

Access Management: An Overview

by Elizabeth Humstone & Julie Campoli

The 1960s and 1970s were a major period of road building in the United States. Interstate highways were constructed, major arterial highways were improved, and new roads were developed to provide access to vast, undeveloped lands. With these improvements more commercial development appeared outside of urban and village centers, particularly along major highways and at interchanges. With time, vacant lands between the commercial uses filled in. Individual curb cuts for each business lined the highway. Traffic increased. Congestion began to cause delays for drivers. People found it difficult to enter or leave businesses or homes along the road. The number of accidents grew. State and local officials widened roads to handle more cars. Before long there were traffic signals, left turn lanes, and four, six, and even eight travel lanes.

Figures 1-5 Below— Evolution of development along a highway. In the early stages, land along the road is used for farming with little traffic generated. As time passes, the highway corridor becomes a de facto growth area. Additional businesses demand curb cuts which increase congestion, which results in a wider road and more turning lanes.

What can be done to break this cycle of increased congestion necessitating costly road widenings which result in increased traffic? While there is no single solution, one important — and increasingly used — strategy involves what is called “access management.”

...IT IS CRITICAL TO KEEP IN MIND THE CLOSE CONNECTION BETWEEN LAND USE AND TRANSPORTATION.

WHAT IS ACCESS MANAGEMENT?

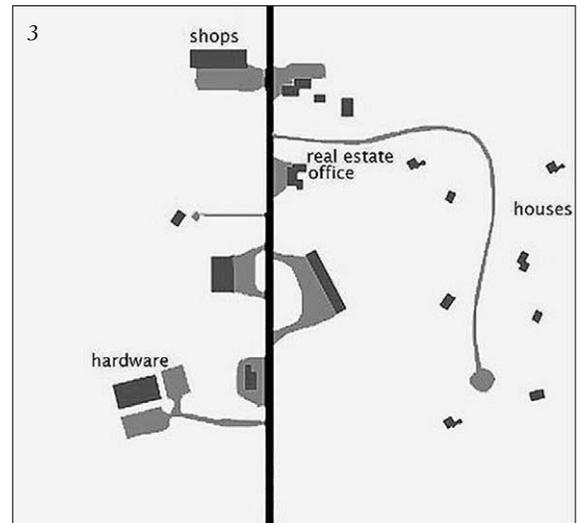
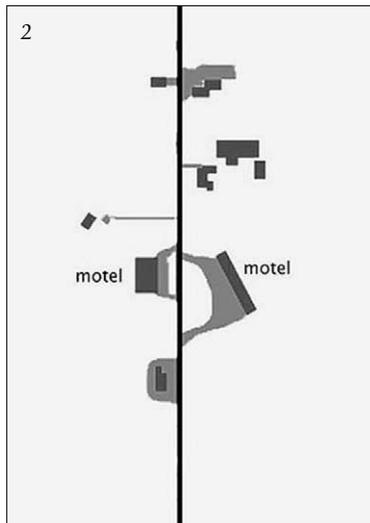
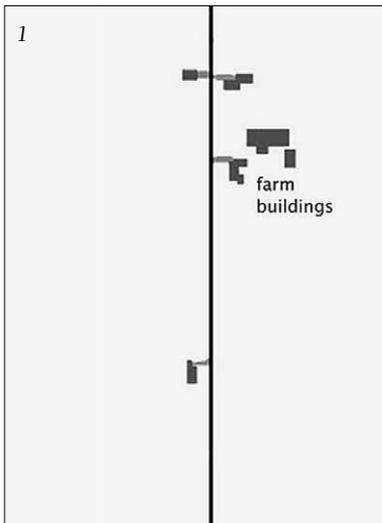
Access management is the planning, design, and implementation of land use and transportation strategies that control the flow of traffic between the road and surrounding land. Access management can bring significant benefits to the community, such as:

- Postponing or preventing costly highway improvements
- Improving safety conditions along highways
- Reducing congestion and delays
- Providing property owners with safe access to highways
- Promoting desirable land use patterns
- Making pedestrian and bicycle travel safer

THE LAND USE – TRANSPORTATION CONNECTION

In order to understand the role of access management, it is critical to keep in mind the close connection between land use and transportation. Highways provide access to land which enables the development of that land. Land uses generate vehicle, pedestrian, bicycle, and transit trips. In order to manage traffic along a highway, both land use and transportation strategies are necessary. To manage one without the other will result in congestion, deterioration of the highway corridor, and resident, business, and landowner dissatisfaction.

Not all highways influence land development in the same way. For example, interchanges attract industries and warehouses, whereas local streets pose problems for these uses due to weight limits, neighborhood conflicts, and limited maneuvering space.



Highway systems can be barriers or connectors between land uses. For example, interstates bisect communities and limit their interconnection to a few underpasses, overpasses, or exits. Alternatively, local street networks connect destinations within communities.

Traffic congestion and delays affect the desirability of doing business along parts of a highway corridor. Improvements designed to ease congestion often attract more traffic requiring more improvements in the future. Increased highway capacity may result in the spread of development to peripheral areas, leaving vacant and abandoned areas behind.

Traffic volumes and choices of mode of travel are influenced by the location, density and mixture of land uses. Communities that separate land uses reinforce driving as the mode of choice. Low density land uses also encourage driving and require longer travel times. More people walk in compact, mixed use centers.

The layout and design of land uses can affect the choice of mode of travel. Low density commercial and residential developments, often with big road setbacks, large lots, and low density, can discourage walking and bicycling. Buildings set far apart by vast parking areas, liberal landscaping and wide access roads discourage walking between uses. Connected sidewalks, attractive walking environments, and pedestrian crosswalks

in compact settlements encourage more walking trips.

Land use planning and access management need to work together. When communities plan for the future, they should be aware of how their land use plans will affect the levels of traffic, appearance, and points of congestion on highways.

CORRIDOR PLANNING

The focus of the "Access Management Guide" which follows is on how access management strategies can be integrated into the planning and design of major roadway corridors. Note the word corridor. It is important in thinking about roadways to consider not just the physical right-of-way, but also the area along the roadway. By looking at the entire corridor, a community can evaluate the traffic conditions, land use conditions, and historic, scenic, and environmental features; identify future problem areas; and make broad recommendations for the area.

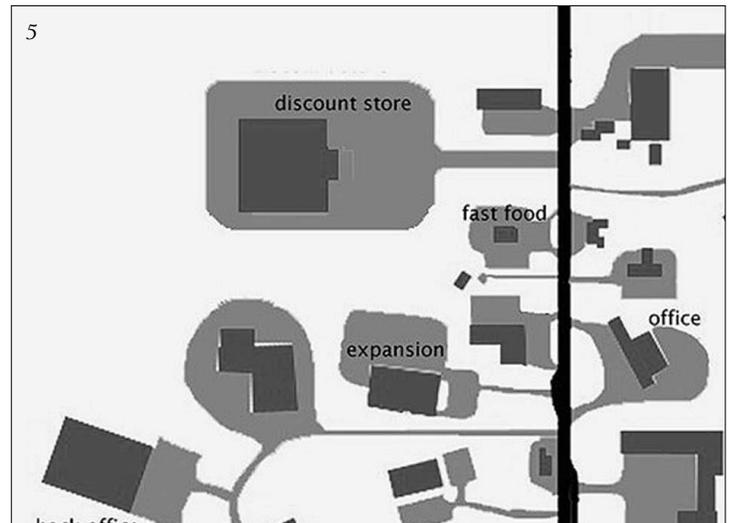
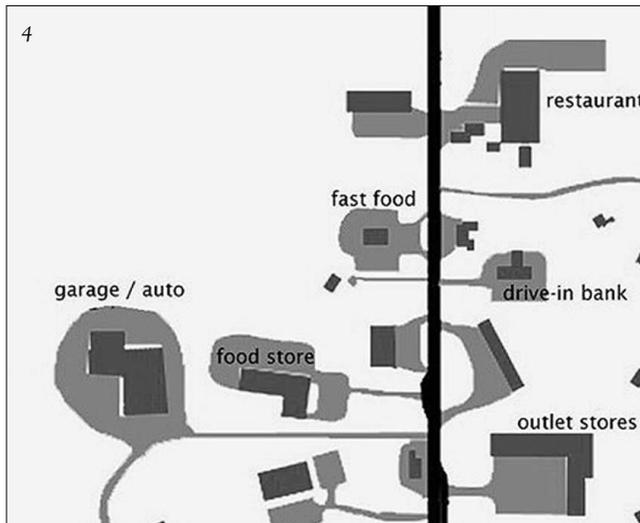
Corridor planning is most often undertaken with the assistance of a regional or county planning commission because many arterial and collector corridors serve regional transportation needs. If a corridor plan is being developed for a regional arterial highway, all communities along the highway will need to participate in the planning process.

Corridor planning requires broad

Planning Policies That Assist Access Management

1. Focus development in villages, urban centers or other growth centers.
2. Provide for mixed uses and higher densities than surrounding areas in these growth centers.
3. Do not plan narrow, commercial strips along highways.
4. Redesign existing strip development areas.
5. Limit development along arterial highways in rural settings.
6. Plan for a community street network.
7. Require master planning for large tracts of land.
8. Plan and design transportation improvements that fit with community character.

public participation. Local officials, regional or county planning representatives, property owners, businesses, and residents along the corridor, citizens, and representatives from the state transportation agency should be included. All of these people will be affected by the corridor plan and, therefore, must help establish the plan. ♦



Access Management: A Guide for Roadway Corridors

by Elizabeth Humstone & Julie Campoli

Land Use Strategies

Set development boundaries along a corridor

Avoid zoning that allows for a commercial strip along the length of the roadway. Existing strip development corridors may be defined in order to focus attention on remedies to existing conditions. However, these areas should not be designated to enable a continuation of bad practices that are causing congestion and decline in the character of the area.

Look for areas that can be zoned to serve as compact centers for development, such as existing village or urban centers or major road intersections. Check your municipal plan before defining these areas.

The boundaries of scenic corridors are often defined by land that is most visible from the road and has high scenic quality. For example, a corridor through an agricultural region will usually include the farm fields and farmsteads that can be seen from the road. A corridor in a gorge will include the steep slopes up to the height of land that is visible. Locate important historic, scenic, and environmental resources along a corridor

In order to implement land use strategies that protect these resources, the corridor management plan should clearly identify where they are located. In fact, this is typically required as part of federal or state agency review of major roadway projects.

Define appropriate land uses

Along rural stretches of road, limit uses to agriculture, forestry, outdoor recreation, conservation, and low density housing or compatible activities. Allow and encourage cluster residential development. Consultation with your municipal or county attorney is important to ensure that any proposed land use restrictions will not result in the “taking” of property requiring compensation.

In compact centers, provide for a balance of jobs, housing, and civic activities. Limit the scale of development to what is appropriate for your community.

Define standards for development — lot size, density, setbacks

Compact centers along a highway should have smaller lots and higher density than surrounding areas.

In existing and developing centers, buildings should be set close to each other and to pedestrian ways and main streets to encourage walking and shared parking.

In rural areas and scenic, historic, and environmental areas setbacks should be based on distances that would be most compatible with the character of the area and that would preserve resources.

Define land subdivision standards for lot layout, streets, driveways, and location of buildings

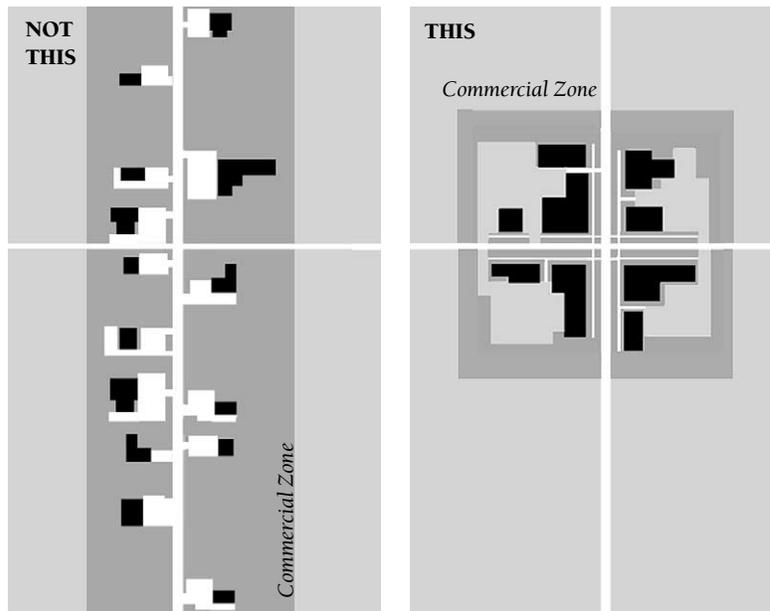
Look at the entire parcel. Lot layout should minimize linear development along a highway except in planned centers.

Access to arterial or collector highways should be restricted to secondary roads or one access point on the highway if there are no secondary roads.

In rural areas buildings and roads should be located off of important scenic or environmental resource lands

though cluster development.

Dead end streets, cul-de-sacs, and large “walled” developments should generally be avoided because they reduce access and contribute to congestion.



Avoid commercial strip zoning. Look for areas to serve as compact centers for development

Along undeveloped corridors, limit the scale and density of buildings. Isolated, large-scale and dense projects can create safety and congestion problems along otherwise smoothly functioning arterial highways.

Curb Cuts, Driveways & Parking

Limit number of curb cuts permitted per parcel or per linear feet of corridor

Restrict the number of curb cuts per parcel to one or none if alternative access exists through a secondary road or a shared driveway.

Reduce number of curb cuts along a corridor

Close excessive curb cuts on a corridor upon development or redevelopment of a parcel. Look for opportunities to share access among properties.

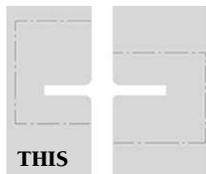
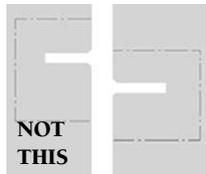
Separate curb cuts and intersections

Establish minimum distances between curb cuts and between curb cuts and public street intersections.

Plan for new street network

Map new secondary streets on which driveways can be relocated. Place proposed streets on an official map and plan for construction in a capital budget and program.

Align driveways



Align driveways

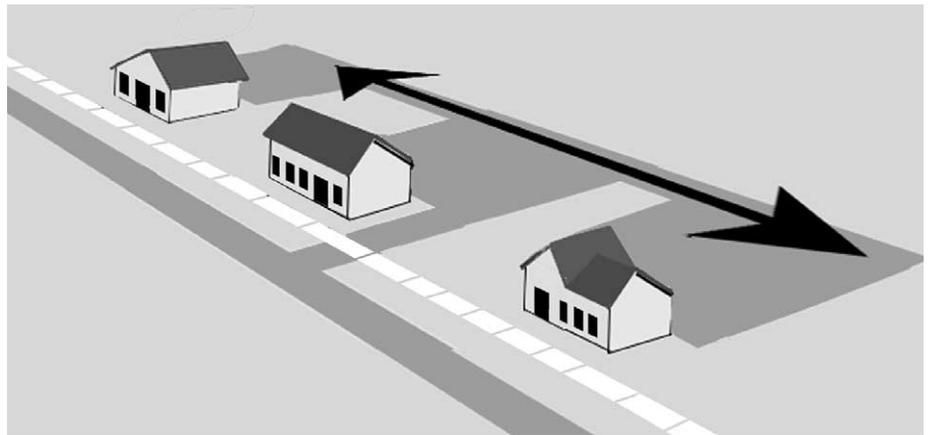
Align new or relocated driveways opposite each other or offset at least 125 feet from each other.

Relate driveway design to travel speed and traffic volumes

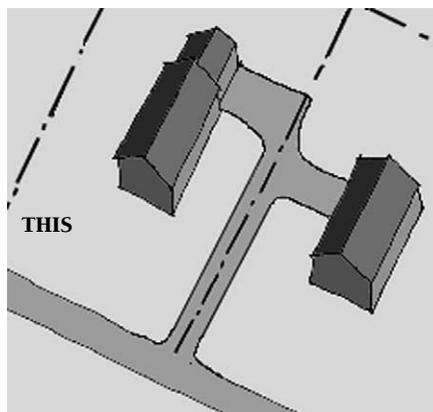
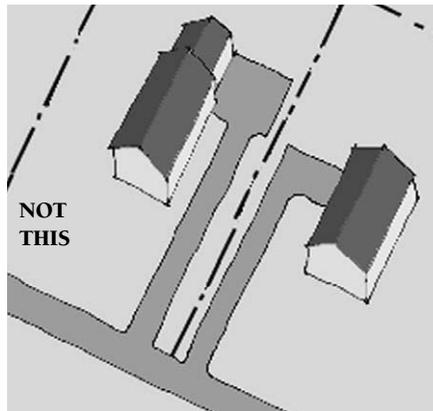
Relate the design of driveways, including width, length, and curb radii, to travel speed and traffic volumes on the corridor.

Require shared access and parking for new developments, expansions or redevelopments wherever possible

Consolidate parking lots and driveways to minimize paved areas. Plan for future shared parking by requiring reserved rights-of-way and reciprocal easements. Develop shared parking standards to reduce the amount of parking



Connect secondary roads or parking areas of the back of lots.



Require shared driveways.

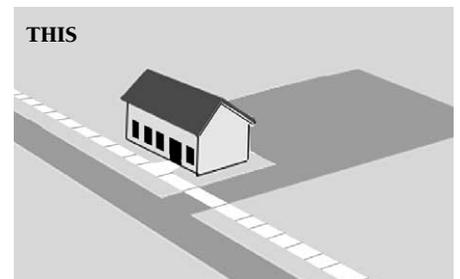
required for individual developments.

Prohibit direct parking access from a parking space to an arterial or collector

Prohibit parking that requires backing out onto the road except in downtowns and village centers where speeds are low.

Plan for public parking

Plan for municipal parking areas and



Locate parking areas behind buildings.

on-street parking in city and village centers to reduce on-site parking and encourage more compact development.

Require pedestrian and bicycle connections

Require sidewalks and other connections along roads where uses are concentrated and between buildings and parking areas. Provide for pedestrian crosswalks at regular intervals.

Make provisions for transit where applicable

Locate transit stops at reasonable intervals within and between centers and make provisions for pedestrian access between transit stops and buildings.

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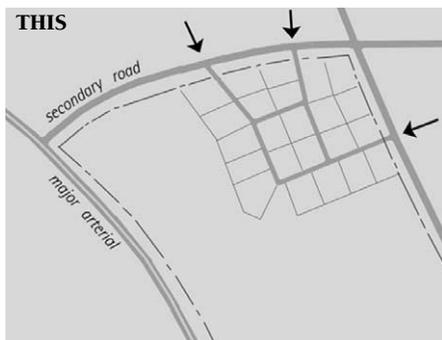
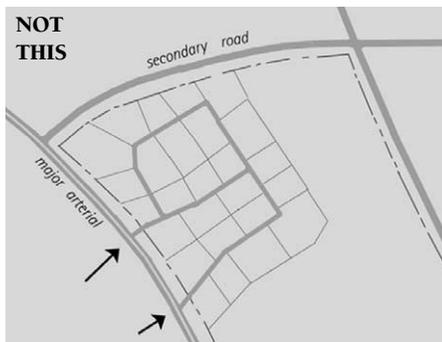
Site Development Strategies

The design of individual sites directly affects the success of access management along a corridor. Through site plan review and subdivision controls, a community can ensure that the subdivision and development of parcels are meeting its access management goals.

Viewing the Whole Parcel

In reviewing site development plans, look at the entire parcel rather than simply the particular project. If the parcel has frontage on a secondary road, access points should occur there and not on a major arterial or heavily-traveled collector.

The lay-out of parking and loading areas, and vehicular, bike, and pedestrian circulation patterns should be undertaken with the corridor plan in mind. Service roads, pedestrian links, shared parking areas, and other inter-parcel site components identified in the corridor plan should be implemented during site plan or subdivision review.



Access points should be from secondary roads, not from major arterials.

Lot Layout

- Subdivide parcels into lots that do not require direct access to the road.
- Provide access through a shared driveway or new street.

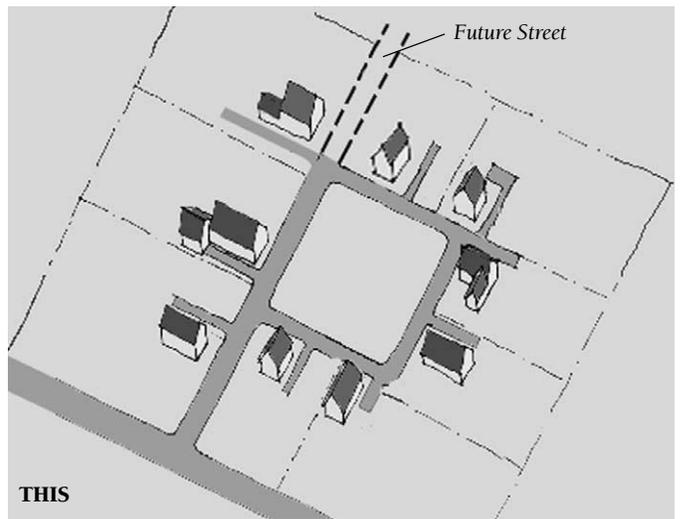
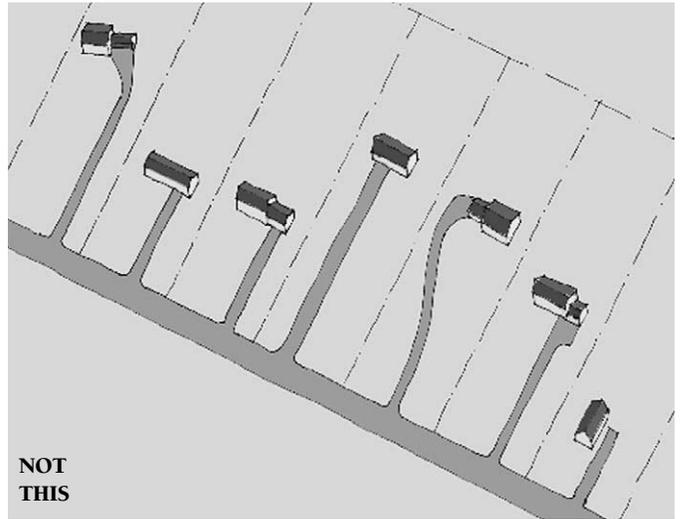
Parking Lot Location and Design

- Site commercial buildings close to the road with parking areas in the rear.
- Make provisions at the back of lots for secondary roads or parking areas that connect to other parcels.
- Require shared parking.
- Plan for future shared parking by requiring reserved rights-of-way and reciprocal easements.
- Prohibit parking and loading that requires backing out onto the road except in downtowns and village centers where speeds are low.

- Use landscaping to establish visual and physical boundaries between parking lots and roads.

Driveway Location and Design

- Restrict the number of curb cuts to one entrance and exit drive.
- Where excessive access exists, install curbing to limit access to one or two locations upon applications for expansions, redevelopments, or change of use.
- Require shared driveways between two parcels, at the property line.
- Provide adequate driveway length. Driveways should be long enough to allow adequate space for vehicles pulling off the road and stacking to enter the road.
- Align Driveways. Two-way drive-



Limit the number of access points

ways should intersect the road at an angle of 70 - 90 degrees.

- Provide adequate sight distance. Sight distances from a curb cut should be at least eleven times the speed limit.
- Alignment of highway at curb cut. Curb cuts located on sharp hills should be prevented. Driveway grades within twenty feet of a roadway should be no more than 3% uphill and 6% downhill.

Pedestrian and Bicycle Considerations

- Require sidewalks in new developments and sidewalk connections between parking lots and building entrances, and between sites.
- Install crosswalks at intersections. Install mid-block crossings where necessary.



Reduce excessive curb cuts and define boundaries

- In downtown locations or between destinations where pedestrian activity is heavy, provide safe crossing opportunities through bump-outs or median refuges.
- Set sidewalks back from the road. Require on street parking or landscaping to create a buffer between sidewalks and moving traffic.
- Service roads and driveways should have limited widths and curb radii to contribute to a low speed environment (10-15 mph).
- Minimize pedestrian - vehicular conflict points in the orientation and configuration of parking areas and the location of driveways.
- Provide bike racks and storage areas near entrances to public buildings, including civic, commercial, and industrial buildings. ♦

Elizabeth Humstone is principal of Humstone Associates in Burlington, Vermont. Humstone has worked on a wide range of planning studies and projects. She is also Chair of the State of Vermont's Housing & Conservation Trust Fund Board.



Julie Campoli is a landscape architect and principal of Urban Design & Landscape Architecture, based in Burlington. Campoli is also a member of the Burlington Public Works Commission.

Material from this article was derived from the author's "Access Management Guidebook" prepared in 1996 for the Northwest Regional Planning Commission in St. Albans, Vermont.



Turning Traffic

The accommodation of turning traffic should be based on the traffic volume, capacity, and character of the roadway and the needs of other modes of travel, including pedestrians and bicycles. Low volume roads with no major congestion or safety problems may not need turning lanes. Widening of rural, scenic roads, and village streets to handle turning movements could harm the character of these routes.

The addition of turning lanes can also make pedestrian crossings more difficult and create conflicts with bicycles. Special accommodations of turning movements, such as signals, can impede traffic flow. These factors need to be weighed in the decision to accommodate turning movements.



Resources:

An extended version of this article, including additional material on the link between access management and municipal plans, and on strategies for implementing access management will be available at the *Planning Commissioners Journal* web site: www.plannersweb.com

Kirk R. Bishop, *Designing Urban Corridors*, American Planning Association, Planning Advisory Service Report No. 418, Chicago, Illinois, 1989.

Chester E. Chellman, *Traditional Neighborhood Development Street Design Guidelines*, Institute of Transportation Engineers, June 1997. 525 School Street SW, Suite 410, Washington, DC 20024-2797.