

# Gorski Consulting Website

## Archived News - 2012 - September

### September 30, 2012

It has been reported that a single vehicle rollover collision occurred at a curve on Line 56 near the intersection of Perth Highway 119 north of Stratford, Ontario on the afternoon of September 29, 2012. Although four persons were reportedly taken to hospital a photo of the vehicle at its final rest position confirms that this was not a high severity rollover and the vehicle simply rolled onto its right side. Unless there was a partial ejection by one of the occupants (which should not occur in this severity of impact if seat-belts are properly worn) then this collision should be of minor consequence.

The significance of this incident is that local residents have been commenting to the news reporter that there have been many previous events like this at the curve and they don't know "...what they can do to fix that".

Doug Williamson was quoted as saying that there is a long straight area of highway on Line 56 that runs all the way to Wellesley. He surmised that drivers stop paying attention as a result of this straight distance of road and they are caught by surprise when they suddenly encounter the curve. He indicated that "The last accident, a big stink was made of it". Other facts mentioned in the news article is that a large sign warning of the upcoming curve was installed a few years ago. Williamson also noted there were no rumble strips grooved into the pavement leading up to the curve.

This is an example where local residents have not been informed of the specific problem, or if one actually exists. It is our experience that local residents frequently complain about a road after a collision occurs but they have few facts to guide their conclusions about whether a genuine problem exists.

For example, there is never any information about the precise number of collisions that occur at these sites. But collisions would be so rare on these lower volume roads that they would have essentially no scientific meaning. Potentially, one could obtain better data by documenting "near-misses" which would be more frequent but that would require a greater investment of time and resources.

A better approach is to conduct testing at the site with an instrumented vehicle in a similar manner to what we have been reporting in our recent articles of our testing on Adelaide Street north of London, Ontario. Such objective data could be posted on a website and residents could review it. It could be possible to post such objective data on

most roadways in the region and thus the public could appraise itself of the differences between one road and another.

Without such direct data residents often complain to their local political representatives whose decisions to act are not necessarily based on factual data but more on how much pressure they are receiving from their voters. Those staff responsible for roadway maintenance then feel the pressure to do something when the limited resources could be placed to the proper priority. Even the fielding of complaints could become time-consuming to these agencies.

So there is good reason to make details of roadway issues available to the public on a website. Unfortunately our efforts to do so are totally voluntary and there are limits to what we can accomplish without any funding of our work.

**September 28, 2012**

**Police and Official News Media Need to Inform Public Whether Guard Rail was a Factor in Death of Stephen Smith in Crash on Highway 40 Near Wallaceburg, Ontario**

We are as eager as anyone else to ensure that drivers impaired by alcohol, or any other substance or condition, who cause the death of another person, are properly identified and given their just punishment in court. Paul Nahdee, 34, was the driver of a Ford Mustang that struck a guard rail on Highway 40 near Wallaceburg on September 15, 2012 and he has been charged with impaired driving causing death. However we do not agree that other factors that might also have contributed to such a death be kept from the public.

Photos from the accident site displayed in a London Free Press article showed the condition the guard rail and the position of the Ford Mustang that struck it. Although these photos only show the rear and left sides of the vehicle they indicate a lack of roof damage and lack of rollover evidence in the field where the car was stopped. This indicates that the Mustang did not roll over. The damage to the crop in the field indicates that the vehicle just continued to travel forward, in an arcing path, after the guard rail impact and then it came to a stop while still travelling essentially forward.

The London Free Press photos also show the condition of the struck guard rail which appears to have been lifted upwards after the crash suggesting that the Mustang rode underneath it. If the Mustang rode underneath the guard rail then this is not the way it is supposed to function.

Care must be taken when a guard rail is the only device placed at a T-intersection on a rural highway where vehicles are likely to be approaching it a high speed. The purpose of the guard rail is to decrease the severity of a crash not to increase it. If it is to be installed

at such a location then it must be expected that a vehicle's centre-of-gravity will be arrested by the height of the rail and, much like the function of a seat-belt on an occupant's body, the rail must deform and deflect and dissipate the kinetic energy of the impacting vehicle so as to "ride down" the crash over a longer time and in a controlled manner. If there was no guard rail at this site then the Mustang could also achieve an extended "ride down" with low levels of deceleration by simply travelling a long distance through the crop until the vehicle's kinetic energy was dissipated. The problem with allowing such a vehicle to simply enter the field un-impeded is that there is no guarantee how the vehicle will move during the chaos and thus a rollover could commence involving roof crush with possible structural intrusion. This is why a guard rail might be considered because there is a belief that such a barrier will cause a safe motion and deceleration of the vehicle. But is that what happened in the present accident?

The London Free Press photos suggest there is an elevation change in the ground, perhaps just before the rail, but more likely just behind it. Knowing that such a guard rail will deflect and be displaced away from its anchored location in a significant crash the installers of the rail should have made sure that, as the vehicle penetrated through the barrier it did not fall below the rail due to the drop in the elevation of the ground just behind the rail. Is that what happened in this incident? Both the police and news media need to inform the public if this occurred so that consideration can be made to inspection of other sites in the area to ensure that barriers will function as they should.

The latest article in the Chatham newspaper published on September 27th only indicates that police are still investigating the crash and that they are requesting any further information from the public. The newspaper fails to mention what it is that police want to know and what is the focus of their investigation. To us the apparent lack of interest in the performance of the guard rail is the issue.

### **The Seven S-Curves of Adelaide - Part 3**

Part 3 in our series of articles dealing with testing on the seven S-curves on Adelaide Street, north of London, Ontario is now uploaded and available for viewing on our Articles webpage. This article presents charts of data obtained from our drives through the curves in a vehicle instrumented with multiple video cameras and an accelerometer.

**September 26, 2012**

### **The Seven S-Curves of Adelaide - Part 2 Now Uploaded**

In the continuation of our reports on our testing and research at seven S-curves on Adelaide Street, north of London, Ontario, we have posted a second article on the Articles webpage of this site. The article discusses the instrumentation used in our testing as well as the procedures we employed when driving through the road with a vehicle mounted with multiple video cameras and an accelerometer. Some preliminary

results from Curve 1 are presented. Future articles will provide the results from all seven curves and results from additional testing will also be presented in the future.

**Septemb25, 2012**

### **"New-News" Becomes Old "News"**

We have now removed the old version of the News page and replaced it with what you presently see. You should be able to access all previous News items not displayed in the CURRENT NEWS section by clicking the links at the top of this page in the ARCHIVED NEWS section for either 2012 or 2011 news items.

### **The Seven S-Curves of Adelaide - Part 1 Now Uploaded**

We are presently in the process of uploading a series of articles based on testing we have been conducting on Adelaide Street North, just north of the city limits of London, Ontario, Canada. This involves a series of seven S-curves that exist along the road and the differences in these curves as demonstrated through videotaped "Driv-Thrus" with an instrumented vehicle. The first article introduces the site through a series of photos taken at each curve. Later articles will show the instrumentation and methods used to obtain the data and then followed articles displaying the results of the analysis. The testing and analysis is likely to be an ongoing process with further details being provided as additional testing is completed. Check out the first article in this series on the Articles page of this website.

**September 19, 2012**

### **Adjustments to News Webpage Are Coming**

The Gorski Consulting website is testing this new News webpage which is temporarily called "New News". Given the large number of items on the original News webpage we have opted to place older news items in an Archived News pdf that will be accessible at the top of the News webpage. You should see the link buttons above. This is a trial so if the process does not succeed please be patient. If everything goes well this page will replace the original News page. For the present time however we are continuing to display the original News page until we can confirm that no problems are occurring.

### **Ontario's Minimum Maintenance Standards for Pavement Edge Drop Off Are Evaluated**

Readers can find a new article on our Articles webpage discussing our on-going research into the dangers of pavement edge drop off. Ontario's Minimum Maintenance Standards (MMS) provide guidelines to municipalities regarding their obligations for correcting

these drop offs but those standards may fall short in terms of protecting the motoring public. Take a look at our article and let us know if you agree or not.

## **Does the Glanworth Curve in London Ontario Require a Guard Rail?**

The London Free Press has sided with a number of local residents in the Glanworth area who are concerned about the safety of the Glanworth Curve on Wellington Road and are calling for a guard rail to be installed at that site. In contrast the City of London believes a guard rail is not the solution. A double-fatal collision occurred at this site on February 11, 2012 and much of the discussion includes the tragic consequences where a 15-month-old daughter of the young female driver was one of the fatally injured passengers.

The London Free Press published two articles on September 14th in support of the guard rail installation.

Gorski Consulting has been following these developments and a couple of articles have previously been written on the crash and the safety of the curve. Our stance has continued to focus on the fact that almost nothing has been provided by either the investigating police or the City of London as to how and why the fatal collision occurred and how this impacts their decisions on what will be done, if anything, about the safety of the curve. Much of this silence could be interpreted as a sign that both parties could be in jeopardy of being sued if it was determined that proper maintenance or road closure procedures were not followed. Whatever may be the true reason for the silence information about the accident needs to be released so that those requesting the guard rail installation can determine whether their requests are reasonable.

In light of this lack of information we have opted to put some effort in the issue by conducting our own testing at the Glanworth curve. On September 17th we conducted some drive-through tests at the curve with video cameras and an accelerometer to study what forces were exerted on our vehicle as it passed through the curve at a constant speed of 80 km/h. Only one test was performed and several would be needed before sufficient accuracy was developed. However it is a start. The results of this study are presented in a new article on the Articles webpage of this site. If readers have any questions about the methodology or want further details about the results we encourage you to contact us at our contact page.

## **Ontario Coroner's Office Study of Pedestrian Collisions Requests Lower Speed Limit But Will That Actually Result In Lower Speeds And Less Severe Crashes?**

Dr. Bert Lauwers, Ontario's Deputy Chief Coroner, announced that, following an intensive study of Ontario's 95 fatal pedestrian collisions from the year 2010 the Province should reduce speed limits since "two-thirds of the deaths occurred on roads

with posted speed limits higher than 50 kilometres an hour, while only five per cent occurred below that limit".

What the remedy does not discuss is how the lowered speed limits are going to result in lower speeds and less severe collisions. It would appear to conclude that, as soon as a speed limit is reduced drivers will immediately reduce their speed to the lowered limit. We do not think that belief is realistic. From our studies of driver behaviour the average driver drives at speeds at least 10 km/h, and even higher, than the posted speed limit, depending on the individual characteristics of road segments. We accept some credibility to hypotheses such as Professor Gerry Wilde`s Risk Homeostasis theory that persons behave to achieve their individual levels of acceptable risk. Causing a change in that driving behaviour will require a large police involvement that will involve a large cost.

In our experience many fatal pedestrian collisions occur due to factors other than the posted maximum speed limit. One factor is a roadway character that places pedestrians at higher risk of being struck. This could be a scenario where a busy, four-lane road does not contain a centre median where pedestrians might gain refuge if they encounter a difficulty while crossing such a road.

It might include a failure to improve the design of vehicles to reduce the impact force to vulnerable portions of the pedestrian's body. A classic scenario is that a pedestrian dies because head contact is made with a stiff roof pillar while impact to a softer area such as a windshield or middle of the hood results in survival. The front ends of passenger cars and light trucks can be made to cause a pedestrian motion during impact that favours protection of the more important portions of the pedestrian's anatomy. It might include preventing the deep glazing of side and rear windows so that drivers can better see through them. It might include a prevention of artificial increases in the height of light trucks where visibility is compromised for the need to follow a popular cultural fad.

It might involve improvement of visibility for drivers of large trucks and buses so that pedestrians are not run over during a truck/bus turning motion. This might include back-up cameras for situations where vehicles are backing and drivers find it difficult to see pedestrians.

And finally it will also include a more philosophical understanding that a society's care for the healthy character of its individuals reaps the rewards of having those individuals acting in a desirable and responsible manner. We say this because in too many instances of fatal collisions we see that either drivers or pedestrians, or both, have acted improperly and this has been the major factor in the collision consequences. It can be as obvious as the consumption of alcohol and drugs. But it is also more subtle in the exercise of poor habits, lack of discipline and bad judgment. If we grow better pedestrians and drivers we will also grow safer ones.

## **Sarnia Police and Newspaper Identify Deceased Struck on Highway 402 Near Nauvoo Road between Sarnia and London, Ontario**

The Sarnia Observer Newspaper has reported that 62-year-old Chenoa Plain-Firth, 21, of Sarnia was struck and killed on Highway 402 east of Nauvoo Road at approximately 9:30 P.M. on "Wednesday night" (likely September 12, 2012). It stated that the woman was killed when struck by an eastbound van.

**September 9, 2012**

## **Fatal Tree Impact on Wonderland Road Reportedly at Fanshawe But In Reality Was Just South of Sunningdale**

The fatal tree impact that was reported by news media as occurring near the intersection of Wonderland Road and Fanshawe Park Road was actually just south of Sunningdale Road and substantially north of Fanshawe Park Road.

(See our article on the Articles Webpage for further details)

## **Gorski Consulting Lack of Discussion Of Recent Fatal Collisions – Busy With Research & Testing**

While we attempt to remain current in our discussions of serious and fatal collisions in our region, we also have commitments to our clients and our on-going research. Time commitments to our client files and research has led to a shortage of articles and news items placed on our website pages in the last two to three weeks and we apologize.

However, we have been conducting extensive testing with respect to the causation of loss-of-control collisions. We have set up multiple video cameras at a local site and have

been monitoring the progress of traffic as it passes through a series of curves. We hope such data will be useful in our continued efforts to explore the mechanisms by which serious-injury and fatal loss-of-control collisions occur.

While conducting this time-consuming testing we have also been attending the sites of several recent fatal, loss-of-control collisions in our area. Unfortunately we simply have not had the time to discuss our findings at this time. It is the combination of examining these fatal collisions and conducting testing that enables us to proceed to a better understanding of these events. We want to make mention of just two of the recent sites that we examined.

On Friday, August 31, 2012 Sophie Proulx, of Brantford, Ontario, was killed when her westbound Chevrolet Impala collided with an eastbound Jeep on Otterville Road, just east of Otterville, Ontario. It was not mentioned in local news coverage of the collision that Proulx's Impala was travelling around a right curve when the hard topped road surface on which she was travelling changed to a freshly laid tar and chip mixture. This fresh layer of loose gravel was combined with narrow channels of harder packed gravel where the wheels of vehicles had been successful in compacting the gravel into the underlying tar. This difference in road surface conditions would be challenging in circumstances where a driver was not made aware of the upcoming conditions. The road maintenance personnel placed a "Construction" sign in advance of the new coating but failed to also provide a similar advance warning for the existence of the new tar and chip compound.

The warning of the new treatment was not placed until several metres into the area of new treatment. The problem with such a placement is that it is too late to provide drivers with enough time to comprehend the warning and to adjust their speed. This is why most warning signs are placed in the range of 150 metres prior to the location of the danger. Again, a standardization of sign placements has been in existence for decades throughout North America in such documents as the Manual of Uniform Traffic Control Devices (MUTCD). These standards are based on decades of scientific research.

We also examined a collision site on Brant County Road 53 just east of Catcher, Ontario. On September 7, 2012 an eastbound vehicle approached a left curve when it travelled onto the right (south) gravel shoulder and began to rotate counter-clockwise. It travelled into the centre of the road where its motion changed to a clockwise rotation. It then

travelled back toward the right shoulder and struck a grouping of trees located about 4.5 metres south of the road's asphalt edge. Unfortunately, due to the impact occurring near the driver's door, the lone female driver sustained fatal injuries.

It would appear from the positioning of the tire marks that this driver experienced her difficulties before reaching the curve. This could be accomplished, for example, if an opposing vehicle travelled around the curve and entered her path causing her to take evasive action. Also the presence of fresh, re-surfacing of the pavement caused a narrow strip of the pavement to be re-surfaced along the road's centre-line. In effect this caused the removal of the guidance provided by the centre-line precisely at the location where the curve commenced. Again, nothing of these facts was mentioned in any official news reports.

It has also been reported that a fatal single-vehicle collision has occurred this morning, at approximately 0230 hours on September 9, 2012, near the intersection of Wonderland Road and Fanshawe Park Road in the north-western area of London, Ontario. No details are yet available. We will likely be examining this collision site later this afternoon once the roadway is re-opened. This is in keeping with our further examinations and analysis of these fatal loss-of-control collisions.

## **September 6, 2012**

### **Tricks Are Not Necessarily Meant Just For Kids**

A news article is passing through the ranks of local newspapers in southern Ontario showing an Insurance Institute for Highway Safety (IIHS) test wherein a 2009 Malibu is shown in an off-set frontal impact with a 1959 Chevrolet Impala. A photo accompanying the article shows the front end of the Malibu penetrating into the driver's seating space of the old Impala. The purpose of the article was to demonstrate the superiority of the design of newer vehicles.

While we applaud the intent of the article, there are subtle facts in the positioning of the vehicles in the crash test that may not be apparent to the average viewer.

We have tried to explain through many past articles that a narrow, left-frontal impact can result in dramatically different results when the angle of the direction of force is adjusted from directly rearward to an angle slightly from the left.

In typical terminology we call a force applied directly rearward as a “12 O'clock” direction. A force applied directly to the driver’s door would be a “9 O'clock” and one applied to the right door would be a “3 O'clock”.

The IIHS test with the old Impala suggests that the force applied to it was not at “12 O'clock” but something in the range of “11 O'clock”. Such a scenario causes the direction of the force to be applied toward the centre-of-gravity of the old Impala and therefore prevents the vehicle from rotating away, counter-clockwise, during the separation phase. This results in the front end of the newer Malibu penetrating into the left front of the Impala in a deadly manner that we have observed hundreds of times in real-life collisions. But this is not necessarily due to the superiority of the newer vehicle’s design. It is due to how you set up the test. So the devil is in the details. A good trick to emphasize the improvements of modern design, but we are not impressed with the magician’s sleight of hand.

Regardless of the vehicle design, examination of real-life collisions confirms that there is a genuine safety problem when vehicles are struck in a narrow left-front impact and the direction of force is similar to what was demonstrated in the old Impala of the IIHS test. It appears unfortunate to us that these engineers were knowledgeable enough to demonstrate the problem for their propaganda yet the IIHS has never prepared any article to inform their readers that this is a particular form of frontal impact that is common in real-life collisions and it is of deadly consequence. While it is a challenging problem it should also be revealed and discussed.