# Section G
# Access Management Analysis

# G. Access Management Analysis

## PURPOSE

Appropriate property access along US 1 is a major factor in road-user safety as well as the economic viability of many of the businesses along US 1. Managing access to corridor properties can begin to improve conditions for pedestrians, bicycles, and vehicles by reducing the number of conflict points in the right-of-way. Roadway operations can also be improved by organizing turning locations at fewer managed locations. Access management and development of a local road network are essential to maintaining a system that meets all of the demands of a corridor such as US 1.

Changes that reduce driveways and create parking access from local connections will bring about important visual and safety enhancements.

Access is currently determined almost exclusively through the private development and permitting process. This analysis considers the review process and also provides a prioritization scheme for modifying accesses through state-initiated projects. Directing access management funding to the most problematic areas of the US 1 corridor has the greatest potential to improve safety and circulation.

## KEY FINDINGS

In general, the SHA spacing standards for US 1 access are consistent with the corridor improvement vision. Working with SHA EAPD, the County should develop and adopt a Best Practice Policy for a hierarchical access system which

- encourages public street access according to local roadway-spacing standards tailored to the corridor ,
- discourages driveways fronting on US 1 and serving only frontage properties,
- provides a greater number of route and access options, and
- orients local traffic, trucks and bicyclists to the most appropriate streets and accommodates pedestrians throughout.

Since influence over the layout of proposed developments rests primarily with Howard County, development policies and reviews would provide clear guidance in placement, function, and design of internal roadway networks. The hierarchical circulation system policy would avoid single-property access for small parcels and provide greater ability to require and fund new links necessary to complete the network chain.

Public resources for acquiring property and access, and for designing and building access improvements, should be prioritized as described in this analysis.

## METHODOLOGY

The access management analysis included:

- A review of SHA and Howard County permitting practices and policies guiding access management on US 1;
- A review of strategies and policies used successfully in other jurisdictions to manage access through the development review process; and
- Prioritization of locations that would benefit from access management improvements.

## ANALYSIS

### Policy Review

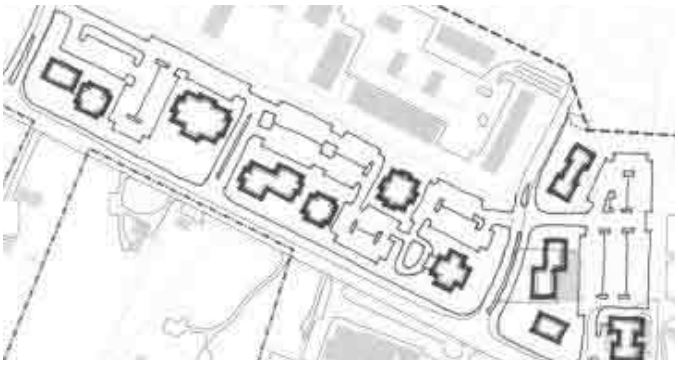
SHA is responsible for controlling access along US 1 to provide and maintain a safe and well-functioning highway system. A permit must be obtained from SHA prior to any construction activity on the State's right-of-way, including, but not limited to, the construction of driveways, entrances, and street connections for site development and subdivision access.

SHA's Engineering Access Permits Division (EAPD) administers regulations pertaining to commercial and subdivision access to State highways and issues permits for the construction of approved entrances, street connections, and highway capacity improvements according to the SHA "Access Management Manual."

US 1 is an arterial highway with uncontrolled access in the state's secondary system. Based on this system classification, the abutting properties are entitled to reasonable access. SHA may recommend that the County require some or all access via a local road, and may limit the number of access points and movements permitted onto US 1, limited to those which are appropriate for the development and can safely be accommodated. Regardless of frontage, a development may be restricted to a single entrance and exit.

If reasonable access to another public road is available, SHA may deny a property owner new access to US 1. Furthermore, SHA may deny a property owner all access to US 1 if the denial is based on an access management plan that has been agreed to by SHA and Howard County and alternative access can be provided.

The "Access Management Manual" notes that the use of inter-parcel connections is encouraged to reduce traffic in and out of the State highway, to alleviate localized congestion, and to provide easy access between adjacent properties; however, it does not stipulate whether or not inter-parcel connections may be required. Sections 16.119(a)(8) and 16.119(b)(4) of the Howard County Subdivision and Land Development Regulations empower



Inter-parcel connections and accesses that serve multiple developments improve local circulation and are particularly important in commercial areas.

the Department of Planning and Zoning to require shared access between abutting parcels.

Table 14 provides a summary of the access spacing standards applicable to US 1 based on Chapter 10 of the access manual.

**Table 14 Comparison of SHA Access Spacing Standards for US 1**

| Standard | SHA Access Manual | | | Recommended Guidance | |
|---|---|---|---|---|---|
| | Preferred | Minimum | Notes | Preferred | Acceptable Range |
| Access Points per Development | -- | 0 | SHA allows a maximum of two for the first 200 feet and one for each additional 100 feet. | 0 (access via side streets) | 1 for each 325 ft of frontage |
| Spacing between Entrances | -- | 20 ft (on same side of highway) | -- | 325 ft | 200 ft to 500 ft spacing |
| Corner Clearance | 200 ft | 100 ft | -- | -- | Beyond intersection influence area |
| Median Crossover Spacing | -- | 750 ft | 750 ft spacing may be acceptable in densely developed urban areas where posted speeds are 40 mph or less and route function will not be compromised. | 650 ft in highly developed areas | |
| Public Street Spacing | | 750 ft | -- | 325 ft | 250 ft to 500 ft right-in-right-out spacing |

SHA specifies that a maximum of two entrances may be allowed in the first 200 feet of frontage, and a maximum of one may be allowed for each additional 100 feet. Based on a review of national best practices for access management, it is recommended that a maximum of one driveway be allowed in the first 325 feet of frontage. Driveways should be spaced no closer than 200 feet apart, and should not be allowed within the influence area of an intersection. Public streets should be spaced no closer than 250 feet for right-in, right-out approaches and 325 feet for full-movement public street approaches. The outcome should create streets and blocks spaced and controlled to manage conflicts and pedestrian crossing points for improved multimodal safety and comfort as well as traffic operations.

The desired spacing standards for median crossovers and public street connections are less restrictive than the SHA access manual. Less-restrictive median crossover spacing will encourage mid-block organization of access to minor roadways where full-access movements are permitted. The 650-foot spacing was selected based

Roads with property access from side streets provide a safe uninterrupted pedestrian experience and permit the introduction of a median that can improve the road's appearance and safety.

on the anticipated spacing of full-access signalized intersections at approximately 1320 feet (1/4 mile). The safety and operational considerations of permitting design exceptions for median crossovers should be considered on a case-by-case basis.

An overlay policy to permit public street spacing, as shown in Table 15, is recommended to permit development of a more grid-like pattern of streets, rather than a series of single-use driveways. While this goal is echoed in the access manual, it is inconsistent with the public street spacing standard. These access points would not be guaranteed full-access movements.

Overall, Howard County has the authority and responsibility to require internal circulation patterns that reduce dead-end streets, culs-de-sac, and private-driveway access; and, increase connectivity. While SHA has the authority to issue or refuse an access to US 1, SHA has little authority to dictate the function of that access point. Developing a hierarchical access system will require joint effort between SHA EAPD and Howard County.

## Best Practices for Hierarchical Access Systems

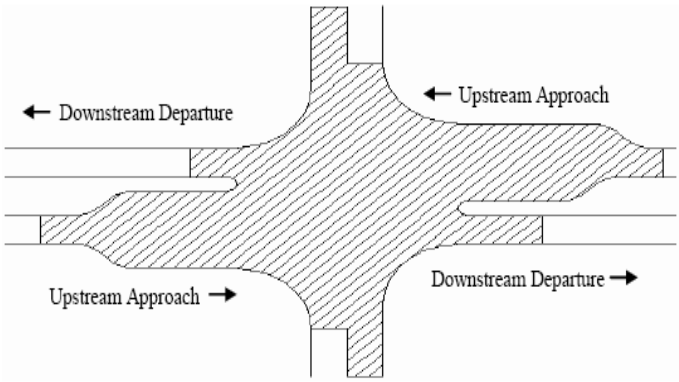
Many jurisdictions have adopted policies and standards to develop a system of lower-order roads, rather than a series of driveways. Most of these are local rather than State DOT policies. Some examples include:

- Adopting street spacing minimums and connectivity requirements.
- Requiring cross-access easements, agreeing to close temporary driveways, and developing maintenance agreements for shared driveways.
- Requiring an access study submittal that includes a safety and operational review of existing and proposed access along the length of the site's frontage plus the distance of the applicable access spacing standard measured from the property lines.
- Permitting temporary access with agreement to provide cross-easements in the future.
- Tying in stub-outs and other design features to make it visually obvious that the abutting properties provide cross-access via a service drive.

## Prioritizing Access Improvements

### *INTERSECTION INFLUENCE AREAS*

Driveways within the influence area of an intersection are problematic as they present drivers with multiple conflicts, often leading to high crash rates. The influence area of an intersection shown in this diagram includes the queue storage area, deceleration distance, perception-reaction distance on each approach, and acceleration distance on each departure.




The influence area of an intersection includes space for queuing, deceleration, acceleration, seeing and reacting . Conflict points in this area should be minimized or managed.

At many intersections along the corridor the intersection influence area is larger than the SHA access manual recommended corner clearance of 200 feet. Access management should be prioritized to reduce driveways within the influence areas of intersections along US 1.

### *PRIORITIES MATRIX*

The safety analysis described in Section D of this report was incorporated with additional considerations to develop Table 15, to identify priority locations for access management. The shaded rows indicate the highest priority locations. Although the safety screening was designed to focus on crashes that are more likely to be related to driveways, driveway density was included in the matrix to reinforce the flagged safety locations where there are more than 15-20 driveways per mile in either direction. Pedestrian and bicycle crashes and demand are considered because these users are particularly vulnerable to conflicts at driveways. Transit stop locations are included as supporting evidence of the potential for pedestrian demand and conflicts within the roadway.

**Table 15 Access Management Priority Locations**

| Location | Safety Screening | Pedestrian and Bike Crashes (2003 through 2005) | High Driveway Density | High Pedestrian Demand (Near Term) | Transit Stop |
|---|---|---|---|---|---|
| **High Priority Locations** | | | | | |
| Levering Avenue | X | 2 | X | X | X |
| Levering Ave to Old Washington Rd (segment) | X | 2 | X | | |
| Montgomery Rd (MD 103) | X | 1 | X | X | X |
| Rowanberry Dr to Loudon Ave (segment) | X | | X | X | X |
| Business Pkwy to Montevideo Rd (segment) | X | 1 | X | X | |
| Montevideo Rd | X | | X | X | X |
| MD 175 | X | 1 | | X | |
| Freestate Dr | X | | X | | X |
| Whiskey Bottom Rd | X | | X | X | X |
| Whiskey Bottom Rd to Laurel Rd (segment) | X | 1 | X | X | X |
| North Laurel Rd | X | 1 | X | X | X |
| **Additional Priority Locations** | | | | | |
| Loudon Ave to Troy Hill Dr (segment) | X | | | X | X |
| Troy Hill Dr | X | | | | X |
| MD 100 Ramps to Meadow Ridge Dr (segment) | X | | | | |
| Business Parkway | X | | | X | X |

| | | | | | |
|---|---|---|---|---|---|
| Crestmount Rd/Assateague | | 1 | X | X | |
| Mission Rd to Patuxent Range Rd (segment) | X | | X | | |
| Patuxent Range Rd | X | | | | |
| Guilford Rd | X | | X | | |
| EB Off Ramp at MD 32 | X | | | | |
| Howard St/Corridor Rd | X | | | X | X |
| Gorman Rd | X | | X | | |

As shown in Table 15, the following general areas are the highest priority locations for access management:

- Levering Road to Montgomery Road
- Rowanberry Drive to Loudon Avenue
- Business Parkway to MD 175
- Whiskey Bottom Road to North Laurel Road

Figures 23 to 26 highlight these locations within the corridor. Opportunities to acquire access, consolidate driveways, and develop local facilities from which indirect access may be provided should be focused in these areas in the near term.

The area highlighted in white exhibits high proportions of crashes that may be related to driveways and high access densities. Access consolidation and orientation to local roads is recommended.

Safety screening, as well as existing driveway density, pedestrian and bicycle crashes, and fatal crashes along the corridor should be used as criteria considered in determining appropriate access.

## Conclusion

An Access Management Plan should be prepared that includes priority access control areas based on safety considerations for a voluntary access acquisition and cross-easement program; a local streets network, extensions and access strategy; and, intersection spacing standards that are specific to US 1 and mapped for use by reviewers. The plan should identify the appropriate lead agency and the roles and responsibilities of participating agencies to implement and management attainment of cross-easements. SHA's Access Manual should be revised such that the guidance provided in Section 10.2.1 A through D be applied to all arterials rather than only those on the primary system.