



Access and Mobility Study Report

November 2005

Prepared for:
Pima Association of Governments

Prepared by:
URS



Executive Summary

Access management is important to maintaining roadway safety and to maintaining or improving mobility, which can be a significant quality of life issue. This study conducted interviews with local jurisdictions regarding local access management policies, researched documents in other areas, developed recommendations for local and regional access management policies and for improvements to existing policies, and demonstrated that these policies would work in the local situation. The key recommendations for the regional program included:

1. Adopting well-defined access management standards by all governmental agencies that currently do not have the
2. Adopting cooperatively a uniform set of access management standards along corridors by local governments and Arizona Department of Transportation
3. Promoting the benefits of access management
4. Addressing multi-modal forms of transportation within access management standards
5. Including the term “Access Management Plan” within corridor studies title
6. Linking the use of regional funding to compliance with an adopted access management plan
7. Developing a method of ensuring the commitment of member organizations to the regional access management program

Purpose of Study

As the region grows, the government entities within Pima County struggle to find a balance between providing access to homes and businesses while maintaining mobility. As access points are added to the transportation network, more conflicts result, and overall mobility of the network diminishes. The overall purpose of this study was to investigate existing development design/practices and jurisdictional development policies, practices, standards and ordinances to develop recommendations for regional guidelines and policies for access and mobility.

This process consisted of several steps, including:

1. Interviews with local jurisdictions regarding local policies
2. Research of access policy documents throughout the country
3. Development of a “policy toolbox”
4. Demonstration of the efficacy of this policy toolbox on a local situation
5. A discussion with transportation planning practitioners regarding successful and unsuccessful models
6. Development of recommendations for a guiding policy.

Development of an access and mobility policy is important because:

1. Transportation funding is limited and reconstruction of roadways may be a significant expense; therefore, the efficient use of these funds is critical



2. A policy that is consistent and easy to understand enables all staff from member organizations and development applicants to understand the process, which will facilitate implementation
3. This consistency will improve member organizations' credibility with the public and applicants
4. Mobility, or lack thereof, is a significant quality of life issue

Definition of Access Management

According to the Transportation Research Board (TRB), access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. It involves also roadway design applications, such as median treatments and auxiliary lanes, and spacing of traffic signals. Access management is used to provide vehicular access to developments, but maintain the safety and efficiency of the transportation system. It is important to understand that access management applies to all roadways—not just limited-access highways or freeways.

| Table 1. Generalized Relationship Between Access Category and Roadway Functional Classification for State and Local Roadways | |
|--|--|
| State | Local |
| <p>Interstate Highways and Other Freeways Roadways that are of national or statewide importance for interstate, interregional, and intercity travel. In large metropolitan areas they also provide for interregional and some intracity travel. Roadways have full control of access, with access provided via grade-separated interchanges only.</p> <p>Roadway of Statewide Importance (Strategic Arterial, Principal Arterial) Roadways that are of statewide or regional importance and serve interregional, intraregional, and intercity travel needs. Direct access to abutting land is subordinate to through-traffic movements.</p> <p>Roadway of Regional Importance (Other Arterial) Roadways that serve intraregional and intercity travel and are not of statewide importance. They should be managed to provide for safe and efficient through-traffic movements, while providing some access to abutting land.</p> <p>District Roadway (Collector) Roadways that provide for medium to short travel distances and are not of regional importance. Service to through-traffic movements and access to abutting land are given equal consideration.</p> <p>Local Roadways that serve short trips, such as from a residence to a collector. Service to through traffic is subordinate to access. Category applies to state highway systems where the state highway agency is responsible for all roadways. Frontage roads are also often in this category.</p> | <p>Freeway Major highways that provide access via interchanges only.</p> <p>Major Arterial Roadway that is of regional importance and is intended to serve high volumes of traffic traveling relatively long distances. A major arterial is intended primarily to serve through traffic, and access is controlled.</p> <p>Minor Arterial Roadway that is similar in function to major arterials, but operates under lower traffic volumes, serves trips of shorter distances, and provides a higher degree of property access than major arterials.</p> <p>Major Collector Roadway that provides for traffic movement between arterials and local streets and carries moderate traffic volumes over moderate distances. Collectors may also provide direct access to abutting properties except individual residences.</p> <p>Minor Collector Roadway that is similar in function to a major collector, but carries lower traffic volumes over shorter distances and has a higher degree of property access.</p> <p>Local Roadway that is intended to provide access to abutting properties, tends to accommodate lower traffic volumes, serves short trips, and provides connection to collector streets.</p> |

(Source: Transportation Research Board. *Access Management Manual*. Washington, DC. 2003.)



From a planning perspective, access management is a systematic method of maintaining roadway functional classifications. These classifications are described in Table 1. Roadway classifications balance the roadway's function of providing access versus through traffic movement. Access management is particularly important along arterials and other primary roads that are expected to provide safe and efficient movement of traffic, as well as access to property. However, access management is still necessary on lower-level roadways, such as minor collectors and residential streets, to address safety considerations, such as sight distance and corner clearance.

Although Table 1 presents general guidelines, the amount of access control may vary somewhat with the functions and traffic characteristics of a roadway, the character of land uses along the roadway, long-term planning objectives, and desired character. A major collector roadway in a residential area may need a higher degree of access control and through-traffic movement than an older arterial with commercial strip development. Some major roadways may serve a mix of competing functions that are difficult to reconcile and that may require special design, traffic-calming, or access management measures.

Regional Access Management

An important aspect of this study is the identification of regional access management concepts for Pima County Jurisdictions. A regional policy will help promote higher levels of regional cooperation, continuity, and consistency throughout the area. Although a successful regional program cannot exist without having local access management programs in place, this discussion will focus on regional programs. Local access management policies will be discussed later in the report.

The potential need for a regional policy became apparent with the difficulty in resolving issues associated with roadways that serve regional functions and pass through a number of different jurisdictions. There are several examples of roadways in the Pima County jurisdictions that fall under the auspices of more than one governmental entity. For example, Tangerine Road is jointly managed by the Arizona Department of Transportation (ADOT), Pima County, the Town of Marana, and the Town of Oro Valley. Similarly Oracle Road is managed by ADOT, the Town of Oro Valley, and the City of Tucson.

Problems can arise when different jurisdictions have differing goals and objectives regarding the roadway. For example, a corridor study report may recommend a controlled access facility that would eventually become a regionally important state route. Allowing direct access to the roadway, or even providing access through frontage roads, could differ by jurisdiction or be inconsistent with the regional plan for the roadway. Inconsistencies can also occur, if jurisdictions have differing design standards. Roadway improvements that meet a local design standard may not meet state standards (e.g. drainage) for the same roadway. Likewise, local jurisdictions may desire or require facilities for pedestrians and bicyclists along a roadway that do not meet state design standards or preferences. These situations may compromise future development of a proposed regional role for the facility or may produce a roadway that does not fill local needs.



Local Agency Interviews

Discussions with local agencies indicated varying approaches to integrating access management into the regional transportation planning process. For example, ADOT suggested that regional governmental agencies participate in general agreements to identify routes of significance and then commit to maintaining the regional function of these routes through intergovernmental agreements (IGA). ADOT also recognized that the political nature of IGAs makes governmental agencies less likely to participate. Marana stated that a condition of receiving regional funding should be compliance with the regionally significant routes program. Oro Valley felt that regional issues were not a major problem and that rural and urban sections can exist on the same roadway, if they fit with adjacent land uses.

Local Practitioner Interviews

Private sector transportation engineers who provide traffic impact assessments for projects deal frequently with access management policies. Suggestions from this sector included:

- Adopt clear and consistent access management policies/regulations by all agencies who do not have them. The lack of programs makes these agencies indecisive and inconsistent. For example, ADOT needs formalized access management policies and state implementing legislation.
- Provide coordination between ADOT and local agencies regarding land use decisions and access issues. ADOT gets involved in the process too late.
- Address all modes of transportation in access management. Most policies address vehicular access only. A comprehensive access management program should address also pedestrians and bicycles and how these modes can safely get from an adjoining street to a land use such as shopping center or school.
- Educate developers on the motive for access management regulations. Developers typically want access to the highest functional classification roadway, but this is often inconsistent with the mobility needs of that roadway classification.
- To protect the functional classification of roadways, agencies should charge an access fee from public roadways to recover the value of capacity lost because of side friction at the access points. The fee would depend on land uses and the roadway classification, and could include differential fees for driveways, partial access driveways, and median openings. This would be in addition to impact fees, which pay for new capacity, not diminished capacity.

Review of Other Areas

The need for regional cooperation on access management issues is not unique to Tucson, Pima County, or Arizona. A number of areas across the nation have implemented programs to improve regional cooperation. These programs have met with mixed success, with successful programs appearing to have relatively strictly enforced controls. The more voluntary the program, the less successful the program appears to be.



Programs that were reviewed from other areas (Michigan, Kentuckiana Regional Planning and Development Agency, etc.) are outlined in Appendix A. An abbreviated discussion of several of these programs is presented in the regional recommendations presented below.

Regional Policy Recommendations

The key recommendations of this study for a regional program include:

1. All governmental agencies that currently do not have well-defined access management standards should adopt them.
2. A uniform set of access management standards should be adopted cooperatively along corridors by local governments and ADOT.
3. Adoption of access management plans and policies should be accompanied by a program to promote the benefits of access management.
4. Access management standards should address multi-modal forms of transportation.
5. The term “Access Management Plan” should be included within corridor study titles.
6. The use of regional funding should be linked to compliance with an adopted access management plan.
7. A method of ensuring the commitment of member organizations to the regional access management program must be developed.

Each of these recommendations is discussed in greater detail below.

Regional Policy Recommendation Number 1:

All governmental agencies that currently do not have well-defined access management standards should adopt them.

Discussion:

Access management maintains roadway functional classifications, which is particularly important along arterials that provide safe and efficient movement of traffic, as well as access to property. A primary benefit to access management is an improvement in safety through a reduction in traffic conflict points. These conflict points are not only between vehicles, but also between vehicles and pedestrians and vehicles and bicycles; therefore, overall safety benefits to the community result. In addition, the lack of an access management program may make local governments appear indecisive, arbitrary, and inconsistent. This can result in public relations issues with the general public, elected officials, and the business community. Local access management programs are discussed in the next chapter of this report.

Regional Policy Recommendation Number 2:

A uniform set of access management standards should be adopted cooperatively along corridors by local governments and ADOT.

Discussion:

In Michigan, Corridor Advisory Committees (CAC) are formed for each major corridor. The CAC includes all affected local governments, Michigan Department of Transportation, a representative of the County Road Commission, the County Planning



Commission, and the County Drain Commissioner. The CAC meets monthly and reviews all pending permits and prospective development projects proposed along the corridor. This coordinated permit review prevents individuals from avoiding important access management standards and typically results also in a more thorough review of pending site plans. The coordinated review can uncover also future traffic safety or capacity problems that otherwise might not be discovered for some time. Coordinated reviews serve also as a forum to discuss needed changes to access management standards. If a particular standard is recognized as problematic in several jurisdictions, it probably should be changed in all jurisdictions.

Michigan feels that developers benefit from the coordination. Because all of the affected agencies are reviewing the same site plans together, the developer is not required to take issues back and forth between key agencies as often. A uniform set of access management standards along the corridor allows the development community to become familiar with one set of standards and should improve compliance. Another benefit of coordinated reviews becomes evident when applicants request a variance.

Regional Policy Recommendation Number 3:

Adoption of access management plans and policies should be accompanied by a program to promote the benefits of access management.

Discussion:

As noted by private sector transportation engineers, developers typically want access to the highest functional classification roadway. Elimination of driveways and access restrictions through raised median installation or median closures are normally accompanied by protests of varying degree. Access management projects should be portrayed as improvements to safety, capacity, or mobility.

Regional Policy Recommendation Number 4:

Access management standards should address multi-modal forms of transportation.

Discussion:

Access management standards address access by vehicles, but should address also multi-modal forms of transportation. Pedestrians and bicycles are becoming increasingly important in the regional transportation mix and the safe integration of all travel modes should be a key goal. As discussed earlier, one of the primary benefits to access management is the reduction in traffic conflict points between vehicles, between vehicles and pedestrians, and between vehicles and bicycles. A persistent criticism of ADOT has been a perceived reluctance to integrate pedestrian facilities into state routes.

Regional Policy Recommendation Number 5:

The term “Access Management Plan” should be included within corridor study titles.

Discussion:

The importance of access management should be recognized and emphasized by including the term “Access Management Plan” within corridor study titles. Corridor studies in Michigan are entitled frequently “Roadway Comprehensive Corridor and Access Management Plan”; therefore, even the document title reflects an emphasis on access management and a recognition of its importance in the planning process. This process is continued into the selection of alternatives.



Regional Policy Recommendation Number 6:

The use of regional funding should be linked to compliance with an adopted access management plan.

Discussion:

Some Metropolitan Planning Organizations (MPO) use a point ranking system and assign more points for complying with the access management plan. Another effective system may be to assign negative points to projects that do not comply with the adopted access management plan. Another method would be for the member organizations of PAG to adopt a resolution stating that no project would be included within the Regional Transportation Plan or the Transportation Improvement Program that did not comply with adopted access management policy.

Tying access management to regional funding might also be accomplished informally; however, the informal process doesn't appear effective in other areas. For example, access management improvement receives favorable consideration for project funding by the Duluth-Superior Metro Interstate Committee (D-S MIC) in Duluth, Minnesota. However, according to Andy MacDonald of the Arrowhead Regional Development Commission (the administrators of D-S MIC), while access management is considered in applications for federal funding, the consideration is qualitative and not quantitative and, therefore, less effective.

On the other hand, the Capital District Transportation Committee (CDTC), the MPO for the Albany/Schenectady/Troy, New York region, screens projects for land use planning and access management linkages before moving a project from the Long Range Transportation Plan (LRTP) to the Transportation Improvement Program. The screening process includes consistency requirements related to access management and land use. CDTC will not entertain highway capacity projects unless land use planning and access management commitments are already in place. In addition, the Albany area LRTP does not identify specific projects until a local study focused on land use and transportation issues, which includes detailed consideration of access management strategies, is completed.

Regional Policy Recommendation Number 7:

A method of ensuring the commitment of member organizations to the regional access management program must be developed.

Discussion:

Regional policies will be effective only if member organizations uphold their commitments to the process. A formal written agreement is more difficult to ignore than a policy statement. There appear to be three methods of accomplishing this goal: (1) development of corridor by corridor access management policies; (2) development of a general guiding regional policy; or, (3) a combination of both methods. Each are described below.

Corridor by Corridor

A Corridor Advisory Committee is an effective method of incorporating all affected local governments (both planning and public works components) and ADOT in a coordinated effort toward access management. A CAC could be established for corridors as corridor studies are proposed and implemented. All parties with ownership in the corridor should be prepared to participate in a Memorandum of Understanding (MOU) or



Intergovernmental Agreement (IGA) to create the access management plan, to coordinate review and approval of development and roadway projects along the corridor, and, most importantly, to abide by the results of the access management recommendations. In addition to the access management aspects of these agreements, issues such as general roadway and landscaping maintenance, turn-back of facilities, and other important corridor issues may be specified in the agreements. This process would ensure consistency within a particular corridor, but may not provide consistency between corridors. This process is also time consuming and would require a substantial commitment of time from all member agencies along the corridor. If more than one corridor is under consideration simultaneously, this would require an even greater commitment. This process could be initiated by the Transportation Planning Committee of PAG.

Development Of A Guiding Regional Policy

The second method of ensuring the commitment of member organizations to the regional access management program is to develop a general guiding regional policy. To accomplish this task, a series of facilitated workshops would be held initially between the technical staff of the member agencies. The goals of the workshops would be to gradually refine those access management issues on which all member agencies agree and on which there will be no compromise.

For example, the series of meetings might begin with an initial meeting to discuss overall goals for the access management program and to discuss openly all issues of interest to the group. A second meeting would discuss the process to be used for the implementation of regional access management (i.e. are we developing a program by consensus, etc.), who from the member agencies should be involved in the decisions, and how to monitor this program. A third meeting (and likely several more meetings) would discuss and then attempt to reach agreement on particular technical issues on which compromise will not be acceptable (e.g. traffic signal spacing along major arterials, median placement, median openings, driveway and street connections). Although the initial time investment would be substantial, this method could be more efficient over time. This process could occur as a recurring item during Transportation Directors meetings.

Combination Method

This method could begin with the regional guiding policy and then use the corridor approach to refine the access management approach to the driveway level. The regional guiding policy would establish the major issues for corridors; therefore, it would accelerate this portion of the decision-making process. The corridor approach could allow the refinement necessary to have relatively complete access management of a particular corridor.

Application to Tangerine Road

To determine the efficacy of these recommendations, they were applied to a local situation -Tangerine Road. Would Tangerine Road look differently today if the recommendations were implemented several years earlier? Discussions between the governmental entities along Tangerine Road (as in a CAC) may have resulted in a consistent policy for Tangerine Road among all jurisdictions.



Access and Mobility Study Report

A consistent comment from local governments was that ADOT is focused on rural highway issues; therefore, alternative transportation modes are not addressed adequately by ADOT projects. In developing their section of the road, it was important to Oro Valley to incorporate pedestrian and bicycle facilities into the design of Tangerine Road. As the Tucson area continues its urbanization, ADOT should respond by encouraging and providing facilities for alternative modes, especially pedestrians.

It is highly likely that, without regional funding, Oro Valley would not have had sufficient funds to complete the improvements to Tangerine Road; therefore, tying regional funding to compliance with adopted access management programs may have had a significant impact on implementing access management recommendations along Tangerine Road.



Local Access Management

As discussed earlier in this report, a successful regional program cannot exist without having effective local access management programs in place. This section of the report addresses local access management programs. The section will discuss the major components of existing local programs, advantages and disadvantages of local programs as perceived by the authoring agencies and outside parties, and, finally, present model programs that could be utilized to improve existing programs or to implement in areas that do not have currently an access management program.

To determine the current state of existing local access management policies and procedures, local jurisdictional documents, such as subdivision and platting rules and regulations and specific access management guidelines were obtained and reviewed and local transportation agencies were interviewed. These activities established the basis for comparison between programs. During interviews with the local agencies, they were asked about their methods of administering access management, the strengths and weaknesses associated with their programs, methods to improve the programs, and successful and unsuccessful examples of access management policies in their area and elsewhere. In several cases, interviews were held with both the administrative head of the transportation agency and the traffic lead within the organization. In addition to transportation agencies, information was solicited also from the development community and from private sector transportation engineers in the area. The development community did not respond to repeated attempts to involve them in this study; however, two local private sector transportation engineers agreed to provide information. Because these individuals provide traffic impact assessments for development projects, they deal frequently and intimately with access management policies. The results of these interviews and a review of the access management policies are presented in the following discussion.

Methods Of Administering Access Management

According to the TRB, state and local agencies have a variety of options for implementing access management. These methods may include: (1) adopting specific policies, directives, regulations, or guidelines; (2) during the development review process in response to a request for a development, rezoning, or connection permit; (3) implementing roadway design standards during new construction or improvement projects; and, (4) purchasing access rights or properties. In general, regulations are more enforceable than guidelines or policy, but they are rigid and do not allow the flexibility of policy or guidelines. Locally all of these methods are utilized and each of these methods are discussed below.

Pima County emphasized that some of the best access management in the area was self-imposed. The Santa Catalina Foothills (Murphy Trust lands) were developed in the 1930s through the 1950s. While developing, this area implemented covenants, conditions, and restrictions (CC&Rs) which were linked to the properties. Access restrictions were imposed within the CC&Rs, and, as a result, this area has some of the best access management in Pima County. It must be noted, however, that these CC&Rs were developed over 50 years ago. Since that time, the priorities of development have changed and these types of restrictions are unlikely to recur. In fact, considering the shift of focus to infill in many areas, these CC&Rs may no longer be appropriate.



Local access management programs are in various states of development. The Arizona State Transportation Board approved Policy 12 in 2003, which directed ADOT to develop an access management classification system and manual to guide uniform access management throughout the state. ADOT now has a consultant under contract to develop a statewide access management program.

Comparison of Local Programs

Within the area, only two jurisdictions, the City of Tucson and The Town of Sahuarita have produced specific access management guideline documents, *Transportation Access Management Guidelines for the City of Tucson, Arizona* (March 2003) and *Access Management Guidelines, Town of Sahuarita* (May 2004), respectively. Although the Town of Oro Valley has not adopted town-specific access management guidelines, they have incorporated the TRB's Access Management Manual by reference within their Subdivision and Street Standards, which were revised in 2004. However, Oro Valley's method is probably not as meaningful to developers as a guideline document specific to the area would be.

Both Tucson and Sahuarita based their guidelines on roadway functional classifications as discussed earlier in this report. Both use the same functional classifications of arterials, collectors, and local roadways, but the Town of Sahuarita's guidelines focus on arterial roadways. Sahuarita's guidelines are condensed compared to the Tucson guidelines, because a number of issues specific to Tucson are not included; however, Sahuarita has included their Traffic Impact Assessment (TIA) requirements, based on ADOT methodology, in the document, which Tucson has not. Tucson's guideline contains also roadway design standards.

The City of Tucson emphasized that, although guidelines may not have the force of regulation, they allow flexibility and the use of engineering judgment in addressing numerous situations that are not addressed within a regulatory framework. Therefore, guidelines allow compromise solutions to be negotiated with developers.

Implementation Methods

Most areas implement access management through the development review process in response to a request for a development, rezoning, or connection permit. Developments are often required to submit a TIA to assist the agency in its review; however, as pointed out by private sector transportation engineers in the area, TIA requirements are inconsistent between jurisdictions. For example, Oro Valley requires a TIA regardless of the size of the development project, while others (e.g. ADOT and Sahuarita) require only larger development projects to prepare TIAs. Reviews of developments are accomplished pursuant to the City of Tucson's Land Use Code, the Town of Oro Valley's Subdivision and Street Standards, the Town of Marana's Land Development Code, and Pima County's Subdivision and Development Street Standards. ADOT is involved in development projects only if there is an application for a driveway permit, although they actively participate in project reviews when requested by local governments.

Access management is also addressed through roadway design. Geometric design features, such as interchanges, frontage roads, medians, median openings, auxiliary lanes, driveway design, and intersection channelization are used to manage access and vehicular turning movements. Geometric design criteria are normally included in design manuals and these criteria are implemented as roadway improvement projects occur.



Most of the local jurisdictions have design standards or guidelines, including: Pima County's Roadway Design Manual, Pima County's Environmentally Sensitive Roadway Design Guidelines, Pima County Subdivision and Development Street Standards, City of Tucson's Transportation Access Management Guidelines, and the Town of Oro Valley's Subdivision and Street Standards. Several areas use Pima County's Roadway Design Manual or ADOT's Roadway Design Guidelines, depending upon the facility.

Another method of managing access is through the purchase of access rights or exercising eminent domain. Although this process may be costly and time consuming, it is a permanent solution. With the exception of one case by the City of Tucson, it appears that this method is not utilized locally.

Acceptance and Effectiveness of Local Programs

In general, the local jurisdictions that have implemented access management programs were relatively satisfied with them. Several areas mentioned that access management programs could be rendered ineffective through interference by political figures; however, this was an issue that was outside their control. The City of Tucson felt their program could be improved by providing funding specific to the program. In retrospect, they would recommend that an access management budget line item be provided to address some of these issues as they arise (e.g. purchase of access rights).

Other issues which indirectly impacted effective access management were also discussed with local agencies. Pima County referred to the issues of lot splitting which is allowed by state law. This process allows individuals to circumvent subdivision laws, although Pima County stated that this was more a problem with county-wide control of land uses than access. ADOT referred to cases where local rezoning eliminated access to local roads. In these cases, ADOT is required to issue driveway permits to ensure that individuals may access their properties. ADOT felt also that inconsistencies in programs from jurisdiction to jurisdiction were a problem.

Several successful local applications of access control were noted during the agency interviews. The City of Tucson cited developments along Houghton Road near Rita Road as examples of successful access management. Oro Valley pointed to the Verde Ranch development on the southwest corner of Tangerine Road and La Cañada Road, which was designed so that traffic cannot cut-through the development to shorten the distance between Tangerine Road and La Cañada Road. Pima County pointed to the Catalina Foothills development which was mentioned earlier.

Local Practitioner Interviews

Recommendations were solicited also from private sector transportation engineers in the area. These individuals provide traffic impact assessments for projects and, therefore, deal frequently with access management policies. Their recommendations were:

- Adopt clear and consistent access management policies/regulations by all agencies who do not have them. The lack of a program makes these agencies appear indecisive and inconsistent. ADOT was cited as needing a formal access management policy. For example, ADOT tends to require right-turn deceleration lanes in almost every case. Criteria under which a right-turn lane is required should be specified.



- Access management policies should be consistent between jurisdictions. Often the policies differ along the same corridor, which makes it difficult for developers to comply. Differences between Pima County and City of Tucson guidelines were cited as examples of inconsistent programs.
- Better coordination between ADOT and local agencies regarding land use decisions and access issues is needed. Normally, ADOT is involved in the process too late.
- Access management should address all modes of transportation. Most policies address vehicular access only. A comprehensive access management program should address also pedestrians and bicycles and how these modes can safely get from an adjoining street to a land use such as shopping center or school.
- Developers should be educated on the motive for access management regulations. Developers typically want access to the highest functional classification roadway, which in most cases is inappropriate.
- To protect the functional classification of roadways, agencies should charge an access fee from public roadways to recover the value of capacity lost because of side friction at the access points. The fee would depend on land uses and the roadway classification, and could include differential fees for driveways, partial access driveways, and median openings. This fee would be in addition to impact fees, which pay for new capacity, not diminished capacity.
- Development size triggers should be implemented for TIAs. Requiring TIAs for every size project is a waste of resources.

When asked for examples of successful and unsuccessful access management in the area, one private sector transportation engineer cited the Tucson Mall as an example of successful access management. At the time the Mall was constructed, no access off Stone Avenue was provided; therefore, two access points were provided off Oracle Road and two were provided off Wetmore Road. The Thornydale Road/Ina Road area was noted as an example of an unsuccessful access management situation. It was noted that the intersection of Oldfather Road on north and the private driveway on the south is a highly undesirable situation and that the area is characterized by far too many driveways.

Representative Policies

Most successful policies involve the following key elements:

- Classifying roadways into a logical hierarchy according to function,
- Planning, designing, and maintaining roadway systems based on functional classification and road geometry,
- Defining acceptable levels of access for each class of roadway to preserve its function, including criteria for the spacing of signalized and unsignalized access points,
- Applying appropriate geometric design criteria and traffic engineering analysis to each allowable access point, and



- Establishing policies, regulations, and permitting procedures to carry out and support the program.

The Ohio-Kentucky-Indiana Regional Council of Governments (OKI COG) has produced a guideline access management document that may be useful for adaptation and adoption by local governments (Appendix B). This guideline incorporates the key elements of successful programs discussed above.

TRB's *Access Management Manual* does not contain a model ordinance for adoption by local jurisdictions. Instead, TRB developed guidelines to assist state highway agencies in developing language for statutes and determining the content of regulations. These guidelines are presented in a collection of paragraphs that can be used in statutes and rules and listings of issues and elements common to access regulations. For model Access Management Policies, TRB recommends that model regulatory language be obtained from rules in place in Colorado, New Jersey, Florida, Maine, and Oregon. In addition to these programs, the City of Tucson and the Town of Sahuarita's guidelines may be more easily adapted to local situations.

Summary

Access management is important to maintaining roadway safety and to maintaining or improving mobility, which can be a significant quality of life issue. This study conducted interviews with local jurisdictions regarding local policies, researched access policy documents in other areas, developed recommendations for local and regional access management policies and for improvements to existing policies, and demonstrated that these policies would work in the local situation.



References

- Access Management: A Review Of Recent Literature
<http://www.ctre.iastate.edu/Research/access/Litrev.html>
- Access Management (Driveways and Entrances)
<http://www.state.me.us/mdot/planning-process-programs/access-mngmnt.php>
- Albrecht, Christopher and David Plazak. Bridging the Gap Between Access Management Ideals and Land Use Planning Practice: Suggested Policies and Potential Benefits. Transportation Conference Proceedings. 1998.
- Alternative State Approaches to Transportation/Land Use Interactions
<http://www.uwm.edu/Dept/CUTS/lu/lu-phil2.pdf>
- Beimborn, Edward, et al. Land-Use and Environmental Considerations. In Transportation Research Circular E-C015: Statewide Transportation Planning. 2000.
- City of Tucson/ Transportation Access Management Guidelines for the City of Tucson, Arizona. 2003.
- Comprehensive Planning: The Land Use and Transportation Link
<http://www.uwex.edu/ces/cty/washington/cnred/growth/ppt/transportationlanduse.pdf>
- Federal Highway Administration. An Overview: Land Use and Economic Development in Statewide Transportation Planning. 1999.
- Forbes, Gerry. Urban Roadway Classification: Before the Design Begins. TRB Circular E-C019: Urban Street Symposium. 2000.
- Giguere, Ronald. Access Management. TRB Committee on Access Management A1D07. 2000.
- Integrated Land Use and Transportation --Observations for Coastal Sussex County, Delaware
<http://www.ocean.udel.edu/mas/SGseminar/Final%20Report.pdf>
- Integrating Transportation & Land Use Planning
<http://www.plannersweb.com/trends/6roads.html>
- Kramer, J., K. Williams, and K. Seggerman. *Integrating Access Management into the MPO Transportation Planning Process*. Research Findings NCHRP Project 8-46. August 2004.
- Land Development and Access
<http://www.co.kane.il.us/DOT/2030/finaldraft/section/Section04.pdf>
- Land Development and Subdivision Regulations that Support Access Management
http://www.cutr.usf.edu/research/land_dev.pdf
- Land Use and Development
<http://www.gov.mb.ca/tgs/2020transport/info/documents/landuse.pdf>
- Land Use And Transportation
<http://www.odot.state.or.us/tdb/planning/highway/documents/1badoptedchanges2.pdf>
- Land Use Density and Clustering TDM Encyclopedia Victoria Transport Policy Institute
<http://www.vtppi.org/tdm/tdm81.htm>



Access and Mobility Study Report

Land Use Transportation Interface

<http://www.nctcog.org/trans/landuse/>

Model Land Development and Subdivision Regulations That Support Access Management

http://www.cutr.usf.edu/research/land_reg.pdf

Nebraska Department of Roads. Access Control Policy to the State Highway System. 1993.

Route 322 Land Use Study

<http://www.dvrpc.org/data/pubs/abstract/02022.htm>

Sisiopiku, Virginia. Access Management Training. University Transportation Center for Alabama. UTCA Report 03235. 2003.

State-local Coordination in Managing Land Use and Transportation Along State Highways

http://www.ce.utexas.edu/prof/kockelman/public_html/JUPD,InteragencyCoop.pdf

State of Colorado. State Highway Access Code. Volume 2, Code of Colorado Regulations 601-1. 2002.

State of Montana Department of Transportation. Access Management and Land Use Planning. TranPlan 21 2002 Update. 2002.

Town of Sahuarita. Access Management Guidelines. May 2004

Transportation and Land Use Patterns

<http://www.michiganlanduse.org/resources/councilresources/TransportationandLand%20Use.pdf>

Transportation Research Board. Access Management Manual. Washington, DC. 2003.

Transportation Research Board Publication: NCHRP Synthesis Reports #233. Land Development Regulations that Promote Access Management 1996.

Urban Transport Patterns and Land Use Planning

<http://www.unece.org/env/europe/utlu.htm>

Vermont Agency of Transportation. Vermont Corridor Management Handbook. 2005.

Appendix A

General Access Management Policy Guidelines in other areas

Access Management and Regional Transportation Planning and Funding

Kramer et al (2004) noted “success factors” that seemed to contribute to the integration of access management considerations into Metropolitan Planning Organization (MPO) planning practices. Kramer’s success factors include:

- Integrate access management as a supporting strategy into every aspect of MPO activities, at every level of MPO decision-making, and into every MPO process.
- Develop MPO policies and practices that support roadway functional hierarchy, particularly the concept of limiting access on higher order roadways.
- Place available funds into separate budgets for different types of projects, including budgets specifically intended to address access management issues or for other project categories that are supported by access management techniques (safety, congestion mitigation, aesthetic and other targeted community enhancements, etc.).
- Include as many people as possible in the education process. Don’t attempt to accomplish access management in a vacuum. Educate MPO participants, elected officials, stakeholders and the public about the benefits of access management at every opportunity presented.

MPOs can fund special studies using their annual allocation of federal planning funds, flexible federal surface transportation funds, or other local and state-provided funds. These studies may be part of a broader thoroughfare planning effort, or they may be special subarea or corridor studies that focus on identifying root causes and potential solutions for facility degradation. Access management strategies are often suggested for preserving roadway safety and efficiency as a part of these studies.

In 1998, for example, the Kentuckiana Regional Planning and Development Agency engaged in a project to identify access management, right-of-way preservation, and developer mitigation measures for the greater Louisville metropolitan area. The project involved the development of alternative access management and right-of-way preservation systems that could be implemented at the local level, along with subarea plans illustrating applications for a variety of conditions, including older strip development, scenic corridors, and freeway interchange areas. These studies were part of a broader effort to update the regional thoroughfare plan.

A relatively comprehensive example of the integration of access management into the transportation planning process may be found in Michigan. The Michigan system is characterized by:

- Access management is a priority in the early stages of planning and thereafter. Corridor studies in Michigan are entitled often “Roadway Comprehensive Corridor and Access Management Plan”; therefore, even the document title reflects an emphasis on access management and a recognition of its importance in the planning process. This process is included also into the selection of alternatives. Alternatives that incorporate access management into the design are given special consideration. Several of the corridor and access management plans reviewed for this report have a mission statement that states clearly the plan’s purpose. This purpose is normally to identify improvements to the roadway and local regulation of access that balance the mobility needs of local and through users safely and that recognize the important roles that local

governments and Michigan Department of Transportation (MDOT) each play when making decisions that affect the corridor.

- Long term compliance with the access management recommendations from the studies is attained by the application of a coordinated review process that involves the local government entities along the corridor. Prior to initiation of the corridor study, each community along the corridor enters into a Memorandum of Understanding (MOU) to create the plan, to coordinate review and approval of development projects along the corridor, and to abide by the results of the study. The MOU establishes also a procedure for initiating meetings and imparts time limits on reviews. The MOU establishes also thresholds for review of projects within or adjacent to the corridor.

Each of these points is discussed in the following paragraphs.

Coordination Between Jurisdictions

In addition to the MOU, Michigan forms a Corridor Advisory Committee (CAC) for each major corridor. The CAC includes all affected local governments, MDOT, a representative of the County Road Commission, the County Planning Commission, and the County Drain Commissioner. The CAC meets monthly and reviews all pending permits and prospective development projects proposed along the corridor. The CAC may be established for all corridors listed in a Major Streets and Routes Plan or the CAC may be established for corridors as corridor studies are proposed and implemented.

Michigan's coordinated permit reviews allow zoning jurisdictions to issue conditional site plan approval until receipt of a driveway permit from MDOT and/or the County Road Commission and those agencies can issue conditional permits zoning approval from the local government is received. This prevents individuals from avoiding important access management standards and typically results also in a more thorough review of pending site plans. The coordinated review can uncover also future traffic safety or capacity problems that otherwise might not be discovered for some time. Michigan feels that developers benefit from the coordination also. Because all of the affected agencies are reviewing the same site plans together, the developer is not required to take issues back and forth between key agencies as often.

Coordinated permit reviews serve also as a forum to discuss needed changes to access management standards. If a particular standard is recognized as problematic in several jurisdictions, it probably should be changed in all jurisdictions. As mentioned repeatedly by local private transportation engineers in the Tucson area, a uniform set of access management standards along the corridor allows the development community to become familiar with one set of standards and should improve compliance. Another benefit of coordinated reviews becomes evident when applicants request a variance. Sharing experiences and jointly reviewing the variance request makes it less likely that any one jurisdiction will create a precedent that may be harmful to other areas.

The coordinated reviews need not be solely the responsibility of local governments. The MPO may review the conceptual design of transportation projects. This may provide an opportunity for the MPO to promote access management and other regional goals and objectives. Metroplan Arkansas regularly reviews state highway project conceptual designs in the region to ensure that median treatments, sidewalks, or other desired access management and corridor treatments are consistent with the goals and objectives of the long range transportation plan.

According to the TRB, Metroplan worked with the Arkansas State Highway and Transportation Department to replace a proposed five-lane section of State Highway 60 with a four-lane section that incorporated a raised center median. As a result, a design concept for the median (including the location and design of partial and full median breaks) and future driveway spacing was developed. Metroplan staff met also individually with commercial property owners on the corridor to discuss access issues, address specific concerns, and obtain general support for the concept. This success engendered further actions to expand the median design concept to the next phase of the project and to incorporate landscaping.

Michigan considers also that coordinating community capital improvement programs (CIP) with corridor improvements and a comprehensive public involvement program are important to the success of access management programs along corridors. Coordinating CIPs with neighboring jurisdictions and road authorities may prevent duplicate expenditures, assist in phasing work to avoid conflicts, and take advantage of economies of scale. Many of Michigan's corridor studies also contain objectives to educate citizens, businesses, and property owners about the basic contents of the corridor plan and seek public input before adopting any corridor plan updates.

Long Term Compliance with Access Management Policies

Long term compliance with the access management recommendations in Michigan is attained by the application of a coordinated review process that involves the local government entities along the corridor. Prior to initiation of the corridor study, each community along the corridor enters into a Memorandum of Understanding (MOU) to create the plan, to coordinate review and approval of development projects along the corridor, and to abide by the results of the study. A typical MOU provides in part:

“The parties to this MOU agree that they will not authorize site plan approvals, rezonings, new Planned Unit Developments, or similar projects requiring Planning Commission action in the planning area unless and until they have met jointly to discuss and review the impact of the proposal—favorable or unfavorable—on the future development of the Corridor.”

Other important considerations for a successful MOU include a procedure for initiating meetings and imparting time limits on reviews and project size thresholds for review of projects within or adjacent to the corridor.