

PROS AND CONS OF SPEED BUMPS



PROS



CONS

Reduces Speed	Humps instead of bumps are a gentle design and cannot reduce speeds as much as some residents want
Speed and volume changes tend to remain over time	Causes traffic to divert to other streets so the problem just gets moved
Some residents usually report that they are generally satisfied	Large trucks and emergency vehicles residents usually report that they must pass over them very slowly thus delaying assistance
Have advantage of being largely self enforcing and of creating a visual impression, real or imagined, that a street is not intended for speeding	Require striping and signage which some residents object to
Potential to reduce accident rates	Some residents believe they create an environment in which their right of enjoyment of the common properties is interfered with
May reduce some resident complaints	Noise levels increase at the bump due to rapid deceleration and noise of the vehicle going over the bump
Less public controversy than some other concepts	Cost of initial construction and then continued maintenance. (Metal bumps last longer, however they damage trucks and emergency vehicles; plastic and rubber bumps do not damage vehicles, however they must be replaced regularly
Another tool or option in traffic calming	Drivers trying to avoid bumps run off road onto shoulder and cause road to breakdown increases potential conflict in neighborhood since there is not 100% support for bumps Potential vehicle damage if traversed at high speed
	Potential personal injury if traversed at high speed
	Longer emergency response time

I began my research looking for PROs to install speed bumps. I found just the opposite. I have included articles and studies sponsored by OSHA and the National Automobile Association. I have also attached an article related to the Disabled Americans agency containing interesting although negative information regarding speed bumps. To be completely fair, I searched but found no recent studies or articles in favor of speed bumps in a rural residential community or in-town community for that matter. I found plenty of case law where agencies and communities had been sued for speed bump injuries. I also found many medical spinal injury websites sponsored by doctors warning of serious spinal injuries as a direct result of speed bumps. As a board member and paralegal, I personally would not be in favor of installing speed bumps and possibly opening the association up to potential litigation. The board may want to poll the entire membership as well prior any installation. After reviewing all the information, if the majority of the board still votes in favor of speed bumps, I do believe it would be in the best interest of the subdivision to install engineered speed bumps.

Emergency responders across the country are in direct opposition to speed bumps in residential communities as it reduces response time, which in some instances is critical to life or death. A study by emergency responders in one city showed that a 30 second delay in response time due to speed bumps would lose an additional 37 lives!

I spoke to Laura, the President of HOVE Road Association. She advised me that she was not on the Board that “yielded to the pressure of a few members insistence and installed speed bumps” but she was a part of the Board that removed them. Because of pressure, the previous board installed the bumps without due diligence resulting in poorly placed bumps, etc. Another problem was it cut down on traffic on some main streets as drivers simply diverted their driving routes to avoid the bumps. Then the residents of the new route began demanding bumps for their street. Pretty soon they had speed bumps all over! Laura said this resulted in a \$100,000 error! At any rate, installing speed bumps did not culminate in the desired results and was a costly mistake. A couple of our long time members live in Ocean View and were there when the speed bumps were installed and removed. They wrote a letter regarding their experience to share with the Board and members. It is attached to this report. Many of the articles that I read also spoke of this same situation – where speed bumps were installed; only to be removed a short time later.

There have been quite a few studies conducted by state and federal agencies that measure and compare the effectiveness of various traffic calming options. As you might have guessed, each has it advantages and disadvantages. The following offers a synopsis of the research findings, which will hopefully guide the Association to the option that is best suited for our situation.

MORE STOP SIGNS and SPEED LIMIT SIGNS

PROs: Uncomplicated to install CONs: Not effective in slowing traffic,
May cause speeding, noise,
Pollution and dangerous road
Conditions.

While both of these options seem logical enough, studies have again shown that the opposite might be closer to the truth. Stop signs are generally used to indicate which driver has the right of way at an intersection. They are great at preventing crashes – not so good at getting drivers to reduce speeds. In fact, it's been found that drivers often increase their speed after stopping at a stop sign. When signs are posted for the purpose of slowing traffic, studies find that drivers often exhibit a resentful attitude toward them. This increases the chance of drivers simply running stop signs as well as speeding.

Installing speed limit signs may seem to be a logical solution to remind drivers not to speed. But numerous studies show that speed limit signs have little impact on actual driving speeds. They find that drivers do not operate by the speedometer but by the conditions they meet.

SPEED BUMPS

PROs: Moderate cost. Somewhat effective in slowing speeds. CONs: Increased noise levels.
May impede fire trucks and or emergency vehicles. May be unsafe to bicyclers, motorcyclists and others.

Employing speed bumps in order to slow traffic has been a popular choice for neighborhoods and government agencies throughout the U.S. In the past twelve years, one city for instance has installed 300 speed bumps. The reaction has been very mixed.

Guidelines I found that are used to determine if speed bumps are necessary and should be installed on a road is if there are approximately 600-5000 cars traveling that road. Our subdivision hardly fits into that category.

While speed bumps are proven somewhat effective in slowing average traffic speed, they also have drawbacks that must be considered. The first is noise.

Researchers of one study estimated that the undulation of cars passing over the speed bumps increased the volume of car noise by 10 to 20 decibels. Another test found that cars driving over the bumps at 10-15 MPH had a noise level equal to a car traveling 25-30 MPH. Trucks passing over the bumps at 5 to 10 MPH had a noise level equal to a truck going 25-30 MPH. The study concluded that the slower speed made the noise last over a longer period of time.

The study showed also that many communities went to great efforts to have speed bumps placed on neighborhood streets only to have it take quite a bit longer to have the speed bumps removed.

Another concern with speed bumps is that they impede fire trucks and other emergency vehicles. For this and other reasons, departments and agencies conduct extensive evaluations of the target sites before improving installation. Speed bumps are usually prohibited on streets designated as main routes for emergency vehicles. Aoa and Waena would fall into a category as main routes. Additionally, we must consider that Aoa and Waena are the main roads that tie into our ingress and egress routes, including tsunami evacuation. Installing speed bumps on roads that lead directly to our tsunami evacuation routes does not seem to be a prudent decision.

The last consideration is that speed bumps, like stop signs, often have a negative effect on adjacent streets. Drivers will often change their driving pattern to avoid bumps all together, which simply moves the problem from one block to the next. For this reason, we may find that residents who live near the alternate routes, which drivers may use to avoid the roads with speed bumps, may then demand speed bumps for their roads.

RUMBLE STRIPS

PROs: Moderate cost. May be effective at low speeds. CONs: Increase noise level. May be hazardous to bicyclists

Rumble strips have been used primarily to alert drivers to upcoming stop signs or other traffic signals ahead. Studies of their use for calming traffic are limited – particularly at slower speeds where the discomfort that they produce tends to be milder than at higher speeds. The studies that have been done seem to indicate that rumble strips may cause drivers to slow down.

In one study, the rumble strips reduced speeds from 5 to 15 MPH for cars traveling at speeds of 16 to 30 MPH. In another study, the rumble strips appeared to have the effect of reducing average traffic speeds by 1 to 4 MPH with cars traveling approximately 21 – 28 MPH.

The biggest concern with rumble strips is the noise they product. The studies conducted in the U.S. tested the noise levels inside the car (with windows closed) and found the strips raised noise levels from 92 to 100! I do not believe this would be our best traffic calming solution.

RADAR SPEED SIGNS

PROs: Moderate cost. Highly effective CONs: Requires power/solar

in slowing traffic. Mobile – can be moved to problematic streets.

They are called radar speed signs, speed-reader boards, driver feedback signs and “Your Speed” signs. They can be permanently mounted like any other traffic sign or they can be attached to a trailer and moved from one location to another. All speed-reader boards alert drivers to their actual speed as they pass by. Some flash warnings such as **“SLOW DOWN”** when speeds reach a pre-set limit.

The studies done on driver feedback signs indicate that they are highly effective in slowing traffic, particularly when used on residential streets, near school zones and around playgrounds. They have the greatest effect on those who are traveling significantly over the speed limit. Interestingly, research results also indicate that these traffic-calming devices have a long-lasting effect. They continue to calm traffic even after they become long-standing fixtures at a location. A study conducted by the Transportation Institute showed that almost the same speed reduction was being achieved four months after installation. Other studies have shown drivers exhibit traveling significantly reduced speed months after the signs are removed. In a recent survey, traffic engineers and other safety professionals ranked driver feedback radar signs as the most effective traffic calming method for neighborhoods and school zones. Researchers suggest that the sign’s effectiveness is due to the fact that, unlike static speed signs that are often ignored, feedback signs refocus driver attention on their own speed rather than on their personal evaluation of driving conditions. I believe this is a significant finding as our remote location lends itself to drivers (both residents and visitors) making their own decision that there is simply no reason to obey stop signs, etc. I have personally witnessed drivers ignoring stop signs in our subdivision. I have also been guilty of not stopping completely as by my estimation at quick glance there were no other cars or people around the intersection I was crossing. I will add – the two things that always make me check my speed and/or slow down are signs that state “Children Playing” and a radar sign showing me my speed and flashing red when I am over the limit. Typically a speed limit sign is placed shortly before the radar sign so a driver has no question.

Finally, the quote we received to put in more signs is in excess of \$4000 (see attached). I did some research and the radar signs are about \$3800 - \$4200. I have attached a quote from a radar sign company along with some information regarding this type of traffic calming.

While more investigation should be done so the Board is sure about what direction to go, I do think it would be worth considering this option instead of putting up a bunch more signs that probably won’t result in the outcome we desire. We should also think long and hard about all the negative research regarding speed bumps/humps. I was very surprised at the negative results of my research, as I truly believed it would culminate in a pro speed bump decision.

The Continuing Problem With Speed Humps

Speed humps are spreading like a plague across the US. These "traffic calming" measures are proliferating with very little rhyme, reason, or even consistent use.

This is happening, primarily, because many of the speed hump installations are politically motivated rather than safety motivated. It seems a desire by residents to "mark their territory" and reduce traffic, rather than a specific safety concern. Most often, "traffic" is the motivation for speed humps and safety is the spoken excuse for speed humps.

Local officials find it easier to appease speed hump proponents rather than attempting to explain why speed humps won't solve the problem. Politicians would rather oil the squeaky wheel. Consequently, speed humps are being installed without real thought to the consequences of having these devices.

The political nature of traffic calming projects has resulted in an attempt to ignore the realities of speed humps. Speed humps often divert traffic to the next block, or more likely into the adjacent jurisdiction. Residents who live on the new alternative routes then approach the city with their requests for these traffic calming devices. This is a vicious cycle that doesn't address any of the reasons for traffic using local neighborhood streets. Speed humps only aggravate traffic flow and congestion problems.

Speed humps seriously affect the response time of emergency vehicles. An analysis performed by scientist Ronald Bowman in Boulder, Colorado (<http://members.aol.com/raybowman/risk97eval1.html>) and replicated in Austin, Texas by Assistant Fire Chief Les Bunte (http://home.cfl.rr.com/gidusko/texts/tfc_calm.pdf), shows that even minor delays in emergency vehicle response time is far more detrimental to public health and safety

then can be offset by any perceived reduction in "speeding."

Speed humps can also cause pain and injury to some residents with disabilities. The devices limit their access to public rights-of-way, guaranteed under the ADA (Americans with Disabilities Act).

There is increasing evidence of the danger of calming devices to passengers traveling in vehicles as well as to the vehicles themselves. In the state of Rhode Island, there is a raised device that launched a police officer in the air, landing him in the hospital. The same device was responsible for breaking the axle of a fire truck, costing \$15,000. Fire fighters, injured from being thrown to the roofs of their cabs hitting speed humps, have been placed on permanent disability. Legislation has been introduced to remove the specific speed hump.

In many areas, when communities request speed humps, none of these factors are addressed. If your community or one nearby is requesting speed humps, you need to speak out. The NMA site has an entire section on traffic calming (at <http://www.motorists.org/issues/engineering/index.html>) You can find a guide on how to oppose traffic calming in your area, a personal account of one member's fight against speed humps, research articles, and links to other groups that oppose these devices. ☺

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The Pros & Cons of Speed Bumps

Article sponsored by OSHA



Although speed bumps are a cost-effective initial solution to speeding problems in residential areas and school zones, they can often be expensive to maintain. And while they are a good temporary solution to speeding traffic they can create long-term problems, as well.

Safety

- Speed bumps are generally installed to slow the speed of traffic in residential areas and school zones. While they force cars to move at a slower pace, they can create problems for emergency vehicles, large trucks and buses.

Noise

- Speed bumps generally deter non-mandatory traffic on residential streets, encouraging those drivers to choose alternative routes. On the negative side, cars often slow down very quickly to avoid bounding over the speed bumps, which leads to the endless sound of squealing brakes.

Costs

A major shortcoming of speed bumps is that the materials they are made of break down often, requiring costly repairs.

Materials

Speed bumps are usually made of plastic, metal or rubber. Metal speed bumps can damage large trucks or emergency vehicles but last longer than other materials. Plastic and rubber speed bumps do less damage but generally need to be replaced more frequently.

Misconceptions

Speed bumps are not the same as speed humps as the latter features a gradual incline while the former have a steeper incline.