

ACCOMPLISHING ALTERNATIVE ACCESS ON MAJOR TRANSPORTATION CORRIDORS

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Introduction

Many communities have developed access management plans and programs aimed at reducing the number of driveways on major arterial routes. These plans often involve the provision of service roads, shared driveways, and interparcel connections that reduce the need for individual sites to have direct, driveway access. Yet accomplishing alternative access can be challenging in today's development environment. This paper examines strategies for accomplishing alternative access on major transportation corridors, based on actual case examples. It addresses policy, regulatory, and funding strategies for alternative access that can be directly applied by communities alone, or in coordination with state transportation agencies and MPOs.

Alternative Access in Subdivision Regulations

Alternative access is best accomplished when new lots are being created on major roadways or land is being subdivided for development. Unmanaged subdivision activity on major roadways is a key constraint to accomplishing alternative access. Even communities with effective subdivision regulations can face access problems from minor land divisions that are exempted from plat requirements.

Subdivision statutes in most states exempt certain types of minor land division activity from the platting process, provided the resulting plat does not include a road. Additional exemptions may be provided by state legislatures and through local subdivision ordinances. The intended purpose of such exemptions is to allow property owners to engage in minor subdivision activity, such as transferring a lot to a family member, without incurring the expense of platting.

Yet lot split exemptions also provide an avenue for property owners to circumvent platting requirements by incrementally subdividing land to avoid the regulatory thresholds. The resulting "plats" may rely heavily on private access easements or flag lots, or more commonly they are divided in strips along existing roads and highways, increasing demand for direct driveway access. Another typical result is the creation of long, narrow "bowling alley" lots. These lots are subsequently subdivided with access via cul-de-sacs that have no connectivity to adjacent parcels. Figure 1 illustrates these typical land division and access problems with a scanned image of property ownership patterns along a major road in a small city.

These problems can be avoided by enacting a few basic changes to common development requirements. One such change is to increase the minimum lot frontage requirement for properties abutting major transportation routes. A variation of this technique is to tie minimum lot frontage to connection spacing standards, where they exist. (Note – the term "connection" includes spacing standards for driveways and street connections.) Property owners could then be allowed to further subdivide the parcel into smaller frontages, but only where each lot is served by alternative access (e.g. a local street, cross access easement, or service road).

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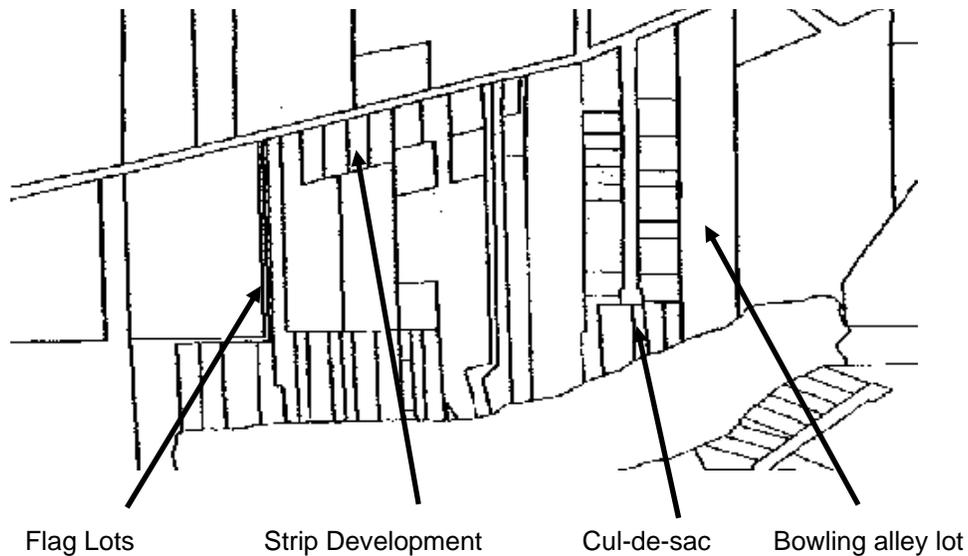


FIGURE 1 Common land division and access problems.

For example, Levy County, in rural west central Florida, established this requirement for its primary arterial (US Highway 19), which is tied to the 660 ft access spacing requirement of the Florida Department of Transportation:

Section 1.5 Lot Frontage Requirements

- 1) The minimum lot frontage for all newly created lots within the overlay district shall not be less than the applicable minimum connection spacing standard. The frontage requirement shall not apply to properties that obtain driveway access only from an interior road.
- 2) Existing or assembled lots with less than the required frontage may be permitted individual access to US 19 only where alternative access or joint and cross access with adjacent properties is clearly impractical as provided in Section 1.7(5).

Another regulation that could be incorporated into local regulations is a prohibition on the creation of new lots that fail to meet adopted access spacing criteria, as in this regulation currently under consideration in Tallahassee, Florida:

Section 2.3 New lots or parcels on arterial and collector roadways.

1. No new lot or parcel shall be created along arterial or collector roadways in the City of Tallahassee or Leon County that would result in connection spacing that does not comply with the connection spacing or corner

clearance standard(s) for the abutting roadway(s) due to inadequate lot frontage, or the lack of alternative access where smaller lots are proposed.

2. All lots and parcels that are proposed on or after the effective date of this ordinance must be reviewed for conformance with this section by the jurisdiction where they are proposed and approved, prior to being recorded in the property records of Leon County.

Another important provision common to most subdivision ordinances is a requirement that residential subdivisions on major roads provide access to individual lots from a local street, like this example from Martin County, Florida:

Access to Homes and Subdivisions.

1. When a residential development is proposed that would abut an arterial or major collector roadway, it shall be designed to provide lots abutting the roadway with access from an interior local road or frontage road. Direct driveway access to individual one and two family dwellings from arterial and major collector roadways shall be avoided. All other reasonable access alternatives shall be investigated and judged unacceptable by the County Engineer before direct residential driveway access on an arterial or major collector is permitted.

Most communities require all new lots to have access to a public road and to meet minimum lot size and frontage requirements. Reviewing new lots for conformance with these provisions is an opportunity to evaluate whether the proposed lots should provide for alternative access in accordance with other local policies. A streamlined review process for lot splits and other minor subdivision activity that may otherwise be exempted from subdivision review helps assure that lots have appropriate access, without placing an unnecessary review burden on the property owner.⁸

Licking County, Ohio, for example, handles many access issues through the land division process for major and minor land divisions. A minor land division includes actions that will: 1) result in no more than five lots, including the remainder of the original lot, 2) not involve the opening, widening, or extension of any street or road, or easement of access, and 3) not be located on a roadway classified by Licking County as a minor or major arterial. Major land divisions include all other land divisions and any development activity that will involve multi-family, commercial, industrial, and quasi-public land uses. Both application processes involve the submittal of a site plan that outlines the proposed site circulation system and access points within and between the proposed lots, as well as to the external roadway network.

It can be particularly challenging to avoid individual driveway access to single family homes along rural highways. In *Rural by Design*, Randall Arendt notes that property owners can respond positively if provided with low cost alternatives to road stripping. Suggested techniques include working with property owners on small concept plans for shared access drives, and allowing shared gravel driveways built to appropriate standards (1). Says Arendt,

“By allowing the shared driveway access to be gravel surfaced (perhaps 12-foot wide for one pair of homes, and 16-foot wide a group of five), instead of requiring the rural landowners to construct expensive subdivision streets, local officials can eliminate one of the greatest obstacles deterring such owners from subdividing the property in a creative, nonstrip fashion” (1).

Unified Access to Shopping Center Sites

Another alternative access issue relates to shopping center outparcels – lots created along thoroughfare frontage of shopping center sites and leased or sold separately due to their high value location. If treated separately in development review and site planning, these lots could each have individual driveways on a major road, sometimes with no internal connection to the surrounding development (Figure 2).

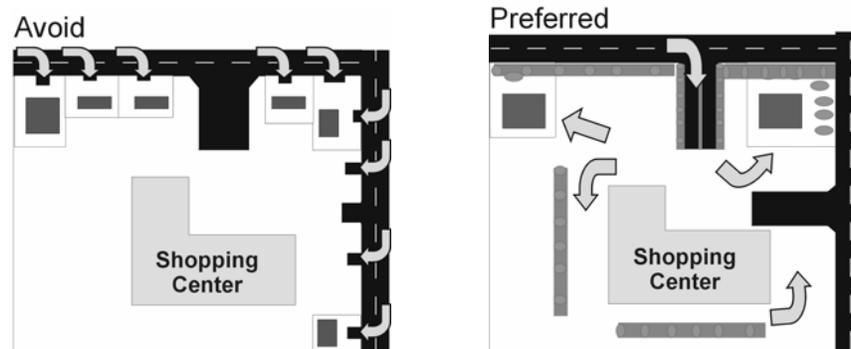


FIGURE 2 Promote internal access to shopping center outparcels (3).

To avoid this problem, local governments can establish a requirement that properties consolidated for development or those under common ownership, will be treated as one property for the purposes of access review. Regulations should also require outparcels to be tied into the on-site circulation system of the larger shopping center. Below is sample regulatory language to address these issues, as adapted from a Florida model (2):

1. In the interest of promoting unified access and circulation systems, development sites under the same ownership or consolidated for the purposes of development and comprised of more than one building site shall not be considered separate properties in relation to the access standards of this code. The number of connections permitted shall be the minimum number necessary to provide reasonable access to these properties, not the maximum available for that frontage. All necessary easements, agreements, and stipulations required under Section 7 shall be met. This shall also apply to phased development plans. The owner and all lessees within the affected area are responsible for compliance with the requirements of this code and both shall be cited for any violation.
2. All access to outparcels must be internalized using the shared circulation system of the principle development or retail center. Access to outparcels shall be designed to avoid excessive movement across parking aisles and queuing across surrounding parking and driving aisles.
3. The number of outparcels shall not exceed one per ten acres of site area, with a minimum lineal frontage of 600 feet per outparcel. This frontage requirement may be waived where access is internalized using the shared circulation system of the principle development or retail center. In such cases the right of direct access to the roadway shall be dedicated to the (*local government*) and recorded with the deed.

Service Roads

Service roads are local or collector roads that generally provide alternative access to small commercial

tracts along a major roadway (3). Frontage roads are a type of service road that parallels an arterial roadway or freeway between the roadway right-of-way and the front building setback line. Frontage roads can work well for light office or single family residential developments, where they begin and end between major road intersections. However, continuous frontage roads can lead to crashes and operational problems if they connect too close to a major roadway intersection. Therefore, it's a good idea to provide buildable sites between the service road and the major road right-of-way and move the service road to the rear of individual sites. (One-way frontage roads are another way to reduce intersection conflicts.)

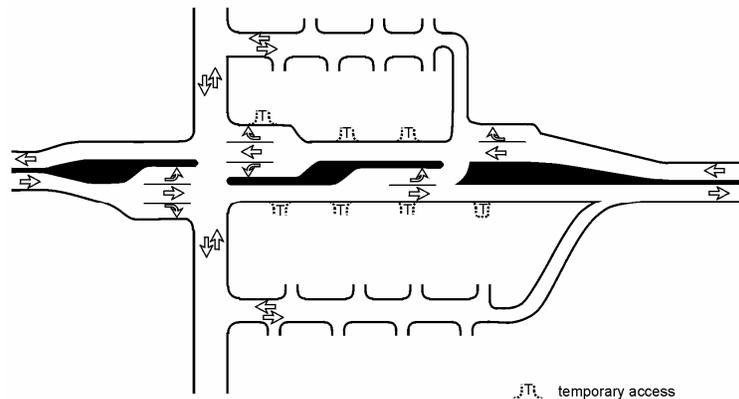


FIGURE 3 Sample service road configuration (3).

Some local governments have successfully implemented alternative access on major roads through “frontage road” ordinances. The Hernando County (FL) Board of County Commissioners, for example, adopted a frontage road ordinance in 1986 (Ordinance 86-8), due to concerns about rapid development and future traffic congestion on U.S. 19. The ordinance applies to U.S. 19 and several other major roads within the county, and requires each developer of property adjacent to major arterial highways to provide for the funding and construction of frontage roads upon demonstration of need and demand by the County.

Although the Hernando County ordinance uses the term “frontage roads”, the roads may be built to the front of a site, the rear, or in a zigzag configuration. The ‘developer’ is defined as “the person or entity responsible for increasing the traffic demand upon the arterial system by either building a new building, expanding the capacity of an existing building, changing of the approved use, or subdividing real property to create additional building lots” (4). Development is said to occur when the daily trip generation of the site increases by more than ten trips per day determined using the Institute of Transportation Engineers (ITE) Trip Generation Manual.

The core provisions of the frontage road ordinance require developers to provide funds to the County, who will construct the frontage road at their discretion. Any driveway permits directly connecting to the arterial are considered temporary and will be revoked when the frontage road is constructed. These key provisions are provided below:

“General Requirements. Developers of properties adjacent to the major arterial highway grid must provide at the developer's expense a frontage road from property line to property line parallel to the arterial highway upon demonstration of need and demand by the county.

The frontage road is to be designed to county designated specifications. The developer shall furnish to the county sufficient funds for the engineering and construction of the frontage road across the property when the county indicates that sufficient length is available to construct a link in the frontage road system.

All driveway cuts issued to developers of properties adjacent to arterial highways shall be considered temporary and subject to removal when the frontage road link is constructed across the property" (4).

Hernando County also added the following objective and policies to the local comprehensive plan, to address a goal for maintaining adequate transportation capacity to accommodate anticipated growth:

Objective 2.04D: Fully implement a fully integrated frontage road system in the urban sections of the Florida Intrastate Highway System (FIHS) Arterial Network.

Policy 2.04D(1): Continue to require new development adjacent to state arterials to comply with the County's Frontage Road Ordinance.

Policy 2.04D(2): Provide for the completion of missing links in the frontage road network by incorporating these projects into the Short and Long Range Elements of the MPO's cost affordable Long Range Transportation Plan.

The frontage road ordinance is working well and the evidence of successful applications have reduced both the frequency and the effectiveness of opposition by developers. According to staff, frontage roads are becoming "a mindset" and developers sometimes even provide them on non-regulated roadways. Yet funding remains an issue in the County. No funds have been earmarked through the MPO process to acquire additional right-of-way, build gaps in frontage roads, or to provide enhancements like turn lanes or sidewalks where necessary. Another issue is the lack of a specific frontage road plan or map, which staff believes would help to guide development. Also, the ordinance has not been updated to reflect the importance of separating connections at intersections and designing entrances with adequate throat depth.

Encouraged by the success of the Hernando County frontage road ordinance, the small city of Brooksville adopted a similar ordinance in June of 2003. Brooksville, which is the Hernando County seat, enacted the following provisions that are notably different from the Hernando County ordinance:

"If the City does not determine need within ten (10) years from the date the Certificate of Occupancy is issued for the current use, the developer may be exempted from this requirement by the City Council until such time as when the impact from additional development, redevelopment or change of use on the site occurs."

"The frontage road requirement may also be applied to collector roads for a distance of up to 600 feet from their intersection with an arterial highway, which will provide for greater safety by effectively looping frontage road traffic away from the intersection of the collector road and the arterial highway system."

This section allows the City to impose the requirement to reserve an easement for the frontage road and require the necessary financial assurances, but to later waive the requirement should it prove unnecessary. The City of Brooksville's Land Use/Zoning Regulations were also amended to further clarify when the City would consider exceptions, as follows:

"To meet frontage road requirements, all properties located adjacent to arterial highways are required to meet a minimum seventy-five (75) foot building setback from the arterial highway. The administrative official may provide exceptions from this requirement with the approval of the City Manager and enforce the standard zoning district front yard setback from the arterial roadway in the following circumstances:

- A hardship exists in the redevelopment of an existing developed parcel due to the

inadequate depth of the property and/or the continued use of an existing structure.

- The developer has provided for a reverse frontage road along the rear portion of their property. Any such exception may be subject to additional conditions.
- In the redevelopment of existing developed property adjacent to an arterial highway, frontage road standards may be modified to provide for joint access driveways that provide for travel from one property to the next without having to access the arterial highway.
- Frontage road standards and setbacks will not be applied to property located within the Central Business District as delineated in the City's adopted Comprehensive Plan".

The City is taking a proactive role in working with property owners and the local economic development department to implement a frontage road on SR 50, using right-of-way donations, economic development funds, and Community Development Block Grant funds. The City has also been successful in obtaining State money for the project through the Transportation Outreach Program (TOPS), a Florida Department of Transportation program that was recently discontinued.

Opportunities to partner with the state transportation agency can increase the ability of smaller communities to create service roads on state highways. The small City of Hays, Kansas, located at the crossroad of Interstate 70 and US Highway 183 (Vine Street), is one example. As the only major north/south corridor in the region, US Highway 183 plays a critical role in the regional movement of traffic. Within the City of Hays, US Highway 183 is a 4-lane road serving an intensely developed commercial zone with numerous signalized and unsignalized intersections. This segment contains the roadway's highest traffic volumes as well as the highest crash rates.

The City took measures to improve conditions along US Highway 183 in 1999. Improvements were made to a one-mile segment of the roadway that included curb and gutter replacement, asphalt surfacing, median landscaping, storm sewer installation, street lighting, and the addition of three traffic signals. However, state and local officials concluded that without some retrofitting and a higher level of management, greater development pressure would "jeopardize operational efficiency and would likely increase the magnitude of safety issues" (5).

With support from City officials, the Kansas Department of Transportation identified the corridor as a "Protected Corridor" within the agency's *Corridor Management Plan* in May 2000. The designation defines corridors "in need of an increased level of management to preserve capacity and functional integrity." To formalize coordination efforts, KDOT implemented Kansas Statute (KSA) 68-169 that authorizes the Kansas Secretary of Transportation "to enter into written agreements with political subdivisions of the State for highway purposes, including establishment of access control" (5). This partnering agreement established a mutual commitment to managing the corridor, particularly in relation to access and right-of-way issues.

City officials and KDOT then developed a *Corridor Master Plan* that called for the creation of alternative access for existing and future development, installation of parallel facilities and reverse access roads. Property owners were approached to dedicate public right-of-way across their property for the purpose of constructing reverse access roads. With a *Corridor Master Plan* in place, the roadway was eligible for state project funding under the Corridor Management Program. In 2003, the Hays City Commission passed Resolution No. 423 authorizing the City to participate in KDOT's Corridor Management Grants Program that would outline funding sources for acquiring additional right-of-way and associated improvements to US Highway 183.

Funding would be jointly provided by KDOT and the City of Hays. Specifically, KDOT would contribute two-thirds funding and the City would provide a one-third local match. KDOT allowed the City to apply the cash value of any dedicated right-of-way by an adjacent property owner toward the one-third local match.

State officials estimate the entire cost of the project to total \$4.6 million, with an estimated \$515,000 provided by the City.

Street Network and Connectivity

Many small or medium sized communities have developed in strips or ribbons along major arterial roadways. Local and collector street networks are often underdeveloped and major highways are used as access roads. The resulting conflicts between higher speed traffic and turning vehicles, bicycles, and pedestrians, have led not only to unsafe conditions but also to greater dependence on driving. These problems can be addressed through policies that promote activity centers and a connected network of local and collector streets.

Smaller blocks and a balanced, connected network of streets and sidewalks make an area more pedestrian, bicycle, and transit friendly, while increasing opportunities for alternative access. Therefore, many corridor access management plans include measures to improve the connectivity of local street networks. Although local streets help reduce the need for driveway access, too many minor street connections on major roadways can lead to the same safety and operational problems as having too many driveways. One way to address this issue is to evaluate all proposed street connections to major arterial roadways to assure that they conform with adopted access spacing standards or would otherwise pose no safety or operational concerns.

Existing local street systems provide a framework for a corridor access management plan. Where they are not adequate, a long-range plan could be developed to identify preferred future locations. Side streets may be laid out in a general grid pattern or branch out to accommodate terrain or other natural features. A system of parallel roads or service roads could run behind corridor properties with side streets intersecting the arterial at reasonable spacing intervals.

An example in practice is Fort Collins, Colorado, which promotes a supporting street network on arterials through street spacing and connectivity requirements in its land development code (6). The requirements are implemented mainly in developing areas through the development review process and applicants are required to submit an access management plan that advances the standards. The code ties street spacing with access spacing criteria, as follows:

Spacing of Full Movement Collector and Local Street Intersection With Arterial Streets. Potentially signalized, full-movement intersections of collector or local streets with arterial streets shall be provided at least every one thousand three hundred and twenty (1,320) feet or one-quarter (¼) mile along arterial streets, unless rendered infeasible due to unusual topographic features, existing development, or a natural area or feature. State Highway Access Control Code or specific access control plan adopted according to that code shall determine the location of collector or local street intersections with state highways [Section 3.6.3 (C)].

Spacing of Limited Movement Collector or Local Street Intersections with Arterial Streets. Additional non-signalized, potentially limited movement, collector or local street intersections with arterial streets shall be spaced at intervals not to exceed six hundred and sixty (660) feet between full movement collector or local street intersections, unless rendered infeasible due to unusual topographic features, existing development, or a natural area or feature [Section 3.6.3 (D)].

A planning and regulatory model for multimodal transportation districts (MMTDs) in Florida (7), applies concepts similar to those of Fort Collins. The model is aimed at achieving a more walkable, transit

friendly environment, but has the added benefit of improving street networks and connectivity through the following provisions:

"Policy 8: Street Network and Connectivity. MMTDs shall provide a dense, interconnected network of local and collector streets that supports walking, bicycling and transit use, while avoiding excessive through traffic in residential neighborhoods, in accordance with the following:

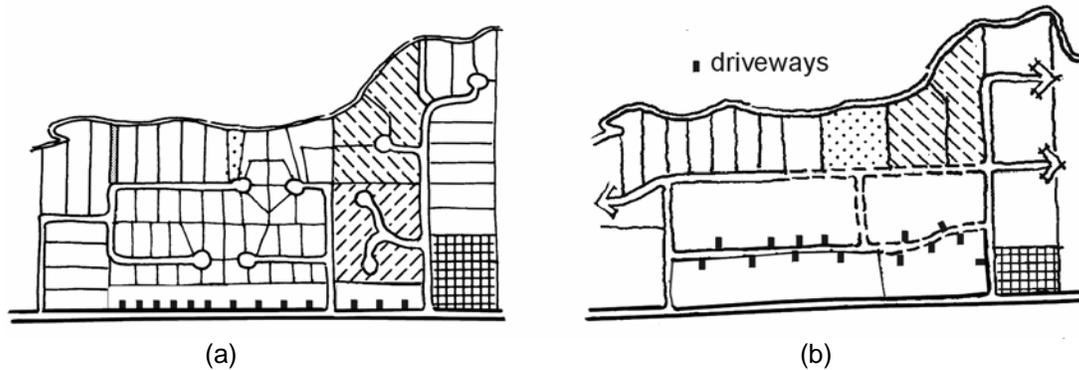
- a. The street network shall be comprised of a system of interconnected and direct routes with a connectivity index of 50 or more polygons per square mile as measured in the *FDOT Multimodal Transportation Districts and Multimodal Areawide Quality of Service Handbook*.
- b. For MMTDs with a street connectivity index below 50, the missing links in the street network shall be identified and eliminated where feasible through the development and capital improvement process.
- c. Each MMTD shall be subject to a maximum block (length or perimeter) requirement to advance connectivity as development and redevelopment occurs.
- d. Connections of new local and collector streets and driveways with arterial streets shall conform to adopted access spacing intervals of the agency with jurisdiction.
- e. The local street circulation pattern shall maximize access to individual lots and activity center destinations (e.g. schools, commercial areas, parks). At the same time, the circulation pattern shall discourage cut-through traffic in residential areas through designs such as curving roads, jogs, T-intersections, roundabouts, gateway treatments, and traffic calming techniques (e.g. chicanes, speed tables, raised intersections, on-street parking, etc)."

These plan policies and performance criteria for MMTDs are implemented through the following model regulations:

3.1 General Requirements

1. The street network shall be designed to promote the overall connectivity of the system while avoiding excessive through-traffic in residential areas by including:
 - a. Multiple direct multi-modal connections to and between local destinations such as parks, schools, and shopping;
 - b. Inter-connections to multimodal transportation facilities and services within and outside the boundaries of the MMTD, including bus services, regional rail service, regional greenway and trail systems, the FIHS, and the regional aviation facilities;
 - c. Modified grid systems, T-intersections, roadway jogs, and other appropriate traffic calming measures as provided in *[Section 4. Traffic Calming]* to discourage the use of local streets for cut-through traffic; and
 - d. Additions or enhancements to improve the street network connectivity index as provided in *[Policy 8 of the Model Comprehensive Plan Amendments]*.
2. All development plans shall contribute to developing and/or enhancing a street system that will allow access to and from the proposed development, as well as access to all existing and future development within a ¼ mile radius of the proposed development, via at least three

arterial or major collector streets upon development of remaining parcels within the ¼ mile radius.



- (a) Poor connectivity impedes walking, bicycling and transit use.
(b) Improved connectivity shortens local trips and improves multimodal mobility.

Figure 4 Connectivity of supporting streets (3).

3.2 Street Network Design

1. All development plans shall incorporate and continue all sub-arterial streets stubbed to the boundary of the development plan by previously approved development plans or existing development. Developers required to extend collector roads may be eligible for impact fee credits where such extension is not reasonably related to the impacts of the development. The requirements of this subsection do not apply if it is demonstrated that a connection cannot be made because of the existence of one or more of the following conditions:
 - a. Physical conditions preclude development of the connecting street;
 - b. Buildings or other existing development on adjacent lands, including previously subdivided but vacant lots or parcels, physically preclude a connection now or in the future, considering the potential for redevelopment.
2. The street network within development plans shall provide for future public street connections to adjacent developable or redevelopable parcels, and shall include block lengths not in excess of 660 feet, except where additional spacing is required in conformance with FDOT or [local government] access management standards and unless the developer demonstrates that a block length must be greater due to the existence of one or more of the following conditions:
 - a. Physical conditions (e.g. topography), buildings or other existing development on adjacent lands physically preclude a block length 660 feet or less; or
 - b. An existing public street terminating at the boundary of the development site, has a block length exceeding 660 feet, or is situated such that the extension of the street(s) into the development site would create a block length exceeding 660 feet. In such cases, every effort shall be made to accomplish reasonable block lengths to maintain walkability.
3. Proposed office and commercial development plans for sites abutting an arterial or major collector street must include internal vehicle connections from the subject development site to each adjacent site, where applicable. Exceptions may be provided where abutting uses are clearly incompatible or where physical conditions or existing development on adjacent sites

precludes such connection now or in the future considering the potential for redevelopment. Development plans shall include joint use driveways with adjacent sites wherever feasible.

Although these policies and regulations are designed for application in multimodal transportation districts, as defined in Florida law, they could be adapted for use by any community. Small or medium sized communities could apply such policies to reinforce grid street systems in urban core or main street environments, or to assure adequate supporting street networks in newly developing areas. These strategies reinforce alternative modes of transportation, while helping to reduce traffic conflicts and congestion on major roadways.

Conclusion

Alternative access to development along major roadways can be accomplished in a variety of ways, but is most readily achieved at an early stage when land is being subdivided or consolidated for development. Subdivision regulations could require platted streets to be extended to the property line to connect to adjacent undeveloped parcels, and require each applicant to continue or extend surrounding streets.

Where service roads are planned, developers could be required to set aside the necessary right-of-way as a condition of development approval, and to construct the service road or provide the necessary financial assurances. If necessary, temporary access may be allowed to the major road until adjacent properties develop and the service road is complete, at which time the temporary driveways would need to be closed – usually at the developer's expense.

Minor land division activity along major roadways will also need to be managed so it doesn't preclude opportunities for alternative access in the future. Local governments can enact regulations and review procedures for minor land divisions and alternative access. Regulatory strategies include increasing minimum lot frontage for properties on major roadways with no alternative access or restricting the creation of new lots that would not conform with access spacing standards. These policies help to preserve parcels of adequate width and depth to accommodate a range of developments, thereby increasing their market value and enhancing local economic development opportunities.

Alternative access may also be implemented when roadways are being improved. Some state transportation agencies build access roads or contribute to local road improvements where this would reduce safety and operational problems on a state highway. In some cases, a local government may opt to complete undeveloped segments of the road where needed to maintain continuity or as an incentive for private participation. Funding could also be sought through the MPO process in communities served by a metropolitan planning organization. State transportation agencies and MPOs should earmark funds for this purpose, however small, as this can be a significant incentive for small and medium sized communities to promote alternative access.

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