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MEMORANDUM

To: Dave Ramsay, City Manager

From: Lieutenant Mike Murray
Ray Steiger, P.E. Interim Public Works Director
Dave Godfrey, P.E., Transportation Engineering Manager

Date: February 18, 2010

Subject: Pedestrian Safety Update

RECOMMENDATION

It is recommended that Council receive this report and direct staff to take further actions as necessary.

BACKGROUND

This memo has two parts. The first part is a description of a car/pedestrian collision that occurred on January 27 and the second part is a discussion of Kirkland's pedestrian safety efforts.

Collision



Figure 1 Pedestrian crossing 12600 block of 100th Avenue NE, looking north.

The collision occurred on January 27, 2010 at 1:30 PM. The weather was clear and cool and the visibility was good. Traffic flow was considered normal for this time of day and there were no negative condition factors related to this collision. This crosswalk is marked and supplemented by overhead signage and lighting, street level signage, landscaped medians, advance stop bars, pedestrian flags and flashing indicators in the roadway. (See Figure 1) The line of sight at this crosswalk is over a ¼ mile in both directions.

Two (2) female pedestrians, ages 16 and 2, were crossing 100th AVE NE from west to east in the approximate 12600 block. (See Figure 2) Witnesses in vehicles

traveling north bound on 100th AVE stated that they saw the lighted crosswalk markers flashing, so they slowed and stopped at the crosswalk when they also observed the pedestrians in the crosswalk to their left. As the girls stepped from the south bound inside lane and into the south bound curb lane of this crosswalk a south bound vehicle in the curb lane struck both of them. The 16 year old was thrown onto the hood and windshield of the vehicle before falling back to the roadway to the left of this vehicle, approx 10 to 15 feet away. The 2 year old girl was knocked to the right of this vehicle, landing near the curb, approx 15 feet away. These distances indicate that this vehicle was traveling at or near the posted

speed limit of 35 MPH. The vehicle stopped immediately, however there were no skid marks or anti-lock tire marks on the roadway indicating that the driver of this vehicle saw the pedestrians prior to the collision.

The driver of the vehicle that struck the pedestrians stated that she had not seen the flashing crosswalk lights or the girls in the crosswalk until "it was too late". The driver also stated that she was not distracted or talking on a cell phone at the time of the collision. One witness traveling south bound and behind the above vehicle stated that she saw the flashing crosswalk lights and had started to slow down. All witnesses stated that it did not appear that the driver of this vehicle had seen the girls in the crosswalk. The collision investigation also indicated that the girls thought that this vehicle would stop for them at the crosswalk. There were no other

contributing factors; intoxication, fatigue, speed or other, indicated in this collision. The girls were treated at the scene and transported to Harborview Medical Center for further examination and treatment. The 2 year old suffered a laceration to her head and the 16 year old had a severely fractured left leg. Both girls had bruises and other superficial lacerations as well.

It is the opinion of the Kirkland Police Department that inattention was the main causing factor of this collision. The driver of the vehicle should have observed the crosswalk, flashing crosswalk lights and pedestrians crossing the roadway. Additionally, the 16 year old pedestrian could have, and probably should have, observed that this vehicle was not slowing or stopping for them as they crossed the road.

Pedestrian Safety efforts

Sidewalk construction.

Providing facilities for pedestrians encourages more walking and increases safety. Both private development projects and City capital improvement projects construct sidewalk in Kirkland. During the period 2003 to 2007, private development built 7.4 miles of new sidewalk. The Capital Improvement Program constructs sidewalk and sidewalk ramp improvements associated with road projects, as a part of the pavement maintenance program and through specific sidewalk projects.

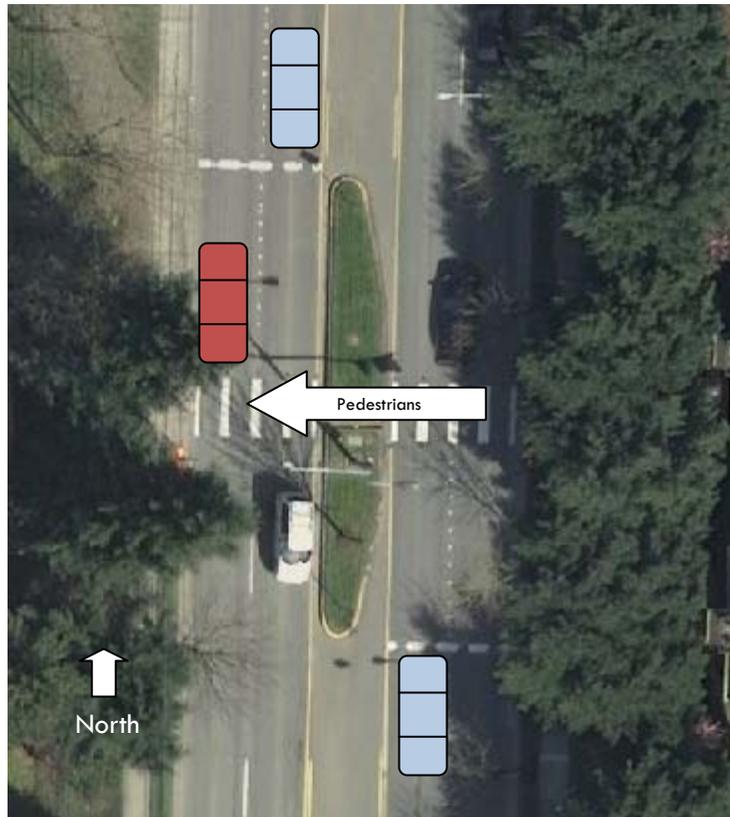


Figure 2. Pedestrian collision site, 12600 block of 100th Avenue NE. Blue cars stopped for pedestrians, red car did not. Pedestrians were crossing from east to west.

Improving school walk routes.

Last year, Kirkland was awarded a \$498,000 Safe Routes to School grant that will address the top priority projects on school walk routes at each public elementary school in the City. The funding will be used to connect existing sidewalks, construct curb and gutter and make storm drainage improvements where the most pressing need exists at each school. Prior to project completion police will remind kids about pedestrian safety, and a portable radar trailer will be purchased with grant funds and will be used around all schools to inform motorists of their speed. Projects will be completed in the fall of 2011 and surveys/counts of walking students will be made before and after the improvements are completed.

Crosswalk improvements.

The Capital improvement program includes \$70,000 every two years to improve crosswalk safety. Recently, funds have been used to construct a median, overhead signing and overhead lighting on 100th Avenue south of NE 124th Street connecting senior housing with a bus stop. (See Figure 3). These funds have also been used to improve crosswalks on Lake Washington Boulevard and elsewhere.



Figure 3. Crosswalk on 100th Avenue south of NE 124th Street at Casa Juanita.

New Devices

Due to increasing maintenance costs the City of Kirkland is moving away from in-pavement flashing lights at crosswalks. Rectangular Rapidly Flashing Beacons or RRFBs are a promising replacement. RRFBs use pushbuttons similar to those used with in-pavement lights. Two very bright LED flashers, like those used on emergency response vehicles, are mounted under pedestrian warning signs at crosswalks. (See Figure 4) When the button is pushed, the LEDs

are activated and flash at 70 to 80 flashes per minute. First tested in Florida, RRFBs have proven to be very effective in getting drivers to stop at crosswalks. Because they are new, vendors are still refining their products and prices are fluctuating. RRFBs can operate with solar power and use wireless activation making them relatively easy to install. Components are readily available and because they are simpler in construction and not subject to the punishment of traffic, the initial and life-cycle costs of RRFBs should be well below the costs of in-pavement lights. As a part of the 2009 pavement maintenance program, an RRFB was installed on NE 124th Street near the North Kirkland Community Center. The product the contractor received from the manufacturer is not operating properly and the contractor is working with the manufacturer to resolve those problems.

Pedestrian Safety Flags. Kirkland pioneered the use of pedestrian flags in 1997. Yellow flags have made the purpose of the flags more obvious and increased their use. Research performed nationally and local experience shows that flags are effective, but budget cuts have eliminated the ability to place new installations.

Controlling speeds in school zones.

The severity of pedestrian injuries resulting from crashes is directly affected by vehicle speed. Therefore, reducing speeds in school zones can increase pedestrian safety among some of the most vulnerable pedestrians. Over the past three years, flashing beacons have been installed on school speed limit signs at all public elementary schools in Kirkland. These beacons operate during the times that children are walking to school and draw driver's attention to the school speed limit signs. Radar feedback signs that



Figure 4. RRFBs are mounted under pedestrian warning signs. The orange arrows point to the RRFB lenses.

display vehicle speeds to drivers and flash when preset speeds are exceeded are located in the Peter Kirk and Benjamin Franklin school zones. Both the flashing beacons and the radar feedback signs were funded by grants from the Washington Traffic Safety Commission. The City is exploring photo enforced speed limit zones in selected elementary school zones with demonstrated speeding issues. This is a promising technique for increasing pedestrian safety by reducing vehicle speeds during periods when children are traveling to and from school. In addition, Police Officers regularly patrol school zones to enforce school speed limits.

Police Department stings and routine enforcement

As part of the enforcement prong in managing pedestrian safety, Kirkland Police regularly participate in grant funded crosswalk stings. A sting consists of multiple uniformed officers driving marked vehicles, and a decoy officer dressed in plain clothes. Before the enforcement activity takes place, officers measure out a distance in both directions from the crosswalk based on the speed limit of the roadway, the reaction time and a safety factor of 5%. Orange cones are placed in the roadway near the curb denoting the required stopping distance for motorists.

The decoy officer, dressed in bright clothing, waits until a vehicle is outside of the designated stopping distance and then enters the roadway. The decoy officer continues walking across the street making eye contact with motorists as he/she nears the crosswalk. Drivers that do not stop for the decoy officer are stopped by other officers and issued citations, as well as pedestrian safety information. The sting is consistent with established protocol such as being conducted during dry weather. Thirty eight tickets were issued in two stings during 2008 and 17 tickets were issued in two stings during 2009. The crosswalk in the 12600 block of 100th Avenue NE has been utilized in past crosswalk stings.

As a part of their regular duties, Patrol and Traffic Officers actively enforce crosswalk violations throughout the city of Kirkland. Additionally, officers will work citizen "complaint" zones which include observed crosswalk violations in certain areas. Again, the 12600 block of 100th Avenue NE is one of the areas worked periodically and as staffing allows. Enforcement programs are used to educate roadway users about the traffic laws that govern them; serve as periodic reminders to obey traffic rules; encourage safer behaviors; and monitor and protect public spaces. (See Figure 5) Overall and citywide, 163 tickets for crosswalk violations were issued in 2008 and 184 tickets for crosswalk violations were issued in 2009.

Reflective Lanyards.

Staff worked with the Youth Council and students from Lake Washington High school to develop a way to encourage students to be more visible as pedestrians. Since many youth already use lanyards, it was felt that a reflective lanyard imprinted with the school logo could be an effective way to get more students to wear something reflective. Lanyards are often worn so that the lanyard hangs out of a pocket and would be visible to drivers. (See Figure 6) The city purchased 100 lanyards as a pilot and worked with the Lake Washington High School DECA marketing club to distribute them. If they were popular, the DECA club would purchase more lanyards using their own funds and sell them as a fund raiser for their club. The initial lanyards were distributed in January. The following is an excerpt from an email sent by Mr. Kevin Lemme the president of the DECA club describing the reaction to the lanyards.



Figure 5 Excerpt from information distributed by Police Department

I am pleased to say that the lanyards are a BIG hit. We finished distributing them about 4 days after we started. In order to try to meet your request, we made sure to distribute evenly across the 3 grades and all different demographics. The students like the design and every day I walk the halls seeing them hanging out of the pockets of students. As for our mission of pedestrian safety, last week driving up to the high school, I witnessed at least 15 students walking in with the lanyards as my headlights illuminated them. LW administration also love the lanyards, and would like to purchase some to give to a group of Japanese students that visit in the spring. That said, LW DECA would also like to purchase another batch and begin selling them. If you would forward me the information, I will pass it on and start another order. These lanyards are a huge success, I thank the city for sponsoring and initiating this program.



Figure 6 Reflective lanyard. The white portions of the lanyard are reflective.

City Update

The next issue of City Update will include an article on pedestrian safety. It will focus on the theme of a shared responsibility between drivers and pedestrians using information similar to that in Figure 4 and referencing the recent collision on 100th Avenue.