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Transportation Harmonization

Community and Traffic: A Growing Challenge

According to the Division of Motor Vehicles, last year in Virginia, there were over 5 million licensed drivers who drove an estimated 86 billion miles. That number only includes Virginia motorists and doesn't take into account visitors to our state. Does it seem they all came through your neighborhood?

Even though a large part of Virginia is considered rural, traffic congestion is growing in all geographical regions and in areas of all sizes. With this increasing volume of traffic is the growing population and the need to combine the two in an effective balance of transportation needs and community needs.

Several years ago, the Institute of Transportation Engineers began formally promoting the philosophy of "Transportation Harmonization." This idea marries traffic efficiency and safety practices with concerns for neighborhood livability and downtown viability.

The first national traffic calming study was



This "choker" at the Medical College of Virginia helps to slow, but not impede traffic flow.

completed in the early 1980's and covered issues related to traffic count, barrier performance data and legal issues. Traffic calming is the primary approach for reducing traffic volumes and speeds. In 1998, the Federal Highway Administration funded another study which went beyond these aspects and explored policy, procedural and political issues.

"Traffic harmonization is more than just putting in speed bumps to slow vehicles down," says Tom Flynn, Professional Transportation Operations Engineer for Draper Aden Associates.

"Care needs to be taken so that the solution doesn't cause new problems. For example, you may want to slow traffic but not reduce access by emergency vehicles," he says. "The goal is to "calm" the higher speed traffic, while not impeding traffic flow of the other drivers."

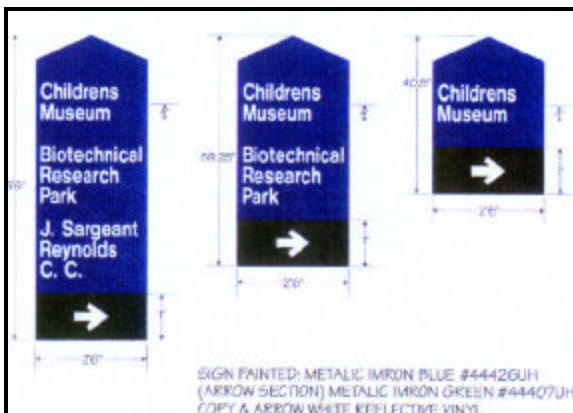
Traffic calming is just one aspect of harmonization. Traffic circulation, streetscapes, and wayfinding signage are other elements that have an impact on community life.

Good traffic circulation prevents congestion and increases efficiency of roadways. One-way streets became a popular and effective way of increasing traffic capacity in downtown areas experiencing growth during the latter half of the last century. In many instances these street patterns have remained in place in downtowns where traffic volumes have been reduced because of economic deterioration or elimination of through-travel movements. By converting one-way streets to two-way operation, direct access to businesses can be enhanced, speeds can be

Traffic Calming Examples

- Choker:** various forms of narrowing the road at mid block or at intersections usually by curb extensions at one or both sides of the street.
- Chicane:** curbs that extend alternately from one side of the street to the other forming an "s" or serpentine path.
- Speed Bump:** raised, rounded areas of pavement reaching across a road.
- Traffic Circle:** raised island, placed in traffic intersections, often landscaped with groundcover and trees.
- Roundabout:** requires a center island, but requires traffic to be circulated counterclockwise to allocate rights-of-way on high volume intersections.
- Speed table:** flat-topped speed bump often in a different texture from the roadway.

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This example of signage demonstrates a continuity of color and lettering to ease driver understanding and readability.

reduced and a more pedestrian ambiance realized.

Streetscapes or the enhancement of street infrastructure through landscaping is probably the most common form of transportation harmonization. These improvements are usually in the pedestrian areas and include the planting of trees, addition of benches, enhanced drainage and other pedestrians amenities.

Wayfinding signage is another example of harmonization. The systematic evaluation and development of an informational signage system will help direct visitors to a new destination, while minimizing "sign clutter." Specifically, signage plans take the following criteria into account:

- 1) Selected highway gateways to a destination are identified;
- 2) A defined rationale is used for the selection of destinations to be included in the system;
- 3) Design criteria of lettering, color scheme, etc. for ease of readability;
- 4) Placement of signs on the road system are based on ease of understanding.

Tom predicts a fundamental shift to traffic circles (retrofit in existing residential areas; also called mini-roundabouts) and modern roundabouts (for higher volume areas) in lieu of traditional all way stop signs or traffic signal control. Before and after studies at the local, state, and federal level document their benefits of slower speeds, reduced accidents and the added benefit of being an amenity to the community. Their use in Europe is well established.

The good news now is that transportation harmonization techniques can help solve traditional traffic and safety issues, while enhancing community livability. All groups benefit with this approach.

Managing growth is always an important concern for municipalities. Two areas that will continue to grow are population and traffic. Anticipating and planning for the growing combination of these two elements will allow localities to serve their communities in two ways: transportation needs and community needs.

Draper Aden Associates is a full-service engineering, surveying and environmental consulting firm. Services include: civil/utilities engineering; environmental services; geological/hydrogeological services; geotechnical/construction/laboratory; site planning & engineering; solid waste management; surveying; subsurface utility engineering, information management services, GIS and transportation engineering.