Innovative Analysis of Access

Access Management Conference
September 1, 2004
Agenda

- **Traffic Access Management Applications**
  Presented by Kip Strauss, AICP
  HNTB Corporation

- **Land Use and Access Management**
  Presented by Brian Comer, AICP
  HNTB Corporation

- **Public Involvement and Access Management**
  Presented by Eric Saggars, PE
  HNTB Corporation

- **Right Turns: The K-7 State & Local Planning Exercise**
  Presented by Michael DeMent, APR
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Traffic Access Management Applications
Corridor Management and Preservation for Kansas Route 7

Kip Strauss, AICP
HNTB Corporation
K-7 Corridor Technical Report, 2002

1. Background
2. Study Approach
3. Technical Analysis
4. Public Involvement
5. Engineering
6. Next Steps
K-7 Corridor Technical Report
K-7 Corridor Technical Report
K-7 Travel Times

K-10 to I-70
(Northbound Direction)

11 Miles

Travel Time (In Minutes)

100
80
60
40
20
0

2000 Existing Freeway/Expressway
2 signals/mile – (1)
2 signals/mile – (2)

2023 Freeway

2023 Urban Arterial

1 - Minimize Delay for all
2 - Minimize Delay for K-7

2000 Existing Freeway/Expressway

2 signals/mile – (1)

2 signals/mile – (2)

2023 Freeway

2023 Urban Arterial

1 - Minimize Delay for all
2 - Minimize Delay for K-7
K-7 Corridor Technical Report

K-7 Travel Times

I-70 to Mary Street
(Northbound Direction)

12 Miles

Travel Time (In Minutes)

1 - Minimize Delay for all
2 - Minimize Delay for K-7

2000 Existing Freeway/Expressway

2023 Freeway

2023 Urban Arterial

2 Signals per Mile – LOS

D 55 s Delay

F 80 s Delay

4 Signals per Mile – LOS

D 55 s Delay

F 80 s Delay

4 signals/mile – (1)

4 signals/mile – (2)

2 signals/mile – (1)

2 signals/mile – (2)
K-7 Corridor Technical Report
K-7 Travel Times

215th St. to I-35
(Northbound Direction)

8 Miles

Travel Time (In Minutes)

- 2000 Existing Freeway/Expressway
- 2023 Freeway
- 2023 Urban Arterial

- 4 signals/mile – (1)
- 4 signals/mile – (2)
- 2 signals/mile – (1)
- 2 signals/mile – (2)

1 - Minimize Delay for all
2 - Minimize Delay for K-7
K-7 Corridor Management Study, 2005

- Study Objectives
  - Community Involvement
  - **Facility Type on Mainline and Local Street Network**
  - Access Requirements / Street Network System
  - Right-of-Way Preservation Needs
  - Phased Implementation Plan
  - Memos of Understanding
K-7 Corridor Management Study

- Technical Analysis Approach
  - Travel Model Development
  - Land Use and Network Planning
  - Freeway vs. Arterial
  - Access Plan
  - Implementation Plan
K-7 Corridor Management Study

Phase 1 - Macro-Level Analysis
- Planning level tool
- Detailed traffic analysis zone structure 3 miles either side of K-7
- Detailed roadway network 3 miles either side of K-7
- Model measures of effectiveness
- Animation model of 1 selected location

Phase 2 - Micro-Level Analysis
- HCM methodology operational analysis
- Detailed operational analysis of K-7 and local street network within ½ mile of K-7
- Curvilinear operational analysis of local street network ½ mile to 1 mile from K-7
- Simulation model in Segment 2
K-7 Model Measures of Effectiveness

**Accessibility**
- Average Travel Time
- Average Travel Distance

**Mobility**
- Select Link/Zone
- Travel Time Isochrones

**Traffic**
- Travel Demand
- Average Speed
- Volume/Capacity
- Difference Plots

Accessibility is the ability to reach desired goods, services and destinations.

Mobility is the movement of goods and people.

Traffic is vehicle movement.

Traffic is vehicle movement.
Lessons Learned

- Develop information that is easy for people to understand
- Show people the issues
- Develop tools that are flexible
Land Use and Access Management

Brian Comer, AICP
HNTB Corporation
Land Use and Access Management

- Highway 7—Blue Springs, Missouri
  - Older Suburban Corridor
  - Two-Way Left Turn Lanes
  - Multiple Driveways
Existing Linear Development Pattern
Existing LOS
2020 No Build LOS

2020 Future No-Build PM Peak Hour Intersection Level of Service

LOS Legend
- A - C
- D
- E
- F
Guiding Principles

- Promote Cluster Development Pattern
- Provide Cross Access
- Connect Parking Lots and Relocate Driveways
- Regulate the Location and Spacing of Driveways.
- Protect Interchange Areas
- Integrate Medians
Cluster Development
Corridor Master Plan

Legend
- Proposed Roadway Improvements
  - Proposed Median (16'-20')
  - Designated Bike Lane (5')
- Driveways/Curb Cuts
  - Proposed (New) Drives
  - Existing Drives (Proposed to Keep)
  - Existing Drives (Proposed to Remove)
- (Proposed) Median Breaks
  - Directional Break (left-turn in only)
  - Full Break
Implementation Strategies

- Improvements triggered by change of use
- Improvements triggered by redevelopment of property
- City initiates improvements
Implementation Strategies

- Utilized a Combination of Both Strategies
  - Identified Median and Intersection Improvements
Public Outreach
Public Outreach
Lessons Learned

- Integrate Access Management into Land Use Planning from the Beginning
- Educate the Public on the Benefits of Access Management
- Follow through with Implementation of Policies and Physical Improvements
Public Involvement and Access Management

Experiences on the US-54 Project: Pratt and Kingman Counties, Kansas

Eric Saggars, PE
HNTB Corporation
US-54: Project Location
Project Background

- Currently a two-lane rural highway
  - Located in South-Central Kansas
  - 44-mile-long corridor
- Convert to fully access-controlled expressway and freeway
- Preservation of the project corridor is a high priority
- Access is an important issue!
GIS-based Website
- Provides detailed alignment information
- Updated at milestones
- Also provides other project news and contact information
Map Introduction

Welcome to the Forward 54 GIS Interactive Map, which has been specially created for this design project. The main purpose of this application is to provide a means of viewing current design recommendations for the project via a dynamic interactive map.

You may begin by either clicking on the map to zoom into a specific location within the project area, or use one of the search methods provided. Using these methods will allow you to search for your property, zoom to a city, or area and more.

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Comments@Forward54.org
Corridor Management Plan

- A preliminary Access Control and Property Management strategy was developed as a working paper
- Focused on the ideal solution
  - Advance acquisition of R/W
  - Immediate relocations
  - Reducing number of access points
  - Constructing frontage roads
  - Long-term management with GIS
Access Management Workshops

- Two workshops were held
- Discussed the Corridor Mgmt. Plan
- Informed attendees on the Process
  - Formal presentation
  - Case studies in small groups
  - Open discussion
Case Study #2

NOTE: This illustration depicts concepts for discussion purposes only as part of the Corridor Management Workshop with public officials as part of the US-54 Pratt to Kingman project. The exact location, design, and right-of-way for completed improvements cannot be determined from this drawing and could be different from those shown. Details of right-of-way and individual access will be determined during design activities that will occur later. Date of illustration July 24, 2003.
Determine “Categories” of R/W and Access Changes

- Access not affected
- Field entrance adjustment
- Residence/Driveway adjustment
- Frontage road required
- Parcel to be landlocked
- Total acquisition
Permitted Driveways located via GIS
“Kitchen Table” Meetings

- Decide what to do with each property owner’s access points
- Get input on how they use their property
- Get initial indications of the owner’s disposition
- Provide an opportunity to express opinions
Property Management Plan

- Project is 44 miles long with approximately 253 parcels
- Preservation is a long-term issue for KDOT (land, fencing, mowing)
- Our next steps:
  - Develop a policy for R/W acquisition
  - Develop a GIS-based Access Control and Property Management Application
Lessons Learned

- Communicate early and often with local governments and the impacted residents
- Be responsive and flexible to local needs
- Capture and preserve information for later use
Right Turns:
The K-7 State and Local Planning Exercise

Michael DeMent, APR
doc COMMUNICATIONS
“Right Turns” Interactive Exercise

- Education and input “game”
- Simplified transportation/planning rules
- Scale-model components based on rules
- Facilitated assembly by stakeholders teams
- Adaptable/transportable for future projects
Attributes
- Length
- Diversity

Attitudes
- Development
- Politics

Actions
- Time horizon
- Funding realities
- Coordinated response
Communication Isn’t The Issue

- Websites: 75%
- Small Grp. Dial.: 73%
- News Releases: 73%
- Brochures: 71%
- Surveys: 69%
- Newspaper Ads: 69%
- Briefing Docs.: 68%
- Focus Groups: 66%
- Public Hearings: 61%

Intl. Assoc. of Public Participation Survey
The Key is Facing Trade-offs

- Accessibility
- Local impacts
- Econ. development
- Property rights
- Dev. type & density
- Development desires vs. reality

- Funding
- Timing
- Decision influences
- State local partnership
- Our needs vs. your needs

- Mobility
- Regional impacts
- Funding needs vs. realities
- User types
- Ideal vs. realistic facilities

- Safety
- Economic opportunity
- Environmental concerns
- Noise
- Traffic
- Community identity

- Land Use
- Transportation
- Political Realities
- Quality of Life

Stakeholder
Trade-offs
Game sets consensus, differences

Individual Surveys

Surveys put check on group input

Idealized Priorities Exercise

Input for game context, set-up

“Right Turns” Game Process

MOUs

“Real-World” Game

Game sets consensus, differences

Input for game context, set-up

MOUs
Game Attributes

- Aerial maps/plexiglass holders/markers
- “Garden marker” flags for specific traits/issues
- Consultant “referees” and impact flags
- Facilitated segment discussion
- Electronic documentation
Project Schedule

- Complex project
- Extensive public involvement
- Collaborative process
- Multiple feedback streams
- Boundaries of political will/community vision
- Memos of understanding/lasting partnerships
Results

**Determination**
- Areas of differences
- Opportunities for consensus
- MOUs & political will

**Visualization**
- Personal, community values
- Actionable feedback
- Facility, land use and transportation trade-offs

**Education**
- KDOT planning process
- Land use & transportation concepts
- Realistic expectations

**Futures Workshops**

**Demonstration**
- Links between facilities, traffic and development
- Impact on K7 design
- Interplay with local roads
Lessons Learned

- Multiple feedback streams needed to get full picture
- Stakeholders want even greater consultation
- Visible, actionable feedback is key to good results for all parties
Innovative Analysis of Access

Questions?