Maple - Add weekday, Saturday and Sunday daytime service, as far as Confederation Parkway (60 minutes).

Exhibit 3.7.3 summarizes the proposed service frequencies for local routes in the Richmond Hill service area.

Exhibit 3.7.3 – Proposed Service Frequencies – Richmond Hill Local Routes

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
82	Valleymede – Weldrick	30	60	30		60		60	
83	Trench	30	60	60		60		60	
86	Mill – Crosby	30	60	45		60		60	
87	Langstaff – Maple	30	60	45		60		60	

Exhibit 3.7.4 summarizes the estimated annualized resource impacts for the service level improvements proposed for local routes in the Richmond Hill service area.

Exhibit 3.7.4 – Estimated Resource Impacts – Richmond Hill Local Routes Service Improvements

	Route	Peak Vehicles	Vehicle Hours
82	Valleymede – Weldrick	0	1200
83	Trench	0	600
86	Mill – Crosby	0	600
87	Langstaff – Maple	0	2800

3.8 NEWMARKET-AURORA (INCLUDING KING AND EAST GWILLIMBURY)

3.8.1 Routing Changes

The following routing changes are proposed for routes in the Newmarket-Aurora service area.

Seneca Shuttle – Introduce a new high-frequency route between Seneca College (King Campus) and Bloomington and Yonge, providing direct and frequent RT connections to Seneca College, timed to connect (to the greatest extent possible) with the RT service. It would replace the Newmarket Seneca shuttle (resulting in no net cost during peaks) and the southern portion of Route 32. It should also eventually replace the need to send Routes 88 and 90 to the College, although these routings would be phased out gradually as riders move to Rapid Transit and the new shuttle.

Oak Ridges, King City – Replace Route 84 with a local route in Oak Ridges similar to the current local routing but with connections to RT stops at King and Bloomington and a connection via King Road to King City. It should be designed to meet local needs and connect all areas with RT stops and could route from a Humberland-Bathurst-Bloomington-Yonge-Coon's loop via Parker, King to Yonge, then looping via Sunset Beach, Bayview, North Lake and new streets to the north.

South Aurora – Re-align Route 32 to loop via McClellan Way, Bathurst and Henderson, then via Henderson, Yonge, Murray (existing Route 31), Wellington (select off-peak trips via the Aurora Seniors Centre as required), John West Way, then looping via Hollidge and new local streets to the north. This will re-orient the local service into more of an east-west direction to serve the RT stations in South Aurora. It will also serve the Aurora GO station, so that there will be no need for a parallel GO shuttle. The GO shuttle bus would be integrated into the local route to provide a 30-minute peak service.

North Aurora – Start Route 31 to loop via St. John's Sideroad, Bayview, Pederson, Gateway, St. John's Sideroad, then via present route on Old Yonge, Orchard Heights, Aurora Heights and Yonge to Wellington (select off-peak trips via the Aurora Seniors Centre as required), then re-routed via Wellington, Bayview and looping on Stone Road (now done by Route 33). As for the South Aurora route, this route will also serve the Aurora GO station, so that there will be no need for a parallel GO shuttle. This GO shuttle bus would also be integrated into the local route to provide a 30-minute peak service.

Bayview – Wellington – London Road – Re-route the southern part of the route from Bayview and Hollidge via Hollidge, John West Way and Wellington, looping via Murray, Kennedy, Bathurst and

Wellington. The routing on Wellington will be meshed with the South Aurora route to provide a more frequent service on this most important east-west route. This route will also serve the Aurora GO station.

Also, combine Route 44 with the Bayview route via Davis, including turning the London Road portion into a full two-way service along London Road and Main Street. These changes will link the Bayview corridor to the Yonge RT corridor, both in Aurora and at the Newmarket terminal.

Mulock – Re-route the eastern end to cover Stonehaven (via Stonehaven, Leslie, Mulock), replacing the large one-way loop through Stonehaven and providing direct connections to the Yonge corridor.

Also, extend Route 57 west of Yonge to combine with Route 66, instead of duplicating local service on Yonge. This, in combination with the proposed changes to the Bayview and Davis routes will save two peak buses in Newmarket while improving connections to the Yonge RT corridor.

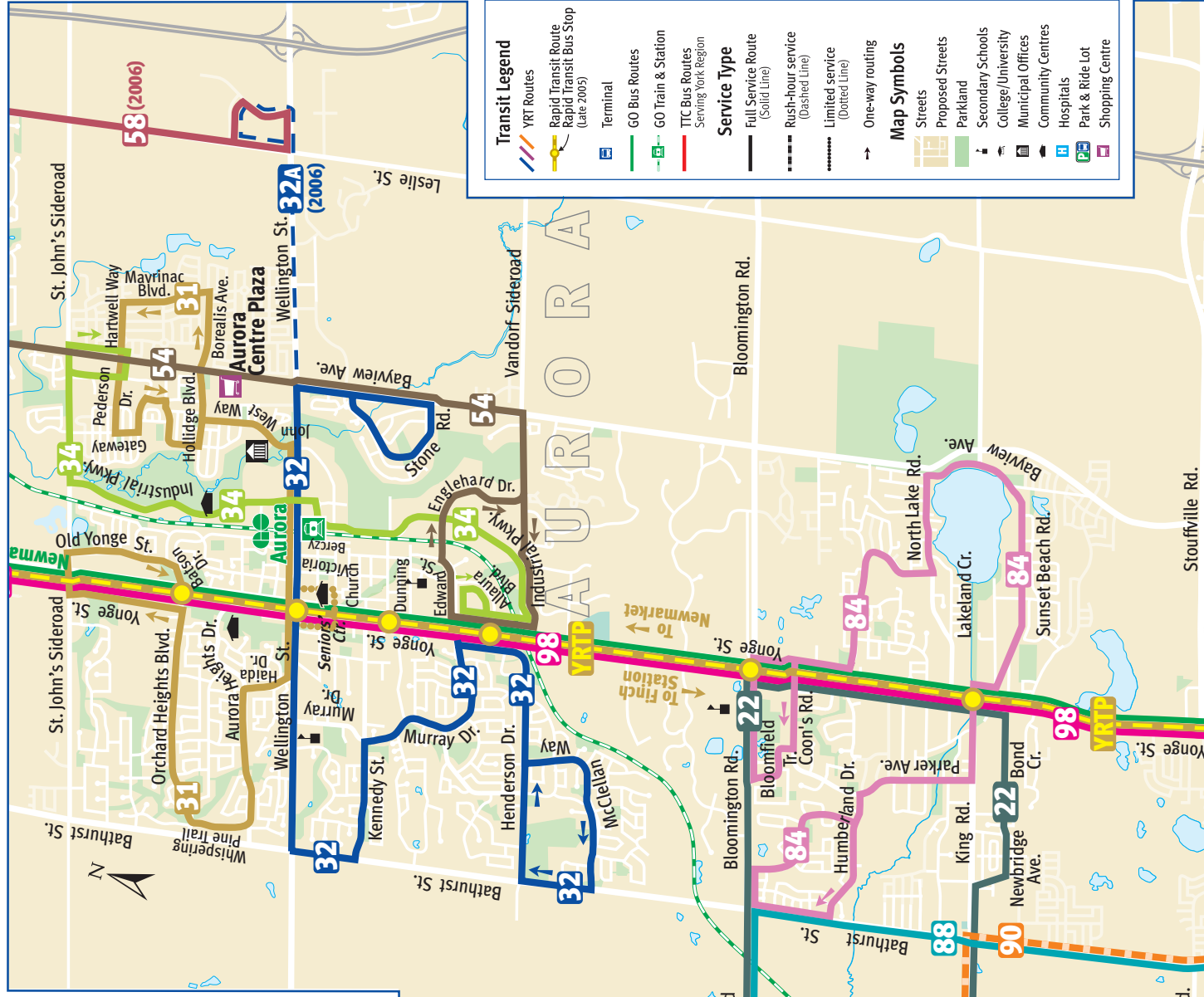
Leslie Valley – Replace the portion of Route 33 north of Davis with a new route that will serve the Leslie Valley area, then route direct via Davis to the Newmarket Terminal. This will combine with Route 55 to maintain a higher level of service between Newmarket Terminal and South Lake Hospital and will provide an opportunity to reduce service on Davis east of the Hospital, which currently has low ridership compared to the relatively high service levels.

Sharon – Combine all service to Sharon with through trips on Davis Drive (Route 55) to avoid transfers at 404 Town Centre and/or a longer connection to the Yonge corridor via Mulock on the current Route 57.

Exhibits 3.8 and 3.9 illustrate the route changes proposed for the Newmarket, Aurora and Oak Ridges service area. (note that this map also includes other proposed YRT improvements unrelated to the implementation of Rapid Transit). Exhibit 3.8.1 summarizes the estimated annualized resource impacts for the routing changes proposed for all routes in the Newmarket-Aurora service area.

Exhibit 3.8.1 – Estimated Resource Impacts – Newmarket-Aurora Routing Changes

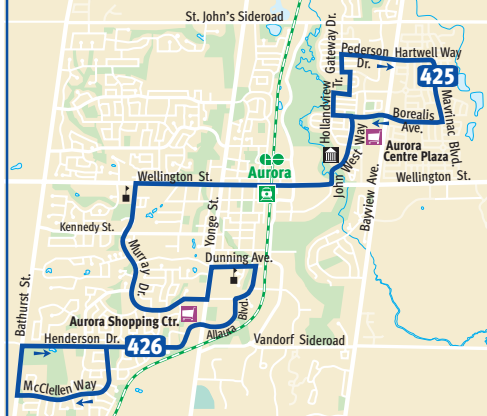
	Route	Peak Vehicles	Vehicle Hours
	Seneca Shuttle (new, Seneca to Yonge/Bloomington)	0	4800
	Oak Ridges Local (restructured, no Yonge routing)	-1	-3100
31-32	Aurora locals (rerouted, integrated with GO shuttles)	0	0
54-44	Bayview – London (integrated)	0	0
55	Davis – Leslie Valley – Sharon (restructured)	0	2900
57	Mulock (Yonge routing eliminated)	0	-800
66	Glenway – Summerhill (integrated with Mulock)	-2	-7700



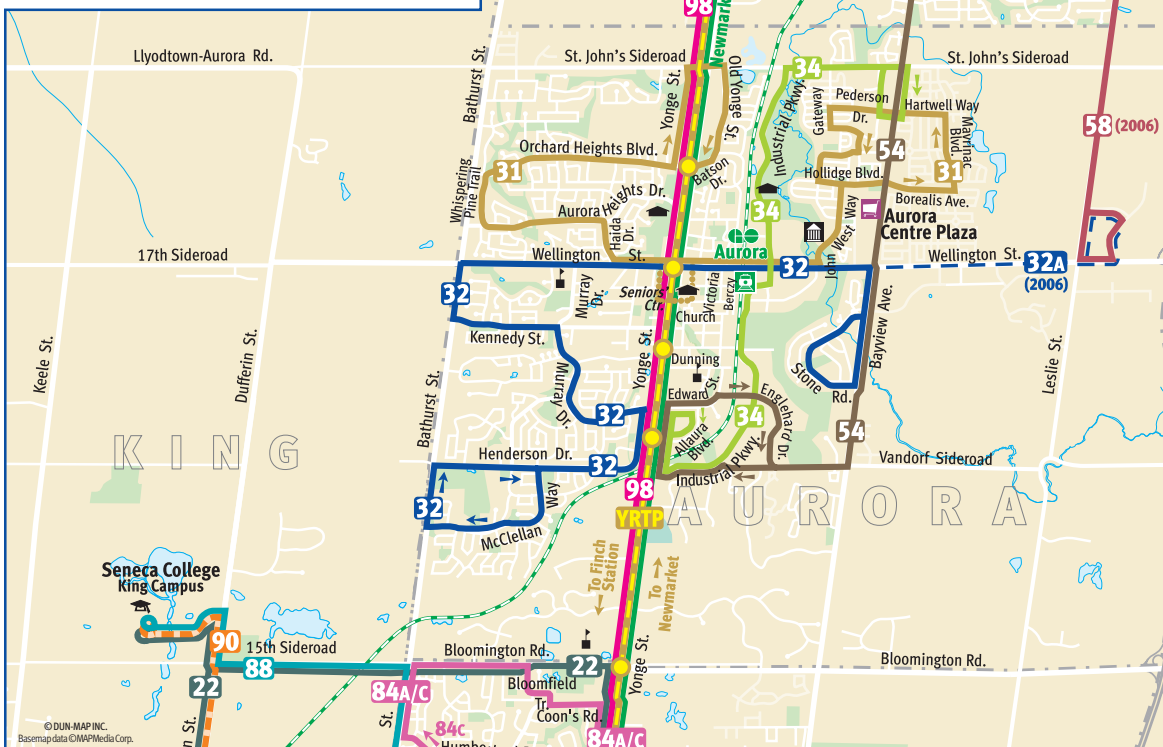
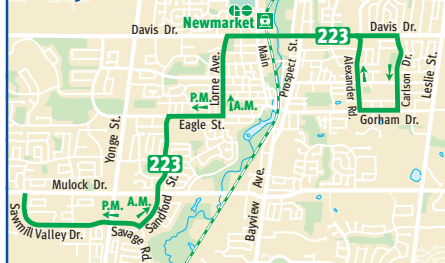


Newmarket & Aurora Proposed Services 2005

Proposed Aurora School Specials



Proposed Newmarket GO Shuttle



Transit Legend

- YRT Routes
- Rapid Transit Route
- Rapid Transit Bus Stop (Late 2005)
- Terminal
- GO Bus Routes
- GO Train & Station
- TTC Bus Routes Serving York Region

Service Type

- Full Service Route (Solid Line)
- Rush-hour service (Dashed Line)
- Limited service (Dotted Line)
- One-way routing

Map Symbols

- Streets
- Proposed Streets
- Parkland
- Secondary Schools
- College/University
- Municipal Offices
- Community Centres
- Hospitals
- Park & Ride Lot
- Shopping Centre

3.8.2 Service Level Improvements

Exhibit 3.8.2 summarizes the existing service frequencies for all routes in the Newmarket-Aurora service area.

Exhibit 3.8.2 – Existing Service Frequencies – Newmarket-Aurora

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
84	Oak Ridges	30	60	45		60			
31	Aurora North	70-75	70			70			
32	Aurora South	60	60			60			
54	Bayview	30	60	60		60			
44	Bristol – Union	30-40	60	30		60			
66	Glenway – Summerhill	30-40	60	30		60			
55	Davis	15-20	15	30	30	30	30	30	30
56	Eagle – Gorman	30	30	40	40	60	40	40	40
57	Mulock	20	30	30	30	30	30	45	45
55-57	Davis/Mulock – Sharon	30	60	60	60	30-60	60		
52	Holland Landing	45-60	60	60	60	60	60		

The following service level improvements are proposed for routes in the Newmarket-Aurora service area.

Seneca Shuttle (new) – Add Sunday service (60 minutes), interlined with Oak Ridges.

Oak Ridges Local (new) – Add Sunday service (60 minutes), interlined with Seneca shuttle.

Aurora North and Aurora South (restructured) – Add early evening and Sunday service (60 minutes). Note that the improved peak service results from restructuring the local routes and GO shuttles, as described above.

Bayview (including London Road, as a result of restructuring) – Add Sunday service (60 minutes).

56 Eagle-Gorman – Improve Saturday service to 30 minutes.

Exhibit 3.8.3 summarizes the proposed service frequencies for all routes in the Newmarket-Aurora service area. Note that the frequencies on Davis between Yonge and South Lake Hospital are a combination of

Routes 55 and 54. Also note that not all Route 55 trips need to go to Sharon, but the frequency to Sharon should be based on demand and available schedule time.

Exhibit 3.8.3 – Proposed Service Frequencies – Newmarket-Aurora

	Route	Monday – Friday				Saturday		Sunday	
		Peak	Day	Early Eve.	Late Eve.	Day	Eve.	Day	Eve.
New	Seneca Shuttle	10	15	15	60	60		60	
New	Oak Ridges	30	60	45		60		60	
31	Aurora North	30	60	60		60		60	
32	Aurora South	30	60	60		60		60	
54	Bayview – London	30	60	60		60		60	
55	Davis – Leslie Valley	30	30	45		45		45	
55	Davis – Sharon	30	30	45	45	45	45	45	45
56	Eagle – Gorman	30	30	45	45	30	45	45	45
57	Mulock	20	30	30	45	30	45	45	45
52	Holland Landing	45-60	60	60	60	60	60		

Exhibit 3.8.4 summarizes the estimated annualized resource impacts for the service level improvements proposed for all routes in the Newmarket-Aurora service area.

Exhibit 3.8.4 – Estimated Resource Impacts – Newmarket-Aurora Service Improvements

	Route	Peak Vehicles	Vehicle Hours
	Seneca Shuttle	0	300
	Oak Ridges Local	0	300
31	Aurora North	0	1400
32	Aurora South	0	1400
54	Bayview – London	0	600
56	Eagle – Gorman	0	600

3.9 YRT RESOURCE IMPACTS

Exhibit 3.9.1 shows the total estimated annualized resource impacts for the YRT services affected by the implementation of Viva Phase 1. Exhibit 3.9.2 summarizes the resource impacts by YRT contractor. This assumes the new local Route 99 (Finch to Newmarket) would continue to be operated under the Vaughan contract.

Note that all of these figures are also being refined as part of the 2005 YRT budget process.

Exhibit 3.9.1: Projected Resource Impacts – Affected YRT Routes

	AM Vehicles	PM Vehicles	Vehicle Hours
Route 99 Yonge	-10	-7	-20,400
Route 1 Highway 7 East	-4	-7	-10,800
Route 77 Highway 7 West	0	0	-6,200
SUB-TOTAL – YRT CORRIDOR ROUTES	-14	-14	-37,400
TTC contracted – route changes	-1	-1	-4,300
Other Markham – route changes	-1	0	3,000
Other Vaughan – route changes	3	3	11,800
Richmond Hill – route changes	-4	-4	-6,800
Newmarket-Aurora – route changes	0	0	6,100
SUB-TOTAL – YRT ROUTE CHANGES	-3	-2	9,800
TTC contracted – service improvements	0	0	8,900
Other Markham – service improvements	2	2	4,800
Other Vaughan – service improvements	-1	0	7,900
Richmond Hill – service improvements	0	0	9,800
Newmarket-Aurora – service improvements	0	0	4,600
SUB-TOTAL – YRT SERVICE IMPROVEMENT	1	2	36,000
TOTAL	-16	-14	8,400

Exhibit 3.9.2: Projected Resource Impacts – YRT Totals by Contractor

	AM Vehicles	PM Vehicles	Vehicle Hours
Markham	-3	-5	-3,000
Vaughan	-8	-4	-6,900
Richmond Hill	-4	-4	3,000
Newmarket-Aurora	0	0	10,700
SUB-TOTAL – YRT	-15	-13	3,800
TTC Contracted Routes	-1	-1	4,600
TOTAL	-16	-14	8,400

APPENDIX – EXISTING YRT SERVICE STANDARDS

This section reviews existing YRT service standards. The “core” and “feeder (local)” standards described below are as they were developed for the YRT 5-Year Service Plan in 2002 without change.

Core Route Standards

Core routes will operate in the major travel corridors on the main arterial roads in the urban transit service area. They will form a grid route network that can provide a basic level of mobility to all residents in the urban transit service area. Core routes will have the following standards:

- ***Route Structure*** – straight-line route structures focused on the main transit centres in or near the urban transit service area including the GO Stations, the TTC subway stations, and any designated transit terminals such as those in major shopping malls.
- ***Service Levels*** – minimum service frequencies on clock-face schedules and minimum spans of service as per the following:

Weekdays	15 minutes	6:00 to 9:00 am / 3:00 to 7:00 pm
	30 minutes	9:00 am to 3:00 pm / 7:00 to 11:00 pm
Saturdays	30 minutes	6:00 am to 11:00 pm
Sundays/Holidays	30 minutes	9:00 am to 11:00 pm

The above minimums for evenings, Saturdays, Sundays and holidays will not necessarily apply in industrial or business areas during times when businesses are closed.

It is recognized that many of the routes in York Region operated by the TTC are not on clock-face frequencies due to the need to integrate the York trips with the other trips on a given route. The clock-face standard should remain, however, and schedules should be adjusted to clock-face frequencies wherever possible and whenever the opportunity arises.

- ***Vehicle Loadings*** – average maximum loads per bus will not exceed the following standards (frequencies will be increased if the loading standard is exceeded):

During peak periods	150% of seating capacity over maximum 60 min. period
During off-peak periods	100% of seating capacity over a 60 minute period

- ***Performance Targets*** – core routes are expected to meet or exceed the following performance targets:

Weekday Peak Hours	30 passengers per service hour
Other times	20 passengers per service hour

- ***Service Warrants*** – routes will become core routes if they can complement the grid route network and meet the above criteria. Their spans of service will be extended outside the above core hours if a minimum performance level of 15 passengers per vehicle service hour (25% cost recovery) can be maintained after a one year trial period.

Feeder (Local) Route Standards

Feeder routes will circulate the various communities in the urban transit service area and will connect the communities to the major local activity centres and to the core network where transfers between routes can be made. They will provide a feeder or neighbourhood circulation function in the transit system supplementing the core route network to bring most residences within the route coverage standard, as described above. Feeder routes will have the following standards:

- **Route Structure** – operate primarily on collector and local roads, focused on a transit focal point or main activity centre.
- **Service Levels** – minimum service frequencies on clock-face schedules and minimum spans of service as per the following, when operating:

Weekdays	30 minutes	6:00 am to 9:00 am / 3:00 pm to 7:00 pm
	60 minutes	9:00 am to 3:00 pm
	60 minutes	7:00 pm to 11:00 pm
Saturdays	60 minutes	6:00 am to 7:00 pm
	60 minutes	7:00 pm to 11:00 pm
Sundays/Holidays	60 minutes	9:00 am to 11:00 pm
- **Vehicle Loadings** – average maximum loads per bus will not exceed the following standards (frequencies will be increased if the loading standard is exceeded):

During peak periods	150% of seating capacity over maximum 60 minute period
During off-peak periods	100% of seating capacity over a 60 minute period
- **Performance Targets** – feeder routes are expected to meet or exceed the following performance levels:

Weekday Peak Hours	25 passengers per service hour
Other times	15 passengers per service hour
- **Service Warrants** – feeder routes are dependent on the demand both in residential areas and in industrial or business areas. They can operate during weekday peak periods only, or can be extended to other periods and days depending on their ability to maintain the minimum performance targets after a one year trial period. They can start earlier or operate later than the designated core hours if a minimum performance level of 15 passengers per vehicle service hour (25% cost recovery) can be maintained after a one year trial period.