



Access Management in Value Engineering

**Access Management National Conference
Kansas City, Missouri**

Aug 29-Sept 1, 2004

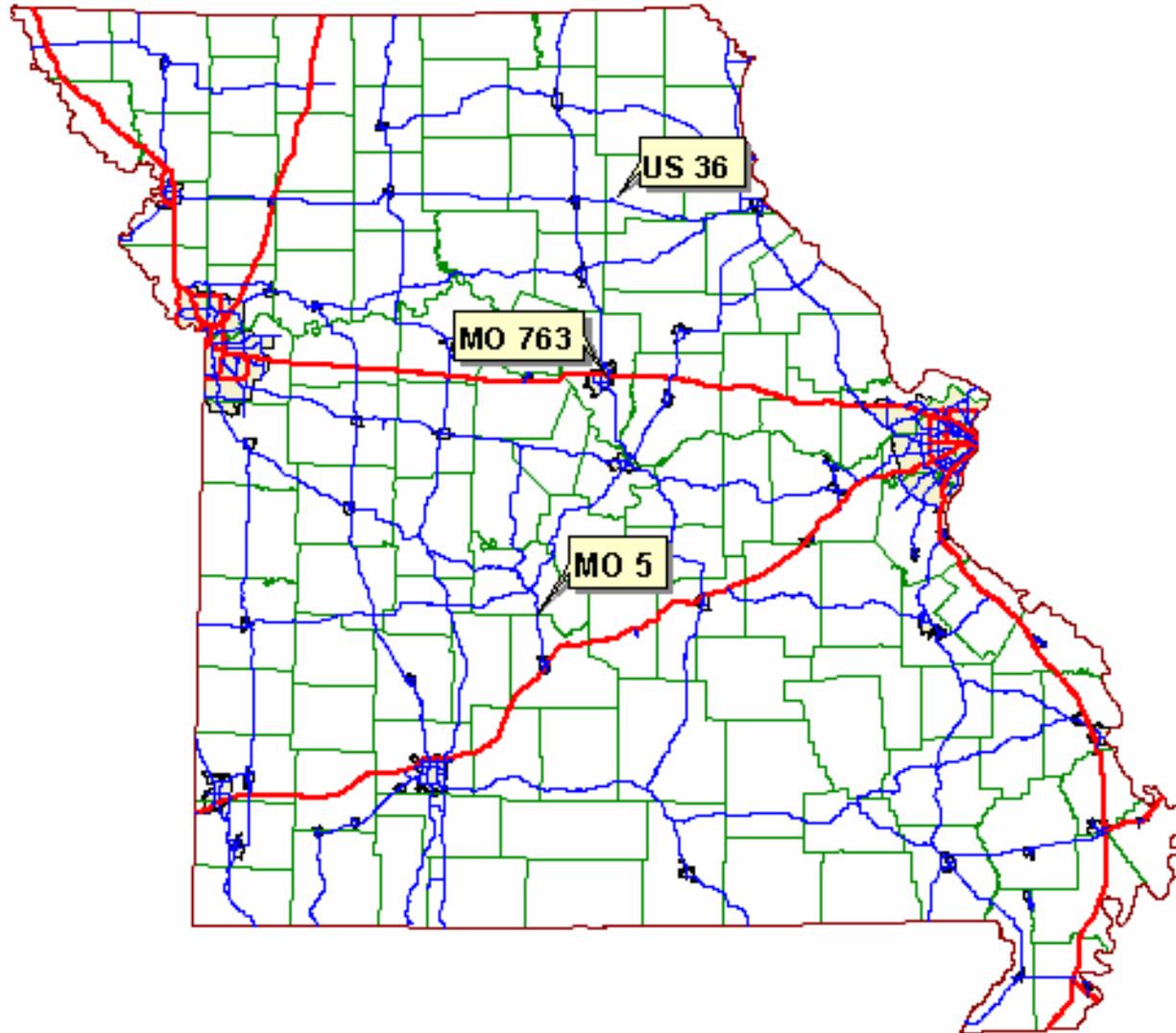
Items for Discussion:

- **Diamond Interchange Footprint**
 - **Distance Between Ramp Terminals & Outer Road**
- **Urban Widening**
 - **Retrofit with Median Strip**
- **Left Turn Lane Placement**
 - **Warrants**

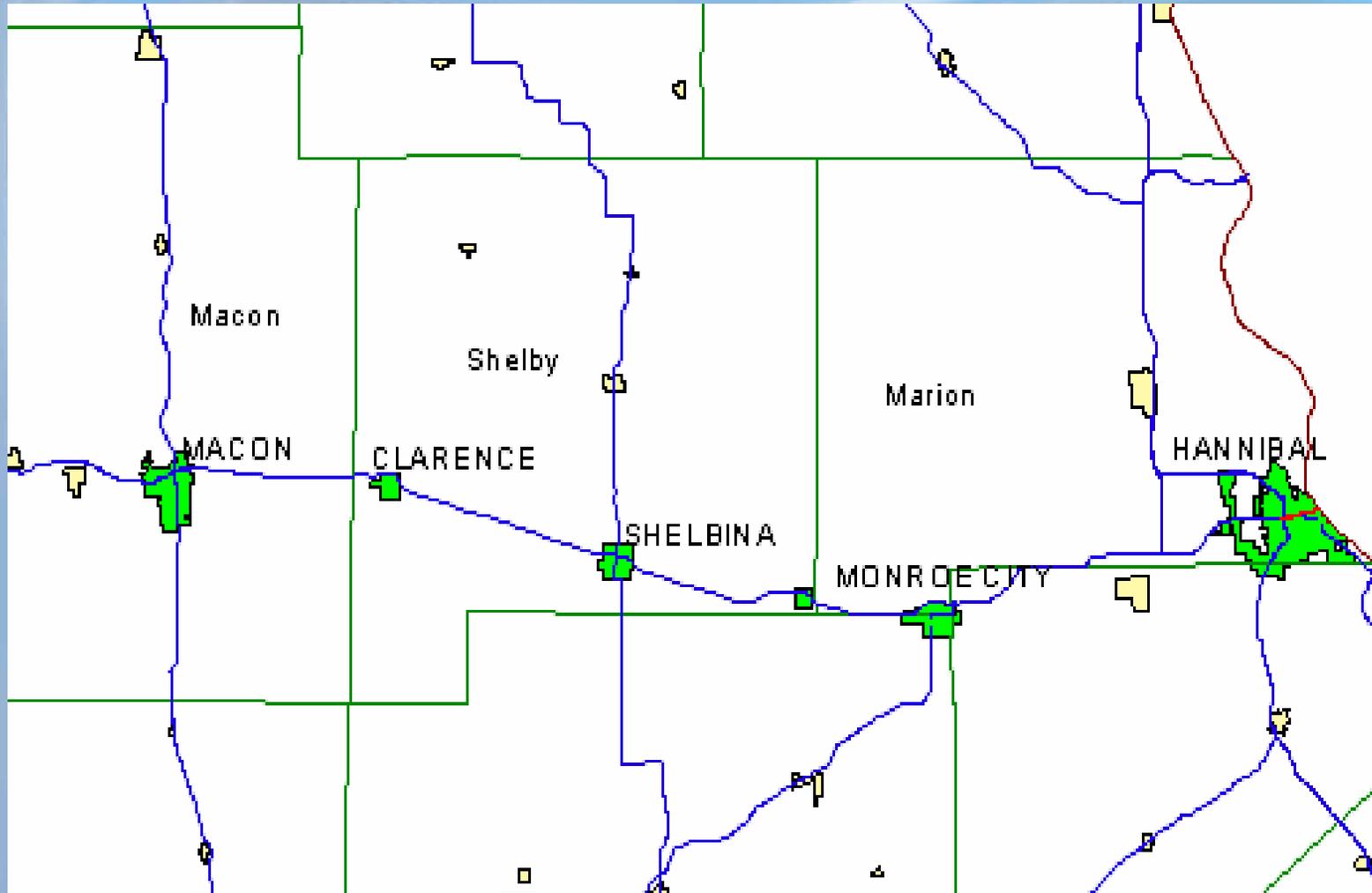
Design Policy:

- **Project Development Manual (PDM)**
 - **Contains our current design standards**
- **Access Management Guidelines (AMG)**
 - **Approved by MHTC in Sept. 2003 as “Guidelines”**
 - **Being incorporated into PDM**

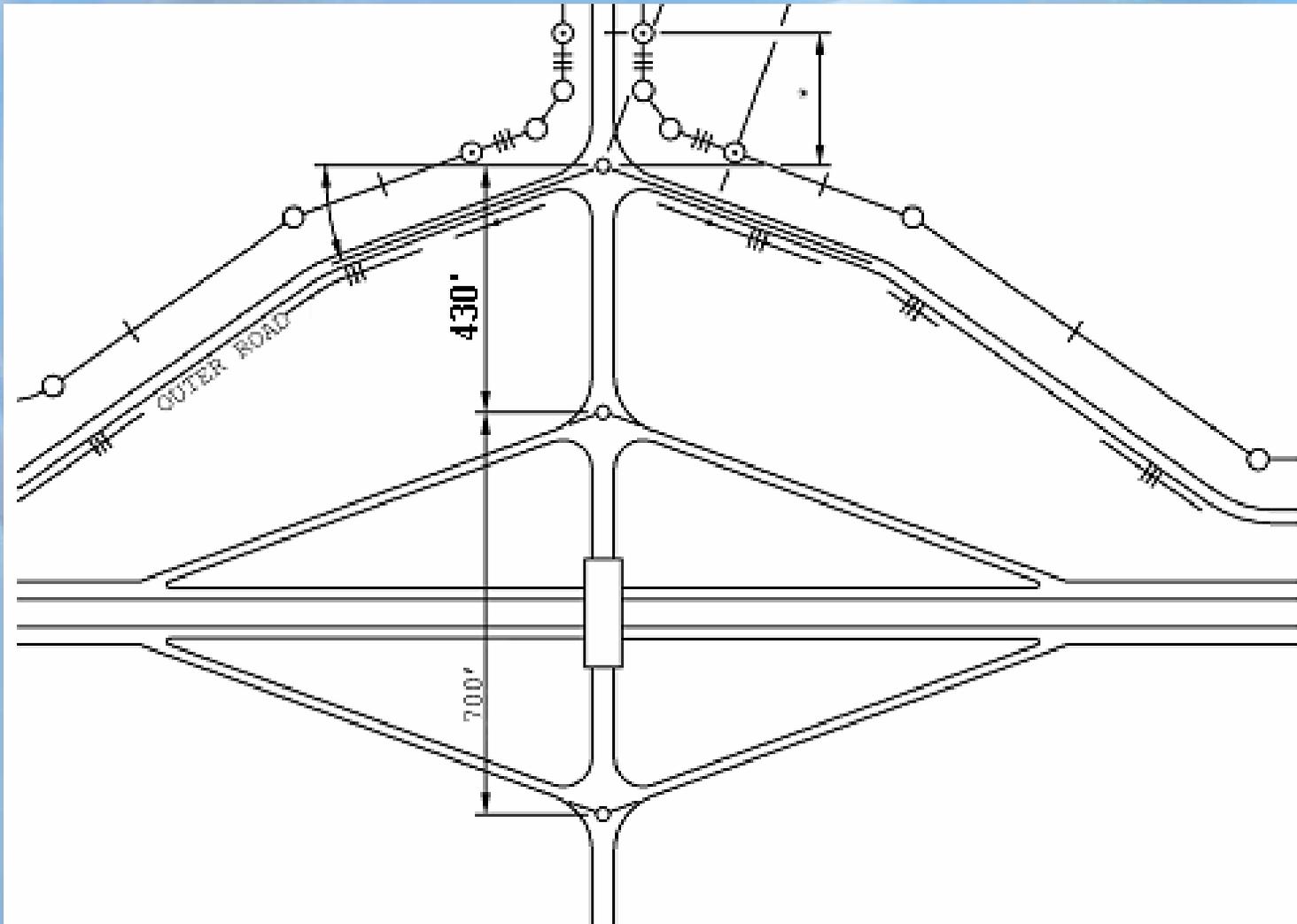
Project Locations



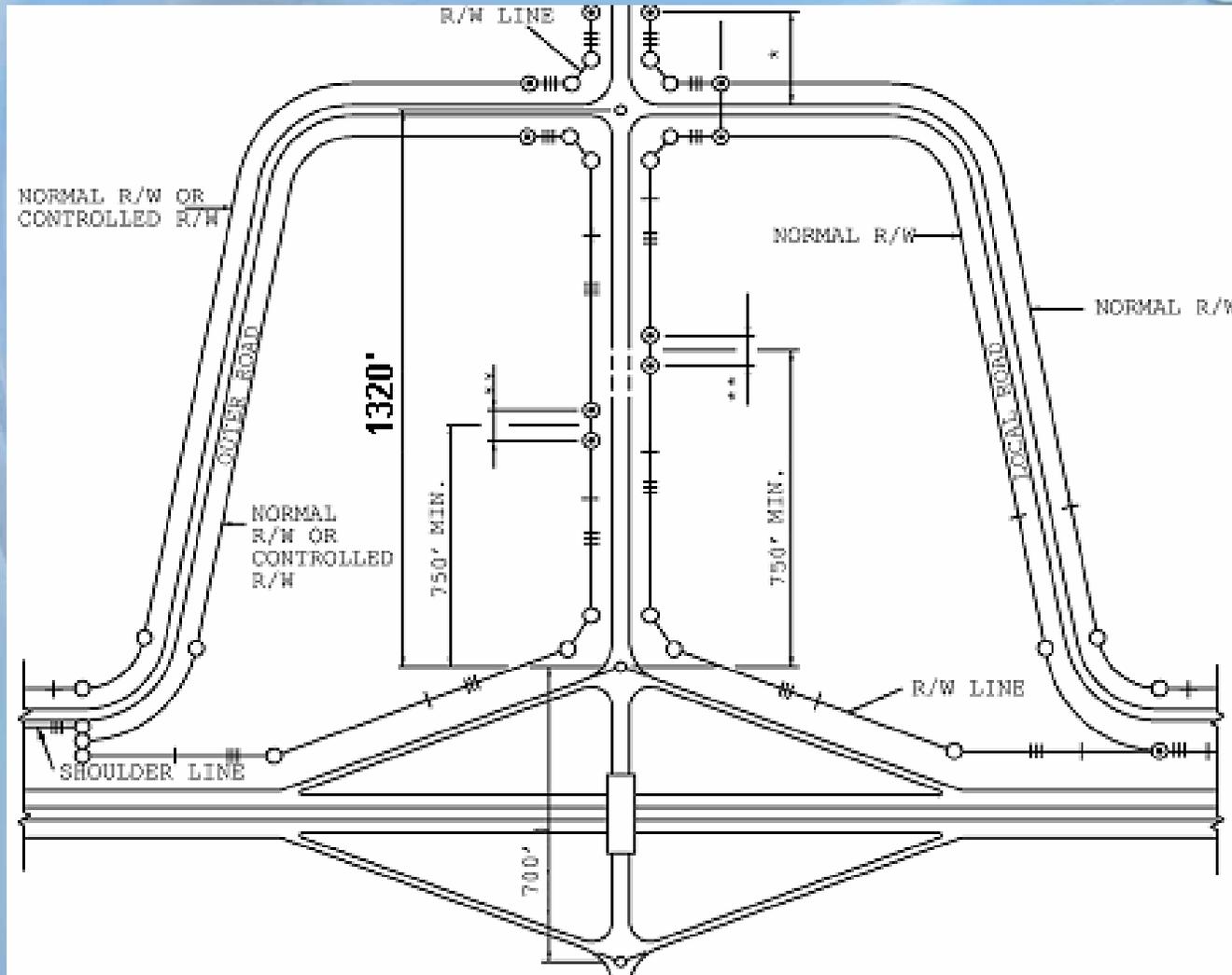
Route 36 Corridor



Minimum Interchange Footprint



Desirable Interchange Footprint



Why 1320' of Managed Access?

- **Better Signal Progression**
- **Allows time for turning vehicles**
- **Ensures queues do not develop down ramps onto freeway**
- **Space for Future Development**
- **Less Congestion - Economic Development Opportunities**



*Findings of the Value
Engineering Team*

Economic Analysis

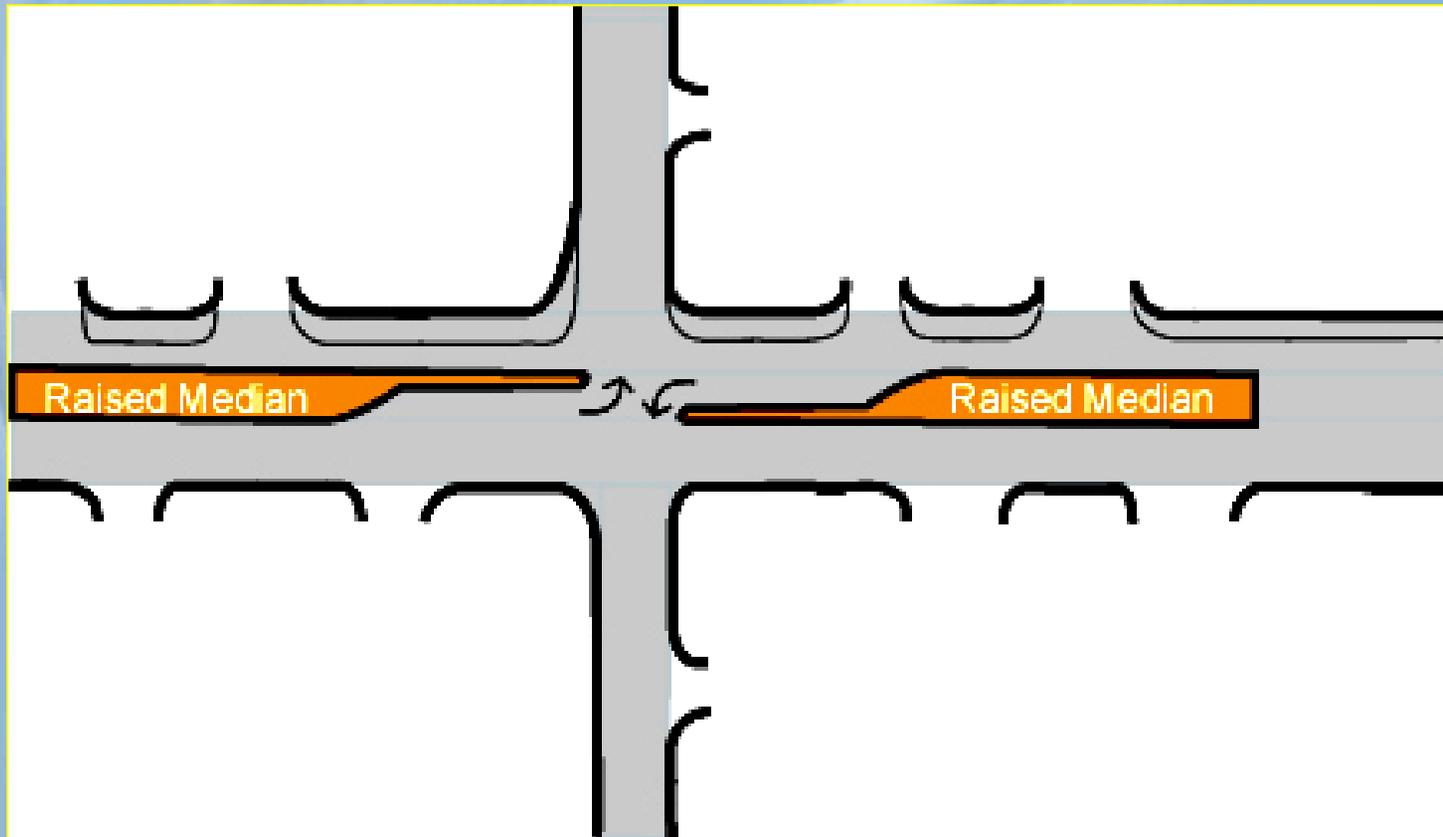
Distance Between Ramp Terminals and Outer Road	Right-of-Way Area (Acres)	Right-of-Way Cost at \$2000/Acre	Length of Outer Road (Miles)	Outer Road Construction Cost at \$771,500/mile
Minimum - 430 feet	65.8	\$131,600	1.15	\$888,400
Desirable - 1320 feet	62.8	\$125,600	1.61	\$1,244,900
	(3)	(\$6,000)	0.46	\$356,500

Net Difference: Adds approx. \$350K/interchange

Findings

- **An insignificant amount of R/W is needed to implement Access Management Standards**
- **In rural areas, minimum and desirable footprint have the same R/W costs**
- **Approximately \$0.35 M in extra paving and grading**
- **Purchase of R/W at current costs vs. higher future costs would offset future outer road construction costs**

Urban Widening



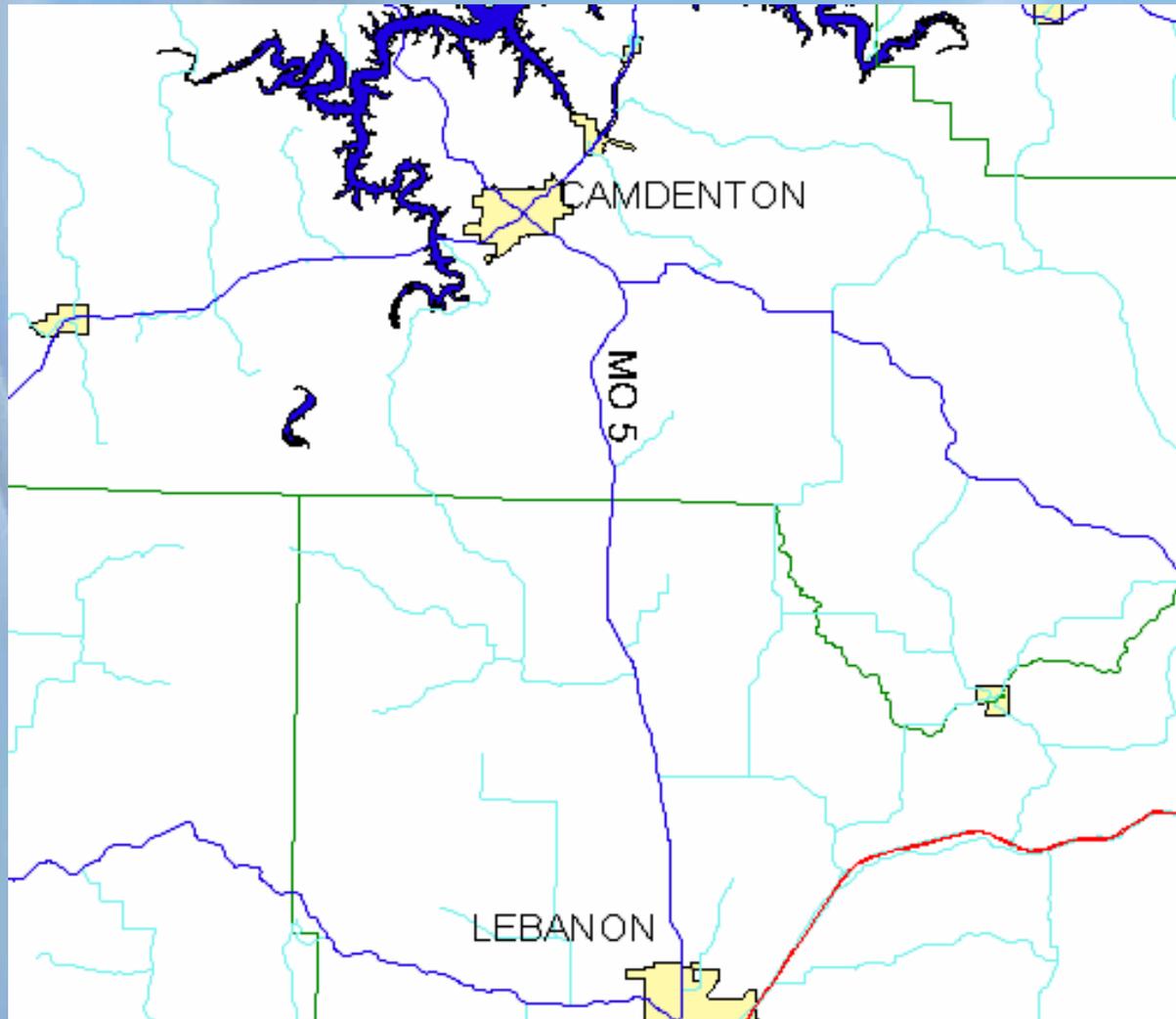
Urban Widening Project

- **Widen from 2 lanes to 4 lanes**
 - **Add raised median strip**
 - **Provide protected left turns at appropriate locations**
- **Goal of VE Team:**
 - **Find proper balance between applying access management principals and minimizing R/W impacts**

Recommendations of VE Team:

- **50-60 entrances within project limits**
 - close 6
 - relocate 3 to side roads
 - remainder are RI/RO
- **Added three $\frac{3}{4}$ Intersections (restrict LO)**
- **Expand some city streets to provide backage roads**

MO 5 Corridor



Rural Bypass Project

- **Relocate 8 miles of Rte 5 around
Camdenton south to Laclede
County line**
 - **Part 4 lane**
 - **Part 2 lane**
- **Goal of VE Team:**
 - **Apply Access Management judiciously
and as economically as possible**

Creative Ideas

Add Left Turn Lanes

- + Access Management Guidelines
- + Reduce conflict / Enhanced safety
- + Increase capacity

- Increased pavement construction
- \$137,000 additional cost

Conclusions

- VE Team initially thinks A.M. principles are excessive
- VE Team recommends increasing costs to improve performance
- Increasing distance between ramp terminals & O.R. increases costs < 10% on rural diamond interchanges
- Applying Access Management techniques improves the chance for most projects to deliver it's purpose and need and achieve its goals

Value = Performance/Cost

Access Management Improves Value



Questions?