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

Right-turn in
Right-turn out
Left-turn in (1 direction)

1 Major
6 Minor
7 CONFLICTS
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>91%</td>
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<tr>
<td>20%</td>
<td>65%</td>
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<td>30%</td>
<td>45%</td>
</tr>
<tr>
<td>40%</td>
<td>36%</td>
</tr>
<tr>
<td>50%</td>
<td>25%</td>
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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.

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>
<th>Highly Access Managed Arterials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colfax</td>
<td>23 mph</td>
<td></td>
</tr>
<tr>
<td>Alameda</td>
<td>28 mph</td>
<td></td>
</tr>
<tr>
<td>Federal Blvd</td>
<td>25 mph</td>
<td></td>
</tr>
<tr>
<td>Wadsworth</td>
<td>25 mph</td>
<td></td>
</tr>
<tr>
<td>Havana</td>
<td>30 mph</td>
<td></td>
</tr>
<tr>
<td>Parker</td>
<td>48 mph</td>
<td></td>
</tr>
<tr>
<td>Arapahoe</td>
<td>46 mph</td>
<td></td>
</tr>
</tbody>
</table>

Source: Florida Department of Transportation

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

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>
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<td></td>
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<tr>
<td></td>
<td>B</td>
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<tr>
<td>Tier 3: Sub-Regional Corridors</td>
<td>A</td>
<td>Multi-lane</td>
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</tr>
<tr>
<td></td>
<td>B</td>
<td>2-lane</td>
<td></td>
<td></td>
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<tr>
<td>Special Transportation Areas (STAs)</td>
<td></td>
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</table>
Elements of the Implementation Plan

- Adopt and Implement an Access Classification System
- **Implement Access Spacing and Design Criteria**
- Improve Local Coordination
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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>INDOT Permit Manual</th>
<th>Revised AASHTO*</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>185</td>
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<td>200</td>
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<td>395</td>
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<td>425</td>
</tr>
<tr>
<td>55</td>
<td>435</td>
<td></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
- Alternate Access
- 440' minimum
- property lines

40° 80° 60° 80° 80° 80° 80°
Elements of the Implementation Plan

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- Other Actions

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/

Stephen C. Smith
Manager, Long-Range Transportation Planning Section
Office of Urban and Corridor Planning
Phone: 317-232-5646
Email: ssmith@indot.in.gov