Narrower Residential Streets

Practice Description

This better site design practice promotes reducing the width of streets to lower the level of impervious cover associated with new residential development. By doing so, stormwater runoff and associated pollutant loads may also be reduced. Currently, many communities require residential street widths of 32, 36, and even 40 feet. Wide streets provide two parking lanes and two moving lanes, but they often provide more parking than is necessary. Narrowing street widths requires a more efficient use of the public realm and individual lots to match community needs. In many residential settings, street widths can be as narrow as 22 to 26 feet without sacrificing emergency access, on-street parking, or vehicular and pedestrian safety. Even narrower access streets can be used when only a handful of homes need to be served. Driveways make up an average of 20% of a subdivision's impervious surface, a figure which jurisdictions can reduce by allowing the use of alternative paving, shorter driveways, or even shared driveways (Schueler, 1995). Currently, developers often have little flexibility to design narrower streets because most communities require wide residential streets as a standard element of their local road and zoning standards. Revisions to current local road standards are often needed to promote greater use of narrower residential streets.

Planning Considerations

Narrower streets can be used in residential developments generating less than 500 or fewer average daily trips (ADT). Such developments generally consist of 50 single family homes. Narrower streets may also be feasible for streets generating 500 to 1,000 ADT. However, they will not work for arterials, collectors, streets that carry greater traffic volumes, and those streets on which traffic volume varies over time.

In most communities, existing local road standards will need to be modified to allow the use of narrower streets. Several communities have successfully implemented narrower streets, including Portland, Oregon; Bucks County, Pennsylvania; and Boulder, Colorado. In addition, there are numerous examples of communities where developers have successfully narrowed private streets within innovative subdivisions. Local communities may lack the authority to change road standards when state agencies retain the review of public roads, however. In these cases, street narrowing can be accomplished only on private streets that are maintained by residents rather than by a local or state agency.

Cities interested in adopting a narrow streets policy will benefit from consulting with a broad cross section of city officials and affected stakeholders, including public works departments, emergency personnel, residential communities, and business owners, among others. Outreach and local research can help correct misperceptions about the effects of narrow streets and can gain broader acceptance for their environmental, safety and aesthetic benefits (NSPS, 2000).

Design Criteria

Residential street design requires a balancing of competing objectives: design, speed, traffic volume, emergency access, parking, and safety. These objectives can be met in a much narrower roadway than that required by the traditional subdivision.

Safety

Roadway widths in residential areas with 50 homes or fewer can safely be as narrow as 22 feet, according to many national engineering organizations (CWP, 1998). Narrowing streets actually lowers traffic speeds, making streets safer (USDOT, 1997). By dedicating more of the right-of-way to pedestrians and bicyclists, street planners can also make these alternative forms of travel more attractive, further reducing the number of automobile trips and relieving traffic pressure on the roadway.

Emergency Access

Although emergency vehicle access is often given as the reason for wide roadway requirements in a subdivision, this may not be necessary. The U.S. Fire Administration indicates that a street width of 18 to 20 feet is adequate for accommodating a fire vehicle (CWP, 1998).

Parking

The right-of-way associated with parking provides a great deal of design flexibility for reducing impermeable surface. There are some cases where on-street parking may not be desirable at all. Where the street provides space for parking, however, alternative paving surfaces, like pervious pavers, can reduce the overall impervious cover. Extending the curb and devoting some existing parking spots to stormwater management is another design alternative. Streets with angled parking accommodate this strategy well. By taking in just one or two spaces, street designers can incorporate a rain garden within the curbline at the corner or the midblock (ICF, 2009).

Common Problems

Real and perceived barriers hinder wider acceptance of narrower streets at local levels. Advocates for narrower streets need to respond to the concerns of local agencies and the

general public. Some of the more frequent concerns about narrower streets are listed below.

Inadequate On-Street Parking. Recent research and local experience have demonstrated that narrow streets can adequately accommodate residential parking demand. A single-family home typically requires 2 to 2.5 parking spaces. In most residential zones, this parking demand can be satisfied by one parking lane on the street and a driveway.

Car and Pedestrian Safety. Recent research indicates that narrow streets have lower accident rates than wide streets. Narrow streets tend to lower vehicle speeds and act as traffic-calming devices. Furthermore, sidewalk access can be provided if needed. Although this might add additional impervious area, net impervious area can be decreased due to greater reductions in street width.

Emergency Access. When designed properly, narrower streets can easily accommodate fire trucks, ambulances, and other emergency vehicles.

Large Vehicles. Field tests have shown that school buses, garbage trucks, moving vans, and other large vehicles can generally safely negotiate narrower streets, even with cars parked on both sides.

Utility Corridors. It is often necessary to place utilities underneath the street rather than in the right-of-way.

Maintenance

Narrower streets should slightly reduce road maintenance costs for local communities, since they present a smaller surface area to maintain and repair.