ASHBRIDGES BAY
FLEET MAINTENANCE
& STORAGE FACILITY

Ashbridges Bay Maintenance and Storage Facility
Leslie Street Connection Track
Potential Effects and Mitigation Strategy

To Leslie Street Property Owners and Residents

July 15, 2010

TORONTO

Agenda

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- Purpose of Meeting
- Identify the Need
- The Project
- Potential Impacts of Leslie Street Connection Track
  - Process
  - Timing
- Timeline Summary
- Next Steps

Purpose of Meeting

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Outline the process and approach to determining mitigation measures related to the new streetcar (Light Rail Vehicles, LRV) tracks on Leslie Street.

Identify The Need

- Existing streetcars are 30 to 40 years old and have reached the end of their useful lives.
- New LRV design cannot be maintained at existing facilities.
- Insufficient amount of storage track at Roncesvalles and Russell carhouses.
- Roncesvalles and Russell carhouse required for minor repairs/daily cleaning and storage for approximately 50 LRVs at each facility.
- New facility is required to maintain and store LRVs.

Identify the Need (cont)

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- Summer 2009 City Council approved the purchase of 204 Light Rail Vehicles (LRV) to replace the existing streetcars.
- New vehicles will carry 80% more passengers per vehicle.
- Increase system capacity by 35% and will accommodate growth for 20 years.

Identify the Need (cont)

Vehicles

- Replacement fleet of 204 new Low Floor Light Rail Vehicles (LRVs)
  - Will improve reliability of the vehicles
  - Multiple doors for entry/exit will improve passenger flow and reduced crowding
  - Enhance access for people with disabilities, seniors, families with strollers
  - Expected to have lower noise and vibration impacts then current vehicles
  - Delivery of LRVs to commence 2013

Interior of new vehicle

New Low Floor Light Rail Vehicle

The Project

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- Approved by TTC Commission on June 2, 2010
- Approved by City Council on June 9, 2010

  - Ashbridges Bay Maintenance and Storage Facility (MSF) located at Lake Shore Boulevard and Leslie Street
  - Facility to maintain 204 LRVs and store 100 LRVs
  - Non-revenue service track required to connect the MSF to the existing streetcar network along Leslie Street
  - Commitment for an Enhanced Landscape Design around the facility and along Leslie Street
  - Commitment to engage local community

Potential Impacts - Leslie Street Connection Track

- Noise and Vibration
- Construction

Noise and Vibration Study

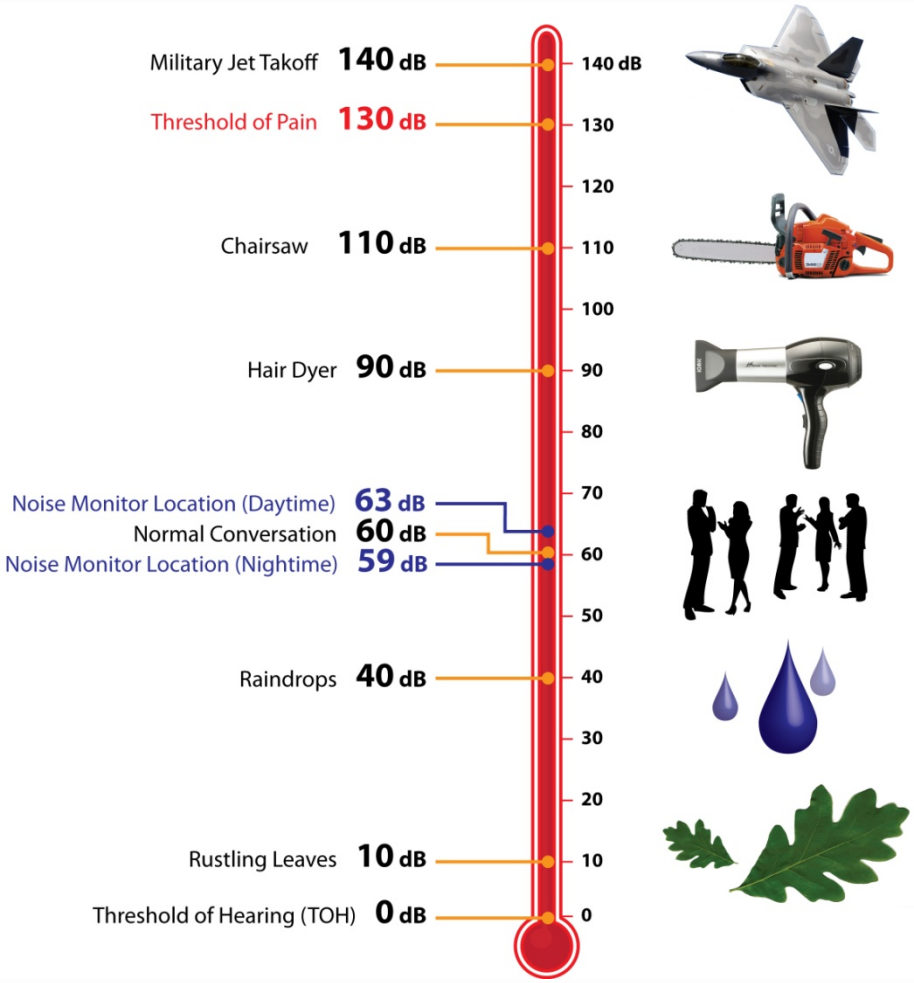
To Date:

- Measured the existing ambient noise and vibration levels on Leslie Street.
- Completed theoretical assessments of the anticipated noise and vibration levels based on existing streetcars.
- Assessment conducted in accordance with the Ministry of Environment (MOE) Guidelines

Noise Levels

- Night time is the critical time period – ambient noise level 59 dB
- MOE requires mitigation for impacts exceeding the ambient level by 5 dB - 64 dB (where determined to be feasible to implement)

Distance from track centreline	Predicted Noise Level	Above Ambient Noise level
7 m	66 dB	+7 dB
15 m	64 dB	+5 dB
30 m	61 dB	+2 dB



Comparative Examples of Noise Levels

Vibration Levels

- MOE acceptable level - 0.14 mm/s

Distance from track centreline	Predicted Vibration Level
7 m	0.25 mm/s
15 m	0.14 mm/s
30 m	Less than 0.14 mm/s

Process

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1. Prototype LRV testing will identify the need for required mitigation
2. Identify Mitigation Measures for each residence and business.
3. Formalize an Agreement between property owner and TTC, for required mitigation measures.

Process

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1. Prototype LRV Measurements

- Delivery of Prototype LRV end of 2011
- Measurement of Prototype LRV noise and vibration levels early 2012
- Prepare noise and vibration assessment with new LRV information
- Assess impacts and identify mitigation measures for those affected
- Communicate results of new study to residents/property owners
- Timing: Summer 2012

Process (cont)

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2. Identify Mitigation Measures

- Consultant to identify proper measures required to mitigate effects
- Source mitigation will be examined which includes track construction methods
- Other potential mitigation measures may include, window and door replacement, air conditioning, etc.
- Consult with residents/property owners on required mitigation measures
- Timing: Fall 2012

3. Formalize Agreement

- Agreement between TTC and impacted property owner will formalize provision of the mitigation measures and the TTC financial contribution to the property owner (based on reasonable quotes)
- Compensation to home, business and condo owners for legal costs related to legal advice on agreements with the TTC for mitigation measures.
- Compensation for legal costs provided based on costs incurred and supported by invoices up to a maximum of $5,000 for condominium corporations and $1,000 for house and business owners.
- Compensation for legal costs will be provided following execution of the agreements between the property owner and the TTC.
- Timing: Fall 2012

Property

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Potential options to be considered include:

- Cash in lieu
- Property Value Protection
- Property Acquisition

Construction Impacts

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Pre-Construction Assessment

- Pre-construction survey for properties within 30 m.
- Protects property owners who may be concerned about the construction impacts on their property.
- A third party would be retained to record existing conditions (interior and exterior) using various means. This will include any combination of the following: written reports, still photography and video.
- Property owners will be provided a copy of the pre-construction assessment report.
- Timing: Spring 2011

Construction Impacts (cont)

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Post Construction Assessment

- Construction of connection track anticipated to commence 2012.
- Assessment to be conducted approximately 4 weeks following construction.
- Assess if any damage resulting from construction activities.
- Property owners will be provided a copy of the Post Construction Assessment report.
- If damage has occurred due to construction activities, TTC will compensate home, business or condo owner(s)/management
- Timing: Approximately 4 weeks following street construction (2013)

Construction Management

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- Construction methods and staging will be developed during detail design stage to minimize impacts throughout process
- Ongoing liaison with community and technical agencies and will occur during the process to discuss your concerns
- Prior to construction a “Construction Liaison Group” will be formed
- Comply with regulatory standards and directives
- Timing: Spring 2011

Timeline Summary

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2010	Engage design firm from Lake Shore/Leslie project to develop concept for Leslie Street/ consult with community
2011	Present Leslie Street streetscape improvements to community
2011	Develop construction management plans and share with local community
Spring 2011	Conduct Pre-Construction surveys
Early 2012	Prototype LRV measuring
Spring 2012	Commence Connection track construction
Summer 2012	Assessment of Noise and Vibration levels on Leslie Street with new LRV data and identification of effects
Fall 2012	Finalize agreement with affected property owners for mitigation measures
Mid 2013	Complete connection track construction
Fall 2013	Post Construction surveys

Next Steps

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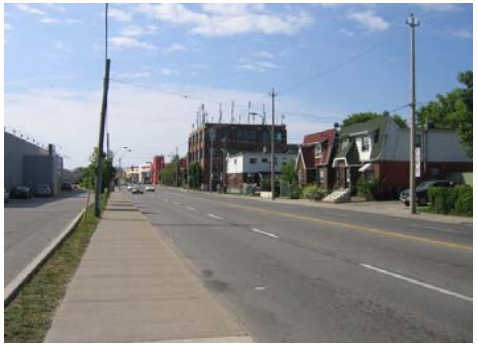
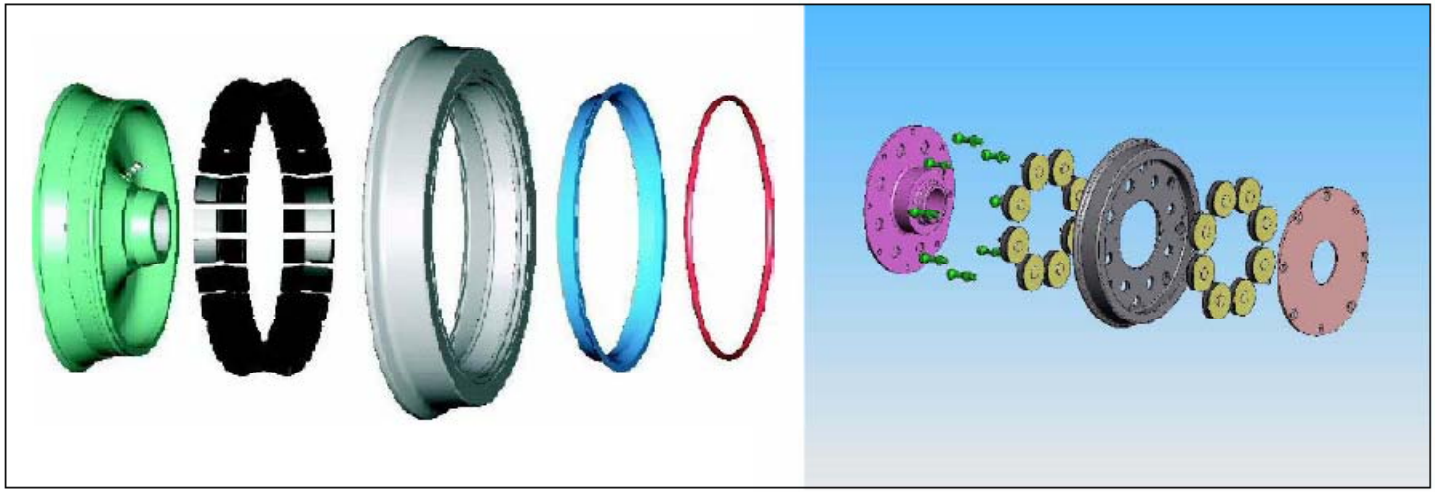
- Consult with community over the next three years at various stages of design and construction
- Commence Streetscape design for improving Leslie Street - 2011
- Measurement of Prototype LRV on Toronto streetcar network in - Early 2012
- Prototype LRV assessment will assess impacts and identify noise and vibration mitigation measures for affected properties – Fall 2012



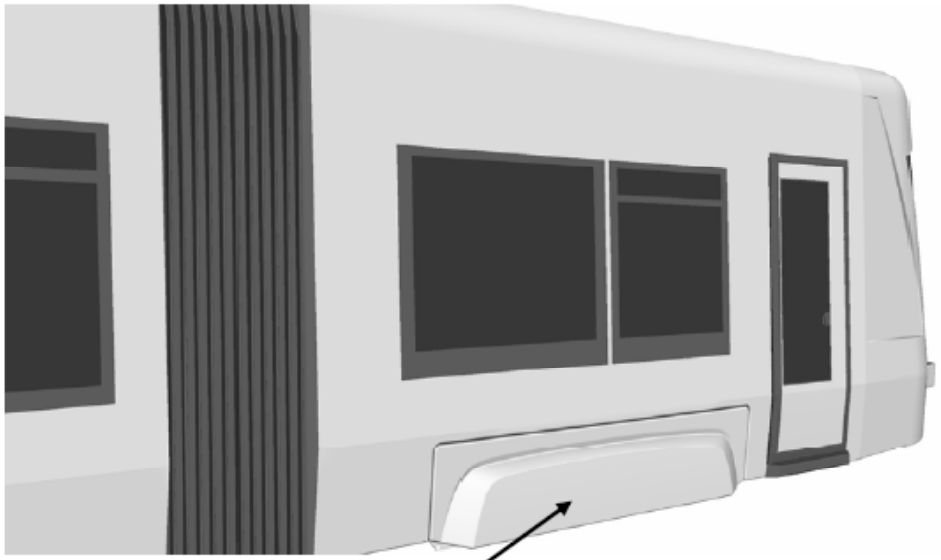
Reducing Noise and Vibration - New Wheels

Typical Semi-Soft Wheel | **Advanced Softer Wheel**



- Most rail vehicles use stiff wheels.
- Typical European LRVs use semi-soft wheels.
- TTC will use advanced softer wheels on the LRV.
- Softer wheels tend to transmit less vibrations into the ground than other wheel types.

Bogie Skirt to Reduce Noise



Bogie Skirt

Bogie skirts reduce wheel noise while improving safety and aesthetics.

New Track Installation

Rubber Boot Enclosing Rail

Thank You