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Memorandum

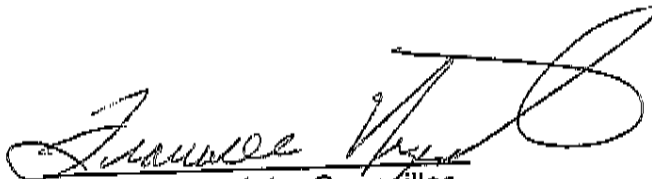
February 22, 2005

**To: Members
GO Transit Weston Consultation Group**

Re: At Grade Crossings

For your information, please find information that my office received concerning grade separations and level crossings within the City of Toronto.

I thought that you might find this information to be useful.



Frances Nunziata, Councillor



Works & Emergency Services
David C. Kaufman, P.Eng., Acting Commissioner

Transportation Services
City Hall, 22nd Floor East
100 Queen Street West
Toronto, Ontario M5H 2N2

John Kelly, P.Eng.
Acting Director, Transportation
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Reply to: Ann Larkin Tsinoglou, P.Eng.
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MEMORANDUM

Date: February 18, 2005

To: George Berger,
Executive Assistant to Councillor Nunziata, Ward 11

Copy to: John Kelly
John Niedra

From: Ann Larkin Tsinoglou, P.Eng.,
Acting Manager, Infrastructure Planning 

Subject: **At-Grade Crossings in the City of Toronto**

Per your discussion with John Niedra regarding at-grade crossings in the City of Toronto, please find attached two reports:

- Works Committee Report No. 15, Clause 14, **Review of Level Crossings and the Construction of Grade Separations in the City of Toronto**, adopted by Council on August 1, 2, 3, 2000
- Works Committee Report No. 12, Clause 18 (e), **Cost Sharing of Grade Separations in the City of Toronto**, received for information by Council on July 24, 25, 26, 2001.

If you have any questions or require additional information, please do not hesitate to contact me at 416-392-8340.

AELT/jc
Attachment
K:/Infrastructure Planning/IP/AELT/George Burger

Clause embodied in Report No. 15 of the Works Committee, which was before the Council of the City of Toronto at its meeting held on August 1, 2, 3 and 4, 2000.

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Review of Level Crossings and the Construction of Grade Separations in the City of Toronto

(City Council on August 1, 2, 3 and 4, 2000, adopted this Clause, without amendment.)

The Works Committee recommends:

- (1) **the adoption of the report dated May 31, 2000, from the Commissioner of Works and Emergency Services;**
- (2) **that the level crossing of the CN Bala Subdivision south of Sheppard Avenue East between Provost Drive and Old Leslie Street be identified within the inventory of existing rail level crossings in the City of Toronto; and**
- (3) **that priority be given to the construction of grade separations on rail lines which are serving all-day GO Transit rail service or are scheduled for upgrades to all-day GO service, and that the Commissioner of Works and Emergency Services be requested to investigate the potential to share the costs with GO Transit for these upgrades.**

The Works Committee reports, for the information of Council, having requested the Commissioner of Works and Emergency Services to submit a report to the Committee on:

- (i) **the possibility of any financial contribution from the various railway companies; and**
- (ii) **the frequency of trains and their impact on traffic.**

The Works Committee submits the following report (May 31, 2000) from the Commissioner of Works and Emergency Services:

Purpose:

To respond to a request from the former Urban Environment and Development Committee on the issue of level crossings and grade separations in the new City of Toronto.

Financial Implications and Impact Statement:

There are no financial implications resulting from the adoption of this report.

Recommendation:

It is recommended that a program to construct high priority grade separations in the City of Toronto be considered as part of the City of Toronto's response to the recently announced federal infrastructure program.

Background:

The former Urban Environment and Development Committee, at its meeting of July 13, 1998, in considering a communication dated June 1, 1998, requested that the General Manager of Transportation Services report on the issue of level crossings and grade separations in the new City of Toronto, particularly the locations of all level crossings in Toronto, the financial formulas to be used for the construction of grade separations, the contributions of benefitting developers/industries, and the status of the Strachan Avenue level crossing (Clause No. 24 of Report No. 9).

Comments:

Railway level crossings and the need for grade separations throughout the City of Toronto are reassessed on an ongoing basis due to changing patterns of railway and vehicular movements and the corresponding need for additional crossing protection. Factors typically considered in the determination of need for grade separations include traffic safety, congestion, future growth, capital spending priorities, and the availability of financial assistance from other levels of government. Prior to amalgamation, the seven former municipalities approached the issue of separating road and rail grades at level crossings from a number of perspectives as set out below.

Metropolitan Toronto:

Former Metro Transportation, with its regional mandate and focus on arterial roads, proactively pursued the issue of grade separations for a number of years in light of ongoing service upgrades on major rail lines and increases in traffic volumes on arterial roads. In the mid-eighties, during the adoption of new National Transportation Agency (N.T.A.) guidelines, the federal government withdrew funding support for grade separations.

In revisiting Metropolitan Toronto's Rail Grade Separation Program in 1992, Metro Council petitioned the Ministry of Transportation of Ontario to provide a special subsidy for necessary grade separations on the CN Bala and Uxbridge Subdivisions. The Minister subsequently denied the special funding request for grade separations due to financial constraints and suggested that funding for any projects be through established subsidy arrangements. These established arrangements subsequently were eliminated and no formal program currently exists for contributions by senior levels of government to fund grade separations.

City of Toronto:

The Council of the former City of Toronto endorsed from time to time a policy report advanced by the Commissioner of Public Works on bridges and underpasses. Progress Report No. 4 on City of Toronto Bridges and Underpasses, which was approved by City

Council on March 23 and 24, 1992, noted that the protection afforded to existing crossings was adequate and that no new grade crossings were required at the time or in the near future. This conclusion was based on an assessment of safety record, delay time to local traffic, current land use, contemplated future changes affecting vehicular and pedestrian traffic and the continuing annual cost to the City for its share of operating and maintaining the crossings.

City of York:

As far as staff can ascertain, there were no formal policies in effect relating to programming or funding grade separations in the former City of York.

Borough of East York:

The Council of the former Borough of East York endorsed Metropolitan Toronto's Rail Grade Separation Program. Apart from this endorsement and several requests to Metro to advance the construction of grade separations in East York, it would appear that there were no formal policies in effect relating to programming or funding grade separations.

City of Etobicoke:

Staff of the former City of Etobicoke recognised the need for grade separations and carried out a number of feasibility and preliminary engineering studies in the early eighties, namely along the Canpa Subdivision crossing Evans Avenue and Horner Avenue. In addition, staff have been taking a site specific approach on priorities through technical analysis and area redevelopment. The Council of the former City of Etobicoke endorsed the construction of an underpass at the North Queen/CPR Level crossing west of Kipling Avenue under the Ontario Strategic Transportation Improvement Program in 1995 and work was completed in 1996.

City of North York:

As far as staff can ascertain, there were no formal policies in effect relating to programming or funding grade separations in the former City of North York.

City of Scarborough:

Staff of the former City of Scarborough recognised the need for grade separations at a number of locations through ongoing analysis, identified priorities and acknowledged the need for additional funding. The Council of the former City of Scarborough, in considering a staff report dated December 9, 1996, respecting priorities for future grade separations, recommended that staff monitor the progress of Bill C-43: Proposed Amendments to the Railway Safety Act through communication with Transport Canada and the Federation of Canadian Municipalities with respect to potential legislative and financial impacts on the City of Scarborough. At the time, staff identified four locations where grade separations were warranted. Funding for these projects has not been made available to date.

Inventory of Level Crossings:

In the context of the amalgamated city, there are roughly 44 level mainline crossings currently in operation, as shown on Table 1, attached. Rail spur lines are included but are not priorities for grade separations as train volumes are insignificant. The list also shows related information such as the rail subdivision name, road classification and exposure index. The exposure index is the average annual daily traffic (AADT) multiplied by the number of trains passing per day, and has been traditionally used on a municipal, provincial and federal level to assist in setting priorities for grade separations. Transport Canada typically indicates that a grade separation should be considered when the exposure index for a grade crossing exceeds 200,000. For the information of the Committee, 11 existing crossings currently have an exposure index exceeding this threshold.

Funding:

Since the withdrawal of dedicated federal funding in the late eighties, grade separation projects have been implemented on a site specific basis and cost sharing arrangements negotiated where possible. In the last ten years, only one grade separation has been constructed within the City of Toronto – the North Queen Street/CP underpass identified above. This underpass was built by the former City of Etobicoke at a cost of about \$8 million that was cost shared between the local, provincial and federal government. Future infrastructure programs have the potential to be the vehicle to accelerate a grade separation program in the new City.

The Transportation Services Division's preliminary projection of capital works for the period 2000-2009 includes a proposed grade separation at the Finch Avenue East/CN Uxbridge crossing, at an estimated cost of \$22 million for commencement in 2003, and at the Steeles Avenue/CN Uxbridge crossing, at an estimated cost of \$15.4 million, for the years 2003-2005.

There are no currently established financial formulas for the funding of grade separations as each situation is unique, with costs varying from approximately \$5 to \$20 million, depending on functional requirements and local conditions. However, on the basis of detailed assessment and design work carried out over the past five years at a number of locations, the total cost of grade separating all 44 active crossings would be in the order of \$400-\$500 million.

Having regard to the considerable costs associated with the construction of grade separations, staff have been endeavouring to secure cost sharing arrangements with developers of abutting or nearby properties where growth may warrant separations. Moreover, a number of grade separation projects have been identified as increased service needs in the Development Charge Background Study with implementation targeted towards the 2004-2011 time frame. Unfortunately, despite the inclusion of cost sharing obligations in the Development Charges By-law and site specific development agreements, the substantial capital costs involved may prohibit construction of these facilities in the absence of sustained funding from other levels of government. It should be noted that recent amendments to the federal Railway Safety Act did not address the provision of additional funding for rail grade separations.

In the context of the recently announced federal infrastructure program, staff are investigating the potential of including the funding of some high priority grade separations as part of a City of Toronto response.

Status of the Strachan Avenue Level Crossing:

The former City of Toronto has previously identified the need to grade separate the Strachan Avenue level crossing should redevelopment in the immediate area proceed to the extent that incremental traffic volumes on Strachan Avenue increase the exposure index to an unacceptable level. Specifically, as recently as 1986, during the review of the redevelopment of the former Massey-Ferguson/King Business Centre Lands north of the rail corridor, both the City and developer agreed that given the nature of development contemplated and associated anticipated traffic volumes, a grade separation at the CNR/CPR rail corridor was required prior to proceeding with the second phase of development. At that time, although detailed design had not proceeded, it was originally expected that the grade separation would be a bridge and its cost, estimated in the order of \$15 million, would be shared between the City and developer in portions of 25 percent and 75 percent, respectively.

The economic downturn of the late eighties and early nineties had a considerable impact on the pace of redevelopment in the Massey-Ferguson/King Business Centre Lands and the site was sold well in advance of reaching the second stage of development. Subsequently, development plans were revised significantly and the grade separation no longer required.

The need for and configuration of the Strachan Avenue grade separation has been recently tabled within the context of the redevelopment of lands to the south of the rail corridor and discussions have again commenced between City staff and the developers. The future of this crossing will largely depend on adjacent development, the Front Street Extension, plans for the Gardiner Expressway and, most importantly, approved funding.

Conclusions:

This report provides an overview of the status of level rail crossings in the City of Toronto.

Given the City's state of good repair needs, the viability of embarking upon a proactive program of grade separations at this time on a city-wide basis is unlikely without a sustained funding commitment on the part of City Council and senior levels of government. In the short term, staff will continue to evaluate the need for grade separations at site specific locations with implementation through the annual capital program. In addition, staff will explore alternate funding scenarios through private development initiatives and ongoing discussions with railway companies and senior levels of government, including the recently announced federal infrastructure program.

Contact:

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Manager, Infrastructure Asset Management and Programming
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List of Attachments:

Table 1 - Existing Rail Level Crossings in the City of Toronto

TABLE 1

EXISTING RAIL LEVEL CROSSINGS IN THE CITY OF TORONTO

Crossings in bold have an exposure index >200,000

May 31, 2000

#	RAIL SUBDIVISION	STREET	WARD	LAND USE	ROAD CLASSIFICATION	AADT	TRAINS /DAY	EXPOSURE INDEX
District 1								
1	CP Belleville	Wicksstead	1	Undeveloped	Collector	N/A	46	
2	CN Bala	Pottery	1	Park	Minor Arterial	19000	40	760,000
3	CN Weston	Strachan	20	Industrial	Minor Arterial	8500 avg.	32	272,000
4	CN Newmarket	Wallace	21	Industrial	Collector	2395	6	14,370
5	CP North Toronto	Bartlett	21	Industrial	Local	<500	46	<23,000
6	CP North Toronto	Osler	21	Industrial/ Undeveloped	Collector	3000	46	138,000
7	CN Weston/ CP MacTier	Old Weston	21	Industrial	Collector	7000	32/24	392,000
8	CN Galv/ CP North Toronto/ CN Weston/ CP MacTier	The Junction (industrial spurs)	21	Industrial/ Residential/ Commercial/ Undeveloped				
9	CN Kingston	Port of Toronto (industrial spurs)	24/25/ 26	Industrial				
10	CP MacTier	Oak	27	Industrial/ Commercial	Collector	10000	24	240,000
11	CN Weston/ CP MacTier	Church	27	Industrial	Collector	N/A	32/24	

#	RAIL SUBDIVISION	STREET	WARD	LAND USE	ROAD CLASSIFICATION	AADT	TRAINS /DAY	EXPOSURE INDEX
12	CN Weston/ CP Maclier	King	27	Industrial	Local	2000	32/24	112,000
13	CN Weston/ CP Maclier	John	27	Industrial	Collector	3000	32/24	168,000
14	CN Weston/ CP Maclier	Denison	27	Residential	Collector	4000	32/24	224,000
15	CN Newmarket	Castlefield	27/28	Industrial	Collector	17000	6	102,000
16	CN Newmarket	(Industrial spur)	28	Industrial/ Residential				
District 2								
17	CP Campa	Evans	2	Industrial	Major Arterial	26506	7	185,542
18	CP Campa	Homer	2	Industrial	Minor Arterial	10055	7	70,385
19	CP Galt	(Industrial spurs)	2	Industrial				
20	CN Weston	Carlingview	5	Industrial	Minor Arterial	5000	32	160,000
21	CN Halton	(Industrial spurs)	5	Industrial				
22	CN Weston	(Industrial spurs)	5	Industrial/ Undeveloped				
District 3								
23	CP Maclier	(Industrial spurs)	6	Industrial			24	
24	CN Leaside	Lawrence	11	Residential/ Undeveloped	Major Arterial	26000 avg.	Temporarily out of service	
District 4								
25	CN Kingston	Scarborough Golf Club	13/16	Undeveloped	Minor Arterial	12174 avg.	108	1,314,792
26	CN Kingston	Galloway	13/16	Undeveloped/Park/ Residential	Collector	5167 avg.	108	558,036
27	CN Kingston	Poplar	13/16	Residential/ Undeveloped	Collector	1422 avg.	108	153,576
28	CN Kingston	Morningside	13/16	Residential/ Undeveloped	Minor Arterial	12000	108	1,296,000

#	RAIL SUBDIVISION	STREET	WARD	LAND USE	ROAD CLASSIFICATION	AADT	TRAINS /DAY	EXPOSURE INDEX
29	CP Belleville (spurs)	Warden	14	Industrial	Major Arterial	37000		
30	CP Belleville (spurs)	Canadian	14	Industrial/ Commercial	Collector	5057		
31	CP Belleville (spurs)	Lawrence	14	Industrial/ Residential	Major Arterial	46000 avg.		
32	CP Belleville (spurs)	Bertrand	14	Industrial	Collector	6814		
33	CP Belleville (spurs)	Crookford	14	Industrial	Collector	3814		
34	CP Belleville (spurs)	Thermos	14	Industrial	Collector	7068		
35	CP Belleville (spurs)	Ashonbee	14	Industrial	Collector	3000		
36	CN Uxbridge	Progress	15	Industrial/ Commercial	Minor Arterial	19100	8	152,800
37	CN Uxbridge (Geco Spur)	Kennedy	15	Commercial/ Industrial	Major Arterial	21000 avg.		
38	CN Uxbridge	Danforth	15	Residential	Major Arterial	23500 avg.	8	188,000
39	CN Kingston	Manse	16	Industrial/ Residential	Local	775	108	83,700
40	CN Kingston	Beechgrove	16	Industrial/ Institutional, i.e. sewage treatment plant	Local	556	108	60,048
41	CN Kingston	Chesterston Shores	16	Undeveloped	Local	181	108	19,548
42	CN Uxbridge	Steeles	17	Industrial		38500 avg.	8	308,000
43	CN Uxbridge	Passmore	17	Industrial	Collector	6000 avg.	8	48,000

#	RAIL SUBDIVISION	STREET	WARD	LAND USE	ROAD CLASSIFICATION	AADF	TRAINS /DAY	EXPOSURE INDEX
44	CN Uxbridge	McNicoll	17	Industrial	Minor Arterial	16594	8	132,752
45	CN Uxbridge	Finch	17	Industrial/ Residential	Minor Arterial	38500 avg.	8	308,000
46	CN Uxbridge	Huntingwood	17	Residential/ Undeveloped	Minor Arterial	16421	8	131,368
47	CN Uxbridge	Havendale	17	Residential	Collector	1997	8	15,976
48	CN Uxbridge	Sheppard	17	Residential	Collector	36000	8	288,000
49	CP Belleville (spurs)	Old Finch	18	Residential/ Undeveloped	Collector	4000		
50	CP Belleville (spurs)	Sewells	18	Residential/ Undeveloped	Minor Arterial	6000		
51	CP Belleville (spurs)	Morningview Trail	18	Undeveloped/ Park	Collector	3502 avg.		
52	CP Belleville	Reesor	18	Park	Local	2083	23	47,909
53	CP Belleville	Beare	18	Park	Collector	3226	23	74,198
54	CP Belleville	Scarborough/ Pickering Townline	18	Park	Local	410	23	9,430
55	CP Havelock	Tapscott	18	Industrial	Minor Arterial	9149	3	27,447
56	CP Havelock	Passmore	18	Industrial	Collector	705	3	2,115
57	CP Havelock	Steeles	18	Industrial/Park	Minor Arterial	9000	3	27,000
58	CP Cross Connection	Neilson	18	Industrial	Collector	833 avg.		
59	CP Cross Connection	Finch	18	Industrial/ Undeveloped	Minor Arterial	13000		
60	CN York	Sewells	18	Park	Local	2250	65	146,250
61	CN York	Reesor	18	Park	Local	2083	65	135,395
62	CN York	Beare Road Landfill Access	18	Institutional		Private Road	65	

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JH/avelCo-Table1

Excerpt from Clause embodied in Report No. 12 of the Works Committee, which was before the Council of the City of Toronto at its meeting held on July 24, 25 and 26, 2001.

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Other Items Considered by the Committee

(City Council on July 24, 25 and 26, 2001, received this Clause as information, subject to striking out and referring Item (l), entitled "Tender No. 95-2001: Collection of Curbside Waste, Bulky Items, Yard Waste, Recyclables and Waste, and Waste and Recyclables from Public Receptacles in Former City of Etobicoke", embodied therein, back to the Works Committee for further consideration.)

(e) **Cost Sharing of Grade Separations in the City of Toronto.**

The Works Committee reports having received the following report for information:

(June 20, 2001) from the Commissioner of Works and Emergency Services responding to the request of the Committee at its meeting of July 12, 2000, for a report on several issues related to cost sharing for the construction of rail grade separations in the new City of Toronto; advising that the viability of embarking upon a proactive program of grade separations at this time on a City-wide basis is unlikely without a considerable and sustained funding commitment on the part of City Council and senior levels of government; noting that staff will continue to evaluate the need for grade separations at site specific locations with implementation through the annual capital program with due regard to City-wide needs and priorities; that staff will also continue investigating alternative funding scenarios through private development initiatives, ongoing discussions with railway companies and senior levels of government; and recommending that this report be received for information.

 **TORONTO** STAFF REPORT

June 20, 2001

To: Works Committee

From: Barry H. Gutteridge, Commissioner, Works and Emergency Services

Subject: Cost Sharing of Grade Separations in the City of Toronto
(All Wards)

Purpose:

To respond to a request from the Works Committee to report on several issues related to cost sharing for the construction of rail grade separations in the new City of Toronto.

Financial Implications and Impact Statement:

There are no financial implications resulting from the adoption of this report.

Recommendation:

It is recommended that this report be received for information.

Background:

The Works Committee, at its meeting of July 12, 2000, in considering a report dated May 31, 2000 regarding level crossings and the construction of grade separations in the City of Toronto, requested that the Commissioner of Works and Emergency Services investigate the potential to share the costs with GO Transit for grade separations on rail lines which are serving all-day GO Transit rail service or are scheduled for upgrades to all-day GO service, and report to the Committee on the possibility of any financial contribution from the various railway companies and the frequency of trains and their impact on traffic (Clause No. 14 of Works Committee Report No. 15).

Comments:

GO Transit

The GO Transit system provides an inter-regional commuter rail service in the GTA. The primary focus of its rail service is the efficient operation of its trains, the tracks upon which these run and its stations.

In terms of capital priorities, the main objective in the short term is the refurbishing of Union station, being its principal hub. In the short to medium term, expansion of its rolling stock inventory is critical.

For grade separations, GO Transit's long-term strategic priorities are targeted towards rail-rail crossings in order to prevent delays resulting from the schedules and operations of other rail companies. As escalating demand will likely necessitate the provision of all-day service on all of its routes in the long term, restrictions to traffic flow stemming from freight traffic (which has priority) could have a profound effect on level of service and a corresponding negative impact on ridership.

One of the implications of the provision of future all-day service on existing peak period GO Transit lines will be the impact on existing at grade rail crossings, resulting in increased vehicular traffic delays and congestion at the level crossings. Mitigation of these delays will require the grade separation of the roads and rails as noted in our May 31, 2000 report.

With regard to funding participation in grade separation projects, it should be noted that the City of Toronto already pays a large portion of GO Transit's annual operating and capital subsidies (over \$50 million in 2001). Any future arrangement for potential cost sharing of grade separations will have to recognize the City's current financial commitment to GO Transit. As noted earlier, GO Transit's focus for capital expenditures is on rail service upgrades and accordingly, contributing to the provision of road/rail grade separations would not be a priority.

Railway Companies

Generally, the railway companies (CN and CP) have taken the position that safety at level crossings is related to increased road volume, with an expectation that the road authority is primarily responsible for the funding of grade separation projects. In the past, funding for the construction of new rail grade separations has been provided by a combination of the senior levels of government, the railways and the municipality. Although the exact portions have changed over the years, a new fixed formula, equitable to all parties concerned, has yet to be established. At present, it is anticipated that 90% of the cost would have to be assumed by the municipality as it is perceived to be the main beneficiary with road traffic volume, in most cases, being cited as the main reason for more incidents at a grade crossing. In recent years, however, each potential grade separation project has been reviewed on a case by case basis and cost sharing arrangements negotiated individually with due regard to pre-existing responsibilities as set out in the Canadian Transportation Agency board orders, where applicable.

Transport Canada has tabled a new set of rules for safety at rail crossings, as an amendment to the *Railway Safety Act*. Although this amendment does confirm that road and rail authorities will have a responsibility for ensuring public safety at existing crossings, it does not explicitly recommend the construction of grade separations nor address the provision of additional funding.

Frequency of Trains and their Impact on Traffic

The element of risk and/or congestion/delay occurring at level crossings can be quantified through the 'exposure index' which is the multiple of the average annual daily traffic and the number of trains passing per day. As noted in our report of May 31, 2000, this index has traditionally been used on the municipal, provincial and federal levels to assist in setting priorities for grade separations. An increase in train frequency will result in a corresponding increase in exposure index and delay. An increase in vehicular traffic at a level crossing will also have the same result.

Conclusions:

The viability of embarking upon a proactive program of grade separations at this time on a city-wide basis is unlikely without a considerable and sustained funding commitment on the part of City Council and senior levels of government. Staff will continue to evaluate the need for grade separations at site specific locations with implementation through the annual capital program with due regard to city-wide needs and priorities. Staff will also continue investigating alternative funding scenarios through private development initiatives, ongoing discussions with railway companies, and senior levels of government.

Contact:

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//AR/Cost-GradeSeparations