APPENDIX 4

INTEGRATION OF TTC SERVICES WITH SMARTTRACK

1. STUDY OBJECTIVES

This appendix summarizes work that is being led by the TTC to integrate TTC services with SmartTrack. Ongoing work is being undertaken to:

- Identify existing and planned future TTC services that could provide convenient and customer-friendly connections to SmartTrack stations;
- Provide the best-possible opportunities for travelers to take advantage of this new rapid transit service; and
- Allow SmartTrack to function, in general, as an integral part of the TTC network.

Integrating TTC services with SmartTrack will ensure that Toronto residents are provided with maximum choice of travel options.

2. UNDERLYING PRINCIPLES OF SERVICE CONNECTIONS AND CHANGES

The TTC's approved Service Standards require that any change to a TTC service must be a net advantage or benefit to travelers. That is, after identifying, measuring, weighting, and assessing all effects of the service change, the change will be implemented only if the net effect on all customers – existing and new – is positive.

3. PROCESS

As part of the City-led SmartTrack Study Team, TTC staff are identifying and recommending TTC services that could be connected to SmartTrack stations. This is a multi-step process:

Identification of Candidate Routes

All routes which intersect with, pass by, or are in reasonable proximity to a SmartTrack station are examined for connection potential. Each route is examined with respect to its potential ability to attract or generate local travel. This ensures that the connection or transfer would be a meaningful or logical one. This is done by considering factors such as: duplication of services, degree of diversion, frequency of service (potential waiting times), other rapid transit connections made by the same route, and known or planned network changes (forthcoming subway extensions, light rail lines, etc).

Determine the Type of Connection

There are three main types of connections: on-street connection, off-street connection, and off-route diversion. The type of connection is determined for each candidate route identified.

a) On-street connection: these arrangements allow for convenient connections between existing TTC services and intersecting services (i.e. subways, GO lines, SmartTrack) with no diversion of the TTC service away from its main routing. This type of connection avoids time-consuming diversions of on-board customers. Station entrances are designed to ensure convenient transfers between services.

b) Off-street connection: these arrangements call for the connection between TTC services and SmartTrack to be made within the station itself, which would be facilitated by designing and constructing the station to include bus bays and associated facilities (i.e. enclosed customer waiting areas, next vehicle information screens, operators washrooms, retail vendors, etc). These more-costly arrangements are implemented when there is a sufficient number of connecting routes to warrant such an expense; where the geographical location of the station is such that the off-street connection will not require a significant diversion of the services away from their main direction of travel for customers; and where TTC services will terminate at the station.

c) Off-route diversion: these arrangements entail a pronounced diversion of a service away from its main direction of travel, or main arterial alignment – possibly in a counter-intuitive way – for the specific purpose of connecting the route to a rapid transit service. This would encourage travelers to make use of the connecting service. Such off-route diversions can be facilitated using either on-street or off-street arrangements as described above. This type of service is limited to situations where there are no other options available and the benefit to customers outweighs the inconvenience of the diversion.

Weighting and Evaluating Effects on Customers

For any routes with connections that are either off-street or off-route, an assessment of the changes in travel time for both transferring and non-transferring customers is done to determine whether the proposed connection is a net benefit for travelers (i.e. reduces travel time).

Preliminary List of Connecting Routes

Consistent with the above, TTC staff have identified a list of TTC services which, on an unweighted, pre-evaluation basis, would appear to provide customer-benefitting connections with SmartTrack. This list (see Table 1) includes TTC routes making seventy-five (75) transfer connections at 21 proposed SmartTrack stations (see Appendix 2 SmartTrack Station Analysis). The preliminary connecting routes are shown in the map attached as Figure 1. The list includes nine (9) TTC routes that could make connections at SmartTrack stations, but fall in the category of an off-route diversion. Off-route diversions are generally implemented by the TTC on an exception basis and are determined through the weighted evaluation process described above. This list of candidate routes will change as SmartTrack stations become finalized and after a full evaluation of the effects of these connections on all customers.

TTC routes already make many connections to existing GO stations. The existing network has 82 TTC routes connecting with 19 GO stations in Toronto. Six of these 19 stations would be on the SmartTrack route.

Appendix 4: Integration of TTC Services with SmartTrack

Use in Ridership Modelling and Forecasting, and Station Selection

The list of candidate routes, by SmartTrack station, will be used in the ridership modelling and forecasting exercise being led by City Planning. The ridership modelling will provide projections of the number of customers who would benefit from and likely choose to transfer to/from the SmartTrack service. These projections will be used in the weighting and evaluation of the effects of changes on customers. They will also be used in the assessment of SmartTrack stations, which is a step in the station selection process.

Iteration and Fine-Tuning of Transfer Connections

The candidate routes for connecting TTC and SmartTrack services will be modified and refined as part of the ongoing planning, modelling, and business-case analyses for SmartTrack. The final recommended list of connecting services will be established as the plan for SmartTrack becomes further refined. Public consultation and TTC Board approval of the recommendations will be required. Fine-tuning of the service details and characteristics continue up until 12 to 18 months before the new rapid transit service begins operation. Service frequency on the connecting routes would be increased, where necessary, to accommodate the additional riders transferring between TTC and SmartTrack services.

*Table 1. Potential TTC Routes Connecting to SmartTrack Stations*

#	SmartTrack Station	Type	Potential Connecting TTC Routes	
Stouffville GO Corridor				
1	Unionville (in Markham)	GO Station		
2	14th Avenue (in Markham)	New Station		
3	Milliken	GO Station	• 17 Birchmount • 21 Brimley • 43 Kennedy	• 53 Steeles East • 57 Midland • New Steeles Rocket bus
4	Finch East	New Station	• 39 Finch East • 169 Huntingwood	• 199 Finch East • New Commander bus
5	Agincourt	GO Station	• 6 Sheppard East LRT	
6	Ellesmere	New Station	• 95 York Mills	• New Ellesmere Rocket bus
7	Lawrence East	New Station	• 54 Lawrence East	• New Lawrence Rocket bus
8	Kennedy	GO Station	• 5 Eglinton LRT • 20 Cliffside • 21 Brimley	• 43 Kennedy • 57 Midland • 113 Danforth
9	Scarborough	GO Station	• 20 Cliffside	• New Kingston Rd East bus
10	Danforth	GO Station	• 64 Main • 135 Gerrard	• 506 Carlton
11	Gerrard	New Station	• 72 Pape • 506 Carlton	
12	Queen	New Station	• 501 Queen • 502 Downtowner	• 503 Kingston Rd

Appendix 4: Integration of TTC Services with SmartTrack

#	SmartTrack Station	Type	Potential Connecting TTC Routes	
13	Unilever	New Station	• New East Bayfront streetcar	
Union Station Rail Corridor				
14	Union	GO Station	• 509 Harbourfront • 510 Spadina	• New East Bayfront streetcar
Kitchener GO Corridor				
15	Spadina	New Station	• 510 Spadina	
16	Liberty Village	New Station	• 63 Ossington	• 504 King
17	Lansdowne	New Station	• 47 Lansdowne • 505 Dundas	• 506 Carlton
18	Dundas West	GO Station	• 40 Junction • 168 Symington	• 504 King • 505 Dundas
19	St Clair	New Station	• 41 Keele • 89 Weston • 168 Symington	• 47 Lansdowne • 512 St Clair • New Caledonia bus
20	Mount Dennis	Planned GO station	• 5 Eglinton LRT • 32 Eglinton West • 34 Eglinton • 35 Jane • 71 Runnymede • 89 Weston	• 161 Rogers Rd • 168 Symington • 171 Mt Dennis • 195 Jane Rocket • New Jane South bus • New Weston Rocket bus
Eglinton West Corridor				
21	Scarlett	New Station	• 32 Eglinton West • 73B Royal York	• 79 Scarlett RD
22	Kipling	New Station	• 32 Eglinton West • 45 Kipling • 46 Martin Grove	• 52 Lawrence West • New Princess Margaret bus
23	Renforth Gateway (Mississauga Airport Corporate Centre)	New Station	• 32 Eglinton West • 111 East Mall	• 112 West Mall

Figure 1. Proposed TTC Routes Connecting to SmartTrack Stations
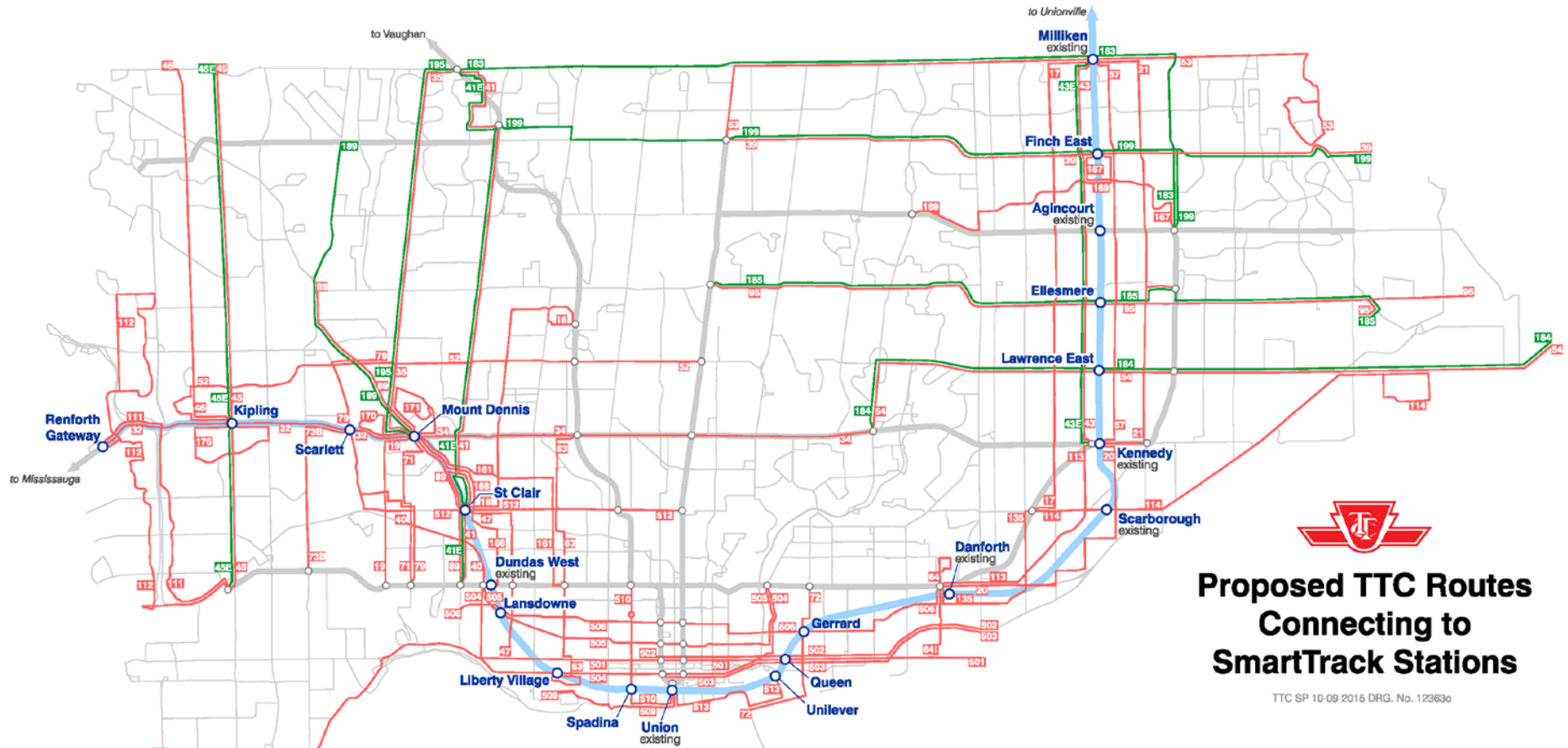
Proposed TTC Routes Connecting to SmartTrack Stations

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Route List

#	Route	Description
17	Birchmount	(Warden Stn - Milliken Stn)
18	Caledonia	(St Clair/Weston Rd Stn - Yorkdale Stn)
19	Jane South	(Mount Dennis Stn - Jane Stn)
20	Cliffside	(Kennedy Stn - Main Street Stn)
21	Brimley	(Kennedy Stn - Milliken Stn)
32	Eglinton West	(Mount Dennis Stn - Renforth Gateway Stn)
34	Eglinton	(Mount Dennis Stn - Eglinton Don Mills Stn)
35	Jane	(Mount Dennis Stn - Pioneer Village Stn)
39	Finch East	(Finch Stn - Neilson/Old Finch)
40	Junction	(Dundas West Stn - Runnymede)
41	Keele	(Keele Stn - Steeles West Stn)
43	Kennedy	(Kennedy Stn - Milliken Stn)
45	Kipling	(Kipling Stn - Steeles)
48	Martin Grove	(Eglinton & Kipling Stn - Steeles)
47	Lansdowne	(Queen - St Clair/Weston Rd Stn)
52	Lawrence West	(Lawrence Stn - Eglinton & Kipling Stn)
53	Steeles East	(Finch Stn - Markham Rd/Staines)
54	Lawrence East	(Eglinton Don Mills Stn - Starspray)
57	Midland	(Kennedy Stn - Milliken Stn)
63	Ossington	(Eglinton West Stn - Liberty Village)
64	Main	(Eastdale/Main Street Stn - Queen)
71	Runnymede	(Runnymede Stn - Mount Dennis Stn)
72	Pape	(Pape Stn - Commissioners)
73	Royal York	(Royal York Stn - Eglinton/Scarlett Rd)
79	Scarett Rd	(Runnymede Stn - Lawrence & Jane)
89	Weston	(Keele Stn - Albion Rd)
95	York Mills	(York Mills Stn - U of T/Kingston Rd)
111	East Mall	(Kipling Stn - Renforth Gateway Stn)
112	West Mall	(Kipling Stn - Disco Rd)
113	Danforth	(Kennedy Stn - Main Street Stn)
114	Kingston Rd East	(Warden Station - Beechgrove)
135	Gerrard	(Main Street Stn - Warden Stn)
161	Rogers Rd	(Ossington Stn - Mount Dennis Stn)
166	Commander	(Finch East Stn - Sheppard East Stn)
168	Symington	(Dundas West Stn - Mount Dennis Stn)
169	Huntingwood	(Don Mills Stn - Finch East Stn)
170	Emmett	(Mount Dennis Stn - Jane & Emmet)
171	Mt Dennis	(Mount Dennis Stn loop)
176	Princess Margaret	(Eglinton & Kipling Stn - Princess Margaret)
183	Steeles Rocket	(Pioneer Village Stn - Sheppard East Stn)
184	Lawrence Rocket	(Eglinton Don Mills Stn - Starspray)
185	Ellesmere Rocket	(York Mills Stn - U of T via Scarb Centre Stn)
189	Weston Rocket	(Mount Dennis Stn - Finch & Weston)
195	Jane Rocket	(Mount Dennis Stn - Pioneer Village Stn)
199	Finch Rocket	(Finch West Stn - Sheppard East Stn/Neilson)
501	Queen	(Neville Park - Long Branch)
502	Downtowner	(Bingham - McCaul)
503	Kingston Rd	(Bingham - York)
504	King	(Broadview Stn - Dundas West Stn)
505	Dundas	(Broadview Stn - Dundas West Stn)
506	Carlton	(Main Street Stn - High Park)
509	Harbourfront	(Union Stn - Exhibition)
510	Spadina	(Union Stn - Spadina Stn)
512	St Clair	(St Clair Stn - Keele)
513	East Bayfront	(Union Stn-Eastern/Broadview)

Station List

Route Number

Express Route Number

Agincourt Stn
Sheppard East LRT

Danforth Stn
64 135 506

Dundas West Stn
40 166 504 505

Station at Ellesmere
95 185

Station at Finch East
39 166 169 199

Station at Gerrard
72 506

Kennedy Stn
Eglinton LRT
20 21 43 57 113

Station at Kipling
32 45 46 52 176

Station at Lansdowne
47 505 506

Station at Lawrence East
54 184

Station at Liberty Village
63 504

Milliken Stn
17 21 43 53 57 183

Mount Dennis Stn
Eglinton LRT
19 32 34 35 71 89 161 168 170 171 189 195

Station at Queen
501 502 503

Renforth Gateway Stn
32 111 112

Scarborough Stn
20 114

Station at Scarlett
32 73B 79

Station at Spadina
510

Station at St Clair
18 41 89 168 47 512

Station at Unilever
513

Union Stn
509 510 513