**“We’re All Pedestrians”**

FINAL REPORT OF THE DOWNTOWN EASTSIDE PEDESTRIAN SAFETY PROJECT

**EXECUTIVE SUMMARY**

**Introduction**

Traumatic pedestrian injury leads to about 4,000 hospitalizations in Canada each year. These injuries often result from the interplay of modifiable or preventable environmental factors. Addressing the environmental factors related to pedestrian injury represents an important public health opportunity. The City of Vancouver places pedestrians as the top priority in transportation planning. For example, one of the recommendations in the Greenest City Action Team’s 2009 Quick Start Report, under the section “Greener Communities – Mobility,” is to “make streets safer for pedestrians and cyclists.”

A background study conducted by researchers at SFU and UBC entitled “Pedestrian Injury and the Built Environment: An Environmental Scan of Hotspots” provides the foundation for the Downtown Eastside Pedestrian Safety Project. The study found there were 2,358 recorded pedestrian injuries citywide in the six year period, an average of 393 per year, or just over one per day and just over 10% of recorded pedestrian injuries occur in a small area of the Downtown Eastside (DTES). It identified 32 injury “hotspots” (five or more pedestrian injuries during the study period) in Vancouver, of which nine (28%) are on East Hastings in the Downtown Eastside.

Hastings Street is home to a disproportionately large number of vulnerable road users including seniors, families with children, and people with disabilities, mental illness, and addictions – some of Vancouver’s most marginalized residents. For example, out of a total DTES population of just over 16,000, an estimated 4,700 (29%) are injection drug users. As for motorists, a study by the Canadian Centre on Substance Abuse found that 10.4% of BC drivers tested positive for drug use and 8.1% had been drinking.
Project Description

A high level Advisory Committee was convened to identify broadly what the whole project would look like and what deliverables could be achieved within the resources available. It included participation from the City’s Engineering, Planning, and Police departments, the City Manager’s Office, and Seniors, People with Disabilities and Bicycle Advisory committees, Vancouver Coastal Health, Carnegie Community Centre, ICBC, TransLink, injury researchers from SFU and UBC, VANDU, and Putting Pedestrians First.

The objectives of the Downtown Eastside Pedestrian Safety Project were to:

1. Engage with Downtown Eastside residents in creating awareness about pedestrian safety in their community;
2. Increase knowledge about factors contributing to DTES pedestrian injury; and
3. Recommend concrete and realistic solutions that will make the Downtown Eastside safer for pedestrians.

The project work plan had three components:

1. Best practices research and baseline data gathering, with volunteers conducting observation reports on road user behaviour;
2. An education campaign focused on road user safety using a community health-based strategy; and
3. Community engagement to elicit the experiences, ideas, and suggestions of DTES residents to inform short, medium and long term changes to improve pedestrian safety in the area.

The project was funded by the City of Vancouver through the Great Beginnings Program and Vancouver Agreement with in kind support from Vancouver Coastal Health and safety clothing from Acklands Grainger. It is estimated that the total cost would have been approximately $130,000 if the project were carried out completely by City staff, and approximately $210,000 if carried out by a consultant, the difference being mainly in salary rates and the project’s use of volunteer labour. The total project budget was $65,000 for two part-time staff members over a period of eight months, volunteer stipends for 2,000 hours of volunteering, training, materials, and supplies, resulting in a substantial cost savings.

Education and Community Outreach

From early December 2009 to mid-April 2010, a total of 167 volunteers went out on daily shifts engaging with other Downtown Eastside residents to both educate and learn from them regarding pedestrian safety in the neighbourhood. Specifically, volunteers led workshops, hung posters along Hastings Street, distributed brochures, held placards with messages aimed at motorists, and surveyed pedestrians.

Seventeen workshops with a total of 347 participants were conducted in social housing buildings, single room occupancy hotels, and in public gathering places throughout the Downtown Eastside. Over 7,500 brochures were distributed containing information about pedestrian safety in the neighbourhood and the DTES Pedestrian Safety Project. Over 1,400 pedestrian intercept surveys were conducted in the Downtown Eastside between January and April 2010, reaching almost 10% of the total population.

Of the 1,400+ DTES respondents to the pedestrian intercept survey, 63% were aware that their neighbourhood has the highest injury rate in the City. A full 32% had been hit by a motor vehicle in the Downtown Eastside. Half of respondents identified Main and Hastings as the most dangerous location in their neighbourhood, followed by 21% who responded “Anywhere on Hastings”. The top four ideas for making the neighbourhood safer for pedestrians were longer walk signal times (30%), more drug treatment programs (17%), install crosswalks (15%), and slow/reduce traffic on Hastings (13%).

The workshops uncovered several recurring themes including the underreporting of injuries, frequent pedestrian conflicts with buses, the aggressive attitude and behaviour of motorists towards Downtown Eastside residents, and the impact of the street drug trade on pedestrians. According to workshop testimonials, the most common reasons pedestrian injuries in the Downtown Eastside are not reported are as follows:
• Drivers paid them money to consider the matter resolved.
• Injured pedestrians who were in possession of illicit drugs or had a warrant wished to avoid the police.
• Because of negative past experiences, some injured pedestrians do not want to deal with the police or hospital staff.
• In the case of hit and runs, injured pedestrians did not feel there would be any benefit to them for reporting the incident when the identity of the motorist was unknown.
• Pedestrians did not realize the extent of their injuries until well after the incident or did not feel their injuries were severe enough to merit medical attention.

Ironically, people disabled in collisions with motor vehicles sometimes find themselves living in the worst pedestrian injury area in the city. Victims are often forced to stop working, at least for a period of time, and the various assistance options leave them with less money. They no longer have the means to afford to live in a safer neighbourhood, especially if left with permanent disabilities, and are attracted by the cheaper/social housing and services available in the Downtown Eastside.

Data Collection

A total of 81 volunteers – both VANDU members and members of the community – were trained to collect traffic data that would be used to evaluate appropriate recommendations. Data collection within the study area included all nine intersection and midblock pedestrian injury hotspot locations along Hastings Street, as well as a couple of other sites that came up in the pedestrian survey and other midblock locations throughout the city for comparison purposes.

The first question tackled was whether or not Downtown Eastside pedestrian behaviour was quantifiably different from pedestrian behaviour in other neighbourhoods. Jaywalking accounted for an average of 18% of all crossings of Hastings Street in the 10-block study zone. This is less than all the other jaywalking “comparison” neighbourhoods studied except Broadway between Prince Edward and Main Streets. These results suggest that the act of jaywalking itself does not explain the high rate of pedestrian injuries in the Downtown Eastside, but rather injuries occur as a result of the interplay between vehicle speed and a very high ratio of vulnerable pedestrians, many with compromised judgment.

The project examined whether or not the overall infraction volumes and infraction rates were higher in the DTES than other non-hotspot locations. In this regard the project collected further midblock data on Burrard Street between Georgia and Dunsmuir for comparison with Hastings Street.

Pedestrian infractions – both in total number and rate – were much higher at this Burrard Street location than at any of the injury hotspots in the Downtown Eastside. Overall, approximately 60-70% of pedestrians on Burrard Street committed an infraction when crossing the street, varying by the time of day and day of week. Infractions included not staying within the painted lines of the crosswalk, stepping off the curb against the flashing or solid hand signal, and jaywalking. In comparison, approximately 30-60% of pedestrians on Hastings Street committed an infraction when crossing the street, varying by location, the time of day, and day of week.
On Hastings Street, the tally of vehicle drivers entering the intersection on a yellow or red light is between 3% and 17.8%. The red+yellow light infraction rate is highest in the evening and the average across sites is just under 9%. The highest red light infraction rate was observed on a Friday evening after 9:00 pm at 5.2% of vehicles.

Speed data was collected at select locations within the study zone as well as neighbourhood gateways leading into the study zone. In general, traffic is traveling close to the current 50 km/h speed limit on Hastings Street with the exception of afternoon peak period eastbound traffic between Jackson and Dunlevy.

### Best Practices Research

According to Helsinki’s Traffic Planning Division, from the point of view of capacity, the “optimal speed in downtown traffic is somewhere between 30 and 39 km/h.” According to Singapore’s Land Transport Authority, Electronic Road Pricing (ERP) was implemented to reduce congestion and the rates are reviewed on a quarterly basis and during the June and December school holidays: “After the review, the ERP rates would then be adjusted where necessary to minimise congestion on the roads. ERP has been effective in maintaining an optimal speed range of 45 to 65 km/h for expressways and 20 to 30 km/h for arterial roads.”

London has seen over four hundred neighbourhood wide 20 mph (30 km/h) zones created since 2001. A study published in the *British Medical Journal* found that serious traffic injuries and fatalities have fallen by 46 percent within the zones. With the success of the neighbourhood scale zones, eight of London's 32 boroughs are moving towards a blanket 20 mph (30 km/h) speed limit. Other cities with 30 km/h injury reduction zones on major arterials include Portsmouth and London, England, Perth, Australia, and Dublin, Ireland and Amsterdam, The Netherlands as noted in Figure 2.

Pedestrian injuries have been experienced by about one third of Downtown Eastside residents. In BC, the average hospitalization cost of a pedestrian injury in 2008, not including ambulance or rehabilitation, was $15,747.06. This is only the direct cost to the taxpayer. According to a 2004 Ontario study, the average total social cost of a pedestrian injury is over $400,000, which includes the cost of healthcare, first responders, property damage, rehabilitation, out of pocket expenses, lifetime loss of income, and so forth.

<table>
<thead>
<tr>
<th>Vehicle Speed</th>
<th>Pedestrian Death Rate</th>
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<tbody>
<tr>
<td>48 km/h</td>
<td>45%</td>
</tr>
<tr>
<td>32 km/h</td>
<td>5%</td>
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</tbody>
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*Table 2: Vehicle speeds and pedestrian deaths*

![Time interval (s)](time_interval.png)

*Figure 2: 30 km/h zones in Dublin and Amsterdam superimposed on Vancouver, showing proposed 30 km/h zone on Hastings.*

![Figure 2: 30 km/h zones in Dublin and Amsterdam superimposed on Vancouver, showing proposed 30 km/h zone on Hastings.](30kmh_zones.png)
Recommendations

The recommendations of the Downtown Eastside Pedestrian Safety Project are targeted to have the most positive public health outcomes possible. They have the support of all project stakeholders with the exception of the 30 km/h zone, which is not supported by TransLink.

Short-term recommendations could be announced at end of project, require limited funding, and could be substantially implemented by the end of 2010. Medium term recommendations are targeted at the study area and need more time to implement but are within the City’s jurisdiction and the funding envelope of the 2009 – 2011 Capital Plan. Longer term recommendations target the study area but require additional Capital Plan allocations and inter-agency partnerships. The longer term planning could be undertaken as part of the forthcoming update of the City’s Transportation Plan, expected to begin in late 2010.

Short Term Recommendations (ST)
- ST1: 30 km/h Pedestrian Safety Zone
- ST2: Pedestrian Injury Monitoring, Reporting, Targets, and Capital Spending Alignment
- ST3: Signals
  - ST3.1: Extended clearance time
  - ST3.2: Countdown Signal
  - ST3.3: Reduced wait times at existing semi-actuated pedestrian operated signals
- ST3.4: Speed Reader Board
- ST4: Education
  - ST4.1: Education Campaign Network
  - ST4.2: Pedestrian Safety Media Campaign
- ST4.3: Buses
- ST4.4: Community Outreach/Safety Patrols
- ST5: High Visibility Crosswalk Markings
- ST6: Improvements outside the Hotspot Zone

Options Needing Further Review: Pedestrian Scramble, Enhanced Pedestrian Operated Signals, Convert Full Signals to Pedestrian Signals, Leading Pedestrian Indicators, Civic Pedestrian Advisory Committee

Medium Term Recommendations (MT)
- MT1: Signalized Midblock Crossings
- MT2: Street Trees, Furniture, and other Public Realm Greening
- MT3: Pedestrian Bulges
- MT4: Pedestrian Only Areas
- MT5: Review Location of Target Land Uses
- MT6: Develop a DTES Neighbourhood Centered Bike Network
- MT7: Intersection Safety Cameras (Red Light Running)

Options Needing Further Review: Barrier to Separate Pedestrians from Vehicle Traffic
**Long Term Recommendations (LT)**

LT1: Redesign of Hastings Street  
LT2: Speed Reducing Crossing Treatments  
LT3: Pedestrian Corridor Plans  
LT4: Better Pedestrian Weather Protection  
LT5: A Ban on All Devices While Operating a Vehicle  
LT6: Photo Radar

**Conclusion**

The Downtown Eastside Pedestrian Safety Project is the first step in transforming one community from the epicentre of pedestrian injury in Vancouver to among the safest. It focused primarily on Hastings Street and did not engage with non-English speaking residents or specific demographic subgroups. It is proposed that a subsequent phase would address these shortcomings.