



Stantec

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June 30, 2008
File: 1135 35016

City of Edmonton
Transit Projects Branch
Transportation Department
Suite 710, Tower 1, Scotia Place
10060 Jasper Avenue
Edmonton Alberta T5J 3R8

Attention: Mr. Brad Smid, P.Eng., Senior Planning Engineer,

Dear Mr. Smid:

**Reference: North LRT Extension Downtown – NAIT
Concept Planning Study**

Further to our meeting on Wednesday, June 25, 2008, please find attached concepts and a matrix comparing the proposed recommended LRT alignment on 105th Street, with cut and cover and surface options on 104th Street from 105th Avenue to 108th Avenue.

Please call me at 780 - 917 - 7224 should you require any additional information.

Yours Truly,

STANTEC CONSULTING LTD.

Gordon Menzies, P.Eng.
Senior Associate, Urban Transportation
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Attachment:

c. Art Washuta, UMA
Steve Melton, ISL

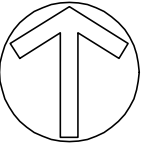
North LRT Extension

Downtown to NAIT Concept Planning Study

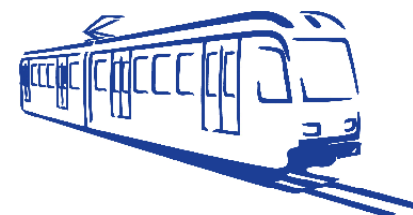
Route Comparison June 30, 2008

Item	Proposed Recommended Alignment	104 Street Options	
		Cut and cover Underground with improved geometry	Surface
MacEwan Station	Surface/partially depressed east of 105 Ave	Underground station on 104 Street centred on 106 Ave	Surface station on 104 St north of 106 Ave
Walking distance from NE 105 St/105 Ave	70 m - closest to and visible from Grant MacEwan College	260 m	350 m - furthest from Grant MacEwan College
Ridership	Maximizes ridership	Potential for reduced ridership from Grant MacEwan College	Potential for reduced ridership from Grant MacEwan College
Property Acquisition (Lots S/108 Avenue)			
Residential	13	0	0
Commercial/Industrial/Undeveloped	21	10	16 Additional properties required due to loss of access
Total	34	10	16
Epcor			
Victoria Sub station feeds	impacted	impacted	impacted
240 KV Line	not impacted	to be relocated	Partial relocation
LRT Geometry	minimum radius 120 m (restricted to avoid EMS and Chintz.)	minimum radius 160 m	minimum radius 160m
LRT Operations	Increased maintenance due to tight geometry	Increased operational costs with underground station	Improved geometry less maintenance
		Increased safety and security concerns	
Underground Cut and Cover measured from Churchill Station.	600m	1400m	700m
Redevelopment Opportunities	Consistent with Downtown North Edge Plan	Not consistent with Downtown North EdgePlan	Not consistent with Downtown North EdgePlan
	Remnant parcels developable	Remnant parcels developable, potential to build over LRT with additional	Majority of remnant parcels developable consistent with
	Park space adjacent to station	structural costs and possible impact on underground parking.	Downtown North Edge Plan
Property Tax Base Impact	Serves high density sector in Downtown North Edge Plan	Serves high density sector in Downtown North Edge Plan	Surface station furthest removed from high density sector in Downtown
	Surface station together with land acquisition for LRT could act as	Underground station and LRT may not encourage redevelopment as quickly	North Edge Plan
	catalyst for redevelopment, accelerating tax base revenue.	as surface LRT. Potential loss of short term tax base from redevelopment	Surface station north of 106 Avenue would warrant consideration of high
			density development on both sides of 104 Street north of 106 Avenue
			Similar tax revenue to proposed recommended route.
Traffic Impact	Maintain existing arterial roadway capacity south of 107 Avenue	Maintain existing arterial roadway capacity south of 107 Avenue	Maintain existing arterial roadway capacity south of 107 Avenue
	At grade crossings of 105 Street, 106 and 107 Avenues	Total closure of 104 Street for two years	Permanent closure of 104 Street from 105 Avenue to 108 Avenue
		Traffic management required during construction - 106 Ave and 107 Ave	
		cannot be closed at same time	
Constructability	Sufficient work space available for laydown	Potential to increase construction cost due to increased timeframes needed to	Potential to increase construction cost due to increased timeframes needed to
		work in restricted space (1 year)	work in restricted space (6 months)
		Increased construction risks with longer underground component	Greater construction impacts on community (traffic/pedestrian access)
		Greater construction impacts on community (traffic/pedestrian access)	
Pedestrian/Bicycle Impacts	Consistent with 105 Avenue Corridor Design Study	Not consistent with 105 Avenue Corridor Design Study	Not consistent with 105 Avenue Corridor Design Study
	Grade separated crossing at MacEwan Station	No pedestrian/LRT crossings south of 108 Avenue	MacEwan Station 240m from 105 Avenue MUT.
	At grade crossings at 105 Street, 106, 107 and Aves.	MacEwan Station 160m from 105 Avenue MUT.	At grade pedestrian crossings at 106, 107 and 108 Aves.
Cost (2008 dollars)			
Cavity below Epcor	\$43 M	\$43 M	\$43 M
Heavy Civil Works	\$120 M	\$285 M	\$150 M
Stations	\$32 M	\$47 M	\$35 M
LRT Works	\$108 M	\$112 M	\$108 M
Roads	\$58 M	\$66 M	\$50 M
Engineering & Administration	\$55 M	\$83 M	\$58 M
Risk	\$100 M	\$155 M	\$150 M
Land	\$150 M	\$75 M	\$92 M
LRV	\$84 M	\$84 M	\$84 M
TOTAL	\$750 M	\$950 M	\$770 M

Central McDougall Community League Cut and Cover Option D
Underground, station east of 104 St, south of 106 Ave
200 m
Potential for reduced ridership fromGrant MacEwan College
0
11
11
impacted
to be relocated
minimum radius 100 m.
Increased operational costs with underground station
Increased safety and security concerns
Increased maintenance due to tight geometry
1400m
Not consistent with Downtown North EdgePlan
Remnant parcels developable, potential to build over LRT with additional
structural costs and possible impact on underground parking.
Park space adjacent to station
Serves high density sector in Downtown North Edge Plan
Underground station and LRT may not encourage redevelopment as quickly
as surface LRT. Potential loss of short term tax base from redevelopment
Maintain existing arterial roadway capacity south of 107 Avenue
Total closure of 104 Street for two years
Traffic management required during construction - 106 Ave and 107 Ave
cannot be closed at same time
Potential to increase construction cost due to increased timeframes needed to
work in restricted space (1 year)
Increased construction risks with longer underground component
Greater construction impacts on community (traffic/pedestrian access)
Not consistent with 105 Avenue Corridor Design Study
No LRT/pedestrian crossings south of 108 Avenue
MacEwan Station 80m from 105 Avenue MUT.
\$43 M
\$280 M
\$45 M
\$110M
\$66 M
\$82 M
\$150 M
\$80 M
\$84 M
\$940 M



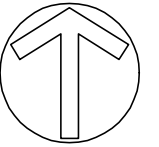
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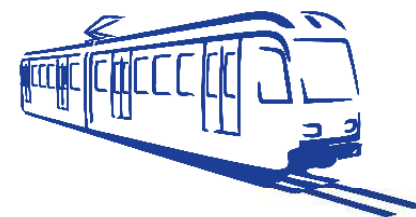
North LRT Extension - Downtown to NAIT
Concept Planning

Route Comparison June 30, 2008
Proposed Recommended Alignment

FIGURE 1



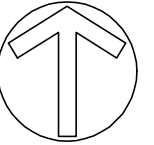
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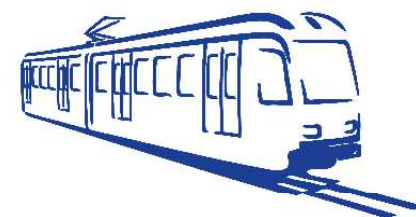
North LRT Extension - Downtown to NAIT
Concept Planning

Route Comparison June 30, 2008
Cut and Cover Underground with improved geometry

FIGURE 2



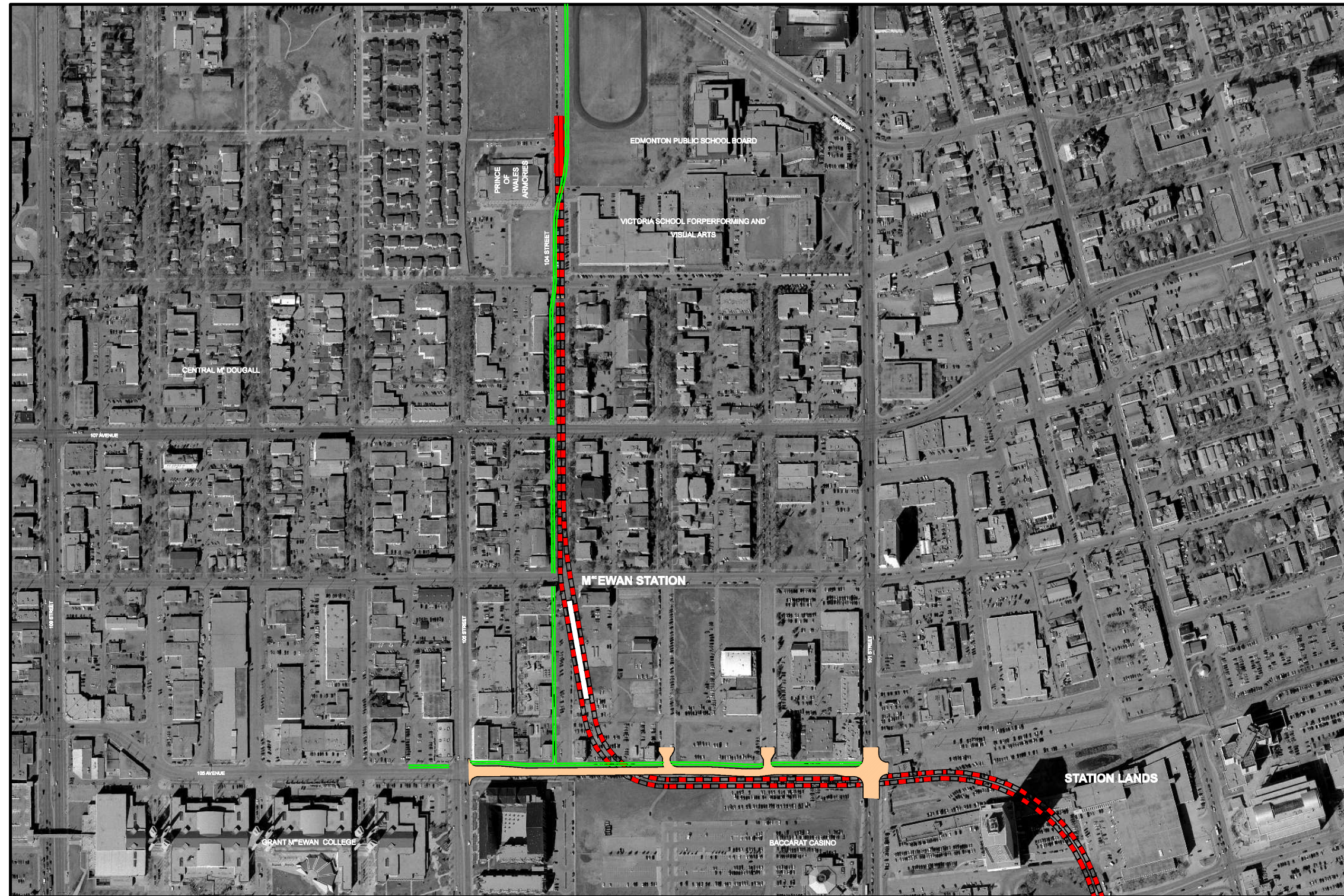
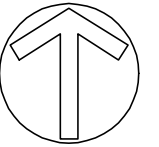
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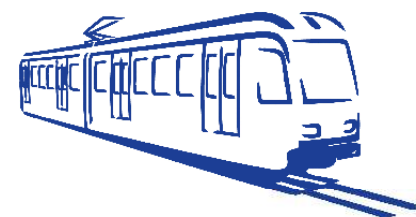
North LRT Extension - Downtown to NAIT
Concept Planning

Route Comparison June 30, 2008
104 Street Surface

FIGURE 3



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North LRT Extension - Downtown to NAIT
Concept Planning

Route Comparison June 30, 2008
Central McDougall Community League Cut and Cover Option D

FIGURE 4