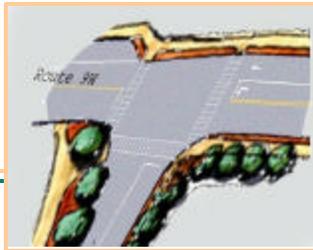




Access Management
Guidelines



Moving Forward:



The
Ulster County
Transportation Plan



Prepared for
The Ulster County Planning Board
April 2003

PIN # 8808.28.121

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The Ulster County Access Management Guidelines were prepared as part of the development of the Transportation Plan for Ulster County. Access Management recommendations for the County are included in the Plan. The Guidelines were written under the direction of the Technical Advisory Group.

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Ulster County Access Management Guidelines

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Ulster County Access Management Guidelines



The Ulster County Access Management Guidelines (the *Guidelines*) were prepared to provide a roadmap for use by municipalities in enhancing the safety and quality of their access management and roadway environments. It was prepared as part of the Ulster County Transportation Study (the *Study*) to serve as a companion document to the *Ulster County Transportation Plan* (the *Plan*). The *Plan* will present the findings and recommendations of the full *Study* on a range of transportation issues including access management.



Purpose of this Primer

These *Guidelines* are intended to provide County, City, Town, and Village officials with a general framework for consideration of how to most effectively implement access management within their borders. The *Guidelines* offer basic information on access management goals, issues, and approaches on both in-the-field and planning steps. Together these actions will improve the safety of roadways and reduce vehicle conflicts.

In order to keep clear the relevance of the concepts discussed, the *Guidelines* will present a number of illustrative examples from within the County of the concepts it presents and the issues it discusses.



Introduction

What is Access Management?



According to the Federal Highway Administration Access Management is *“the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding road system in terms of safety, capacity, and speed. It attempts to balance the need to provide good mobility for through traffic with the requirements for reasonable access to adjacent land uses.”* Access Management is a key component in the maintenance of an efficiently functioning highway system in Ulster County. As growth occurs over the next twenty years, there will be tremendous pressure to simply add driveways and curb cuts along existing roadways. This approach, over time, reduces the ability of important components of the highway system to carry traffic safely and efficiently. With the likelihood that only limited funding will be available in the foreseeable future for new highway construction the County must make effective use of the road system that is currently in place. Access Management combined with the tools discussed in the other Ulster County Transportation Plan Primers can insure growth and mobility will be accommodated into the future.

Benefits of Access Management

Benefits of Access Management Techniques:

- Fewer crashes and safer roadways
- Fewer traffic delays
- Fewer potential conflicts with vehicles entering or leaving the roadway
- Fewer driveways to cross for bicyclists and pedestrians
- A safe place for pedestrians to stand in the middle of the street if medians or islands are used
- Better overall access to developments because traffic will flow more smoothly
- Decreased roadway costs
- Increased capacity per lane of roadway
- Gateway and other roadway amenities can be added to improve the appearance of an area
- Unsightly strip development can be avoided

As described below implementing access management techniques improves safety, preserves highway capacity, helps the economy and environment, and saves tax dollars:

Increased Safety

One significant benefit of access management involves traffic safety. Studies in Iowa have shown access management projects are able to reduce average accidents per vehicle mile traveled by forty (40%) percent with a significant drop in personal injury accidents.

Highway Capacity

Studies have shown that access management techniques can improve peak hour levels of service. Travel speeds on managed corridors are shown to be considerably higher as well.

Economy and Environment

Some access management techniques, such as medians, are often of concern to business owners. Once in place however, case studies generally show improvement in sales activities. Avoidance of capacity additions, such as lane widening, along with lessening delays results in reduced auto emissions and stormwater runoff.

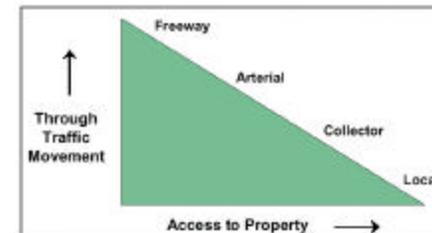
Tax Savings

Access management will save tax dollars by minimizing the need for additional traffic improvements. Research has also shown that poorly managed corridors experience economic decline as businesses choose less congested locations. Properly managed

Responsibility for Access Management

corridors maintain the vitality longer and are easier to re-develop.

All levels of government, State, County, and municipalities have some responsibility in managing access to the highway system. In Ulster County, all these levels of government require curb-cut permits to connect to the highway system. But it is the municipality through their authority to control the type and intensity of development and the subdivision of land that plays a decisive role in the overall success of access management.



Functional Integrity

Source: Iowa Access Management handbook

Basics of Access Management

Simply put, the goal of access management is to reduce traffic conflicts. That reduction should be consistent with the functional classification (purpose) of the roadway. The concept is easy to understand if one envisions the NYS Thruway as the most restricted with no direct adjoining property access; Frank Sottile Boulevard in the Town of Ulster, with predetermined major property access points; signalization, turning lanes and turning restrictions; NYS Rt. 28 allowing direct property access with center median controls at critical locations; and local streets with property access by individual curb-cuts. Each level of access management reflects its function in the hierarchy of the highway system.

Three basic strategies are available to reduce traffic conflicts:

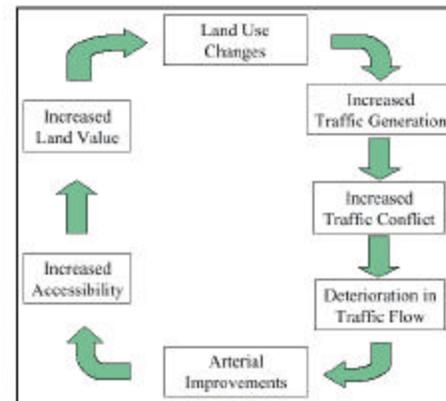
- limit the number of conflict points experienced by a vehicle along the corridor
- widen the distance between conflict points that cannot be removed
- provide space outside through traffic lanes for slower or stopped vehicles

At the height of their effectiveness, the success of these techniques rests on the effective merging of transportation and land use goals. Those factors associated with transportation are:

- curb-cut management – link, reduce, define
- traffic control points – signal systems, turn restrictions
- roadway design – turning lanes, medians

Primary land use concerns associated with access management relate to:

- Zoning, Site Plan and Subdivision Regulations
- Development Guidelines
- Comprehensive Plans



Transportation Land use Cycle

Source: Iowa Access Management Guidelines

Planning for Access Management

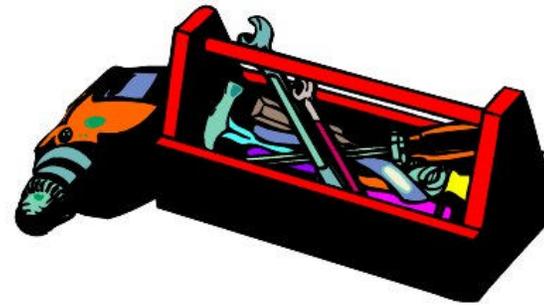
Access Management should be part of the comprehensive planning process for all transportation and land use decision-makers. The intensity of development along critical corridors, growth areas, etc., coupled with access management techniques at this level as well as for individual projects will forge a cohesive approach. Ideally, access management is a cooperative effort among all stakeholders: landowners, state, county, local highway departments, and local government approval agencies. That said, local governments bear the primary burden in its success. Municipalities have substantial regulatory powers available, such as zoning and subdivision approval as well as site plan review to accomplish access management goals once articulated. In an effort to meet community goals for safe streets and quality-of-life issues, communities can often require actions where other agencies lack authority or beyond what they deem acceptable. Access management is most efficient applied early in the planning process and adds little cost. Where reuse of existing sites is proposed, the application of access management techniques can alleviate existing safety and congestion problems.

Access Management **Toolbox**

The Toolbox contains techniques for managing highway access. When properly applied these can preserve the functional integrity of roads, allow for efficient and safe flow of traffic and give adjacent property owners an appropriate amount of access. Their consistent application in a corridor will reduce driver confusion and unexpected conflicts. The Toolbox contains three major areas:

- **Driveway Control**
- **Roadway Design**
- **Site Layout**

With each major category, you will find several techniques available to assist the community in preserving the transportation infrastructure of Ulster County.



Driveway Control

As the title suggests, some of the most important techniques in access management relate to control of driveways. Tools are available to eliminate, minimize, restrict, design and locate.

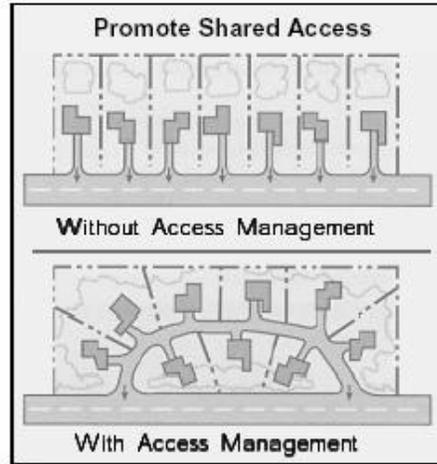
Limit Driveway Connections

Private individual residential driveways should only intersect with local streets and should be prohibited from intersecting with arterials. It is not always appropriate that commercial driveways intersect with collectors and arterials because of the higher trip generation associated with these types of developments. By combining driveways, reducing lengths of commercial strips, and providing reverse frontage roads, many conflict points can be eliminated. In many cases, however, these intersections will carry as much traffic as the intersection between two arterials making the connection a necessity. For example, the main Hudson Valley Mall entrance with Route 9W carries 6,600 vehicles per day on a typical weekday and much higher seasonal volumes.

The historic patterns of development along roads in Ulster County make the strict application of this hierarchical principle impossible. Residential driveways exist in the County that intersect with arterials and collectors. The goal should be to apply these principals as part of redevelopment approvals as well as where future development continues.

Restrict the Number of Driveways per Lot

In Ulster County, there have been many parcels developed in the past with multiple driveways for one lot. Municipalities can establish standards to allow only one driveway per parcel, with special conditions for additional driveways (e.g. for corner lots allowing one driveway per street). The standard could be established as part of zoning and subdivision statutes. Implementation would occur during site plan and subdivision approval. Parcels that were subdivided later, would be permitted only one shared driveway to serve the original lot and any new parcels.



Source: Center for Urban Transportation Research

Driveway Control

Eliminate - where possible, driveways should be eliminated. Access, if needed can be alternatively satisfied from secondary or side roads.

Minimize - where access is required, techniques such as reverse frontage roads and allowing only one curb-cut per use are available.

Restrict - restrictions on turning movements eliminate conflict points.

Locate - adequate separation from intersections and other driveways are key safety considerations

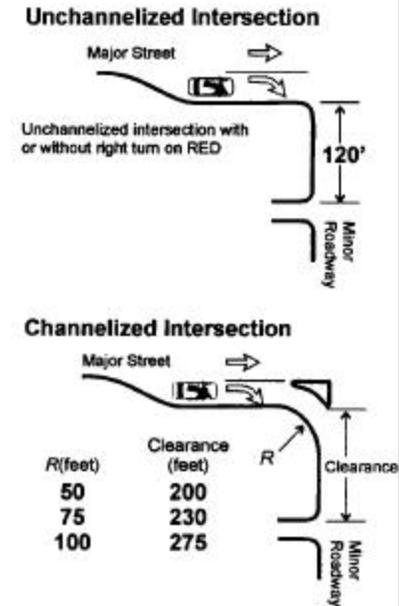
Design - turning radius and throat length all play a role in reducing conflict points and increasing driver reaction time.

*Provide Adequate Driveway Spacing
From & Between Intersections*

Driveways near intersections create increased conflicts between vehicles waiting at traffic signals or stop signs and vehicles turning into and out of the driveways. If the driveway is on the upstream side of an intersection, turning vehicles can have an impact on the queues waiting at traffic signals. On the downstream side, turning vehicles can slow through traffic movements. In extreme situations as motorists' frustrations increase, they may block the flow in one direction on the main street while waiting to make a left turn.

Since most developments at intersections are on corner lots, the potential also exists for traffic to cut through parking lots if driveways are provided on both sides of the lot.

There are a number of typical standards that have been proposed for distances from the edge of an intersection to the first driveway. One principle is that there should be **no driveways entering within an intersection's functional area**. The functional area is defined as the length of typical peak hour queue or the length of intersection turning lanes. A sample standard is shown below. These types of standards can be adapted into the zoning statute in several ways including an overlay zone covering critical corridors. Communities can and should restrict high traffic volume uses where they cannot be met



Minimum Corner Clearance on Minor Roadway
Source: Transportation & Land Development 1988

Driveway Spacing Standards for Canandaigua and Farmington

Type of Development	Small Development	Moderate Development	Large Development
Trips Generated	0 – 150 Peak Hour Trips	151-300 Peak Hour Trips	301 + Peak Hour Trips
<u>Type of Roadway</u>			
All State Roads	220 feet between driveways	330 feet between driveways	550 feet between driveways
Local Streets & Collectors	150 feet between driveways	250 feet between driveways	400 feet between driveways

Source: "Farmington, New York Ordinance Local Law", M.T.O.D. Major Thoroughfare Overlay District Access Management Law.

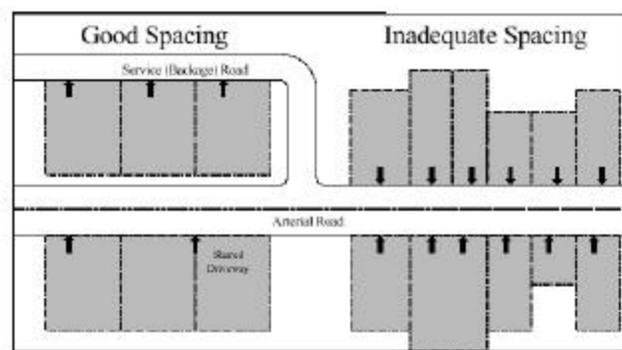
Between Driveways

Adequate spacing between driveways increases driver reaction time and reduces the potential for accidents from entering and exiting vehicles. Restrictions on driveway spacing also encourage the sharing of access among smaller parcels. The spacing also allows more green space and building frontage along the highway that improves community character. Communities should establish greater minimum lot frontages for lots on important corridors to reduce the need for closely spaced drives. In addition consideration should be given to increasing lot size and assuring that zoning district lines encourage a suitable depth of development rather than a commercial strip. This combination allows flexibility in site design and encourages placement that not only promotes access management but also protects the development potential of the corridor.

Besides the spacing distance between driveways, a number of other actions can be applied to reduce the conflicts at driveways including:

- Provide full access on the side streets rather than on the main street
- Provide right in and right out access on the main street
- Reduce the number of curb cuts serving existing parcels
- Eliminate open curb areas

Eliminate open curb areas

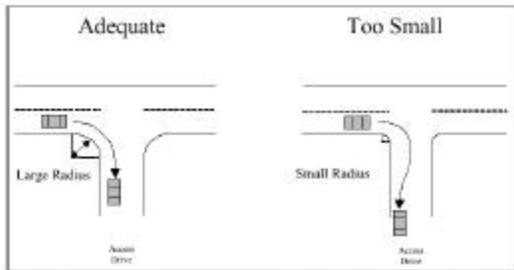


Source: Iowa Access Management Handbook

Establish Driveway Specifications and Utilize Channelization

The ease with which vehicles can enter and leave the main roadway has a significant impact on through traffic operations. Good driveway design will allow vehicles to enter roadside developments smoothly and reduce vehicle slowing and stopping that affects through traffic. At a minimum all driveway widths, curb radii, throat lengths, and grades should meet standards established in the NYSDOT Policy and Standards for Entrances to State Highways. These standards can be exceeded by local policy.

Turn Radius



Smooth Traffic Flow

Slow Traffic Flow

Source: Iowa Access Management Handbook

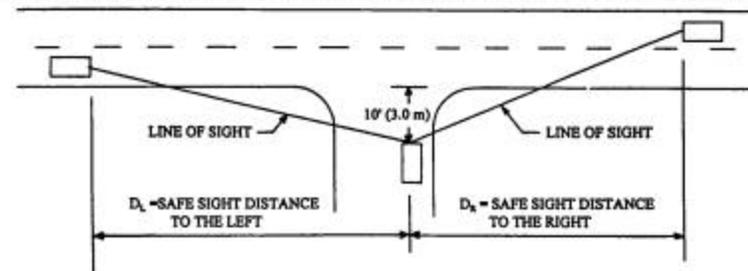
Sight Distance

Sight distance from driveways is another important consideration. If there is not adequate sight distance for turning movements to and from a development, drivers may hesitate as they leave a development or as they are making left turns in. Sight distance standards are also provided in the Policy and Standards.

SIGHT DISTANCES AT ENTRANCES

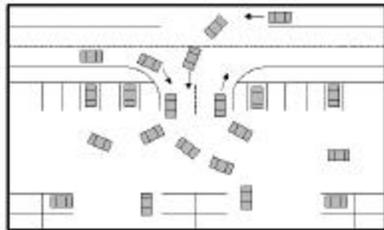
D - DISTANCE ALONG MAJOR ROAD FROM DRIVEWAY TO ALLOW VEHICLE TO ENTER SAFELY																	
See Illustration Below																	
	30 Mph (50 Km/h)		40 Mph (60 Km/h)		50 Mph (80 Km/h)		60 Mph (100 Km/h)										
	2 Lane		4 or 6 Lane		2 Lane		4 or 6 Lane		2 Lane		4 or 6 Lane		2 Lane		4 or 6 Lane		
	D _L	D _R	D _L	D _R	D _L	D _R	D _L	D _R	D _L	D _R	D _L	D _R	D _L	D _R	D _L	D _R	
Passenger Cars	Feet	360	260	220	260	530	440	380	440	740	700	620	700	950	1050	950	1050
	Meters	110	80	67	80	160	135	115	135	225	215	190	215	290	320	290	320
Trucks	Feet	500	400	400	400	850	850	850	850	1600	1600	1600	1600	2500	2500	2500	2500
	Meters	150	120	120	120	260	260	260	260	490	490	490	490	760	760	760	760

VALUES ARE FOR URBAN CONDITIONS. ON RURAL HIGHWAYS, INCREASE DISTANCES BY 10 PERCENT FOR SLOWER DRIVER REACTION.



Throat Length

Entering and exiting driveway throat length is critical to adequate design. Throat length should be sized so that stacking and queuing occurs on the site. With larger projects, a traffic study can best determine adequate throat length. For smaller projects, communities should adopt policies that insure drivers can exit the traffic stream without encountering conflict. Nowhere is this more important than at small site, high intensity uses such as convenience stores. The difference between a good and bad design is shown below:

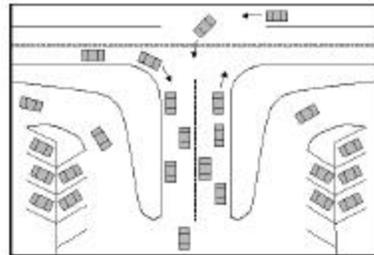


Insufficient throat length and poor site planning can cause unsafe conditions
 Source: Iowa Access Management Handbook

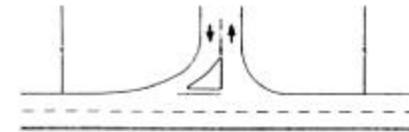
Channelization

Channelization islands are used to regulate turns into a driveway from the major street. They are critical to encourage compliance with turning restrictions. When they are used without a street median, there will be some violations but, with proper design, they are much more effective than signing alone. When used on a corner parcel, they still allow some access to the major street with the potential for full access on the minor street.

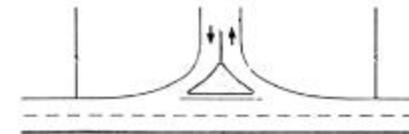
Three types of design are possible – all movements in rights out only, all movements out rights in only, and rights in and rights out only.



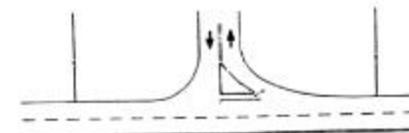
Adequate throat length - Stacking & queuing on-site - less confusion greater safety.
 Source: Iowa Access Management Handbook



Channelizing prevents left-turn egress



Channelizing prevents left-turn egress & ingress



Channelizing prevents left-turn ingress

Roadway Design

The Toolbox contains several roadway design techniques that meet the definition of access management. Applied to existing corridors the techniques can increase capacity and improve safety.

Provide Uniform Signal Spacing

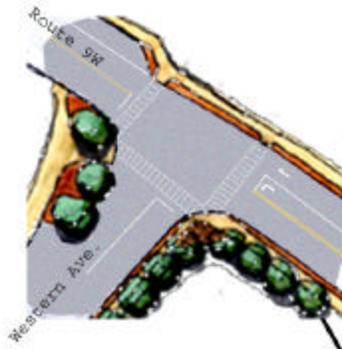
The objective of uniform signal spacing is to allow smooth progression for the major traffic movements on the highway system. This is accomplished by timing the signals so that traffic moves in groups between intersections at a constant speed. Signal timing can be used to control speed because the signal timing is set for a specific speed. For example, if the timing is set for a 30 mile per hour speed, drivers traveling at 40 miles per hour will be stopped by red signals as they travel through the corridor, while those going 30 mph will have a smooth ride.

In Ulster County, many signal locations have been dictated by the existing roadway configuration and therefore may not meet ideal standards. However, as development in the County continues, there will be requests for new signals. Approval of these should be based on instituting and maintaining appropriate spacing.

Recommended signal spacing varies depending on the roadway functional class, speed limit, adjacent land use, and trip generation from adjacent land uses. Standards suggested for ideal signal placements are discussed below:

- Typically, a ½-mile interval between signals is a minimum reasonable standard because it allows for progressive flows to be established at a variety of speeds and traffic flow conditions.
- Where possible, major arterial intersection spacing should be 1 mile. This is because the traffic volumes on both approaches to the intersection may be part of a progressive system and the longer distance permits more flexibility in the development of signal timing plans.
- Shorter intervals are possible where minor streets with lower volumes are entering an arterial. In these cases, the minor street can be traffic-actuated so that the green time on the major street is longer.

Provide Left- and Right-Turn Lanes



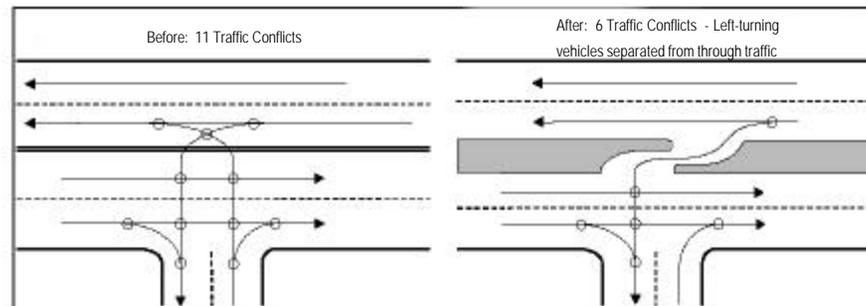
- Intersection improvements:
- *remove on-street parking at intersection and create a 'thru-traffic' lane.
 - *provide a 'left turn only' lane.
 - *install crosswalks.
 - *install traffic signals for both vehicles and pedestrians.

Turning lanes offer particularly attractive retrofits to alleviate problems that occur as traffic builds along the road network. In addition, they are often the first technique employed for new projects to maintain highway capacity at project intersections. Even where capacity is not an issue, turning lanes have a role in accident reduction with rear end and left-turn crashes reduced by as much as 25 %. Left-turn lanes are most effective as left-turning vehicles block traffic as they wait for an opening to make their turn.

Critical components in the design of turn lanes include the length of the taper (the angled transition area between the turning lane and the through lane), the length of the turning lane itself, and the width of the turning lane. The length of left-turn lanes is especially critical because if the lane is not long enough, queues of left-turning vehicles can form that will block through traffic. Standards for the dimensions of turn lanes are provided in the NYSDOT Highway Design Manual, Chapter 5.

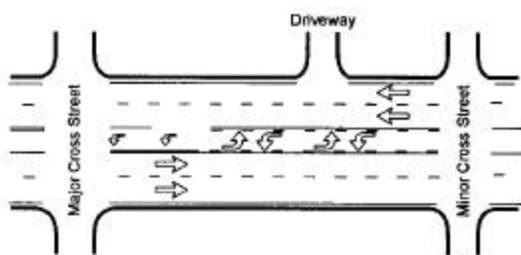
Standards have been established for turning lanes that should be applied as local municipalities review site plans. These standards relate the speed, the amount of through traffic, and the amount of turning traffic to determine if turn lanes are needed. Development site reviews should reference these standards which are available from the American Association of State Highway and Transportation Officials, "A Policy on Geometric Design of Highways and Streets" and from the National Cooperative Highway Research Program, Report 279.

Reduction in traffic conflict points from conversion of a driveway on a 4-lane undivided roadway to a driveway on a 4-lane roadway with a raised median and a restricted left-turn lane.



Provide Continuous Two-Way Left-Turn Lane

Many locations in Ulster County already have numerous curb cuts onto arterial roadways. These locations can be improved somewhat using the other access management techniques described in this manual, but there will still be an excessive number of curb cuts. In these circumstances, use of a continuous left-hand turn lane offers a method to reduce the impact of turning vehicles on through traffic. These lanes provide a refuge for left-turning vehicles separated from the through traffic lanes.



Continuous Two-Way Left-Turn Lane

Continuous left-turn lanes can be added to 2-lane or 4-lane sections of existing roadway if there is sufficient right of way available. Research has shown that they can reduce crashes by about 35% over comparable undivided highway segments. They also increase capacity and reduce vehicle conflicts. At the same time, they are not as safe as a divided highway with a raised center median. Guidelines indicate that they are appropriate for roadways that carry up to 24,000 vehicles per day and have at least 45 curb cuts per mile.

Care should be taken not to provide these two-way turn lanes in areas where there are heavy driveway volumes from major developments. In these locations, dedicated left-turn lanes should be used. Use of these lanes is also incompatible with locations where there are heavy pedestrian crossing volumes because they do not provide for pedestrian refuge areas. Therefore, they are not appropriate for the hamlet areas of the County. Finally, in no instances should the use of continuous left-hand turn lane be considered for developing corridors when other access management techniques can be utilized. Design of two-way left-turn lanes should follow the specifications in Chapters 2 and 5 of the NYSDOT *Highway Design Manual*. Standards include:

- A minimum width of 11' and a maximum width of 16'
- Specific pavement marking details

Provide Medians to Limit Turning Movements

Medians restrict turning movements to right turns to and from driveways. In some areas where there is very limited right of way, they can be established using concrete barriers. These are not attractive usually do not reflect local aesthetic goals. A more attractive and just as effective technique provides landscaped medians. These serve the dual function as community gateways and traffic safety devices. When a median is added, left turns are made with turning lanes at intersections. The result is greater capacity in the corridor and a significant reduction, 35 to 50 %, in crashes on a roadway with previously unrestricted access.



Provide Frontage and Parallel Roads

In areas of new development, frontage and parallel roads provide an opportunity to separate through traffic from traffic accessing development. A frontage road is generally built between an existing arterial and the proposed development. A parallel road (sometimes referred to as a reverse frontage road) can also be provided behind existing development. Two examples of the parallel roads currently exist in Ulster County – Frank Sottile Boulevard in the Municipality of Ulster and South Roberts Lane in the Municipality of Lloyd. The functional purpose of these roadways illustrates two different uses. Frank Sottile Boulevard was designed as a limited access roadway with minimal connections to adjacent roadways. Its primary function (when it is fully completed) will be to provide a bypass for Route 9W. In contrast, South Roberts Lane is designed to serve the adjacent land and development while through traffic remains on Route 9W. Frontage roads also are applicable on local roads as part of the subdivision review process to reduce driveways on local streets (see Driveway Control).



As is evident from the current Ulster experience, there are a number of alternative configurations that can be utilized for this type of improvement.

Frontage roads can access the main roadway at existing intersections or mid-block locations. They can be applied successfully for both commercial and residential development.

In designing these roads, standard guidelines should be followed that include:

- Adequate queuing distance between the frontage road and the main road
- Clear traffic control at the driveway connections to the frontage road
- Sufficient pavement design standards that meet Municipality requirements if the roads are built as part of development projects
- Consistency with long-range land use plans for the area so that future connections between the frontage road and the main road will be maintained.
- Access control to the frontage road that follows driveway spacing and design principles

Frontage roads should be included in corridor and growth area plans so that access to large tracts of commercial land adjacent to arterials will not effect through traffic. Providing these roads is one of the best actions that a municipality can take to maintain the viability of its highway system and insure that growth can take place where the community wants it.

Site Layout

Ultimately, while transportation agencies can initiate access management techniques, its success requires a commitment from local governments in all phases of their planning programs. Zoning, subdivision regulations, and comprehensive planning must all support the goals of access management. The Toolbox contains several techniques that can be utilized as part of site layout.

Internal Access Connections

Internal access connections for developments are an alternative to frontage roads. These include the use of joint access, cross access, and out-parcel access and work well for new development or retrofitted to existing. Cross access provides connections between parking lots. It can also be combined with the shared driveway. Parking lot connections are useful regardless of the type of connection or size of development. These connections often function nearly as effectively as frontage roads and the main purpose to move traffic between developments without using the main roadway is accomplished

Source: Iowa Access Management Handbook

Joint access

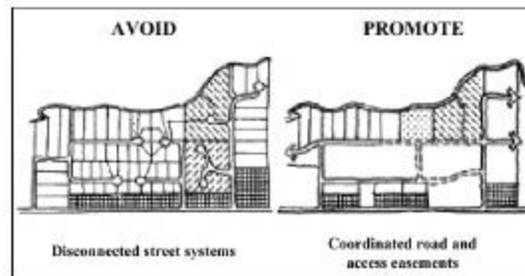
Joint access uses shared driveways between adjacent developments, often at the property line. Requiring shared driveways reduces the number of curb cuts and increases driveway spacing

Require Internal Access to Out-Parcels

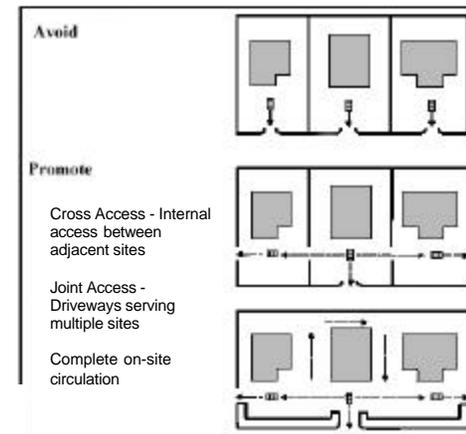
Out-parcel access within large-scale developments is another application of cross access. Typical large-scale retail developments usually have out-parcels that are developed for restaurants, banks, or other uses. In some cases, separate access points to these parcels onto the existing street system are requested. This access is not necessary and it should not be permitted.

Residential Subdivision Design

Careful application of cross access, consolidated access, elimination of flag lots, and cooperative access agreements can reduce the impact of residential development on the arterial highway system. The objective is to reduce the number of conflicting points on the highway system.



Although typically associated with commercial development, the principle of cross access is also very useful in residential development. In this case, subdivision design should include connections between adjacent residential streets so that traffic will not have to use arterials to travel between adjacent housing developments. Use of long cul-de-sacs should be avoided as well. At a minimum, pedestrian pathways should be provided to permit circulation within and between subdivisions. It is also desirable to link the pathways to destinations such as schools and shopping.



Shared commercial driveway recommendations.

Source: Iowa Access Management Handbook

Where can Access Management Actions be Applied?

The type of access management technique that is appropriate varies, depending on the type of roadway. Therefore, before evaluating access management, it is critical to define the function of a roadway segment. Roadway classifications can be made based on the following functional roadway classifications used by The New York State Department of Transportation.

Urban Areas:

- Principal Arterial Other – Route 9W
- Minor Arterial – Route 208 in New Paltz
- Collector – Route 44/55 in Highland
- Local – Most Village and City Streets

Rural Areas:

- Principal Arterial Other – Route 9W
- Minor Arterial – Route 28
- Major Collector – Route 212
- Minor Collector – Route 55A
- Local – Most County Roads



Within these classifications, access management is most important for roads classified as arterials and collectors. Even on local roads, it is useful to apply some of the techniques discussed in this guide. Municipalities should also consider the following questions as they consider alternative access management techniques.

What is the current access provided by the roadway? Are there already numerous driveways and connections to local land uses or does the roadway pass through an undeveloped area?

Is there a long-range Municipality or County plan that designates the future function of the road? Will it be used primarily for through traffic or local access?

Is adjacent land use – rural undeveloped, urban fringe, suburban, village center, or urban?

What is the travel speed on the road? Higher speed roads will need to have the balance between safety and direct access.



Application of Access Management Actions

	Existing Developed Areas			Undeveloped Areas		
	<i>Arterials</i>	<i>Collectors</i>	<i>Local Roads</i>	<i>Arterials</i>	<i>Collectors</i>	<i>Local Roads</i>
1. Limit Driveway Connections	●	●		●	●	
2. Driveway Spacing	●	●	●	●	●	●
3. Driveway Specifications & Channelization	●	●		●	●	
4. Uniform Signal Spacing	●			●		
5. Left and Right Turn Lanes	●	●		●	●	
6. Two-Way Left-Turn Lanes - only if no other alternative	●			●		
7. Medians	●			●		
8. Frontage Roads				●		
9. Driveways Per Lot	●	●	●	●	●	●
10. Internal Access to Out Parcels	●	●		●	●	
11. Connect Parking Lots	●	●		●	●	
12. Subdivision Design				●	●	●

Implementation Techniques

There are as many ways to implement access management as there are alternative techniques and actions that can be taken. The most important action a community can take is to lay the foundation for access management in its comprehensive plan and advance through policy statements their transportation principals including access management. The transportation section of the plan should classify the function of highways and the level of access control desired (see application of access management techniques).

Municipalities can require that access management techniques be initiated for land use actions in developed areas. One way to accomplish this is to require a review of site plans and special permits when there is a change in ownership or land use. It is also important to understand the position of NYSDOT and Ulster County Highway Department in this process. These agencies often lack the authority to require improvements at these times but are highly desirous of implementing these techniques and more than willing to provide design assistance along with the necessary permits once they are required by the community. To facilitate this, communities should engage these agencies in a cooperative dialogue rather than have the applicant serve as a go between.

Development of a corridor Access Management Plan can also serve as an impetus for action and negotiation. The Access Management Plan can also be linked with a repaving and reconstruction project.. The following actions can be taken to implement access management in existing developed areas:

1. Selectively reconstruct existing substandard driveways.
2. Negotiate driveway closures, reconstruction, or relocation.
3. Require access changes as part during redevelopment or expansion of an existing use.
4. Encourage consolidation of small parcels and plan for limited frontage access.
5. Include access management activities as part of sidewalk and street enhancement programs.
6. Re-time and improve the signal system
7. Encourage use of cross access of adjacent properties.
8. Incorporate access management actions into a Business Improvement District Program (BID).
9. Include access management recommendations as part of comprehensive plans

In undeveloped areas of the County, implementing Access Management Techniques outlined in this Primer can create safer, more efficient, and more accessible quality communities. One of the recommendations of the Ulster County Transportation Plan is to prepare Access Management Plans for all of the State Highways in the County as well as for key County roads as well. These Plans can assist Municipalities as they review land use proposals in the future and as they update their land use regulations. A key strategy to implementing Access Management Plans is to include them in the Municipalities' zoning and land use regulations so that they can be applied uniformly.

Financing Techniques

There are a number of financing techniques that can be used to implement Access Management Techniques in the County. Most smaller projects can be financed directly as part of a new development. Larger projects, such as a corridor access management plan, can use funding from a combination of public and private sources. These larger projects access management actions can often be implemented as part of regular DOT roadway paving or other improvements. Many suggestions for alternative funding are provided in The Toolbag of Techniques for NYS Arterial Management prepared by the NYSDOT. The techniques recommended include:

Innovative Finance Techniques for roadway improvements are a non-traditional or alternative means of local funding or a share of the funding for use on local and State roadways. Various funding mechanisms, used at the locality's option, have been identified as appropriate for use in New York State. Some require State enabling legislation for local use.

Finance Plans are a review and selection of alternative finance mechanisms that are appropriate for a specific project or program use and feasible for the specific locality to implement. They can be paired with a cumulative traffic impact study to determine how to raise the local share of funding for the identified improvements, on and off a State arterial. They may be a preliminary step to preparing a Capital Program.

Transportation Development Districts (TDDs) are special assessment districts, similar to water and sewer districts, for the purpose of bonding to fund specific roadway improvements which benefit those properties in the district. In NYS, simple State legislation is required to enable the locality to use this mechanism. They appear most useful to raise a local share of funding for cumulative traffic impacts along a major commercial arterial corridor.

Right-of-Way Donation is a voluntary gift of land from a property owner to the roadway provider or local sponsor for a pending road project. It can be an effective local share financing or traffic mitigation mechanism which addresses present and future traffic impacts. It is helpful to have the future right-of-way specified in an Official Map so that all properties in an identified corridor are aware of a systematic program to acquire the ROW.

Section 200 Assessments refer to an existing feature of City, Municipality and Village law which allows the locality to assess properties abutting the existing road for improvements along that roadway. A long list of permitted actions includes new sidewalks, curbs, drainage, and lighting but, relative to TDDs, the work and financing are much smaller scale.

Impact Fees are often applied to new development, per local ordinance in other states, to help fund the new share of infrastructure required by or extended to that site. It is a one-time, up-front fee to mitigate that development's impact on local

infrastructure. Transportation improvements have been limited to adjacent or onsite locations. It appears most useful for addressing residential subdivisions' immediate traffic impacts. The New York State Legislature has not enabled localities to impose impact fees yet, but several statewide bills are introduced annually. A locality could introduce its own enabling bill through their State Legislators.

Business Improvement Districts are available for use in New York State for capital improvements and maintenance. District properties are assessed for mostly operating costs for street cleaning, repair, and patrolling. The downtown Municipality Buffalo Light Rail Transit Mall is one example.

Capital Improvement Programs are a locally adopted schedule of capital or infrastructure improvements that the municipality intends to build. It can determine the amount, timing, location and costs according to the plan to support anticipated development.

Betterments on a highway project generally refer to those features beyond the basic roadway scope or a mitigation share that the locality desires to add. Traditionally, these have been the localities' responsibility for funding but, alternatively, these can be negotiable when the locality takes strong measures to protect the upgraded arterial. Use of the standardized *NYSDOT Betterment Agreement* is suggested for action.

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