

## POTENTIAL TRAFFIC CALMING STRATEGIES

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This section includes a “toolbox” of traffic calming measures for traffic control in Kings Beach based on a review of standard practice in the field, experience in peer communities that have used various potential measures, as well as the specific characteristics of Kings Beach.

### General Strategies

As discussed in greater detail below, traffic management strategies can be considered in the following general categories:

- ♦ **Enforcement/Education** – This includes focused enforcement of traffic laws (particularly with regards to speeding). Educating the driving public (such as through distribution of flyers or advisory signs) can also help to address specific problems.
- ♦ **Regulation** – This includes changing traffic regulations (such as modifying speed limits or prohibiting heavy vehicles).
- ♦ **Changes in Vertical Roadway Alignment** – Speed humps are an example of changing the vertical alignment of a roadway to reduce the comfortable travel speed.
- ♦ **Changes in Horizontal Roadway Alignment** – There are a wide variety of options, such as small traffic circles and chicanes, which slow traffic by requiring drivers to maneuver through a constriction.

### Review of Traffic Management in Similar Mountain Resort Communities

A review of neighborhood traffic management strategies in similar settings can provide some insight into what has proven successful and not successful. The following “peer” communities were reviewed:

- ♦ **Vail, Colorado** – The Town of Vail has implemented raised crosswalks at various locations. While the initial installations were 4-inches in height, the Town found that a 2 to 3-inch increase in height provided better traffic flow and still reduced speeds and encouraged yielding to pedestrians. The Town has not seriously considered any chicanes, bulb outs, or speed humps because of snow plowing issues.
- ♦ **Ketchum, Idaho** – The City of Ketchum has instituted an extensive traffic calming program, including the following measures:
  - Raised Crosswalks
  - Back-in diagonal parking
  - Parallel parking on one side of the street and diagonal parking on the other, with this pattern alternating along the street
  - Permanent radar speed signs at sites with heavy pedestrian traffic including schools
  - Bulbouts at intersections

- Pedestrian flag stands at crosswalks
- Pavement marking at Stop signs on roadways and on multi-use paths (Stop bar “triangle”)

The City previously attempted temporary speed humps, but found that they were vandalized by residents. As a result, they are no longer used. In addition, the City found that graders caused damage to curb bulbouts during snow removal, which has been an ongoing maintenance headache. Ketchum established a “Traffic Authority” made up of public figures that meet monthly to discuss and plan traffic calming measures.

- ♦ **Aspen, Colorado** – The City of Aspen has implemented permanent speed humps, and found them to be an effective means of reducing traffic speed. The City found that a 4-inch height with an elliptical profile is the best configuration. They attempted “speed dips,” but found these to be ineffective as drivers could actually reduce their vertical displacement by speeding up.
- ♦ **Avon, Colorado** – The Town of Avon, Colorado, the gateway to Beaver Creek ski area, has implemented several traffic calming measures:
  - Angled parking on one side of the street that alternates sides
  - Roundabouts with slightly raised brick-paved crosswalks (1.5-2 inches)
  - Lane striping which narrowed lanes from 12 feet to 10 feet each and additional pavement to include a pedestrian lane separated by a cutout rumble strip

The Town also has future plans to implement raised intersections in redevelopment areas, to add a raised landscaped median, and to potentially provide intersection bulbouts.

- ♦ **Summit County, Colorado** – The Summit County Engineering Department has an official set of guidelines for how and when to install speed humps. Their criteria includes community support identified through a petition, effect of the humps on surrounding traffic flow, effect on local and emergency services, and a speed study of existing conditions. The County’s speed hump program was able to overcome the initial and continuing resistance from snowplow drivers. The County specifically requires that all costs be borne by the adjacent property owners. The County has also implemented roundabouts.
- ♦ **Park City, Utah** – Park City has implemented a gateway treatment to the historic highway entering the community, which consists of a raised, landscaped median along the roadway edge. The community also has several landscaped medians along residential streets as well as a roundabout.

### Potential Measures Appropriate for the Kings Beach Residential Streets

The Placer County Department of Public Works conducted a study of traffic management strategies appropriate in Placer County. As documented in the *Placer County Neighborhood Traffic Management Program* (February 28, 2007), the following traffic calming devices were identified as potentially appropriate in “snow country:”

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|------------------|---------------------|
| ♦ Traffic Circle | ♦ Textured Pavement |
| ♦ Roundabout     | ♦ Rumble Strips     |

- ♦ Chicane
- ♦ Realigned Intersection
- ♦ Two-lane Gateway Restriction “choker”
- ♦ Full Street Closure
- ♦ Radar Speed Signs
- ♦ Non-physical measures (such as edge line striping, speed enforcement, etc.)

In reviewing this list, the following devices are considered to not be applicable to the Kings Beach residential streets:

- ♦ Roundabouts are not warranted by the relatively low traffic volumes in Kings Beach, and also could not be implemented without acquisition of right-of-way from each corner as well as loss of property access and parking.
- ♦ Chicanes would be difficult to fit into the Kings Beach grid. Without curb/gutter and sidewalks along the streets, they would also inhibit pedestrian travel.
- ♦ Realigning intersections would probably require right-of-way.
- ♦ Textured pavement and rumble strips can be an impediment to bicycle travel, and can increase noise near residences.
- ♦ Full street closures would not be consistent with the goal of not diverting traffic from one residential street to another.

On the other hand, the review of successful traffic calming strategies in similar mountain communities indicates that speed humps and raised crosswalks (if properly designed) have been effectively used in areas similar to Kings Beach. These devices are not currently in the County’s NTMP program for “snow country” because of concerns during icy conditions and ability to plow snow, but could be reevaluated based upon the information found in this report and the experience of peer jurisdictions. These devices could also be placed seasonally as some jurisdictions have found seasonal placement to be effective. Based on this review, the following physical measures are considered to be potentially applicable to the Kings Beach grid:

- ♦ Speed Hump
- ♦ Traffic Circle
- ♦ Gateway Constriction (Two-lane Choker)
- ♦ Raised Crosswalks
- ♦ Speed Feedback Signs
- ♦ Non-physical measures

Appendix B provides excerpts from the *Placer County Neighborhood Traffic Management Program Final Report*, which provides more detailed description of these devices.

As an aside, it is important to recognize that the following are **not appropriate** as traffic calming strategies:

- ♦ **Arbitrarily Reducing Speed Limits** – Setting lower speed limits is controlled by state law, except on local streets “primarily serving abutting residential property.” While this indicates the County could reduce speed limits on some (but not all) Kings Beach streets, research has shown that arbitrary low speed limits are largely ignored and can lead to erratic driver behavior that increases the potential for accidents.

- ♦ **Adding Stop Signs** – While the public often suggests installing additional Stop signs as a traffic calming measure, several studies have found this to be largely counterproductive. Faced with a line of Stop signs, drivers tend to “roll” the stop sign, and this result has been shown to actually increase mid-block speeds as they attempt to make up for lost time. In addition, by placing Stop signs at locations where they are not needed, drivers tend to pay less attention to the Stops signs that must be obeyed. While Stop signs are effective in assigning right-of-way, they should not be used simply for traffic calming purposes.