5. NEW DEVELOPMENT GUIDELINES

Proposed developments can benefit from neighborhood traffic management strategies. Developers can anticipate and prevent concerns about speeding and traffic volumes by reviewing neighborhood plans and proposing refinements to reduce or avoid future traffic-related concerns. In addition, neighborhood traffic management measures incorporated with project construction often receive greater acceptance than a retrofit approach. Traffic calming measures can be included as off-site mitigation measures for infill or redevelopment projects that are surrounded by existing developments that may be impacted by project traffic.

This chapter is intended to be a tool for staff and project designers to identify potential problem areas and suggested remedies. Anticipating future problems and remedies is a subjective activity, not conducive to absolute standards. However, it may be appropriate to incorporate general language into Placer County's Development Guidelines regarding the role of staff in identifying potential neighborhood traffic problems and suggesting remedies.

In most cases, staff and the developer's representatives should be able to identify mutually acceptable neighborhood traffic management features, which are then incorporated into the proposed plans. However, in some cases, staff may need to develop conditions-of-approval that can be discussed, modified, and/or approved by the relevant governing bodies.

SUGGESTED DEVELOPMENT REVIEW PROCESS

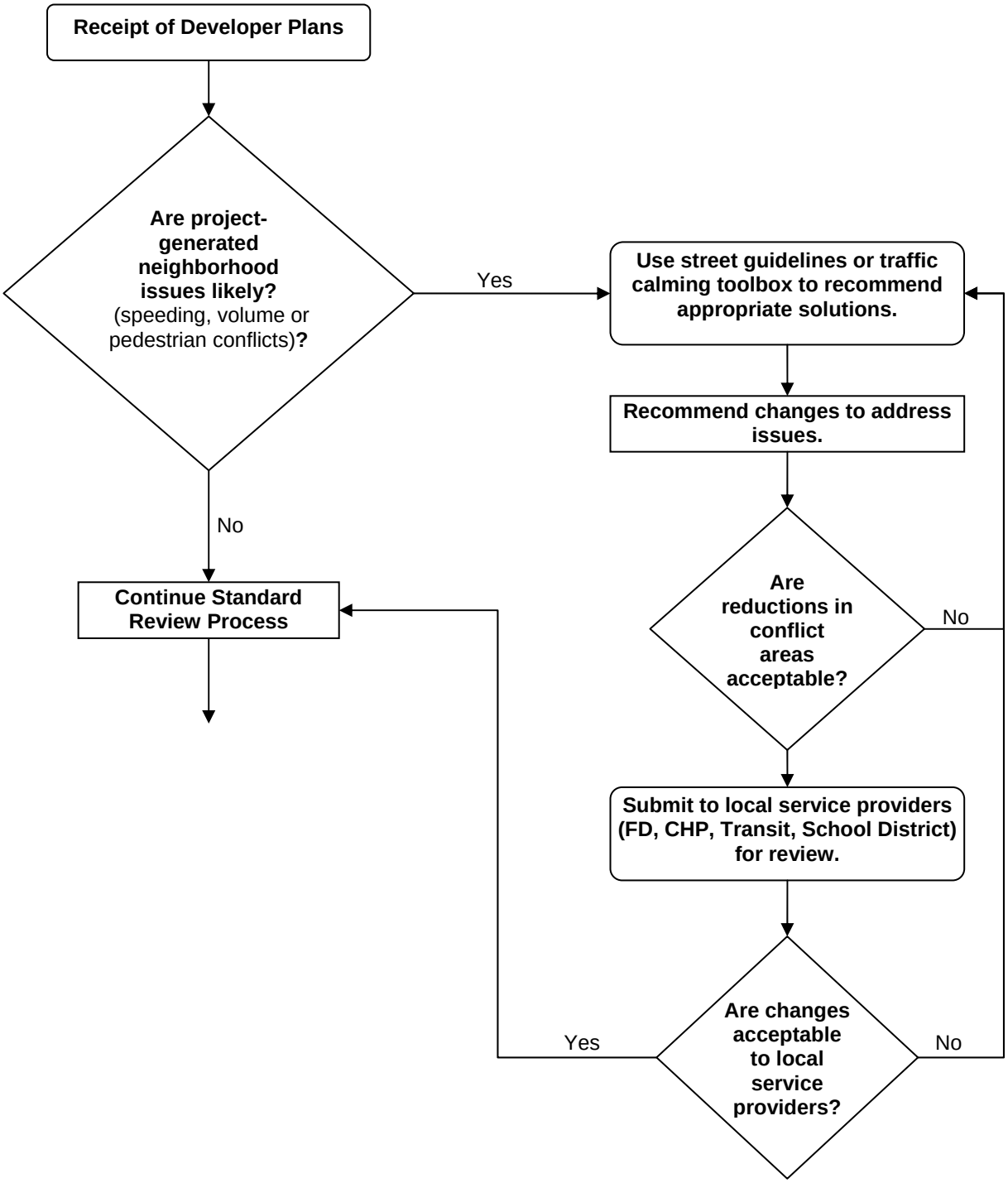
As part of the Placer County development review process, County staff may consider the need for neighborhood traffic management measures within the proposed development or off-site. New development and redevelopment projects may be required to design, build, and maintain traffic calming features as part of the development project through the subdivision improvement agreement, development agreement, homeowners' association, and other development-related mechanisms.

The County's process of reviewing new residential subdivisions varies and is dependent on the decision type. Information contained in the development application determines the permit type and subsequent process. Although the processes differ, they all require staff review after the submission of the plans. At this point, County staff may recommend or condition the inclusion of traffic calming measures.

The toolbox and application guidelines contained in other sections of this document should provide staff and developer representatives with both ideas and guidance on selecting the most appropriate treatments for the identified problem.

The following flowchart is a suggested approach for County staff during the development review process.

Figure 4 New Development Review Process



DEVELOPMENT REVIEW PRACTICES

During the development review process, staff should review the street network and intersection traffic controls to determine areas of potential speeding, excessive volume on residential streets, or pedestrian conflict areas. Where appropriate, developers should be required to incorporate traffic calming measures into their development plan. The process for reviewing street and lot plans for new developments and prescribing refinements may include the following, at staff discretion:

- **Traffic Volumes** – Estimate the average daily traffic (ADT) on residential roadways within and surrounding the proposed project.
  - If traffic volumes on residential streets are projected to be less than 1,500 vehicles per day (vpd), then no action is needed.
  - If the projected traffic volume on a residential street is 1,500 - 2,500 vpd, then consider traffic calming treatments depending upon the context (such as area history, resident expectations, or magnitude of change).
  - For projected volumes of above 2,500 vpd on a residential street, incorporate traffic calming measures to lessen the impact. In addition, consider driveway treatments that do not require vehicles to back out of driveways, such as loop or hammer head driveways.
- **Traffic Speeds** – Identify potential speeding concerns on new streets and adjacent existing streets. Potential problem areas may include:
  - Streets with unimpeded block lengths (i.e. slow points) greater than 600 feet between traffic control or traffic calming devices, or as determined by staff.
  - Areas where roadway grades may increase the potential for speeding, as determined by staff.
  - Areas with potential pedestrian/vehicle conflicts, such as schools, parks, or community centers.
  - Areas with design attributes that encourage speeding, such as wide travel lane width, absence of on-street parking lane, absence of a bike lane, and long block lengths.
- **Street Layout** – Staff may request street design and layout modifications if an area is likely to experience cut-through traffic.
- **Adjacent Neighborhoods** – Consider traffic calming measures in new developments where adjacent neighborhoods include traffic calming, as determined by staff.
- **Traffic Calming Plan** – Based on the size and nature of the proposed development, staff will determine if a traffic calming plan is necessary. As described above, a traffic calming plan should be developed when the proposed street layout cannot be modified in such a way that will eliminate foreseeable traffic problems. The applicant's representative should develop the traffic calming plan with DPW oversight.

DESIGNING STREET NETWORKS

Neighborhood traffic management measures have traditionally been installed as retrofit measures in existing neighborhoods, in response to a particular traffic concern. The guidelines below describe some common street design features and their propensity to lead to neighborhood traffic management concerns such as speeding and cut-through traffic. The guidelines should assist developers in laying out streets in new

residential developments and staff in reviewing them pursuant to the process described above. This chapter is by no means comprehensive on the layout of new residential streets. For detailed information on street design and layout, refer to the following Placer County documents:

- Placer County General Plan, August 1994
- Land Development Manual, Placer County 1988
- Placer County Design Guidelines, September 2003
- Placer County Community Plans (various)

The following documents provide supplemental readings on the subject of designing residential streets. These are guidance documents only:

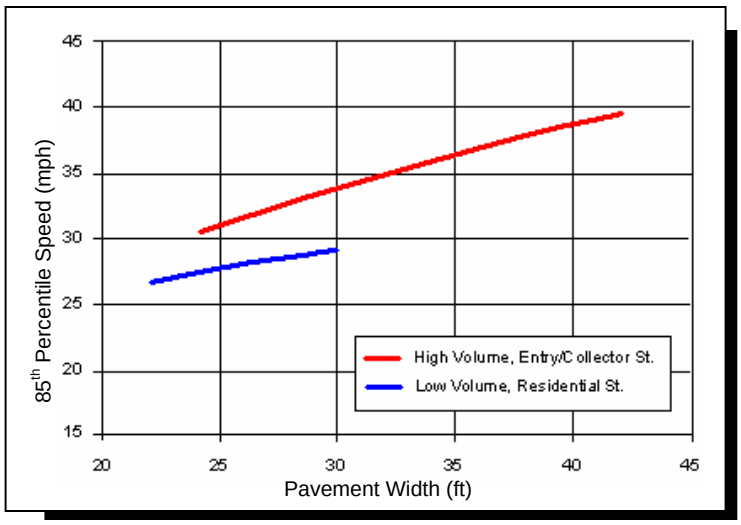
- *Residential Street Design and Traffic Control*, Homburger, Deakin, Bosselmann, Smith, and Beukers (Institute of Transportation Engineers), 1989
- *Residential Streets*, 3rd Edition, American Society of Civil Engineers, Institute of Transportation Engineers, National Association of Home Builders, and the Urban Land Institute, 2001
- *Traditional Neighborhood Development: Street Design Guidelines*, Institute of Transportation Engineers, 1999

DESIGNING FOR APPROPRIATE SPEEDS

The design of residential streets can often influence vehicles speeds. Residential streets that are wide, long, straight, and have few uninterrupted blocks have been shown to have a positive correlation to higher vehicle speeds. To minimize vehicle speeds, consider the following attributes when designing residential streets:

- **Travel Lane Width** – Current County standards for street width varies depending on the lot size, number of lots served, and presence of on-street parking. Plates R-1 through R-7 of the Land Development Manual specifies the requirements for new streets. Provisions for on-street parking are also provided within these standards. The chart shows a positive correlation between pavement width and increased traffic speeds.[2]

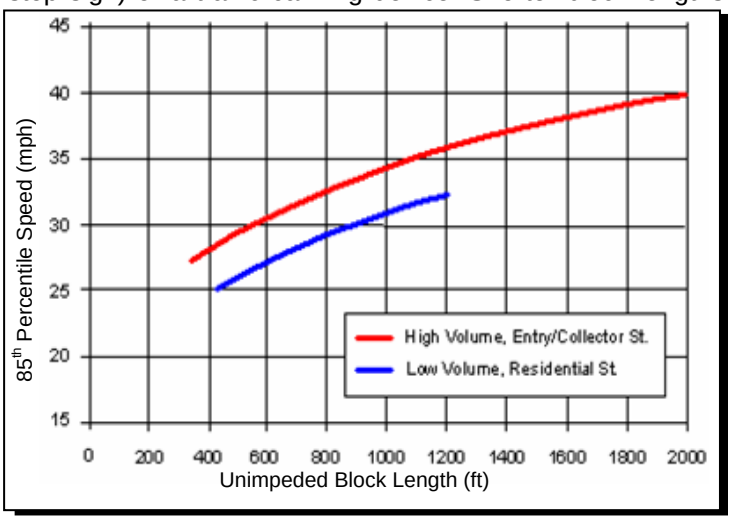
  New streets should not exceed the current County standards. However, if additional width is provided in anticipation of high on-street parking demand, the roadway should be treated with appropriately spaced chokers, center median islands or other neighborhood traffic calming devices.



[2] Ballard, Andrew J. and Haldeman, David M. "Low Speed Design Criteria for Residential Streets." *ITE Journal* December 2002: 44-46.

- **Block Length** – Some street networks leave excessively long blocks with few side street intersections. Drivers who travel distances 600 feet or greater, as illustrated in the chart below, without being required to slow or stop by traffic control or neighborhood traffic management devices, tend to travel at speeds higher than the posted limit. To minimize this effect, the street network can be designed such that street blocks are frequently interrupted by streets of sufficient traffic volumes to warrant a traffic control device (e.g., stop sign) or a traffic calming device. Shorter block lengths also facilitate pedestrian movement throughout the neighborhood. The chart shows the correlation between unimpeded block length and travel speed.

  Acceptable block lengths for urban local streets should not exceed 600-800 feet, while urban collector street block lengths should not exceed 1,000 feet.



- **Parking Lanes** – In circumstances where adjacent land uses generate low on-street parking demand (such as large-lot subdivisions or collectors without fronting uses) the street can function as if it were wider than intended. If the parking demand can be accommodated elsewhere, the parking lanes should be eliminated or restricted to one side of the street and the street width reduced accordingly.

DESIGNING FOR LOCAL TRAFFIC

Some residential collector streets can become cut-through routes, or routes used by non-local motorists as a means of bypassing congested or circuitous arterial roads. In these cases, the residential collector should be modified in one of two ways:

- The collector can be designed with a deviating path so that the overall distance by collector is greater than the distance by arterial.

- The residential roadway network can be designed such that traffic-controlled intersections interrupt the parallel collector route sufficiently that the travel time by collector is greater than the travel time by arterial.

PEDESTRIAN/VEHICLE CONFLICT AREAS

Some elements of residential areas, such as schools, parks, community centers, or other high pedestrian generators, have particularly high potential for vehicle and pedestrian conflicts. The major pedestrian routes to school should be identified and traffic controls should be structured so that the number of crossings at uncontrolled cross-streets is minimized and pedestrians are directed to the most appropriate crossing locations. For both schools and parks, entrances tend to focus pedestrian street crossings at particular locations. These entrances can be made safer by combining them with roadway intersections, so that the intersection's traffic control can also allocate right-of-way to pedestrians.

If a pedestrian-oriented land use is located in an area where speeding or high traffic volumes are unavoidable, then select neighborhood traffic management measures that accommodate and provide benefit to pedestrians. For example, at an intersection, bulbouts or center island narrowings should be given some preference over other measures, such as intersection realignment or speed humps. While a realigned intersection or speed hump may slow traffic in the area, a bulbout or center island narrowing assists pedestrians by creating a shorter crossing distance and physical roadway narrowing, thereby reducing driver speed.

DEVELOPING A NEIGHBORHOOD TRAFFIC MANAGEMENT PLAN

When a proposed street layout cannot be modified in such a way that will eliminate foreseeable potential traffic problems, develop a neighborhood traffic management plan. Follow the procedure for developing a neighborhood traffic management plan as described in the Toolbox Chapter, with the following exceptions:

- For speed-related problems, existing travel speed data will not be available. Consequently, a response to anticipated speeding problems must rely on roadway geometry. For example, if a block length is greater than 600 feet, then you could use neighborhood traffic management measures to divide the block into segments that are each shorter than 600 feet.

- For volume-related problems, traffic volume data will be available only in the form of traffic forecasts, and these will typically be limited to the major roads. You may need some manual traffic volume estimates using land use quantities and trip generation rates for the proposed development.

- Anticipated safety problems will likely revolve around land uses that generate pedestrian activity, such as schools, parks, and community centers. For these land uses, consider the planned locations of walkways, gates, and building entrances when placing neighborhood traffic management devices (such as raised crosswalks or bulb-outs) . Likewise, the land use planning should consider existing and planned traffic safety features.

- For some neighborhood traffic management measures, particularly those involving modified curbs, you can achieve significant cost-savings by constructing them concurrent with roadway construction. Consequently, when selecting a type of neighborhood traffic management measure, give additional preference to measures that take advantage of these cost-savings.