ADAPTING EFFECTIVE ACCESS MANAGEMENT ACROSS MULTIPLE JURISDICTIONS

Ohio Transportation Engineers Conference
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Presenters:
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- Bill Narducci, Union County Engineer’s Office
- Kimberly Burton, Burton Planning Services
Outline

• State-Wide Access Management
  • ODOT Policies, Priorities & Recent Studies

• County-Level Access Management
  • Union County Projects & Techniques

• Corridor-Level Access Management
  • US-42 Access Management Study
STATE-WIDE ACCESS MANAGEMENT:
ODOT POLICIES, PRIORITIES & RECENT STUDIES
Policies & Priorities

Access Management

• Improves public safety by reducing accidents
• Preserves the useful life of the highway system by maintaining highway capacity
• Facilitates the movement of people and goods by reducing travel delay and congestion
• Supports orderly economic development by providing appropriate access to property consistent with the operation and safety of the highway
• Minimizes transportation costs by making highways more efficient
• Encourages closer cooperation between state and local governments in land use and transportation decisions
Policies & Priorities


- Established access categories
- Established access spacing and allowable movements
- Provided guidance for traffic impact reports
- Turn lane warrants
- Created a Variance and Appeals process
Policies & Priorities

Application of Access Management

• Permits
  • New access
  • Change of use

• Projects
  • New or upgraded highways
  • Safety projects
  • Access management specific

• Corridor Access Management Studies
Corridor Access Management Studies

Benefits:
• Partnering between public agencies
• Consistency across multiple jurisdictions
• Documents plan for the long term
• Allows public input for the plan
• Establishes a framework for future design expectations
• Provides up front information to land owners and developers they can use for initial site planning
Corridor Access Management Studies

US 23 – Delaware County

• Signal/Access spacing defined
• Backage roads parallel to highway
• Public road access
• No direct outlot access

• Channelized access with restrictions
• Turn lanes
Corridor Access Management Studies

US 36 – Delaware County

Interchange Safety
Improvements:
• Concrete median
• Relocated signal
• Indirect left turns

• Flexible delineators
• Restricted movement driveways
• Backage roads
Corridor Access Management Studies

US 42 – Madison, Union & Delaware Counties

Important freight corridor
Increasing development pressure
- I-70 interchange area – truck stops
- Plain City
- US 33 interchange – Union County/Dublin
- Delaware

Congestion
Safety problems
COUNTY-LEVEL ACCESS MANAGEMENT:
UNION COUNTY PROJECTS & TECHNIQUES
Union County at a Glance

- 2015 Population – 55,877
  - 85,000 By 2035 (+52%)
- 3rd Fastest Growing County In Ohio
- County Seat - Marysville
- 14 townships
- < 3 miles From I-270 & 30 Minutes From Columbus
- Honda, Scotts & Nestle
- Strong Automotive/R&D Presence
- NW Innovation Corridor
Northwest 33 Innovation Corridor
Development Challenges

• Rural Community -> Rural Infrastructure
  • Upgrades Are Needed
  • Who Pays For Them (And How?)
• Funding Is Limited
  • Gas Tax Hasn’t Increased Since 1993
  • Sales Tax – Chicken And Egg
• Preserve Existing Infrastructure
  • Preventative Maintenance
  • Innovative Treatment Techniques
  • Access Management
Benefits of Access Management

- Safety
  - Reduces Conflicts
  - Consistent Speed
- Capacity
  - Reduces Congestion
  - Decreases Travel Times
- Economic
  - Preserves Existing Infrastructure And Public Investment
  - Attractive For Development
Union County Access Management

- Authorized By ORC 5552
- Adopted In 2004
- All County And Township Roads
- Administered By County Engineer
- Requirements Vary By Road Class
- “…Adopted for the purposes of promoting traffic safety and efficiency….while at the same time providing necessary and reasonable ingress and egress to properties…”

ACCESS MANAGEMENT REGULATIONS

Union County, Ohio
effective January 1, 2004
Problematic Access Management Example

- Small Parcels
- Wide Driveways
- Minimal Alternative Access Points
- Limited Access R/W
Problematic Access Management Example
Access Management w/ Development

- Handled As Part Of Our Development Process
  - Small Scale – Single Drive Or Drive Modification
  - Large Scale – Subdivision Process
- Things To Consider
  - Most Projects Develop On Small Scale (Parcel to Parcel)
  - Usually Little Consideration For Regional Impact
  - Multi-Jurisdictional Impacts
- Early Communication Is Key
  - Contact During Re-Zoning
  - Determine If Traffic Impact Study Is Required
  - Lay Out County/Region Plans
  - Get All Public Stakeholders Involved (Direct And Indirect)
  - Provides All Parties w/ Expectations
Access Management Gone Right

Jerome Village Development

• 1,500 Acres
• Mixed Use
  • Residential (Single/Multi-Family)
  • Commercial/Retail
  • Educational
  • Town Center
• Construction Of Multiple “Pods”
• All Infrastructure Installed By Developer Via Community Authority
Access Management Gone Right
Thoroughfare Planning

- Existing And Proposed Roadway Map
- Guideline For Development Of Roadway Network
  - Not A Promise To Build Roads (Need VS. Funding)
  - Shows General Alignment Of Future Roads And R/W Width
- Benefits
  - Promotes Development Of Safe, Effective, And Efficient Roads
  - Compatibility Between Road Network And Land Use
  - Establishes Clarity With Private Development
  - Ease Of Collaboration With Adjacent Public Agencies
  - Can Plan To Reserve Sufficient Space For R/W & Setbacks
2006 Union County Plan

- Several Large Developments During Generation Of Plan
- Has Remained A Draft
- Limited State Involvement
- Development Landscape Changed
US 42 Study – Next Steps

• Growing Interest In Corridor Development
• Coordinate With Existing Land Owners
• Currently Working On Update To Thoroughfare Plan
  • Incorporating Data And Suggestions From Study
  • Integrate Study Recommendations Into Capital Improvement Plan
• Continue To Work With Townships On Marrying Land Use With Infrastructure Upgrades
CORRIDOR-LEVEL ACCESS MANAGEMENT:
US-42 ACCESS MANAGEMENT STUDY
Study Background

Study Background:
  - US-42, 33 miles
  - Northwest Central Ohio
  - London to Delaware

Study Team Leads:
  - ODOT District 6 – Dirk Gross
  - Burton Planning Services – Kim Burton
Study Background

Jurisdictions Involved:

- ODOT District 6
- MORPC, LUC RPC, DCRPC
- Madison, Union & Delaware Counties
  - Cities: London, Marysville, Dublin & Delaware
  - Villages: West Jefferson & Plain City
  - Townships (Madison County): Canaan, Darby, Deer Creek & Monroe
  - Townships (Union County): Jerome & Mill Creek
  - Township (Delaware County): Concord

- State DOT, 3 MPOs, 3 Counties, 4 Cities, 2 Villages, 7 Townships
Study Background

Vision:
- Serve as a guide as development occurs & land uses change
- Use by state & local agencies, property owners & developers
Study Background

Goals:
- Improve public safety
- Accommodate local and regional traffic, multiple modes & functions
- Provide safe property access
- Minimize costs by optimizing existing capacity
- Promote economic development
- Target solutions by land use, existing & planned
Study Background

Access Management Principles Focus:

• Reduce conflict points to improve traffic flow and reduce crash potential

• Reducing number of driveways is the most direct way to reduce conflict points
  • Consolidation of 2 of more driveways
  • Relocation of driveway to service road with mainline access
  • Restrict left-turn movements at driveways

• Improve/enhance the local road network to encourage local trips to use local roads
  • Frontage/backage roads with property access
  • New/extension of public roads and connections

• Residential vs commercial access needs are different
Study Background

Scope:
1. Public & Stakeholder Involvement
2. Existing Conditions Evaluation
3. Transportation Analysis
4. Access Management Development & Recommendations
5. Additional Recommendations: Safety, Capacity, Geometrics, Multi-Modal, Zoning
6. Funding Options
7. Implementation
Public Engagement

Goals:

- Understand land use/zoning affect on access management
- Local government & developer collaboration
- General public input & support
- Diverse outreach techniques
Public Engagement

Plan:
- Project Website & Surveys
- Stakeholder Meetings
- Business/Developer Meetings
- Public Meeting
- Local Government Meetings
Public Engagement

Activities:

• 3 initial & 1 final stakeholder meeting
  • Over 40 local government representatives attended both rounds
• Public meeting attended by over 100 people
• Additional presentations of plan to 10 local governments
• Over 200 comments from website

Results:

• Input and local goals/needs were used to customize solutions
Corridor Analysis

Access

- **Inventory**
  - Access Point Type
    - Full/T Intersections
    - Un/Signalized
    - Driveways
    - Field/Utility Drives
  - Access Spacing
  - Access Dimensions

- **Issues Identification**
  - Skewed Intersection
  - Sight Distance
  - Spacing
  - Driveway width
  - Turning radius
  - Driveway proximity to intersection
Corridor Analysis

Access

- Density by Section
- Spacing & Width Criteria Evaluation

<table>
<thead>
<tr>
<th>ID</th>
<th>Section</th>
<th>AM Category</th>
<th>Access Type</th>
<th>Width (ft)</th>
<th>Next Access Distance (ft)</th>
<th>Side of Road</th>
<th>Driveway Permitted</th>
<th>Spacing Criteria Met</th>
<th>Width Guidelines Met</th>
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<td>NO</td>
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Corridor Analysis

Safety

- Corridor Evaluation
  - Heat maps to ID high crash locations
- 7 Intersections Selected for Crash Analyses
  1. CR-71
  2. SR-29
  3. US-33
  4. CR-11
  5. SR-745
  6. SR-257
  7. London Road
Corridor Analysis

Traffic & Signals
- 24-Hour Tube Counts (33)
- Intersection Turning Movement Counts (18)
- Planning-Level Peak Hour Volumes
- Traffic Operations (LOS & V/C Ratio)
- Signal Warrant Analyses (6/33)
Corridor Analysis

Geometrics
- Visibility
- Grades & Curves
- Skewed Intersections
- Speed Limits
- Major Utilities
Corridor Analysis

Limited Access Right-of-Way & Encroachments
Corridor Analysis

Land Use & Zoning
- Land Use Inventory
  - Existing & Future
- Growth Trends
- Zoning Codes Review
- Development Factors
  - Agriculture, Existing Development, Accessibility
- Opportunity Areas
  - I-70 Interchange
  - Plain City
  - US-33 Interchange
  - City of Delaware
- Preservation Areas
  - Agricultural Lands
  - Historic Districts/Areas
Corridor Analysis

Multi-Modal Options

- Existing & Planned Facilities
- Airports
- Transit
- Bicycle Facilities
- Pedestrian Facilities
Corridor Analysis

Environment & Community
• Ecological Resources
• Geological Resources
• Community Resources
• Hazardous Materials
• Noise & Air Quality
• Cultural Resources
• Population
• Employment & Economics
• Commute Patterns
• Environmental Justice
• Section 4(f) & Parks
Solutions Development

Solutions Development Process:
1. Identified functions of US-42 within the study area
2. Incorporated existing & future land use & development
3. Identified transition points
4. Divided into sections; assigned Access Management Categories based on function
5. Developed recommendations for each section using category standards
Solutions Development

Access Management Categories:

1. Category I
   - Interstate highway/freeway

2. Category II
   - Roadway of statewide importance (strategic or principal arterial)

3. Category III
   - Roadway of regional importance (other arterial)

4. Category IV
   - District Roadway (Collector)

5. Category V
   - Local Roadway
Solutions Development

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5. Category V
   - Local Roadway
## Solutions Development

### Sections & Category Assignments:

1. **Operational standards**
2. **Access spacing criteria**
3. **Driveway dimensions**
4. **Median types**

<table>
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<tr>
<th>Section</th>
<th>Name</th>
<th>Termini</th>
<th>Access Mgmt Category</th>
<th>Lanes &amp; Medians</th>
<th>Log Points</th>
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<td>London Section</td>
<td>Southern Terminus to CR-104</td>
<td>III</td>
<td>Rural Arterial</td>
<td>3 Lanes Two-Way Left Turn Lane</td>
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<td>US-40/I-70 Section</td>
<td>CR-104 to SR-29</td>
<td>II</td>
<td>Principal Arterial</td>
<td>3 Lanes Median Intersection Turn Lanes</td>
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<td>I-70 to Plain City Section</td>
<td>SR-29 to CR-30</td>
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</table>
Solutions Development

Potential Solutions:
1. Direct Access Control
2. Capacity & Safety Improvements
3. Land Use & Code Changes
4. Other Improvements

Potential solutions were identified and evaluated for feasibility of further consideration – some were dismissed.
Solutions Development

Direct Access Control
1. Limited-Access Right-of-Way
2. Restrict Left Turns
3. Install Medians
4. Install U-Turns
5. Convert access to right-in/right-out
6. Narrow/delineate access
7. Consolidate accesses
8. Close accesses
9. Install service roads
10. Restrict location/number of new accesses
Solutions Development

Capacity & Safety Improvements
1. Add a TWLTL
2. Construct a Roundabout
3. Add Travel Lanes
4. Add Auxiliary Lanes
5. Install Signals
6. Correct Sight-Distance Issues
7. Reduce Speed Limits
Solutions Development

Land-Use & Code Changes
1. Develop Local Street Network
2. Rezone Parcel to Lower Intensity Use
3. Limit/Share Parcel Access
4. Require Parcel Access to Meeting Spacing Requirements
5. Require Parcels to Access Non-Mainline Roadway
6. Require Backage/Service Road Easements
7. Require Side/Rear-Loading
8. Reduce Building Setback Requirements
Solutions Development

Other Improvements

1. Center Passing Lanes
2. “Slow Shoulders”
3. Sidewalks
4. Pedestrian-Actuated Crossings
5. Bicycle Facilities
6. Wildlife Crossings
Recommendations & Implementation

Recommendations

1. Evaluated Potential Solutions By Section
   - Interchanges
   - Medians
   - Intersections
   - Driveways & Service Roads
   - Future Development
   - Section Transition Points

2. Additional Safety, Capacity, Multi-Modal & Zoning Improvements

3. Sample Typical Sections by Category
Recommendations & Implementation
Recommendations & Implementation
Recommendations & Implementation
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Recommendations & Implementation
SAMPLE TYPICAL SECTIONS

Category II
3-Lane, Median & Shoulders

Category III
2-Lane, Shoulders

Category IV
3-Lane, TWLTL, Bike Lanes & Sidewalks
Proposed 3-Lane Section with Shared-Use Path

Proposed 2-Lane Section with “Slow Shoulders”
Recommendations & Implementation

Implementation

• Identified Potential Funding Sources
• Grouped Recommendations
  • Short Term
    • Lower-cost, Transitional, High-Priority
  • Medium Term
    • Moderate cost, Needed soon but not immediate
  • Long Term
    • Highest cost, Full build-out, Not needed immediately, Ideal conditions/funding, Uncertain
Key Takeaways

1. Access management is important for efficient roadway operation & cost effective facility investments
2. Plan for now; plan for the future
3. Stakeholder collaboration, public input throughout
4. Access management is not just a design issue
5. Zoning & land use development are key to successful access management
6. Effective implementation is a public (state & local) & private sector effort
7. Customize solutions for each sub-area in each jurisdiction & account for any unique functions
QUESTIONS?