Traffic Operations and Access Management in Springfield, Missouri

A Corridor Approach
This Presentation

- About Springfield
- Access Management Study
- Projects and Accomplishments
- Applications and Lessons
Springfield, Missouri

- City population - 150,000
- Urban area population - 220,000
- 900 miles of streets - 30 miles of freeway, 150 miles of arterial, 100 miles of collector
- Retail and medical service area with 80-mile radius
- Diverse employment centered on agriculture and transportation
- Seven college/university campuses with over 35,000 students
Current access conditions
Study Outline

• Public Involvement Process
• Pre-Existing Conditions
• Traffic Data
• Access Management Guide
• Proposed Improvements
Public Involvement Process

• A public open-house meeting held in each corridor to introduce access management principles
• A public open-house meeting held in each corridor to discuss proposed improvements
• A public meeting held or informational material to distributed to stake-holders prior to finalizing any project
Pre-Existing Conditions

- **Glenstone Avenue**
  - 4-lane street with continuous two-way left turn lane
  - Commercial development on both sides, much of which is small lots with multiple accesses typical of development between 1940 and 1960
  - 35 accesses per mile per side

- **Kansas Expressway**
  - 4-lane divided arterial street
  - Mixed development that generally takes access to cross streets
  - 6 accesses per mile per side
Traffic Data

• Glenstone Avenue
  – Traffic volume: 35,000 vehicles per day
  – Crash experience: 120 crashes per mile (60 at intersections and 60 mid-block)

• Kansas Expressway
  – Traffic volume: 31,000 vehicles per day
  – Crash experience: 70 crashes per mile (60 at intersections and 10 mid-block)
Access Management Guide

• Access Management Defined
  – Principles and techniques for managing the location, design, and type of access to roadways from adjacent property.

• Benefits
  – Improves traffic safety
  – Results in shorter travel times
  – Preserves the capacity of roadways
  – Enhances the value of private land development
  – Improves aesthetics of communities

• Techniques
Access Management Techniques

- Restrict number of driveways per lot
- Encourage shared driveways and adequate driveway spacing
- Locate driveways away from intersections (corner clearance)
- Locate driveways and intersections away from functional areas of interchanges and other intersections
- Provide adequate sight distance
- Provide acceptable geometry
More Access Management Techniques

- Provide access to and from cross streets and parallel streets
- Provide appropriate signalized intersection spacing
- Provide raised medians
- Provide well-designed median openings
- Provide left turn lanes
- Provide right turn lanes
Proposed General Actions

- Incorporate access management principles in the development process
  - Modify land development regulations to incorporate access management principles
  - Develop and adopt access management ordinance
  - Incorporate access management principles in street design standards
- Improve driveway compliance
- Incorporate access management principles in public improvement projects throughout metro area
Access Management Principles
Incorporated in Improvement Projects

- Construct bus turnouts
- Reduce number of non-compliant driveways
- Construct right turn lanes at intersections
- Construct tapered driveways on arterial streets
- Remove unwarranted traffic signals
- Construct parallel and connecting access roads
- Reconstruct deficient intersections
- Give priority to projects that have the greatest public support
Proposed Actions on Glenstone Avenue

- Construct bus turnouts
- Consolidate and improve driveways
- Construct median from Sunset to Seminole
- Improve intersection at Cherokee Street
- Develop access management corridor plan
- Construct access alternatives between I-44 and Keamey Street
Proposed Actions on Kansas Expressway

- Construct bus turnouts
- Remove traffic signals that do not comply with access standards
- Relocate traffic signal at Evergreen Street
- Close median crossovers between Chestnut Expressway and Division Street
- Construct right turn lanes
- Construct median with access alternatives between I-44 and Kearney Street
Projects and Accomplishments
Bus Turnouts

Bus turnout on Kansas Expressway at Chesterfield Boulevard

Bus turnout on Glenstone Avenue north of Sunshine Street
Kansas Expressway and High Street

- Removed unwarranted traffic signal
- Partially closed median with diverter to prohibit High Street cross traffic and left turns out
National Avenue and Bradford Parkway

- Experienced average of 12 crashes per year including fatalities
- Entrance to hospital emergency room and medical office buildings
- Negotiated partial median closure rather than traffic signal with hospital
Kansas Expressway and Evergreen Street

- Existing signalized WalMart entrance 200 feet from freeway diamond interchange ramp
- Move signalized access 500 feet farther from ramp
Kansas Expressway and Evergreen Street

Kansas Expressway north toward Evergreen Street and I-44 interchange

Kansas Expressway north toward driveway between McDonalds and QuikTrip
Access Management Ordinance

- Relates driveway authorization to use of land
- Is based on roadway classification system
- Provides standards for spacing between street and driveway and intersection and signalized intersections
- Provides standards for corner clearance and intersection functional area treatment
- Provides for use of driveways by multiple properties
- Provides for driveway design standards
Applications and Lessons
What have we learned?

- Manage access with new development – have a strong access standard for new streets and new development
- Upgrade access management in the built community through redevelopment
- Provide a parallel roadway system for major streets
- Optimize number of accesses for development intensity
Development Code

- **Comprehensive Plan**
- **Subdivision Ordinance**
  - Requires street improvements
  - Often sets access policies
- **Zoning Ordinance**
  - Development intensity increase warrants street improvements as shown by traffic impact analysis
- **Driveway Ordinance**
- **Access Management Ordinance & Policy**
When is the best time to improve a transportation system?

- When system improvements are a part of a public improvement project, the public agency pays for needed right-of-way and system improvements.
- When a property owner wishes to change use of land, the property owner is more willing to pay for related system improvements to obtain the requested change of land use.
- Therefore, the public agency should have a plan for street and access improvements to be implemented when land development changes are requested.
Improving management of access with redevelopment

• Have a policy and plan for access management

• Prioritize access management techniques as to importance for traffic flow and safety

• Be willing to negotiate

• Work for best improvement of traffic flow
Improving A. M.
with redevelopment
Developing an Access Management Plan

- Emphasize parallel roadway system to reduce turns on arterial street and remove an impediment to median construction
- Optimize driveway and median break spacing
- Optimize number of cross street lanes and arterial street auxiliary lanes
Conclusion

• Have a strong access standard for new streets and new development

• Improve existing access conditions when redevelopment occurs
  – Have a plan and policy for access management
  – Know what access management techniques are most important to improve traffic flow
  – Be willing to negotiate
  – Work for best improvement of traffic flow
Thank you. Do you have any questions?

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