

Case Study Brief – Traffic Calming

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Definition of Traffic calming

Usually, the traffic calming is defined as road-implemented elements for improving traffic safety, increasing neighborhood livability, and protecting environment. The objectives of traffic calming can be more generally expressed as to alleviate the adverse effects of motorized traffic. The measures of the traffic calming are basically local traffic speed control, speed reduction, and traffic restraint. Measures can extend much wider to network planning, parking, biking or walking safety, and stimulating of alternative traffic modes.

Traffic calming was focusing mainly on safety in early times. During the rapid expansion of car ownership in 1960s and 1970s, the road safety became disastrous in residential areas because of the motorized traffic. Thus, the traffic calming was born to aim at alleviate the adverse effects of motorized traffic, especially private vehicles. Over the years, the scope and objectives of traffic calming changed and generalized. Originally, traffic-calming measures were limited within individual residential streets and residential areas, with the major focuses of reducing the speed of motorized traffic and increasing safety. Later on, traffic calming was also applied to multiple residential streets, regional roads or major local roads. These types of road would have more safety issues than residential roads because of higher speed, higher traffic volume, and higher complexity. As years passed, considerations with respect to traffic calming further extended with the points of urban-wide measures stimuli alternative traffic modes other than private vehicles. During this extension, environmental protection, livability, and health became consideration measures besides safety.

How traffic calming was related to land use and transportation planning?

Traffic calming has many aspects in influencing land use and people's travel behavior. The main goal is to avert motorized traffic from areas with a residential function. A number of conditions have to be met to realize this. First, we should build up a functional road categorization system. Each road should be appointed with one function, either residential function or traffic function in urban areas. Second, traffic calming requires traffic volumes to be as low as possible. So the network structure within the residential area and the number of connections with higher order distributor roads determine play more important role. This indicates that residential area could be designed with an organic street network. Third, traffic calming promotes walking, cycling, and the use of public transport as an alternative trips by car, and if successful, this may have an urban-wide effect.

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Traffic calming strategies and techniques

Traffic calming schemes generally incorporate a wide range of measures designed to complement each other in both speed reduction and environmental terms. Schemes are designed to be self-enforcing, although the effectiveness of this varies according to the measures employed. The principle techniques used fall into four areas: vertical deflections, horizontal deflections, road narrowing and central islands. These techniques are applied at traffic links, road junctions, and gateways. Also a number of supporting measures are commonly used to back up the principle techniques. These include the use of different surface materials, the planting of trees, the use of street furniture, specific junction design, and traffic signals etc. When implementing these techniques, they also follow some traffic management measures, like road closure and one-way street.

Effectiveness and conclusion

Empirical studies show that reducing vehicle speeds involve vertical shifts in the carriageway such as road humps, plateau and cushions is the most effective traffic calming measures. Other complementary measures are dependent on specific situations and may have better effect when combined together.

Traffic calming schemes may reduce accident levels by up to 40%, and also can reduce the severity of accidents. (T Pharoah, Feb 1989) Air pollution can be reduced to some extent. Due to the reductions in traffic volumes resulted from traffic calming, noise pollution can be reduced. There is also a noise level problem, especially when there is more HGV's.

Regional traffic calming designs are supposed to calm both main roads and residential areas. This is a relatively new practice and need more studies to focus on.

You can find details about traffic calming projects that are undergoing in Minnesota at the following: <http://www.mn-traffic-calming.org/search.html>

Works Cited

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Schagen, I. v. (2003). *Traffic Calming Shemes: Opportunities and Implementation Strategies*. SWOV Institute for Road Safety Research, The Netherlands.

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