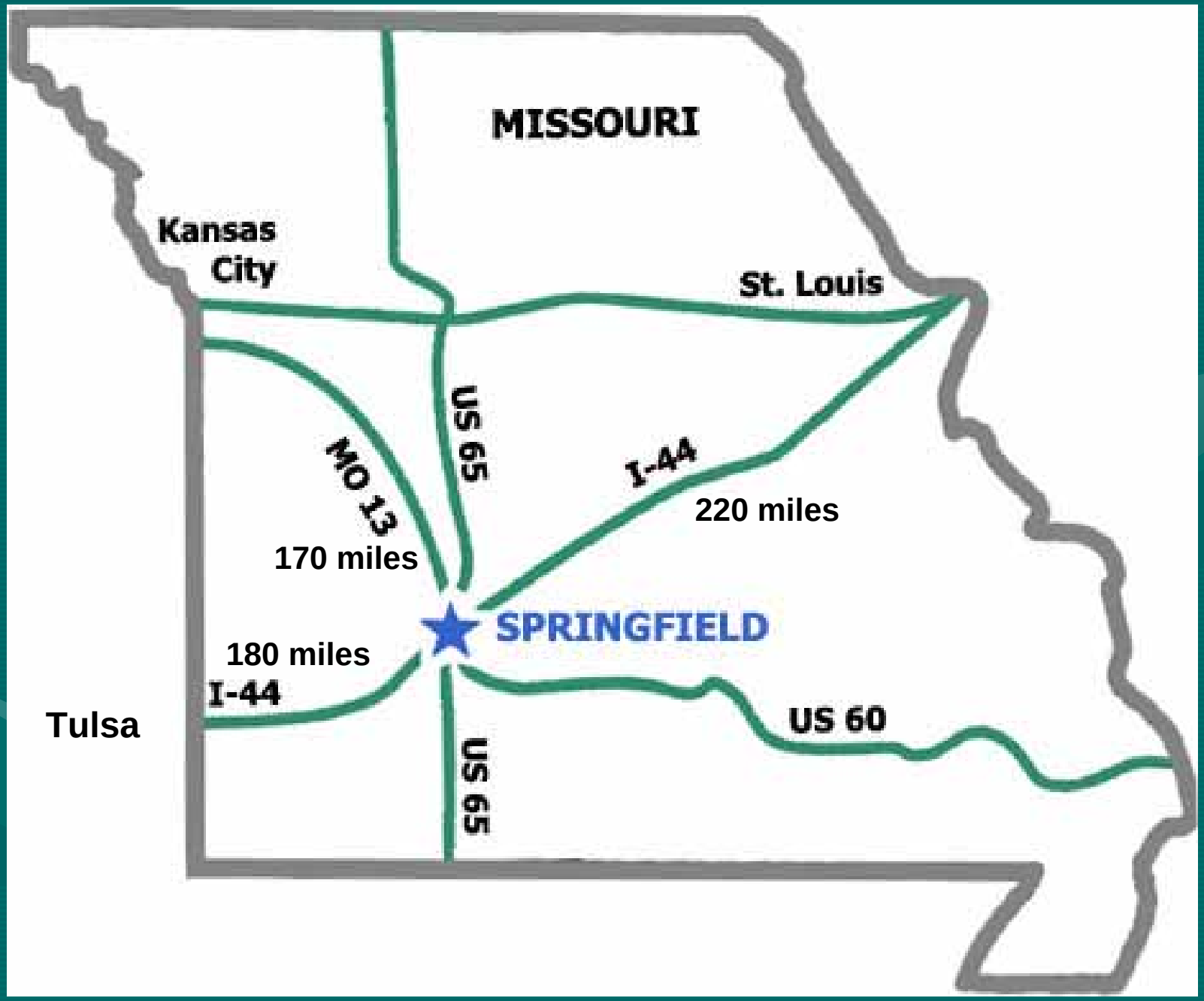
Traffic Operations and Access Management in Springfield, Missouri

A Corridor Approach

This Presentation

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

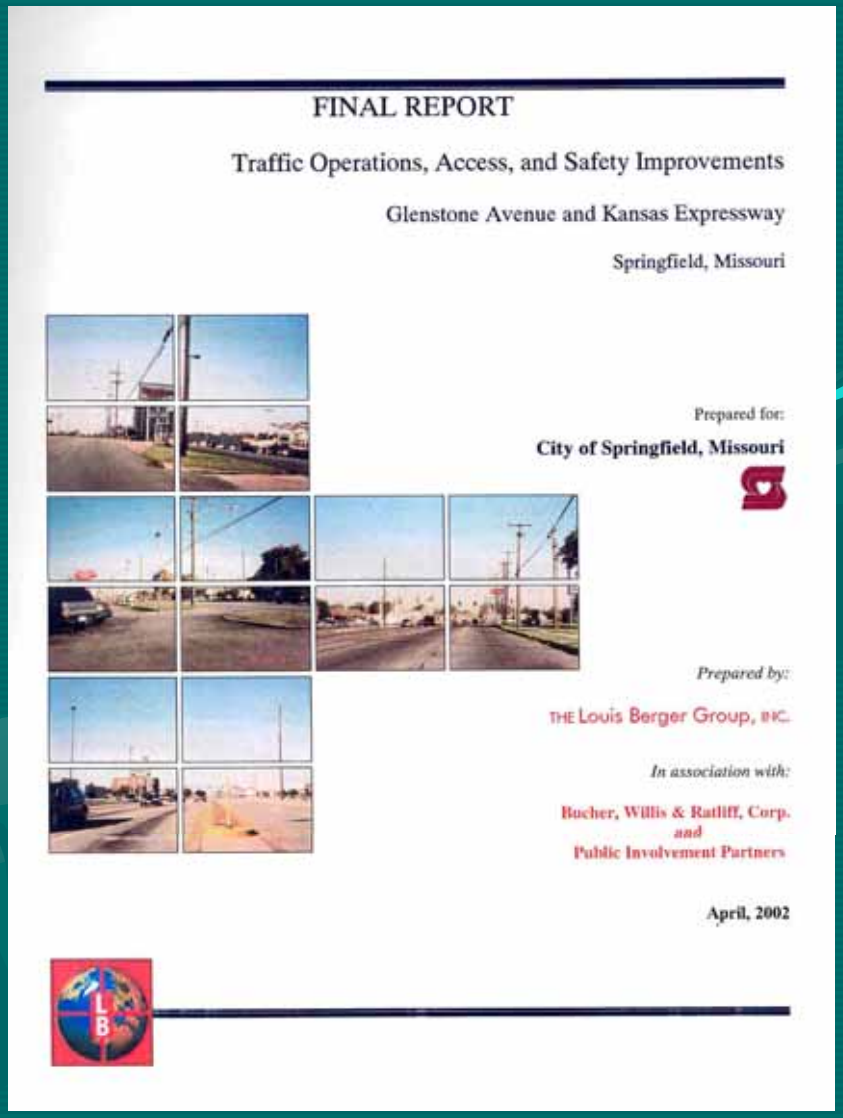

MISSOURI
Kansas City
St. Louis
US 65
MO 13
I-44
220 miles
170 miles
SPRINGFIELD
180 miles
I-44
Tulsa
US 60
US 65

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

Access Management Study



FINAL REPORT

Traffic Operations, Access, and Safety Improvements

Glenstone Avenue and Kansas Expressway

Springfield, Missouri

Prepared for:

City of Springfield, Missouri

Prepared by:

THE Louis Berger Group, INC.

In association with:

Bucher, Willis & Ratliff, Corp.
and
Public Involvement Partners

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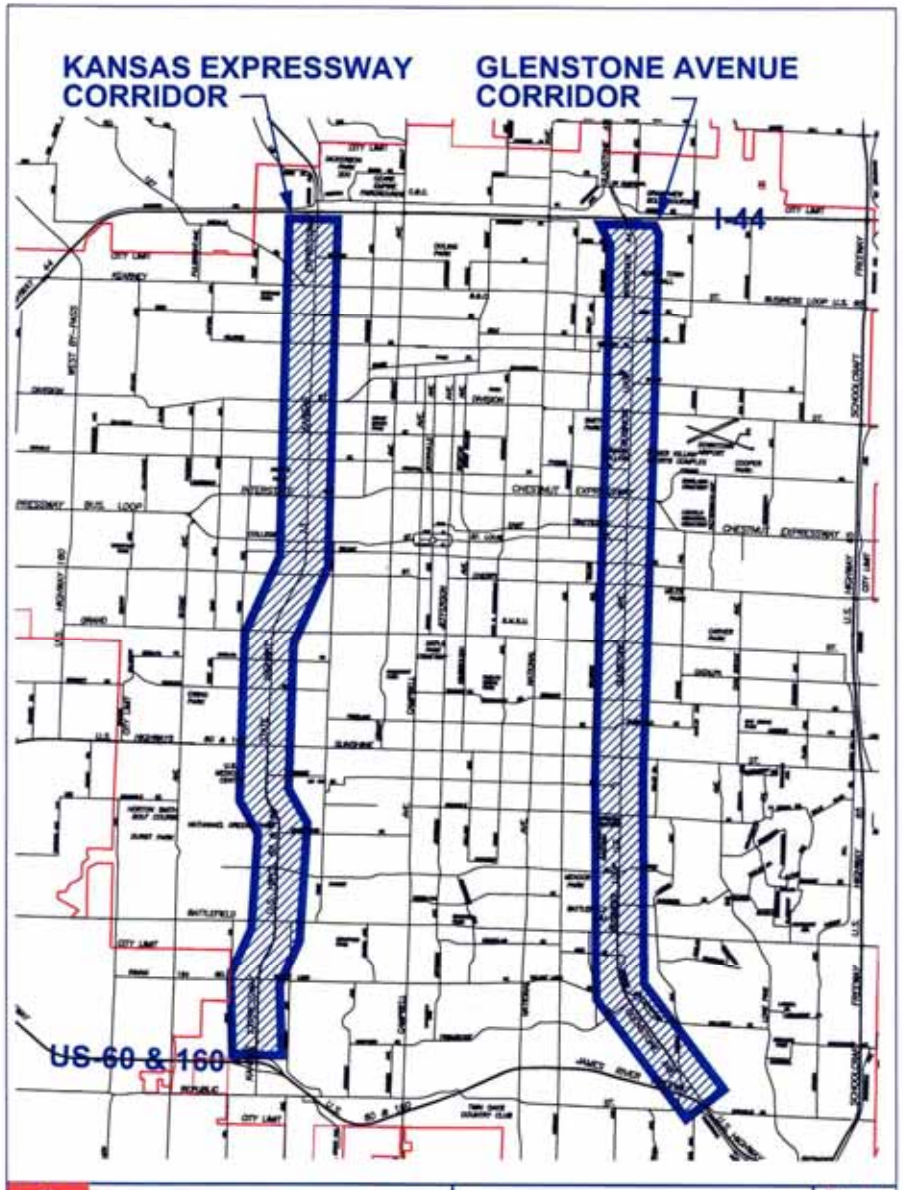


ACCESS MANAGEMENT STUDY
GLENSTONE AVENUE & KANSAS EXPRESSWAY
SPRINGFIELD, MISSOURI

LOCATION MAP

Figure 1.1

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 Kearney 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

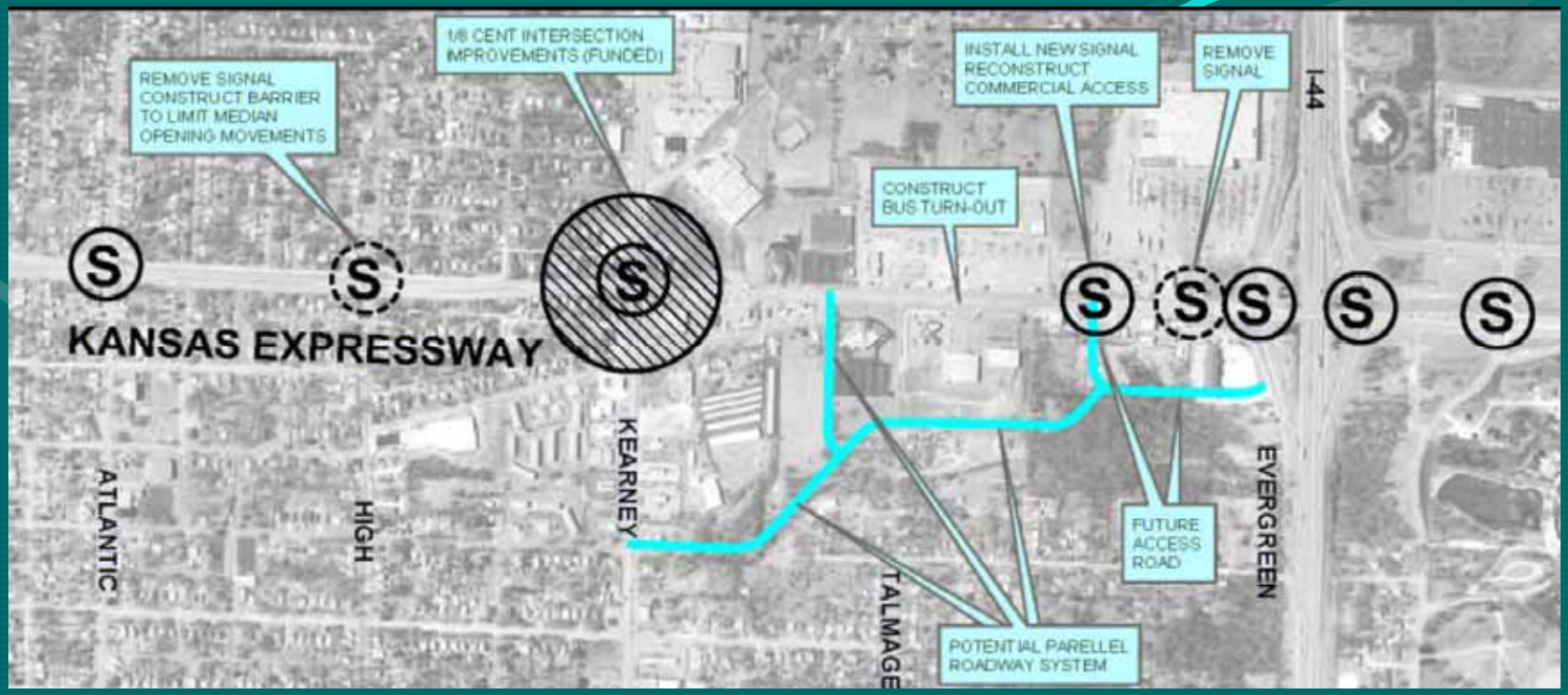
- Removed unwarranted traffic signal
- Partially closed median with diverter to prohibit High Street cross traffic and left turns out

National Avenue and Bradford Parkway

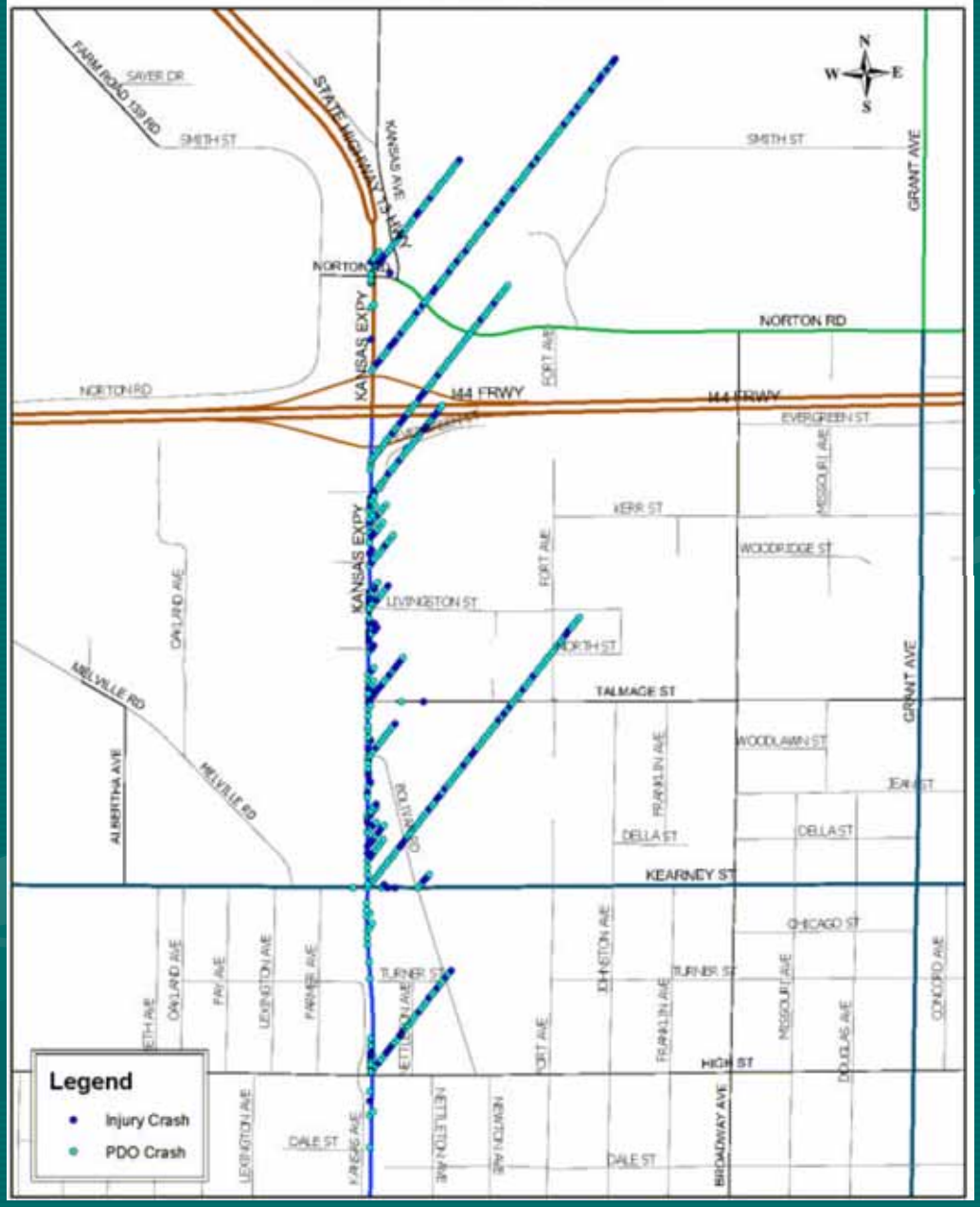
- Experienced average of 12 crashes per year including fatalities
- Entrance to hospital emergency room and medical office buildings
- Negotiated partial median closure rather than traffic signal with hospital

Kansas Expressway and Evergreen Street

- Existing signalized WalMart entrance 200 feet from freeway diamond interchange ramp
- Move signalized access 500 feet farther from ramp



2001 - 2003 Crashes



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?

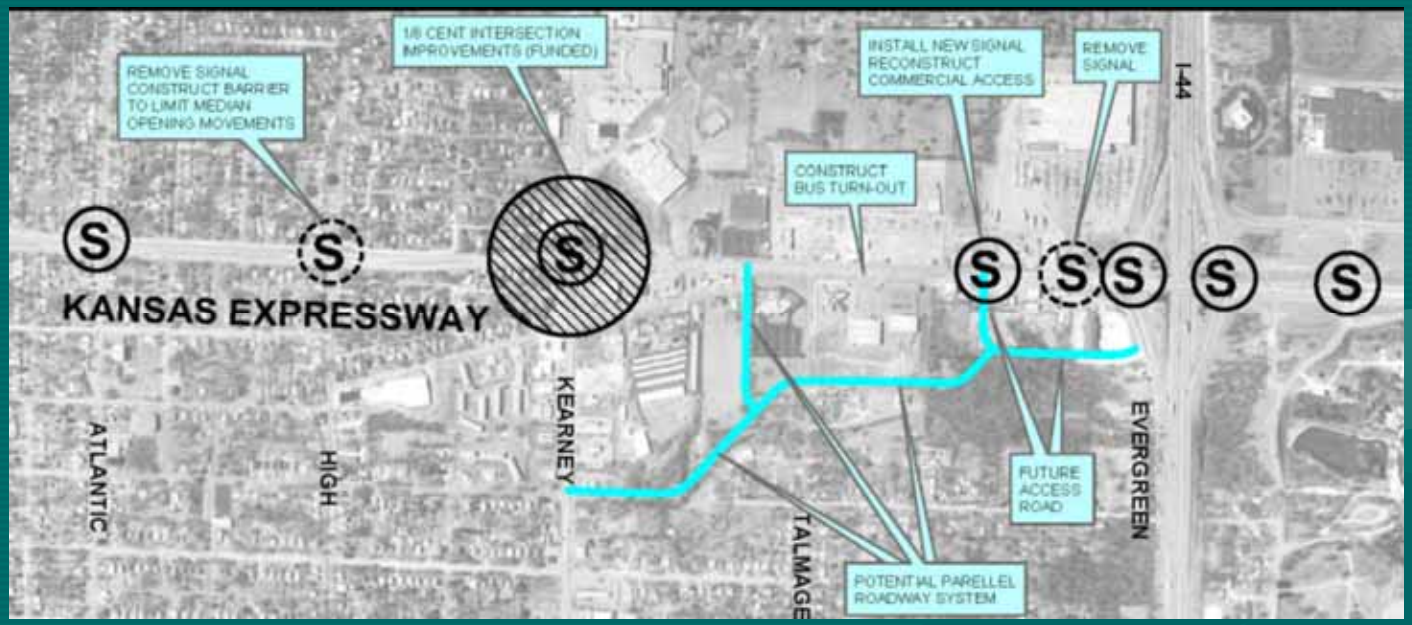
- When system improvements are a part of a public improvement project, the public agency pays for needed right-of-way and system improvements.
- When a property owner wishes to change use of land, the property owner is more willing to pay for related system improvements to obtain the requested change 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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