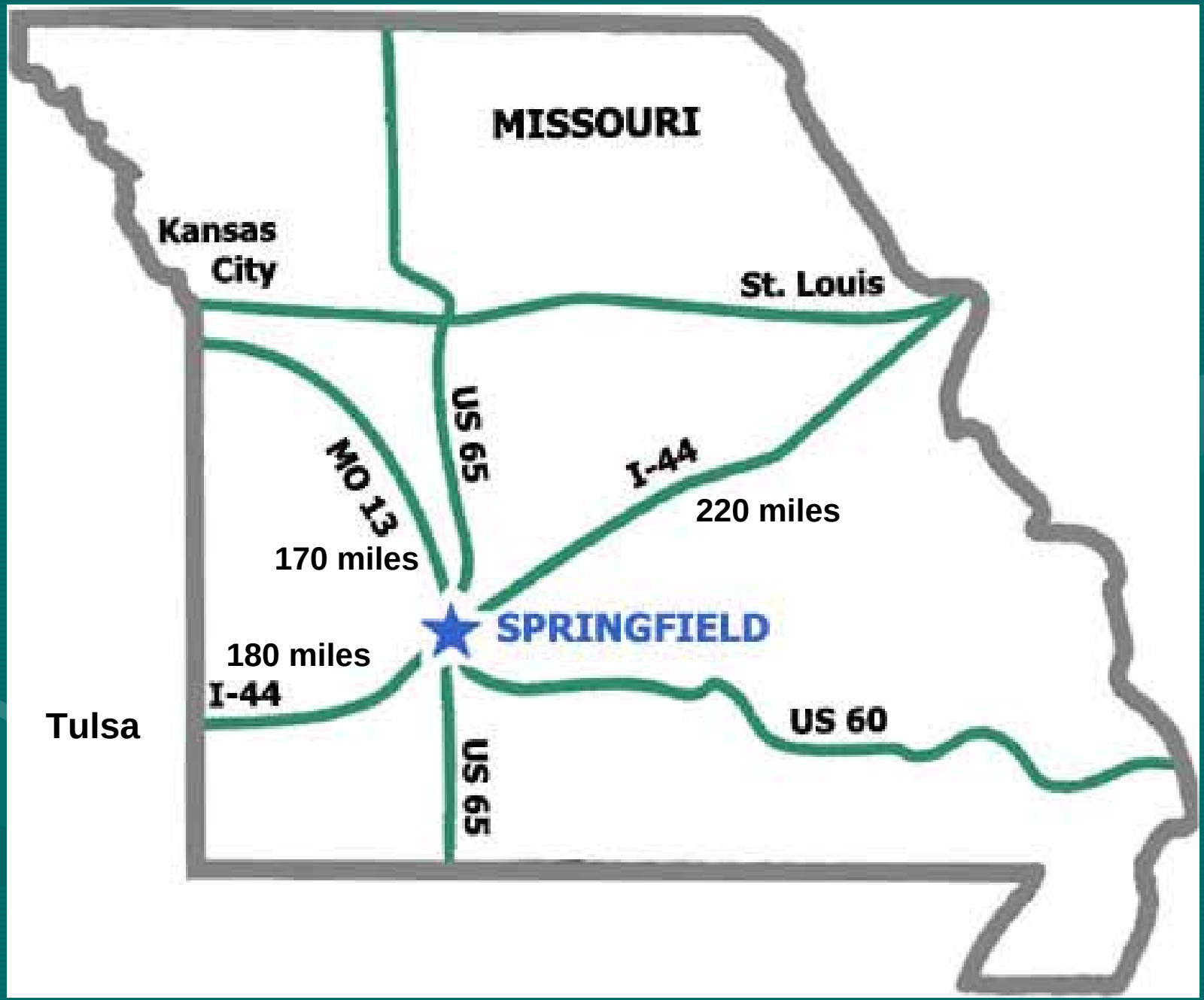
Traffic Operations and Access Management in Springfield, Missouri

A Corridor Approach

This Presentation

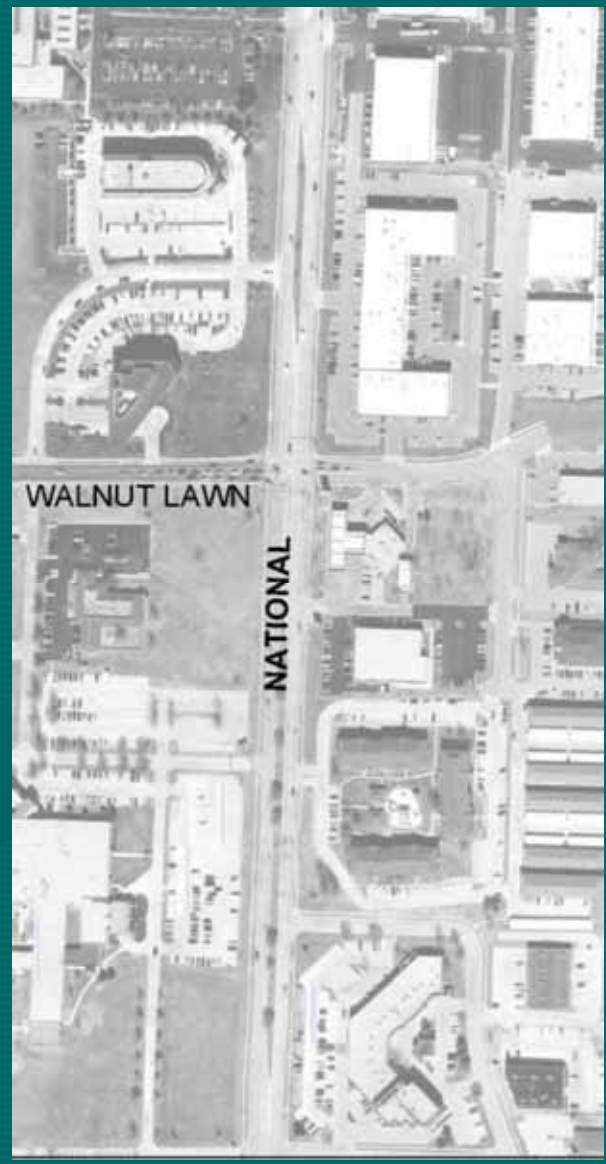
- About Springfield
- Access Management Study
- Projects and Accomplishments
- Applications and Lessons


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

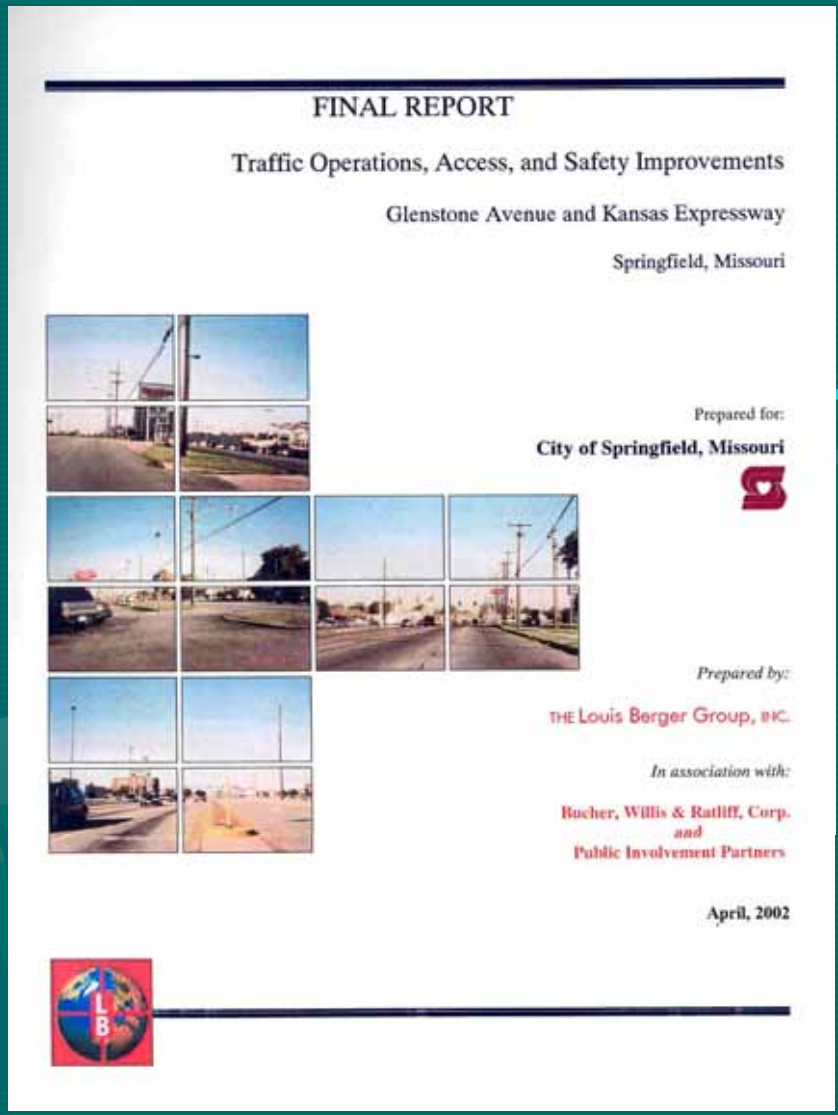
Springfield, Missouri

- 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

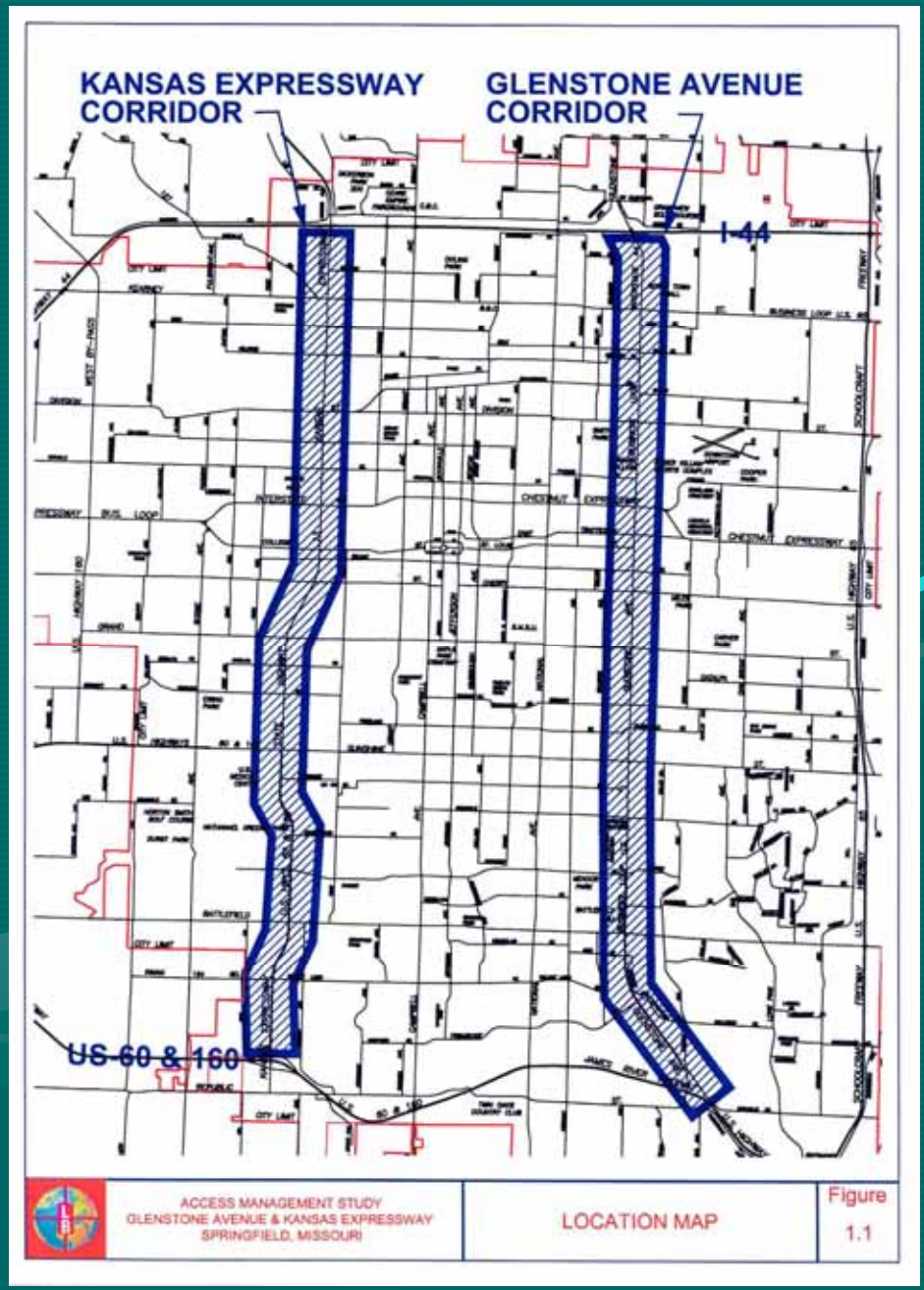
Prepared by:

THE Louis Berger Group, INC.

In association with:

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

April, 2002


KANSAS EXPRESSWAY CORRIDOR
GLENSTONE AVENUE CORRIDOR
I-44
US-60 & 160
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


Kansas Expressway at High Street


Kansas Expressway at Atlantic Street (1/4 mile south of High)

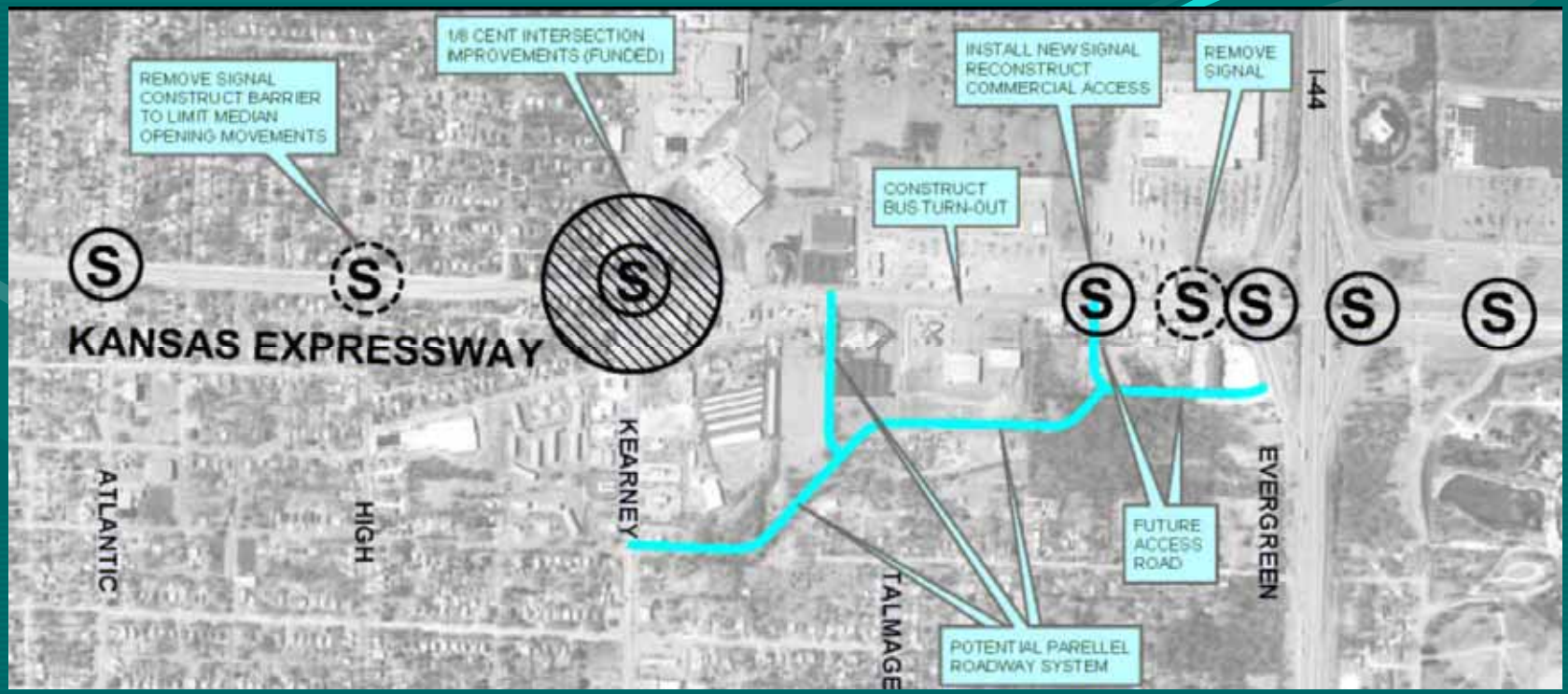
- Removed unwarranted traffic signal
- Partially closed median with diverter to prohibit High Street cross traffic and left turns out

National Avenue and Bradford Parkway

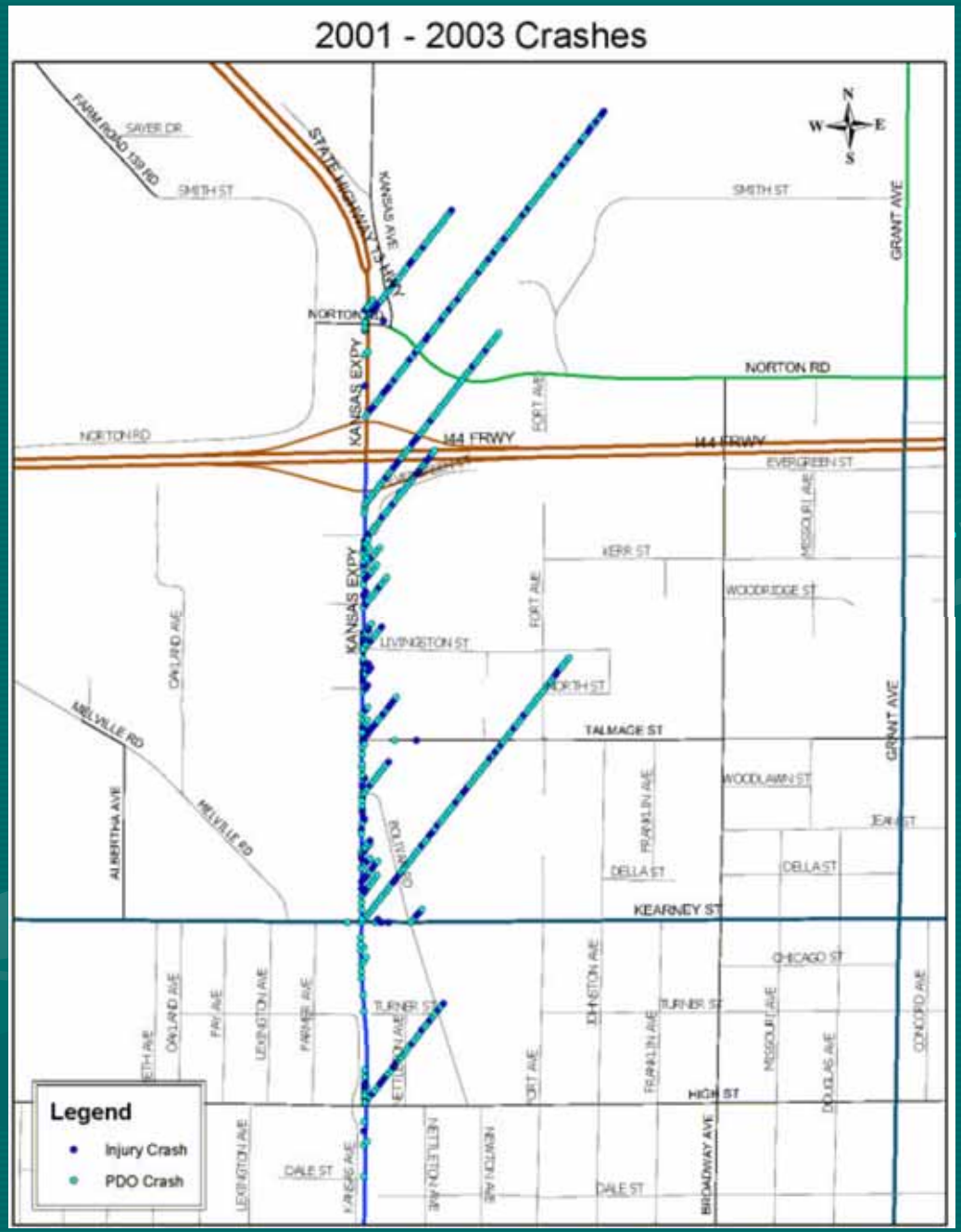
- Experienced average of 12 crashes per year including fatalities
- Entrance to hospital emergency room and medical office buildings
- Negotiated partial median closure rather than traffic signal with hospital

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

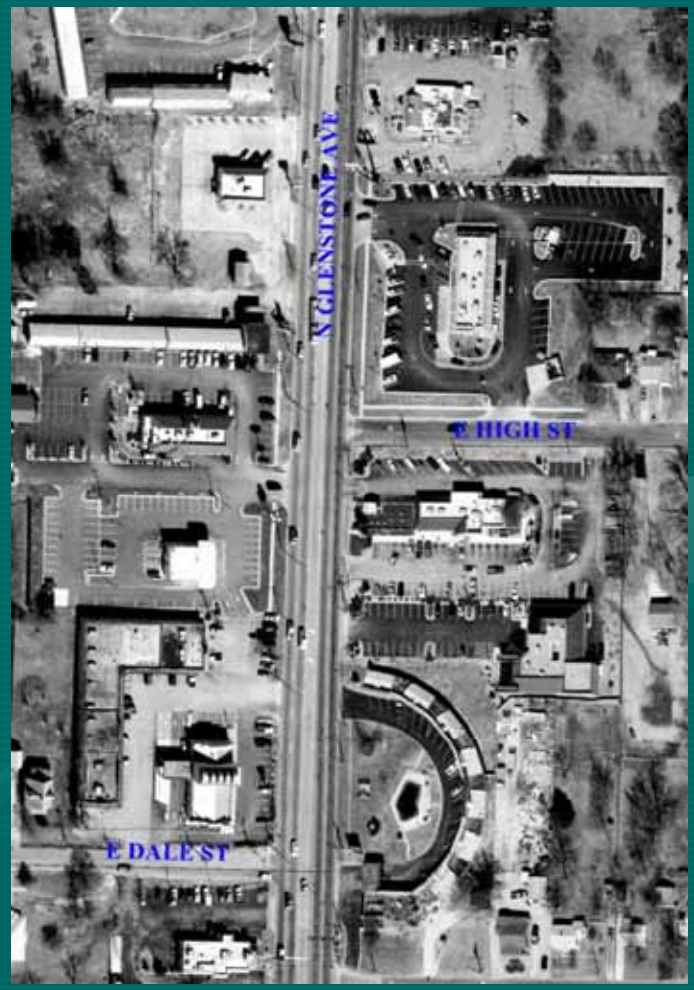
When is the best time to improve a transportation system?

- 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.

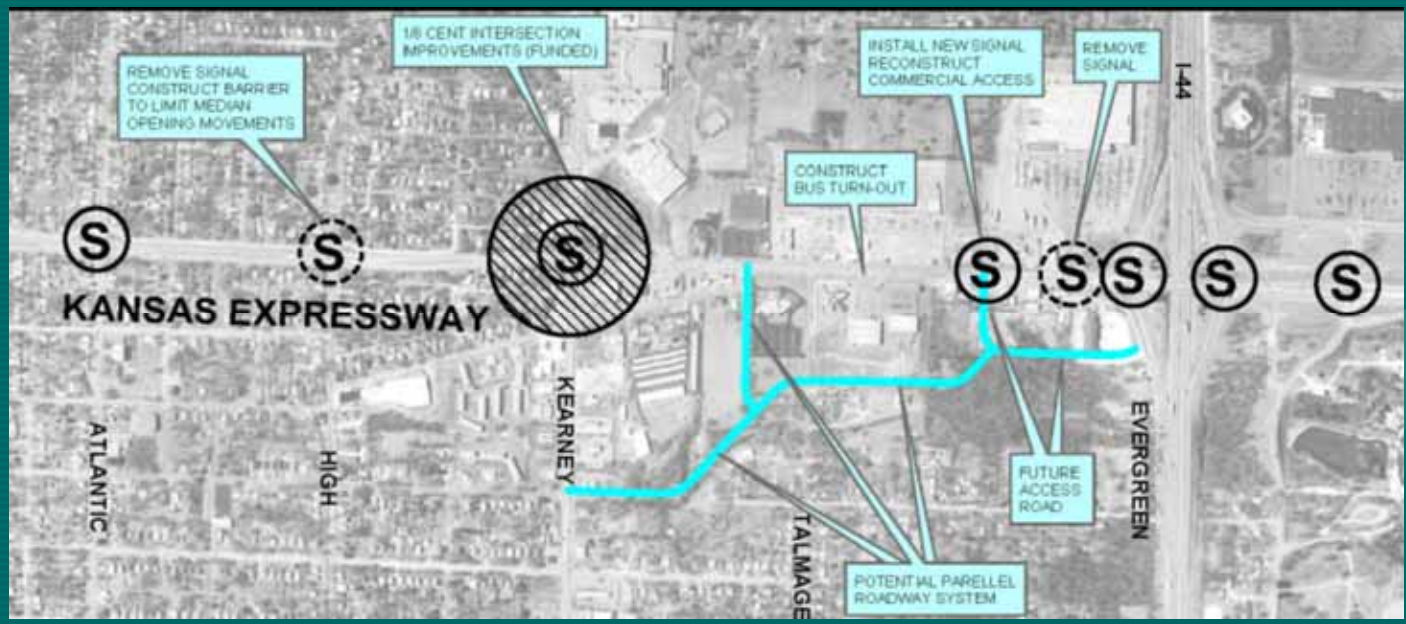
Improving management of access with redevelopment

- 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?
David Hutchison
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