PennDOT Access Management Model Ordinances Training

Trainers:

Chad Dixson, AICP, TPD
Angela Watson, PB

pennsylvania
DEPARTMENT OF TRANSPORTATION

Objective of Today

Assist Pennsylvania's municipalities and transportation professionals in better understanding the benefits of access management and guide them in the development and implementation of a program for their community that can be used as a tool for responsible growth.


Introduction to Access Management

What is Access Management?

The Transportation Research Board's (TRB) Access Management Manual defines access management as the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. It also involves roadway design applications, such as median treatments and auxiliary lanes, and the appropriate spacing of traffic signals.

Access Management Principles

- Provide specialized roadway system
- Limit direct access to major roadways
- Promote intersection hierarchy
- Signalization for through movements
- Preserve function areas of intersections

Access Management Principles (cont.)

- Limit the number of conflict points
- Separate conflict areas
- Remove turning vehicles from through traffic
- Use non traversable medians
- Provide supporting street network

Why Access Management?

- Increasing safety concerns
- Increasing congestion on transportation facilities
- Limited resources

Safety Benefits of Access Management

Reductions in Total Crashes:

- Two-way Left Turn Lane: 35%
- Non-traversable Median: 35%
- Add Left Turn Lane: 25-50%
- Add Right Turn Lane: 20%

Source: TRB, Access Management Manual, 2003

Operational Benefits of Access Management

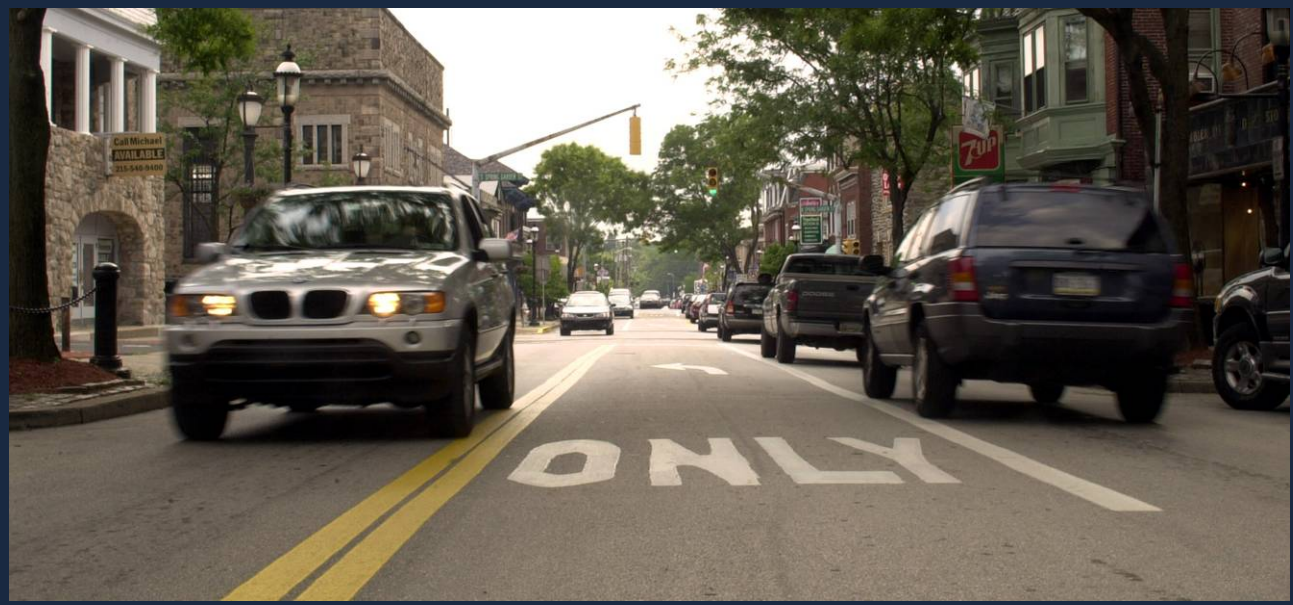
Increases in Capacity:

- Two-way Left Turn Lane: 30%
- Non-traversable Median: 30%
- Add Left Turn Lane: 25%

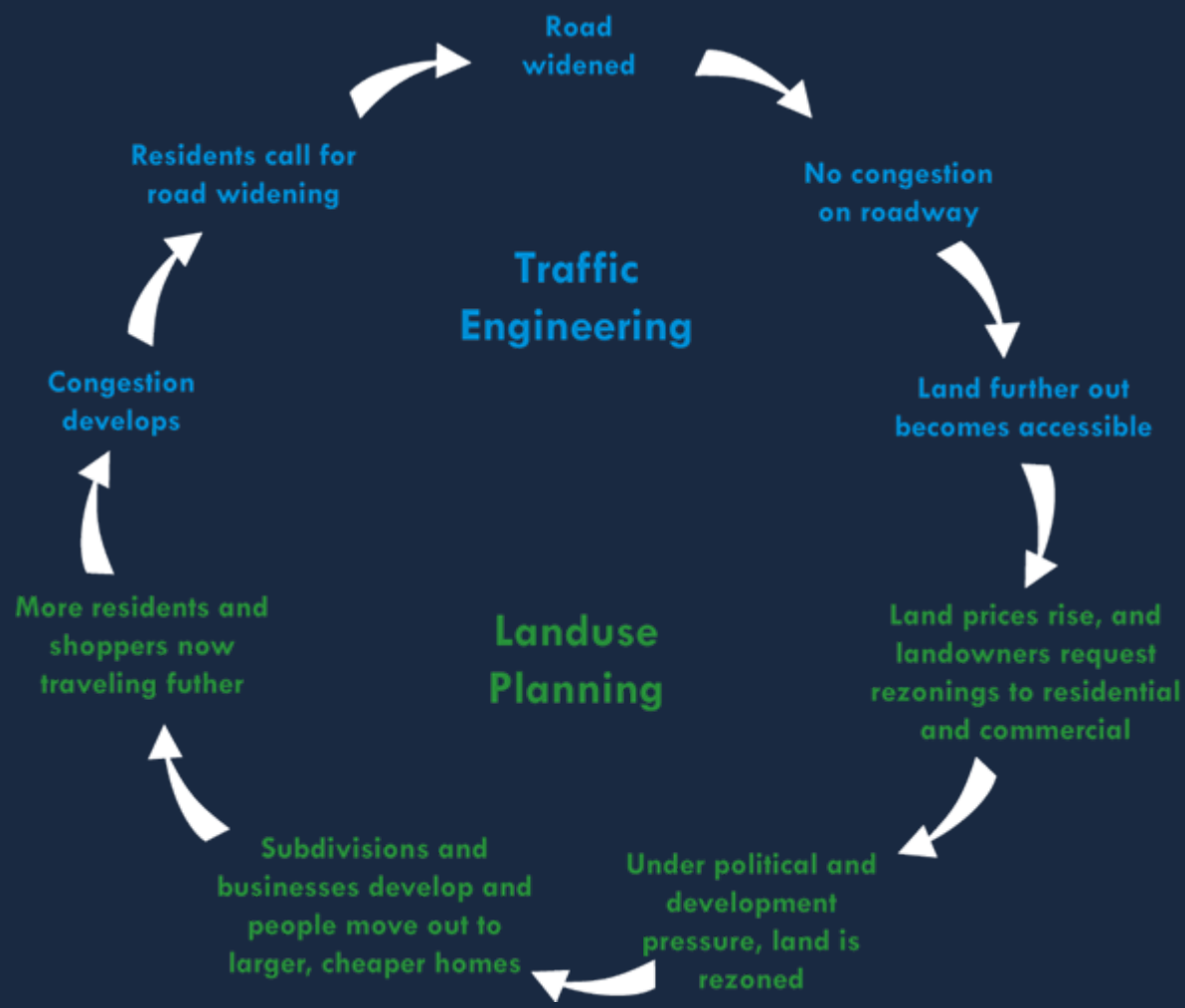
Source: TRB, Access Management Manual, 2003

Community Benefits

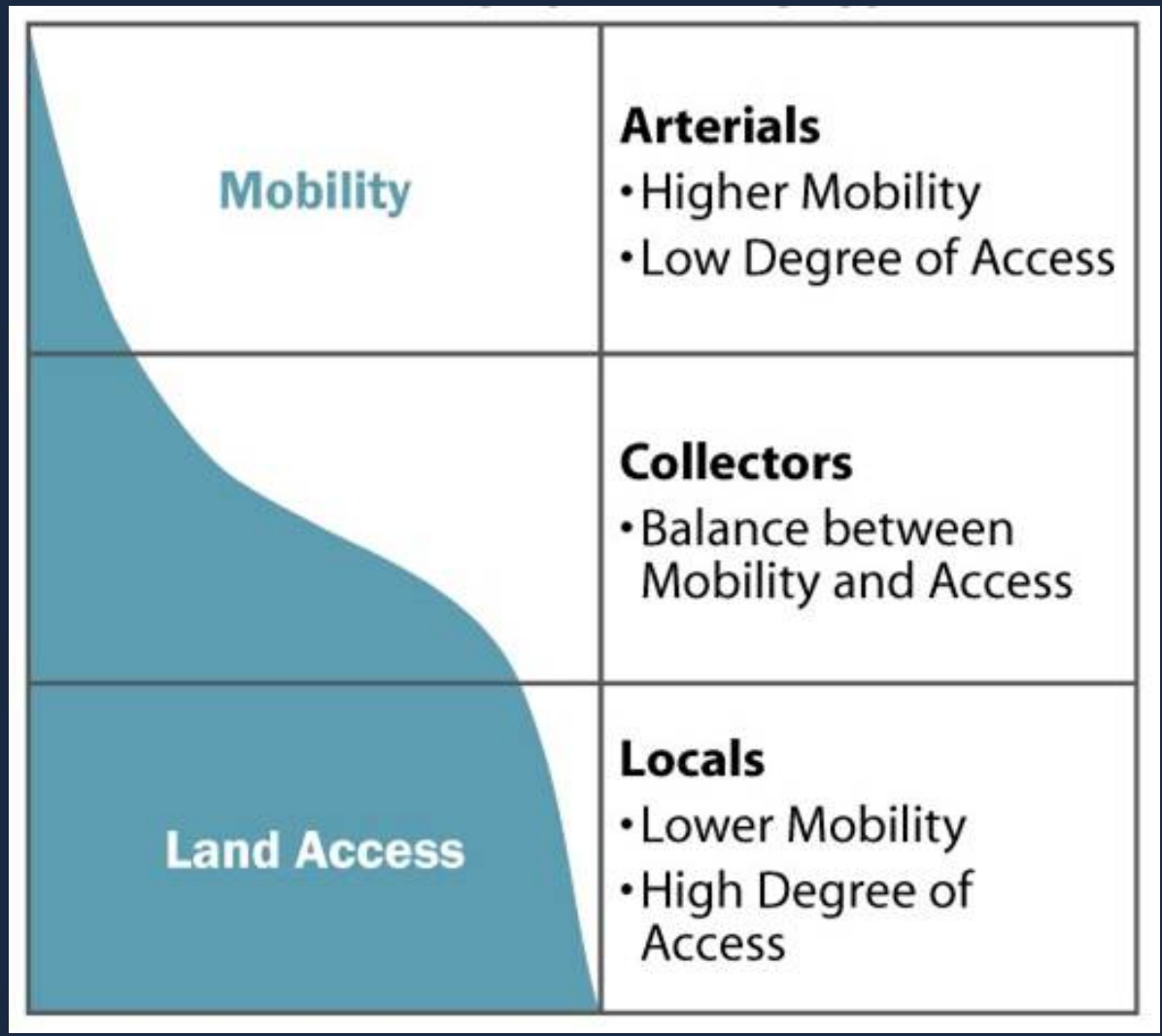
- Linking transportation and land use
- Balancing mobility and accessibility
- Improved mobility on local roads
- Improved safety for cyclists and pedestrians



Linking Transportation and Land Use



Balancing Mobility and Access



Legal Basis for Access Control

- Pennsylvania Code
- Municipalities Planning Code (MPC)
- Case Law
  - Ice v. Cross Roads Borough
  - Township of Middle Smithfield v. Kessler

Pennsylvania Code

Pennsylvania Code, Title 67, Chapter 441: "Access to and Occupancy of Highways by Driveways and Local Roads."

The purpose of Chapter 441 is to assure safe and reasonable access as well as safe and convenient passage of traffic on the State highway.

Municipalities Planning Code

Pennsylvania Municipalities Planning Code (MPC) is the enabling legislation for local planning providing:

- A uniform approach to planning and land use regulations; and
- An asset to communities that choose to join together and address common problems.

MPC Techniques

Some of the land use management tools that are available at the local level include:

- Subdivision design and control;
- Mixed use zoning;
- Restriction of commercial strip zoning;
- High density and cluster zoning;
- Transit oriented development;
- Official map;
- Overlay districts;
- Elimination or restriction of flag lots; and
- Promotion of bicycle and pedestrian design.

Challenges

- Local vs. regional perspectives
- Changing land uses
- Community and political opposition
- Addressing existing conditions

Model Ordinance Overview

Model Ordinances

Purpose

- Provide vehicular access to land development in a manner that preserves safety and efficiency.

Application

- Modify to fit your community
- Planning and Regulatory solutions
- Apply as appropriate
- Coordinate with PennDOT District Office

Model Ordinance Development

Create model access management regulations that recognize:

- Transportation/land use connection;
- Management concepts differences for various communities (e.g., urban vs. rural);
- Consistency between subdivision and land use ordinance (SLDO) and zoning ordinance;
- Differences in model application
  - County-level land use ordinances vs. local level
  - Communities with a SLDO but no zoning
  - Communities, which manage land use through single purpose ordinances rather than SLDO and zoning.

Model Ordinance Tiers

Tier I consists of access management techniques for parcels;

Tier II consists of access management techniques for roadways and

Tier III includes comprehensive traffic planning techniques.

Tier I Techniques

- Number of Driveways
- Corner Clearance
- Safe Sight Distance
- Driveway Channelization
- Joint and Cross Access
- Access to Out-parcels
- Driveway Design Elements

Number of Driveways

Number of Driveways

Advantages

- Reduce the number of driveways and the number of conflict points along a roadway.
- Help preserve the capacity of the roadway.
- Allows greater speeds for through traffic.

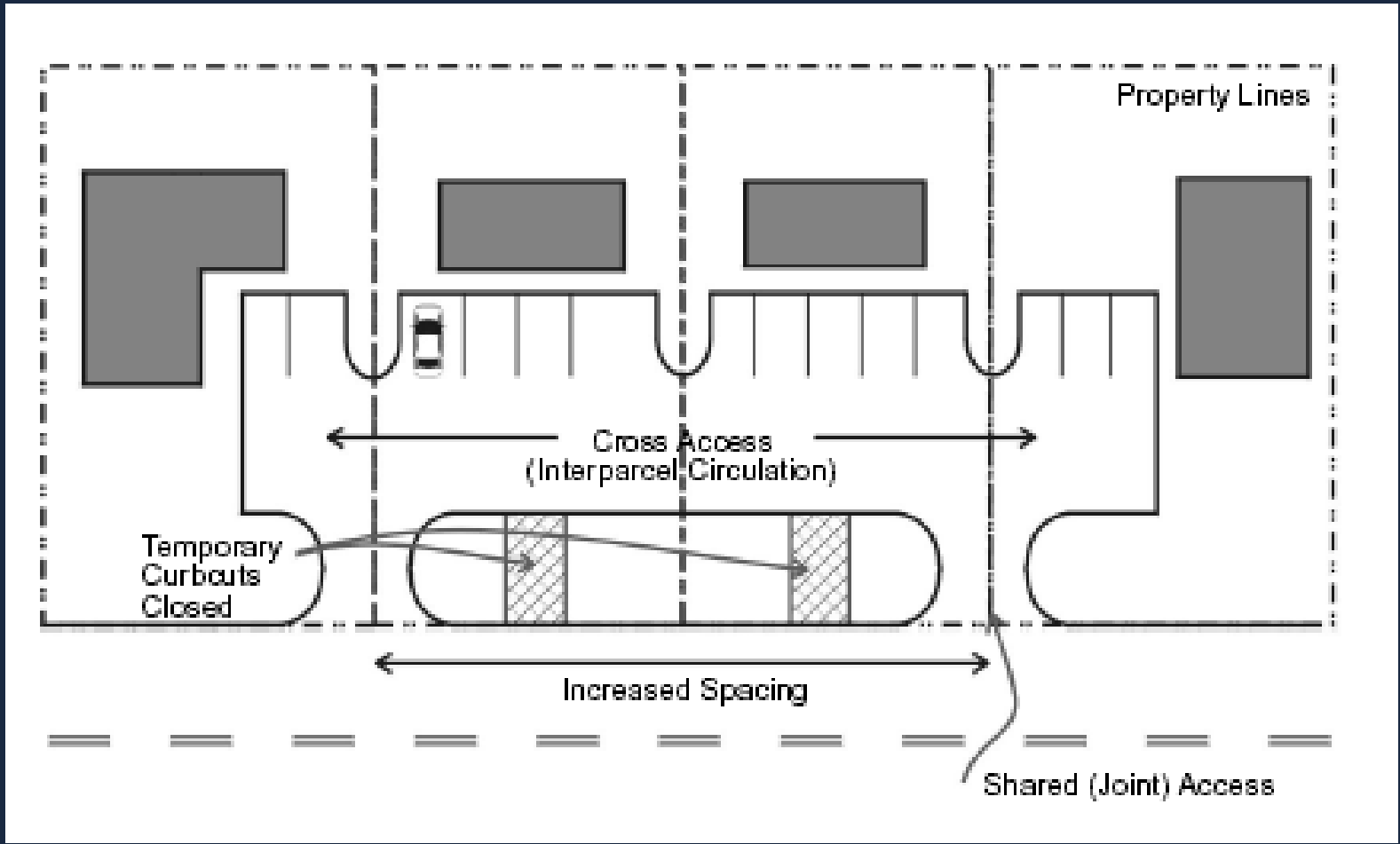
Number of Driveways

Obstacles

- Multiple driveways are often needed for large traffic volume generators.
- Safe access cannot be provided on the roadway with the lower functional classification.

Shared Driveways

Shared Driveways



Shared Driveways

Advantages

- Reduce the number of driveways and the number of conflict points along a roadway. They are a safe and more efficient way to provide access to two adjacent land uses. Proper standards help avoid liability claims for a municipality.

Shared Driveways

Obstacles

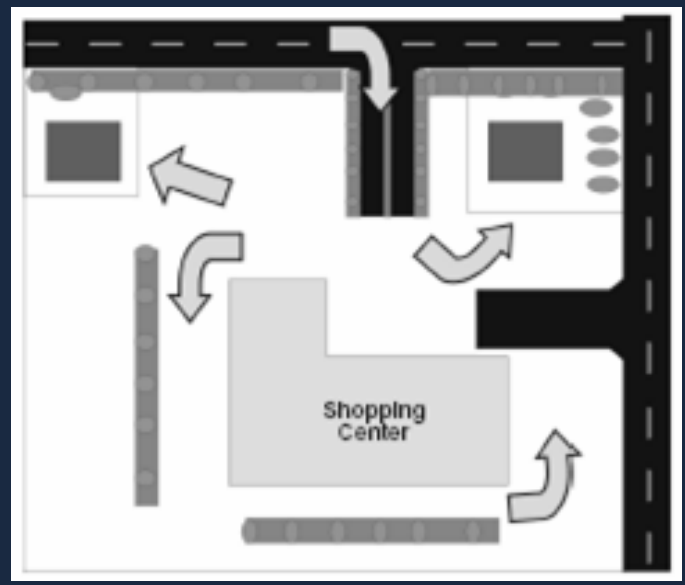
- Shared driveways are difficult to retrofit as they usually apply to new developments. Easements, deeds, and letters of agreement are needed to resolve maintenance issues.

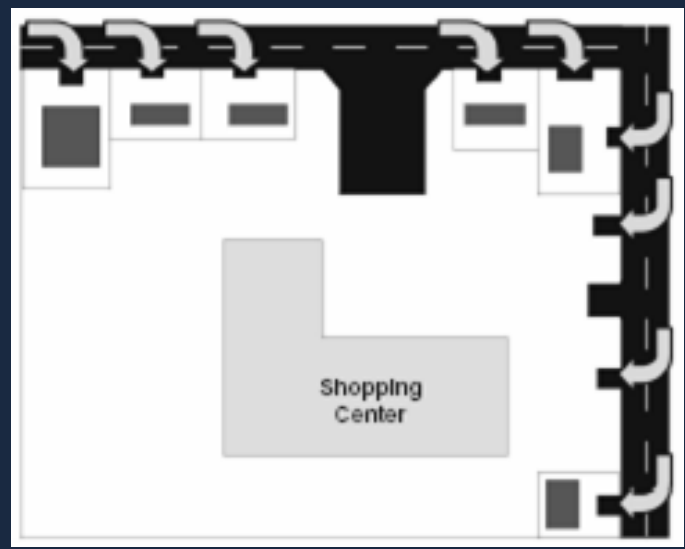
Internal Access to Out parcels

Internal Access to Out parcels

Internal Access to Outparcels

Internal access consists of an on-site circulation system that serves the out parcels, as well as the interior development. Requirements for internal access are most applicable to shopping centers and office parks.





Internal Access to Outparcels

Advantages

- Reduces the number of direct access points on major roadways in commercial and employment areas, thus reducing the number of conflict points.

Internal Access to Outparcels

Obstacles

- Property owners may avoid internal access requirements by individually selling out parcels.
- Some owners of out parcels may lobby for direct access to the roadway.

Tier II Techniques

- Deceleration/Right Turn Lanes
- Left Turn Lanes
- Acceleration Lanes
- Driveway Spacing
- Signalized Intersection Spacing
- Driveway Clearance from Interchange Ramps

Left Turn Lanes

Left Turn Lanes

Left Turn Lanes

Advantages

- Allows left turn movements to be removed from the through lanes, reducing the delay for the through movement.

Left Turn Lanes

Obstacles

- May require substantial right-of-way involve the reconstruction of a considerable length of roadway in order to provide the appropriate transitions and lane shift tapers.

Driveway Spacing

Driveway Spacing

Driveway spacing is the distance between two driveways. It creates a tangent distance between the end of the radius of one driveway and the beginning of the turning radius at the next driveway. Without such a requirement, a radius from one driveway could tie into the radius of an adjacent driveway using the other definitions.

Driveway Spacing

Advantages

- Standards reduce the number of access locations a motorist must monitor at one time.
- Adequate driveway spacing allows greater speeds for through traffic, reduces the number of potential conflict points and helps preserve the capacity of the roadway.

Driveway Spacing

Obstacles

- Driveway spacing is difficult to implement in areas that are already developed, such as in commercial areas or corridors.
- It is also difficult to implement this practice when there are no supporting land use regulations governing lot frontage or dimensions.

Signalized Intersection Spacing

Signalized Intersection Spacing

Advantages

- Prevents queues from one intersection backing into an adjacent intersection.
- Provides better traffic flow progression.
- Limiting the number of signals can reduce the number of locations where queues may block driveways.

Signalized Intersection Spacing

Obstacles

- Difficult to implement in established commercial areas.
- Mid-block high volume driveways may require signalization and often break uniform spacing standards.

Tier III Techniques

- Access Management Overlay District
- Official Map
- Two-way Left Turn Lanes
- Frontage/Service Roads
- Non-traversable Medians

Access Management Overlay District

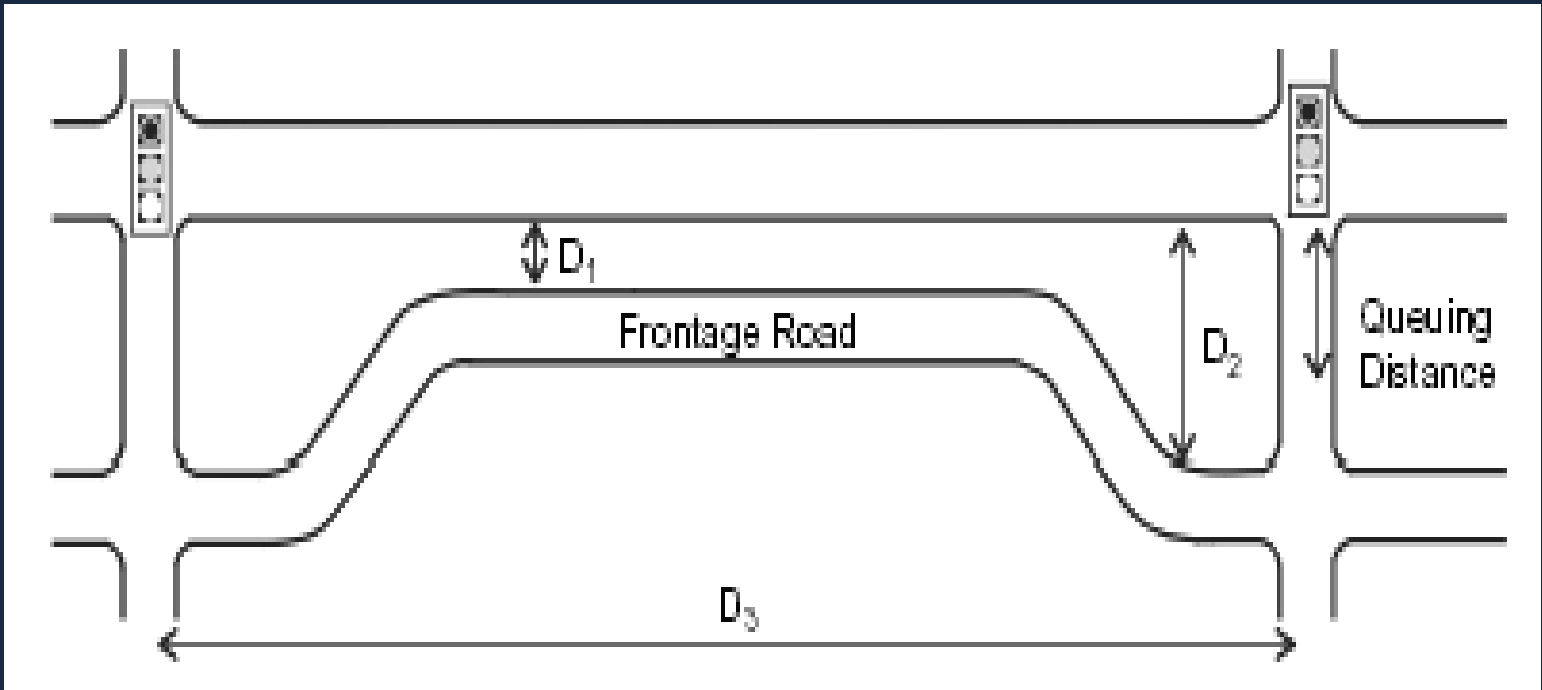
- Established for corridors, interchanges or intersections.
- Address concerns regarding safety, access and capacity problems.
- Land use requirements for large trip generators.
- Setbacks, signing and landscaping Planning study/implementation.

Official Map

- Existing and proposed public streets, including widening, extensions, openings or closings.
- Pedestrian facilities and easements.
- Railroad and transit rights-of-way and easements.

Frontage Roads

Frontage Roads



Frontage Roads

Advantages

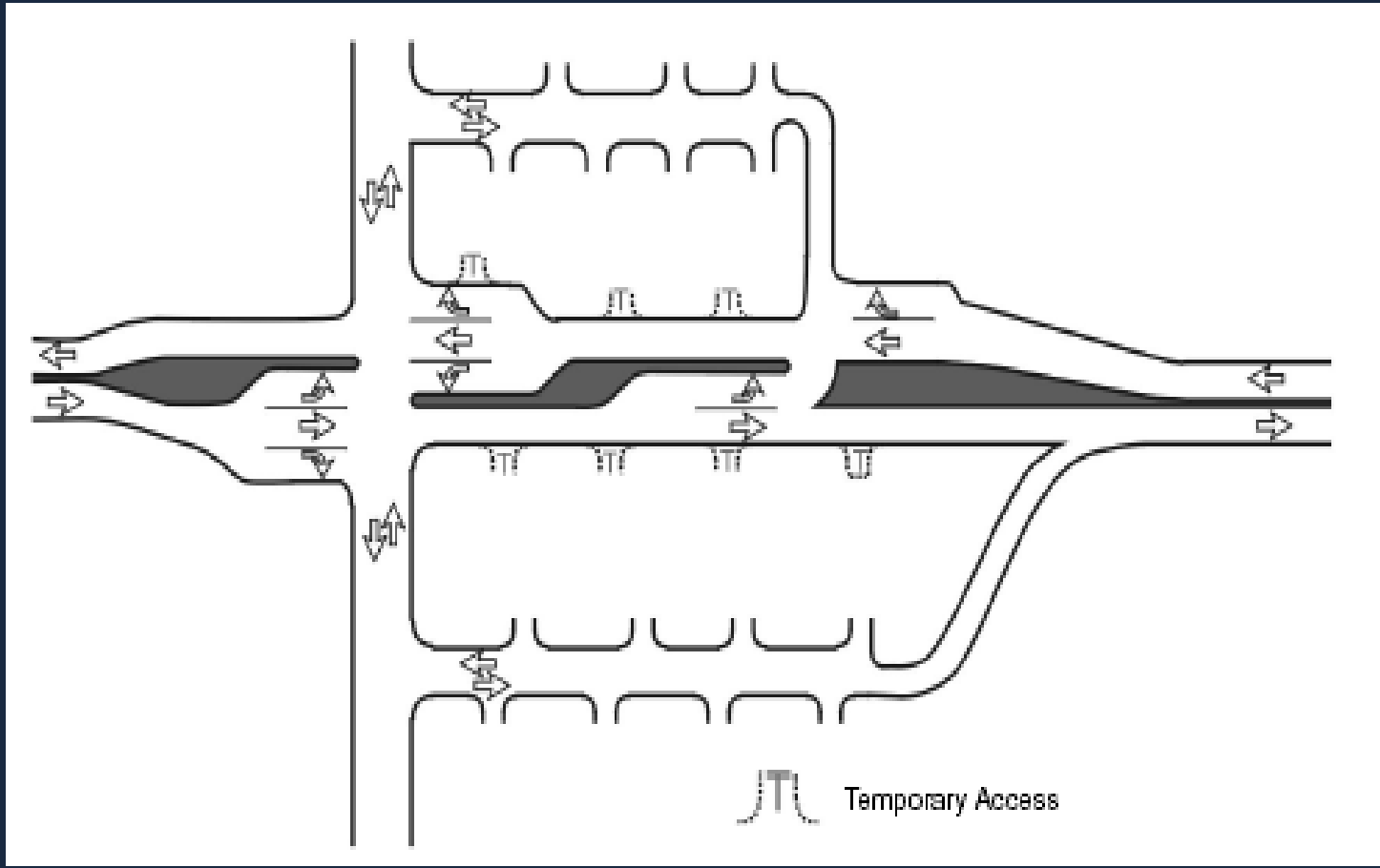
- Minimize the number of access points on an arterial.
- Separate local traffic from high speed through traffic.

Frontage Roads

Obstacles

- Short spacing can cause queues that extend through the intersections. They could result in severe congestion and high crash rates.
- Contribute to commercial strip development rather than compact activity centers.
- Very difficult to retrofit in fully developed areas.

Service Roads



Setbacks

Setbacks

Advantages

- Assist in preserving right-of-way for future widening for turn lanes or additional through lanes.

Setbacks

Obstacles

- Irregular lot dimensions may preclude meeting setback standards.

Pre-existing Access

Advantages

- Provides the municipality a tool to implement access management for existing driveways when there is a change in use, expansion of the existing use or modifications to the existing driveway are requested.

Pre-existing Access

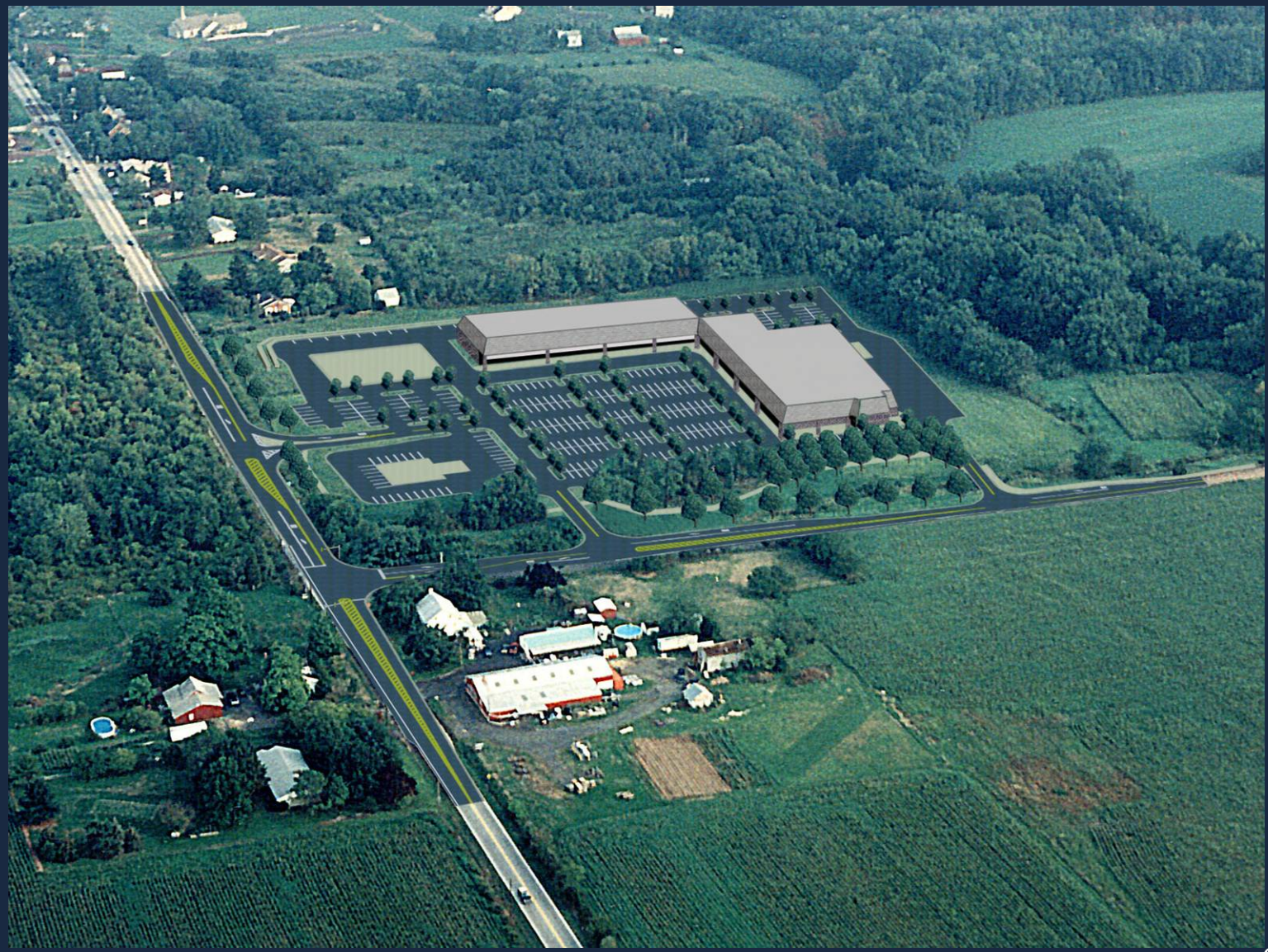
Obstacles

- Absent special conditions, the municipality cannot impose immediate and in some cases very expensive retrofit designs.
- Retrofit of existing access along a corridor can take many years to implement.

Before and After Examples

Examples - Before

Examples - After



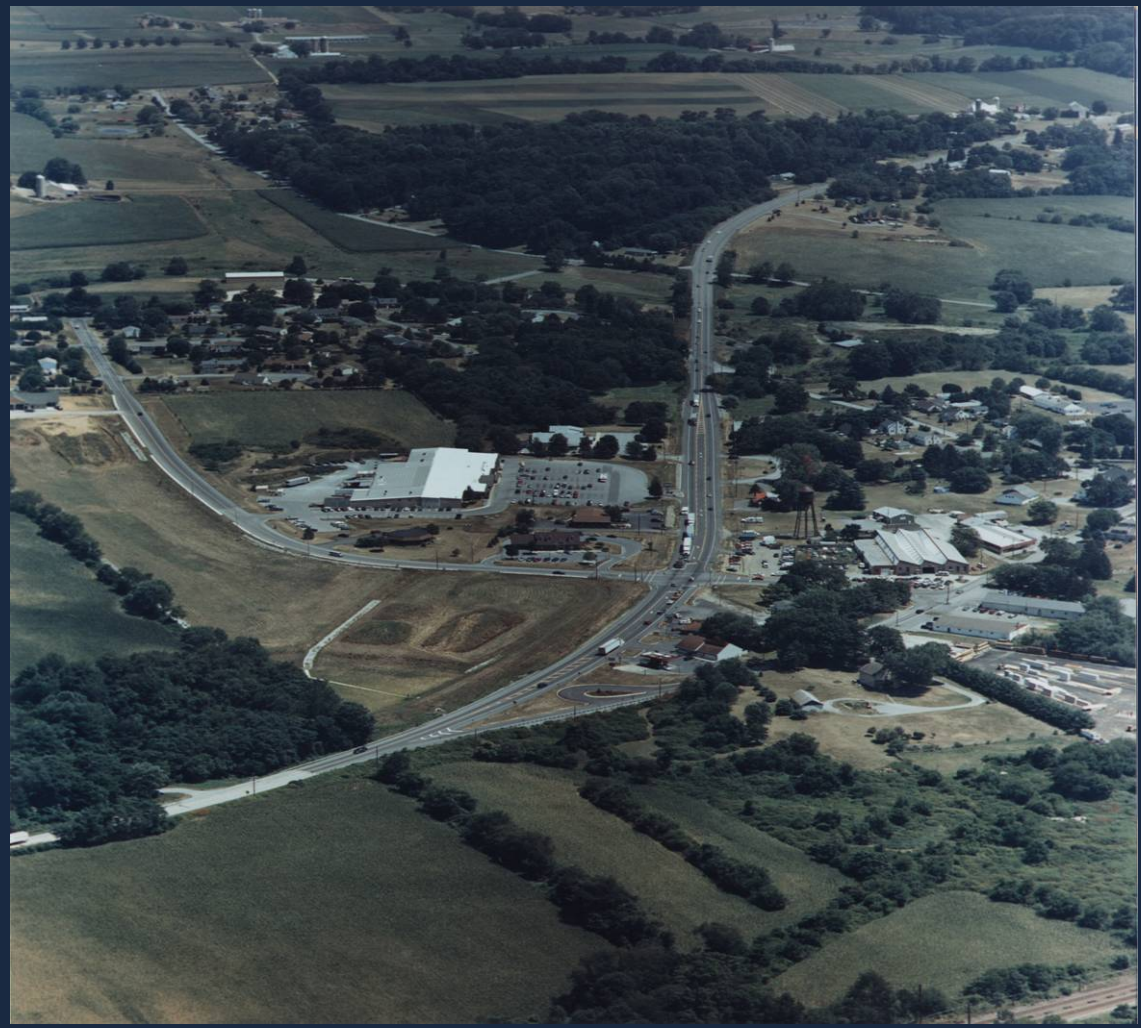
Examples - Before

Examples - After

Example - Before

Example - After

Example - Before



Example - After

Example - Before

Example - After

Coordination of HOP and Municipal Approval Process

- Developers commonly approach the completion of their municipal approval without ever having discussed their project with PennDOT.
- This is often precipitated by the misunderstanding that PennDOT requires municipal land development approval prior to considering the project.
- Approvals or agreements between developers and municipalities may unintentionally conflict with PennDOT regulations, standards or policies.
- In some instances, PennDOT is forced to insist upon changes that may require repeating the municipal land development approval process.

Improving Coordination of the Development Process

- Municipalities should encourage developers to seek PennDOT comments as early in the municipal review process as possible.
- Preliminary comments should be sought on critical items such as driveway location, number of driveways and appropriate signal locations.
- Municipalities should require that developers include all municipal review letters in their HOP submission to PennDOT.
- Municipalities should request from PennDOT the opportunity to review HOP's before the Department accepts the application for processing.
- Coordination between the municipality and PennDOT is needed throughout the process.

Communication and Coordination with PennDOT

Municipalities are strongly encouraged to continue communication and coordination with the PennDOT District office before, during and after the development of their program and the adoption of ordinance changes.

PennDOT Access Management Model Ordinances Training

Trainers:

Chad Dixson, AICP, TPD
Angela Watson, PB

pennsylvania
DEPARTMENT OF TRANSPORTATION