SAFE ACCESS IS GOOD FOR BUSINESS

U.S. Department of Transportation
Federal Highway Administration

You may be reading this primer because your state transportation agency or local government has told you about plans that will affect access to your business. They may be planning to install a raised median on your roadway, to close a median opening, or to reconfigure your driveway. Perhaps your request for a driveway is under review or the regulating agency has imposed conditions on its approval. Or, maybe the state or local agency is planning a new access policy and you have questions or concerns about the economic effects of these changes.

Whatever the reason, it is important for you to understand the basis for these changes and how they might affect your business. This primer will address questions you may have about access management and its effect on business activity and the local economy. It focuses on economic concerns that may arise in response to proposed access changes or policies, including potential impacts on business activity, freight and deliveries, parking for customers, and property or resale value of affected property.

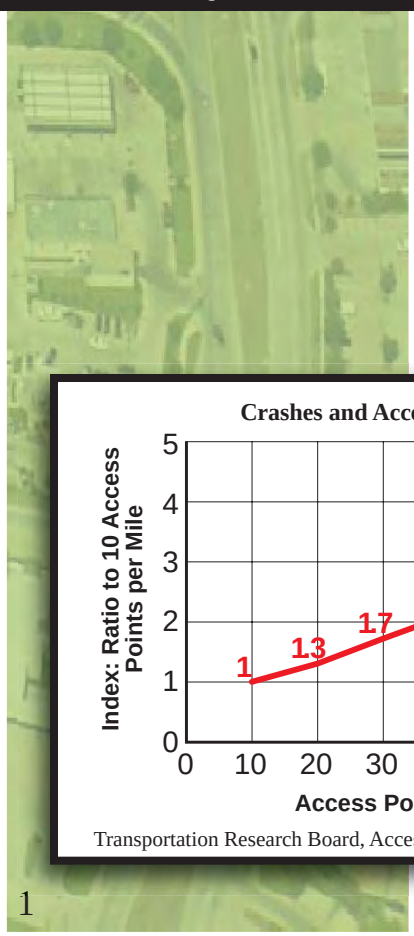
Why is my access being changed or reviewed?

The access changes being proposed for your business or road are part of a growing effort by government agencies to improve how major transportation corridors are managed. These efforts, known as access management, involve the careful planning of the location and spacing of driveways, street connections, median openings and traffic signals. Access management can also involve using medians to channel left-turns to safe locations, and providing dedicated turn lanes at intersections and access points to remove turning vehicles from through lanes. The combined purpose of these strategies is to reduce crashes and traffic delay.

To understand access management, it is important to know that roads have different primary functions; either to provide access or move traffic.

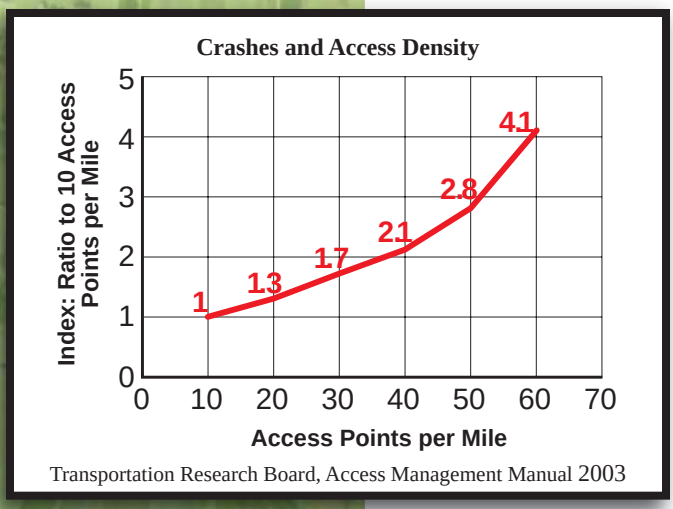
- The main function of ***minor roads***, like neighborhood collectors and local streets, is to provide access. Minor roads must operate at slower speeds so people can enter and exit homes and businesses safely and conveniently.
- The main function of ***major roads***, like interstate freeways and regional highways, is to move traffic over long distances at higher speeds. Access to these roads must be carefully managed so requests for new access to development do not contribute to unsafe or congested conditions.

> *"In the four years I have lived here we at times have seen a lot of rear end collisions here, and we haven't seen one now for a long time."*
>
> **— E. Stanley Tripp of Tripp's Auto Sales in Spencer, Iowa, commenting on a median project in his area.**



How exactly does this improve the situation on my road?

One reason managing access on major roads is so important is that driver safety is reduced when access is not properly located and designed. Imagine, for example, a driveway on an interstate freeway – it would certainly cause serious safety concerns. These same safety problems occur with improperly designed access to major arterial roads.

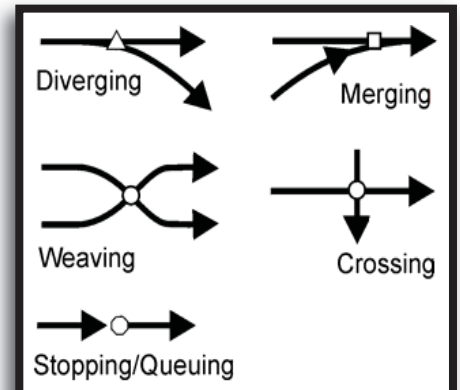


Transportation Research Board, Access Management Manual 2003

Managing access on your road can result in better traffic flow, fewer crashes, and a better shopping experience for you and your neighboring businesses. Consider the effects of adding more access points to a highway. A national study in the late 1990s looked at nearly 40,000 crashes and data from previous studies to determine the crash rate associated with adding access points to major roads. It found that an increase from 10 to 20 access points per mile on major arterial roads increases the crash rate by about 30% *(1)*. The crash rate continues to rise as more access is permitted. This is why **studies consistently show that well-managed arterials are often 40 to 50 percent safer than poorly managed routes** *(2)*.

Example of Crash Involving Left-Turn Movement from Driveway

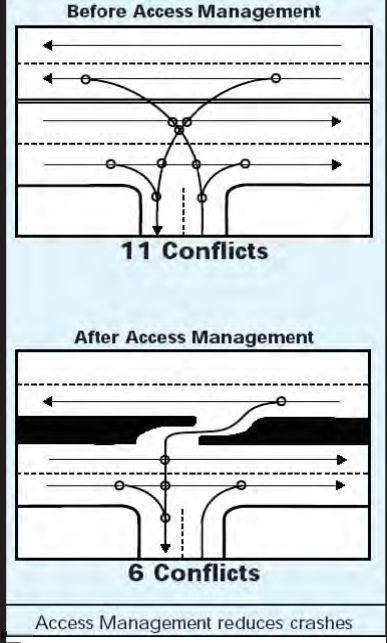
How does access management improve safety?



Types of Traffic Conflicts

Each access point creates potential conflicts between through traffic and traffic using that access. Each conflict is a potential crash. **Access management improves safety by separating access points so that turning and crossing movements occur at fewer locations.** This allows drivers passing through an area to predict where other drivers will turn and cross, and also provides space to add turn lanes.

The figure to the right shows how basic changes in access design, such as incorporating a median or changing a full median opening to a directional opening, can reduce traffic conflicts and the potential for crashes.



Using Medians to Reduce Potential Crashes

If crashes and congestion become frequent on your roadway, people will seek out other routes. Bear in mind that a single crash can tie up traffic and potential customers for hours.

What about congestion and the effect it has on my market area?

Access management not only improves roadway safety, it also helps reduce the growing problem of traffic congestion. Frequent access and closely spaced signals increase congestion on major roads. **As congestion increases, so does delay, which is bad for the economy and frustrating to your customers.** Well-managed arterials can operate at speeds well above poorly managed roadways – up to 15 to 20 miles per hour faster. **This means more traffic past your door and better exposure for your business. It also means a more convenient shopping experience for your customers.**

How will a change in access affect the success of my business?

To address this question, it's important to first determine the type of business that you own – drive-by or destination.

- **"Destination businesses"** are businesses that customers plan to visit in advance of the trip. Examples include electronics stores, doctor or dentist offices (in fact most offices), major retailers, insurance agencies, sit down restaurants, etc.

- **"Drive-by businesses"** are those that customers frequent more on impulse or while driving by, such as convenience stores, gas stations, or fast food restaurants.

If you own a drive-by business, your clients will expect to get in and out easily from the highway. For you, the critical issues are *visibility*, *signage*, and *convenient access*. If your site is relatively small, a driveway connecting to the highway may not be your best option. A driveway on a highway service road or a private circulation lane serving several properties can increase the convenience of your access and the volume of customers you can accommodate. Convenient access can be provided by periodic connections between the service road and the highway, or through the shared private access points. Short driveways or open frontages not only cause safety hazards for pedestrians and traffic, but have less capacity than local roads or long driveways.

Access management has no impact on the demand for goods and services.

If you are the owner of a destination business, your customers are planning their trips in advance. A driveway on a congested highway or a highway that is perceived as unsafe may actually intimidate customers from making the trip. Most small destination businesses or specialty stores benefit more from access to a lower speed minor road, such as a neighborhood collector road. The greater exposure that a major road provides is an advantage for larger destination businesses, but it's a good idea to have access from more than one roadway. Allowing customers to enter and exit from different directions will increase safety and convenience.

> "Our business has increased about 20% in customer count."
>
> **—C. Randy Rosenburger of City Looks in Ankeny Iowa.**

How important is access to the success of my business?

Location and access are factors, but not the most important factors that determine whether businesses succeed or fail. The main reason that businesses fail is lack of management expertise *(3)*. The main reasons that businesses succeed include *(4)*:

- the experience of management,
- how well customers are served,
- the quality of the product or service provided,
- adequate financing and investment,
- well-trained employees,
- the level and nature of competition, and
- keeping costs competitive.

Given that access is not the primary reason that businesses survive or fail, it follows that a change in access will not be the primary cause of whether a business will survive or fail. In fact, access is one of the lesser factors that customers will consider when weighed against price, service, product, and store amenities.

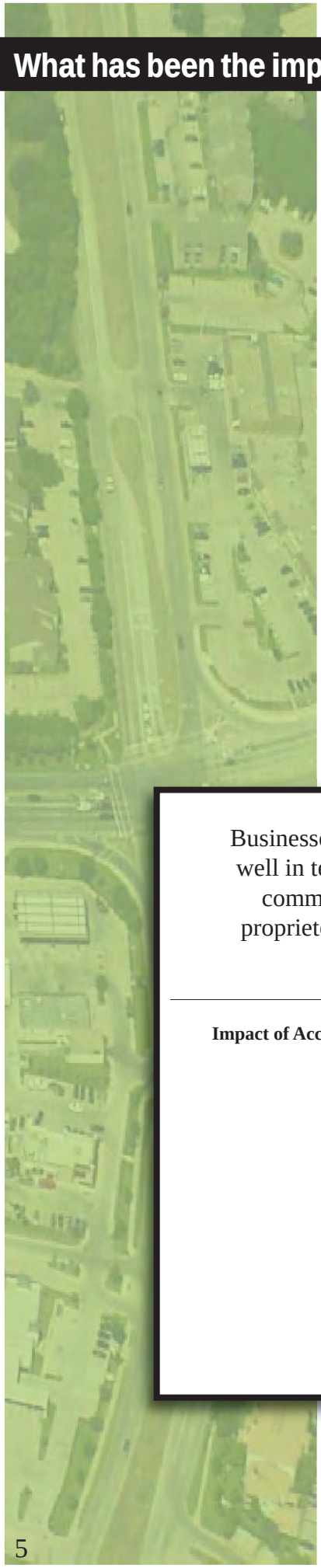
This is not to say that good access is not important to your business. **Whether your business is large or small, it is important that you can handle customer traffic demand.** If you operate or develop major retail centers, factories, or campuses, proper location and design of access is essential to customers and employees. For shopping centers, the Urban Land Institute's Shopping Center Development Handbook states "poorly designed entrances and exits not only present a traffic hazard, but also cause congestion that can create a negative image of the center *(5)*."This is also true for small businesses, especially those on the intersection of busy roads. If your business is difficult or unsafe to enter or exit, then customers may be dissuaded from visiting.

Just think about the roads in your community where access has been carefully planned and compare them to those having lots of driveways, open frontages, and no median. Which roads do you prefer to travel on and which corridors have the most vibrant businesses?

Small corner properties are more difficult to access.

This queue is blocking street traffic and additional customers

Is this a sign of a store doing great business, or one that is telling customers to try the next guy down the street?



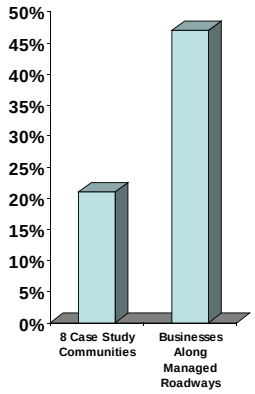
What has been the impact to businesses where this type of thing has been done?

Studies of the business impacts of access management projects in Florida, Iowa, Minnesota, Kansas and Texas have consistently found that most businesses continue to do well when the project is completed. These results are particularly true for destination businesses. However, most drive-by oriented businesses are not unduly affected either. Drive-by businesses have been adversely affected by reconstruction projects that reduce their visibility from the major road or cause them to have highly circuitous or inconvenient access. However, these are not typical impacts of access management projects and where they do occur, it is not uncommon for transportation agencies to compensate business owners for losses.

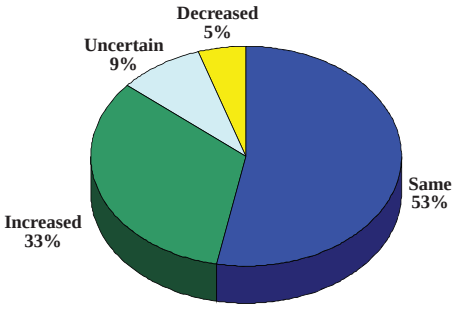
Business activity: Access management projects alone do not appear to increase or decrease business failure rates *(6)*. This makes sense considering that many factors other than highway access can affect business success. **"Before and after" studies of businesses in Florida, Iowa, Minnesota, and Texas along highways where access has been managed found that the vast majority of businesses do as well or better after the access management projects are completed.** The turnover rate (the proportion of businesses that close or move out each year) of businesses in Iowa and Minnesota was studied along newly access-managed corridors and was similar to or lower than that of the surrounding area. For example:

Businesses affected by access management projects in Iowa tended to do at least as well in terms of growth in retail sales, but usually better than those in surrounding communities, after the projects were completed. Most of these Iowa business proprietors said that sales were similar or greater following the completion of the projects. Only five percent reported a sales decrease *(6)*.

Impact of Access Management on Retail Sales Growth



Business Proprietors' Reported Sales Comparisons



Business owners report that the actual impacts to their businesses were much less than they anticipated. Most adverse impacts were due to construction and not to access changes.

"If anything, our business has increased, which very much surprised me."

— D. Stanley Tripp of Tripp's Auto Sales in Spencer, Iowa

Property values: Most property owners surveyed following an access management project do not report any adverse effect of the project on property values. Often, such projects can have a positive effect by cleaning up the patchwork of driveways and curb cuts. For example:

A study of property values on **Texas** corridors with access management projects found that land values stayed the same or increased, with very few exceptions *(7)*.	More than 70% of the businesses impacted by a project in **Florida** involving several median opening closures reported no change in property value, while 13% reported some increase in value *(8)*.
A 2005 study of commercial property values along a major access management project in **Minnesota** found that property values depend more on the strength of the local economy and the general location of the property in the metropolitan area; changes in access seemed to have little or no effect on the value of parcels *(9)*.	A study of **Kansas** properties impacted by access changes found that the majority were suitable for the same types of commercial uses after the access management project was completed. This was true even for businesses that had direct access before the project and access only via frontage roads after project completion *(10)*.

Customers and deliveries: The majority of customers and truck drivers surveyed in before-and-after studies have reacted positively to access management projects as improving both safety and traffic flow. Business customers surveyed about access management projects in Iowa, Texas and Florida overwhelmingly supported the projects because their drive became quicker, easier and safer *(6)*.

What are some common types of access management projects and what are the impacts?

There are many access management techniques, each with a specific purpose and different type of impact. One common type of access change is the building of a **median** on a road or closing existing median openings. Another common type of project is providing a **frontage road** or a rear service road along a highway for access to businesses. Below is an overview of these strategies, the types of issues or impacts associated with these projects, and how you can work with the agency to adjust to these changes.

MEDIANS and MEDIAN OPENINGS

A *median* is a grass or raised divider in the center of a road that separates opposing traffic and discourages or prevents vehicles from crossing the divider.

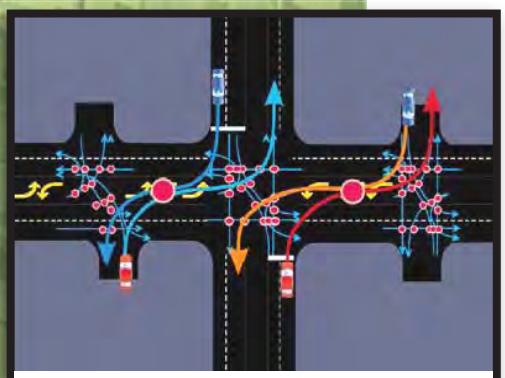
Openings in the median provide for different turning or crossing maneuvers, depending on how they are designed.

- A ***directional median opening*** only allows certain movements, usually a left-turn in or U-turn.
- A ***full median opening*** allows all turning and crossing movements and is often signalized.

Where too many full median openings exist, agencies may reconstruct the median and close the excess median openings.

Turn lanes at median openings provide a safe haven for turning vehicles.

Why use a median and not a two-way left turn lane?



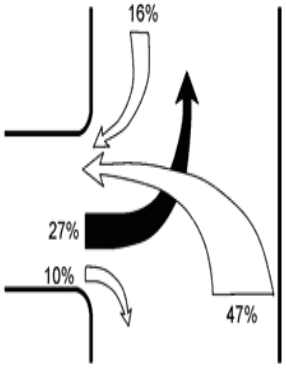
Conflicts and potential crashes associated with continuous two-way left turn lanes

Medians can have a profound effect on driver safety compared to two-way left-turn lanes. Adding a median to a road that previously had a continuous two-way left turn lane can reduce the crash rate about 37% and the injury rate about 48% *(11)*. **For example, when a continuous two-way left turn lane was replaced with a median on Atlanta's Memorial Drive, the crash rate was cut in half *(12)*.**

One reason a two-way left turn lane is less safe than a median is that a driver who is turning left must be able to ensure that the traffic is clear from two directions in multiple lanes. When this is not quite possible, drivers will sometimes use a two-way left-turn lane in the middle of the road while attempting to merge into traffic. Such maneuvers can lead to serious crashes and become more frequent as traffic volumes increase.

Won't I lose customers if they can't turn left into my business anymore?

The number of your customers making left turns into your business is likely already very low during peak travel periods or if you are on a congested roadway. This is because left turns into any business become increasingly difficult as traffic volumes in the opposing lanes increase.



Percentage of crashes by driveway movement.

Perhaps today your customers wait with apprehension to turn left as cars queue behind them, or must shoot across a busy road to complete a left turn out. A turn lane at a median opening or signalized intersection will allow them to wait safely to complete a U-turn when traffic clears, and that is truly a safer option on a busy road. **In fact, the left-turn into and out of a driveway is less safe than a U-turn and comprises the majority of driveway crashes.** Studies have shown that making a U-turn at a median opening to get to the opposite side of a busy highway is about 25% safer than a direct left turn from a side street or other access point *(13)*.

Surveys show that a majority of drivers have no problem making U-turns at median openings to get to businesses on the opposite side of the road. Where direct left-turns are prohibited, studies show that motorists will change their driving or shopping patterns to continue patronizing specific establishments. In fact, most drivers are reporting that access management improvements made the roads safer and that they approve of the changes, despite minor inconveniences associated with U-turns.

Some owners of drive-by businesses have reported a loss of customers following a median project or other change that has eliminated the left-turn-in opportunity (and less often left-turn-out), although the majority do not. For example, a before-and-after study of a median reconstruction project in Florida involving numerous median-opening closures found that **the majority of surveyed merchants, 68% of the 96 respondents, reported little or no economic impact to their businesses, although 27% reported some type of loss** *(14)*. Generally, businesses that feel they were adversely impacted also have competition nearby or may have experienced reduced visibility of signage.

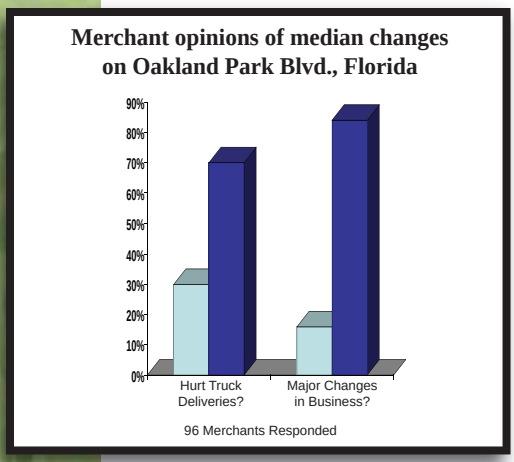
> "Because of the design of the roads, the timing of the traffic signals, and the way the traffic is broken up, it has become very convenient for people to pull into a safe haven, or storage lane within the raised median, take their time and make a safe and convenient u-turn to access properties that were concerned about that problem."
>
> **— Kurt Easton, Executive Director of Merritt Island Redevelopment Agency, Florida**

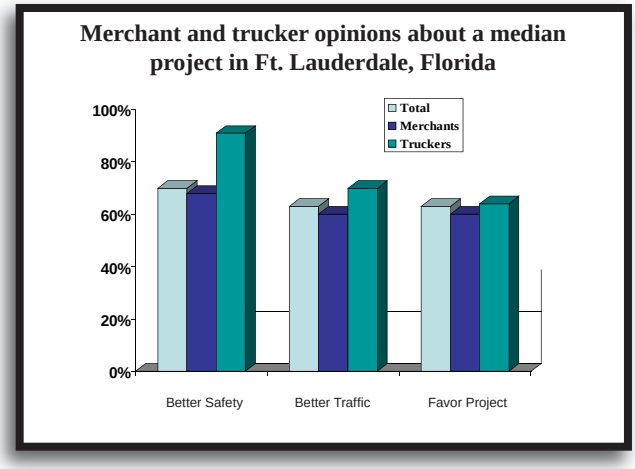
Why not just signalize all median openings and high volume driveways?

The decision on whether or not to signalize a median opening or access point depends on many factors, including the volume of traffic using the access, the proximity of other traffic signals, and the potential impact on public safety and traffic congestion. Most signal warrants are related to traffic volumes, but some consider school crossings, crash history, pedestrian crossings, "factory" peaks, and other situations. Unwarranted signals cause undue delays as motorists wait at a red light while little or no cross traffic exists. Worse, unwarranted signals may eventually be disobeyed or ignored by frustrated motorists who are only one reckless incident away from causing an accident or emerging as a casualty themselves. For these reasons, median openings and driveways should not be signalized where they do not meet the requirements of a traffic signal study.

What about impacts on truck deliveries?

The limited number of before-and-after studies have found that truck deliveries may be inconvenienced, at worst, but may in fact benefit from improved opportunities resulting from a change in access. And while the actual studies may be few, the anecdotal comments are many and favorable.





What are the other issues with medians and median opening closures?

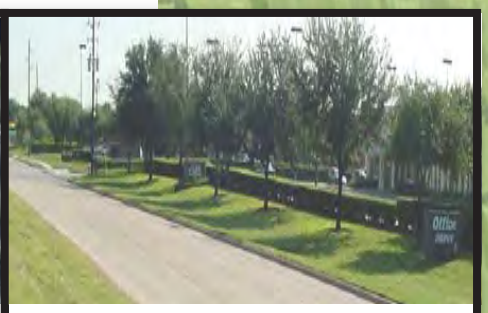
- Alternative access through side streets, service roads, or internal connections with neighboring developments helps increase accessibility on busy or median separated roads – especially if the result allows several properties access to a signal.
- Minor roadway improvements, such as additional pavement on the shoulder, may be needed to accommodate U-turning traffic.
- Some trucks and large vehicles may need to take alternate routes as U-turns can be difficult to negotiate.
- Medians can be landscaped to enhance the image of an area and help attract investment and customers.

FRONTAGE or SERVICE ROADS

A *frontage road* is a type of service road that parallels a major road or freeway and is located between the road and building sites abutting the road. *Service roads* can also run behind businesses.

The purpose of these roads is to provide lower-speed access to commercial sites along a major roadway and to separate business traffic from higher-speed through traffic. Connections of frontage or service roads to side streets or onto the highway must be well away from signalized intersections, so entering and exiting traffic doesn't conflict with traffic queuing at signals.

Rear service roads providing access to highway commercial properties.



A frontage road.

How will I get access while I'm waiting for a frontage or service road to be finished?

Some sites may need to be given temporary access to the major roadway until the service road system is complete. This is typically needed when a service road is being constructed in segments through the development process, rather than built by a transportation agency as part of a road construction project. Most agencies will require you to remove your temporary driveway and build a driveway to the frontage or service road at a later time, so it's important to design your site access and circulation to accommodate that change.

How will people know how to get to my business from the highway?

Frontage roads maintain good visibility for businesses along a major road and typically it is apparent how to enter and exit the road to get to a business. Points of entry can be signed to identify businesses that can be accessed from that entrance, if it is not already apparent. **It's a good idea to provide signs where a service road or frontage road connects at a side street, so customers know they can obtain access** to businesses that may not be visible from the side street.

What are the other issues with frontage or service roads?

- **Service roads that run behind highway properties are often less disruptive to existing businesses than frontage roads, less costly for an agency, and more functional than a frontage road.**
- Rear service roads can provide access to businesses on each side and can operate safely from both directions. Frontage roads provide access only to businesses fronting on the highway and are much safer when designed for one-way traffic.
- Additional right-of-way will be needed for the frontage or service road and for connecting a service road back to the highway or side street. If your site will be impacted, it is important to work with the agency on how to reduce adverse effects. For example, if your site becomes nonconforming under local zoning regulations because of a smaller setback or other change, ask the local agency if they will waive that status, given that it was caused by a government right-of-way taking.

What are other commonly used access management techniques?

Regulate minimum spacing of median openings and access connections (driveways and street connections).	Limit the number of access points per property, or consolidating access points and encouraging shared driveways.	Establish standards for driveway width, driveway throat length and internal drive aisles to move traffic smoothly off of the adjacent street.
Move access points away from signalized intersections and freeway ramps.	Incorporate right- and left-turn lanes into roadways.	Close or replace a full median opening with a directional opening.
Provide a service road or parallel collector roads and side streets for site access along an arterial roadway.	Promote interconnection of parking lots and unified on-site circulation systems.	Install a median on an undivided roadway or replace a continuous two-way left-turn lane with a median.

So what's the bottom line on access management?

Efforts by government agencies to manage access in site development and road projects can help businesses, even those operating on older highway corridors, in a variety of ways. Here are some specific benefits to you and your customers:

- **Fewer roadway delays and better traffic flow will result, which will preserve and possibly even enhance the market reach of businesses in your corridor;**
- Safer approaches to businesses result from installation of medians, which can also be landscaped to improve the image of the area;
- Properly designed entrances shared by multiple businesses allow more site area for parking, more customer options to access your site, and improved landscaping or other site amenities;
- Service roads along the highway allow customers to enter and exit businesses conveniently and safely, away from faster moving through-traffic;
- Internal connections between businesses allow customers to circulate easily, without reentering a busy road; and/or
- Driveways and service road entrances farther away from signalized intersections allow easy access for customers, even during times of peak congestion.

"It has been a very positive thing all the way around, from the economic, and the community sides. We have improved our tax base, we have improved our traffic problem, and plus we have improved our business community."

— Chuck Fisher, Supt. Public Works
Ankeny, Iowa

In brief, minimizing the number of curb cuts, consolidating driveways, constructing landscaped medians, and coordinating internal site circulation and parking among several businesses results in a visually pleasing and more functional corridor. That protects your investment in your business, the public investment in the roadway, and can even help attract new investment into the area.

"There are a lot of beautification projects going on, tree plantings and what have you. I think the landscaping in the medians has very much added to the very nice decorum of Ankeny. It will make a nice impression for those visiting Ankeny, or living here."

— Andy Kasper, Iowa Realty, Ankeny, Iowa

What can be done to keep my business going during construction?

There's no doubt about it, road construction can disrupt customers and drivers, but there are ways adverse impacts can be minimized. **Two key issues during construction are maintaining open access to businesses for customers and deliveries, and having sufficient sign visibility so your customers know you are open, and know how to enter and exit your site during this period.** When your road is scheduled for reconstruction, your transportation agency will initially notify you about what to expect in terms of traffic, duration of construction, any foreseeable disruptions, and so on. It is important for you to respond to them about your special needs and concerns. Below are some of the things that you can ask of the agency:

- Provide clear signs from the roadway to business entrances;
- Provide temporary and/or secondary business access points, where feasible;
- Schedule construction for after business hours or to occur during times of low usage for seasonally-oriented businesses;
- Provide alternative parking, if possible and avoid taking or blocking parking spaces;
- Stagger construction along a corridor so impacts are localized and staged;
- Expedite construction through incentive/disincentive programs;
- Avoid blocking business entrances with construction equipment or construction barriers;
- Establish a single point of contact in the agency about the construction project to communicate with property and business owners and help address issues that may arise;
- Provide regular project progress reports to business and property owners.

Business owners certainly may see drops in gross revenues during construction. But these are not unlike drops you may routinely experience during expansions, remodeling, seasonal variations, or other self-initiated management. Experience has shown that "construction" drops are temporary too, and that retail sales typically return to pre-construction levels or greater. Research findings from corridors in Texas indicate that businesses did not change employment levels during construction periods. This finding indicates that retailers understand that construction projects are a temporary and perhaps even an inevitable disruption to business, and that loyal patrons will return to stable businesses. The same research found that gross revenues typically either returned to pre-construction levels or were higher after construction was complete *(7)*.

How can I have a say in the access management project on my road?

Get involved! All government agencies are required to involve the public in transportation policy and project decisions. Most state transportation agencies offer open house meetings during transportation project planning and design, and both state and local government agencies conduct public meetings and hearings when making important policy or regulatory changes that involve access management. Prospective business owners can also review area master plans to research potential changes.

It is important for you as a stakeholder in an access management project to attend public meetings and hearings and to voice your ideas and concerns.

These meetings are opportunities for you to hear more about an access management project or plan and to make the planners and engineers aware of how it impacts your business. This might involve issues related to internal traffic circulation and parking, deliveries, plans for expansion, etc. Knowing this information early in project planning or design allows them to make better project decisions and can result in changes that reduce or avoid adverse impacts on your business.

For example, many businesses depend on trucks for deliveries and other functions. Larger trucks are not typically able to make certain movements (such as U-turns). It is important to work with agency staff to develop a plan that will accommodate truck access to your business in a manner as convenient as possible. Sometimes this will require that trucks follow a slightly different route to arrive at the property. Project planners can work with you to assure that trucks will be able to access your business. This is just one of many ways your input is important.

Where can I go to learn more about access management?

Hopefully this primer has answered some of the questions that you, as a business or property owner, may have. Your state or local transportation agency or your state's Federal Highway Division office (on larger projects) are other excellent resources to point you to the right project manager, or to answer your general questions concerning access changes. These transportation agencies need and value your input as they strive to provide a safe and efficient highway system.

For the latest information on access management or to order the latest Access Management Library CD/DVD collection, go to **www.accessmanagement.gov**. Other important sources for information on the economic effects of access management include the TRB Access Management Manual, and NCHRP Report 420: Impacts of Access Management Techniques, which are both available from the Transportation Research Board at **www.trb.org**.

References

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