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## The Residential Street -- Part I

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Most everyone is familiar with the basic classification of roads and streets into several different categories. These major divisions include the arterial street, the collector street, and the local street. While a great deal of attention has been given to the design and functions of arterials and collectors, the local (or residential) street has also begun to receive greater attention.

The evolution of public perception as to what constitute the most desirable characteristics of a residential street has undergone many fascinating changes. Residential streets in the early part of the century were characterized by relatively narrow widths, sidewalks, and shallow front yards, often with porches dominating the front elevation of the house. They typically occurred in a grid pattern. With the advent of the modern subdivision, the character of residential streets began to change substantially. Streets became wider to better accommodate traffic, houses were set back further, sidewalks often disappeared completely, and the front door became less of an activity area.

Now, many planners and designers are beginning to rebel against this modern pattern. You have probably heard about "neo-traditional" designers who are advocating a return to many of the old residential street characteristics. While some characterize these ideals as nostalgic, others see them as shedding new light on proven design principles. As planning commissioners you should understand the issues involved in this debate.

### Residential Street Standards

It is important to understand how existing street standards came about and how prevalent their use is today. The design of today's residential street has evolved from the construction of roads that once carried horses and buggies and the early automobile. Streets in the early 1900's had a right of way (ROW) of 30-50 feet and a pavement width of 18-24 feet. Houses were typically set back only 12-20 feet from the ROW.

In the 1960's, the national Institute of Transportation Engineers produced a publication titled -- *Recommended Practice for Subdivision Streets*. This publication contained a set of recommended standards for residential street design. These included: a 60 foot ROW; 32-34 feet of pavement; a 6-7 foot planting strip; and a 5 foot sidewalk on both sides of the street. Typical front yard setbacks were set at 40-60 feet. These standards have been widely used as the basis for many of today's subdivision regulations.

[See Sidebar, [Residential Street Vocabulary](#) for cross-section comparison of early 1900's versus 1960's ROW].

It is important to remember, however, that a transportation engineer's mission is to ensure efficient and safe vehicular movement. The standards' emphasis on vehicular movement is what has drawn increased criticism in recent years.

Many communities are now taking another look at their existing residential street standards. In most suburban areas the last twenty to thirty years of development have produced multitudes of identical looking, curving streets that have pavement widths and design speeds not unlike major arterials or even highways. And when residents drive at speeds of 40-50 mph because that is what feels comfortable, community officials are forced to consider retrofitting "traffic calming" devices to fix the problem. [Editor's Note: For more on traffic calming, see Richard Untermann's "[Taming the Automobile](#)".]

Some communities have begun to take a more proactive approach by changing the standards for residential street design. Boulder, Colorado, for example, has developed standards for several different types of streets based on their hierarchical functions and traffic volumes. In this way, the city has set for each street type standards for design speed, right-of-way, pavement width, on-street parking, and sidewalks. The new standards also provide for alleys, which, among other benefits, can help remove traffic from the street. While alleys are common in older neighborhoods, many communities' design standards and zoning ordinances prevent their use in new residential development. [For more on Boulder's approach, see the June 1994 issue of *Planning* magazine].

Suburban residential street design is not just an issue being looked at by city officials and urban planners. It has even recently been questioned by the media. *Newsweek* magazine's recent cover story, "Bye-Bye, Suburban Dream" (May 15, 1995), offers fifteen ways to bring back neighborhood identity to the suburbs. One of them is to "make the streets skinny." The article points out that modern subdivisions are designed to be driven, not walked. It is suggested that to remedy this streets should be made narrower. "Narrow streets -- as little as 26 feet wide -- and tight, right-angled corners are a lot easier for walkers, and probably safer as well, because they force drivers to slow down."

This type of coverage by the popular media is reflective of an emerging movement in the planning profession known as "neotraditional" planning, or the "new urbanism." The proponents of these ideas believe that successful, enduring cities and towns need to have certain elements within them. These elements include such items as a pedestrian network, public buildings and squares, blocks of streets that interconnect in a more grid-like pattern, and street cross-sections designed to give a tighter, pedestrian-oriented character to the street (this is done by, among other things, requiring sidewalks and well-sized street trees; encouraging on-street parking instead of more driveways; and reducing the width of the roadway).

Nevertheless, many people still appear to like the conventional suburban pattern of deep front yards, and long, wide, gently curving streets, with cul-de-sacs -- whose houses typically carry a price premium -- branching off. However, this very layout contributes to higher speeds and greater traffic volumes on many local streets, and also results in more roundabout travel routes for both pedestrians and motorists. [See Sidebar, "Arterial Congestion."](#)

### **Summing Up:**

The standard used for the typical residential street has evolved from a narrow pavement width and right-of way to the much wider cross-section seen in today's suburbs. Vehicle speeds are becoming an ever-increasing complaint in suburban areas. Many traffic engineers and police officers agree that drivers respond to their surroundings and not to posted speed limit signs. In other words, if the street has the width and gentle curves of a highway, people will drive on it as if it were a highway.

Consequently, many communities are reconsidering their existing residential street design standards. There are an increasing number of planners and designers who, for many reasons, advocate going back to the street pattern found in older, traditional neighborhoods. However, many developers argue that the public is well-satisfied with the "modern" suburban street pattern that still predominates today.

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## **Arterial Congestion**

Peter Calthorpe, who has planned and designed a number of "transit oriented developments" notes that "standard suburban development patterns presently force all local shopping, recreation, and school trips, as well as work trips, onto the arterial street system," leading to "the congestion about which neighborhood groups typically are most concerned." Calthorpe cites a study by traffic engineer Walter Kulash which projected vehicle mile trips (VMT) in a suburb with standard street configurations versus one with mixed-use development and a grid pattern of local streets. "Because of the more direct routing possible in the gridded neighborhood, the overall VMT for trips with destinations in the area was reduced by 33% and the VMT on the arterial network was reduced by 75%. Although this study only calculates local trips and not through traffic,

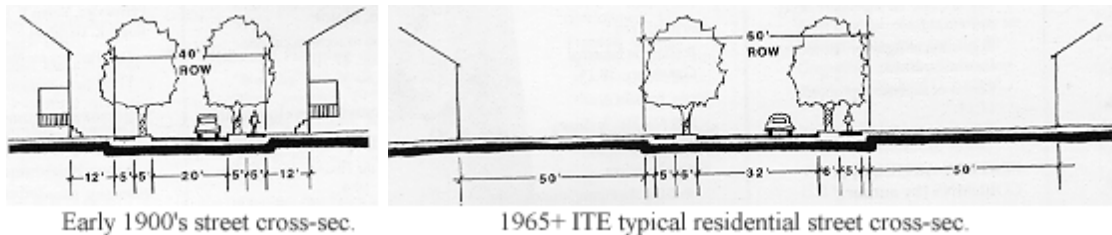
such local trips typically represent over 50% of all travel." From Peter Calthorpe's, *The Next American Metropolis* (Princeton Arch. Press 1993).

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## Residential Street Vocabulary

**Boulevard** -- A street, broad in width, often tree-lined and landscaped. Directional traffic may be physically separated by landscaped medians.

**Cross-section** -- A section formed by a plane cutting through an object, in this case a roadway, usually at right angles to an axis. Cross-sections are often used to illustrate the character, or design of a street and right-of-way, and can show the relationship of street to sidewalk to house.



**Cul-de-sacs** -- Local streets, one end of which is closed and consists of a circular turn-around. While many homeowners choose the cul-de-sac as the most desirable place to live, they are often blamed for traffic congestion by reducing the number of travel options and concentrating traffic on collector and arterial streets at selected intersections.

**Curvilinear** -- A development pattern characterized by streets with multiple curves, typical of many modern subdivisions. Many people argue that curvilinear subdivisions not designed as such for topographic reasons create unnecessary confusion and disorientation.

**Frontage** -- The side of a lot abutting on a street right-of-way and ordinarily regarded as the front of the property. The amount of frontage required under a zoning code has a substantial influence on the perceived density of an area, often more so than minimum lot size or dwelling units per acre.

**Grid** -- A framework of parallel or crisscrossed streets intersecting at right angles. Many people are now suggesting the grid pattern as a more desirable approach in that it distributes traffic throughout the grid by giving people multiple options for travel.

**Pavement Width** -- Pavement width is the horizontal distance measured from one side of the street to the other. The distinction between right-of-way and pavement width becomes substantial when front yard setback regulations are discussed; setbacks are typically measured from the right-of-way line, when people often think in terms of pavement location.

**Right-of-Way** -- The publicly owned land which incorporates the roadway, sidewalk, grassy strip, street trees and/or public utilities.

**Setback** -- The required minimum horizontal distance between the building line and the related front, side or rear property line.

**Streetscape** -- The design and character of a street, often with regard to the aesthetic design of features such as landscaping, lighting, pedestrian facilities, signage and street furniture.

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