

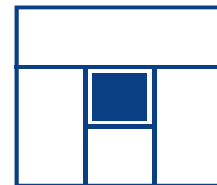
Pedestrian Bridge Over Highway 401

Class Environmental Assessment

December 2005

Public Open House # 2: December 15, 2005

***Project Team staff will be available to answer your
questions on December 15, 2005
from 5:00 p.m. to 8:00 p.m.***



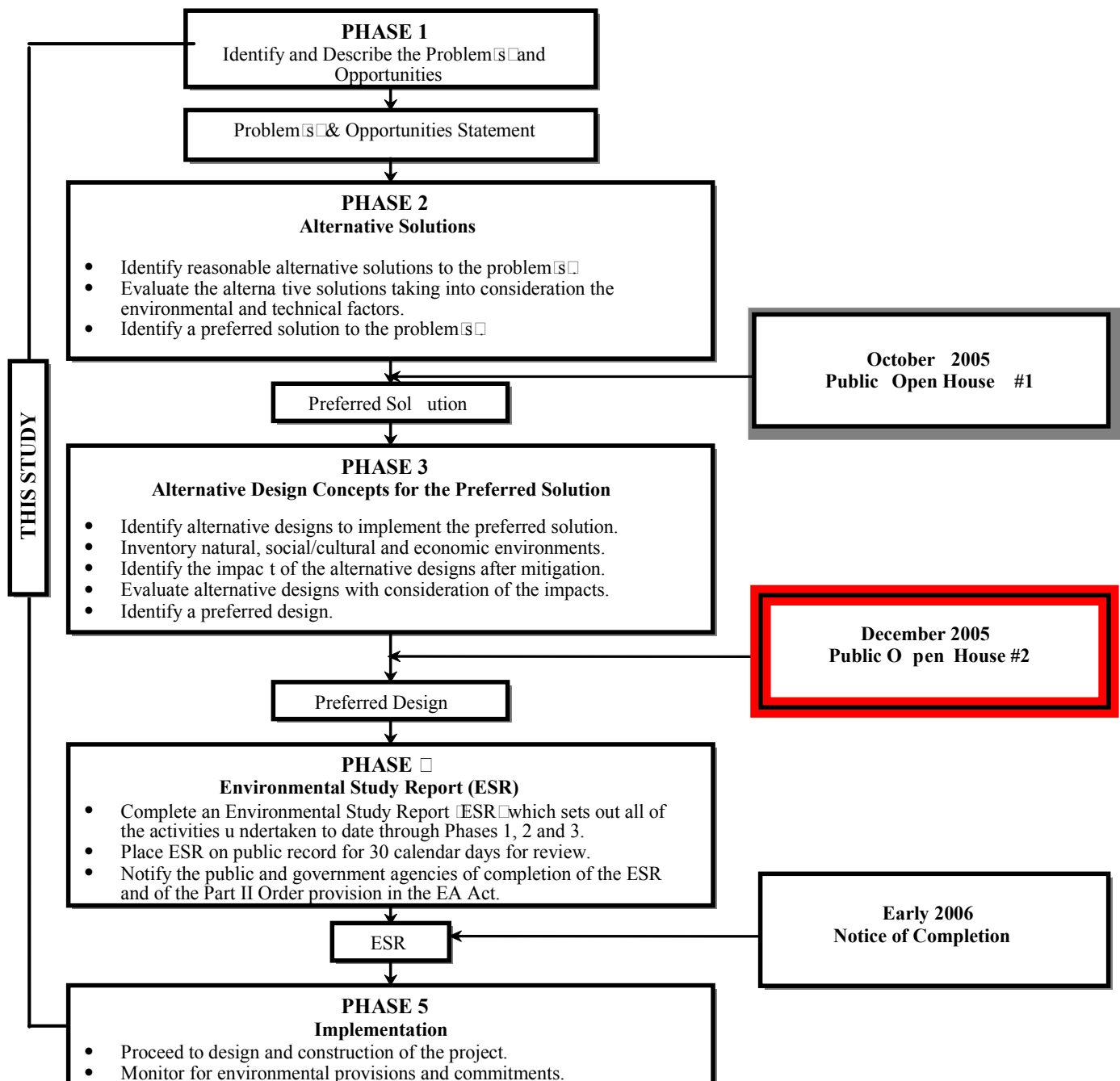
TSH
engineers
architects
planners

Welcome

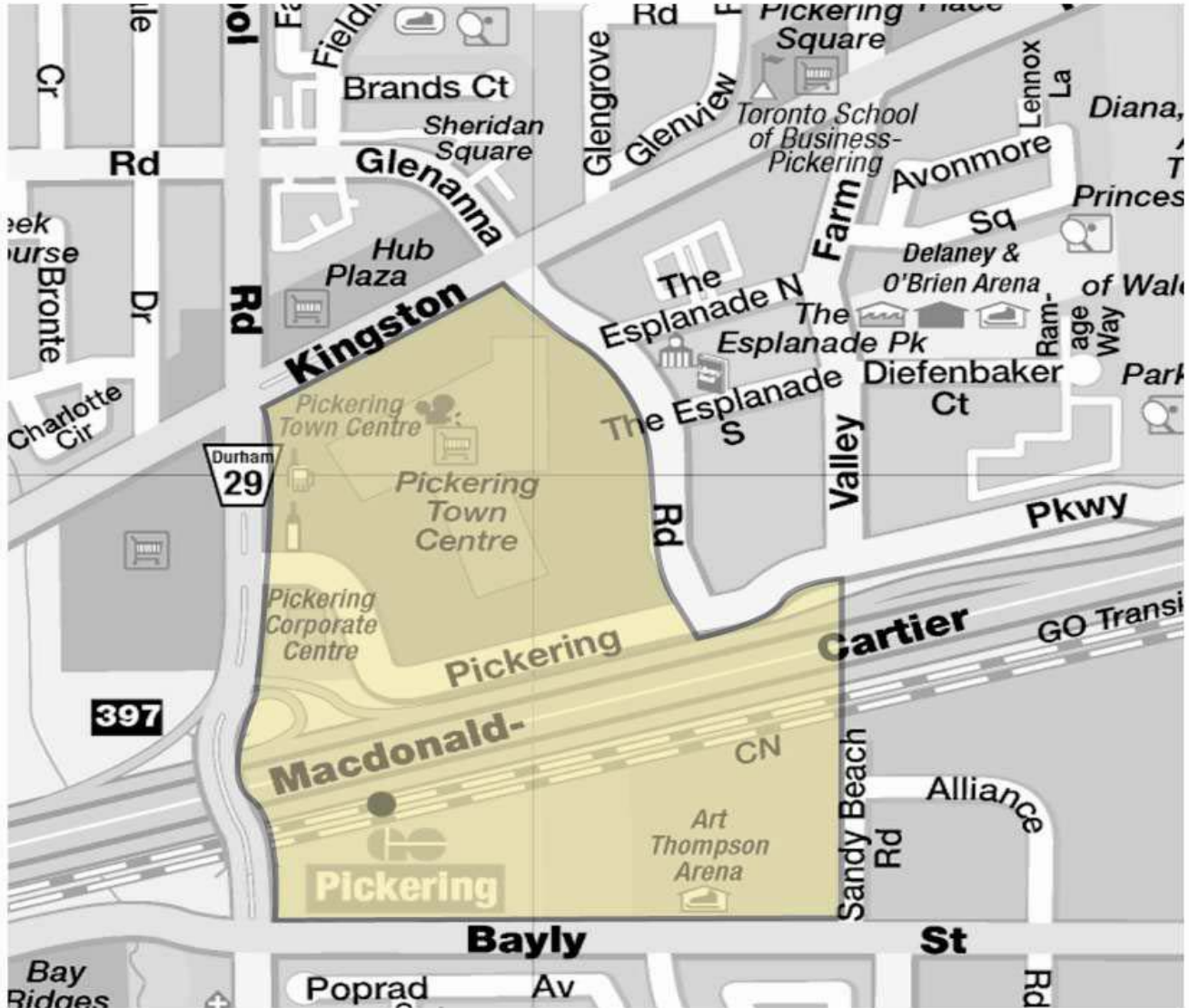
- **Thank you for taking the time to review the information for this project**
- **The purpose of this presentation material is to provide the public with the opportunity to review:**
 - **The Class EA process for this project;**
 - **A description of the alternative design concepts considered;**
 - **The evaluation of the alternative design concepts;**
 - **The preferred design concept; and**
 - **A summary of the future activities to be completed as part of the EA Study.**
- **Your comments are important to us. Following your review of the information, please complete one of the comment forms and place it in the box provided at the sign in table or send it back to the address on the form prior to January 12th 2006. Note that the questionnaire can be accessed and submitted on the City of Pickering Website.**

Class EA Process

This Study is being conducted to **determine the need and justification**, and if warranted, the **location** for a **Pedestrian Bridge over Highway 401** in the City of Pickering, in accordance with the requirements of Schedule "C" of the Municipal Class EA. This Planning and Design Process comprises five phases:



Study Area



 Study Area

Study Purpose and Background

Study Purpose

- **To gain Environmental Assessment approval for improvements to pedestrian and cyclist movement over the Highway 401 and CN Rail corridor**

Study Background

- **A pedestrian bridge to span Highway 401 in the vicinity of the Pickering GO Station and Pickering Town Centre was first identified through the City's Trails and Bikeway Master Plan in 1996**
- **Various plans and drawings of the bridge have been prepared during the last nine years**
- **In June 2005, Pickering Council authorized the commencement of the required environmental assessment and detailed design process for the pedestrian bridge**

Summary of Comments Received from PIC #1

Existing Conditions:

- **Unsafe – particularly in the AM**
- **The traffic lights at Liverpool and Bayly should be studied giving pedestrians a longer walk signal**
- **Sidewalks are too narrow considering how busy it is**

Improvements to Pedestrian and cycle travel across Hwy #01:

- **The bridge is the least disruptive option compared to tunnel etc.**
- **Separate the bike and roller blade paths from pedestrian walkway**
- **Ramps should be incorporated regardless**

Important elements in the design that should be incorporated:

- **Should have security cameras, kiosks**
- **Keep safety of the Highway travelers and the pedestrians in mind**
- **Low tech and simple, but aesthetically pleasing**

Primary use of the Pedestrian Bridge:

- **Shopping, recreation**
- **GO Transit**

Other Comments:

- **Pedestrian connections should be enhanced between existing businesses and the proposed bridge.**

Evaluation of Design Alternatives

- **Through the first two phases of the Class EA, the preferred solution was determined to be “Provide Access Over Highway 401 with a Bridge”**
- **The following panels illustrate alternative design concepts for:**
 - **The three basic types of bridge access structures**
 - **the North and South terminals on each side of Highway 401; using each of the three basic terminal structures, and**
 - **The bridge span and envelope, illustrating form and function**

Terminal Structures

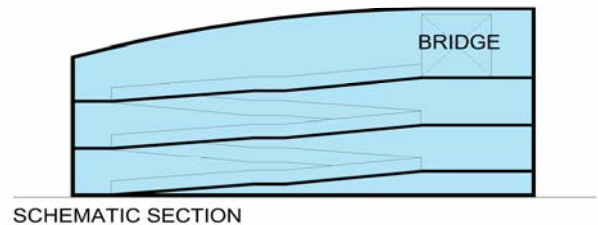
The means of accessing the bridge from grade is evaluated using three basic configurations as illustrated below. These structures are further illustrated in the following panels.

A. RAMPS

CONCEPT:

A series of switchback ramps provides full barrier-free access from grade to bridge level. (± 8.5 metres maximum)

Ramps are 1:12 slope with maximum runs of 30 feet between landings.

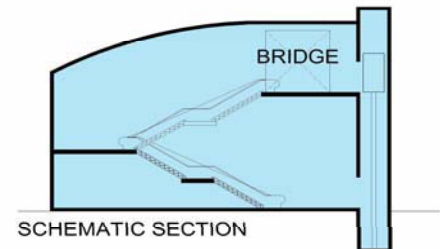


B. STAIRS/ESCALATOR/ELEVATOR

CONCEPT:

A combination stair and escalator is used to provide ambulatory access. The total stair rise is divided into equal flights.

A hydraulic elevator is provided for barrier-free access.

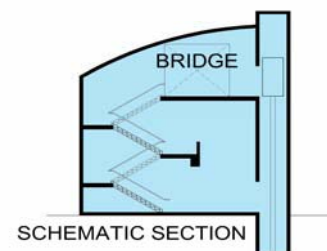


C. STAIRS/ELEVATOR

CONCEPT:

A single but wide stair using multiple flights with ample mid-height landings is provided.

A hydraulic elevator is provided for barrier-free access.



North Terminal Option 1

CONCEPT:

*The bridge extends across
Pickering Parkway*

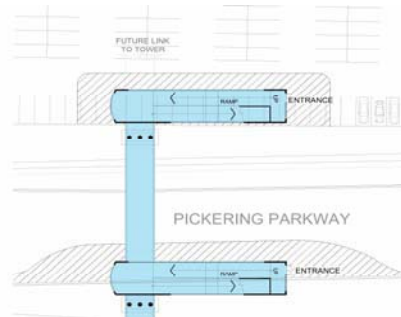
*Two terminal structures are built to
allow access to grade on each side
of the road*

*Regional bus service would provide
for a pick-up on each side of the
road*

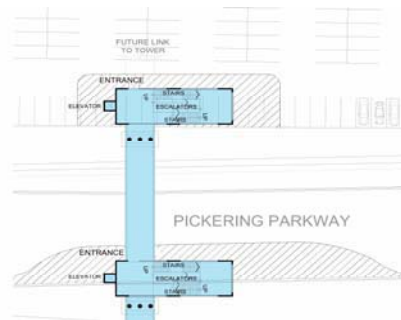
*Pickering Parkway is re-aligned to
include for two traffic lanes plus a
bike lane in each direction*

*A new 'plaza' area is created on the
south side of the roadway*

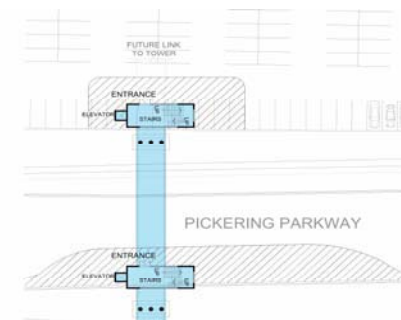
*The bridge is designed to allow for
future connection to a proposed
office tower*



1A. Ramps only



1B. Stairs/Escalator/Ramps



1C. Stairs and Elevator

North Terminal Option 2

CONCEPT:

*The bridge extends across
Pickering Parkway*

*One terminal structure is built to
allow access to grade on north side
of the road*

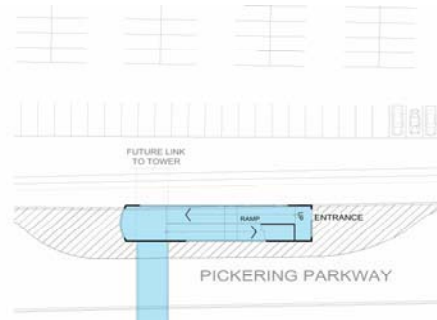
*Pickering Parkway is re-aligned to
include for two traffic lanes plus a
bike lane in each direction*

*Regional transit would allow for a
single stop on each side of the road*

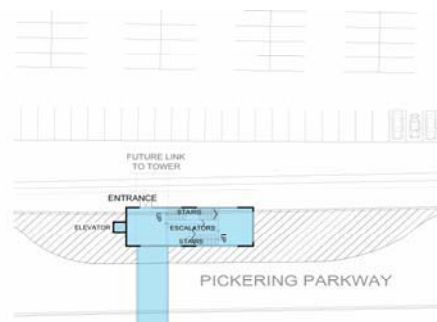
*A pedestrian crosswalk would be
required to connect the north and
south sides of the street*

*A new 'plaza' area is created on the
north side of the roadway*

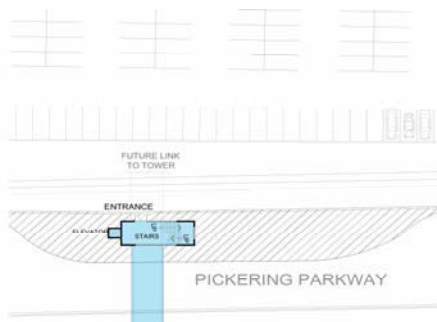
*The bridge is designed to allow for
future connection to a proposed
office tower*



2A. Ramps Only



2B. Stair/Escalators/Elevator



2C. Stairs and Elevator

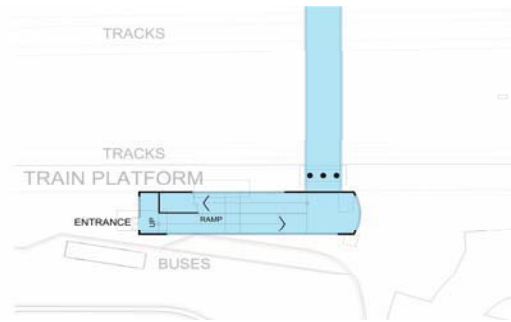
South Terminal

CONCEPT:

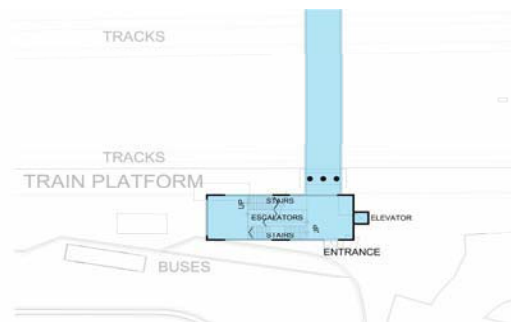
The bridge extends across the CNR rail corridor and terminates on GO Transit property

One terminal structure is built to allow access to grade adjacent to the existing south platform and the existing bus bays

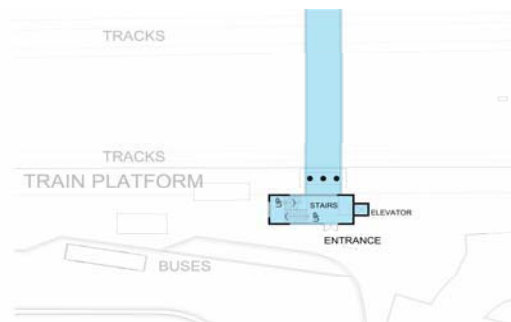
Minor re-alignment of existing bus curbing is created to accommodate footprint of structure



1A. Ramps Only

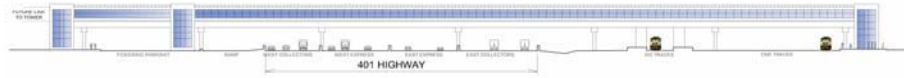


1B. Stairs/Escalators/Elevator



1C. Stairs and Elevator

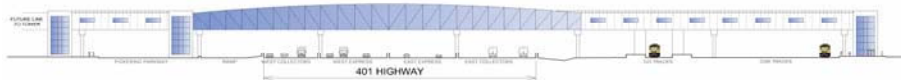
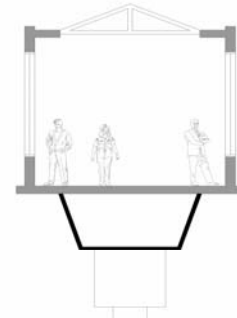
Bridge Span Concepts



CONCEPT A

Conventional frame with a steel box and concrete deck

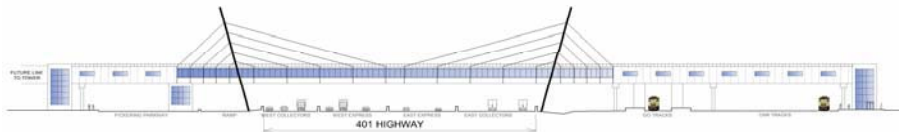
The enclosure is built on top of the deck in-place using a consistent partly solid and partly glazed wall



CONCEPT B

Truss-type frame with a concrete deck

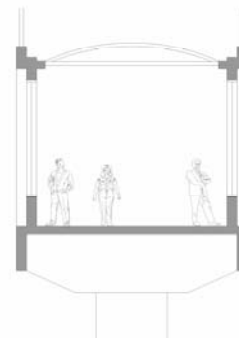
The enclosure is built within the truss frame using a combination of both full glazing at the central span and wall cladding with punched windows at each end



CONCEPT C

Dual structure using a cable stay approach for the centre span and truss-type components at either end

The enclosure varies from maximum glazing at the centre span to punched type windows and wall cladding at each end



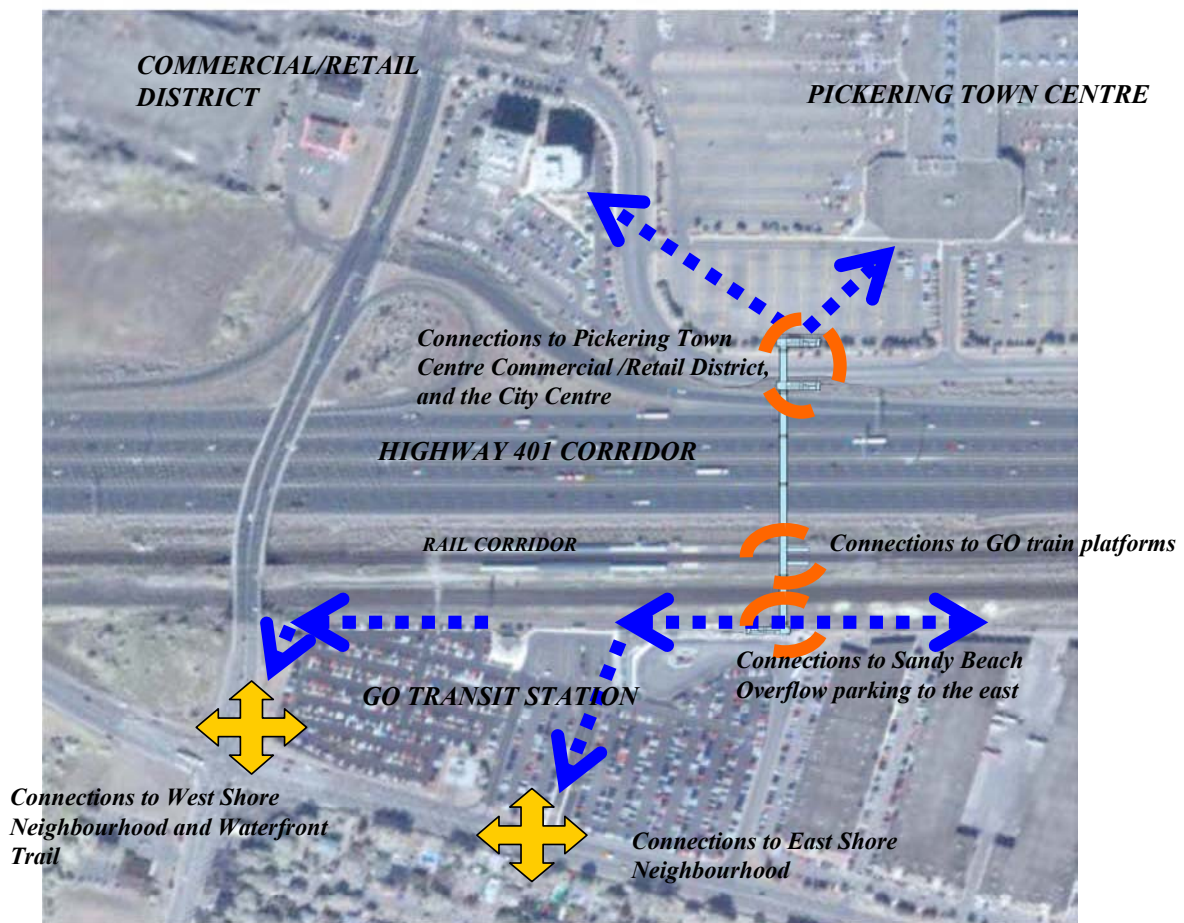
‘Green’ Design

Green Design will be incorporated into the final design of the bridge and will be a key criteria for all design decision-making. These criteria will include:

- ✓ **The extensive use of materials with a high recyclable content such as steel and concrete,**
- ✓ **The selection of finish materials that have low VOC emissions, and use environmentally friendly technologies in their manufacture,**
- ✓ **The incorporation of photo-voltaic systems (solar generated power) to provide an alternate source of electrical power for lighting and power,**
- ✓ **Integration of passive means of ventilation and low energy consuming forms of heating using radiant type systems for example,**
- ✓ **Using high efficiency glass to minimize heat-loss and maximize visibility.**

Neighbourhood Connections

- Contextual plan showing pedestrian connections to the City core to the north, the residential areas to the south and west and the overflow GO parking at Sandy Beach Rd.



Evaluation of Design Alternatives

EVALUATION OF DESIGN ALTERNATIVES FOR NORTH TERMINAL						
Criteria	North Terminal Alternatives					
	1A	1B	1C	2A	2B	2C
Safety	◐	○	●	◐	○	●
Security	○	◐	●	○	◐	●
Comfort and Convenience	○	◐	●	○	◐	●
Hazards	○	◐	●	○	◐	●
Ease of Construction	◐	○	●	◐	○	●
Ease of Maintenance	●	○	◐	●	○	◐
Timing/Scheduling	◐	○	●	◐	○	●
Cost	●	○	◐	●	○	◐
Property	○	◐	●	○	◐	●
Summary/Recommendation	◐	○	●	◐	○	●

Legend: ○ Poor in Comparison ◐ Neutral in Comparison ● Good in Comparison

DESCRIPTION OF EVALUATION CRITERIA:

<i>SAFETY:</i>	<i>Potential for mishaps or misuse of terminal elements, i.e., ramps, stairs, etc.</i>
<i>SECURITY:</i>	<i>Personal security for users of the facility</i>
<i>COMFORT CONVENIENCE</i>	<i>Ease of access and protection from elements</i>
<i>HAZARDS</i>	<i>Potential effect of external elements such as snow, ice, rain, and glare</i>
<i>EASE OF CONSTRUCTION</i>	<i>Constructability, including potential for impacts on GO Transit and/or Highway 401 operations</i>
<i>EASE OF MAINTENANCE</i>	<i>Serviceability, including complexity of electrical and mechanical systems</i>
<i>TIMING/SCHEDULING</i>	<i>Order-of-magnitude assessment of time required for completion</i>
<i>COST</i>	<i>Order-of-magnitude assessment of construction cost</i>
<i>PROPERTY</i>	<i>Impact of building footprint at grade level</i>

Evaluation of Design Alternatives Cont'd

EVALUATION OF DESIGN ALTERNATIVES FOR SOUTH TERMINAL			
Criteria	South Terminal Alternatives		
	1A	1B	1C
Safety	◐	○	●
Security	○	◐	●
Comfort and Convenience	○	◐	●
Hazards	○	◐	●
Ease of Construction	◐	○	●
Ease of Maintenance	●	○	◐
Timing/Scheduling	◐	○	●
Cost	●	○	◐
Property	○	◐	●
Summary/Recommendation	◐	○	●

Legend: ○ Poor in Comparison ◐ Neutral in Comparison ● Good in Comparison

DESCRIPTION OF EVALUATION CRITERIA:

SAFETY:	<i>Potential for mishaps or misuse of terminal elements, i.e., ramps, stairs, etc.</i>
SECURITY:	<i>Personal security for users of the facility</i>
COMFORT CONVENIENCE	<i>Ease of access and protection from elements</i>
HAZARDS	<i>Potential effect of external elements such as snow, ice, rain, and glare</i>
EASE OF CONSTRUCTION	<i>Constructability, including potential for impacts on GO Transit and/or Highway 401 operations</i>
EASE OF MAINTENANCE	<i>Serviceability, including complexity of electrical and mechanical systems</i>
TIMING/SCHEDULING	<i>Order-of-magnitude assessment of time required for completion</i>
COST	<i>Order-of-magnitude assessment of construction cost</i>
PROPERTY	<i>Impact of building footprint at grade level</i>

Evaluation of Design Alternatives Cont'd

EVALUATION OF DESIGN ALTERNATIVES FOR BRIDGE SPAN			
Criteria	Bridge Span Concepts		
	A	B	C
Safety	◐	◐	◐
Security	◐	◐	◐
Comfort and Convenience	◐	◐	◐
Hazards	◐	◐	○
Ease of Construction	◐	●	○
Ease of Maintenance	◐	◐	○
Timing/Scheduling	◐	●	○
Cost	●	◐	○
Property	○	●	◐
Summary/Recommendation	◐	●	○

Legend: ○ Poor in Comparison ◐ Neutral in Comparison ● Good in Comparison

DESCRIPTION OF EVALUATION CRITERIA:

SAFETY:	<i>Potential for mishaps or misuse of terminal elements, i.e., ramps, stairs, etc.</i>
SECURITY:	<i>Personal security for users of the facility</i>
COMFORT CONVENIENCE	<i>Ease of access and protection from elements</i>
HAZARDS	<i>Potential effect of external elements such as snow, ice, rain, and glare</i>
EASE OF CONSTRUCTION	<i>Constructability, including potential for impacts on GO Transit and/or Highway 401 operations</i>
EASE OF MAINTENANCE	<i>Serviceability, including complexity of electrical and mechanical systems</i>
TIMING/SCHEDULING	<i>Order-of-magnitude assessment of time required for completion</i>
COST	<i>Order-of-magnitude assessment of construction cost</i>
PROPERTY	<i>Impact of building footprint at grade level</i>

Next Steps

- **Incorporate input from the public and agencies into the preferred design concept**
- **Complete the Study documentation and present to City Council in early 2006**
- **Provide Notice of Completion two weeks in advance of the filing date of the Environmental Study Report (ESR)**
- **Place the ESR on record for public review**
- **Once approved, proceed to detailed design**
- **Construction to be considered by Pickering Council following completion of EA and detailed design work**

We encourage you to provide us with your comments and we thank you for participating.