#### **Golf Course Road - Traffic Calming Assessment**





## Golf Course Road Traffic Calming





#### How are Speed Limits Determined?

The posted speed limits that are different from the limits set out by the province legislation such as, residential zones, business districts, and streets adjacent to schools, are set by the recommendations of traffic engineers/public works officials. The speed limits are based on such relevant factors as the dominant speeds on a street, visibility restrictions, roadway conditions, traffic patterns, roadway designation (arterial, collector, etc.), and crash rates.

Ultimately the elected officials who are responsible for the roadway must approve the speed limit. Take note, studies have repeatedly demonstrated that motorists typically drive at a speed that they judge to be safe, regardless of posted speed limits.

#### How can we manage speed effectively?

Anyone driving at a speed that is unsafe for the prevailing conditions is speeding. In addition driving over the posted speed limit is speeding.

Law enforcement techniques used to manage speeding include traditional police enforcement, and the use of electronic speed signs. Radar speed signs have been

#### found to be very effective.

In managing speed effectively, it is important to guard against potentially counterproductive solutions. For example, if stop signs are installed to control speed, people tend to speed up significantly between the stop signs to "make up" time. This is not truly addressing the speed issue.

Additional actions that facilitate effective speed management are public awareness efforts and traffic calming.



## What is Traffic Calming?

The purpose of traffic calming is to discourage the negative effects or actions of motorists. These negative effects include speeding, cutting through neighborhood streets to avoid congested major streets, and safety risks for pedestrians, cyclists, and other motorists.

There is a wide variety of traffic calming techniques. In some cases, targeted law enforcement is effective. Targeted law enforcement can be used for specific problem areas. For example, speeding, failure to stop for stop signs, and turn restriction violations; can be addressed by targeted enforcement. Enforcement may also include neighborhood watch programs.

Another traffic calming approach involves signing and marking. For example, speed limit signs, turn prohibition signs, marked pedestrian crossings, and striped bicycle lanes are sometimes effective traffic calming tools. Other situations may require parking restrictions, truck restrictions, and converting some two-way streets to oneway streets.

Traffic calming might also involve making geometric changes to existing streets. Examples of this include roadway narrowing, traffic circles, speed humps, and traffic diverters.

Finally, traffic calming objectives are sometimes met with the aid of landscaping, street furniture placement, and public awareness efforts.



### What is Warrant?

Traffic control devices or, in some cases, traffic calming cannot automatically be installed just because one or more citizens or businesses make a request. Various criteria related to traffic flow, safety, costs, federal and province standards, local ordinances, and street design must be examined. Warrants are the criteria that are used to determine the justification for installing a traffic control device. Warrants are developed in jurisdictions consistent with the warrants already established by the province. Normally, province adopt the national standards specified in the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) or adopt a slightly amended version of the MUTCD. In Ontario, the Ministry of Transportation Ontario Traffic Manuals and Geometric Design Guidelines are used.



# Why can't we have a Stop sign installed at an intersection in my neighborhood?

We might be able to, if it is a smart solution to the problem. The major criteria utilized in determining whether or not a stop sign should be installed are:

- Classification of intersecting roads
- Accident history at that intersections
- Vehicle count of intersecting roads
- Visibility conditions
- Vehicular and pedestrian conflicts, i.e., facilities that generates an unusually high traffic volume concentration of vehicles and/or pedestrians
- Regular use of the intersection by school age children, elderly or disabled persons
- Stop signs work well to assign vehicle right-of-way at intersections. Nevertheless, an overuse of stop signs tends to cause people to do rolling stops or perhaps not stop at all.
- A series of stop signs in a neighborhood, may cause drivers to develop an expectation that there wont be cross traffic, roll through the stop sign, and collide with a vehicle or pedestrian at a future intersection. Drivers can become noncompliant to stop signs, thereby, making them less effective.

Stop signs have an important purpose, but they are not the answer for every traffic situation. They should never be used for traffic calming.



### Radar Speed Display Signs

Speed signs have been proven to be effective, particularly with today's highly visual, often distracted drivers.

Radar speed signs are designed to slow cars down, to make streets safer for everyone. The signs help to make drivers aware that they are traveling above the speed limit. The goal is for drivers to reduce the speed once they realize they are traveling too fast. Radar signs operate on the feedback loop theory: when people are presented with information about their performance, they tend to notice and improve.

Radar speed signs are usually installed in areas where speeding is a concern and are used to gather information to see if additional traffic control measures are needed.

Speed radar display signs have been shown to slow drivers an average of 10%, usually for several miles down the road. In most cases, drivers will slow down when they see that they are driving too fast. Radar speed signs tend to have the greatest effect on streets where vehicles average at least 16km/hr over the posted speed limit.

With intuitive features such as flashing digits and integrated strobe lights to warn speeders and built-in traffic data collection. The signs use solar, AC, or battery power.

## Flexible Delineator Signs or Posts

These posts/signs are installed in the centre of the road, between opposing traffic lanes and/or the lane/road side. They are designed to withstand repeated impacts while still blocking and diverting traffic. They are flexible and highly visible day or night from all angles. If struck, they collapse and rebound back upright.





They have a narrowing effect on the lane or roadway which can give drivers' the perception of the need to slow down.



## Asphalt Speed Tables

Speed tables are flat-topped speed humps with room for the entire wheelbase of a passenger car to rest on top. The flat top design allows cars to maintain slightly higher speeds than they would on speed humps, slowing cars to around 40 km/ph.



Typically 3" high and the width of the vehicle lanes; speed tables are an effective solution for safer neighborhood streets.

What practical difference is there between humps and tables?

Less significant speed reduction, is also a consideration, that won't significantly impede emergency vehicles. While speed tables don't allow ambulances to pass without slowing, they do offer an option that slows them less drastically. This can also be helpful on bus routes or on any roadways to slow cars down and improve safety but also want to keep the flow of traffic smooth and constant.



### **Temporary Speed Humps**

Rubber speed humps are installed across the width of the road. and have a rounded shape. They curve up and then curve back down, without ever having a flat surface on top.



Typically 3" high, speed humps slow cars to between 15-25 km/ph.



#### **Raised Intersections**

A raised intersection is defined as an intersection constructed at a higher elevation where two roadways intersect. Raised intersections create a safe, speed crossing at minor intersections. Similar speed tables and cushions, they enforce slow speeds and encourage motorists to yield to pedestrians at a crosswark. They slows



motorists as they enter and exit an intersection. This option is usually used when constructing new streets, as it is expensive to retrofit and may impact existing drainage.

Typically installed at signalized or all-way stop controlled intersections with high pedestrian crossing demand. Often part of an area-wide traffic calming scheme involving both intersecting streets in densely developed urban areas. They do have potential impacts of reduction in through movement speeds, reduction in mid-block speeds typically less than 10 percent, and can make entire intersections more pedestrian-friendly. However, it can slow down emergency response vehicles.

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Evaluation	Option 1		Option 2		Option 3		Option 4		Option 5	
Criteria	Radar Speed Display Sign		Flexible Delineator Signs or Posts		Asphalt Speed Tables		Temporary Speed Humps		Raised Intersection	
Traffic Operations / Speed Control	• Displays speed to motorists & encourages speed reduction. Traffic data collection can improve speed monitoring enforcement.		• Traffic speed reduction by traveling through guides on lane edges and centerline, visually narrowing lanes.		• Traffic speed reduction to 40km/h by traveling over raised surface. Self-enforcing with no impact on traffic volumes expected.		• Traffic speed reduction to 15-25km/hr by traveling over raised surface. Self-enforcing with no impact on traffic volumes expected.		• Traffic speed reduction to 40km/h tables by traveling over raised surface. Self- enforcing with no impact on traffic volumes	
Cycling Operations	<ul> <li>Signs and lights are installed off to the side of the roadway.</li> </ul>		<ul> <li>Installed at the lane edges and/or centerline.</li> <li>Cyclists travelling along lane edge will have to go around.</li> </ul>		<ul> <li>Cyclists will have to slow down to a comfortable speed to travel over speed table.</li> </ul>		<ul> <li>Cyclists will have to slow down to a comfortable speed to travel over or maneuver around.</li> </ul>		<ul> <li>Cyclists will have to slow down to a comfortable speed to travel over speed table.</li> </ul>	
Pedestrian Operations	<ul> <li>Signs and lights are installed off to the side of the roadway.</li> </ul>		<ul> <li>Installed at the lane edges and/or centerline.</li> <li>If on edge line, pedestrians are better separated from traffic.</li> </ul>		<ul> <li>Pedestrians walking on roadway will have to go around or over.</li> </ul>		<ul> <li>Pedestrians walking on roadway will have to go around or over.</li> </ul>		<ul> <li>Better definition of pedestrian crosswalks with reduce vehicle conflict but pedestrians have to walk over.</li> </ul>	
Transit Operations (Should Route 3 be extended)	<ul> <li>Signs and lights are installed off to the side of the roadway.</li> </ul>		Slight impact expected on reducing route time.		<ul> <li>Moderate impact on reducing route time and may impact the comfort of riders being transported.</li> </ul>		Greatest impact on reducing route time.		<ul> <li>Moderate impact on reducing route time and may impact the comfort of riders being transported.</li> </ul>	
Emergency Service Operations	<ul> <li>Signs and lights are installed off to the side of the roadway.</li> </ul>		Slight impact expected on reducing response time.		<ul> <li>Moderate impact on reducing response time.</li> <li>May impact comfort of riders or patients being transported.</li> </ul>		<ul> <li>Greatest impact on reducing response time.</li> </ul>		<ul> <li>Moderate impact on reducing response time.</li> <li>May impact comfort of riders or patients being transported.</li> </ul>	
Public Works Operations	<ul> <li>No effect to snow removal.</li> <li>Traffic data collection by Town staff to improve efficiency of speed monitoring enforcement.</li> </ul>		<ul> <li>Yearly maintenance by Town staff installing and removing for snow removal required.</li> </ul>		<ul> <li>Yearly maintenance by Town staff installing and removing for snow removal not required but more wear on trucks.</li> </ul>		<ul> <li>Yearly maintenance by Town staff installing and removing for snow removal required.</li> </ul>		• Yearly maintenance by Town staff installing and removing for snow removal not required but more wear on trucks.	
Driveway Operations	<ul> <li>Signs would not be installed at driveways, causing blind spots.</li> </ul>		• Delineators would not be installed near driveways but could create visibility restrictions.		<ul> <li>Speed tables would not be installed near driveways.</li> </ul>		<ul> <li>Speed humps would not be installed near driveways.</li> </ul>		<ul> <li>Driveway locations close to the intersection may require regrading.</li> </ul>	
Property / Development Impacts	<ul> <li>Light omitted from the sign or lights may be observed at night from residential properties within close proximity.</li> </ul>		<ul> <li>Delineators are installed at the edge of lanes and/or centerline.</li> </ul>		• No Impact.		• No Impact.		• Storm drainage and lot regrading expected with retrofitting.	
Aesthetics	<ul> <li>Signs and lights are installed off to the side of the roadway.</li> </ul>		<ul> <li>Delineators are installed at the edge of lanes and/or centerline.</li> <li>They are bright coloured and have reflective</li> </ul>		<ul> <li>Speed tables have some bright colours and reflective pavement style markings.</li> </ul>		<ul> <li>Speed humps have some bright colours and reflective pavement style markings.</li> </ul>		<ul> <li>Can be constructed with a variety of materials to define areas like crosswalks.</li> </ul>	
Stormwater Management System	<ul> <li>Signs and lights are installed off to the side of the roadway.</li> </ul>		Delineators would not impact drainage.		<ul> <li>Speed tables would not impact drainage.</li> </ul>		<ul> <li>Speed humps would not impact drainage.</li> </ul>		<ul> <li>Retrofitting existing intersections could cause storm drainage issues. Only recommended for new</li> </ul>	
Utilities	<ul> <li>Signs and lights will be powered by solar energy.</li> </ul>		• No utilities required.		No utilities required.		• No utilities required.		Possible need of utility relocation.	
Estimated Cost to Tax Payers	<ul> <li>Initial cost is moderate but traffic data collection by Town staff to improve efficiency of speed monitoring enforcement.</li> </ul>		<ul> <li>Initial cost is moderate but yearly maintenance by Town staff installing and removing for snow removal required.</li> </ul>		<ul> <li>Initial cost is moderate</li> <li>Yearly installing and removing by Town staff</li> <li>for snow removal would</li> <li>not be required.</li> </ul>		<ul> <li>Initial cost is moderate</li> <li>Yearly installing and removing by Town staff</li> <li>for snow removal</li> <li>required.</li> </ul>		<ul> <li>Initial cost is very high and further issues may arise.</li> </ul>	
Noise	• No noise is emitted.		• No noise is emitted.		<ul> <li>Some noise expected from vehicle traffic traveling over the speed tables.</li> </ul>		<ul> <li>Greater noise expected from vehicle traffic traveling over the speed humps.</li> </ul>		• Some noise could occur from vehicle traffic traveling over the raised surface.	
Legend	Most Preferred								Least Preferred	



## **Final Recommendation**

Based on the evaluation, as well as discussing with emergency services and Town Operations Department staff; it has been determined that the most effective and acceptable traffic calming solution is #3: asphalt speed tables.



#### The following map shows the proposed locations for the speed tables.



• Speed tables will slow traffic flow and improve safety but will still allow vehicles to maintain a reasonable speed traveling over them at around 40km/hr.

 It should be noted that even though there is less significant speed reduction, there is reduced comfort travelling over them and although they won't significantly impede emergency vehicles.
 Emergency services have

advised that response times in the area will be reduced by the speed tables.

This is the recommended preferred solution, which is subject to approval from Council and available funding.