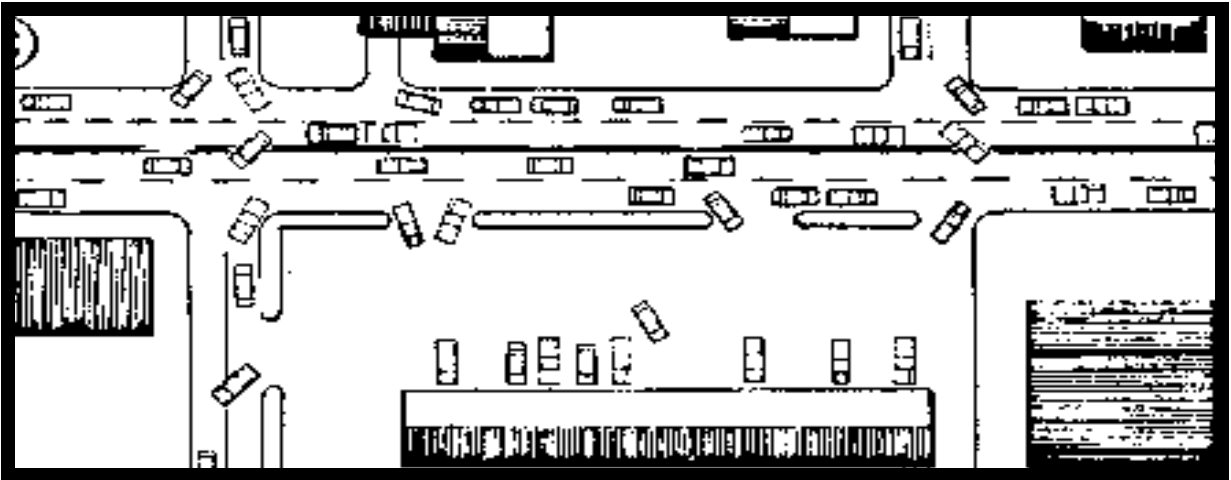


LOCAL ACCESS MANAGEMENT MANUAL



OVERVIEW

While communities are becoming increasingly concerned about the effects of development on community character, quality of life and the costs of providing services-especially transportation improvements, conventional regulatory practices have only perpetuated these land development problems. The most clear evidence of this trend is the cycle of functional obsolescence created by strip commercial developments along major arterials. Unarguably, the practice of strip zoning major corridors has been widespread. Ease of accessibility and expedience are the primary reasons for such zoning. The extension of utilities along highway ROW's further promotes this pattern of development, and commercial developers favor these locations because of low development costs and ready supply of customers.

As this form of development intensifies, the growing number of curb cuts (driveways) and resultant turning movements conflict with the intended function of arterials - to move people and goods safely, quickly and efficiently. Unlike downtown centers, commercial strips are rarely designed for pedestrians or transit use, and due to the linear development pattern, pedestrian amenities are largely unsuccessful (Kittery, Maine).

The most damaging result of strip development is reduced level of service of the arterial, which is typically remedied by adding lanes, raised medians, signalized intersections, and other expensive retrofitting measures to try to maintain the capacity of the corridor for regional traffic. Heavy traffic, coupled with undesirable traffic control measures, often cause businesses to relocate from the corridor, increasing vacancies and lowering property values. As illustrated, the initial costs borne by the developers of strip commercial corridors are low, yet the long term public cost to remedy negative effects on the corridor are substantial.

This cycle and pattern of development is widespread, but not inevitable; it directly relates to the lack of adequate regulatory and access controls-common problems in current planning and regulatory practice.

This manual examines regulatory techniques that support multiple aspects of access management.

THE REGULATORY ASPECTS OF STRIP DEVELOPMENT

No state agency has the authority to prevent strip development, or to prohibit access to land abutting State highways. The State of NH Department of Transportation has jurisdiction over access to State highways, but it is limited. NHRSA Chapter §236 regulates driveways and other accesses to State highways including the permitting process, sight distance, numbers of permitted driveways, drainage, and maximum geometric standards for commercial driveways. NHDOT cannot deny access to properties that abut State highways by withholding driveway permits. Although the NHDOT cannot prevent strip development, driveway permits issued by the NHDOT do not override local regulatory requirements.

Absent State regulation of strip development, only local government can control development along State highways. Local governments have the authority to prepare and adopt master plans and zoning ordinances to guide development patterns and limit or prohibit strip development. Additionally, through proper and appropriate subdivision and site plan review regulations, local governments can enact access management controls to regulate the placement and design of driveways.

WHAT IS ACCESS MANAGEMENT?

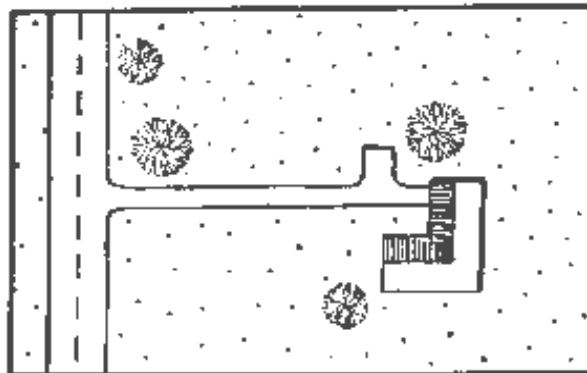
For the purpose of this manual, access management means local oversight of all means of vehicular access onto public highways in order to maintain the safety and efficiency of the road. Practically, it means appropriately spacing or limiting the number of driveways while also, and as a result, removing the slower turning vehicles from the highway as efficiently as possible. The access management tools contained in this study are both preventative; designed to be implemented prior to the development of a highway, and restorative; designed to increase the efficiency of existing points of access. The tools contained herein may be inserted via amendment into a community's existing regulatory scheme, including zoning, site plan review, and subdivision regulations.

Implementing access management at the local level requires several components, explained herein, including the master plan, zoning, site plan review regulations, subdivision regulations and in some cases a conceptual access management plan and memorandum of understanding with NHDOT.

THE TOOLS:

1. ZONING:

- A. SETBACKS.** Adequate setbacks should be required to allow for flexibility in locating driveways, future frontage road construction, adequate driveway throat-length, and to accommodate future right-of-way and/or roadway widening including the addition/extension of sidewalks or bicycle paths/shoulders. As highway rights-of-way vary in width, it is suggested that setbacks be measured from the centerline of the highway. It is recommended that building setbacks be no less than **110'**. Additionally, undeveloped front yards should be required to be no less than **40'** in width.
- B. FRONTAGE.** Increasing minimum frontage requirements effectively reduces the potential number of access points onto a highway. For lots within zoning districts with a minimum lot size less than 1 acre, the recommended minimum frontage is **250'**. Lots in districts requiring larger minimum lot sizes should be required to have \pm **400'** of frontage.
- C. DRIVEWAY TURN-AROUND AREAS.** This regulatory requirement may be added to a Zoning Ordinance, although it may also be adopted as a Selectmen's Ordinance, as it will be largely applied to private residential driveways. A driveway turn-around merely eliminates the necessity to back onto the highway, reducing the potential for collision.



- D. SIGNS.** While sign regulation is not a usual component of an access management regulatory scheme, two very specific tools are offered for consideration. Off-premise signs, not limited to billboards, create visual confusion, which in turn can have the potential of creating traffic hazards. It is recommended that along appropriate highway corridors, off-premise signs not be permitted.

Setbacks. Freestanding sign location(s) should be sufficiently regulated so that they provide adequate information without causing confusion for the traveling public. Specific setback requirements must be based upon several factors, including the posted speed of the road, building setback requirements, dimensional standards for size including area and height, and lighting method.

- E. ACCESS MANAGEMENT OVERLAY DISTRICT.** The use of overlay districts as a method for managing access along commercial corridors is rapidly increasing across the United States and will likely become a useful planning tool in New Hampshire. The tool is used to overlay a special set of requirements onto an existing district, while retaining the underlying zoning and its associated requirements. Language that specifies standards for the Access Management Overlay District is integrated into the zoning ordinance while corridors (overlays) are designated on the zoning map. Overlay district requirements may address a myriad of access management issues including joint access, interconnecting driveways, driveway spacing, as well as limitations on new driveways.

- F. MIXED-USE ZONING.** For the purposes of this manual, mixed-use zoning refers to the practice of allowing a broad and diverse range of land uses both within established districts, and throughout town. The purpose of creating a broad mixture of uses is to reduce the number of vehicle trips necessary for work, shopping, recreation and other purposes, all of which can contribute to reduced levels of service of a corridor. Many communities are identified as, and have made concerted efforts to become, residential 'bedroom' communities. The residents of these communities, because local employment and other opportunities are scarce or nonexistent, must travel out of town to meet their needs. Conversely, allowing mixtures of land uses within zoning districts can have the effect of reducing the number of trips generated, at least within the district.

2. SITE PLAN REVIEW:

- A. MINIMUM DISTANCE BETWEEN DRIVEWAYS.** The minimum distance between driveways on the same and opposing side of a highway (unless otherwise specified in section 1 next below), including all road intersections shall be measured from the centerline of the driveways at the right-of-way line and shall be a function of the posted speed in accordance with the following table:

MINIMUM DISTANCE BETWEEN DRIVEWAYS

Highway Speed	Minimum Spacing
35	150'
40	185'
45	230'
50	275'

SOURCE: "Access Management for Streets and Highways,"
Federal Highway Administration, 1982

1. The centerlines of all new driveways should be aligned with driveways, and road intersections on the opposing side of the highway, if they exist. If such an alignment is not feasible, the driveways shall be offset in accordance with Section A, above.
- B. DRIVEWAY WIDTH.** Commercial driveways shall not exceed 36 feet in width, measured perpendicular to the driveway at its narrowest point. The driveway shall be flared at the property line with minimum radii of 25'. All commercial driveway entrances (regardless of the presence of curbing on the highway) shall be curbed from the edge of the highway to at least the end of the radii at the driveway throat.
- C. MAXIMUM NUMBER OF DRIVEWAYS PER LOT.** Lots which have frontage on one highway only shall be allowed a single driveway, except that two, one-way driveways may be substituted for a single driveway, provided that the minimum required distance between driveways can be met.

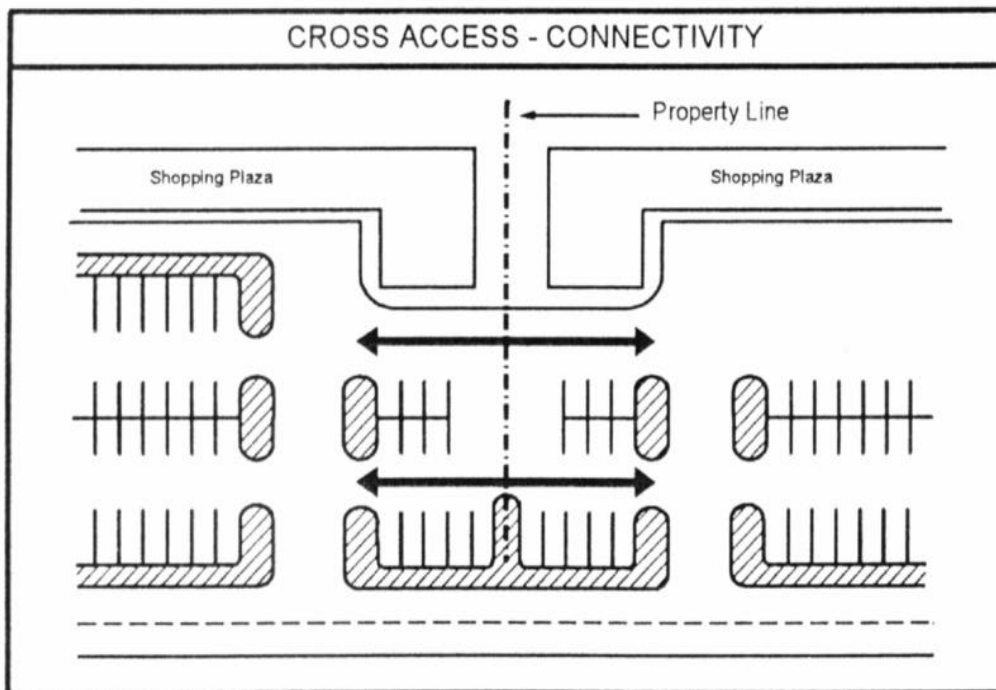
D*. **SHARED DRIVEWAYS.** In order to minimize the number of driveways along highways, shared driveways shall be encouraged for adjacent sites. The following **(OPTIONAL)** dimensional requirements may be reduced if shared driveways are provided as follows:

1. The minimum lot size and the minimum road frontage shall be reduced by a total of 10% if the entire site is accessed by a single shared driveway with an adjacent site.
2. The minimum lot size and the minimum road frontage shall be reduced by a total of 20% if the entire site is accessed by a single shared driveway with an adjacent site on a highway other than the main arterial, and which is appropriately zoned for the use.

** This Site Plan Review Regulation would necessitate an amendment to the relevant section of the Zoning Ordinance.*

E. **INTERCONNECTING DRIVEWAYS.** All projects subject to Site Plan

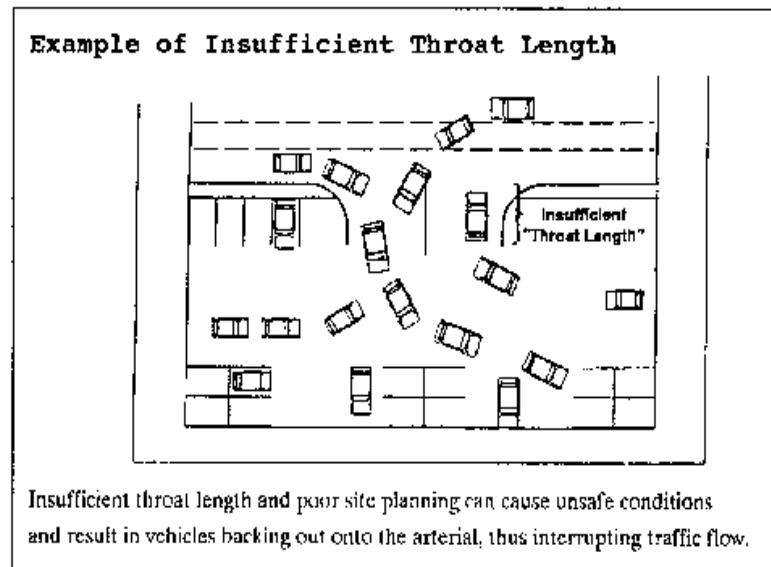
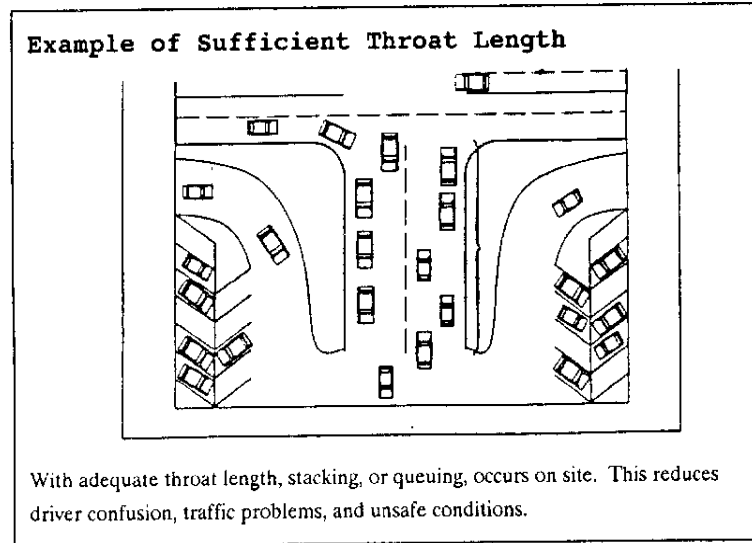
Review shall provide interconnecting driveways or easements for future construction of driveways that will provide and promote vehicular and pedestrian access between adjacent lots, without accessing the highway to all property lines, and shall be designed to provide safe and controlled access to adjacent developments where they exist. Every effort should be made by the Planning Board to require construction of these driveways in anticipation of future developments.



- F. **ACCESS TO LOTS WITH MULTIPLE FRONTAGES.** Lots with frontage on both an arterial highway and an adjacent or intersecting road shall not be permitted to access the arterial highway, except where it can be proven that other potential access points would cause greater environmental or traffic impacts.

- G. **DRIVEWAY (THROAT) LENGTH.** The minimum length of a driveway

shall be of adequate length to accommodate the queuing of the maximum number of vehicles, as defined by the peak period of operation identified in the traffic study. The design of the driveway shall, to the maximum extent possible, cause no vehicles waiting to enter the site, to remain on the highway.



- H. CORNER CLEARANCES.** Lots with frontage on an arterial highway and an adjacent or intersecting road, which, due to environmental or traffic impacts, cannot access the adjacent or intersecting streets shall comply with the following standards:

Minimum Standards for Corner Clearance		
	Signalized Intersection - feet	Stop Sign Controlled Intersection - Feet
A	230	115
B	115	115
C	230	85
D	230	115

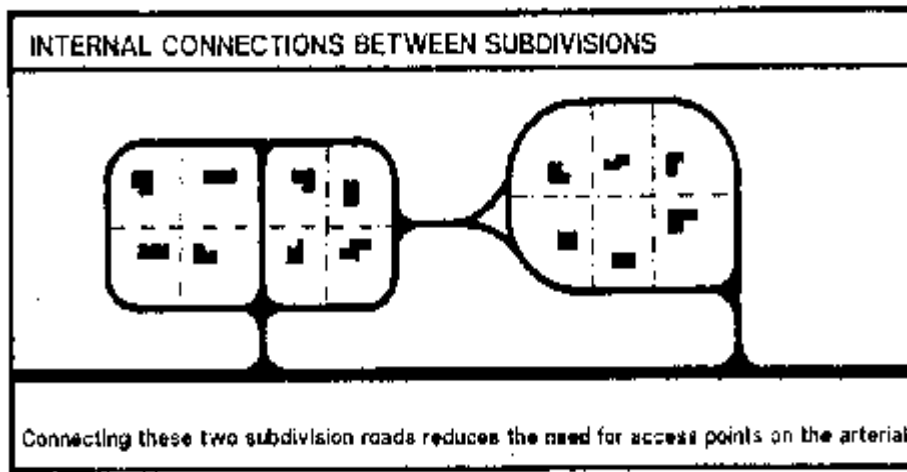
The above dimensions assume a 30 mph operating speed. For rural and other high speed roads, clearances shall be two times as great as the numbers shown.

Source: "Transportation and Land Development,"
Institute of Transportation Engineers, 1988.

- I. ADEQUATE ON-SITE CIRCULATION AND STORAGE.** Adequate aisle widths, raised medians, tractor-trailer access, and number of parking spaces promotes safe and efficient movement into and out-of the site.
- J. LANDSCAPING, BUFFERING.** Landscaping and buffering is especially important along road frontages, and within parking lots. Adequate buffers and properly designed landscaping assists in the identification of driveway entrances and necessary signage, in addition to controlling light diffusion onto abutting properties. Landscaping located within raised medians, separating aisles of parking spaces, controls internal lot circulation and establishes safe and efficient traffic patterns.

3. SUBDIVISION:

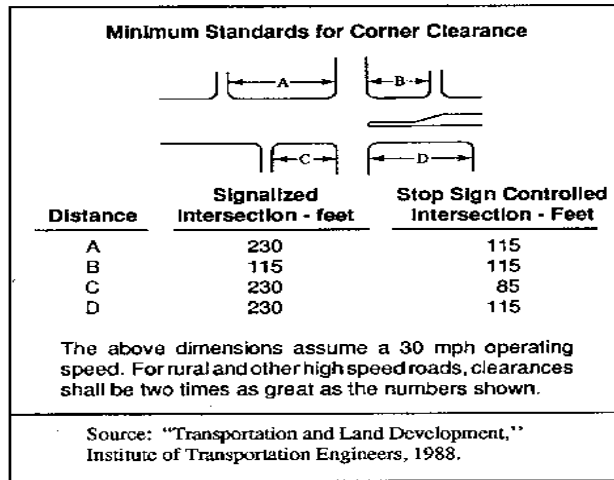
- A. INTERCONNECTING DRIVEWAYS.** All projects subject to subdivision Review shall provide interconnecting driveways or easements for future construction of driveways that will provide and promote vehicular and pedestrian access between adjacent lots, without accessing the highway to all property lines, and shall be designed to provide safe and controlled access to adjacent developments where they exist. Every effort should be made by the Planning Board to require construction of these driveways in anticipation of future developments.



- B. ACCESS TO LOTS WITH MULTIPLE FRONTAGES.** Lots with frontage on both an arterial highway and an adjacent or intersecting road shall not be permitted to access the arterial highway, except where it can be proven that other potential access points would cause greater environmental or traffic impacts.

- C. CORNER CLEARANCES.** Lots with frontage on an arterial highway and an adjacent or intersecting road, which, due to environmental or traffic

impacts, cannot access the adjacent or intersecting streets shall comply with the following standards:



D. MINIMUM DISTANCE BETWEEN DRIVEWAYS. The minimum distance between driveways on the same and opposing side of an arterial highway (unless otherwise specified in section 1 next below), including all road intersections shall be measured from the centerline of the driveways at the right-of-way line and shall be a function of the posted speed in accordance with the following table:

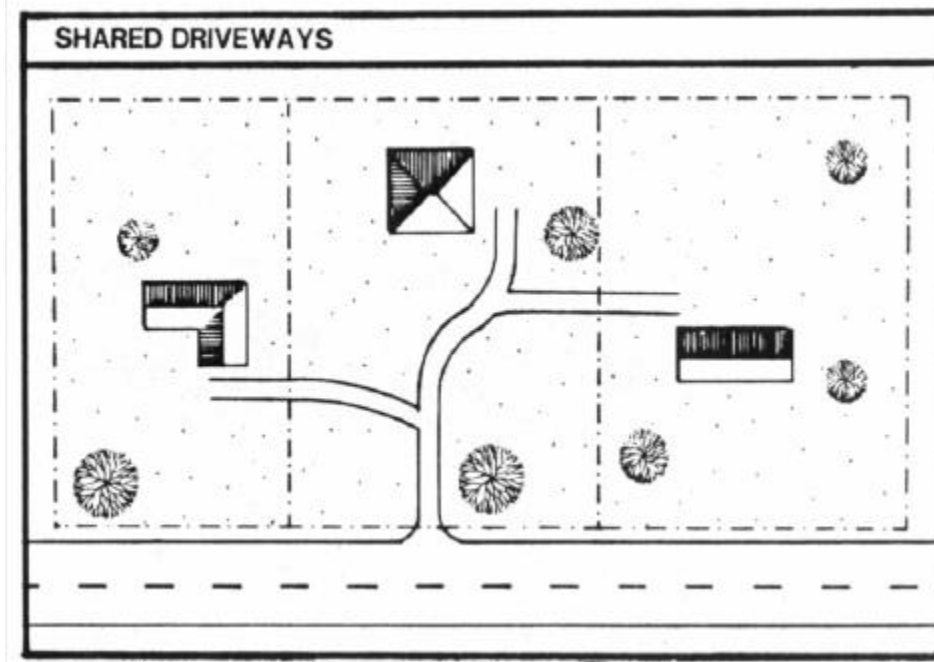
MINIMUM DISTANCE BETWEEN DRIVEWAYS

Highway Speed	Minimum Spacing
35	150 feet
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SOURCE: "Access Management for Streets and Highways,"
Federal Highway Administration, 1982.

E. SHARED DRIVEWAYS. In order to minimize the number of driveways along arterial highways, shared driveways shall be encouraged for adjacent

residential sites.



4. ADDITIONAL COMPONENTS OF ACCESS MANAGEMENT:

- A. **ACCESS MANAGEMENT PLAN/MEMORANDUM OF UNDERSTANDING.** An Access Management Plan is a graphic

representation of the arterial being managed, developed in cooperation/consultation with abutting and affected landowners. The Plan is an advisory tool of sufficient detail (parcel specific) which delineates present and future driveway locations; joint accesses; intersections, including present and future plans for signalization; and frontage/service roads. The purpose of the Plan is to provide for the orderly development/redevelopment of the corridor in compliance with the access management standards adopted by the town. Prospective developers of properties along the corridor should be required to incorporate and construct the appropriate components of the Plan into their development plans. The Memorandum of Understanding is an agreement between the municipality and the NHDOT whereby NHDOT agrees to cooperate with the (planning board) in the implementation of the access management plan through the driveway permitting process.

B. MASTER PLAN. Access management is only one of a myriad of aspects of planning for the future of a community. It is a tool which can be used to better facilitate the movement of people, goods and services within and through communities. Ideally, access management should be developed as a product of the master plan. Proper access management standards are best implemented after a community has determined:

1. Land Patterns. Where development should be encouraged and where it should be limited. Of paramount importance, future land use decisions will likely have more of an impact on traffic conditions than access management alone in reducing future traffic problems on arterial highways;

2. Traffic Flow. The extent to which arterial traffic volumes have increased in recent years and are likely to increase in the future; and

3. Plan's Relationship to Access Management. How the community's transportation and land use policies can be enhanced by sensible access management standards.

The Purpose of the Master Plan. A local master plan is an important policy document which establishes the desired future pattern of development. There are a number of ways in which the master plan can address access management issues and establish a basis for an effective access management program.

Goals & Policies. The goals and policies established in the Master Plan can directly address strip development by making recommendations such as:

- # Designating compact growth areas and limit the amount of development that can occur along less developed/rural arterials;
- # Prohibiting strip development along arterial highways where appropriate, including a proliferation of single lot development;
- # Including standards in the Site Plan Review and Subdivision Regulations to ensure that development along highways does not significantly reduce traffic safety and carrying capacity;
- # Requiring traffic impact analysis for all Site Plan Review and Subdivision applications exceeding a prescribed threshold;
- # Addressing alternative modes of transportation such as bicycles, buses and trains. Transportation Demand Management (TDM) options such as vanpools, carpools, as well as the provision of bicycle lanes, pedestrian amenities and bus stops may also be included.

Future Land Use Plan/Map. The Town's future land use plan/map should include recommended zoning districts which direct growth away from arterial highways, where possible. Land abutting these highways may be down-zoned while more appropriate growth areas are rezoned to allow for a more dense pattern of development.

C. FRONTAGE/SERVICE ROAD PROVISIONS. The planning and development of future frontage/service roads involves the adoption and coordination of several of the tools presented in this manual. The intended difference in the meaning of frontage and service roads merely relates to the physical location of the road. Frontage roads are roads which run parallel to the arterial, providing access to those businesses which now front on this road, instead of directly accessing the arterial. Relocate the frontage road away from the arterial and they become service roads. The proper development of frontage/service roads will require coordination of (at a minimum) the following community planning and regulatory tools:

1. Establish the need for Access Management.
! Master Plan (Transportation & Land Use Chapters)
2. Prohibit direct arterial access.
! Access Management Plan.
- 3.* Require ample front setbacks, free of structures and parking

lots.

! Zoning Ordinance.

- 4. Identify the highway as an Overlay District

! Zoning Ordinance.

- 5. Provide allowances for constructing frontage service roads in the applicable buffer areas.

! Site Plan Review Regulations.

* Frontage roads may be constructed within either the State ROW, a newly created Town ROW, or within the front buffer of the subject parcel.

Additional Notes:

ADDITIONAL SOURCES OF ACCESS MANAGEMENT INFORMATION:

Publications:

Access Management Guidelines for Activity Centers, Koepke, Levinson; National Academy Press, NCHRP Report 348, 1992.

A Recommended Practice: Traffic Access and Impact Studies for Site Development, Institute of Transportation Engineers, 1989.

Community Planning Handbook: Tools and Techniques for Guiding Community Change, Wyckoff, Williams, Armstrong, et al, Planning and Zoning Center, Inc. 1992.

Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development, Yaro, Arendt, Dodson, Brabec; Lincoln Institute of Land Policy and Environmental Law Foundation, 1993.

Guidelines for Driveway Location and Design, Institute of Transportation Engineers, 1987.

Handbook of Subdivision Practice, New Hampshire Office of State Planning, 1972.

Institute of Transportation Engineers: Transportation and Land Development, Prentice Hall, 1988.

Land Division and Access Controls, Williams, McCauley, Wyckoff; Lansing: Planning and Zoning Center, Inc. 1990.

New Hampshire Practice: Volume 15, Land Use Planning and Zoning, Second Edition, Loughlin, Peter. Butterworth Legal Publishers, 1993.

Synthesis of Highway Practice: Land Development Regulations that Promote Access Management, Transportation Research Board, National Academy Press, 1996.

The New Illustrated Book of Development Definitions, Moskowitz, Lindbloom; Center for Urban Policy Research, 1993.

Internet Web Sites:

www.accessmanagement.com