Montgomery Planning

# ACCESS MANAGEMENT STUDY


## Description

The Countywide Planning and Policy Division has conducted this study to assess the need for improvements to how road access is managed within Montgomery County. This study included a review of existing access management practices, some limited interagency coordination, a review of the state of practice in access management within the US, and the development of study recommendations.

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Montgomery County
Planning Board
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## Summary:


- **Improved Access Management is Needed to Support the County's Vision Zero Action Plan** – There is a direct relationship between access and safety. Per the Planning Department's Predictive Safety Analysis, 64 percent of non-interstate crashes in Montgomery County occur at intersections. Current access management practices need to be enhanced with improved standards, guidance, and enforcement.

- **Access Management is a Multi-Agency Responsibility** - This study included input and coordination with the key stakeholders who help manage and enforce road access policy in Montgomery County, including the Montgomery County Department of Transportation (MCDOT), the Department of Permitting Services (DPS), the Montgomery County Planning Department (M-NCPPC), and the Maryland Department of Transportation State Highway Administration (MDOT SHA).

- **Improvements to Access Management Effectiveness Require Increased Support in County Code** - Access management measures and requirements exist in the Subdivision of Land Code (Chapter 50) and the Zoning Ordinance (Chapter 59); however, significant improvements to these code documents are needed to help improve the effectiveness of subdivision and site plan reviews through the Planning Department, including a need to add specific regulations for interparcel connections/shared access/cross-access easements. The Road Code (Chapter 49) and Chapter 49 Executive Regulations are both relatively lacking in access management regulations and given MCDOT's lead agency role on access issues, modifications are needed to include access management definitions and legal authority in Chapter 49. In addition, significant changes to Chapter 49 Executive Regulations are needed to provide technical standards for driveway spacing, residential street driveway standards, corner clearance, protected intersection design, and median intersection design standards.

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# EXECUTIVE SUMMARY

The Access Management Study was conducted by Montgomery Planning over the past 10 months with focused involvement from MCDOT, DPS, and MDOT SHA. This study is intended to provide a review of existing access management practices, and high-level recommendations on access management regulations, standards, and practices as they are practiced on the Montgomery County roadway network. The study included the involvement of a planning consultant, Mead & Hunt, who prepared their own assessment of the county's strengths and weaknesses in regulating access management and provided recommendations. The resulting recommendations developed in this study weighed the consultant's findings carefully in developing overall study recommendations.

Study Recommendations are provided in Section 8 in detail. The following is a concise summary of these recommendations. The recommendations are subdivided into interagency recommendations and specific recommendations for each agency.

**Interagency Recommendations**

1. MCDOT and Montgomery Planning should work together to expand/refine the High Injury Network (HIN) based on the Predictive Safety Analysis study findings.
2. The four primary agencies (MDOT SHA, MCDOT, DPS and Montgomery Planning) should enter into a coordination agreement on two categories of specific access management policies. The first would apply to roads (state and county roads) on the High Injury Network in Montgomery County. The second would apply to all other parts of the county on state and county roads with street types of Connector (per the Montgomery County Complete Streets Design Guide (CSDG) or higher.
3. Within the High Injury Network, MDOT SHA and MCDOT would jointly develop standards and procedures to ensure that consistent strategies be employed on both the County and State-owned roadways,
4. Montgomery Planning should develop a High Injury Network Access Management transportation district to be added into the county Zoning Code, and
5. MCDOT and Montgomery Planning should work to identify commercial corridors and high road safety risk segments in equity focus areas where poor access management is a key contributor to poor road safety and develop CIP projects to address these deficiencies.

**Montgomery Planning Recommendations**

1. Add a clear policy definition and guidelines into Chapter 50 for the requirement of interparcel connections/shared access/cross-access easements,
2. Strengthen Chapter 59 Section 6.1 with the minor text changes to increase clarity,
3. Create zoning density incentive bonuses in Chapter 59 for site access consolidation, and interparcel connections/shared access/provision of cross-access easements,

4. Modify the LATR Vision Zero Statement to include a requirement to assess compliance of an existing site to county access management standards,
5. Incorporate the Vision Zero access management into Chapters 50 and 59 to ensure that this process is applicable to permitting to capture projects that only go through permitting or limited reviews,
6. Require or incentivize the creation of a grid of streets consistent with Complete Streets Design Guide protected crossing spacing standards,
7. Require or incentivize the creation of alleys, where appropriate, for public access to accommodate private development (this should be an integral part of county access management policy),
8. Include a detailed access management/ Vision Zero review for all Corridor Master Plans with special attention paid to high-crash roads identified through the Predictive Safety Analysis.
9. Identify key neighborhood access connections along major county and state highways and prioritize these locations for planned median crossing prioritization,
10. Continue to leverage and refine the Predictive Safety Analysis tools to develop data-backed policies to promote safer access on both new roads and redesign, and
11. Continue to monitor the development of ongoing Vision Zero-focused safety programs and other evolving access-related programs and explore the potential for a peer-exchange on lessons learned.

**Montgomery County Department of Transportation Recommendations**

1. Add definition of access management and related terms into Chapter 49. Incorporate existing guidance or policies related to access into Chapter 49 Executive Regulations,
2. Develop design guidance for protected crossings and restricted (partial-access) median crossings for two-, four- and six-lane highways,
3. Re-evaluate existing commercial driveway spacing standards and add new corner clearance and driveway spacing standards into Chapter 49/Chapter 49 Executive Regulations,
4. Include access management elements in new capital improvement projects particularly with projects located in equity emphasis/focus areas,
5. Independent of Interagency recommendations, discourage or disallow new unsignalized full-access median crossings on six-lane highways,
6. Consider road diets on existing undivided four-lane roads where feasible,
7. Consider road diets on existing six-lane highways where feasible,
8. Eliminate center turn lanes where feasible, except where road diets are being considered, and
9. Continue to follow evolving practices in the MUTCD regarding leading pedestrian intervals governing their use for separated bike lanes.

**Department of Permitting Services Recommendations**

1. Consolidate current DPS access-related driveway policies into Chapter 49 Executive Regulations in coordination with MCDOT.

2. Consider making changes to Chapter 59 to allow safety-based driveway access decisions as part of permitting for a change in use for a site.

**Maryland Department of Transportation State Highway Administration Recommendations**

1. Considering Modifying language in Section 1.4.3B of the MDOT Access Manual related to corner clearance standards to ensure that the largest spacing be provided when sufficient property frontage is not available, and
2. Consider adding increased driveway spacing standards more consistent with national practice.

# SECTION 1: ABOUT THE ACCESS MANAGEMENT STUDY

## INTRODUCTION

On October 7, 2021, the Planning Board approved the scope of work for the Access Management Study (AMS). The intent of this study is to set the stage for improving how access management is addressed in county planning and engineering processes. Consistent with the approved scope, the purpose of this study is:

- to examine existing access management practices in Montgomery County on a multi-agency level;
- to develop recommendations to improve existing practices and incorporate new access management strategies that are consistent with Vision Zero, a Complete Streets framework, and a desire to enable decision-making from a multimodal perspective.

In addition, there are access-related policies now being used by various agencies, including Montgomery Planning, Montgomery County Department of Transportation (MCDOT), the Department of Permitting Service (DPS), and the Maryland Department of Transportation State Highway Administration (MDOT SHA). Ensuring that all county access management decisions are coordinated, consistent and based on unified access management policies is a secondary aim of this study.

Having achieved the main purpose of the study, the AMS prepares the county to address safety-related access management deficiencies, with particular attention to high injury areas and Equity Focus Areas. Follow-on efforts will be required from Montgomery Planning, MCDOT, DPS, MDOT SHA, as well as intergovernmental actions for the recommendations to be put into practice. This next phase of this larger access improvement effort will require a review of existing county code governing access, including the zoning code (Chapter 59), the road code (Chapter 49), the subdivision of land code (Chapter 50), the Fire Access Code (NFPA1), and the development of recommended changes to county code, executive regulations, and review practices to implement AMS recommendations.

## STUDY GOALS AND OBJECTIVES

The study goal is to develop a comprehensive Vision-Zero focused strategy to implement access management systematically for all county roads (for new development, redevelopment and for transportation CIP projects) across all county executive branch agencies and Montgomery Planning.

The first objective is to focus on Vision Zero and Complete Streets design techniques in the development of this new access management strategy. Access management has traditionally been

car-centric in its approach, so shifting the priority to minimizing conflicts between motorized vehicles and bicycles and pedestrians will require consideration of new techniques.

The second objective is to develop clear policy guidance to explain how access onto county roads is managed. Given the shared responsibilities across multiple county agencies to enforce current guidelines, it is critical that all access decisions have the same consistent approach.

The third objective is to evaluate how access management decisions are made under current county guidelines and regulations and assess how more desirable and equitable outcomes can be achieved with modifications, guidance, or clarification.

The fourth objective is to ensure that the study addresses the racial equity and social justice impacts of access management recommendations to ensure that more equitable treatment of access management issues is considered.

## ENGAGEMENT - TECHNICAL WORKING GROUP

A technical working group (TWG) was developed to assemble key personnel from MDOT SHA, MCDOT, DPS, and Montgomery Planning and meet monthly to discuss access management issues and help oversee study progress. With consultant facilitation, feedback from this group was sought on access management issues and challenges. Key activities conducted with this group included:

- Telephone outreach interviews with each TWG stakeholder and some private sector individuals in the development community to assess strengths and weaknesses of current access management policies and practices,
- Access management presentations on the state of practice in access management,
- An access management workshop to evaluate scenario examples in small groups to review roadway corridors in the county, and
- Technical review of the consultant draft report.

A consultant (Mead & Hunt) was hired to lead this technical working group effort, and this group met four times during the study to present the following:

- Review of current access management practices in Montgomery County,
- Briefings on relevant access management issues,
- Results of TWG stakeholder interviews on access management,
- A four-hour workshop on January 28, 2022, where the application of access management issues was explored in four hypothetical development scenarios, and
- A presentation by Planning staff on project progress.

The consultant report summarizing these efforts, including recommendations, is included as Attachment A to this staff report. Many of the consultant's recommendations have been considered in the development of Recommendations presented in this Study Report.

The facilitation by Mead & Hunt, with outreach interviews with members of the Technical Working Group as well as with some select members of the development community, provided a great opportunity to get unfiltered feedback on the development process and how access management decisions are made. The message received was clear – there are coordination and consistency issues that occur during development review, and there is a need to focus on site access at the earliest stages of a development review before funds are invested in site due diligence. Pinning down and obtaining concurrence on site access issues needs to be agreed upon as quickly as possible, with traffic operations, internal circulation, external traffic flow, and traffic safety issues considered up front.

## OUTREACH

In addition to the government-internal technical working group, focused outreach was conducted with the following organizations to elicit comments on study work products:

- Road Code Committee - presentation on June 8, 2022
- NAIOP, the Commercial Real Estate Development Association, Montgomery County Chapter – presentation on June 14, 2022
- Montgomery Planning Equity Peer Review Group (a group internal to Montgomery Planning that focuses on equity in planning) – presentation on June 14, 2022

One comment was raised at the Road Code Committee meeting, stressing that there needed to be some flexibility in the degree to which study recommendations are proposed to be added to County Code, versus Executive Regulations.

From NAIOP representatives, there was concurrence that there was sometimes a “disconnect” between agencies during development review, and that this made development more challenging, but also that an effort to bring clarity and consistency to the access management process was encouraged. While appreciating the focus on Vision Zero, there is still a concern that proportional impact always be considered in access management decisions as change of use redevelopment can often lead to reduced site vehicle trips.

# SECTION 2: ACCESS MANAGEMENT DEFINED

## WHAT IS ACCESS MANAGEMENT?

Access management, as defined by the Transportation Research Board, is the "coordinated planning, regulation and design of access between roadways and land development.[1]" Its purpose is to provide a systematic way to improve the safety and efficiency of moving people and goods while reducing conflicts between all modes using and crossing the roadway, including cars, heavy vehicles, transit vehicles, bicycles, and pedestrians.

The primary mission of access management is to balance the right to property access and the efficiency of traffic throughput while reducing potential crashes and improving roadway safety.

This mission is generally addressed in four ways:

- Reducing the number of conflict points.
- Managing conflict points, particularly those that occur between different modes.
- Limiting interference with through-traffic. (i.e., intersection design controls like dedicated left-turn lanes to provide storage and separate queuing vehicles).
- Providing adequate onsite circulation and storage.

## ACCESS MANAGEMENT AS A VISION ZERO ELEMENT

While traditional access management has tended to focus on motor vehicles, thoughtful access management should be an integral component in the county's Vision Zero Action Plan. Access has a direct and significant relationship to safety. The county's Vision Zero Action Plan[2] has identified a very aggressive agenda for eliminating all serious injury and fatal crashes by 2030. This ambitious plan is truly multimodal in focus, however, as it targets all types of crashes and modes, including bicycle and pedestrian-related crashes as well as vehicle on vehicle crashes which comprise 45 percent of all fatal crashes experienced in Montgomery County's non-Interstate network between 2015 and 2019.[3] Every new driveway adds conflict points to the roadway network. Effective access management policies can lead to crash reductions on urban, suburban, and rural streets. The graph below from previous access management studies illustrates the importance of pursuing a policy of access point consolidation. As the density of access points increase along a corridor, so does the ratio of crashes. Within Montgomery

[1] Access Management Manual, 2nd Edition, Transportation Research Board, 2014. P1-3.
[2] Vision Zero Action Plan, Our Plan to Eliminate Serious Injury and Fatal Crashes by 2030, Montgomery County, Vision Zero Montgomery County, Fiscal Years 2022-2023 Work Plan. https://www.montgomerycountymd.gov/visionzero/action.html
[3] "Montgomery County Vision Zero 2030 Action Plan", FY22-23 Work Plan, April 2021. https://www.montgomerycountymd.gov/visionzero/Resources/Files/vz2030-plan.pdf

County, 64 percent of all crashes (not including Interstate highways and ramps) occur at intersections (per the county's Predictive Safety Analysis findings).

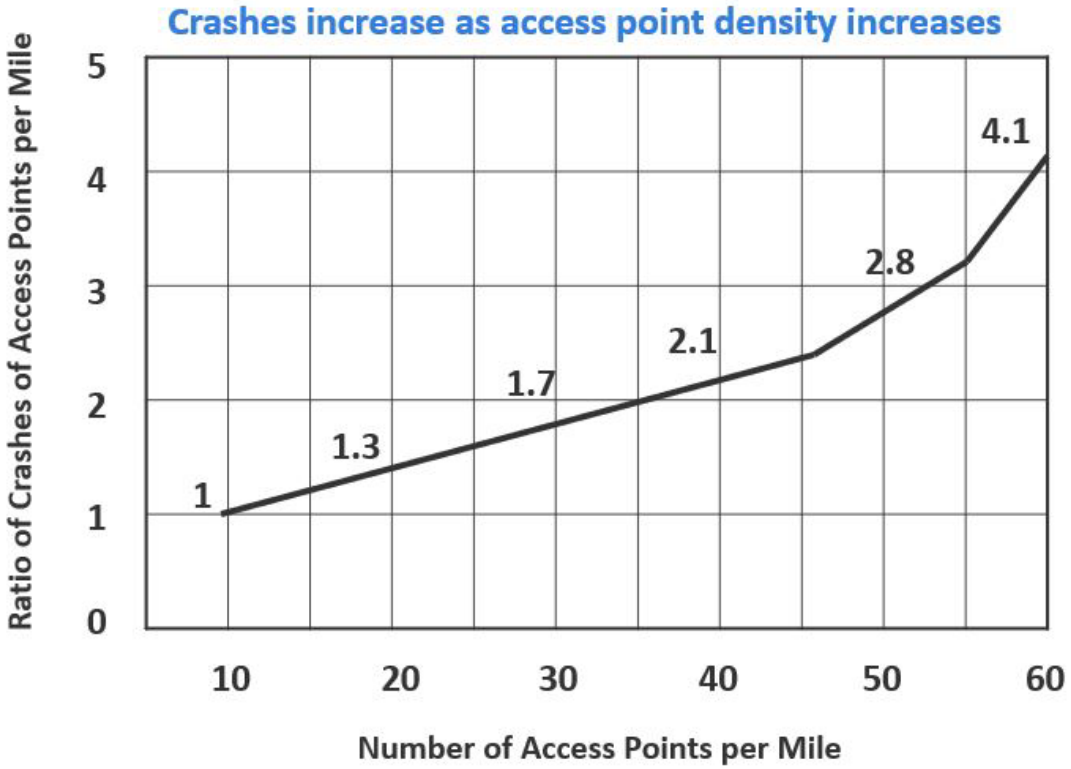


*Figure 1 - Composite Crash Rate Indices*

*Source: "NCRHP Report 420: Impact of Access Management Techniques," Transportation Research Board, 1999, page 34.*

## ACCESS MANAGEMENT FROM A RACIAL EQUITY AND SOCIAL JUSTICE LENS

Montgomery County is home to over a million residents, over 59% of which are people of color. Montgomery Planning and Montgomery County Executive Branch agencies are committed to incorporating racial equity and social justice into current and future work efforts to better meet the needs of all county residents. For Montgomery Planning, this is part of the Equity Planning Agenda, and following the Planning Board approved Equity Agenda in Planning,[4] Montgomery Planning's Equity Focus Areas mapping[5] has identified parts of the county that are characterized by high concentrations of lower-income people of color, who may also speak English less than very well.

[4] Equity Agenda for Planning, Montgomery Planning. https://montgomeryplanning.org/planning/equity-agenda-for-planning/

[5] https://montgomeryplanning.org/planning/equity-agenda-for-planning/the-equity-focus-areas-analysis/

These communities often have frequent pedestrian and bicycle modes of travel, making them vulnerable to unsafe intersections. Work on the Vison Zero Action Plan has shown that pedestrian and bicycle crashes do impact populations living in the county's Equity Focus Areas to a greater degree than the remainder of the county. While the Access Management Study is not a master plan, Montgomery Planning is committed to equity in all work efforts. Accordingly, the subject of road access management and how it is applied, and how future efforts and policies are crafted, must develop recommendations reflective of a commitment to racial equity and social justice outcomes for county residents.

From a property perspective, access management affects how properties can be accessed by vehicles at driveways and pedestrians and bicycles at sidewalk, sidepath, and trail connections. The ability of a developer to pay for needed improvements/exactions required by the county might impact the viability of a commercial or residential parcel if the market cannot support these added costs. In Equity Focus Areas, this could make the difference between a redevelopment occurring or not. While county government has efforts focused on helping business improvements in equity areas, including building façade treatments and other business-oriented funding programs, Montgomery Planning and MCDOT may need to adopt different approaches to ensure that redevelopment with adequate access management can occur. Supportive strategies will need to be explored in future work.

One approach would be to fund a transportation CIP project within an Equity Focus Area to help improve access management and spur redevelopment that otherwise might not occur. The hope is that focused investment in improving access management through the CIP process would help to induce redevelopment. One example of this, although not in an Equity Focus Area, is MD 198 in the Burtonsville area, where both MDOT SHA and MCDOT are working to implement many of the master plan access management recommendations of the Burtonsville Crossroads Neighborhood Plan. This type of effort should be considered more specifically in Equity Focus Areas along commercial corridors in need of revitalization/ redevelopment.

This access management study is focusing on strategies that address access management decisions for all modes to help improve safety and minimize vehicular conflicts with pedestrians and bicycles. This multimodal focus addresses racial equity and social justice by helping to develop policies that focus on non-auto modes to a higher degree.

## FUNCTIONAL CLASSIFICATION AND THE ROLE OF A HIERARCHAL STREET NETWORK

There is a proven relationship between access and road safety. Historically, this was the underlying reason why roadway functional classification systems were developed in the first place, recognizing that roads have varying needs for access versus mobility. Functional roadway classifications systems are essential elements for any access management program. Access is defined as the ability along a particular road to enter and exit the road, either at intersections or at driveways. A freeway is a road with extremely limited access accommodating longer-distance travel, while a residential street has little to no access restrictions and accommodates local travel. Mobility is defined as how far you can

travel in a given amount of time. Mobility is increased when access is limited. This is illustrated in Figure 2 showing the Access-Mobility curve from the 2018 *Master Plan of Highways and Transitways Technical Update*. As mobility needs increase, access is, by design, managed to reduce interruptions to through-travel. One of the primary reasons why this relationship exists is to ensure that road safety can be managed for all road/street types.


*Figure 2 - Access-Mobility Curve – Master Plan of Highway and Transitways*

## REGIONAL ROAD NETWORK/ROADWAY CLASSIFICATION

Within Montgomery County, there are 1,180 miles of roads as summarized in Table 1. 29 percent of these roads are owned and maintained by MDOT SHA, including 41 interstate miles and 303 arterial miles. Montgomery County Department of Transportation maintains the other 71 percent of roads (excluding municipal roads), of which 20 percent are arterials. A map showing this roadway network delineating state versus county roads is shown in Figure 3.

*Table 1: Montgomery County Roads by Type and Ownership*

| Road Type | Road Miles | Percent of Total |
|---|---|---|
| **Interstate** | 41 | 3.5% |
| **State Highways** | 303 | 25.5% |

| | | |
|---|---|---|
| **County Roads** | 836 | 71% |
| **Total** | 1,180 | 100% |

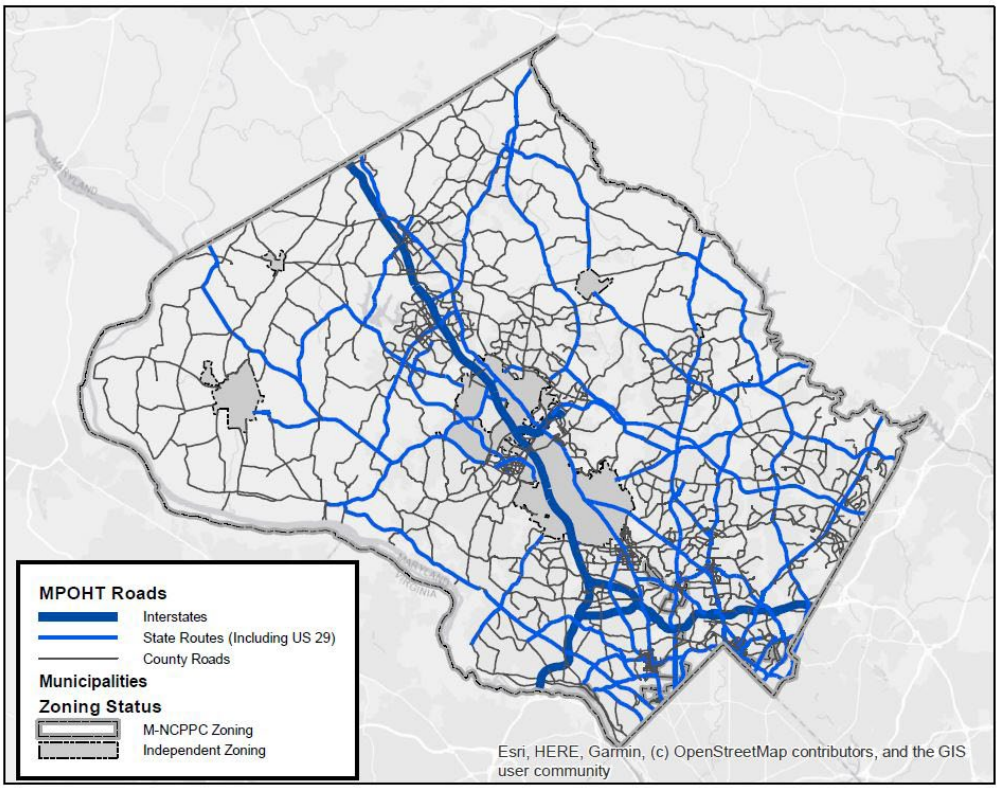


*Figure 3 - County Road Network by Ownership*

## CONFLICT POINTS

Conflict points are locations in or on the approaches to an intersection (including multimodal crossing conflicts at driveways) where vehicular, pedestrian and bicycle paths merge, diverge, or cross. These conflicts can lead to crashes between vehicles and between vehicles and other modes (such as pedestrians and bicyclists). Traditional conflict diagrams tend to overlook these other modes.

### FOUR-WAY INTERSECTION

Figure 4 shows the vehicular conflict points at a traditional four-way intersection.

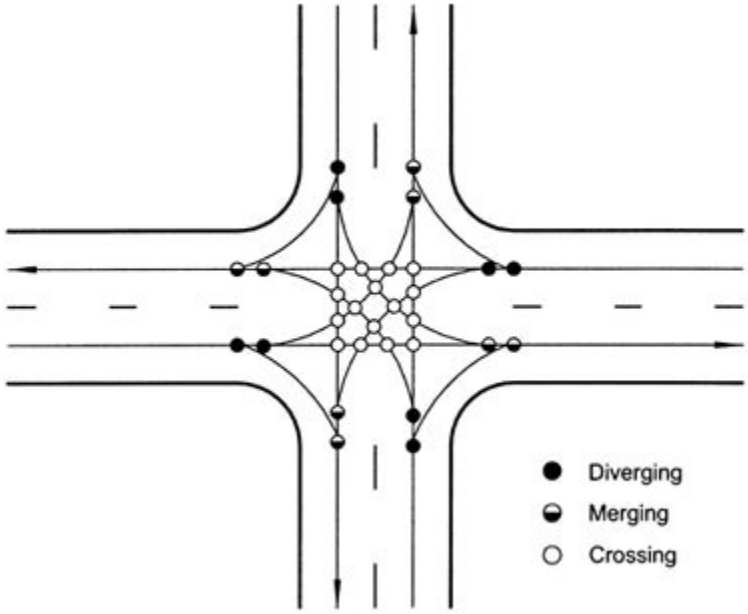


*Figure 4 - Conflict Points at a Four-Way Intersection*

*Source: "Signalized Intersections: Informational Guide, FHWA Report HRT-04-091, FHWA, August 2004.*

Table 2 illustrates how total number of conflict points increase with the addition of pedestrians and one-way separated bike lanes.

*Table 2: Four-Way Signalized Intersection Conflict Points*

| Conflict Point Types | Number of Conflict Points | | | | |
|---|---|---|---|---|---|
| | **Signalized - Vehicle to Vehicle Only** | **Pedestrians with Permissive Left Turns** | **Add Pedestrians with Protected Left Turns** | **Add Peds and SBLs* with Permissive Left Turns** | **Add Peds and SBLs* with Protected Left Turns** |
| **Crossing** | 16 | 16 | 16 | 16 | 16 |
| **Merging** | 8 | 8 | 8 | 8 | 8 |
| **Diverging** | 8 | 8 | 8 | 8 | 8 |
| **Vehicle-Ped** | 0 | 24 | 4 | 24 | 4 |
| **Vehicle-Bike** | 0 | 0** | 0** | 24 | 4 |
| **Total** | **32** | **56** | **36** | **80** | **40** |

** SBL = one-way separated bike lanes on all four approaches.*
*** Bikes assumed to be part of vehicular traffic stream or operating as a pedestrian.*

*Note: Permissive left turns occur when a signalized intersection approach has a green ball indication with no green turn arrow, while a protected left turn occurs when a green arrow indication is provided. Some signals operate with both protected and permissive left-turn operation.*

### THREE-WAY INTERSECTION

Three-way or "T" intersections have significantly fewer conflict points (72 percent fewer) than four-way intersections. This applies for intersections of streets as well as the intersection of a street with a driveway or trail. Figure 5 shows the vehicular conflicts at a three-way intersection.

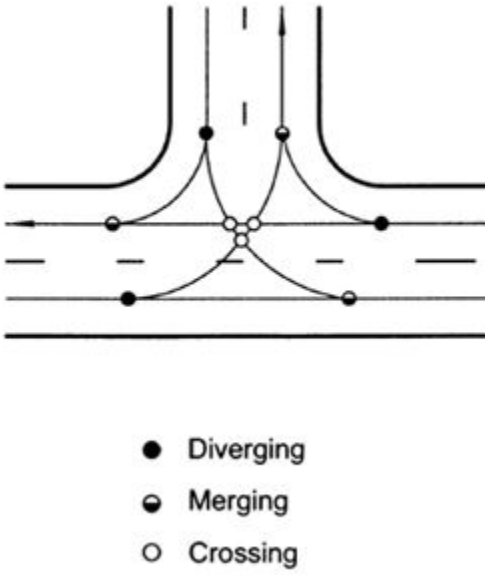


*Figure 5- Conflict Points at a Three-Way Intersection*

Source: "Signalized Intersections: Informational Guide, FHWA Report HRT-04-091, FHWA, August 2004.

Table 3 illustrates how the total number of conflict points change with the addition of pedestrians and also one-way separated bike lanes.

*Table 3: Three-Way Signalized Intersection Conflict Points*

| Conflict Point Types | Number of Conflict Points | | | | |
|---|---|---|---|---|---|
| | **Vehicle to Vehicle Only** | **Pedestrians with Permissive Left Turns** | **Pedestrians with Protected Left Turns** | **Peds and SBLs* with Permissive Left Turns** | **Peds and SBLs* with Protected Left Turns** |
| **Crossing** | 3 | 3 | 3 | 3 | 3 |
| **Merging** | 3 | 3 | 3 | 3 | 3 |
| **Diverging** | 3 | 3 | 3 | 3 | 3 |
| **Vehicle-Ped** | 0 | 12 | 2 | 12 | 2 |
| **Vehicle-Bike** | 0 | 0** | 0** | 12 | 2 |
| **Total** | **9** | **21** | **11** | **33** | **13** |

** SBL = one-way separated bike lanes on all four approaches.*

*** Bikes assumed to be part of vehicular traffic stream or operating as a pedestrian.*

*Note: Permissive left turns occur when a signalized intersection approach has a green ball indication with no green turn arrow, while a protected left turn occurs when a green arrow indication is provided. Some signals operate with both protected and permissive left-turn operation.*

## CONFLICT POINTS – MULTIMODAL CONSIDERATIONS

From these two examples, it is clear that permissive left turns at signalized intersections significantly increase intersection conflict points and thus the risk of crashes for both pedestrians and bicyclists. As we endeavor to improve access management to be more multi-modal focused, strategies to protect pedestrians and bicyclists by reducing conflicts with vehicles should be prioritized. Some potential strategies that are now implemented in Montgomery County include:

- Protected left-turn phases,
- Leading pedestrian intervals (LPIs),
- No turn on red restrictions, and
- Elimination of channelized right-turn lanes.

A protected left-turn phase is a specific traffic signal phase when a green left-turn arrow indication is provided. Protected left-turn phases can reduce conflicts between left-turning vehicles and bicycles and pedestrians, and it is worth noting that evolving practice with the design of separated bike lanes[6] [7] emphasizes the need to provide protected left-turn signal phasing when conflicting volume thresholds are met. Changing from a permissive left-turn to protected left-turn is reported in the Crash Modification Factors (CMF) Clearinghouse to reduce left-turn crashes by 42 percent[8]. (CMFs are crash modification factors determined based on detailed pre/post-crash studies.)

Leading pedestrian intervals (LPIs) are advanced "walk" indications to direct pedestrians to start to travel within a crosswalk in advance of the adjacent traffic receiving a green light. This is typically a short (three to seven second) "head start" which is useful in areas where pedestrian volumes are relatively high. Adding LPIs to a signal is reported by the Federal Highway Administration (FHWA) to reduce pedestrian-vehicle crashes at intersections by 13 percent.[9]

LPIs currently are not allowed for separated bike lanes by FHWA. It should be noted, however, that the New York City Department of Transportation (NYCDOT) conducted a pilot program with Federal Highway Administration (FHWA) approval and found LPIs for bike lane use safe and effective.[10] Longer

[6] "Separated Bike Lane Planning & Design Guide'" MassDOT, 2015, Exhibit 6A.
[7] "Guide for Determining Left Turn Signal Control," Portland (Oregon) Bureau of Transportation, 2021.
[8] https://www.cmfclearinghouse.org/detail.cfm?facid=340
[9] https://safety.fhwa.dot.gov/provencountermeasures/lead_ped_int.cfm
[10] "Bicyclists Use of Leading Pedestrian Intervals: Pilot Program Results," New York City Department of Transportation, May 2019.

term, it is hoped that FHWA will ultimately allow LPI usage for bike signals and be adopted into the Manual on Uniform Traffic Control Devices (MUTCD).

No Turn on Red restrictions should be considered wherever there is a history of right-turning vehicle crashes with pedestrians or bicycles, when conflicting pedestrian and bike volumes are high and when other engineering factors, such as sight distance and high travel speeds, make right turns on red problematic.

Channelized right-turn lanes occur on most arterial roads, and typically provide a triangular/porkchop shaped island to allow right-turning vehicles to turn right on yield sign control. When traffic throughput was prioritized, these treatments were implemented because they allowed vehicles to make right turns without coming to a complete stop at the intersection. This type of lane geometry however creates conflicts with pedestrians by adding an additional uncontrolled crosswalk conflict. Often referred to as a "free right," "hot right," or "slip lane", this is an intersection treatment type that is strongly discouraged in the Complete Streets Design Guide. This design treatment works well in a car-centric environment, but poses challenges in a multimodal, Vision Zero-focused environment. Figure 6 shows a comparison between a channelized right-turn lane and a more traditional right-turn lane. A Vision Zero study[11] in Contra Costa, California showed that "slip lanes facilitate fast moving vehicles and make the pedestrian experience less comfortable." This study reviewed 10 years of crash data in Contra Costa County's Pedestrian Priority Areas (similar to Montgomery County's Bicycle-Pedestrian Priority Areas) and found that one-third of pedestrian and bicycle collisions involving a right turn occurred at intersections with channelized right-turn lanes.

[11] "Vision Zero & Systemic Transportation Safety "How To" Policy and Implementation Guide," prepared by Fehr & Peers for the Contra Costa Transportation Authority, October, 2020.

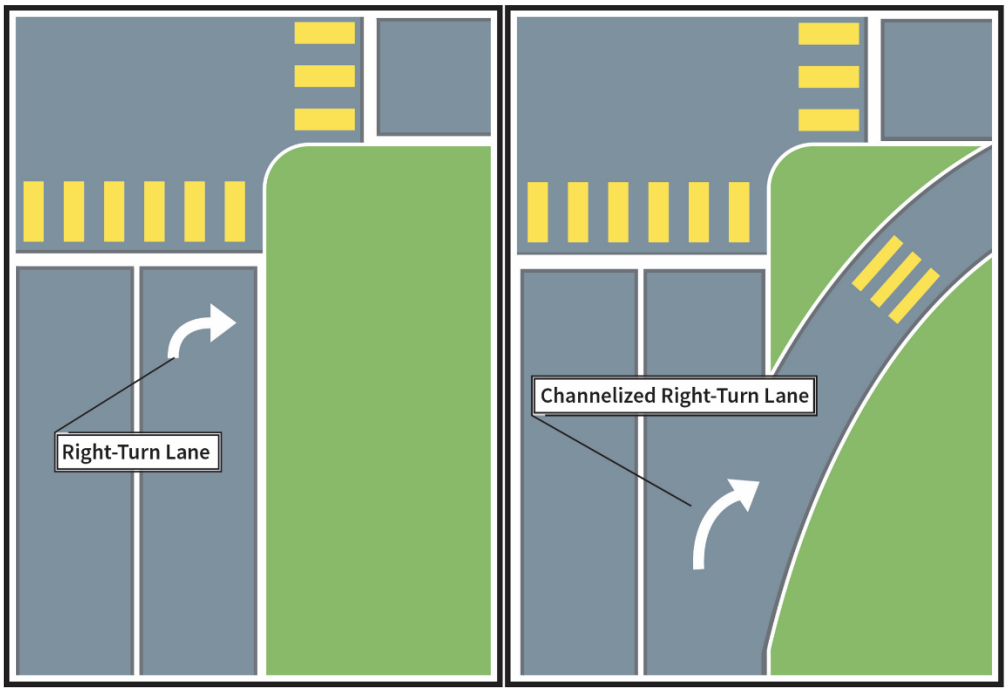


*Figure 6: Comparison of Channelized and Non-Channelized Right Turning Treatments at Intersections*

## ACCESS MANAGEMENT TOOLS

Access management is a critical tool to manage roadway access for individual parcels, along road corridors, and in the vicinity of signalized and other protected intersections. As such, rules or guidelines governing the provision of access are needed to guide the review and approval of site access locations by the Department of Transportation, the permitting of driveways and site access locations by the Department of Permitting Services (DPS), and the approval of site plans and site access by the Planning Board.

Access management aims to decrease crashes, mitigate congestion, and improve mobility by decreasing roadway conflicts. This is done by employing tools, either traffic engineering tools or transportation and land use planning tools, to reduce the amount of conflict points or points of access. Table 4 shows many key access management tools that require consideration in a well-balanced access management program. The subsections below define these concepts and provide more details about each of the main concepts.

*Table 4: Access Management Tools*

| Traffic Engineering Tools | Transportation & Land Use Planning Tools |
|---|---|
| Intersection Design/Corner Clearance | Neighborhood Connectivity |
| Driveway Spacing | Shared Access/Cross-Access Easements |
| Traffic Signal Spacing/Protected Crossing Spacing | Master Plans |
| Two-Way Left Turn Lanes | Access Management Overlay Districts |
| Divided Roadway Design – Unsignalized Median Openings | Corridor Studies |
| Divided Median Design - Prohibition of U-turns when No Left-Turn Lane is Provided in Median | Acquisition of Property to Control/Limit Access |
| Driveway and Street Connections at Sidewalk/Sidepath Level | Incentive Zoning |
| | Alleys to Limit Driveway Interruptions |
| | Street Connectivity |

## TRAFFIC ENGINEERING TOOLS

Traffic engineering tools are mainly geometric strategies that focus on improving how access management is designed on the road system. They are typically design standards codified in either national, state, or local standards, including the Manual on Uniform Traffic Control Devices (MUTCD) and the Maryland (MDOT) version, A Policy on Geometric Design of Highways and Streets by the American Association of State Highway and Transportation Officials (AASHTO "Green Book"), the MDOT Access Manual, the Montgomery County Complete Streets Design Guide, and the Montgomery County Code. The following includes discussions of key traffic engineering strategies that have access management applications.

### Intersection Design/Corner Clearance

Intersection designs present a lot of retrofitting opportunities and standards to regulate the number of conflict points. These include preserving the functional intersection area, establishing adequate corner clearance, designing for U-turns in left turn lanes, handling driveways within intersections, and restricted median access. As shown below in Figure 7, the functional intersection area is found outside the physical area of an intersection where vehicles queue before crossing into the physical intersection area. The functional area has three components: vehicle queue storage distance, maneuver distance, and perception-reaction distance.

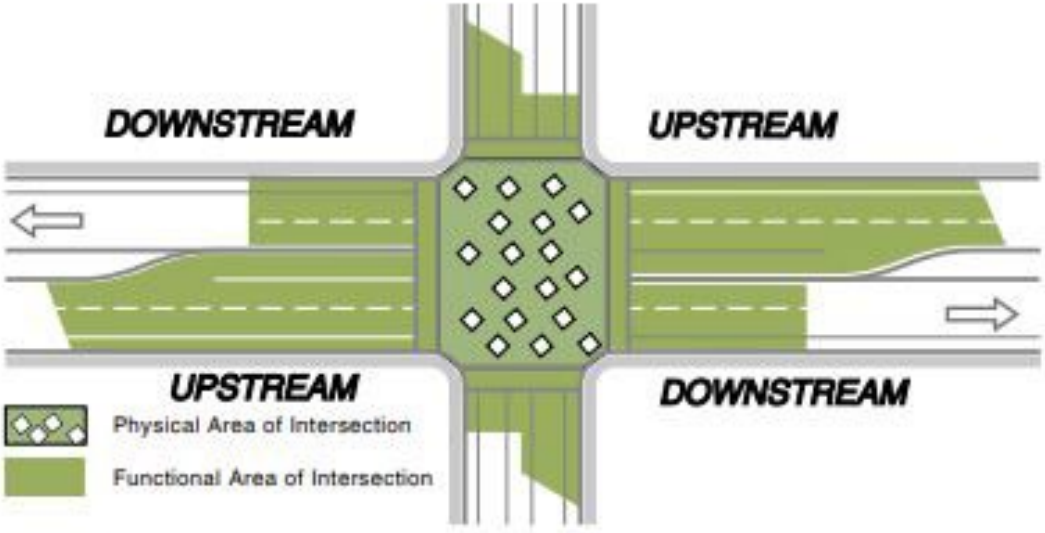


*Figure 7- Functional Area of Intersection*

*Source: "Access Management in the Vicinity of Intersections," FHWA Report SA-10-002, FHWA, 2020.*

Ideally, driveways should not be allowed in the functional intersection area since it constitutes the distance along a road where decision-making and maneuvering occurs before a driver enters the physical intersection area. Driveways in this area create additional conflict points, which can compromise driver perception and reaction as they approach the intersection by increasing driver information overload.[12] In reality, driveways on corner lots exist within the functional area of intersections on most boulevards and often serve highway-oriented uses, such as service stations and fast-food restaurants. Consolidation within the functional intersection area is challenging from a retrofitting perspective.

The performance of the functional intersection area can be preserved by the application of access management techniques including the application of corner clearance minimum standards, proper driveway spacing to decrease driveway density, installing raised medians, and by eliminating left turns specifically by prohibiting median openings within the functional intersection area.

Corner clearance is defined as the distance between the radius return points of the intersection and the first permitted entrance.[13] Insufficient corner clearance can lead to more crashes and reduce capacity in the functional intersection area by shortening weaving distance, blocking access points,

[12] Institute of Transportation Engineers. (2004). Intersection Briefing Sheets: Access Management. https://www.ite.org/pub/?id=e26c5400-2354-d714-51b2-432d8f3da94d#:~:text=Functional%20Areas-,of%20Intersections,any%20required%20vehicle%20storage%20length.

[13] "MDOT SHA Access Manual", Maryland Department of Transportation State Highway Administration. Section 1.4.3.

and increasing the likelihood of rear-end collisions.[14] An example of corner clearance is shown below in Figure 8.

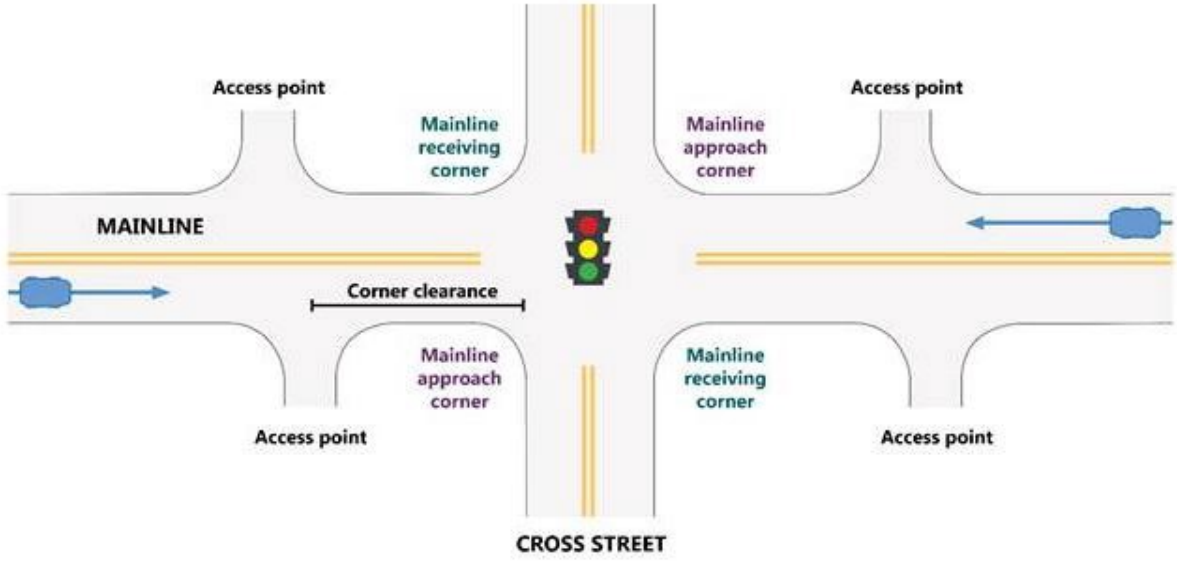


*Figure 8 Corner Clearance at a Signalized Intersection*

*Source: "Tech Brief: Safety Evaluation of Corner Clearance at Signalized Intersections," FHWA Report HRT-17-085, FHWA, 2018.*

## Driveway Spacing

Driveway spacing guidelines ensure that driveways are adequately separated from other driveways to minimize conflicts between adjacent access points. The criteria used to develop driveway spacing guidelines vary by states. A review of 13 state minimum driveway spacing guidelines found that basing the guidelines on traffic volume and speed had a greater impact on safety performance of driveway spacing policies compared to other criteria such as land use, access class, and other access control characteristics on the roadway.[15] Minimum driveway spacing helps prevent problems like the right-turn conflict overlap. The right turn conflict overlap occurs when a driver has to keep an eye on more than one intersection/access at a time when traveling through on a road. Such conflict which increases the driver's workload is directly related to access spacing. Corridors with high driveway

[14] Oregon Department of Transportation. (n.d.) Weave Distance [Fact Sheet]. https://www.oregon.gov/ODOT/Engineering/Docs_AccessMngt/Weave.pdf

[15] Minh, C.C., Huynh, N., Chowdhury, M., Ogle, J.H., Sarasua, W.A., and Davis, W.J. (2014). Impact of Minimum Driveway Spacing Policies on Safety Performance: An Integrated Traffic Micro-Simulation and Automated Conflict Analysis. International Journal of Transportation Science and Technology, 3(1), pg. 249-264. https://doi.org/10.1260/2046-0430.3.3.249

densities aggravate right-turn conflict overlaps and reduce the roadway's operational performance due to the increased need for through-traffic to decelerate to avoid crashes.[16]

Curb cut consolidation is one approach to retrofitting corridors where driveway spacing distances are insufficient. However, where consolidation is not feasible there are corridor design techniques that can be employed to reduce the number of conflict points. These include frontage roads and raised median treatments.

### Traffic Signal Spacing/Protected Crossing Spacing

While traditional traffic signal spacing focuses on setting minimum distances between traffic signals to reduce conflict points between motor vehicles and increase motor vehicle speeds, this can be detrimental to pedestrians and bicyclists when there are frequent attractions alongside the road. Therefore, the county has addressed these different modal needs for traffic signal spacing into the Complete Streets Design Guide (CSDG) with a signal spacing guideline for vehicular traffic and a separate protected crossing spacing recommendation for pedestrians and bicyclists. Revisions to Chapter 50 (Subdivision of Land Code) were introduced to the County Council this summer for review and approval and one major change proposed is to codify the CSDG protected crossing spacing guidelines. These distances vary by street type, recognizing that land use context and the built environment (degree of urbanization) play major roles in the need for improved pedestrian and bicycle connectivity.

### Two-Way Left Turn Lanes

A two-way left turns lane (TWLTL) is an access management strategy that MCDOT employed in the past, but this strategy is no longer being advocated per the CSDG due to the increased crash risk associated with this design in many situations and increased crossing width for pedestrians. TWLTLs are not permitted on Boulevards, Neighborhood Streets, and Neighborhood Yield Streets, and are permitted in limited circumstances on all other road types. Nevertheless, they exist today on many county roads, and in some cases, are an appropriate design treatment. They are typically provided in commercial and industrial areas and along some high-volume Neighborhood Connector roads that experience high through volumes and have a high density of residential driveways. Examples within the county of this include:

- Randolph Road between Rocking Horse Road and Putnam Road
- Blueridge Avenue between Georgia Avenue (MD 97) and Elkin Street
- Crabbs Branch Way between East Gude Drive and Redland Road
- Twinbrook Parkway between Veirs Mill Road and Ardennes Avenue
- Aspen Hill Road just west of Georgia Avenue (MD 97)
- BelPre Road between Georgia Avenue (MD 97) and Layhill Road (MD 182)

[16] Transportation Research Board. (1996). Driveway and Street Intersection Spacing. http://www.teachamerica.com/accessmanagement.info/pdf/TRC_456_Driveway.pdf , pg. 20.

- Powder Mill Road between New Hampshire Avenue (MD 650) and Prince George's County line
- Brookville Road between Warren Street and Stewart Avenue
- Tuckerman Lane between Grosvenor Place and Sugarbush Lane
- Snouffer School Road between Centerway Road and Sweet Autumn Drive
- Centerway Road between Goshen Road and Snouffer School Road
- Wisteria Drive between Father Hurley Boulevard and Waring Station Road
- Waring Station Road between Middlebrook Road and Wisteria Drive

Three-lane cross sections with a TWLTL can be implemented as part of a road diet to an existing four-lane undivided roadway, and safety studies show that this can result in significant safety improvements. Road diets tend to lead to reduced travel speeds, as well as providing a separation between through traffic and left-turning traffic, and shorter crosswalk distances for pedestrians. There are current design treatments now used by MCDOT to provide a channelized island in place of the center TWLTL at crossing locations. They also tend to allow more room for bicycle facilities. Road diets, by themselves, can be an effective access management strategy that also focuses on slowing traffic down.

### Divided Roadway Design

Divided roadways face several challenges such as properly designing median openings, accommodating left turn lanes and U-turns, and determining the appropriate median treatments based on site conditions. Median openings permit cross traffic movement by creating a channelized area and can be signalized or unsignalized. Divided roads are typically, but not always, provided on multilane roads. A major reason to provide a median on a multilane highway is to reduce conflicts and improve road safety by limiting head-on crash potential. Unfortunately, many of the county's boulevards, while divided, often provide convenient full-access median openings at almost every intersection. Particularly troublesome is the proliferation of unsignalized full-access median openings on many major county and state highways and the lack of restricted (partial-access) median openings. Most of these problems are a result of an aging transportation infrastructure network, which was built prior to the development of improved access management practices by MDOT SHA. The lack of a current enforced access management policy with median crossover guidance from either MDOT SHA or MCDOT has not helped this deficiency. With Vision Zero directives at both the state and county levels, this status quo must change.

### Restricted (Partial-Access) Median Design

Restricted (Partial-Access) Median Design: Increase use of restricted or partial-access median crossings, versus full-access median crossings, should be considered to reduce conflicts and improve safety. Restricted (partial access) median crossings typically prevent side street through movements and often side street left turns from occurring. Some typical schematic designs of partial access crossings are shown below in Figures 9 and 10. Side-street left turns and through movements are prohibited, and as a result, the number of conflicts is dramatically reduced. These crossings should be

prioritized to connect the divided highway network to Connector (Neighborhood Connector and Area Connector) streets, and lower volume Town Center Streets and Downtown Streets. Within residential areas, an emphasis should be placed on designing these access points to benefit neighborhood and school connectivity, more than for commercial access.

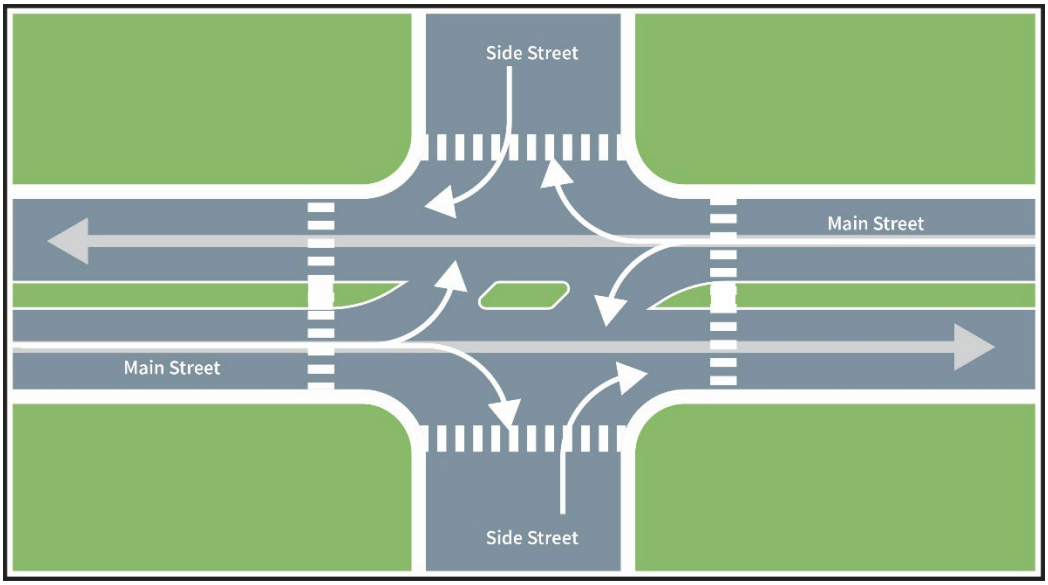


*Figure 9 - Partial Access Crossing with Directional Left Turn*

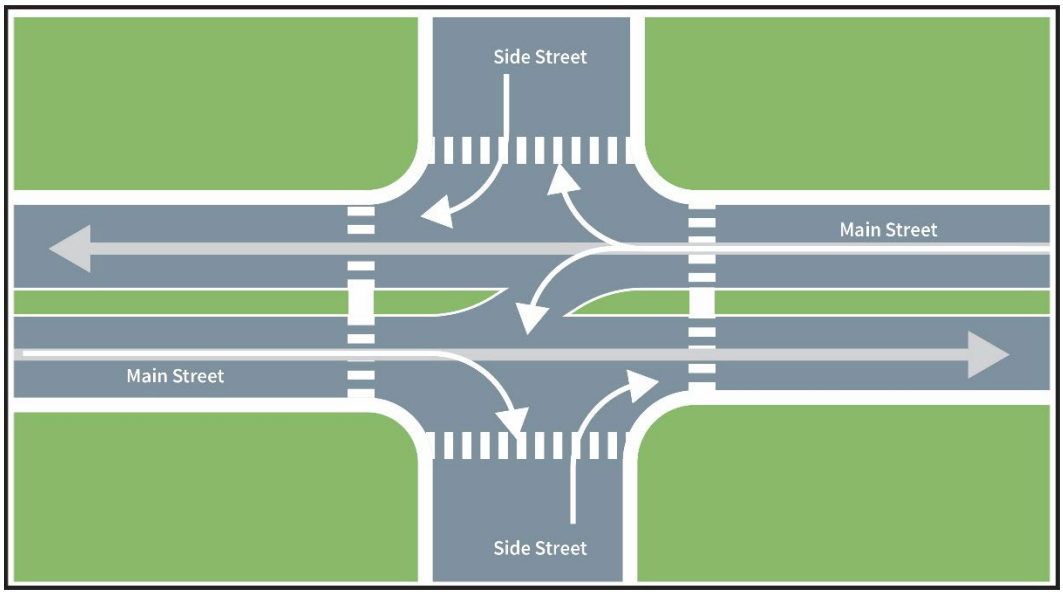


*Figure 10- Partial Access Crossing with Opposing Left Turns*

Montgomery County has many six-lane divided highways (three travel lanes per direction) on many of its state highways and on some county roads as well. When these roads are congested, unsignalized median openings pose an extra safety risk to drivers. Turning left across three lanes of travel from the central median is often extremely difficult at unsignalized median openings during peak times. The

ability of side street traffic at these same locations to turn left or to execute a through movement to cross the six-lane highway is often even more difficult and risky. Depending on the land use context, signalization or modification of these unsignalized full-access median openings should be considered at locations with documented safety concerns with the following techniques:

1. Restrict side street left turns and through movements, by providing opposing main street channelized left-turn lanes, reducing side street traffic to right-in/right out operation,
2. Restrict side street left turns and through movements, by providing a main street left-turn lane in only one direction, reducing the side street traffic to right-in/right-out operation on one side and left & right-in/right-out operation on the other side, and
3. Either of the two previous options with protected crossings added. Option 2 would work very well in combination with a signalized pedestrian crossing on the side of the median where main street left turns are prohibited.

### Prohibition of U-turns when No Left-Turn Lane is Provided in Median

Along many highways in the county, there are full-access median openings where a main street left-turn lane is provided in one direction, but not in the opposing direction. There are also full-access median openings where no main street left-turns lanes are provided in either direction. In both of these cases, main street left-turns and U-turns that do not have exclusive left-turn lanes should be prohibited with signage. This is often not the case on many county and state divided highways. The latter case with no main street left-turn lanes exists often due to an extremely narrow median width, particularly along highways such as Georgia Avenue (MD 97) and Randolph Road. While many of these median openings likely work well in off-peak time periods, the design is substandard for a boulevard, and these types of median openings provide little overall access benefit with a disproportionate safety risk.

### Driveway and Street Connections at Sidewalk/Sidepath Level

Increasingly, MCDOT has been requiring driveway connections across sidewalks and sidepaths to cross at sidewalk/sidepath level. This has been the standard for residential driveways, however, in the past, commercial driveways were often treated like streets with street-level crosswalks provided at sidewalks and sidepaths. Flush driveways are only possible when there is an adequate street buffer between the sidewalk or sidepath and the street to ramp up the driveway (typically 3 to 4 feet). This connection provides a level crossing surface for Active Zone users (pedestrians and bicyclists) and reinforces that pedestrians and bicyclists have the right-of-way at all driveway crossings. This is illustrated in Figure 4 for driveways. Slightly different treatments can also be developed for side street intersections by providing a raised crosswalk across the intersecting street for a sidewalk or sidepath. Figure 5 is an illustration from the Michigan DOT *Sidepath Intersection & Crossing Treatment Guide*.

*Figure 4: Driveway Crossing Flush with Sidewalk*

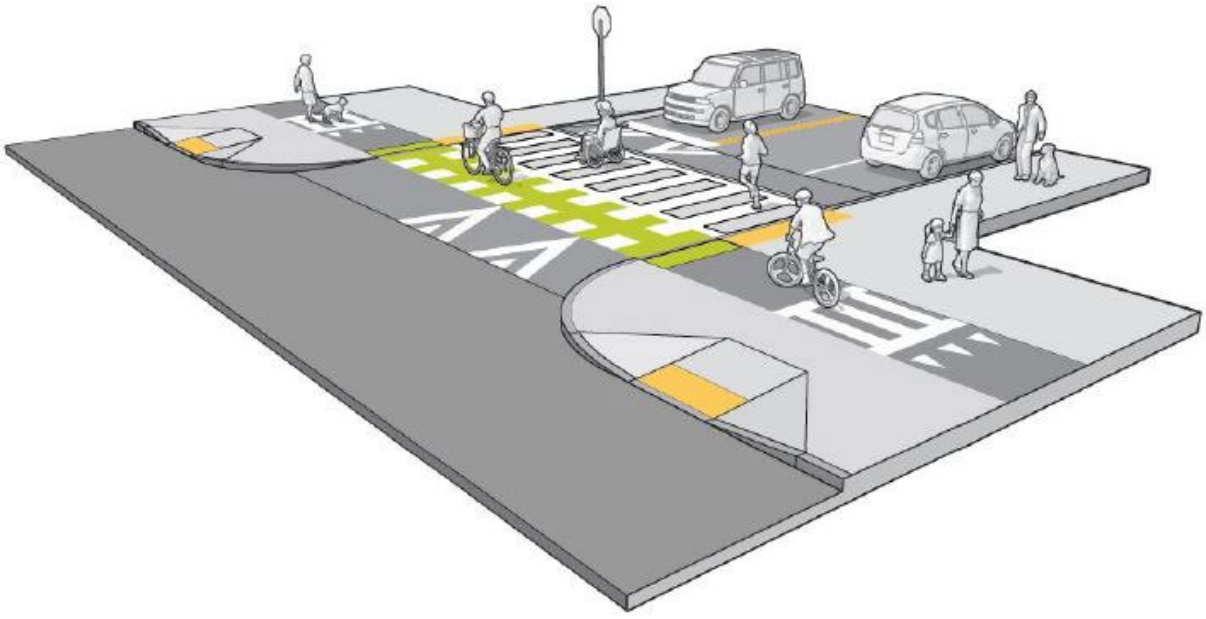

*Figure 5: Raised Crosswalks for Side Street Connections*

*Source: "Sidepath Intersection & Crossing Treatment Guide," Michigan Department of Transportation, June 2018.*

## TRANSPORTATION AND LAND USE PLANNING TOOLS

Primarily at the planning and facility planning levels (for MCDOT), transportation and land use planning access management tools are also available to help guide access management. They include transportation planning-focused tools, like Corridor Studies (both MCDOT and Montgomery Planning conduct these) and the use of Master Plan Roadway Classification, and land use planning strategies, including neighborhood connectivity, shared access/cross-access easements, overlay districts, and corridor master plans. The following consists of discussions of key transportation and land use planning strategies that have access management applications.

### Neighborhood Connectivity

The provision of full-access signalized (or otherwise protected) median openings should be prioritized to provide key connections between the arterial highway system and adjacent neighborhoods. There are many neighborhoods with limited controlled crossings/intersections to exit from the neighborhood street network. Priority should be placed on ensuring that Neighborhood Connector streets have adequate and safe access at their connections with the county and state divided highways. The role of master plans is key in helping to identify these connector streets. Many of these streets are likely classified in the Master Plan of Highways and Transitways as a Neighborhood Connector street, but there are also many gaps in older areas of the county. Any neighborhood of sufficient size should have signalized/controlled access onto a bordering state or county arterial road.

Another important consideration is the development and reinforcement of an interconnected grid of streets within neighborhoods so that residents using any travel mode can easily get through their neighborhood to choose the safest signalized/controlled access point.

### Shared Access/Cross-Access Easements

The sharing of access onto an arterial can be an effective land use strategy. It has two benefits, in that it helps to reduce the number of access points onto the arterial, but it also provides cross access connections between adjacent properties. In order to accomplish this, advanced coordination is needed and some level of cooperation from the development applicant is also necessary. It requires a joint ***cross-access easement*** be provided along a property line (typically on one side of the property line, but if two actively developing parcels were involved, the easement could split the property line). If either of the two parcels in question border on a cross street, it might also require a cross-access drive (parallel to the arterial) be included in the easement. Particularly in areas experiencing redevelopment, this is a critical retrofitting technique where some of the poor decisions of the past can be corrected, by reducing access point spacing on a congested stretch of road, and at the same time, provide improved internal circulation for both adjacent sites.

### Master Plans

A master plan is an effective land use planning strategy that focuses on transportation issues, specifically neighborhood connectivity and vision zero strategies. A number of our master plans,

including the Olney Master Plan (2005) and Westbard Sector Plan (2016) provide guidance on inter-parcel connections and site access to major roadways.

The Veirs Mill Corridor Master Plan (2019) was a plan centered along a busy state arterial highway and in part was an effort conducted to help support planned Bus Rapid Transit services connecting Rockville to Wheaton. During the plan development, discussions around neighborhood connectivity issues, safe routes to school issues, and public transit access to paired bus stops, led to key recommendations along the corridor for protected crossings. These were particularly effective Master Plan recommendations, as evidenced by the recent traffic signal installation by MDOT SHA on Veirs Mill Road at Norris Drive, and the ongoing planning and design work at several other locations along Veirs Mill Road. The review of access management within a Master Plan should prioritize improving neighborhood connectivity, but it should also review the road corridors with current access management regulations.

A corridor master plan focuses both on the adjacent land surrounding the corridor and plan area, as well as how the transportation corridor serves these neighborhoods. Montgomery Planning is embarking on a more deliberative approach to corridors that tie into an overall transportation network. Strategies including access management, neighborhood connectivity, pedestrian/bicycle connections, and road safety should be considered for this type of master plan.

### Access Management Overlay Districts

A corridor or area-focused land use planning tool is an overlay district. An overlay district provides additional regulations that supersede or are additive to the underlying zoning requirements. For properties located within the overlay district (in the case of a corridor overlay, this might be parcels bordering on a road or other type of transportation facility), requirements are developed that are corridor-focused and often related to access management, including driveway spacing, shared access requirements, signal spacing, and protected crossing spacing.

### Corridor Studies

A corridor study is typically a transportation planning study of a transportation corridor that can be conducted by transportation agencies, including MDOT SHA, MCDOT, and Montgomery Planning. These can be focused on a planned transportation mode, such as Bus Rapid Transit, heavy rail, light rail or Metro or it can be focused on operations and safety of the corridor. The Aspen Hill Vision Zero study, conducted by Montgomery Planning in 2019, is one example that focused on a network of intersecting corridors and focused on Vision Zero. Corridor studies often evaluate corridor access management elements and may lead to capital improvement projects focused on improving road safety or traffic operations.

### Acquisition of Property to Control/Limit Access

Montgomery County government does have authority under Article 4 of Chapter 49 to acquire land for streets or roads, consistent with Section 40A of Article III of the Maryland Constitution. Referred to as

"quick take" provisions, this allows the county to acquire land needed for streets/road infrastructure. Acquisition of property or of property access has been used to limit access by state agencies, including MDOT SHA and Delaware DOT. US 50 in Anne Arundel and Queen Anne Counties is an example of a highway that was transformed into a freeway through property and access acquisition. Quick take can be used to purchase land to reduce conflicts between modes, including removing driveway access along a proposed separated bike lane facility or to provide additional room for protected intersection construction.

### Incentive Zoning

Access management decisions can be linked to incentive zoning to encourage development applicants to consolidate or minimize road access and to provide interparcel connections/shared access/cross-access easements. In coordination with other development reviewing agencies, Montgomery Planning should explore opportunities to incentivize access management best practices such as inter-parcel connectivity and consolidation of curb cuts. Such strategies could include adding an access management subcategory to Montgomery Planning's Connectivity and Mobility section of the *Commercial/ Residential and Employment Zones Incentive Density Implementation Guidelines* (CR Guidelines) or some other policy that encourages developers to increase safety and improve access on their sites.

### Alleys to Limit Driveway Interruptions

The use of alleys for public access can be an effective tool at minimizing driveway interruptions to pedestrian and bicycle travel and to minimize conflicts with through traffic along boulevards and commercial streets. Montgomery County should develop tools to require and / or incentivize relocating driveways to alleys as part of the development approval process. In Montgomery County, townhouse blocks with rear-loaded alley parking garage access is the preferred model. Given the narrow lot width of townhouse units, front-loaded townhouse blocks end up with a "sea of concrete" in the front yards, effectively eliminating the effectiveness of any sidewalk and severely detracting from the neighborhood character. Alleys in urban areas traditionally have also provided a good movement and trash collection alternative to the main street. The use of alleys is a component of a complete streets concept and should be considered as an access management measure for new developments.

### Street Connectivity

Expanding the street grid can be an effective tool at organizing the chaotic access that occurs along many of Montgomery County's boulevards, especially at uncontrolled median breaks and uncontrolled pedestrian and bicycle crossings. These movements often represent important travel patterns that can be safely managed by building out the street grid in line with the protected crossing spacing in the Complete Streets Design Guide. These protected crossing spacings, which vary by street type and land use context, are essentially a proxy for healthy street grid spacing that promotes walking and bicycling, particularly in Downtown and Town Center areas. Montgomery County should

develop tools to require and/or incentivize the development of the street grid as part of the development approval process.

# SECTION 3: REVIEW OF EXISTING ACCESS MANAGEMENT POLICIES

## INTRODUCTION

Montgomery County lacks a comprehensive access management policy, and while many agencies utilize access management tools (some built into the County Code, some not), the existing laws, review process, and guidelines are insufficient to manage access effectively and consistently. Following are summaries of the access management policies in place for each agency. It should be noted that all agencies participate in the Development Review Committee process, and that during this process, access management issues are considered when reviewing applications for development.

Access management requirements do exist in County Code, including Chapter 49 (the "Road Code"), Chapter 50 (Subdivision of Land Code) and Chapter 59 (Zoning Code). However, there is no clear technical definition of access management nor specific access management terms in any of these chapters. This includes definition of driveway spacing (and how it is measured), corner clearance, functional intersection area, protected crossings, full access median opening, and partial access median openings. Center two-way left-turn lane is defined in Chapter 49.

## MONTGOMERY PLANNING AND THE MONTGOMERY COUNTY PLANNING BOARD

Planning staff review development applications to ensure consistency with the Zoning Code, Subdivision of Land regulations, and the Growth and Infrastructure Policy (including Local Area Transportation Review). These development applications require approval from the Montgomery County Planning Board. Section 6.1 Access from Chapter 59 (Zoning Code) is the main access management-focused regulation. In addition, the Subdivision of Land Code (Chapter 50) has traffic signal spacing guidelines that may impact the location of site access points. Specifically, the following sections help Montgomery Planning guide access decisions:

Chapter 50, Section 4.3 Technical Review

- Provides design guidelines on intersection spacing and protected crossing spacing (per Subdivision Regulation Amendment recently introduced to the County Council for review and approval),
- Requires for continuation of any existing roads (constructed or recorded) in satisfaction of the Road Design and Construction Code,
- Restriction for a tract in a preliminary plan application to be divided to not preclude future road openings and further logical subdivision of adjacent land (i.e., spite strips), and
- Authorizes the Planning Board to require alleys where they be necessary to provide access, in consultation with other appropriate agencies.

Chapter 59, Section 6.1.3 – General Access Requirements

- Provides development requirements for site access including provisions for vehicles, pedestrians, and bicycles,
- Requires a limit on conflicts between vehicles and pedestrians and bicycles, or transit routes wherever feasible,
- Requires access to a pad site from within the site, and
- Provides restrictions in a Residential Detached Zone to provide driveway access to any land that is not in a Residential Detached Zone with some exceptions.

Chapter 59, Section 6.1.4 – Driveway Access

- Provides required driveway dimensions by zone with minimum and maximum width and radius,
- Requires access to be from an improved alley with a right-of-way of at least 20 feet in width if on-site parking is accessible from that alley and limits new curb cuts along the public right-of-way,
- Allows a maximum of two driveways to be permitted for every 300 feet of site frontage along any street, and
- Requires for all non-residential roads that a vehicle must access a corner lot with only one driveway or a through lot from the street with the lower roadway classification.

### MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION

The Montgomery County Department of Transportation regulates the Road Code (Chapter 49) and this regulation addresses access onto county roads in a generalized manner, with the exception of Freeways and Controlled Major Highways where Chapter 49 has very specific limitations on access.

Chapter 49 has no specific section on access management or its relevant terms. The Department has an informal policy (dating back to a 1983 Departmental policy) to require minimum driveway spacings of 100 feet. In addition, MCDOT has sight distance requirements for cross-streets and access points that vary based on the posted speed limit.[17]

During Local Area Transportation Review (LATR), MCDOT, as well as Planning staff, do address access location issues, including spacing, distance from adjacent intersections, number of access points, and priority when the parcel border two roads with differing classifications. There are no county standards currently enumerated in Chapter 49 or Chapter 49 Executive Regulations to assist this review.

MCDOT's consideration of pedestrian, bicycle and vehicular operations has a direct effect on access-related safety. Through MCDOT's Vision Zero activities and pedestrian and neighborhood safety programs, raised median refuge islands and non-traversable raised medians have been implemented

[17] "Sight Distance Evaluation," Department of Public Works and Transportation, Department of Permitting Services, https://www.montgomerycountymd.gov/DPS/Resources/Files/Land_Development/SightDistanceCertificationForm.pdf

to ensure pedestrian safety on the roadway network. Additionally, MCDOT's safety initiative include the installation of roundabouts at some locations, reducing the number of conflict points and severity of crashes at these features.

The existing County network has many locations where both signalized and unsignalized intersections exist in proximity to each other. The close spacings of these intersections make is difficult for MCDOT to implement traffic control treatments (such as traffic signals) to alleviate congestion and manage traffic flow. This is because closely spaced traffic signals are difficult to program for the optimal regulation of traffic flow and/or there is a need for several signals to be constructed in order to ensure proper flow through a corridor or along segments of a corridor, especially where the minor or side street produces moderate traffic volumes.

The lack of detailed guidance and standards on access management in Chapter 49 limits oversight of access along county roads, effectively limiting the focus to particular points of access during LATR.

### DEPARTMENT OF PERMITTING SERVICES

The Department of Permitting Services (DPS) enforces the Montgomery County Maryland Driveway Construction Policy for residential driveways. DPS has a very detailed residential driveway policy with standards for design and spacing from adjacent driveways and cross streets. This policy is provided in Attachment B.

### MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

The Maryland Department of Transportation State Highway Administration (MDOT SHA) manages access along state highways and MDOT SHA access management policies are defined in the MDOT SHA Access Manual.[18] This manual has minimum driveway spacing standards for commercial/ industrial access points including a maximum number of driveways allowable, distinct rules for commercial property access for sites with road frontages less than 400 feet and greater than 400 feet, requirements for consideration of adjacent intersections, support for the use of inter-parcel connections, and requirements for multiple lots and pad sites. These regulations are applied consistently with the Annotated Code of Maryland §8-625.

MDOT SHA's policy (section 1.12 – Coordination with Non-Programmed Needs Inventory) is to require requested access to be consistent with corridor access management and preservation efforts as well as local and regional master plans. Additionally, the local government may require appropriate dedication or reservation of land for future long-range highway needs. This is a particular strength of the MDOT SHA Access Manual in that the local context is extremely important.

[18] MDOT SHA Access Manual, Maryland Department of Transportation State Highway Administration, 2016 https://roads.maryland.gov/mdotsha/pages/Index.aspx?PageId=393

Streets intersecting with a state highway are required to have a minimum distance of 750 feet between centerlines. Street spacing along primary highways are required to conform to applicable regional transportation plans developed jointly by MDOT SHA and the local jurisdiction.

Median crossover spacing standards are also identified in the Access Manual, with crossovers not allowed on primary highways – fully controlled. On primary highways with partial control and uncontrolled access, the minimum cross spacing is 750 feet in urban areas and 3,000 feet in rural areas. On secondary highways (arterial routes), the minimum crossover spacing is 750 feet in urban areas and 1,500 feet in rural areas.

One standard that is noticeably lenient in the MDOT SHA Access Manual is driveway spacing. While there are restrictions on the number of driveways for a given road frontage, a minimum 20-foot tangent is required between adjacent entrances on the same side of the highway, under any circumstances. This would mostly likely occur at a property line with two driveways, each located ten feet away from the property line. This standard is far below the state of practice among State Departments of Transportation.

The Access Manual also regulates corner clearance from adjacent intersections and interchanges along state highways. Corner clearance is defined by MDOT SHA as the distance between the radius return points of the intersection and the first commercial entrance. Table 4 shows corner clearance standard required by MDOT SHA.

*Table 4: MDOT SHA Corner Clearance Standard, MDOT SHA Access Manual*

| Highway Classification | Preferred Corner Clearance (ft) | Minimum Corner Clearance (ft) |
|---|---|---|
| **Primary** | 400* | 200* |
| **Secondary-Arterial** | 200 | 100 |
| **Secondary - Collector** | 75 | 200* |

* On primary highways, entrances may not be located within the influence area of dedicated right or left-turning lanes for the adjacent intersection.

## DEVELOPMENT REVIEW COMMITTEE

In Montgomery County, development proposals are jointly reviewed by public agencies in a public meeting process twice every month called the Development Review Committee (DRC). This group was developed to ensure that decisions are coordinated for development review projects. At each DRC meeting, development applicants meet with representatives from Montgomery Planning, MCDOT, DPS, MDOT SHA, the Washington Suburban Sanitary Commission (WSSC), and the Potomac Electric Power Company (PEPCO). Access management decisions for development review projects are discussed, along with many other site issues, during these meetings.

To ensure coordinated roles in review development issues, the DRC agencies developed and signed a "*Memorandum of Understanding for the Implementation of the April 2010 Report of the Conflict Resolution Workgroup on Ways to Improve the Development Approval Process in Montgomery County, Maryland.*" Referred to as the Lead Agency MOU, this document establishes the lead agency designation on particular reviews as well as a lead agency procedure. This MOU is provided in Attachment C. For access management issues, MCDOT is identified as the lead agency with the M-NCPPC and Fire and Rescue Services (whose lead agency authority has since been merged into DPS) identified as stakeholders who have a statutory responsibility for this aspect of review. Conflicts between the recommendations of these stakeholders and the lead agency must be resolved in order for a plan to obtain all necessary approvals. These conflicts are elevated to agency principals for resolution. The key takeaway here is that for access issues onto county roads, MCDOT is the lead agency. This tends to point to where most access management regulations should reside.

# SECTION 4: ACCESS MANAGEMENT STATE OF PRACTICE

## INTRODUCTION

This section provides a summary of research conducted reviewing the state of practice in Access Management across the United States, in Maryland and within the Metropolitan Washington, DC region. A detailed review on this topic was presented to the Montgomery County Planning Board in the summer of 2021, as this presentation is included with this staff report as Attachment D. This section has been expanded in the "Lessons Learned" section as the result of continuing research during the course of this study.

## ELEMENTS OF A COMPREHENSIVE ACCESS MANAGEMENT PROGRAM

While access management programs vary widely across the country (typically administered by state departments of transportation), there are some shared elements that all access management programs include and some elements that represent a more multimodal approach. The intent here is to share the research findings on what one should expect an access management program to accomplish and be concerned with. The elements studied during this review include the following items:

**Design controls** – tools that are based on traditional traffic engineering and geometric design of the roadway, including traffic operations and traffic safety/Vision Zero considerations.

**Land Use Considerations** – reactive access management approaches that feature compliance with and standards for existing land use. Used most often in retrofitting/redevelopment.

**Land Use/Zoning Controls** – more proactive access management approaches that feature strategically using land use and development policies to drive access management decisions and outcomes.

**Active Coordination** – supporting activities such as technical assistance, peer-to-peer exchanges among municipalities/jurisdictions, funding opportunities, and providing model ordinances.

**Complete Streets** – access management approaches that reflect and are consistent with a Complete Streets policy or program.

**Multimodal** – access management approaches that consider the needs of transit vehicles, transit users, freight, pedestrians, and bicyclists.

For this review, a comparison was made of the access management programs of 14 different state departments of transportation. Each program was reviewed to see the extent to which each of the above elements were addressed in their access management program. Table 5 provides a summary of this review which includes the Maryland Department of Transportation State Highway Administration and the Virginia Department of Transportation.

*Table 5: Comparison of State Access Management Programs*

| Agency | Design Controls | Land Use Consideration | Land Use/Zoning Considerations | Active Coordination | Complete Streets | Multimodal Considerations | Transit Considerations | Freight Considerations | Bike/Ped Considerations |
|---|---|---|---|---|---|---|---|---|---|
| CDOT | ✓ | ✓ | | | | ✓ | | | |
| DelDOT | ✓ | ✓ | | | | | | | |
| FDOT | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Iowa DOT | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ |
| MDOT SHA | ✓ | ✓ | | | ✓ | | | | ✓ |
| Montana DOT | ✓ | ✓ | ✓ | | | | | | |
| Mich DOT | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| NJDOT | ✓ | ✓ | | | | | | | |
| NYSDOT | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ |
| ODOT | ✓ | ✓ | | | | ✓ | ✓ | | ✓ |
| PennDOT | ✓ | ✓ | ✓ | ✓ | | | | | ✓ |
| SDDOT | ✓ | ✓ | | ✓ | | | | | |
| VDOT | ✓ | ✓ | | | | | | | ✓ |
| VTrans | ✓ | ✓ | ✓ | ✓ | | ✓ | | | |
| **Total Using each Approach** | 14 | 14 | 6 | 6 | 2 | 7 | 5 | 2 | 8 |

Oregon DOT, Iowa DOT, New York State DOT, and Florida DOT all emphasized the use of access management to improve operating conditions for non-motorized modes. The Michigan DOT program is outcomes-based and explicitly identifies the need to include performance monitoring and evaluation instruments as part of an effective access management program. Some recommended performance variables included crash reductions, reduced congestion, improved travel time, fewer tickets for "aggressive driving," number of closed/consolidated driveways, improved non-motorized access, number and length of new service drives and the number of enforcement actions taken against the creation of unauthorized driveways.

The Michigan DOT model access management plan outline includes a recommended Monitoring and Enforcement section and emphasizes creating an implementation timeline. Some other key features of their program include providing interjurisdictional funding guidance and developing a framework to help localities establish a purpose for their access management programs. This framework focused on either remedial objectives, preventative objectives, or both. The Michigan DOT and Vermont Agency of Transportation programs were unique in their development of sample access management

ordinances based on three types of development patterns: 1) slowly growing rural community, 2) growing suburb, 3) urban community with little undeveloped land but with redevelopment/infill opportunities.

South Dakota DOT, New Jersey DOT, Colorado DOT, and Delaware DOT managed access primarily through traffic engineering techniques and design standards. Traffic Impact Study (TIS) guidelines and permitting processes featured as critical implementation tool to meet access management principles. Iowa DOT's program focused on integrated parking and curbside management as part of their access management strategy and developed eight public involvement principles to help guide decision-making. Both Pennsylvania DOT and South Dakota DOT featured technical assistance and education to promote access management practices among local jurisdictions as part of their access management program. And finally, Florida DOT and Vermont Transportation Agency programs identified the business community as strong access management partners. Both programs have extensive and dedicated business outreach and collateral.

From this review, it is clear that design controls and land use considerations are essential elements that were common to all access management programs reviewed. The most comprehensive programs reviewed include Iowa DOT, Michigan DOT, and New York State DOT. Florida DOT has one of the most extensive access management programs, but it lacks a focus on land use/zoning controls present in the other top state programs.

Maryland DOT SHA is somewhere in the middle of this group of 14, with a well-defined Access Manual, a deference to local access management plans along state highways, and a Complete Streets approach to street design (MDOT SHA Context Drive Program). However, it does seem disjointed and not a cohesive approach. The Virginia Department of Transportation (VDOT) has a more cohesive approach to access management than MDOT SHA, including Multimodal Design Standards for Mixed-Use Urban Centers[19]. VDOT's approach allows communities to adopt a Complete Streets approach for VDOT road designs and provides alternative posted speed limits, and access point and signal spacing.

## LESSONS LEARNED

From a review of state and regional access management programs, there are many innovative access management practices that have been identified that should be considered for inclusion in a comprehensive access management program.

**Separated Bike Lane-Related Policies** – MassDOT has left-turn signal control procedures that consider the presence of separated bike lanes. This effectively limits the use of permissive left-turn signal phasing, except under certain low-volume conditions.[20] This approach has also been incorporated into left-turn signal control procedures by the Metro Portland (Oregon) Bureau of Transportation. This recognizes that separated bike lane users have the right-of-way on a green signal

[19] VDOT Road Design Manual, Appendix B(2) "Multimodal Design Standards for Mixed-Use Urban Centers," 2010.
[20] "Separated Bike Lane Planning & Design Guide" (2015), MassDOT – Exhibit 6A.

indication and the potential risk of permissive left-turners hitting bicyclists, partially due to sight lines or a misunderstanding of who has the right-of-way at an intersection. This policy should be considered carefully for roads with and intersecting with separated bike lanes.

**Connected Cul de Sac** – Florida DOT adopted this multimodal policy into their 2019 Access Management Guidebook to require that when a cul de sac is built, they provide a right-of-way or easement for pedestrian and bicycle connectivity. While cul de sacs should be discouraged, it is important to recognize that often land constraints including site size, topography and environmental features make a cul de sac the only practical way to access portions of a proposed new residential neighborhood. Ensuring that any new cul de sac is "connected" for pedestrians and bicyclists should be considered. In addition, ways to reconnect existing cul de sacs in older, established neighborhoods should be explored. This strategy certainly also supports the approved 2018 Bicycle Master Plan and the ongoing Pedestrian Master Plan efforts.

**Recommended Performance Variables** – Michigan DOT's approach has a strong emphasis on "you cannot improve what you do not measure." The DOT recommends that localities include a section on monitoring and enforcement as part of their access management plans.

**Incentive Zoning** – The New York State Division of Local Government Services encourages access management-related activities. Localities may allow different incentives such as increased density/floor area ratio (FAR), lower impact fees, changes in setbacks, reduced taxes, and greater flexibility in mitigation in exchange for site design that advances access management. The Town Farmington, New York has implemented incentive zoning for these purposes. The Town of Farmington updated their Major Thoroughfare Overlay District Map to include incentive zoning provisions as part of its access management strategy.[21]

**Overlay Zoning** - Several state programs with land use-oriented approaches to access management also recommend the use of overlay zoning as a tool. Both Pennsylvania DOT and Michigan DOT specifically provide localities with guidance on how to establish and implement an Access Management Overlay District to consolidate driveways, regulate driveway spacing and promote joint access easement connections. Creating an overlay district would allow for the application of access management standards that are tailored to a specific corridor, such as high-volume commercial corridors, but that may not otherwise need to be applied to all development within the jurisdiction.[22] Furthermore, the Michigan DOT handbook states that an overlay district is an effective tool to extend

[21] New York State Department of Transportation. (2006). Quality Communities Workshop: Advancing the Transportation-Land Use Connection in the Route 332 Corridor [PowerPoint Slides]. https://www.dot.ny.gov/main/land-use/repository/Traver-Route%20332.pdf

[22] Michigan Department of Transportation. (2001). Reducing Traffic Congestion and Improving Traffic Safety in Michigan Communities. http://169.62.82.230/documents/mdot/Access_Management_Guidebook_MDOT_554602_7.pdf , pg. 77 (Chapter4, pg.8)

the benefits of access management along important commercial corridors that cross jurisdictional boundaries.[23]

There are several examples of localities that have adopted an Access Management Overlay Zoning District as part of their zoning ordinance. Thornapple (PA) Township uses its Access Management Overlay Zoning District to enforce minimum driveway spacing and driveway alignments standards and includes landscaping standards, sign regulations, parking regulations, and pedestrian safety path installations.[24] This feature is also present in PennDOT's guidance, integrating standards related to aesthetics and wayfinding within the overlay zoning district to ensure access management goals are tied back to bike and pedestrian needs.

**Equitable Implementation** - Implementing access improvements may create an undue burden on both property owners and motorists. To address this issue, the New Jersey DOT developed a fair share cost determination to help reduce the subjectivity and improve the predictability of how improvement costs were allocated for applicants interested in developing along highways. The New Jersey DOT method requires that the applicant proposing the improvement be responsible for any additional capacity created as opposed to previous methods that factored in existing traffic to determine fair share, even though it "does not cause a need for the improvement."[25] Previous methods ultimately distributed only the marginal costs of that improvement to the applicant, while shifting a greater share of the costs onto motorists who were already using those facilities.

**Curbside and Parking Management** – The Iowa DOT integrated both curbside and parking management as part of their access management strategy. A lack of off-street parking and regulation of curbside operations can compromise capacity and safety on arterials. Iowa DOT's curbside strategies to promote access management focuses primarily on delivery vehicle loading and unloading operations and advise localities to adopt peak-delivery programs for on street deliveries. The agency also encourages localities to develop loading bays and on-site maneuver guidelines. The Iowa DOT handbook, however, does not provide model guidelines or best practices for implementation for these guidelines. With regards to parking, the Iowa DOT promotes off-street parking facilities requirements and off-peak on-street parking to increase safety and discourage cruising along busy arterials.[26]

**Vision Zero-Focused Driveway Safety Plan** - As part of their 2019 Vision Zero Action Plan, New York City created a Driveway Safety Program. The program aims to create more alignment regarding the regulation and design of driveways and curb cuts with access management principles for commercial

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[23] Ibid, (Chapter 4, p 9).

[24] Thornapple Township Zoning Ordinance. Article XVI § Section 16.6. Driveway Regulations (2016). Retrieved from https://thornapple-twp.org/wp-content/uploads/2018/08/ARTICLE-XVI-Access-Management-Overlay-Zoning-District-eff-June-25-2016.pdf

[25] Eisdorfer, A., and Goslin, S. (1998). Equitable Traffic Impact Assessments. 1998 National Conference on Access Management. http://www.teachamerica.com/accessmanagement.info/pdf/AM98.pdf , pg. 173.

[26] Iowa Department of Transportation. (2000). Access Management Handbook: Balancing the Demands on Our Roadways. Retrieved from http://www.teachamerica.com/accessmanagement.info/pdf/Iowa_handbook.pdf

driveways with heavy foot traffic.[27] This program appears to still be in the development phase since there is no other publicly available information about the program other than what is included in the Vision Zero Action Plan. However, such a program might establish policies related to bike lanes and driveway conflicts and therefore it is recommended that Montgomery County continue to monitor any program developments for lessons learned.

[27] New York City. (2019). Borough Pedestrian Safety Action Plans: Vision Zero Update. Retrieved from https://www1.nyc.gov/html/dot/downloads/pdf/vz-2019-update-city-hall.pdf , pg. 121.

# SECTION 5: STUDY RECOMMENDATIONS

The Access Management Study is only a first step in developing improved access management policies within Montgomery County, and it is clear that a multi-agency approach is needed to achieve many of the concepts presented in this report. Recommendations are presented below grouped into interagency recommendations and recommendations for individual agencies.

## INTERAGENCY RECOMMENDATIONS

In order to implement an effective access management policy and address Vision Zero priorities, it is critical that shared policies be developed for the county's High Injury Network, which includes both state- and county-owned roadways. The following joint activities are recommended:

1. MCDOT and Montgomery Planning should work together to expand/refine the High Injury Network (HIN) based on the Predictive Safety Analysis study findings. This study, to be presented to the Planning Board in July, is a detailed tool to more fully assess crash risk on Montgomery County roads. This tool can be used to inform/modify the HIN. The use of predicted crash risk versus or in addition to the most recent few years of crash data would significantly improve the county's ability to more proactively assess and mitigate crash risk.
2. The four primary agencies (MDOT SHA, MCDOT, DPS and Montgomery Planning) should enter into a coordination agreement on two categories of specific access management policies. The first would apply to roads (state and county roads) on the High Injury Network in Montgomery County. The second would apply to all other parts of the county on state and county roads with street types of Connector (per the Montgomery County CSDG) or higher. These policies should be consistent with both the Montgomery County Complete Streets Design Guide and the MDOT SHA Context-Driven Program and be focused on helping the state and county achieve their respective Vision Zero plan goals. This was recommendation #2 and #6 in the Consultant Report.
3. Within the High Injury Network, MDOT SHA and MCDOT would jointly:
    - Develop and enforce access management guidelines more strictly and consider more stringent High Injury Network-specific access management standards. Locations with a history of severe injury and fatal crashes or a high overall crash experience would require significant modifications. The focus should be on improving road safety by reducing vehicular-vehicular conflicts as well as vehicular-non-motorized (bicycle and pedestrian) conflicts.
    - Require consideration of access management improvements for all programmed capital improvement projects along these corridors.
    - Develop consensus on the design and application of protected crossings to ensure consistency on county and state roads (ideally, the goal is to obtain MDOT SHA approval/concurrence of Protected Crossing spacing guidelines now in the Montgomery County Complete Streets Design Guide).
    - Develop consensus on the design and application of restricted (partial-access) median crossings.

- This was recommendation #14 in the Consultant Report.

4. Montgomery Planning should develop a High Injury Network Access Management Overlay District to be added into the county Zoning Code. All High Injury Network-focused access management requirements would be written into this overlay district either specifically or in reference to established MDOT SHA/MCDOT policy documents. This would ensure that the zoning code is a supporting and consistent tool to obtain High Injury Network/Vision Zero access management compliance on development projects.
5. MCDOT and Montgomery Planning should work to identify commercial corridors and high road safety risk segments in equity focus areas where poor access management is a key contributor to poor road safety and develop CIP projects to address these deficiencies. When these corridors occur along state highways, this recommendation applies to MDOT SHA instead of MCDOT. This should focus on properties in need of redevelopment. These CIP projects need to include inclusive engagement strategies to ensure that local residents and commercial property owner concerns are addressed during facility planning and design efforts.

## MONTGOMERY PLANNING RECOMMENDATIONS

Montgomery Planning recommendations are subdivided into five categories:

1. Subdivision of Land Code Changes
2. Zoning Code Changes
3. Development Review practices
4. Corridor Master Plans
5. Vison Zero

### SUBDIVISION OF LAND CODE CHANGES

- A clear policy definition and position should be added into Chapter 50 to provide clear legal authority for the requirement of interparcel connections/shared access/cross-access easements. This should include a definition, reasons for requiring such a connection/easement, policies governing how site access can be provided. The justification can be related to complying with corridor master plan recommendations, an approved master, sector, corridor, or functional plan, complying with Chapter 49 access management regulations, or complying with an Access Management overlay district. This was recommendation #12 in the Consultant Report.

### ZONING CODE CHANGES

1. Strengthen Chapter 59 Section 6.1 with the following changes.
    - Add subsection 6.1.3.5 stating “5. Provide site access consistent with the access management recommendations of relevant functional master plans, area master plans, and corridor master plans.”

- Rewrite Section 6.1.4.E as follows: “For any property abutting two non-residential streets, primary access must be provided from the lower classification street. Corner lots, in addition, must only provide one driveway from the lower classification street.”

2. Create zoning density incentive bonuses in Chapter 59 for site access consolidation, and interparcel connections/shared access/provision of cross-access easements. While it is certainly within the approval authority of the Planning Board and the Department of Transportation to compel a developer to provide shared access, compliance is more likely if there is a return for the development. For Optional Method projects in CR/EOF zones, consider adding public benefit points for access consolidation and for providing an interparcel connection.

### DEVELOPMENT REVIEW PRACTICES

1. Modify the LATR Vision Zero Statement to include a requirement to assess compliance of an existing site to county access management standards. This should be completed before any discussion about site access occurs. A driveway that does not meet approved access management standards should be considered non-compliant, and subject to potential closure during development review.
2. Incorporate the Vision Zero access management into Chapters 50 and 59 to ensure that this process is applicable to permitting to capture projects that only go through permitting or limited reviews.
3. Require or incentivize the creation of a grid of streets consistent with Complete Streets Design Guide protected crossing spacing standards.
4. Require or incentivize the creation of alleys. This was recommendation #16 in the Consultant Report.

### MASTER PLANS

1. Include a detailed access management/ Vision Zero review for all Master Plans with special attention paid to high-crash roads identified through the Predictive Safety Analysis. This was recommendation #13 in the Consultant Report.
2. Identify key neighborhood access connections along major county and state highways and prioritize these locations for planned median crossing prioritization. Consider implementation of protected crossings based on CSDG standards and partial-access median crossings in between. Assess conformance of corridor to new Montgomery County approved access management standards and identify deficiencies.

### VISION ZERO

1. Continue to leverage and refine the Predictive Safety Analysis tools to develop data-backed policies to promote safer access on both new roads and redesign.
2. Continue to monitor the development of ongoing Vision Zero-focused safety programs and other evolving access-related programs and explore the potential for a peer-exchange on lessons learned.

## MONTGOMERY COUNTY DEPARTMENT OF TRANSPORTATION RECOMMENDATIONS

1. Add definition of access management and related terms into Chapter 49. This should include an overall definition and goal of access management, functional intersection area, corner clearance, full-access median crossing, restricted (partial-access) median crossing, and protected crossing. Incorporate existing guidance or policies related to access into Chapter 49 Executive Regulations. This was recommendation #1 and #5 in the Consultant Report.
2. Develop design guidance for protected crossings and restricted (partial-access) median crossings for two-, four- and six-lane highways.
3. Re-evaluate existing commercial driveway spacing standards and add new corner clearance and driveway spacing standards into Chapter 49/Chapter 49 Executive Regulations. The spacing standards should be developed based on CSDG street types including separate more stringent standards along roads within the county's High Injury Network. They should reflect the land use contexts in the CSDG.
4. Include access management elements in new capital improvement projects particularly with projects located in equity emphasis/focus areas.
5. Independent of Interagency recommendations, discourage or disallow new unsignalized full-access median crossings on six-lane highways.
6. Consider road diets on existing undivided four-lane roads where feasible. This would typically convert four undivided travel lanes into a three-lane cross section with a center turn lane.
7. Consider road diets on existing six-lane highways where feasible. This would typically look to repurpose the curb lane for transit use or active zone use (dedicated transit lanes, landscaping buffers, sidewalks, sidepaths, and separated bike lanes).
8. Eliminate center turn lanes where feasible, except where road diets are being considered.
9. Continue to follow evolving practices in the MUTCD regarding leading pedestrian intervals governing their use for separated bike lanes.

## DEPARTMENT OF PERMITTING SERVICES RECOMMENDATIONS

1. Consolidate current DPS access-related driveway policies into Chapter 49 Executive Regulations in coordination with MCDOT.
2. Consider making changes to Chapter 59 to allow driveway access decisions as part of permitting for a change in use for a site. This would allow DPS to revoke or require consolidation of driveways, based on safety/access management input from MCDOT. This was recommendation #15 in the Consultant Report.

## MDOT SHA RECOMMENDATIONS

1. Considering Modifying language in Section 1.4.3B of the MDOT Access Manual. This section is written as follows: “The preferred corner clearance specified in Table 1.4.3 shall be met where there is sufficient property frontage. Where sufficient property frontage is not available, the minimum corner clearance shall be provided.” We recommend that instead of providing the minimum corner clearance when sufficient property frontage is not available (which is only 20 feet), that the largest reasonable corner clearance be provided instead.
2. Consider adding increased driveway spacing standards more consistent with national practice. These standards should be developed within the Context-Driven framework to ensure that the spacing standards are contextually appropriate given the surrounding land use context.

## SECTION 6: NEXT STEPS

The Access Management Study has taken this first step in identifying recommended follow-on actions for Montgomery Planning, Montgomery County executive agencies and MDOT SHA, and the need for collaborative interagency actions. The next step is to present this information to the County Council and begin the implementation of the recommendations presented in this document.

Planning staff would like to express our appreciation to the Technical Working Group, the Road Code Committee, and NAIOP, for their involvement and interest in this study.

## ATTACHMENTS

**Attachment A:** Mead & Hunt Consultant Report titled "Access Management in Montgomery County – Recommended Improvements in Policy and Practice," dated June 2022

**Attachment B:** Department of Permitting Services Driveway Policy

**Attachment C:** Lead Agency MOU

**Attachment D:** Access Management – State of Practice Briefing to the Planning Board, May 13, 2021

# Access Management in Montgomery County – Recommended Improvements in Policy and Practice

FINAL REPORT – JUNE 2022

Mead & Hunt

# Contents

# Introduction

Access management is the coordinated planning, regulation, and design of access between roadways and land development. Traditionally, access management has focused on reducing vehicle conflicts and maintaining design speed and traffic flow on primary roadways; however, evolving policies and practices have increased efforts to enhance safety and accessibility for pedestrians, bicyclists, and transit vehicles as well. The Montgomery County Planning Department is conducting a study to examine existing access management practices on a multi-agency level and to develop recommendations to improve existing access practices and to incorporate new access management strategies that are consistent with Vision Zero, a Complete Streets framework, and a desire to enable equitable decision-making with a multimodal perspective.

As part of the study, the Planning Department retained Mead & Hunt to:

- Assess current practices in Montgomery County such as codes, regulations, manuals, and guidance documents from planning and regulating agencies, including gathering stakeholder views on the process of regulating access management.
- Provide a "state of the practice" overview to identify elements of effective local access management programs, including success factors and common issues or impediments to implementing access management, which could be applicable to Montgomery County.
- Make preliminary recommendations for proactive changes to increase safety and support roadway users on all modes of transportation through better access management.

Initially, the project was conceived of as relating only to County-owned roadways, however, it quickly became apparent the study would only be an effective use of resources if access management on State-owned roadways were considered as well. The combined power of the county in regulating land use and site planning and the state's authority to regulate access to its roadways can yield transformative outcomes if there is a sufficient framework and alignment of principles for coordination.

This report is organized thematically. Issues discovered and discussed throughout the study process are summarized with the consultant's findings and recommendations following each discussion. While the views of the Technical Advisory Committee were given great weight in preparing this report; where there was disagreement or something considerably outside the norms of best practice the consultant's view of the issue considering all angles is presented.

Finally, this is a policy-oriented study. Judgements are not made as to the efficacy of a technical design standard or requirements used by one agency or another. Those are rightly reviewed by technical staff; however, gaps and discrepancies in practice or regulation are described. Appendices are used to provide more detailed information.

## Access Management Decision-making Framework & Process

There are four primary physical contexts in which access management decisions and improvements are made:

- New development and redevelopment of land which depending on the land use and project scale may require only review and approval by DPS and DOT or may also include the M-NCPPC for larger projects through the Development Review Committee,
- Capital projects when determining the purpose, need, and scope of the project, primarily by DOT and with some input from other agencies,
- Operations and safety reviews conducted in the routine course of business by DOT, and
- Master planning efforts initiated by the M-NCPPC (Planning) with the approval of the County Council.

Each context has its own set of actors with their own imperatives and competing forces in the land development process often shape final decisions on points of access to and from adjacent land. Some actors seek to maximize the value of the land being developed, other actors value auto throughput, multimodal access, safety, environmental impacts, or community viewpoints. In the case of capital projects, there are additional project delivery forces that must be contended such as extending the scope of the project beyond its original intent, budget, and potential delay from negotiations with property owners if it is necessary to acquire property interests, etc.

Also important in understanding access management is the legal context through which access to the public right of way can be regulated. Some agency staff expressed concern about the legal authority and experience to impose access restrictions or requirements as a condition of development approval. While there is balance to be struck between the right of a property owner to have suitable access to his or her property and the safety of the travelling public streets, case law undoubtedly has come down on the side of public safety. When an agency acts consistently in making access management decisions and establishes a record of the decision, the courts generally err on the side of the agency's judgment. Figure 1 provides a framework for those decisions.

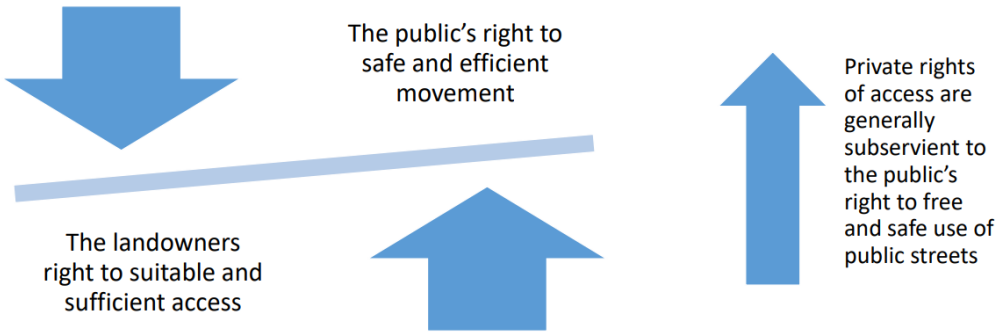


*Figure 1. Development Review Tradeoffs for Access Decisions.*

## Establishing Policy Guidance

Three chapters of the county code (Chapter 49 – Streets and Roads; Chapter 50 – Subdivision of Land; and Chapter 59 – Zoning) contain provisions relating to access management; however, there is no authoritative statement of policy in any chapter that can be relied upon when reviewing development applications or planning and designing capital projects. When gaps in policy, practice and knowledge occur, County staff would benefit from affirmative policy guidance upon which to rely, especially when dealing with external parties.

For state-owned roadways, the authority is clear State Transportation Article §8-625 provides that MDOT SHA may:

- Limit the design, width, and location of existing commercial or industrial access points
- Prevent an entrance from any commercial or industrial property into any highway unless and until an access permit has been issued
- Deny new commercial or industrial access along any primary State highway (with AADT>2000 vehicles/day) if reasonable access to another public road is available to and from the property.

The Annotated Code also provides that such denial is an exercise of the police power and does not require compensation. No such language exists in the County Code.

*Recommendation #1*

*The County should amend County Code Section 49.72 – (Control and Use of Access) to define and establish goals for access management applying to all roadway classifications to Chapter 49[1] and be explicit in DOT's authority to regulate access. Similar statements or cross references should be made in and to Chapters 50 and 59, and regulations should be structured relative to the goals established in the Code.*

[1] In its current form, Section 49-72*, et seq.* apply only to freeways and controlled major highways.

## CONCEPTUAL TEXT FOR COUNTY CODE AMENDMENT

Sec. 49.72 -- Access Management.

1. It is the goal of the County that access to all County-owned roads be safe and equitable for all users of the transportation system and that a hierarchy of roadways be used to distinguish the type and manner of access that may or may not be provided. The Director of Transportation shall issue regulations to meet this goal.

2. The County (through the M-NCPPC) shall use its land use planning authority to manage access to state roadways in a manner consistent with this section.

3. The Director of Transportation, or his/her designee, is authorized to:

    - Establish minimum design standards or requirements related to street and traffic signal spacing, driveway location and design, non-traversable medians and median openings, alley location and design, protected crossings for bicycles and pedestrians, and the like related to access management,
    - establish procedures for and grant exceptions or waivers to the standards,
    - recommend to the Director of Permitting Services that permits be issued, amended, or revoked for access to County roadways based on the design standards or that a persistent roadway safety concern exists such that the access points be mitigated or closed.
    - require that access points be closed, relocated, or modified to meet the design standards when a change in land use or site configuration occurs,
    - require an applicant for subdivision, preliminary plan, or site plan approval (pursuant to Chapter 50 or 59) to provide an easement to an adjacent parcel for purpose of safe and efficient access and circulation,
    - acquire land or interest therein, including through condemnation, for the purpose of achieving the goal of this section, and
    - enter into an agreement with the State or a municipality to cooperatively manage and administer the provisions of this Section.

## Intragovernmental Coordination

On larger development and redevelopment projects, agencies convene through the Development Review Committee to comment on applications and make recommendations to the Planning Board for site plan or subdivision approval.[2] In many respects, stakeholders appreciate that there is a singular table at which development review decisions are made review through a strong and consultative approach. Problems arise, however, when there is inconsistent participation or internal disagreement among agencies about proposed access points.

There exists a May 2011 Memorandum of Understanding among the Planning Board, Washington Suburban Sanitary Commission, PEPCO, and several county agencies which establishes "lead agency" status on several dozen site planning issues. Typically, the lead agency on any matter is the authority having jurisdiction by way of the County Code or a state regulatory process that has been delegated to the county (forest conservation, for example). The tables accompanying the MOU indicate that M-NCPPC is a "supporting agency" in access management decisions and DOT is the lead agency. However, an asterisk (*) in the table indicates that MNCPPC has a "statutory responsibility for this aspect of review."

Notwithstanding the above referenced MOU, there appears to be an inconsistency between practice and law when it comes to access management decision-making, at least with respect to access to County roadways. Whereas the Article 50.4.3.1.d gives authority to the Planning Board to approve roads and access points within a subdivision, Article 50.4.2 specifically requires that the prior to subdivision approval by the Planning Board, the Director of Transportation must "approve in preliminary form the typical section, concept road profile, intersection and site access locations, sight distances…for improvements along County- maintained roads and paths within its jurisdiction."

> *Recommendation #2*
>
> *The Planning Board and DOT should review and amend, as appropriate, the May 2011 MOU to clarify that the authority for access management decision-making lies with DOT; and, that when access management discussions occur with MDOT SHA on a pending project, DOT should also act as the lead agency.*

## Intergovernmental Coordination – MDOT SHA

Local and state agencies have a variety of access management coordination activities include joint participation in the development review process, coordination meetings, collaborative permitting processes, access and corridor management agreements, arterial management plans, intergovernmental agreements, and MOUs between the state and local agencies.[3]

In Maryland, stakeholders recognize that MDOT SHA has jurisdiction for access management on state-owned roadways; however, concern was raised that the timeliness of SHA reviews hampers the overall development review process and creates situations where the applicants can use political influence to resolve disputes and indecision between the County and State. MDOT SHA staff may be three or more

[2] On smaller and "by right" development applications, projects can typically go straight to review and approval through the Department of Permitting Services.

[3] Incorporating Roadway Access Management into Local Ordinances, NCHRP, P. 22

"degrees of separation" from what is occurring in the development review process and sometimes present internally competing views on access management issues. Montgomery County DOT's staff are highly skilled and technically competent to make access management decisions and conduct many of the same reviews as are performed by MDOT SHA, albeit with sometimes differing standards.

While early and frequent coordination among county and state agencies is very often the key to achieve better safety and equity outcomes, it is no substitute for a more fully defined relationship between agencies and their processes. This can be achieved through a formal intergovernmental agreement that does one or more of the following:

- aligns roadway and land development design standards,
- provides for consolidated scoping of traffic impact studies
- requires applicants to receive preliminary approval of access points by DOT or SHA, as appropriate, prior to making application for sketch plan and preliminary plan approval.
- embeds SHA District office staff into the Montgomery County Department of Transportation for ease of review and coordination,
- establishes a joint entitlement process or delegates permitting authority from the state to the county in designated areas, on certain roadway classifications, or in certain circumstances.

*Recommendation #3*

*Montgomery County DOT should request that MDOT SHA consider delegating certain access management decisions to the County and develop a formal MOU for same. There is precedent for this in the County-SHA Agreement regarding management of traffic signals in Montgomery County.*

## Intergovernmental Coordination – Municipalities

The role of the municipalities in managing access to their roadways or to county or state roadways within their boundaries cannot be overlooked. Municipal-maintained roads accounted for 4% of serious and fatal crashes between 2015 – 2019. Within that 4%, 53% were on Rockville roads, 33% on Gaithersburg roads, and 5% on Takoma Park roads.[4] More significantly, 9% of non-Interstate crashes occur *within* municipal boundaries but *along* State or County roadways where municipalities have planning and permitting authority.

Many of the smaller municipalities rely on the Montgomery County Planning Department, Department of Transportation, Department of Permitting Services for review and approve development plans, roadway plans, and related permits through a hybrid review and permitting approach.[5] The two largest municipalities (Gaithersburg and Rockville) in Montgomery have independent land use authority and perform their own design review of development and roadway plans. Where necessary, they coordinate directly with MDOT SHA on access management issues.

[4] Montgomery County Vision Data Analysis (montgomerycountymd.gov); Page 7

[5] APPENDIX F. COUNTY LAWS APPLICABLE TO MUNICIPALITIES* (amlegal.com) In six of the 21 municipalities county in Montgomery County, Article 51 (Subdivision of Land) does not apply; Article 49 (Streets and Roads) does not apply in 14 of 21 municipalities; Article 59 (Zoning) does not apply in 7 of 21 municipalities.

*Recommendation #4*

*It is recommended that municipal codes, regulations, and standards be reviewed to ensure alignment with county and state access management standards and best practices. The Planning Department should provide technical assistance to municipal staff and planning/zoning board members to foster greater understanding of the role that access management plays in multimodal transportation safety.*

## Design Standards & Requirements

Achieving compliance with the County's access management requirements is perceived by some developers to be a very difficult element of site planning due to many published design standards and requirements related to access management. At least nine documents were identified (not including the myriad County's Design Standards nor the MDOT SHA) that provide regulatory and non-regulatory guidance on access management. These are described in Appendix 1.

### Gaps & Transparency in County Policies

Nearly all study participants noted that there are inconsistencies in the guidance and standards, and that often, access points are subject to negotiation during development often without regard to the guidance standards. Examples given include standards on access spacing by roadway type/hierarchy and written criteria and procedures for deviations; median design and median opening spacing, unified access and circulation plans, shopping center pad sites, parking lot cross access, driveway throat lengths, etc. In some cases, the operating policies lack formal regulatory status. For example, the County "Driveway Policy" and the 1983 Montgomery County DOT Policy Regarding Private Access Design and Location Guidelines for Commercial, Industrial, Multifamily and Cluster Development appear to be "non-regulatory guidance" that has not been promulgated in accordance with the County's Administrative Procedures Act. Some staff interviewed for this project were unaware that certain policies even existed.

*Recommendation #5*

*The County should review and consolidate its access management standards and regulatory and non-regulatory guidance to a single section of Code of Montgomery County Regulations (COMCOR). Inasmuch as the Director of Transportation has statutory authority for access management decisions, it is logical that the standards and regulations be consolidated to Chapter 49 – Roads and Streets. If there is non-regulatory guidance that remains useful as part of this review, it should be included in the regulations.*

### Gaps Relative to SHA Standards & Policies

The review of policies and standards included a comparison of County requirements and MDOT SHA requirements. It is apparent that there are gaps and inconsistencies in the design standards between the County and MDOT SHA. A few examples are provided below. Most of the gaps in County policies and standards are well-addressed (although not always ideal to local circumstances) by the SHA Access Manual.

| Issue | County and State Requirements |
|---|---|
| Commercial Entrance Spacing Standards | **County:** Max = 2 per 300' frontage along any street<br>**State:** Max = 2 per 200' frontage, but with right to limit to one per site. |
| Number of Entrances per Frontage | **County** does not have legally established standards for spacing between entrances, corner clearances, offsets from adjacent property.<br>State: One entrance per frontage; access required via lower classified road. |
| Minimum Spacing Between Street Connections | **County:** Arterial - 300' (urban), 600' (suburban), 800' (rural); minor arterial same as above except 500' for suburban<br>**SHA:** 750' between centerlines |
| Median Crossovers | **SHA:** 750' on Urban Arterials<br>**County:** No closer than 600' on divided roadways |
| Design Standards | **County** has fewer design standards than SHA for horizontal and vertical layout, acceleration and deceleration lanes, shoulders, etc. |

*Table 1. Primary Gaps and Inconsistencies in County & State Access Management Standards*

*Recommendation #6*

*When reviewing and updating the county's guidelines and standards, efforts should be made to achieve consistency with SHA standards and guidelines unless a specific rationale can be articulated why the SHA standards are not appropriate. Alternatively, a County-specific access management guidance document could be jointly developed with SHA.*

## Systematic Documentation of Design Waivers or Exceptions

Environmental permitting, urban design goals, engineering standards, etc. are often at odds due to the constraints of an increasingly dense urban environment. Access management is just one piece of the site planning process that is iterative by nature to resolve competing goals and requirements. The difference in granting roadway access relative to other requirements is that site plan (or building permit) creates a property right. Where an applicant requests a design waiver or exception from design standard or regulation, it is important that discussion and decision be fully documented and signed by an authorized person. Should another similarly situated applicant seek the same waiver or exception, the County needs to act consistently.

*Recommendation #7*

*DOT (and the Planning Commission, to the extent applicable) should formalize its design waiver and exception process for access management standards.*

## Tools to Address Access Management in Redevelopment

Montgomery County's pending general development plan recognizes that the county has relatively little undeveloped land left to accommodate the estimated 25% growth in population is forecast to occur by 2050. With 85 percent land already developed or otherwise constrained, accommodating even the relatively modest growth expected is challenging.[6] Most of the growth will have to be accommodated in an urbanism-focused approach to the development of land and related infrastructure (such as roadways, transit systems, and parks) that emphasizes the value of: (1) a compact form of development; (2) diverse uses and building types; and (3) transportation networks that take advantage of and complement these two land use strategies, at all densities and scales.[7]

All study participants expressed that the biggest challenge on access management relates to redevelopment projects as very few new roadways are being built in the county. Staff representatives across all disciplines and agencies did not feel like they had the tools (either legal authority or technical understanding) to address redevelopment as so much occurs on a piecemeal basis. For example, how could the county require interparcel access easements, require driveway closures, etc. without running afoul of property rights? Are there incentives that can be used to achieve better access management (such as additional density, reduction in impact fees, etc.)?

This section describes redevelopment tools for further exploration.

### Proactive Closure and Redesign of Access Points – Left Turn Restrictions

Restricting left turns at unsignalized intersections or driveways is also an effective way to reduce crashes, however, introducing those restrictions often comes with opposition from specific property owners or from communities concerned about access that is more circuitous or brings additional traffic to neighborhood streets. Courts have typically landed on the side of public safety over convenience, provided that due engineering consideration has been given to the matter.

Where uncertainty of public acceptance is a concern, flexposts and other low-cost delineators, etc. can be used on a temporary basis to restrict turning movements and test outcomes. Permanent solutions include installing raised medians and closing existing median breaks, etc. Unsafe medians can be also be redesigned with directional openings rather than full movements; two-way left turn lanes can be converted to median protected crossings which has a particular benefit to pedestrians. Roundabouts

[6] Thrive Montgomery, Page 5
[7] Thrive Montgomery, Page 19

can be used to handle U-turns more safely than both signalized and unsignalized intersections because they have far fewer conflict points.

*Recommendation #8*

*The County should consider recording an affirmative policy in Chapter 49 that "a left is not a right" by specifically authorizing the Director of Transportation to close median breaks. The County should be more aggressive in closing left turns at unsignalized intersections and driveways when safety and operations studies indicate that such closures may be warranted.*

*Recommendation #9*

*In developing the scope of roadway reconstruction and resurfacing projects, the County should carefully consider whether and how access management improvements can be accomplished through low-cost means or more extensive efforts as described below.*

*Recommendation #10*

*The County should produce or provide educational materials on access management to community organizations, elected officials, developers, and other interested parties.*

## Proactive Closure of Access Points – Condemnation

There are times when as part of development review or negotiations, capital project development, or corridor safety review, and otherwise where it may be desirable for the county to proactively close an access point or secure cross parcel access. Staff did not believe that they had the authority to do so in many instances.

There is ample case law demonstrating that to regulate or acquire land for access management is an appropriate use of police power and/or eminent domain authority.[8] Loss of the most convenient access is not compensable where other suitable access continues to exist; however, a substantial loss of access to private property may result in a taking and warrant compensation, although no physical appropriation of property has occurred.[9] "Substantial" and "suitable" are of course subject to interpretation (and possibility litigation), but there should be no doubt that the county has broad legal authority to regulate or condemn land for purpose of access management.

It may be useful for the County to be more specific in enumerating its authorities in the County code. Chapter 49-45 establishes specific authority to acquire property for transportation purposes, including "for the *opening,* relocation, straightening, widening, or proper drainage of any road, street, alley, bikeway, or shared use path, and for any other public transportation purpose." It could be argued that

[8] "The fact that a person loses the most convenient method of access is not …different in kind from damages sustained by the community at large where the property has suitable access from another street even though the alternate route is longer." - *Pinellas County v. Austin, 323 So. 2d 6, 8-9 (Fla. 2d DCA 1975)*

[9] A change in grade rendered property inaccessible, thus taking that required compensation. *Sanderson v. Mayor & City Council of Baltimore, 135 Md. 509, 109 A. 425 (1920))*

acquiring cross-access easements, closing access points, and taking other actions to improve access management is not an enumerated reason for property acquisition and thus not an eligible use of acquisition authority.

*Recommendation #11*

*Clarify the County's legal authority to acquire property for purpose of access management. It is recommended that the County Attorney be consulted on this matter and that the County Code be amended, if necessary, to permit acquisition for access management purposes.*

## Unified Circulation and Cross-Parcel Access

Reducing the number of driveways to and from commercial areas can yield significant safety and multimodal traffic flow benefits. There are no clear provisions in the County code to require cross-parcel access nor is there anything prohibiting the County from doing so. County staff expressed reservations about their authority to require cross-access easements, interconnected parking lots, common access drives, etc., the timing of doing so, process for establishing the legal requirements, etc. Private stakeholders interviewed for the project indicated that the topic of cross-parcel access is very complex with issues such as restrictions by prospective tenants, incremental cost of construction, increased impervious surface, loss of flexibility in site planning, setback requirements, etc. MDOT SHA's Access Manual encourages inter-parcel connections but contends that it does not have the authority to require them, as it is the purview of the local land use authority to do so.

The government's police power to condition development plans on cross parcel access is well-established. In *Holmes v. Planning Board*, 78 A.D.2d 1, 433 N.Y.S.2d 587 (N.Y. App. Div. 1980)), the court found that requiring common access "is not inherently confiscatory" and that the property owner has the burden of proof to claim damages. That said, the court also said that conditioning cross parcel access based on a "vague concept plan" that did not address how the requirement would be applied to individual parcels was problematic. The court directed the Town to prepare a clear implementation strategy.

*Recommendation #12*

*The County should develop a clear and consistent policy on requirements for cross-parcel access, adopt the requirements in the Code or COMCOR and develop consistent language that can be inserted into plats and staff reports to the Commission. In the interim, it may also be useful for staff to regularly engage the Commission's counsel for assistance when opportunities for enhanced access management techniques may arise, but subject to legal controversy with affected property owners.*

## Corridor Plans & Overlay Zones

Infill and redevelopment along major corridors is where future growth will be focused in the county. The pending general development plan indicates that the "evolution of corridors originally planned for the convenience of drivers into multimodal streets where transportation and land use are harmonized to support focused development of a compact mix of uses and building types will reduce driving and make our transportation system more sustainable and resilient." The Planning Department intends to initiate several corridor master plans to guide this approach. Several of the corridors most likely to redevelop are also the corridors with the highest crash rates and are thus part of the County's "High Injury Network" and overlap with the High Incidence Areas for Pedestrian Safety Initiative. These corridors include University Boulevard from Georgia Avenue to Colesville Road, Georgia Avenue from Forest Glen Road to Plyers Mill Road, and segments of Frederick Road and Rockville Pike (MD 355). Bus Rapid Transit and the Purple Line are also be introduced in these corridors further inducing pedestrian trips. The State of Minnesota has prepared a model access management overlay ordinance for use in targeted corridors. The Vision Zero Action Plan for Nashville, TN specifically targets the High Injury Network for corridor-specific access management plans.

*Recommendation #13*

*As corridor master plans are developed, traffic safety analyses should be performed to specifically document locations where access management can be a strategy for improving multimodal traffic flow and reducing serious injuries or fatalities.*

*Recommendation #14*

*Where a corridor plan includes a roadway segment that is part of the County's High Injury Network or high-capacity transit service is planned, a heightened level of scrutiny should be applied to reduce the likelihood that access points and left turns are the cause of crashes. The County should consider applying an Access Management Overlay Zone in these areas. Overlay Zones might create more stringent design standards, require alleys to be constructed, and provide incentives and disincentives for related actions such as capping the number of access points in the corridor, prohibiting access rights created because of parcel or lot splits, awarding density bonuses or other incentives for closing access points, strengthening the street grid. reducing LATR burdens, etc.*

## Change of Use and Incentives for Driveway Closures

The County Zoning Code provides several opportunities for greater density and site plan flexibility or other incentives when additional public benefits are provided by the developer. Reducing the number of access points in areas where there are many unnecessary driveways could be considered as such benefit; however, the County should carefully consider the extent to which it considers multiple existing driveways per parcel to be a property right that may be unilaterally extinguished in a rezoning or change of use. (Driveways closures are specifically distinguished here from median breaks which can be closed at any time and should never be considered an 'existing condition' in development review.) There are differing legal views on this subject – none is offered here.

Examples of incentives that might be offered include:

- The City of Orlando waives or allows exceptions to spacing standards if joint use driveways, cross access easements and unified parking and circulation plan are established.
- Lansing, Michigan allows reduction of the minimum lot size and frontage requirement, as well as the required number of parking spaces, by 15% for adjacent property owners that agree to establish a common driveway.
- South Burlington, VT incentivizes access management[10] in high traffic areas through trip budgets (used in traffic impact studies). Applicants can be allowed more trips (higher density) where a net benefit is determined for traffic flow due to improved access management, internal circulation, connections between adjacent properties, and pedestrian and/or transit access.
- Mesa County, CO has an incentive program that allows applications for a major subdivision to receive a 10% density bonus if the development includes an integrated circulation and access pattern with an adjacent subdivision covering all parcels.[11]
- Citrus County, FL awards an increase in the density and intensity of development permitted on lots of record that eliminate existing access points or to developers that dedicate cross access easements that eliminate additional access to U.S. 19, as part of the US 19 Access Management Plan. The amount of increase is not specified and handled on a case-by-case basis.

*Recommendation #15*

*The County should develop a policy governing the treatment of existing access points when there is a change in land use. The two primary alternatives are to declare any access that does not conform to county standards as a "non-conforming use" and thus revocable in the context of a building permit or site plan approval; or, to enact a set of incentives for access closures as described above. The Zoning Code (chapter 59) should be strengthened to allow DPS to revoke access permits or seek consolidation of driveways for change of use site applications where there are non-conforming access points, based on safety/design input from MCDOT.*

## Alleyways

In many Technical Advisory Committee discussions, requiring alleys in new or redeveloped areas was offered as an access management tool worthy of consideration. In new residential subdivisions, alleyways are desirable for many reasons: improved walkability, reduced visual clutter, better access for trash trucks, fire apparatus, and utilities, etc.; however, there is a significant cost to requiring alleyways in terms of land consumption and density targets, impervious surface created, and the actual cost of construction and long-term maintenance which may stand in opposition to related policy goals in those spheres. As to access management, alleys can be beneficial but are not common as an independent tool. (Alleys cause breaks in the sidewalk as well and raise their own sight distance problems, too.)

Alleyways are preferred in commercial and mixed-use developments where there is more opportunity for conflict between stopped or turning vehicles with through traffic, pedestrians, and bicyclists.

[10] See Section 10.01 – Traffic Overlay District in the link to the City Code.
[11] See §9.3 - Joint Subdivision Bonus in the link to the County Code

Alleways should also be required when residences face onto an arterial roadway as does occur on many roads in Montgomery County.

*Recommendation #16*

*The County should consider the trade-offs of requiring alleyways in new residential subdivisions, although alleyways should always be required to serve residences facing an arterial roadway.*

### Connected Networks, Cul-de-sacs, and Dead Ends

A connected street network promotes hierarchy for access management and provides appropriate circulation for local traffic without affecting through traffic (including, for example, bus rapid transit) on more significant arterial roadways. At a macro level, this is achieved through the County's Master Plan of Highways; however, several staff observed that the same network considerations do not seem to filter down to the sector, subdivision, and site plans.

*Recommendation #17*

*When developing sector plans and reviewing site and subdivision plans, the County should avoid permitting cul-de-sacs and dead ends (unless the dead end is for a long-term purpose of connectivity). This preserves opportunities for connectivity even where it may not be immediately apparent. The County should establish a regulatory rebuttable presumption that cul-de-sacs are not permitted except where topography or environmental conditions so dictate. The approval of cul-de-sacs or dead ends should be accompanied by a public access easement for bicycle and pedestrian uses.*

## Conclusion

The consultant team has had occasion to work with Montgomery County DOT and Montgomery County Planning Department for more than twenty years. The agencies are well-known for being highly competent and aggressive in pursuit of policy aims such as Vision Zero, the Growth and Infrastructure Policy, and developing a Bus Rapid Transit network among others. We did note some uncertainty by the agencies on how well access management is regulated and supported by County laws. County staff would no doubt feel more comfortable – and their decisions more legally defensible -- in pressing development applicants, property owners, and community organizations to accept certain access management solutions if explicit authorities were spelled out in the County Code or regulations (with a particular emphasis on Chapter 49 – the Road Code).

The consultant team believes that the law is clearly on the side of government's ability to regulate traffic including through the land development process, and that the County has the authority to use almost any tool commonly used in access management to achieve desired safety outcomes. The lack of specificity in the County Code is not outweighed by the police powers to regulate the flow of traffic in the interest of public safety. What is important is that the County act consistently in accordance with the standards it does have in place and document decisions thoroughly so that challenges can be withstood.

## About the Consultant Team

Mead & Hunt, a national planning, architecture, and engineering firm led this Access Management study. Through its predecessor, Sabra & Associates, Mead & Hunt has been involved in transportation planning issues in every corner of Montgomery County over the past two decades. This project was led by Jamie Kendrick, former Deputy Director of the Baltimore City Department of Transportation, who managed the agency's development review and transportation planning functions in that role. Kristine Williams of the Center for Urban Transportation Research at the University of South Florida, literally "wrote the book" on access management for the Transportation Research Board provided policy and "state of the practice" guidance from a national perspective. Additional support was provided by former SHA Assistant District Engineer for Traffic Jeff Wentz, and Michael Perrotta of Century Engineering who has led access management projects in rural parts of the state. The consultant team appreciates leadership of Stephen Aldrich, MNCPPC Master Planner, and the active participation of staff from several county agencies and MDOT SHA on a Technical Advisory Committee that met throughout the period of study.

# Appendices

## Appendix 1. Existing Laws & Regulations

This document summarizes all codes, regulations, policies and procedures related to access management in Montgomery County. Given the predominance of state roadways, the MDOT SHA Access Manual is also described. Documents are listed in order of precedence (law, regulation, policy/procedure).

### Montgomery County Code – Chapter 49. Streets and Roads.

Known as the "Road Code," Chapter 49 defines roadway classification, procedures for opening and closing/abandonment of roadways, design, and construction standards, etc. Roadway classifications are described below. Most relevant to the topic of access management is **Sub-Chapter 7 which regulates access to freeways and controlled major highways.** Other terms and conditions related to access management are presumably regulated under Article 3 authority of the Director of Transportation to establish roadway standards and specifications. It should be noted that the Department of Transportation is currently re-drafting the Chapter 49 in the context of the County's Complete Streets policy.

**Sec. 49-31. Classification of roads.**

Each road, except those listed in subsections (m)-(n), must be classified as designated in the applicable master or sector plan. This Section defines the vehicular functions of each road classification.

(a) A Freeway is a road meant exclusively for through movement of vehicles at a high speed. Access must be limited to grade-separated interchanges.

(b) A Controlled Major Highway is a road meant exclusively for through movement of vehicles at a lower speed than a Freeway. Access must be limited to grade-separated interchanges or at-grade intersections with public roads.

(c) A Major Highway is a road meant nearly exclusively for through movement of vehicles at a moderate speed. Access must be primarily from grade-separated interchanges and at-grade intersections with public roads, although driveway access is acceptable in urban and denser suburban settings.

(d) A Parkway is a road meant exclusively for through movement of vehicles at a moderate speed. Access must be limited to grade-separated interchanges and at-grade intersections. Any truck with more than 4 wheels must not use a Parkway, except in an emergency or if the trust is engaged in Parkway maintenance.

(e) An Arterial is a road meant primarily for through movement of vehicles at a moderate speed, although some access to abutting property is expected.

(f) A Country Arterial is an Arterial, typically in the County's agricultural reserve.

(g) A Minor Arterial is a 2-lane Arterial meant nearly equally for through movement of vehicles and access to abutting property.

(h) A Business District Street is a road meant for circulation in commercial and mixed-use zones.

(i) An Industrial Street is a road meant for circulation in industrial zones.

(j) A Primary Residential Street is a road meant primarily for circulation in residential zones, although some through traffic is expected.

(k) A Country Road is a road that has the function of a Primary Residential Street, typically in the County's agricultural reserve.

(l) A Principal Secondary Residential Street is a Secondary Residential Street meant to carry somewhat more through traffic.

(m) A Secondary Residential Street is a road meant to provide access between a residential development with fewer than 200 dwelling units and one or more higher classification roads as defined in subsections (b) through (l).

(n) A Tertiary Residential Street is a road meant to provide direct access to a residential development with 75 or fewer swelling units. A Tertiary Residential Street must not be built unless the Planning Board allows its use when the Board approves a preliminary subdivision plan or site plan.

(o) A Rustic Road or an Exceptional Rustic Road means a road classified as either under Article 8.

(p) An Alley is a right-of-way intended to provide secondary service access to the rear or side of lots or buildings and not intended for transporting through traffic. An alley may be used to provide primary vehicular access if the Planning Board and the Director of Transportation concur that the dimensions and specifications proposed in a project, preliminary subdivision , or site plan would provide adequate primary vehicular access. (Mont. Co. Code 1965, § 103-12; 1971 L.M.C., ch. 24, §§ 2, 3; 1987 L.M.C., ch. 9, § 1.; 1993 L.M.C., ch. 9, § 2; 2007 L.M.C., ch. 8, § 1; 2008 L.M.C., ch. 5, § 1.)

## Montgomery County Code – Chapter 50. Subdivision of Land.

Chapter 50 is generally managed by and through the Montgomery County Planning Board and its staff. A multi-agency Development Review Committee reviews all subdivision applications comments to and negotiates with the applicant, and submits the application and staff report to the Planning Board for its action.

**Section 4.2** requires that the Planning Board refer all subdivision applications to:

- the Department of Transportation, for roads, streets, intersection locations, site access, sight distances, traffic calming, paths, pedestrian, and bicycle facilities (including bike share), parking, transit facilities, transportation demand management elements, and storm drainage within County-maintained rights-of-way and easements.
- Montgomery County Fire and Rescue Service, for requirements for adequate fire protection and access; and,
- the State Highway Administration, for right-of-way requirements and access on state roads.

The Department of Transportation must approve in preliminary form the typical section, concept road profile, intersection and site access locations, sight distances, utility location, and storm drain adequacy for improvements along County- maintained roads and paths within its jurisdiction prior to preliminary subdivision plan approval.

**Section 4.3(B-D)** gives the Planning Board the responsibility to approve arrangement of access roads within a subdivision, dimensioning of lots including access drives for fire and other public services and with respect to future development of adjacent lands, placement of alleys, etc.

**Section 4.3 (E)** prohibits the Planning Board from approving any non-through road unless the non-through road is infeasible due to shape, size, topography, etc., provides access to no more than 75 dwelling units, is properly terminated with cul-de-sac or other turnaround, and is less than 500' in length.

## Montgomery County Code – Chapter 59. Zoning Ordinance.

Although there are some access management provisions included in specific use categories and development processes in of the zoning code,[12] the access management elements are specifically included in Division 6.1 – Site Access. This section applies to most development types where a site plan or conditional use approval is required.

**Section 6.1.3. General Access Requirements**

A. Any development must:

1. allow a vehicle, pedestrian, or bicycle to enter and exit the property to and from a street or an abutting site safely;
2. limit vehicle access across a primary pedestrian, bicycle, or transit route wherever feasible;
3. allow a vehicle to enter and exit any on-site parking area in a forward motion; and
4. allow a vehicle to access any pad site from within the site.

B. Land that is located in a Residential Detached zone must not be used for driveway or vehicular access to any land that is not in a Residential Detached zone, except:

1. in a Historic District; or
2. where such access has been previously approved for a property with a legally existing nonresidential use.

**Section 6.1.4. Driveway Access**

A. Driveway dimensions must satisfy the following table:

| Zone | Width (min) | Width (max) | Radius (max) |
|---|---|---|---|
| R-30, R-20, R-10 | | | |
| One-way | 12' | 16' | 10' |
| Two-way | 20' | 24' | 10' |
| CR, CRT, CRN, EOF, LSC, GR, NR | | | |
| One-way | 12' | 18' | 10' |
| Two-way | 20' | 32' | 15' |
| IL, IM, IH | 30' | 40' | 30' |

B. The applicable deciding body may require a wider driveway if there is an unusual traffic, grade, or site condition.

C. If on-site parking is accessible from an improved alley with a right-of-way of at least 20 feet in width:

1. access must be from the alley;
2. and new curb cuts along the public right-of-way must be limited, to the extent practicable.

D. A maximum of 2 driveways may be permitted for every 300 feet of site frontage along any street.

E. Unless the road is classified as a residential road, a vehicle must access a corner lot with only one driveway or a through lot from the street with the lower roadway classification.

## Context Sensitive Road Design Requirements.

This regulation relates to the development of transportation facility improvement projects and describes a scoping and project development process that is inclusive of all modes with an emphasis on safety and accessibility.

> **Section 49.28.01, Section 5.2** provides that **"**the objectives for selecting an appropriate roadway cross-section and the design of roadside elements are (1) to develop a transportation infrastructure that provides access for all appropriate modes of transportation and safety in equal measure for each mode of travel and (2) to ensure that transportation facilities fit their physical setting and preserve scenic, historic, aesthetic, community, and environmental resources to the extent possible.
>
> In some cases, these design objectives can be achieved within the available right-of- way. In other cases, the cost-benefit of acquiring additional right-of-way needs to be analyzed. Sometimes, tradeoffs in user accommodation need to be made to preserve environmental or community resources located within or adjacent to the right-of- way. In these situations, the challenge is to provide access and safety for each mode of travel. In other situations, it will be necessary to modify environmental characteristics in order to provide a safe and accommodating facility."

## Local Area Transportation Review Guidelines (2021 Update).

LATR is the implementing regulation of the County's adequate public facilities ordinance. The 2021 update refines the context-sensitive and multi-modal procedures and analysis methods used to determination of adequacy of local transportation system performance in the context of the

development review process. As the LATR guidelines note, "many development approval conditions related to transportation are derived from other elements of the regulatory process, including site layout design, site access and internal site travel circulation features. These elements are evaluated based on design standards that are independent of LATR."[13]

However, the LATR Guidelines do require that all studies for a site that will generate 50 or more net new weekday peak-hour person trips must develop a **Vision Zero Statement**. This statement must assess and propose solutions to high injury network and safety issues, review traffic speeds, and **describe in detail how safe site access will be provided**. With concurrence of the responsible agency, projects must implement or contribute to the implementation of safety countermeasures. The Planning Board must find a nexus to the project's impact and that any countermeasure is proportional to that impact.

*Figure 2. Text of Vision Zero Statement Requirements for Site Access Documentation*[14]

**4. Describe site access:** Summarize the safety issues identified in components 1 through 3 and describe how site circulation promotes safety, outlining how safe access will be provided to the site. Planning staff will note if the applicant is contributing a fee in lieu of constructing a countermeasure. Reference the Vision Zero Community Toolkit (forthcoming) or national best practices and research in outlining the appropriate treatments to address identified safety issues.

a. *High Injury Network:* If applicable, summarize how the project's right-of-way improvements along the HIN will address identified safety issues.
b. *Proximate Safety Issues:* Record how the project's right-of-way improvements within the vicinity of the site will address identified safety issues for motorists, transit riders, bicyclists, and pedestrians.
c. *Traffic Speeds:* If observed 85th percentile speed for any day or direction exceeds the posted speed by 20 mph, summarize speed management improvements that could reduce speeds along the roadway. For example, traffic calming would be warranted on a roadway with a 25 mph posted speed limit if the observed 85$^{th}$ percentile speed is greater than 30 mph.
d. *Site Circulation:* Document how site design promotes bicycle, pedestrian, and motor vehicle occupant safety. For example, limiting vehicle access points and locating and designing parking to reduce conflicts with pedestrians and bicyclists both passing by and visiting the site.

**Montgomery County Driveway Construction Policy.**

This non-regulatory guidance document provides that any person who owns land abutting a public street or accessing (using an easement) desiring to construct a driveway apron from the curb line to the lot line may do so only after obtaining a permit from the Montgomery County Department of Permitting Services (DPS). Driveways shall be constructed according to Montgomery County Design Standards and incorporate all applicable ADA requirements as stipulated in the most current PROWAG to ensure that pedestrians and other users can safely traverse the driveway entrance where it intersects the sidewalk area within the public right of way. The number of permitted driveway entrances that may be

[13] LATR Guidelines (2021 Update), Page 8
[14] LATR Guidelines (2021 Update), Page 26

**constructed on a single-family lot is restricted to one per street**, a second entrance maybe considered for lot frontage of ninety (90) feet or more on case-by-case basis with exceptions considered for circular driveway entrance where it can be demonstrated that such an entrance will eliminate the need for reversing onto the roadway.

The placement of a driveway entrance for commercial, mixed-use, high-rise or any other developments shall be in accordance with the Certified Site Plan, approved by Montgomery County Planning Board. At the discretion of the Department of Permitting Services in consultation with the Department of Transportation an exception may be granted by for additional driveway entrances on a project-by-project basis.

**Montgomery County DOT Policy Regarding Private Access Design and Location Guidelines for Commercial, Industrial, Multifamily and Cluster Development.**

This 1983 non-regulatory guidance document provides general guidelines for the location of access points and minimum design criteria for driveway widths, radii and median break spacing. This document is not available online.

**Montgomery County Complete Streets Design Guide**.

This non-regulatory guidance document identifies the need to update county policies and guidelines, including those described above. Policy guidance includes the need to reduce or consolidate driveways, create shared and interparcel access connections, rear and alley access improvements for loading and deliveries, etc.

**County Attorney's Opinion Regarding Legal Requirements to Provide Access to Private Property from the Public Right of Way.**

This memorandum clarifies the responsibilities of the Department of Transportation to give preliminary approval of road, crosswalk and pedestrian path grades and profiles *prior to* approval of preliminary subdivision plans by the Planning Board. The memorandum also provides broad clarification that State courts have "consistently ruled since that time that denial of access to a property constitutes a compensable taking. (*See Arnold v. Prince George's County, 270 Md. 285,3 11 A.2d 223 (1973)*, ("a denial of access from the public street to a property by the governmental agency may also result in a taking without the payment of just compensation")).

## MDOT SHA ACCESS MANUAL

MDOT SHA's Access Manual is a non-regulatory guidance document applicable to entrances for commercial or industrial site access, either new or modified; public or private street connections to subdivision access, either new or modified; and construction or modification residential driveways.

- Chapter 1 describes the access point standards which determine the acceptable number and location of access points for a specific subdivision or development project and the range of turning movements that may be permitted at each approved access point.

- Chapter 2 describes the various types of entrances that are permitted for commercial and industrial sites including and when they should be applied, provides for the horizontal and vertical design requirements, and described coordination with internal site plans.

- Chapter 3 described the horizontal and vertical layout design requirements for street connections.

- Chapter 4 identifies site access improvements that may be required to support proposed entrances and street connections such as frontage channelization, turning and bypass lanes, acceleration and deceleration lanes, shoulder improvements, auxiliary lanes, highway medians, and sidewalks. Section 4.11 provides for exceptions and special case reviews for low volume roadways, previously improved frontage, insignificant traffic impacts, prohibitive impacts such as right of way, utility, or environmental impacts, low-volume commercial traffic generators, and expansion of existing businesses by less than 25% of traffic volume under existing conditions, and site redevelopment. The standard form for requesting an access permit can be found here.

The Access Manual is supplemented by an Environmental Guide for Access and District Permit Applicants, standard details and other design documents.

## Appendix 2. Review of Access Management Case Studies

Three case studies were developed for staff to review and comment in a workshop setting. Each case study offered opportunities to improve safety for autos, bikes, and pedestrians under existing conditions and in a hypothetical redevelopment scenario for the area. The goal of the workshop was to develop a better understanding of how agencies work together to address access management issues, to assess the understanding of technical tools for access management, and to identify access management tools which may not be available or robust enough to be effective.

**Case Study #1: University Boulevard**

In this hypothetical project, MCPS had proposed to expand the MacDonald Knolls Early Childhood Center. In response to neighborhood concerns about additional traffic on local streets, MCPS had negotiated with a church to allow for a shared entrance and shared parking lot to the rear of its property. While the shared entrance would have significantly limited the number of new auto trips onto the neighborhood streets, the shared entrance would need to be signalized and was placed less than 300' from an existing signal. In addition, several unsignalized intersections, median breaks and residential driveways fronting on to University Boulevard already contributed to a significant number of crashes in the area.


**Discussion, Strategies & Lessons Learned:**

- Limiting access to and from arterials will increase traffic on side streets which may be classified to handle additional traffic but may not have operated that way nor may be desirable to affected communities.

- Project applicants should be encouraged to coordinate access points with the permitting agencies prior to making commitments to community stakeholders about where access will or won't be provided. More clear guidance and protocols are needed on which agency has the lead in access management decisions ("chain of command.")

- It could be a reasonable expectation that if a new or significantly altered access point is created by a project sponsor, that other on- or nearby off-site access points be closed or altered to improve traffic flow and safety. (The CSX rule)

- The definition of “access” is too often limited to cars. Especially near schools and other high pedestrian trip generators, provisions for safe/unimpeded access for bicycles and pedestrians to be provided.

- Offset unsignalized intersections should be avoided or corrected.

**Case Study #2 – New Hampshire Avenue at Randolph Road**

New Hampshire Avenue and Randolph Roads are both divided roadways with concrete medians and left turn lanes which control access to commercial driveways. Left-turns at the major intersection are appropriately signalized; however, five minor intersections and two driveways are neither signalized nor channelized within ¼ mile the intersection. The approaches to and intersection of New Hampshire Avenue and Randolph Road has a high crash frequency largely because of uncontrolled left turns and rear end crashes caused by frequent curb cuts. Several bus riders have also been struck crossing Randolph Road trying to transfer to their bus on New Hampshire Avenue.


In the hypothetical case study, seven commercial properties have been acquired and are being consolidated on the northwest corner of the intersection, along with a county-owned lot just to the north, comprising a total of twelve acres. A mixed-use project to include 225 apartments, a grocery store and additional small retail, and a medical office building are proposed over three phases.

**Discussion, Strategies & Lessons Learned:**

- Safety issues at this location are a function of conditions which have been allowed to persist and should be corrected notwithstanding any redevelopment.

- Neighborhood access points at Bregman Road and Betty Lane could be converted to right-in, right-out as a street grid permits full movement at other signalized intersections.

- With respect to the redevelopment, the project will likely close several right-in, right-out driveways. The access management/safety benefit would be modest by reducing the potential for rear-end crashes. If the secondary left turn access points are to remain, signalization should be considered.

- Some access management/safety improvements can be achieved by changing signal timing, restrictions, and signal cycles. For example, the right-out access from the shopping center to

southbound New Hampshire Avenue could be restricted with “no turn on red” signs. A coordinated signal allowing left turns into the shopping center could be coordinated with left turns from Midland Avenue. Each of these improvements would improve predictability of turning movements for traffic entering the shopping center.

- Channelization of left turn lanes at major intersections would eliminate vehicles attempting to cut across traffic an enter the turn lanes in a very short distance.

**Case Study #3 – Snouffer School Road**


Snouffer School Rd in Gaithersburg is a four-lane roadway with a two-way left turn lane median which services 30+ driveways and unsignalized intersections in a 1.3-mile segment between Woodfield Road and Turkey Thicket Road. The segment is among the Top 10 high crash local roadways in the county’s Vision Zero plan. In 2019, MCDOT resurfaced Snouffer School Road and restored lane markings to their existing configuration. To the east Snouffer School Road light industrial/commercial flex land uses; to the west is multifamily residential neighborhoods to the southwest. In the hypothetical scenario presented, several of the light industrial/flex spaces are being consolidated into larger parcels for redevelopment of similar use or logistics/distribution.

**Discussion, Strategies & Lessons Learned:**

- All capital projects (including basic resurfacing) should undergo an access management and safety screening.

- The use of flexposts or other delineators could be used to test changes to access.

- Access management can be used to separate vehicle trips from conflicting land uses. In this case, several of the crashes in the area have occurred between trucks and passenger vehicles. Industrial site access should be directed to the secondary road network.

- The use of two-way left turn lanes should be closely considered; opportunities for raised medians and left turn storage lanes may be more appropriate in certain areas with closely spaced driveways. The need for signalized pedestrian crossing in the vicinity of TWLTLs should be considered.

- A small area traffic management plan for could identify new roadway segments, cross access opportunities, and additional signalization be installed as redevelopment occurs in the area.

- It is unclear to staff that the county has the authority (or will) to enforce dedication of cross-access easements. A clear statement on access management in the county code or regulations would be helpful to staff in addressing the issue in development or redevelopment projects.

## Appendix 3. Comparison of County and State Guidelines Related to Access Management

**Appendix 3. Comparison of Access Management Standards**

| Activ ities That Require an Access Permit | |
|---|---|
| **MDOT SHA** | *per Access Manual*.. ..1) Entrances on state roads for commercial or industrial site access, either new or modified. 2) Public or private street connections to state roads for subdivision access, either new or modified. 3) Off-site SHA improvements by developers, where mandated by the local jurisdiction in connection with development approval or required by SHA. 4) Local government road improvement projects on state property, when related to conditions of land use or development approval, or a new highway intersection. 5) Highway rehabilitation or streetscape improvements that involve work in the travel lanes of the state highway. 6) Temporary construction access for the above. ***Coordinate w District Office initially*** |
| **Mont. Co.** | *per Co. Code - Chapter 50 (Subdivision of Land)* ....DOT approves site access to roads, streets, and intersection locations. DOT reviews/approves typical section, concept road profile, sight distances, utility locations and storm drainage within County-maintained rights-of-way and easements **prior to preliminary subdivision plan approval.** County Board can approve development access (non-through road) if it provides access to 75 dwelling units or less, is terminated w a cul-de-sac, and is less than 500' in length. In practice, access management is coordinated through MNCPPC's Development Review Committee. |

| Access Point Standards | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Commercial | | | | | | Residential | |
| | **Source Document** | **Sight Distance Standards** | **Number of Access Points** | **Commercial Sites Less than 400' Frontage** | **Commercial Sites Greater than 400' frontage** | **Adjacent Intersections** | **Interparcel Connections** | **Multiple Lots & Pad Sites** | **Single Development on Multiple Lots** | **Access to Lower Functioning Roads / Adj. Intersections** |
| **MDOT SHA** | MDOT SHA Access Manual - Chapter 1 | AASHTO; Applicant must demonstrate adequacy PRIOR to submitting Prelim Subdivision or Site Plan Approval and SHA review | Max = 2 per 200' frontage; State has right to limit to one entrance/exit | 1 Access Point | Case by Case review; Max = 2 Access Points | Stop Controlled or Signalized = 1 Access Point; *Additional Access Point if warranted by veh. turning movements* | Encouraged | considered as a Single Development for Plan review purposes | considered a Single Parcel; minimize access points | Preferred over State highway |
| **Mont. Co.** | County Code - CH.59 **Zoning Ordinance - Division 6.1 (Site Access)** https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md_zone2014/0-0-0-4215 | | Max = 2 per 300' frontage along ANY street | Max = 2 per 300' frontage along ANY street | Max = 2 per 300' frontage along ANY street | must access a corner lot with only one driveway | Encouraged | | | Must access street w/ lowest roadway classification |
| **Mont. Co.** | **Driveway Construction Policy** https://www.montgomerycountymd.gov/DPS/Resources/Files/Code%20Policies/Driveway-Permit-Policy-Guidelines.pdf | all entrances subject to proper sight distance eval based on AASHTO | DPS discretion (in consultation with DOT) for additional access points | | | | | | 2 access points considered if lot frontage > 90' (min separation of 40') | min. 35' from ex. or prop. face of curb of intersecting street; min 25' from ex. or prop. Curb return |

| Spacing Standards | | | | | | | Site Plan Coordination | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Commercial Entrance Spacing Standards | | | Minimum Street Connection Spacing | | | | | |
| | **Source Document** | **Offset from Adjacent Property** | **Spacing Between Entrances** | **Corner Clearances per Classification** | **Spacing Between Street Connections** | **Median Crossovers per Classification** | **Circulation** | **Building Setback Restrictions** | **Pump Island Setbacks** | **Minimum Connection Depth/ Throat Length** |
| **MDOT SHA** | MDOT SHA Access Manual - Chapter 1 | min. 10' tangent from radius return point | min. 20' tangent | Primary=200' min., 400' pref.; Arterial = 100' min., 200' pref.; Collector =75' min., 150' pref. | 750' betw. centerlines; *Primary hwys conform to Regional Transp. Plans* | Fully Controlled - Not permitted; Partially Controlled = 750' (urban), 3000' (rural); Arterials = 750' (urban), 1500' (rural) | avoid veh. stacking onto hwy | 30' min. building setback from ROW line; subject to local regs. | 12' min. (15' pref.) from roadside face | large shopping malls- 250'; supermarkets - 120'; strip shopping center - 30'; office park - 250'; office building - 80'; sm. Comm sites - 30' |
| **Mont. Co.** | Adopted Subdivision Regulations Chapter 50 (montgomeryplanning.org) | | | | Arterial - 300' (urban), 600' (suburban), 800' (rural); minor arterial same as above except 500' for suburban. | no closer than 600' on divided roadways | | | | |
| **Mont. Co.** | **Driveway Construction Policy** https://www.montgomerycountymd.gov/DPS/Resources/Files/Code%20Policies/Driveway-Permit-Policy-Guidelines.pdf | min 20' to the point of intersection of adj. prop. line fillet | | | | | | | | |

**Appendix 3. Comparison of Access Management Standards**

| | | Entrance Design Standards | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Types of Entrances | | | | | Horizontal Layout | | | |
| | Source Document | Depressed Curb | Commercial Two Way | Commercial One Way (In/Outbound) | Commercial RI/RO's | Monumental | Width of Connection | Angle of Connection | Entrance Intx Radius and Flare | Traffic Control Islands |
| **MDOT SHA** | Access Manual - Chapter 2 https://www.roads.maryland.gov/mdotsha/pages/index.aspx?PageId=400 | urban, lower-speed roadways w pedestrian traffic, max 40mph; prohibited on Primary hwys | undivided hwys w no turn restrictions; divided hwys w full-movmt median openings; | Site circulation purposes; skewed alignments for divided hwys | Applications: divided hwys above 40mph; design veh 17' or 20' track widths; fully channelized incl. raised islands | large commercial or industrial sites w signalized intersection | Commercial two-way = 35' max; one-way=20'max commercial RI/RO=20'; residential = 17' | two-way = 70-110 deg; one-way = 45-90 deg.; adj. for horiz. curve | min. 30' (channelized); appropriate for design veh.; depressed curbs conform to standards | Islands: set back and nosed down; min. 75 sqft. area; Medians: monolithic <6' width, curb/gutter >6' width |
| **Mont. Co.** | County Code - CH.59 **Zoning Ordinance - Division 6.1 (Site Access)** https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md_zone2014/0-0-0-4215 | | | | | | Commercial two-way = 32'max, 20'min.; one-way=18 'max, 12'min.; Residential two-way =24'max, 20'min.; one-way = 16'max, 12'min.; Industrial = 30'-40' | not less than 70 deg | Commercial two-way = 15'max, one-way = 10'max; Residential = 10'max; Industrial = 30'max | |
| **Mont. Co.** | **Driveway Construction Policy** https://www.montgomerycountymd.gov/DPS/Resources/Files/Code%20Policies/Driveway-Permit-Policy-Guidelines.pdf | | | | | | Residential: 10' min, 20' max, unless variance granted by MNCPPC | | | |

| | | Street Connection Standards | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Horizontal Layout | | | Vertical Layout | | | | |
| | Source Document | Width of Street Connection | Angle of Street Connection | Intersection Radius | Max Landing Grade | Grade Break (max.) | Grading /Drainage Provisions | Vertical Layout Private Streets | Entrance Profile |
| **MDOT SHA** | Access Manual - Chapter 3 https://www.roads.maryland.gov/mdotsha/pages/index.aspx?PageId=401 | two-way = 35' | min. - 70 deg.; max. - 110 deg.; pref. - 90 deg. | 30' min.; increased for channelized rt-turn per large design veh | 3% - landing grade; 6% otherwise | 5% (3% landing grade + 2% cross-slope); 7% for superelevated | grade line of major hwy carried through intersection & street | x-section controlled by hwy profile | ex. & proposed profile grades shown @centerline |
| **Mont. Co.** | <none of the above County Sources contain vertical and horiz. Layout design standards values> | | 70 deg min | | | | | | |

| | | Standard Site Access Requirements | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Source Document | Frontage Channelization | Full Decel Lane Lengths | Full Accel Lane Lengths | Left Turn Bay Lengths | Total Bypass Lane Lengths | Shoulder Impr. Length | Back Curbs | Insignificant Traffic Impacts |
| **MDOT SHA** | Access Manual - Chapter 4 https://www.roads.maryland.gov/mdotsha/pages/index.aspx?PageId=402 | commercial: prop corner to prop corner; residential: 10' min. tangent each side of road connection to open section hwy; rural residential: None | 30mph - 425'; 40mph - 535'; 50mph - 630'; 55mph - 670' *(all include 100' taper)* | 40mph - 250'; 50mph - 360'; 55mph - 560' | 30mph - 425'; 40mph - 535'; 50mph - 630'; 55mph - 670' *(does not include queue storage add-ons)* | 30mph - 700'; 40mph - 800'; 50mph - 1000'; 55-60mph - 1120' (100' reduction for urban areas or res. subdivision <12 lots | Decel/Rt Turn & Accel Movement: <40mph = 8:1 taper; >40mph = 15:1 taper | not req. in rural areas when abutting slopes greater than 2:1 or drainage ditch present | access req. reduced if hwy <2000 ADT or no net gain in in trip generation, and no further widening of roadway |
| **Mont. Co.** | <none of the above County Sources contain vertical and horiz. Layout design standards values> | | | | | | | | |

Montgomery County Department of Permitting Services
2425 Reedie Drive, 7th floor
Wheaton, MD 20902
240-777-0311 or 311
montgomerycountymd.gov/dps

# Montgomery County- Maryland Driveway Construction Policy

## Driveway Construction Permit

A Right of Way (ROW) Permit is required for the construction of a residential or commercial driveway apron; installation of a temporary construction entrance; restoration, repair, removal and/or modification of any existing driveway.

A driveway apron is defined as a paved area that is placed between the roadways edge and the property line. Any person who owns land abutting a public street or accessing (using an easement), that desires to construct a driveway apron from the curb line to the lot line may do so only after obtaining a permit from the Montgomery County Department of Permitting Services (DPS).

## Construction Specifications

1. **Standards:** Driveways shall be constructed according to Montgomery County Design Standards and incorporate all applicable ADA requirements as stipulated in the most current PROWAG to ensure that pedestrians and other users can safely traverse the driveway entrance where it intersects the sidewalk area within the public right of way.

2. **Construction Type:** All driveways shall be paved (Asphalt or concrete) from the edge of roadway pavement to the property line, the paved section shall be in conformity with the other driveways in the neighborhood, unless approved by DPS with a Revocable Agreement signed by the property owner and recorded in the Montgomery County Land Records.

3. **Maintenance:** Construction and maintenance of driveway entrances on public streets is the responsibility of the property owner who uses the entrance.

4. **Minimum Width:** All residential entrances must be constructed in accordance with county standards with a minimum width of 10 feet and a maximum width of 20feet, unless restricted by the Certified Site Plan approved by the Montgomery County Planning Commission (MNCPPC)

5. **Driveway Location:** The placement of a driveway entrance for a single-family residence shall comply with greater of the following requirements, unless restricted by the Certified Site Plan or the Record Plat:

## Driveways near street intersections

i. Shall not be placed any closer than thirty-five feet (35') from the point of intersection (PI) of the projected extension of the existing or proposed face of curb of the two streets

ii. Shall not be placed any closer than twenty-five feet (25') from the point of tangent (PT) or point of curvature (PC) of an existing or proposed curb return

iii. No portion of a driveway entrance shall be placed any closer than twenty feet (20') to the point-of-intersection of the property line fillet of an existing or proposed lot

iv. No portion of a driveway entrance shall be placed within an existing or proposed curb return.

6. **Number of Entrances**: The number of permitted driveway entrances that may be constructed on a single-family lot is restricted to one per street, a second entrance maybe considered for lot frontage of ninety (90) feet or more on case by case basis. An exception may be granted for a circular driveway entrance where:

> A residence's frontage is located on an arterial or neighborhood principal street, and it can be demonstrated that a second entrance shall eliminate the need for reversing onto or from the roadway. The minimum separation between two driveway entrances shall be forty feet (40') measured at the property line.
>
> Driveway Apron must be installed on the street with the assigned house mailing address, except for corner lots. No through lot access is allowed.

7. **Duplexes:** each unit may have a separate driveway apron on the outside edges of the structure depending on location and existing site conditions, or only one driveway apron shared by both units in the center (consent of both unit owners will be required in this situation). For both instances the driveway must follow the zoning impervious area limits

8. **Sight Distance:** All driveway entrances are subject to a proper sight Distance evaluation based upon the American Association of State Highway and Transportation Officials (AASHTO) guidelines.

9. **Commercial Driveway Entrance:** The placement of a driveway entrance for commercial, mixed-use, high-rise or any other developments shall be in accordance with the Certified Site Plan, approved by Montgomery County Planning Board. At the discretion of the Department of Permitting Services in consultation with the Department of Transportation an exception may be granted by for additional driveway entrances on a project by project basis. All driveway entrances shall be constructed according to Montgomery County Design Standards and shall incorporate all applicable ADA requirements as stipulated in the most current PROWAG

10. **Roadside Trees:** A roadside tree protection plan must be submitted with the ROW permit application if the critical root zone of a tree located in the public right of way will be impacted by the proposed work. Critical root zone is a radius of 1.5' feet per inch trunk diameter around the tree. Driveway width may be minimized to limit impacts to a roadside tree. Permit applications for circular driveways may be denied if it impacts a roadside tree.

11. **Traffic Control Plan:** If the proposed driveway is on roadway with arterial or higher classification (80' wide right-of-way or greater); the roadway is in the Central Business District (Wheaton, Bethesda and Silver Spring); and/or needs sidewalk closure for longer than 15 days, the applicant must also submit

a site specific Temporary Traffic Control Plan (TTCP). The TTCP is reviewed and approved by the Division of Traffic Engineering and Operations section of MCDOT. DPS may also require a site-specific TTCP if deemed necessary.

*5/2/2022*

# MEMORANDUM OF UNDERSTANDING

## IMPLEMENTATION OF THE APRIL, 2010 REPORT OF THE CONFLICT RESOLUTION WORKGROUP ON WAYS TO IMPROVE THE DEVELOPMENT APPROVAL PROCESS IN MONTGOMERY COUNTY, MARYLAND

This Memorandum of Understanding (the "MOU") is made this __ day of _____, 2010 between the Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission, a bi-county agency and an instrumentality of the State of Maryland, with a regional office located at 8787 Georgia Avenue, Silver Spring, MD 20910 ("MCPB"), MONTGOMERY COUNTY, MARYLAND, a body corporate and politic and a political subdivision of the State of Maryland, with a principal address of 101 Monroe Street, Rockville, MD 20850 (the "County"), the WASHINGTON SUBURBAN SANITARY COMMISSION, a bi-county government agency responsible for providing water and sewer service within the Washington Suburban Sanitary District, with a regional office at 14501 Sweitzer Lane, Laurel, MD 20707 ("WSSC") and the POTOMAC ELECTRIC POWER COMPANY, a regulated electric utility that provides transmission and distribution services, with a principal address of 701 Ninth Street, Washington, D.C. 20068 ("PEPCO") – collectively the "Parties."

**WHEREAS**, the February 17, 2009 Second Annual Report to the County Executive by the Department of Permitting Services Citizens Advisory Committee contained a recommendation to review and codify the Lead Agency portion of the circa 1992 Implementation Report for Streamlining the Development Authorization Process.

**WHEREAS**, on July 28, 2009, the Montgomery County Council held a Public Hearing on Subdivision Regulation Amendment 09-02 Subdivision Approval – Conflict Resolution ("SRA "09-02"). The Council heard testimony and received written statements from the MCPB, the County Executive, and development community representatives about different ways to facilitate conflict resolution and streamline the development approval process.

**WHEREAS**, on September 21, 2009, the Montgomery County Council's Planning, Housing, and Economic Development Committee ("PHED") held a worksession on SRA 09-02. During that worksession, the representatives from MCPB and MCDOT recommended against a legislated solution to the situation and advocated a more flexible approach to achieve the desired results. The PHED Committee requested a written statement from the Chairman of MCPB and the Director of MCDOT to address the Council's concern about the need for timely resolution of development-related conflicts.

**WHEREAS**, on October 5, 2009, the Chairman of MCPB and the Director of MCDOT submitted a jointly signed letter to indicate establishment of a working group composed of key agency and utility representatives ("Workgroup") with the input of key stakeholders identified in the Conflict Resolution Report to prepare a report to the Planning Board, County Executive and other agencies by the end of January, 2010.

**WHEREAS**, the work program for that report was to include at a minimum:

- Redefine and re-establish lead agency roles based on current agency structure
- Analyze and recommend ways to reduce the delays caused by the need for conflict resolution
- Develop a procedure for resolution of disagreements within and among agencies, and between applicants and an agency
- Analyze the current operation of the Development Review Committee to determine where improvements can be made

**WHEREAS**, on January 11, 2010, the Chairman of MCPB and the Director of MCDOT requested a sixty-day extension until the end of March, 2010 to complete the workgroup's deliberations. On January 26, 2010, the County Council President granted an extension to March 2, 2010 to submit the completed report.

**WHEREAS**, the workgroup actively met between October 2, 2009 and February 24, 2010. During this period, the workgroup members consulted among themselves and with representatives of the development community to identify examples of recurring conflicts, develop five updated and/or new Lead Agency Designations tables, set up a flowchart with timelines for resolving inter-agency review conflicts with participation by the development applicant, and prepare the Report to the County Council.

**WHEREAS**, on March 2, 2010, the completed Report was delivered to the County Council President for the Council's consideration. The March 2, 2010 transmittal letter acknowledged two issues that arose at the February 25, 2010 MCPB worksession on the DRAFT Report and indicated the workgroup would reconvene to address those topics.

**WHEREAS**, on March 10, 2010, the workgroup met to discuss the MCPB comments and identify changes to the Report to remedy those concerns.

**WHEREAS**, on April 2, 2010, the amended Report was distributed to workgroup members and other stakeholders. The transmittal letter noted the changes made to address the MCPB comments, requested all parties to immediately follow the new procedures, noted the new process would be memorialized in an MOU, and indicated the workgroup would reconvene in six months to review progress and recommend further refinements to the new procedures.

**WHEREAS**, on October 11, 2010, the Planning Housing and Economic Development Committee of the County Council ("PHED Committee") held a worksession on SRA 09-02 at which time the PHED Committee recommended that County Council action on SRA 09-02 be deferred and directed the Parties to enter into the MOU with revisions based upon the worksession discussion.

**NOW, THEREFORE**, in consideration of the foregoing Recitals, the parties hereby agree to the following:

1. By entering into this MOU, the Parties adopt and will immediately implement the attached Lead Agency Designations and Flowchart with timelines for resolving inter-agency review conflicts as identified in the April 2010 Report of the Conflict Resolution Workgroup on Ways to Improve the Development Approval Process in Montgomery County, Maryland as amended by the issues identified at the March 10, 2010 meeting ("Conflict Resolution Report").

2. For the purposes of this MOU, the term "development plan" shall apply to any plan or application that is referred to the Montgomery County Development Review Committee for comments.

3. Lead Agencies (to resolve a specific conflict) and supporting Stakeholder Agencies with input in those decisions are identified in the Lead Agency Designations tables in the Conflict Resolution Report. Supporting Stakeholder Agencies with regulatory authority that affect Lead Agency decisions have also been identified in those tables.

4. If conflicts are identified in the inter-agency review comments at the Pre-Development Review Committee ("Pre-DRC") meeting, and those comments are not resolved as part of the Pre-DRC meeting, the Lead Agency shall convene a meeting of the affected Stakeholder Agencies to discuss and attempt to resolve the conflicts before the Development Review Committee ("DRC") meeting.

5. At the time of the DRC meeting, the applicant will be notified of, and given an opportunity to comment on all inter-agency review comment conflicts that required a follow-up meeting(s), including those that have already been resolved.

6. At the conclusion of the DRC meeting the Lead Agency staff will have four weeks to convene a meeting, have further discussion of any unresolved conflicts with the Applicant and other Stakeholder Agencies, and reach a solution. If the Applicant and the affected Parties are unable to reach a mutually agreed-upon solution for an issue, the Lead Agency for that issue is charged with making a decision regarding the recommendation that will be made to the Planning Board ("Lead Agency Decision"). The Applicant can request a time extension to submit additional information before a Lead Agency Decision is finalized.

7. If the Lead Agency Decision conflicts with any legal or regulatory requirement or legally authorized policy decision of a Stakeholder Agency, the Department Heads (or designees) of the conflicting agencies shall meet with the Applicant and appropriate staff to reach a solution. This meeting will occur within four weeks of the Lead Agency Decision. A legal or regulatory requirement or legally authorized policy decision of a Stakeholder Agency must be adopted in accordance with an established regulatory process.

8. The Staff Report to the MCPB will identify all inter-agency review conflicts that required Lead Agency Decisions and the process used by the Lead Agency(s) to resolve the conflicts.

9. If the MCPB, in its review of the development plan, agrees with the Lead Agency Decision, the MCPB will incorporate the Lead Agency Decision into its action on the development plan.

10. If the MCPB, in its review of the development plan, does not agree with the Lead Agency Decision, the following will occur:

    a. If the Lead Agency Decision is not based on a legal or regulatory requirement or legally authorized policy decision of the Lead Agency, the MCPB may render a decision on the development plan that differs with the Lead Agency Decision. If that decision is to approve the proposed development plan, neither the Lead Agency nor any other Party may deny permits or approvals based upon the overruled Lead Agency Decision. However,

    b. if the Lead Agency Decision is based on a legal or regulatory requirement or legally authorized policy decision of the Lead Agency, the MCPB decision on the plan will be deferred, and the matter will be referred back to the Department Head of the Lead Agency (or his or her Designee) for reconsideration.

11. The Lead Agency will consult with the Applicant and appropriate staff and complete their review of any matter referred by the MCPB within three weeks of the MCPB hearing.

12. If agreement or compromise is reached between the MCPB position and the Lead Agency decision, the development plan application will promptly be set for hearing before the MCPB for final decision. An amended Staff Report will be prepared which will document the additional analysis and discussion of the Lead Agency issue.

13. If agreement or compromise is NOT achieved between the MCPB position and the Lead Agency decision, and the development plan application as submitted is not approvable based on the Lead Agency decision in accordance with this MOU, the Applicant may choose to go forward with its application or amend (with or without

regard to the Lead Agency Decision and anticipated MCPB decision), or to withdraw the application.

14. The Workgroup and other stakeholders, including the development community representatives, will reconvene in the spring of 2011 and from time to time thereafter to determine, based on further experience as a result of implementation of this MOU, whether revisions are needed to these procedures.

15. The Workgroup will provide an annual report to the County Council, the first of which is due after the meeting to be held per Paragraph 14 herein, highlighting examples of Lead Agency Decisions, the steps that were taken to resolve issues that arose, and recommendations for revisions, if any, to either the MOU or the Conflict Resolution Report.

**IN WITNESS WHEREOF,** the Parties hereby set their hands and seals on the day and year first written above.

Approved as to legal sufficiency:

The Montgomery County Planning Board of the Maryland-National Park and Planning Commission

By: _____ 5/5/11
Associate General Counsel

By: _____ 5/5/11
Françoise M. Carrier Date
Chair

Recommended:

By: _____ 5-5-11
Rollin Stanley Date
Director, Department of Planning

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Approved as to legal form and legality:

Montgomery County, Maryland

By: _____
Marc Hansen
County Attorney

By: _____ 5/6/2011
Timothy L. Firestine Date
Chief Administrative Officer

Recommended:

By: _____ 15 APR 11
~~Arthur Holmes, Jr.~~ Date
Director
Department of Transportation

By: Jennifer Hughes 5/2/11
Jennifer Hughes Date
Acting Director
Department of Permitting Services

By: _____ 4/27/11
Richard Bowers Date
Fire Chief
Montgomery County Fire and
Rescue Service

By: Robert G. Hoyt 4/21/11
Robert G. Hoyt Date
Director
Department of Environmental
Protection

By: _____ 4/25/11
David E. Dise Date
Director
Department of General Services

By: _____ 5/4/11
Richard Y. Nelson, Jr. Date
Director
Department of Housing and
Community Affairs

---

Washington Suburban Sanitary Commission

By: _____
Gary Gumm, Chief Engineer
Engineering & Construction Team

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Potomac Electric Power Company

By: George P. Nelson
~~Kim M. Watson~~ George P. Nelson
Vice President-~~Maryland Affairs~~
Operations & Engineering Pepco

## LEAD AGENCY DESIGNATIONS
### Site Design and Layout

| | MNCPPC | DPS | DEP | FRS | WSSC | Dry Util. | DOT | DHCA | MCPS | DGS |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. Configuration of buildings and roads** | L | | | | | | | | | |
| a. Environmentally Sensitive Design | | S* | S | | | | S | | | |
| b. Forest conservation and tree save | | | S | | | | S* | | | |
| c. Fire department access | | | | S* | | | S | | | |
| d. Location of cisterns | | | | S* | | | S | | | |
| e. Clearance for wet utilities | | | | | S* | | | | | |
| f. Horizontal alignments and classifications of new roads | S* | S | | S | | | S | | | |
| g. Open vs closed section roads | | S | S | S | | | S | | | |
| **2. Site Access** | S* | S | | S | S | S | L | | | |
| **3. Density** | L | | | | | | | | | |
| a. Number of MPDUs/WFH | | | | | | | | S* | | |
| **4. On-Site Landscaping** | L | | | | | | | | | |
| a. Relationship to stormwater management facilities | | S* | | | | | | | | |
| b. Street tree/streetscape conflicts with wet and dry utilities | | | | | S | S | S* | | | |
| **5. On-site Lighting** (excluding road rights-of-way) | L | | | | | | | | | |
| **6. MPDUs and WFH units** | | | | | | | | L | | |
| a. Location and unit type | S | | | | | | | | | |
| **7. Fire department access** | | | | L | | | | | | |
| a. Environmentally Sensitive Design | S | S* | S | | | | S | | | |
| b. Permeable pavement | S | S | S | | | | S | | | |
| c. Impervious surface limits | S* | S | S | | | | S | | | |
| **8. Location of dry utilities** | | | | | | L | | | | |
| a. Location within road ROWs | S | S | | S | S | | S* | | | |
| b. Location of cisterns vs. PUEs | S | | | S* | | | S | | | |
| **9. Location of wet utilities** | | | | | L | | | | | |
| a. Location in stream valleys, forested areas and parks | S* | S | S | | | | | | | |
| b. Location within road ROWs | S | S | | S | | | S* | | | |
| c. Location in relation to conservation easements | S* | | S | | | | | | | |
| d. Type of service (i.e., gravity vs. pump stations) | S | S | S* | | | | | | | |
| e. Connection with future public service areas | S | | S | | | | | | | |
| **10. Sites for public schools** | S | S | S | S | S | S | S | | L | |
| **11. Sites for public buildings** | S | S | S | S | S | S | S | | | L |
| **12. Sites for public parks** | L | S | S | S | S | S | S | | S | S |

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L=lead agency
S=stakeholder

# LEAD AGENCY DESIGNATIONS
## Environmental Reviews

| | MNCPPC | DPS | DEP | FRS | WSSC | Dry Util. | DOT | DHCA | MCPS | DGS |
|---|---|---|---|---|---|---|---|---|---|---|
| **1. Stormwater Management** | | L | | | | | | | | |
| a. Location of landscaping and recreation facilities in relation to swm facilities | S* | | S | | | | S | | | |
| b. Design of facilities in ROW (relationship to street trees, light poles, etc.) | S | | S | S | S | S | S* | | | |
| c. Placement of swm facilities in stream buffers | S* | | S | | | | | | | |
| d. Open section vs. closed section ROW in Use IV and III streams | S | | S | | | | S | | | |
| e. Addition of swm BMPs in addition to minimum swm facilities to offset imperviousness | S | | S | | | | | | | |
| f. Maintenance of swm facilities | | | S* | | | | | | | |
| g. Maintenance easements for swm facilities vs. other onsite easements | S* | | S* | | | | | | | |
| h. Stream Restoration (non-CIP projects; required as part of ESD) | S | | S | | | | | | | |
| **2. Sediment Control** | | L | | | | | | | | |
| a. Tree save requirements along LODs; enforcement of LODs | S* | | S | | | | S | | | |
| b. Development program - Timing mechanisms for site plan features | S* | | | | | | | S | | |
| **3. Floodplains** | | L | | | | | | | | |
| **4. Well and Septic** | | L | | | | | | | | |
| a. Location within forested areas | S* | | S | | | S | | | | |
| b. Use of sand mounds | S | | S | | | S | | | | |
| **5. Stream Buffers** | L | | | | | | | | | |
| a. Approval of NRI/FSDs | | S | S | | | | | | | |
| b. Stormwater management facilities in the buffers | | S* | S | | | | | | | |
| c. Temporary sediment control in stream buffers | | S* | | | | | | | | |
| d. Storm drain extensions in the buffers | | S* | | | | | S | | | |
| e. New gravity sewer extensions within buffers | | | S | | S* | | S | | | |
| f. Stream crossings for roads | S | S | | S | S | S | S* | | | |
| **6. Steep Slopes** | L | S | | S | | S | S | | | |
| **7. Wetlands** | L | | | | | | | | | |
| a. Protection of supporting hydrology | | S | S | | | | | | | |
| **8. Forest Conservation** | L | | | | | | | | | |
| a. Location within stormwater management easements | | S* | S | | | | | | | |
| b. Slope easements adjacent to ROWs | | | | | | | S | | | |
| c. Location of water and sewer | | | S | | S | | | | | |
| d. Location of dry utilities | | S | | | | S | S | | | |
| e. Location of cisterns in relation to retention and reforestation areas | | | | S* | | | | | | |
| **9. Specimen trees/tree save** | L | | | | | | | | | |

## Environmental Reviews

| | MNCPPC | DPS | DEP | FRS | WSSC | Dry Util. | DOT | DHCA | MCPS | DGS |
|---|---|---|---|---|---|---|---|---|---|---|
| a. FCL variance requests | | | S | | | | | | | |
| b. Establishment of disturbance limits to provide adequate protection | | S* | S | | | S | S | | | |
| **10. Noise** | L | | | | | | | | | |
| a. Design and location of noise walls | | S | | S | | S | S | | | |
| b. On-site noise sources | | | S | | | | | | | |
| **11. SPA Impervious Surface Limits** | L | | | | | | | | | |
| a. Stormwater management to offset increased imperviousness | | S* | S | | | | S | | | |
| b. Layout of site and improvements to reduce overall site imperviousness | | S | S | S | | | S | | | |
| **12. Environmental settings around historic resources** | L | | | | | | | | | |
| a. Location of SWM facilities | | S* | S | S | | | | | | |
| b. Location of site plan features | | S | | | | | | | | |
| c. Onsite grading | | S | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

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L = Lead Agency
S = Stakeholder

## LEAD AGENCY DESIGNATIONS
### Non-APF Transportation Reviews

| | MNCPPC | DPS | DEP | FRS | WSSC | Dry Util. | DOT | DHCA | MCPS | DGS |
|---|---|---|---|---|---|---|---|---|---|---|
| **Improvements within the public rights-of-way & easements** | | | | | | | | | | |
| **13. Street classification** | L | | | | | | S | | | |
| i. Fires department access | | S | | S* | | | | | | |
| j. Public vs private streets | | S | | | | | | S | | |
| **14. New streets – horizontal alignments** | L | S | S | S | | | S* | | | |
| **15. New streets – conceptual profiles** | S | S | S | S | S | | L | | | |
| **16. Target speed, construction standards and cross sections** | S* | S | | S* | S | S | L | | | |
| c. Curb return radii | | | | | | | | | | |
| d. Existing trees in ROW | | | S | | | | | | | |
| e. Improvements to storm drain system | | | | | | | | | | |
| **17. Modifications to roadway design standards** | S* | S | S | S | S | S | L | | | |
| **18. Access points and intersections** | S* | S | | S* | S | | L | | | |
| **19. Traffic calming measures** | S | S | | S | | | L | | | |
| **20. Street interconnections with adjacent properties (current & future)** | L | S | S | S | S | S | S | | | |
| **21. ROW dedications** | L | S | | | S | S | S* | | | |
| **22. Slope easements for roadways** | S | S | S | S | S | S | L | | | |
| **23. Length of cul-de-sacs** | L | S | S | S | S | S | S | | | |
| **24. Sidewalks, bikeways & regional transit in ROW** | L(SP), S*(non-SP) | S* | | S | S | S | S*(SP) L(non-SP) | | | |
| **25. On street parking** | S | S | | S* | S | S | L | | | |
| **26. Crosswalk and under/over passes** | S | S | | S | S | | L | | | |
| **27. Commercial driveways and parking structures** | S* | L | | S | S | S | S | | | |
| **28. Stormwater management in public ROW** | S | L | S | S | S | | S* | | | |
| **29. Traffic controls & median breaks** | S | S | | S | | | L | | | |
| **30. Open section vs closed section roadways** | L | S* | S | S | S | | S | | | |
| **31. Utility location in ROW** | S | S | | S | S* | S* | L | | | |
| **32. Fire protection water** | S | S | S | L | S | | S | | | |
| **33. Street trees** | S* | L | S | S | S | S | S | | | |
| | | | | | | | | | | |
| **On-site improvements outside the public rights-of-way & easements** | | | | | | | | | | |
| **34. Transit stops, shelters, entry gates, noise walls, streetscape, street** | S* | S | | S | S | S | L | | | |

| Non-APF Transportation Reviews | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MNCPPC | DPS | DEP | FRS | WSSC | Dry Util. | DOT | DHCA | MCPS | DGS |
| furniture, lighting, etc. | | | | | | | | | | |
| 35. Pedestrian paths, bikeways | L | S | | S | S | | S | | | |
| 36. Access to transit, lighting, noise walls, parking garages, etc. | L | S | | S | S | S | S | | | |
| 37. On-site circulation and loading | S* | L | | S | S | S | S | | | |
| 38. Parking lot design (stacking) | S*(non-SP) L(SP) | L(non-SP) S*(SP) | | S | S | | S | | | |
| | | | | | | | | | | |

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L = Lead Agency
S = Stakeholder

| LEAD AGENCY DESIGNATIONS<br>APF Transportation Reviews | MNCPPC | DOT* |
|---|---|---|
| 1. Determine Transportation Review Type:<br>a. Traffic Statement describing exemption from both LATR and PAMR studies<br>b. Traffic Study for LATR including traffic statement regarding PAMR exemption<br>c. Traffic Study for PAMR including statement regarding LATR exemption<br>d. Traffic Study for both LATR and PAMR | L | S |
| 2. Identify number and location of intersections to be studied | L | S |
| 3. Review Report to confirm satisfaction of Figure 2 Completeness Checklist in the LATR and PAMR Guidelines and accuracy of calculations, including:<br>a. adequacy of turning movement counts<br>b. background traffic volumes<br>c. site generated traffic volumes, percentage and directional assignments<br>d. existing and proposed lane use assignments<br>e. total traffic and critical lane volumes<br>f. acceptability of the Pedestrian and Bicycle Impact Statement<br>g. number of trips to be mitigated<br>h. identification of proposed measure(s) to mitigate trips | L | S |
| 4. Review Report to determine if proposed mitigation measures within the right-of-way are technically and operationally feasible | S | L |
| 5. Review Report to determine acceptability of proposed Special Mitigation Standards for PAMR mitigation (using LEED standards) | L | S |
| 6. Determine acceptability of proposed traffic controls including review and approval of studies that evaluate the need for new or modification of existing controls (e.g., traffic signals, stop signs, crosswalks, etc.) | S | L |
| 7. Determine the need to enter into a Traffic Mitigation Agreement and the proposed measure(s) to mitigate trips | L | S |
| 8. Determine technical and operational acceptability of proposed Traffic Mitigation Agreement measures | S | L |

*** NOTE: When intersections with State highway(s) are analyzed, the MSHA would be the lead agency or stakeholder (in lieu of MCDOT) for the specific State highway intersection(s)**

L = Lead Agency
S = Stakeholder

## LEAD AGENCY DESIGNATIONS
## Private Street Reviews

| | MNCPPC | DPS | DEP | FRS | WSSC | Dry Util. | DOT | DHCA | MCPS | DGS |
|---|---|---|---|---|---|---|---|---|---|---|
| **39. Street classification** | L | S | S | S | | | S | | | |
| k. Fires department access | | | | S* | | | | | | |
| l. Open section vs closed section | | S* | | | S | | | | | |
| **40. Target speed, construction standards and cross-sections** | L | S | S | S | S | S | S | | | |
| f. Curb return radii | | | | | | | | | | |
| g. Existing trees in ROW | | | | | | | | | | |
| h. Storm drain system | | | | | | | | | | |
| **41. Roadway design standards** | L | S | S | S | S | S | S | | | |
| **42. Access points and intersections** | L | S | | S | S | | S | | | |
| **43. Traffic calming measures** | L | S | | S | | | S | | | |
| **44. Street interconnections with adjacent properties (current & future)** | L | S | | S | S | S | S | | | |
| **45. Slope easements for roadways** | L | S | | S | S | S | S | | | |
| **46. Length of cul-de-sacs** | L | S | | S | S | S | S | | | |
| **47. Sidewalks and bikeways** | L( | S | | S | S | S | S | | | |
| **48. On street parking** | L | S* | | S* | S | | S | | | |
| **49. Commercial driveways and parking structures** | L(SP)S*(non-SP) | S*(SP) L(non-SP) | | S | | | S | | | |
| **50. Stormwater management in ROW** | S | L | S | S | S | S | S | | | |
| **51. Traffic controls & median breaks** | S | L | | S | | | S | | | |
| **52. Parking lot design (stacking)** | L(SP) S*(non-SP) | S*(SP) L(non-SP) | | S | S | | S | | | |
| **53. Utility location in ROW** | L | S | S | S | S* | S* | S | | | |
| **54. Fire protection water** | S | S | S | L | S | S | S | | | |
| **55. Street trees** | L | S | S | S | S | S | S | | | |
| | | | | | | | | | | |

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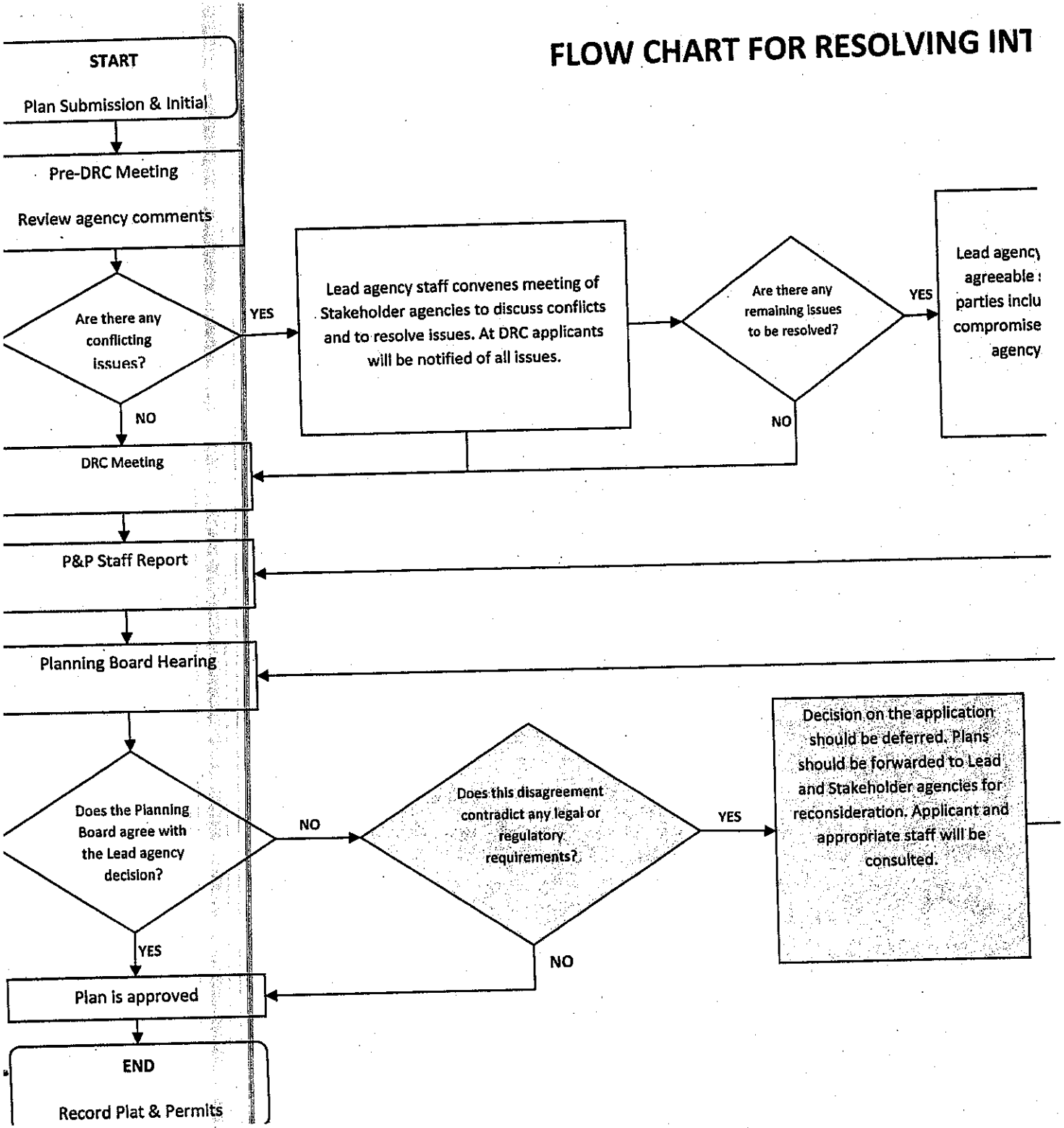
L = Lead Agency
S = Stakeholder

# FLOW CHART FOR RESOLVING INT




**Montgomery Planning** Countywide Planning and Policy Division

05/13/2021

Agenda item 04

# Access Management – State of Practice

## Briefing

# Introduction

- Presenter – Daniella Acosta, Intern – Countywide Planning and Research
- Graduate Student – University of Maryland, College Park

# Outline

- Introduction
- Access Management Study Elements
- Presentation on Research Findings

# Introduction

- Access management is the “coordinated planning, regulation and design of access between roadways and land development.”[1] Its goal is to provide a systemic way to improve the safety and efficiency of moving people and goods while reducing conflicts between all modes using and crossing the roadway, including cars, heavy vehicles, transit, bicycles and pedestrians.
- Vision Zero - Access has a direct and significant relationship to safety

[1] Access Management Manual, 2nd Edition, Transportation Research Board, 2014, p 1-3.

# Access Management Study - Elements

- FY22 Work Program - Access Management Study
- Research the State of Practice in Access Management
- Conduct study in cooperation with MCDOT and other county agencies to explore ways to improve how access is managed, focusing on effective outcomes and safer streets
- Linkages to Vision Zero and Complete Streets efforts

# Access Management – State of Practice Presentation

- Study Methodology
- Access Management Concepts
- State of Practice Findings
- Access Management in Montgomery County
- Recommendations

# Study Methodology

Reviewed **18** publications from national academies and professional associations

Examined **14** state access management programs

Conducted **3** informal roundtables with Area Teams

Interviewed **2** neighboring jurisdictions (Frederick County and the City of Frederick)

# Access Management Concepts

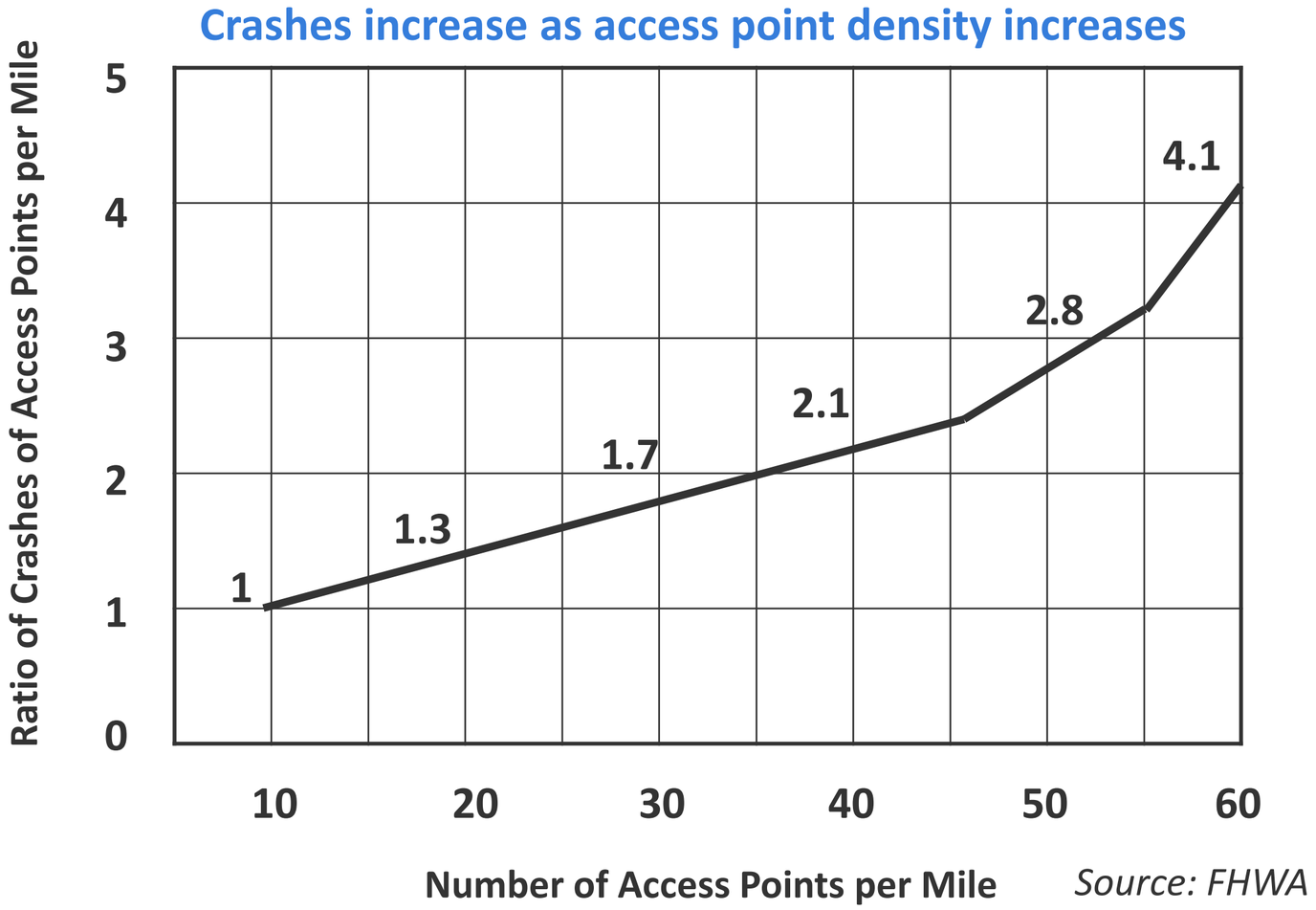
# Goals & Strategies

## Primary Goal

- Property access
- Traffic throughput
- System safety

## Strategies

- Target conflict points
- Separate conflict points
- Limit interference
- Onsite circulation and storage



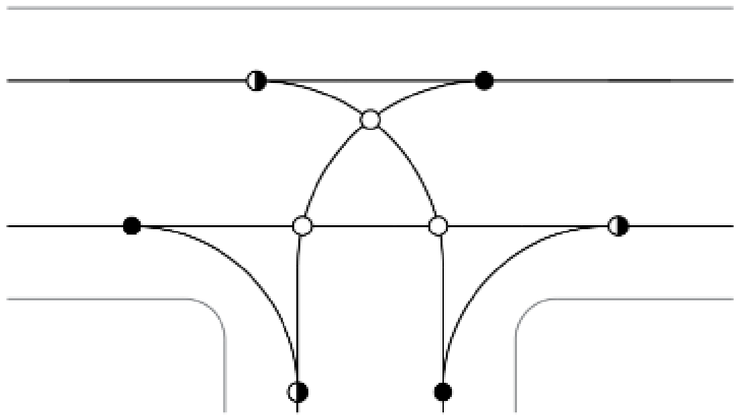

*Source: FHWA*

# Types of Access Management

- Parcel-based
- Driveway-based
- Corridor-based

# Conflict Points

## 3-Way Intersection



Legend

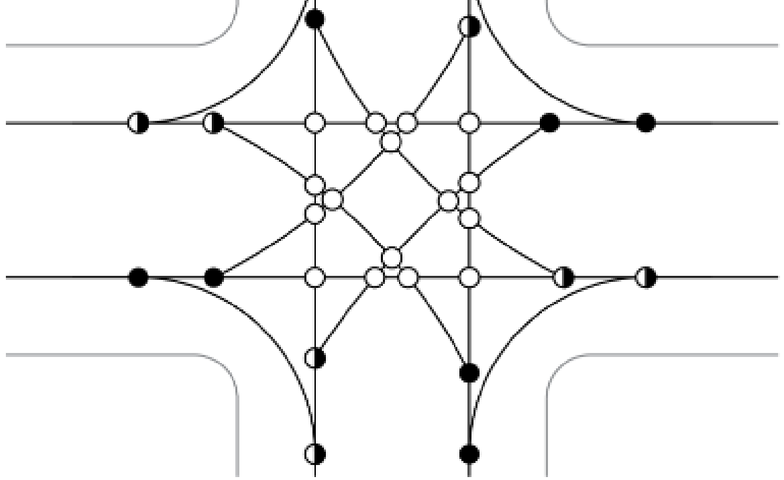
● = Diverging

◑ = Merging

○ = Crossing

| Conflict Type | Count |
|---|---|
| Crossing | 3 |
| Merging | 3 |
| Diverging | 3 |
| **Total:** | |
| **9 Conflicts** | |

## Conventional Intersection



Legend

● = Diverging

◑ = Merging

○ = Crossing

| Conflict Type | Count |
|---|---|
| Crossing | 16 |
| Merging | 8 |
| Diverging | 8 |
| **Total:** | |
| **32 Conflicts** | |

*Source: Adapted from the Virginia Department of Transportation*

# Conflict Points and Multimodal Systems

**32** **Vehicle to Vehicle Conflict Points**

**24** **Vehicle to Pedestrians Conflict Points**

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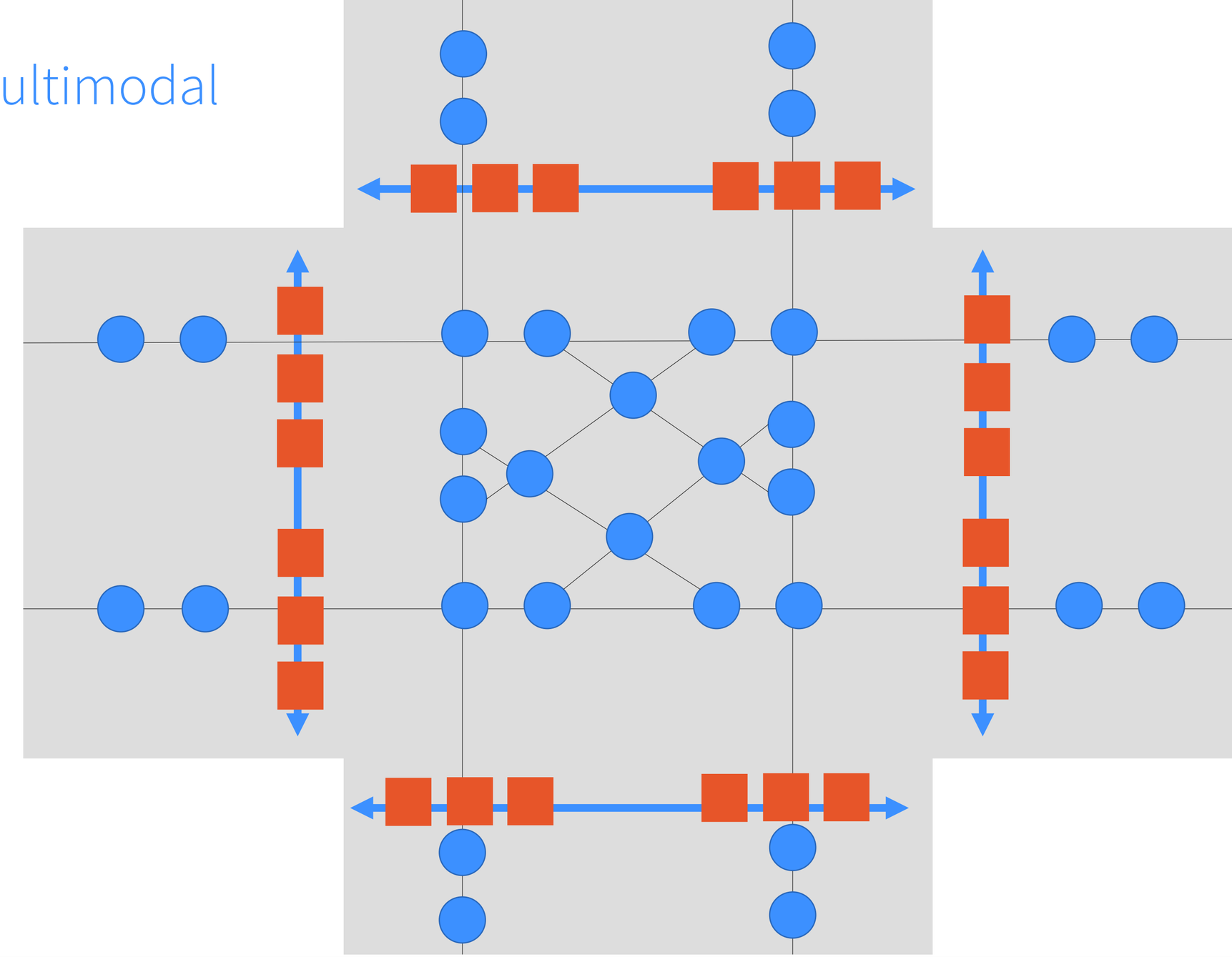
**56** **Total Conflict Points**



# State of Practice Findings

# Elements of Comprehensive Programs

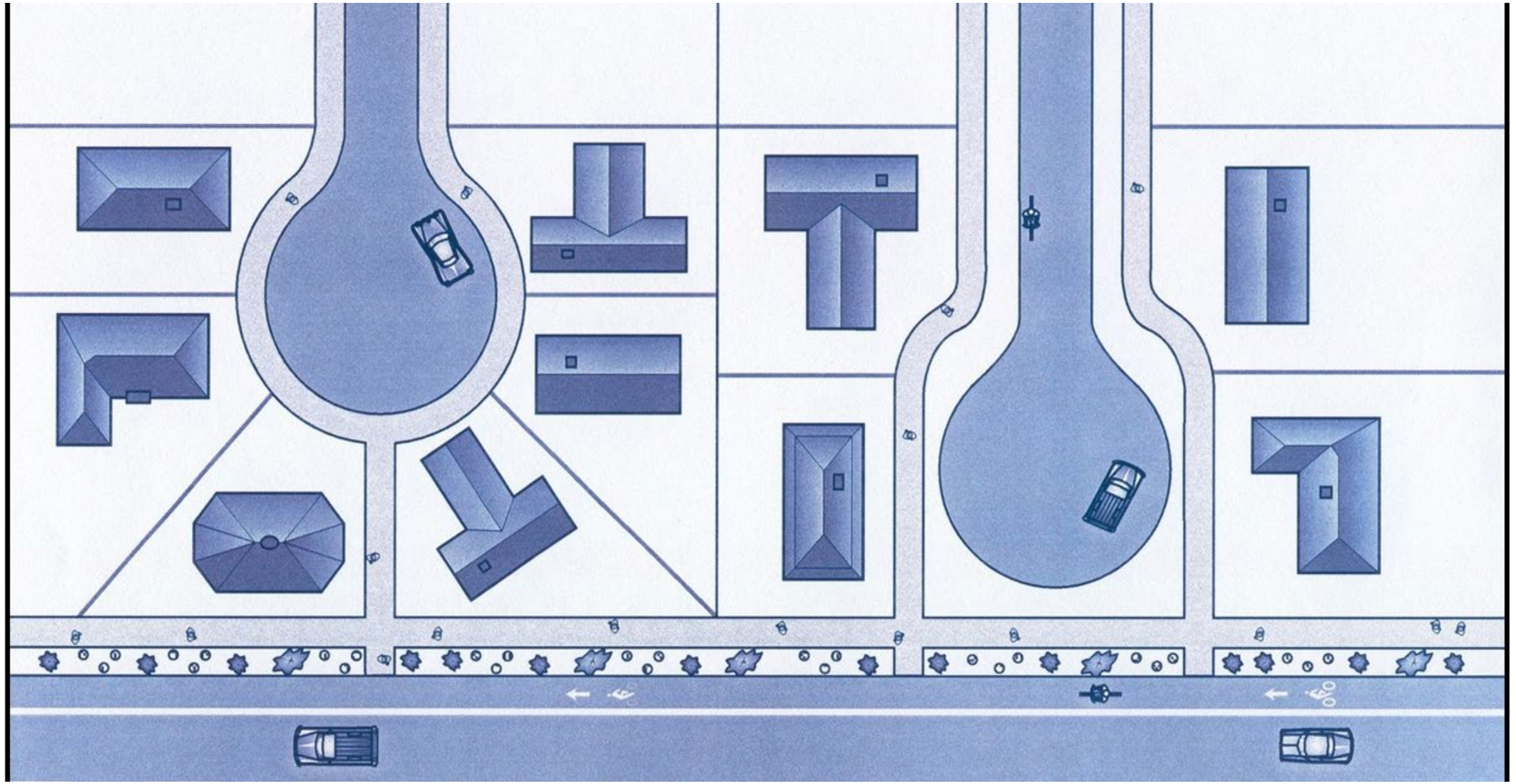
- **Design Controls –** Tools that are based on traditional traffic engineering and geometric design of the roadway
- **Land Use Considerations –** Referenced access management approaches that featured compliance with and standards for existing land uses (**reactive,** retrofitting).
- **Land Use/ Zoning Controls –** Referenced access management approaches that featured strategically using land use and development policies to drive access management decisions and outcomes (**proactive**).
- **Active Coordination** – Referenced activities such as technical assistance, convening peer-exchanges among municipalities, funding opportunities, providing model ordinances.
- **Complete Streets** – Explicit reference to coordination with an existing Complete Streets policy or program
- **Multi-modal** – Explicitly references accommodating all modes as an objective of the access management plan
  - **Transit –** Explicit reference and examples of how to accommodate transit in an access management plan
  - **Freight –** Explicit reference and examples of how to accommodate of freight in an access management plan
  - **Bike/Ped –** Explicit reference and example of how to accommodate bikes and pedestrians in an access management plan

# State DOT Analysis

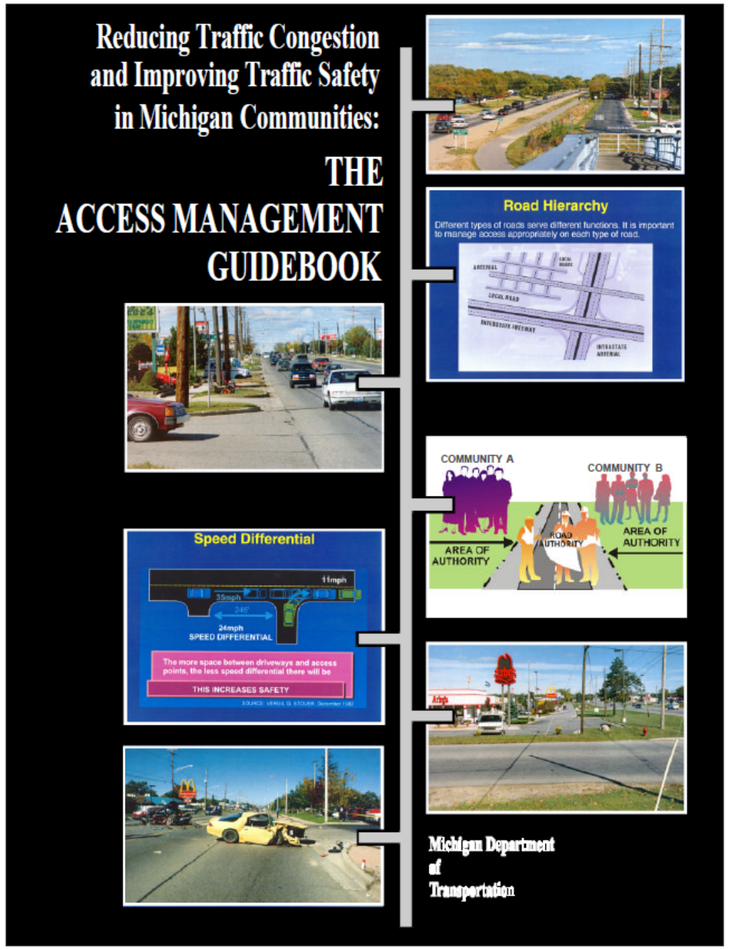
| | Design Controls | Land Use Considerations | Land Use/Zoning Controls | Active Coordination | Complete Streets | Multi-modal | Transit | Freight | Bike/Ped |
|---|---|---|---|---|---|---|---|---|---|
| Florida DOT | X | X | | | X | X | X | X | X |
| Colorado DOT | X | X | | | | X | | | |
| New Jersey DOT | X | X | | | | | | | |
| Maryland DOT-SHA | X | X | | | X | | | | X |
| Pennsylvania DOT | X | X | X | X | | | | | X |
| Montana DOT | X | X | X | | | | | | |
| Iowa DOT | X | X | X | | | X | X | X | X |
| Oregon DOT | X | X | | | | X | X | | X |
| New York State DOT | X | X | X | X | | X | X | | X |
| Michigan DOT | X | X | X | X | | X | X | | X |
| Virginia DOT | X | X | | | | | | | X |
| Vermont Agency of Transportation | X | X | X | X | | X | | | |
| Delaware DOT | X | X | | | | | | | |

# Florida DOT Connected Cul-de-Sacs

*Source: Adapted from the Florida Department of Transportation 2019 Access Management Guidebook*



# Michigan DOT Monitoring & Enforcement Program




**Recommended Performance Variables**

- Safety improvements (crash reductions)
- Reduced congestion
- Improved travel time
- Fewer tickets for “aggressive driving”, etc.
- Number of closed or consolidated driveways
- Number and length of new service drives
- Improved non-motorized access
- Number of enforcement actions taken against the creation of unauthorized driveways

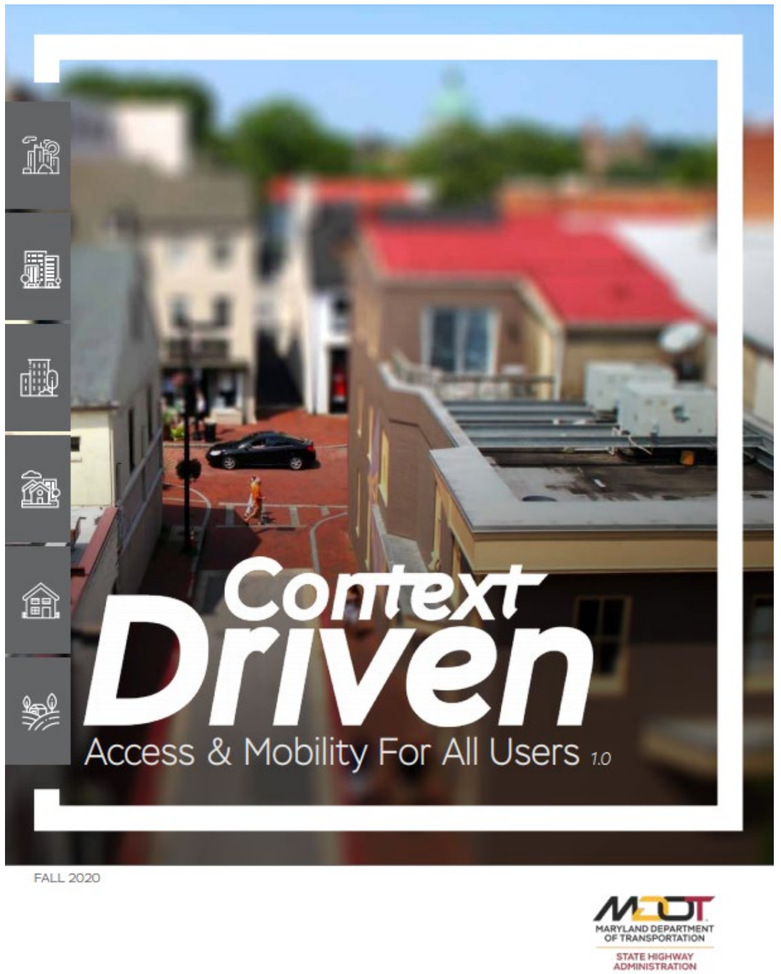
# MDOT-SHA & Access Management

## Current Practice

- Access Manual – Design manual that is more engineering focused.
- Permit process is the primary implementation tool.

## Context Sensitive Solutions

- Multi-stakeholder collaboration between environmental agencies, community group, businesses, and local governments.
- Aligns transportation planning with land use and economic development.
- 2020 *Context Driven: Access & Mobility for All*



# Access Management in Montgomery County

# Existing Regulations

- **Montgomery County Road Code** – Chapter 49, Article 3, Road Design and Construction Code
- **Montgomery County Zoning Ordinance** – Chapter 59-6, Section 6.1.4 – Driveway Access
- **Montgomery County Code**, Chapter 50, Subdivision of Land
- Montgomery County Department of Transportation, **Private Access Design and Location Guidelines** for Commercial, Industrial, Multifamily and Cluster Development (Including Private Driveways)
- Department of Permitting Services, **Driveway Construction Policy**

# Research Questions

- How processes worked with respect to access management?
- What were current areas of strengths, weaknesses, and opportunities for improvement?
- How strong existing access management tools were with respect to interparcel connectivity, shared access, and driveway consolidation?

# Lessons Learned: Challenges

- **Lesson C.1:** Difficult to get interparcel connections and shared access generally.
- **Lesson C.2:** Interparcel connections are rarely pushed for in the cases where there is a lack of frontage or where that interparcel connection is not backed up by a specific master plan recommendation.

# Lessons Learned: Tools

- **Lesson T.1:** No formalized process during development review to discuss access management.
- **Lesson T.2:** Developing a consolidated, front-facing policy document would have to be an inter-agency effort to ensure collective buy-in. But strengthening the language in the code should take precedence.

# Language Reorganization

**Section 6.1.3. General Access Requirements**

A. Any development must:
   1. allow a vehicle, pedestrian, or bicycle to enter and exit the property to and from a street or an abutting site safely;
   2. limit vehicle access across a primary pedestrian, bicycle, or transit route wherever feasible;
   3. allow a vehicle to enter and exit any on-site parking area in a forward motion; and
   4. allow a vehicle to access any pad site from within the site.
   5. Ensure new curb cuts along the public right-of-way must be limited, to the extend practicable.

**Section 6.1.4. Driveway Access**

A. Driveway dimensions must satisfy the following table:
B. The applicable deciding body may require a wider driveway if there is a usual traffic, grade, or site condition.
C. If on-site parking is accessible from an improved alley with a right-of-w f at least 20 feet in width:
   1. access must be from the alley;
   2. and new curb cuts along the public right-of-way must be limited, to the extent practicable.

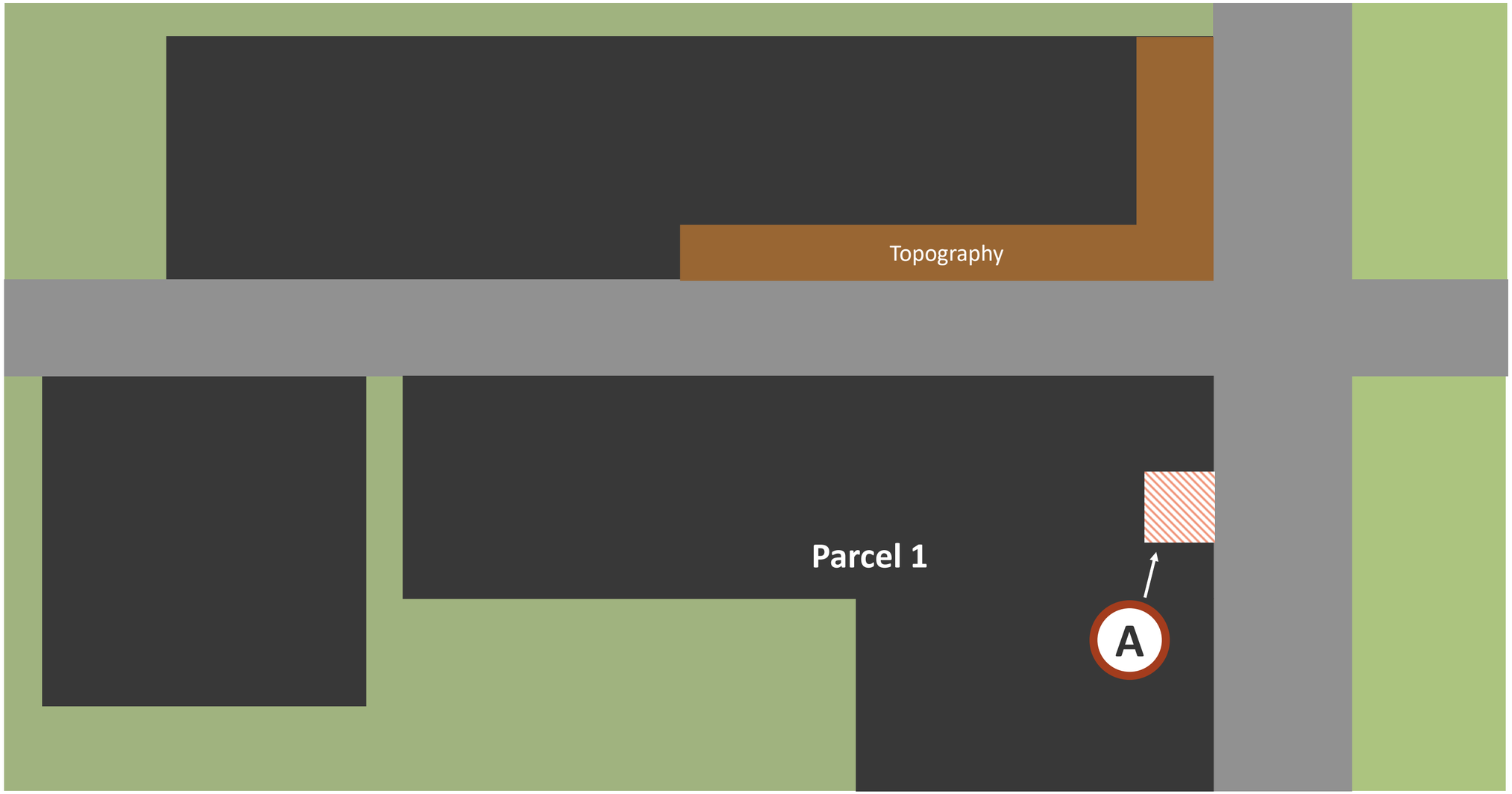
# Lessons Learned: Tools

- **Lesson T.1:** No formalized process during development review to discuss access management.
- **Lesson T.2:** Developing a consolidated, front-facing policy document would have to be an inter-agency effort to ensure collective buy-in. But strengthening the language in the code should take precedence.
- **Lesson T.3:** Internal Access management trainings can help raise awareness regarding where to pull key language to support recommendations.
- **Lesson T.4:** Master plans were identified as effective tools to achieve shared access/interparcel connections.

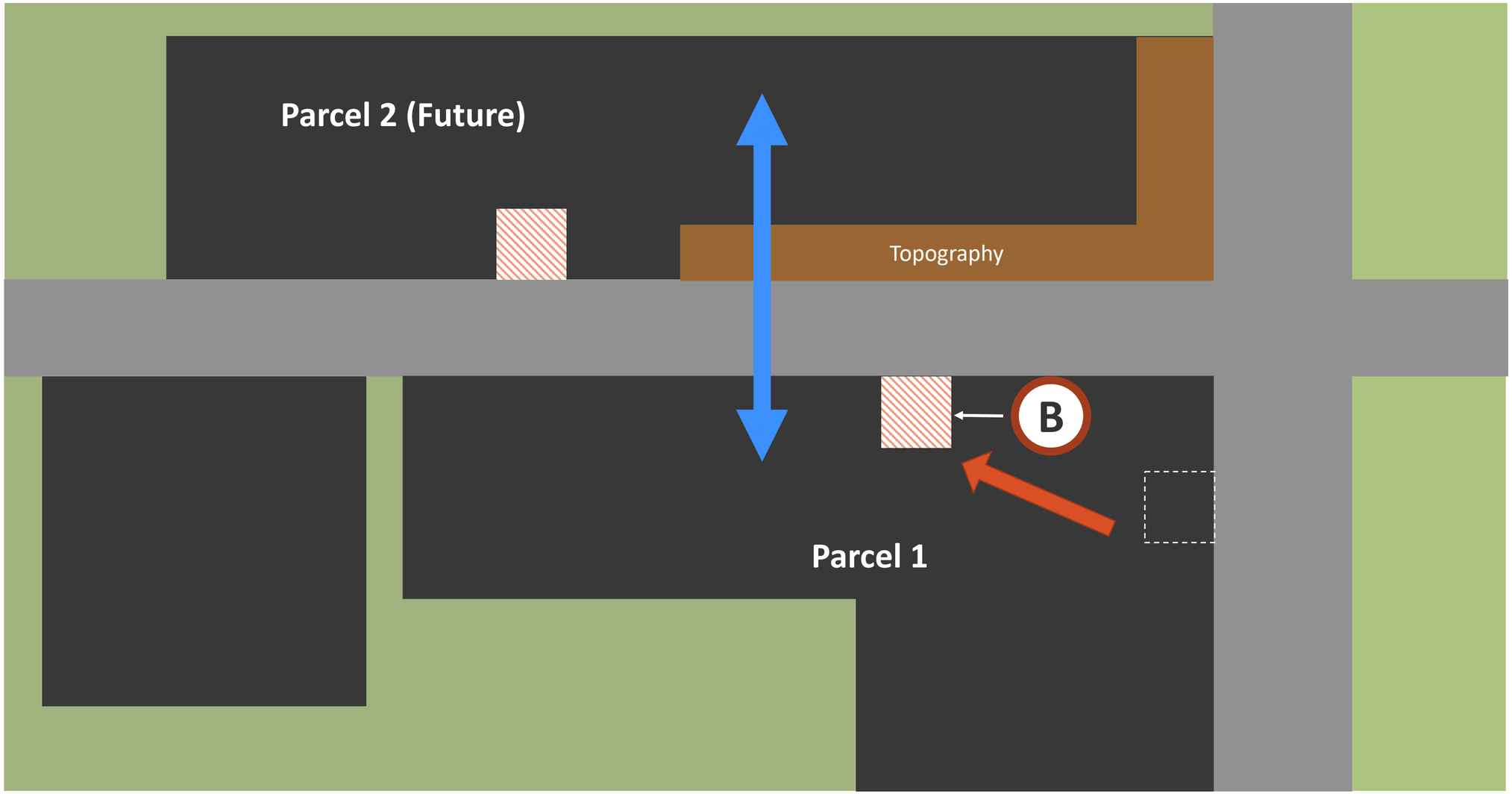
# Lessons Learned: Needs

- **Lesson N.1:** There is a need to proactively identify site limitations. Area teams cited competing factors like impervious surface caps sometimes limited options for access points.
- **Lesson N.2:** Access management needs a stronger and clearer tie to Vision Zero.

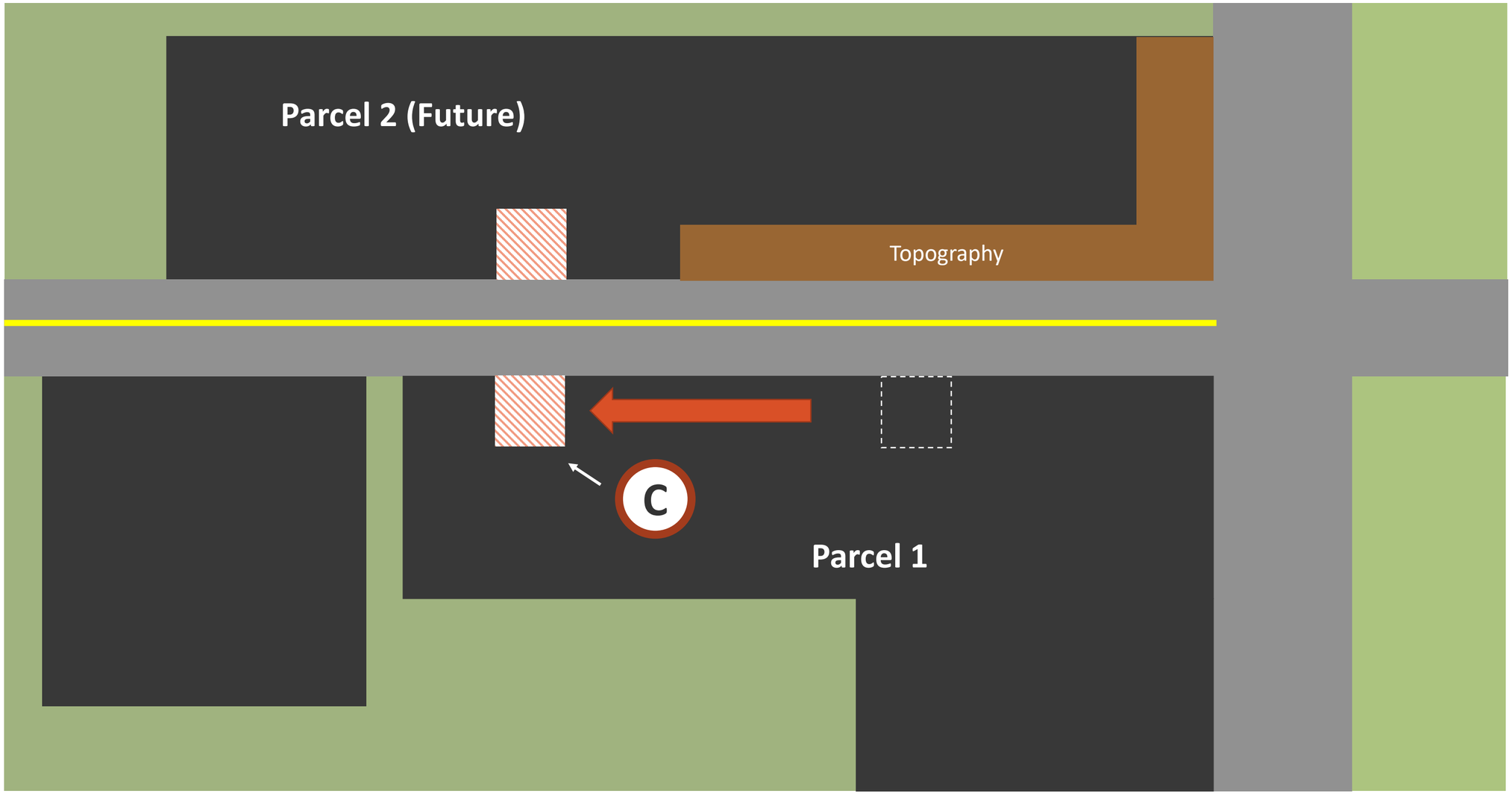
# Planning for Future Access & Corridor Based Decision-Making



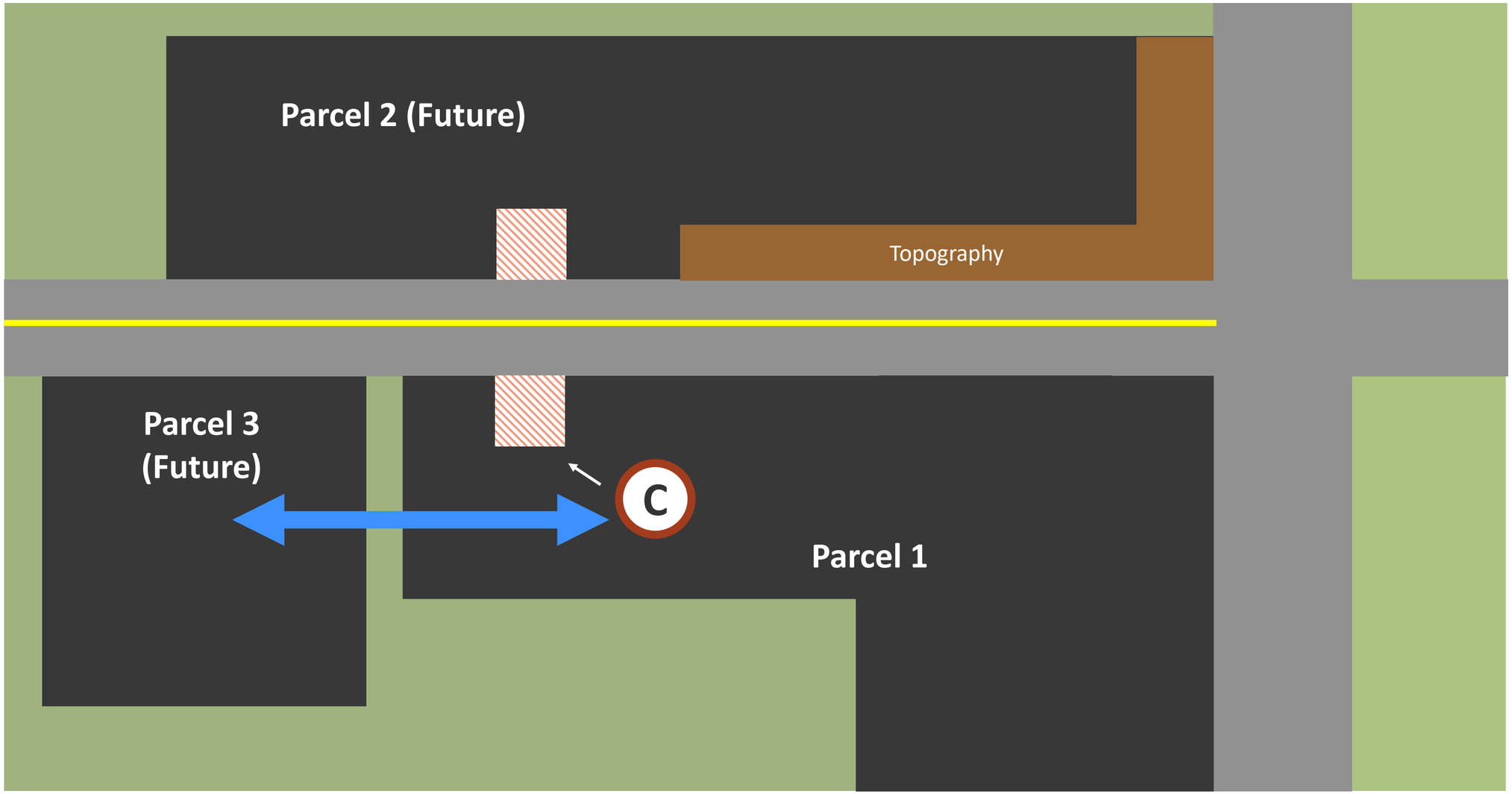
# Planning for Future Access & Corridor Based Decision-Making



# Planning for Future Access & Corridor Based Decision-Making



# Planning for Future Access & Corridor Based Decision-Making



# Recommendations

# Recommendations: Align with Vision Zero

## Recommended Actions

- **Action VZ.1:** Create and incorporate a Vision Zero Site Access Checklist (VZSAC) into the development review process.
- **Action VZ.2:** Codify VZSAC into Chapter 50.
- **Action VZ.3:** Leverage the Predictive Safety Analysis Tool as create data-backed policies to promote safer access on both new roads and redesign projects.
- **Action VZ.4:** Develop driveway policy that addresses sidewalk encroachment issues on higher volume roads.
- **Action VZ.5:** Develop multimodal policy considerations to manage access.

# Recommendation: Tool Enhancements - Changes to Code & Master Plan Elements, and CIP Prioritization

**Recommended Actions**

- **Action TE.1:** Review and strengthen language in Chapter 49, 50, 59 (zoning code) language and develop a guidelines document that helps consolidate and centralize polices.
- **Action TE.2:** Continue to leverage Master Plans as a tool to push for interparcel connections and shared access.
- **Action TE.3:** Explore models of incentive zoning applications for access management.
- **Action TE.4:** Leverage Community Equity Focus Areas as a tool.

# Questions?