Indiana Statewide Access Management Study

2007 Road School
Dan Buck, INDOT
Jerry Gluck, Urbitran

Study Team

- INDOT: Steve Smith & Dan Buck
- Advisory Committee
  - INDOT District/INDOT Central Office
  - Transportation Stakeholders—MPOs, IPA, Ind. Assoc. of County Eng. FHWA
- Consultant Team:
  - Urbitran: Jerry Gluck & Matt Lorenz
  - Bernardin Lochmueller: David Ripple
  - Special Advisors
Overview of Presentation

- Overview of Access Management
- Report on INDOT Study
- Review of Study Products
- Elements of Implementation Plan

What is Access Management?
What happens if you don’t manage access?

Access Management is...

- A process that provides or manages access to land development while preserving the safety, capacity and efficiency of the roadway system.
Access Management is...

- The control and regulation of the spacing and design of:
  - Driveways
  - Medians
  - Median openings
  - Traffic signals
  - Freeway interchanges

The Principles of Access Management

- Limit the number of conflict points.
- Separate the conflict points.
- Remove turning vehicles and queues from through movements.
36 CONFLICTS

Conflicts

- 1 Major
- 6 Minor

7 CONFLICTS

Right-turn in
Right-turn out
Left-turn in (1 direction)
What are the benefits of Access Management?

Benefits of Access Management

- System preservation
- Economic
- Environmental
- Roadway safety
- Traffic operations
- Aesthetic
Economic Benefits

<table>
<thead>
<tr>
<th>Reduction in Average Speed</th>
<th>Market Area Relative to Previous Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>10%</td>
<td>81%</td>
</tr>
<tr>
<td>20%</td>
<td>65%</td>
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<tr>
<td>30%</td>
<td>45%</td>
</tr>
<tr>
<td>40%</td>
<td>36%</td>
</tr>
<tr>
<td>50%</td>
<td>25%</td>
</tr>
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</table>

Safety Benefits

Crash Rates in Urban & Suburban Areas
Traffic Operations Benefits: Increased Capacity

A typical four-lane arterial road with good access management can handle nearly 10,000 more vehicles per day.

Source: Florida Department of Transportation

Traffic Operations Benefits: Reduced Delay

Good access management allows traffic to move closer to posted speed limits, thereby reducing delay.

<table>
<thead>
<tr>
<th>Streets</th>
<th>Regular Arterials</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLFAX</td>
<td>23 mph</td>
</tr>
<tr>
<td>ALAMEDA</td>
<td>28 mph</td>
</tr>
<tr>
<td>FEDERAL BLVD</td>
<td>25 mph</td>
</tr>
<tr>
<td>WADSWORTH</td>
<td>25 mph</td>
</tr>
<tr>
<td>HAVANA</td>
<td>30 mph</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highly Access Managed Arterials</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARKER</td>
</tr>
<tr>
<td>ARAPAHOE</td>
</tr>
</tbody>
</table>

### Traffic Operations Benefits: Signal Spacing

<table>
<thead>
<tr>
<th>Signals Per Mile</th>
<th>Percent Increase in Travel Time (compared to 2 signals per mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>6</td>
<td>29</td>
</tr>
<tr>
<td>7</td>
<td>34</td>
</tr>
<tr>
<td>8</td>
<td>39</td>
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</tbody>
</table>

### Study Tasks

- **Task 1** – Establish Study Advisory Committee
- **Task 2** – Review Legislation and Rules
- **Task 3** – Review Current Practices
- **Tasks 4 and 5** – Develop and Refine Access Classification System
- **Task 6** – Identify Methods for Implementation
- **Task 7** – Develop Implementation Plan
- **Task 8** – Pilot Project: US-31 Corridor Preservation
- **Task 9** – Produce Access Management Guide
- **Task 10** – Conduct Training Courses
INDOT Access Management Guide

- Final Product distributed to Study Advisory Committee and to be posted on INDOT Web
- Intended as a day-to-day reference manual for INDOT staff
- Intended for use in conjunction with existing documents:
  - Driveway Permit Manual
  - Applicant’s Guide to Traffic Impact Studies
  - Roadway Design Manual

Elements of the Implementation Plan

- Adopt and Implement an Access Classification System
- Implement Access Spacing and Design Criteria
- Improve Local Coordination
- Training and Education Efforts
- Consider Retrofit Techniques
- Other Actions
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Movement / Access Balance

- INTERSTATE FREEWAYS
- INTRASTATE ARTERIALS
- OTHER ARTERIALS
- COLLECTORS
- ACCESS ROADS
- LOCAL ROADS

THRU TRAFFIC MOVEMENT

ACCESS TO PROPERTY
Considerations for Defining Access Categories

- Roadway functional classification
  - Role of the roadway in the transportation system
  - Arterial, collector, etc.
- Roadway design characteristics
  - Geometric features (median)
  - Speed
- Degree of urbanization
  - Development intensity
  - Intersection frequency

Draft Access Classification System for INDOT

- Based on experience from throughout the country and tailored to Indiana’s needs
- Incorporates features from:
  - INDOT 25-Year Plan – Mobility Corridor Concept
  - INDOT Roadway Design Manual – Areas Types
  - INDOT Driveway Permit Manual – Driveway Types
### INDOT Mobility Corridor Concept

- Statewide Mobility Corridors
- Regional Corridors
- Sub-Regional Corridors

### Overview of INDOT Access Classification System

<table>
<thead>
<tr>
<th>Access Category</th>
<th>Type</th>
<th>Cross-Section</th>
<th>At-grade Intersections</th>
<th>Commercial Major Driveways</th>
<th>Other Driveways</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate Highways and Freeways</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 1: Statewide Mobility Corridors</td>
<td>A</td>
<td>Multi-Lane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>2-lane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 2: Regional Corridors</td>
<td>A</td>
<td>Multi-lane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>2-lane</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tier 3: Sub-Regional Corridors</td>
<td>A</td>
<td>Multi-lane</td>
<td></td>
<td>Special Transportation Areas (STAs)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>2-lane</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Access Spacing and Design Criteria

- Type of Access permitted (public intersections only or driveways by classification)
- Allowable movements (full, RIRO)
- Traffic Control Devices Permitted and Traffic Signal Spacing
- Spacing Criteria for Public Intersections and Driveways
Provisions in Driveway Permit Manual: Number of Driveways

- Number of driveways should be a minimum to adequately serve the needs of the abutting property.
- Access should be limited to a single driveway per property unless frontage exceeds 400 feet.
- Commercial developments on the corner of a state arterial and state collector should be restricted to access on the collector only.

Refine Access Spacing and Design Criteria

- Apply spacing guidelines for unsignalized intersections:

<table>
<thead>
<tr>
<th>Highway Speed (mph)</th>
<th>Minimum Spacing (feet)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>INDOT Permit Manual</td>
<td>Revised AASHTO*</td>
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<tr>
<td>30</td>
<td>185</td>
<td>200</td>
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<tr>
<td>35</td>
<td>245</td>
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<td>360</td>
</tr>
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<td>50</td>
<td>395</td>
<td>425</td>
</tr>
<tr>
<td>55</td>
<td>435</td>
<td>495</td>
</tr>
</tbody>
</table>

*Based on Stopping Sight Distance (2004)
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Improve Local Coordination

- Rezoning actions and land use approvals
- Residential subdivisions
- Commercial developments
- Site plan review
- Other intergovernmental coordination
Model Ordinances

- Land use actions generally beyond the direct control of INDOT
- Ordinance provides guidance to local governments
- Tool to help implement access management on the local level
- Indiana Adaptations of KYTC and MDOT Model Ordinances

Improved Subdivision Regulations

- Larger Minimum Frontages
  - 440’ minimum
- Alternate Access
  - property lines
Elements of the Implementation Plan

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Training/Education

- Training for INDOT staff
- Educational efforts for other stakeholders
Educational Brochures and Pamphlets

- Do You Need Access to a State Highway?
- INDOT and Your Community: Partners in Access Management
  - What is Access Management?
  - Why do it? Benefits?
  - “10 Ways to Manage Access”
  - Web-links
  - Contact information for INDOT District Offices

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Prepare Access Management Plans

- Corridor-specific plans focused on high-priority problem areas (existing or potential future)
- Could be prepared for both developing areas and retrofit situations, although expected outcomes would be different
- Partnership between INDOT and locals
Purchase Access Rights

- The purchase of access rights helps INDOT manage access
- Focus on high-priority corridors
- INDOT has had projects to purchase rights in the past

Prioritize Projects with Access Management Benefits

- Consider access management benefits as a factor when prioritizing projects
- Similar to IPOC Scoring Criteria
- Reconstruction and Safety & Mobility Projects
- Prioritization could be both from funding or timing perspective
INDOT Recommended Implementation Process

- Define internal organizational structure, and establish roles and responsibilities
- Phase 2 SPR Study for Corridor Level Access Management Plans and implementation support
- Form Implementation Team at INDOT
- Form Access Management Task Force

For more information...

Access management website:  
http://www.accessmanagement.gov/

Indiana Access Management Study:  
http://www.in.gov/dot/div/planning/iams/

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