Transportation Plan

INTRODUCTION

The Transportation Plan explores the existing transportation framework, existing access to properties, safety, and proposes modifications to each to create a safer, higher quality transportation corridor that can be shared by the adjacent home and business owners and commuters alike. These proposed modifications are depicted in a series of plans and diagrams, following.

The Transportation strategies were developed based on comment from public input sessions, the advisement of the Client Team and Steering Committee, the development of the proposed land use plan and the opportunities identified from the existing conditions analysis.

Because 350 Highway / Blue Parkway is a State of Missouri Highway, it is under the jurisdiction of the Missouri Department of Transportation. It is owned, and maintained by MoDOT, and access is granted or denied by their authority. Historically, MoDOT's focus has been on moving traffic as efficiently and as safely as possible. In recent years, concern for the interconnectivity of land use and aesthetic considerations and transportation issues has emerged, enabling the creation of studies such as this, where transportation, land use, and aesthetics are deeply intertwined.

Similar to the Land Use Plan, the Transportation Plan recommendations are long term in nature. Because of the complexity, size, cost, long timeline, and disruption to the corridor for the proposed major transportation strategies, these strategies will be the most difficult to implement. They are large in scale, and have many regulatory layers to navigate for a project to come to fruition. Despite this, the potential positive impact to the corridor on adjacent property owners, safety, access, land use, and aesthetics warrants short and long term focus.

The Transportation Plan should be used to help guide MoDOT officials, elected officials, city staff members, and decision makers in designating projects for potential funding and support, and through their evaluation processes when new development proposals are presented for the corridor.

Because of the significance of the roadway and its impact on the corridor, the majority of the transportation strategies are focused on it and the major intersections along its length.

Roadway – East of Bannister Road

BACKGROUND

As described in the existing conditions summary, the roadway itself is the major contributing factor for the existing character and nature of the corridor. The roadway itself is the major contributing factor for the existing character and nature of the corridor. The initial design complied with accepted standards of the times. The routes expansion to a 4 lane divided highway, put into place more modern standards, new lanes were separated from the original lanes creating developed land in the median, and numerous intersections.

Another defining feature with tremendous impact on safety, and impact to the surrounding land use is the way the highway cuts diagonally across the urban grid. This divorced the grid on the north side from the south side, creating skewed intersections, and odd shaped lots adjacent to the roadway.

The route also carries a high volume of traffic. In 2002, the Average Daily Traffic ranged between 10,000 to 22,000 vehicles per day. The heavier volumes were found at the western end of the corridor, near I-435, and the lightest traffic volumes were found at the eastern end of the corridor near I-470.

The route is a state highway and not a local street, so the expectation for a large portion of drivers is one of convenient, fast, access to Downtown Kansas City or back home to the suburbs. This causes numerous conflicts in balancing the efficiency of the commuter traffic, with the viability, ease of access, and safety of the surrounding commercial and local traffic, particularly in the Raytown segment of the corridor.

There also is significant change of use, of function, of character in the eight (8) miles of corridor in the study. On the west, the corridor is a standard controlled access urban expressway. In Raytown, the road functions as an accessible commercial corridor. To the east, in the Little Blue River Valley, the road functions as a rural expressway, and further east to Lee's Summit, functions as an urban expressway again.

Rail Bridge – West of Noland Raod

APPROACH

During evaluation of the existing conditions, the roadway was analyzed for function, use, safety concerns, access, and aesthetics. Several issues became clear:

The roadway has differing functions along its length. It is an expressway at the west and east ends, and an urban parkway in the middle. It balances business and commercial uses in the middle with the through put of the commuter traffic along its length.

The roadway itself has limited direct impact to the surrounding uses in the KCMO portions of the parkway. In these segments, access is limited, and the roadway is grade separated from the uses. The greatest impact of the roadway itself is to allow easy and convenient access to the interstate roadway system. In the Raytown segment, the roadway is the primary commercial corridor for the City. It is not grade separated from the surrounding uses, and all properties have access on the roadway. This creates conflict between the two primary users of the roadway: Commuters versus Community.

In order to operate efficiently and to the benefit of all parties, the roadway has to balance the interests of its commuter function (efficient, safe, high speed, through traffic), with the community function of the Raytown core (main commercial service & tax generating corridor in the City). Additionally, it is the most visible part of Raytown to rest of KC Metro, and represents the gateways to and from Kansas City and Raytown for many users. The recommended improvements made to the roadway will have the greatest impact in the Raytown segment of the corridor.

It is easy to understand that what is good for commuters, may not be what is good for the community. It became obvious that it is necessary to balance the commuter and community needs where necessary along the roadway. Key components to balance: safety, intersections (signals, geometries, etc.), reasonable access for all parcels, incorporation of multi-modal transportation where possible and safe, and aesthetics.

Safety

Safety issues in the corridor are the number concern for the public. Safety issues are many and varied, but are made significantly more complex because of the commuter vs. community issue illustrated above. Recommended approaches to balance these issues include:

- Address accident hot spots.
- Regulate speed through reduction where necessary, and enforcement of existing limits.
- Modification of cross-section could address safety, access, infrastructure and aesthetic issues in segments where it would be beneficial. (Raytown segment, Knobtown area)
- Remove flow restrictions, if possible, at Rail Bridge at Knobtown and half access at Blue Ridge.
- Provide dedicated circulation routes for non-vehicular modes of transportation to navigate corridor safely. Provide circulation internal to development, connected to existing neighborhoods and adjacent properties. Providing safe crossings of the highway and intersections is critical.

Intersections

Intersections were also of great concern to the public. The issues identified include safety, ease of navigation, time spent waiting, and ability to negotiate safely as a pedestrian. Approaches to address these concerns include:

- Narrow median at major signalized intersections.
- Modify to a 4-way movement instead of 8-way (modification of wide median separated skewed intersections)
- Curb & gutter
- Reduce unsignalized, full access intersection
- Alternate intersections geometry
- Coordinated signalization
- Continuous right hand movements
- Modify for safety 1st, use 2nd, access 3rd, and aesthetics 4th
- Multi-mode incorporated in to normal flow of intersections
- Safe bike/walk crossings
- Planned bike lane (crossings)
- Pedestrian walks – safe distance

Access

Access has a tremendous impact on the existing roadway. It is controlled on the east and west end of the corridor, but in the Raytown segment, and in Knobtown, access to the roadway exists for all properties. Access is critical for the viability of the commercial uses in Raytown, and the future redevelopment potential of the Knobtown area. But the abundance of uncontrolled access points along the roadway length also creates numerous conflicts with safety concerns. A thoughtful and reasonable approach should be taken with any proposed access management plan. Approaches to address access management are:

- Base access management upon new land use plan.
- Create shared access points/drives.
- Redevelop larger continuous parcels to get consolidated access to redevelop areas.
- Install curb & gutter.
- Provide dedicated turning/accel./dual lanes.
- Understand property owner issues.
- Provide alternatives to modification of access.

Multi-Modal

The development of the corridor as a multi-modal system was also found to be important. The auto, public transportation (bus, light rail, etc), pedestrians, and bikes all would have to find a common ground if their development is to be included in the corridor. There are major safety conflicts in mixing modes with the existing roadway along the corridor. The following approaches are used to address those issues:

- Safety is key.
- Utilize curbing to delineate for safe pedestrian areas.
- Utilize crosswalks, of contrasting material, with pedestrian activated signals, to decrease pedestrian crossing conflict with vehicles.

- Provide for accessible new public transportation facilities in mixed use node areas.
- Incorporate existing public transit system into developments along corridor.
- Provide buffering, setback for comfort and safety.
- For bikes & pedestrians – safe crossing is key, parallel travel is less important.

Aesthetics

The aesthetic approach is detailed in the Aesthetics Plan, beginning on page 82.

TRANSPORTATION PLAN

Through design charettes with the Client Team and the Steering Committee, and based upon the strategies identified in the market positioning strategy, the Transportation and Infrastructure Plan, and Major Proposed Transportation Improvements Plan was developed.

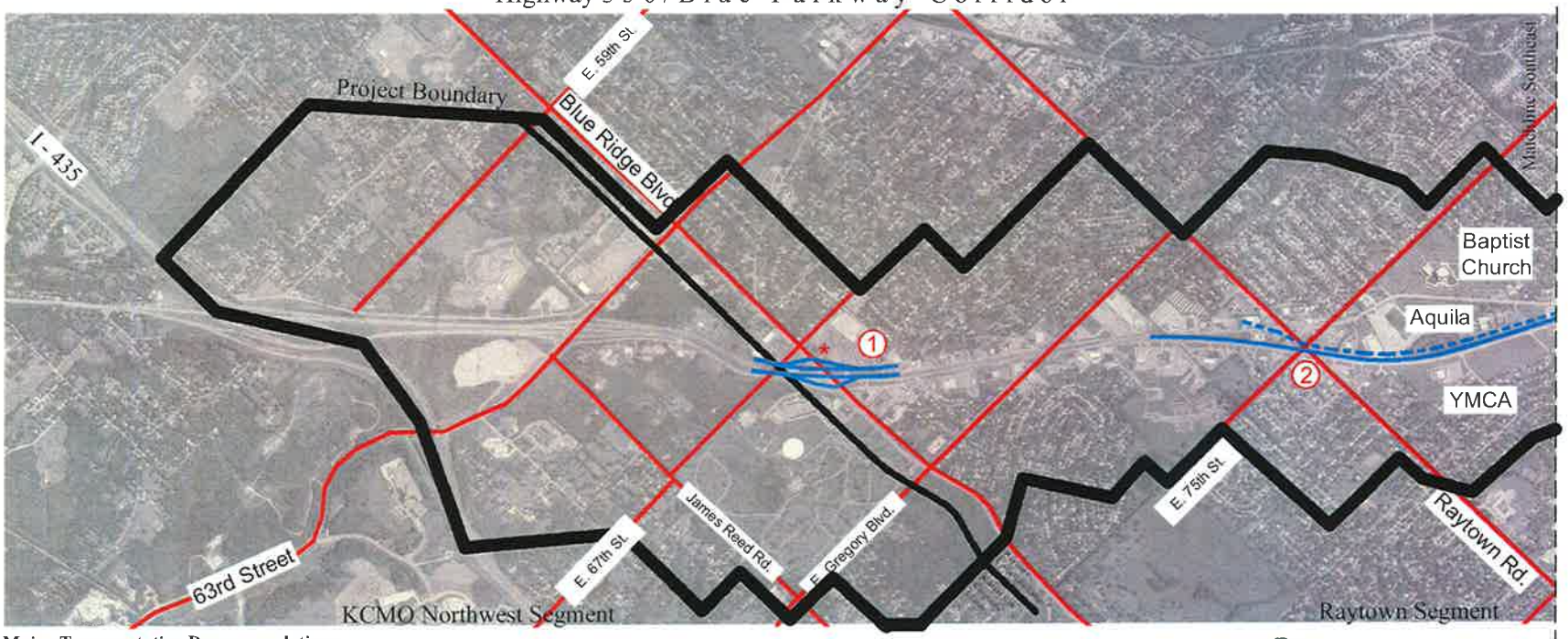
Major Proposed Transportation Improvements

The Major Proposed Transportation Improvements Plan **(Refer to map, pages 69 -70)** identifies the five major transportation improvements proposed in this study. Additional improvements and their location are detailed on the Transportation and Infrastructure Plan **(Refer to map, pages 72 -73).**

The five major projects identified are (from west to east):

1. Interchange enhancement at Blue Ridge and 350 Highway / Blue Parkway. Add ramp access to make Blue Ridge a full interchange. Because of limited property availability, geometric requirements, and existing ROW, a single point interchange is proposed as a possible solution at this intersection.
2. Realignment of 350 Highway / Blue Parkway at wide median separation east and west of Raytown Road. Realign west bound lanes to run parallel to east bound lanes with narrow median. Realign Raytown Road to create a non-skewed, four way intersection. Utilize the vacated land for redevelopment.
3. Realignment of 350 Highway / Blue Parkway at wide median separation east and west of Westridge Road. Realign west bound lanes to run parallel to east bound lanes with narrow median. Realign Westridge to create a non-skewed, four way intersection. Utilize the vacated ground for redevelopment.
4. Rail Bridge at Knobtown. Widen or remove rail-bridge west of Knobtown to allow for additional lane and storm sewer improvements.
5. Realignment of 350 Highway / Blue Parkway west of Bannister Road. Realign east bound lanes to run parallel to west bound lanes with narrow median to reduce accidents in this area. Utilize existing R.O.W. for local road servicing future development.

Highway 350/Blue Parkway Corridor



Major Transportation Recommendations

The five major projects identified are (from west to east):

1. Interchange enhancement at Blue Ridge and 350 Highway / Blue Parkway. Add ramp access to make Blue Ridge a full interchange. Because of limited property availability, geometric requirements, and existing ROW, a single point interchange is proposed as a possible solution at this intersection.

2. Realignment of 350 Highway / Blue Parkway at wide median separation east and west of Raytown Road. Realign west bound lanes to run parallel to east bound lanes with narrow median. Realign Raytown Road to create a non-skewed, four way intersection. Utilize the vacated land for redevelopment.

3. Realignment of 350 Highway / Blue Parkway at wide median separation east and west of Westridge Road. Realign west bound lanes to run parallel to east bound lanes with narrow median. Realign Westridge to create a non-skewed, four way intersection. Utilize the vacated ground for redevelopment.

4. Rail Bridge at Knobtown. Widen or remove rail-bridge west of Knobtown to allow for additional lane and storm sewer improvements.

5. Realignment of 350 Highway / Blue Parkway west of Bannister Road. Realign east bound lanes to run parallel to west bound lanes with narrow median to reduce accidents in this area. Utilize the vacated ground for redevelopment.

LEGEND

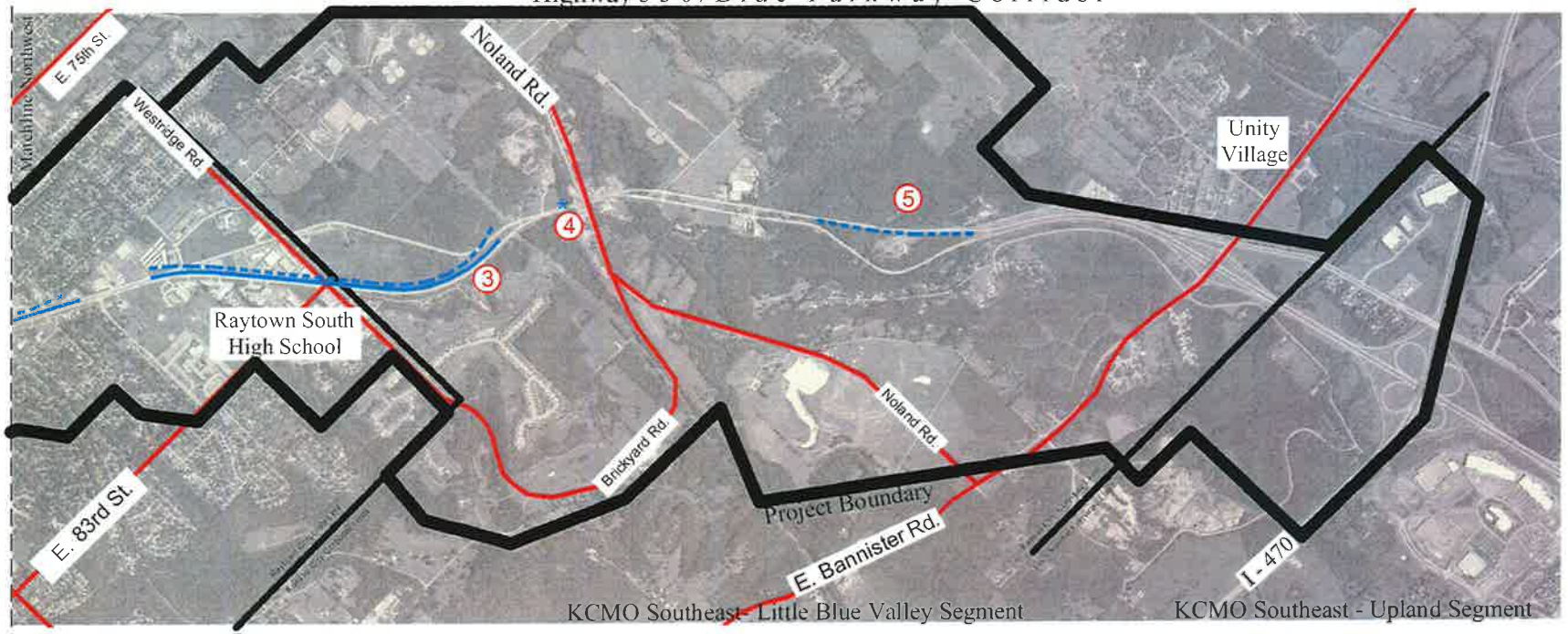
- Project Boundary
- Corporate Limit Line
- Existing 350
- Proposed Realignment of 350
- Proposed Major Transportation Project Area (1)
- Widening of Rail Bridge *
- Interchange Enhancement - Added Ramp Access to Full Access *

MoDOT MARC PARSONS

Major Proposed Transportation Improvement Concepts - Northwest 1 of 2

January 12, 2007

Highway 350/Blue Parkway Corridor



Major Transportation Recommendations

The five major projects identified are (from west to east):

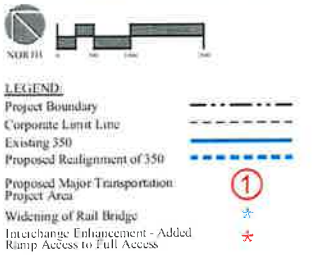
1. Interchange enhancement at Blue Ridge and 350 Highway / Blue Parkway. Add ramp access to make Blue Ridge a full interchange. Because of limited property availability, geometric requirements, and existing ROW, a single point interchange is proposed as a possible solution at this intersection.

2. Realignment of 350 Highway / Blue Parkway at wide median separation east and west of Raytown Road. Realign west bound lanes to run parallel to east bound lanes with narrow median. Realign Raytown Road to create a non-skewed, four way intersection. Utilize the vacated land for redevelopment.

3. Realignment of 350 Highway / Blue Parkway at wide median separation east and west of Westridge Road. Realign west bound lanes to run parallel to east bound lanes with narrow median. Realign Westridge to create a non-skewed, four way intersection. Utilize the vacated ground for redevelopment.

4. Rail Bridge at Knobtown. Widen or remove rail-bridge west of Knobtown to allow for additional lane and storm sewer improvements.

5. Realignment of 350 Highway / Blue Parkway west of Bannister Road. Realign east bound lanes to run parallel to west bound lanes with narrow median to reduce accidents in this area. Utilize the vacated ground for redevelopment.



Major Proposed Transportation Improvement Concepts - Northwest 1 of 2

January 12, 2007

These projects have the greatest potential positive impact on the transportation system in the corridor. These include safety improvement, visibility improvements, access improvement, and additional adjacent redevelopment opportunities.

These projects will also require significant efforts in planning, design, funding and implementation to accomplish. Additionally, there will be significant additional study required for these proposed major improvements to become reality.

Transportation and Infrastructure Recommendations

The proposed Transportation and Infrastructure Plan **(Refer to map, pages 72 -73)** identifies the key strategies for transportation improvements in the corridor, including the Major Proposed Transportation Improvements. Significant additional transportation improvements are recommended. They include:

- Intersection improvements.
- Incorporation of multi-modal transportation into the planned transportation improvements.
- Managment of access along corridor.
- Development of local sanitary sewer in non-sewered areas within study boundary (Little Blue Valley).
- Development of storm sewer utilities for non-sewered areas in Raytown and Knobtown areas.
- Development of curb and gutter for the Raytown Segment, both on 350 Highway/Blue Parkway, and adjacent neighborhoods. Develop these improvements with the new storm sewer utilities mentioned above.

ACCESS MANAGEMENT

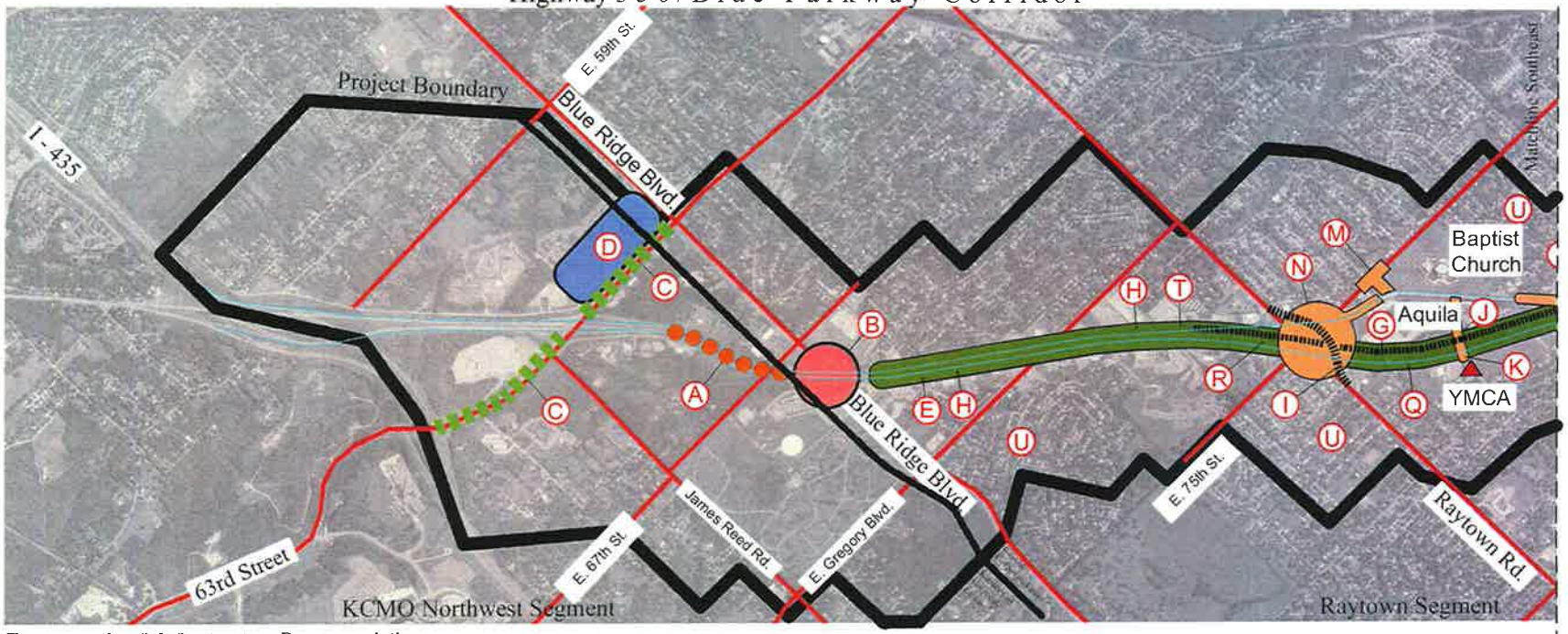
As indicated previously, access management is an important component in the study of the roadway and its safety, land use, aesthetic and economic viability. Access management is the management and control of interchanges, intersections, and crossings, driveways and access points along a roadway. It is used to prevent or limit future conflict points or in areas where significant conflict exists and where changes are recommended to occur.

Providing access management for new or undeveloped roadways is relatively simple. Recognized standards have been developed for the design and construction of these facilities and they can be easily applied. Retrofitting an existing roadway with numerous driveways and cross streets to a new roadway standard is unrealistic and in most cases not even possible. Therefore, a standard of reasonableness should be applied in identifying access management opportunities on 350 Highway / Blue Parkway.

Guidelines

The Missouri Department of Transportation has access management guidelines that are applied to their roadways based upon type of roadway. A graphic depiction of the relevant guidelines

Highway 350/Blue Parkway Corridor



Transportation & Infrastructure Recommendations

Ⓐ Potential changes to bring lanes together. Transition from urban expressway to urban parkway. Introduction of curb and drainage.

Ⓑ Interchange enhancements.
- Short range options
  - Remove access to Wal-Mart from 350 (SE corner)
  - Remove access from vacant auto showroom (SE corner)
  - Add ramp at SE Blue Ridge Blvd. corner of interchange
- Long range options
  - Single point interchange (see concepts)
  - Narrow diamond w/ roundabout (see concepts)

Ⓒ Streetscape enhancements.
- Landscape street trees
- Median pavers
- Ornamental lighting
- Sidewalks/crosswalks at signalized intersections

Ⓓ Multimodal transportation node.
- Park & ride
- Connect to neighborhood (trails, walks)
- Connect to retail/mixed use area

Ⓔ Curb & gutter improvements for roadway - urban section.

Ⓖ Realignment of westbound 350, south to parallel eastbound 350.
- Curb & gutter
- Piped storm drainage

Ⓗ Application of access management principles to reduce dangerous access points, increase safety, and increase ease of ingress/egress - consolidation into joint drives. Curb & gutter in urban section.

Ⓘ Realignment of local arterial (Raytown Road) to as close to a 90 degree intersection as possible.

Ⓙ Road extension adjacent to Aquila to connect to old 350 eastbound lane. Signalized intersection at 350 realignment access from YMCA.

Ⓚ Newly signalized intersection.

Ⓛ Modify existing westbound lane to outer access road.
- Realign 'Y' intersection

Ⓜ Realign existing westbound 350 Highway lanes (after proposed major realignment is completed) to connect to 75th as local road.

Ⓝ Major road and infrastructure changes at primary node. Significant study for the realignment and redesign will be required.

Ⓞ Reduced speed limit - entire Raytown segment to 35 mph.

Ⓡ Regional storm detention facility - create as amenity.

Ⓢ Piped storm utility on roadway.

Ⓣ Burial of overhead utilities.

Ⓤ Storm utility, curbs & gutters in neighborhoods.

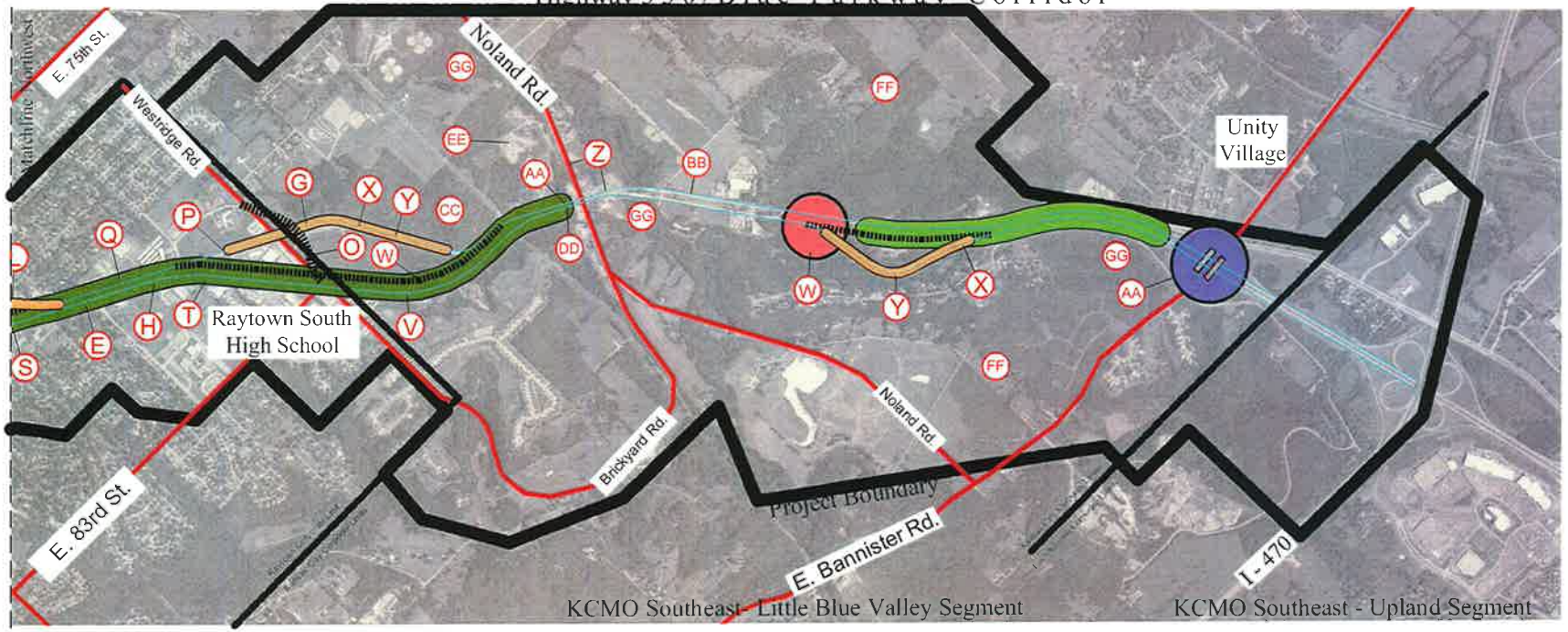
NORTH

LEGEND
- Project Boundary
- 350 Highway / Blue Parkway Roadway
- Corporate Limit Line

Transportation & Infrastructure Plan - Northwest 1 of 2

January 12, 2007

Highway 350/Blue Parkway Corridor



Transportation & Infrastructure Recommendations

- (E) Curb & gutter improvements for roadway - urban section.
- (S) Realignment of westbound 350, south to parallel eastbound 350.
  - Curb & gutter
  - Piped storm drainage
- (H) Application of access management principles to reduce dangerous access points, increase safety, and increase ease of ingress/egress - consolidation into joint drives. Curb & gutter in urban section.
- (Q) Realign Westridge Road at Highway 350 to as close a 90 degree intersection as possible.
- (P) Connect existing westbound land to local road or vacate based future land use changes.
- (T) Burial of overhead utilities.
- (V) Curb & gutter improvements.
- (W) Realign 350 eastbound, north to be parallel with westbound 350.
- (X) Vacate or utilize existing converted 350 eastbound/westbound ROW
- (Y) Utilize converted 350 roadway as internal development drive as much as possible, depending on use.
- (Z) Redevelop Knobtown, Noland Road and MO 350 transportation elements.
  - Curb & gutter
  - Access management of intersection and redevelopment area
- (AA) Rail bridge - choke point for roadway/storm water.
  - If bridge remains a rail line, redo bridge to accomodate storm drainage lane improvements
  - If bridge is removed, it opens up greater redevelopment area potential and Noland Road
- (BB) Utilize existing section with shoulder from Little Blue River Bridge, east to I-470.
- (CC) Implement sanitary sewer plan to reach development areas not currently served.
- (DD) Storm sewer improvements at rail bridge.
- (EE) Affordable base material for projects in corridor.
- (FF) Sanitary sewer development is needed to open development opportunities in valley.
- (GG) Bike and pedestrian connections needed to and through valley.

NORTH

LEGEND

- Project Boundary
- 350 Highway / Blue Parkway
- Roadway
- Corporate Limit Line

Transportation & Infrastructure Plan - Southeast 2 of 2

January 12, 2007

are included, **(Refer to map, pages 75 -76)**. These guidelines are applied as is possible to new roadways and redeveloping existing MoDOT roadways to manage their efficiency and safety.

These guidelines can not be applied across the board on existing roadways. But they may be used as a tool to indicate potential conflicts on an existing roadway. This was done for the 350 Highway / Blue Parkway corridor.

The Roadway Access Analysis Map **(Refer to map, pages 77 -78)**, indicates the location of the existing driveway locations on the roadway. It also indicates the number of access points per mile for individual segments of the roadway. Additionally, the map indicates the severity of potential conflicts based upon the rule of thumb:

0-9 access points per mile = conflicts are few, access is managed

10-20 access points per mile = numerous conflicts exist, access should be better managed.

21+ access points per mile = significant conflict exists, resulting in significant reduction in safety, efficiency and ability to navigate access to properties. Access needs to be managed to reduce the conflicts.

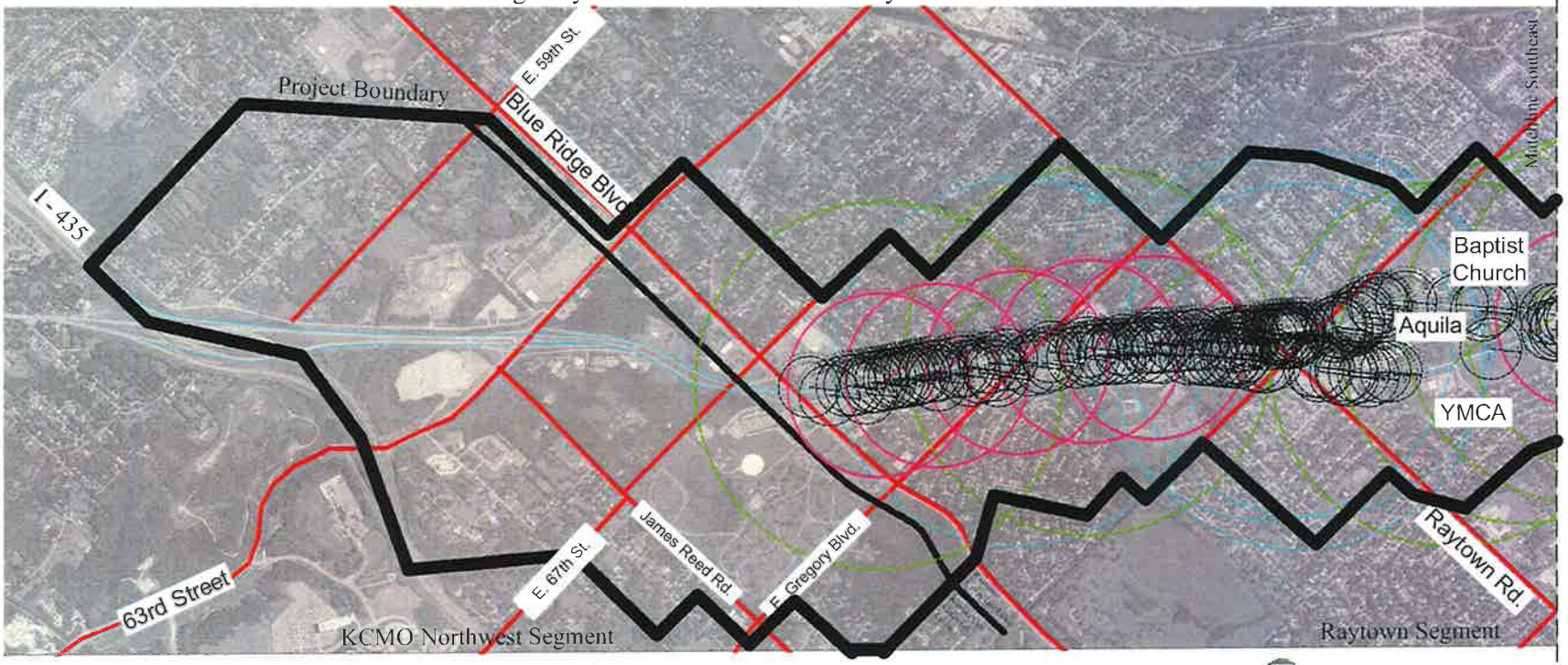
The application of this standard to the roadway indicated the Raytown Segment has significant conflict, as high as 74 access points/per mile adjacent to the Raytown Road intersection. This indicates the need to develop alternatives to the existing access of the roadway to reduce potential conflicts. This is supported by the traffic accident data analyzed in the Existing Conditions Report.

In addition to simply looking at the number of drive locations in a segment, the intersection offsets recommended in the guidelines were applied to those driveways. Based upon the amount of overlap of suggested offsets for access points, it again becomes very clear that 350 Highway / Blue Parkway does not meet the standards as described in the guidelines. Again, significant access conflicts exist on the Raytown Segment of the corridor.

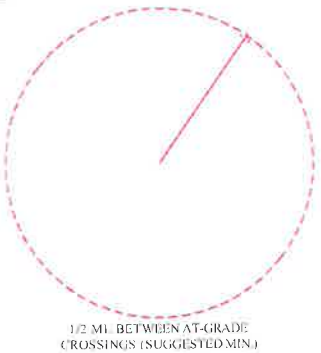
Because of the magnitude of the issue, and the detail required to explore property specific issues along 350 Highway / Blue Parkway, preparing an access management plan is not within the scope of this study. However, because it is tied very closely to the land use, transportation and aesthetics issues described in this report, Conceptual Access Management Techniques are presented as a starting point for addressing access management in the corridor, **(Refer to map, page 79).** Developing a detailed access management plan for the corridor should be an important next step for the redevelopment of the corridor.

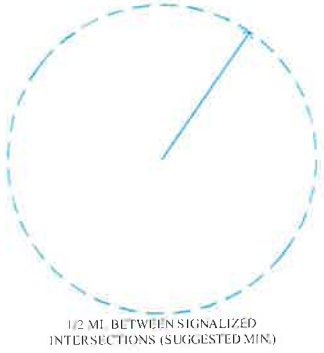
The Transportation Plan proposes both major and minor improvements to the transportation and infrastructure system. These improvements, in safety, access, incorporation of multiple modes of transportation, utilities and sewers, will have great positive impact on the corridor.

Highway 350/Blue Parkway Corridor



LEGEND:



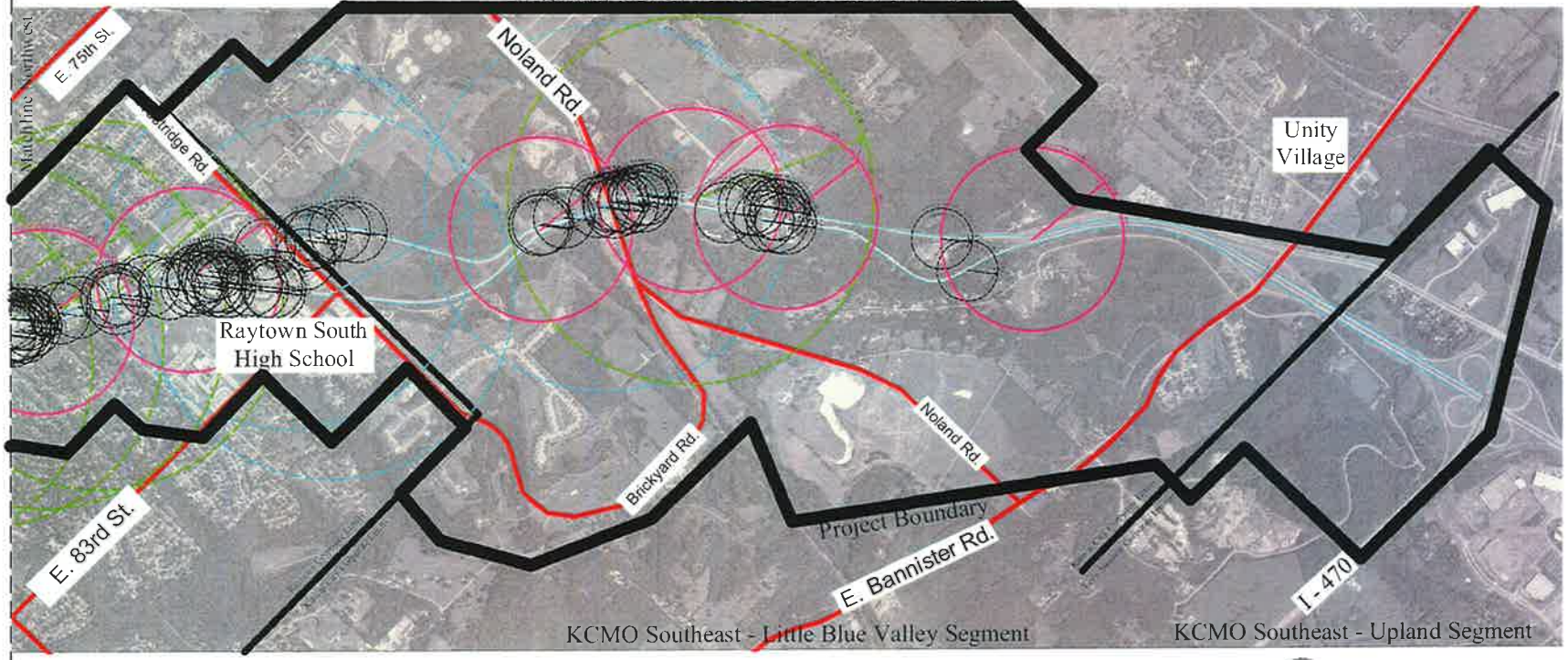


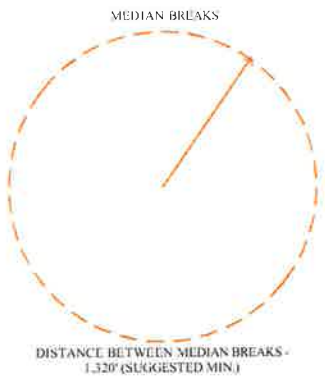
Application of MoDOT Access Management Guidelines to Corridor

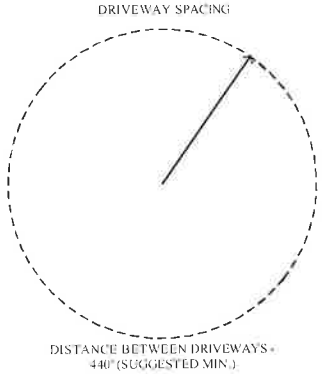
Proposed Access Guidelines - Northwest 1 of 2

January 12, 2007

Highway 350/Blue Parkway Corridor



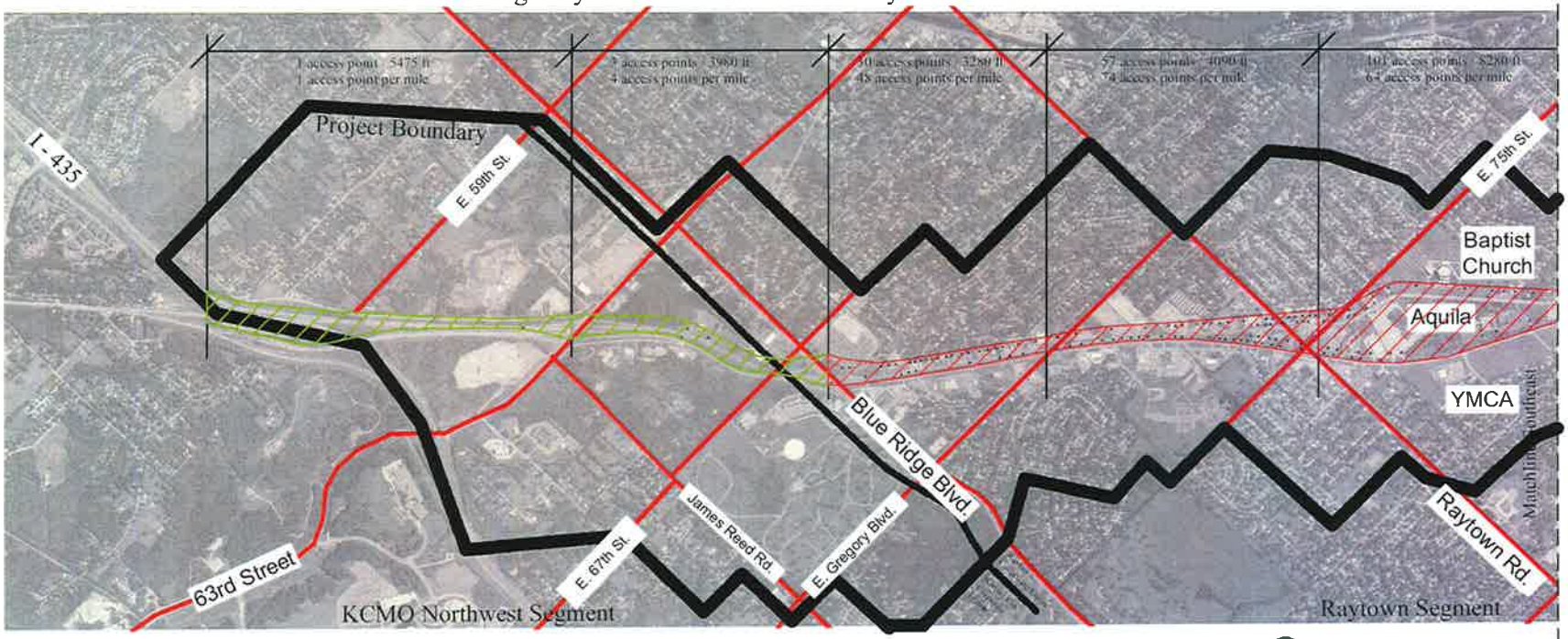




Proposed Access Guidelines - Southeast 2 of 2

January 12, 2007

Highway 350/Blue Parkway Corridor



Description

This map indicates the location of the existing driveway locations on the roadway. It also indicates the number of access points per mile for individual segments of the roadway. Additionally, the map indcates the severity of potential conflicts base upon the rule of thumb:

0-9 access points per mile = conflicts are few, access is managed.

10-20 access points per mile = numerous conflicts exist, access should be better managed.

21+ access points per mile = significant conflict exists, resulting in significant reduction in safety, efficiency and ability to navigate access to properties. Access needs to be managed to reduce the conflicts.

NORTH

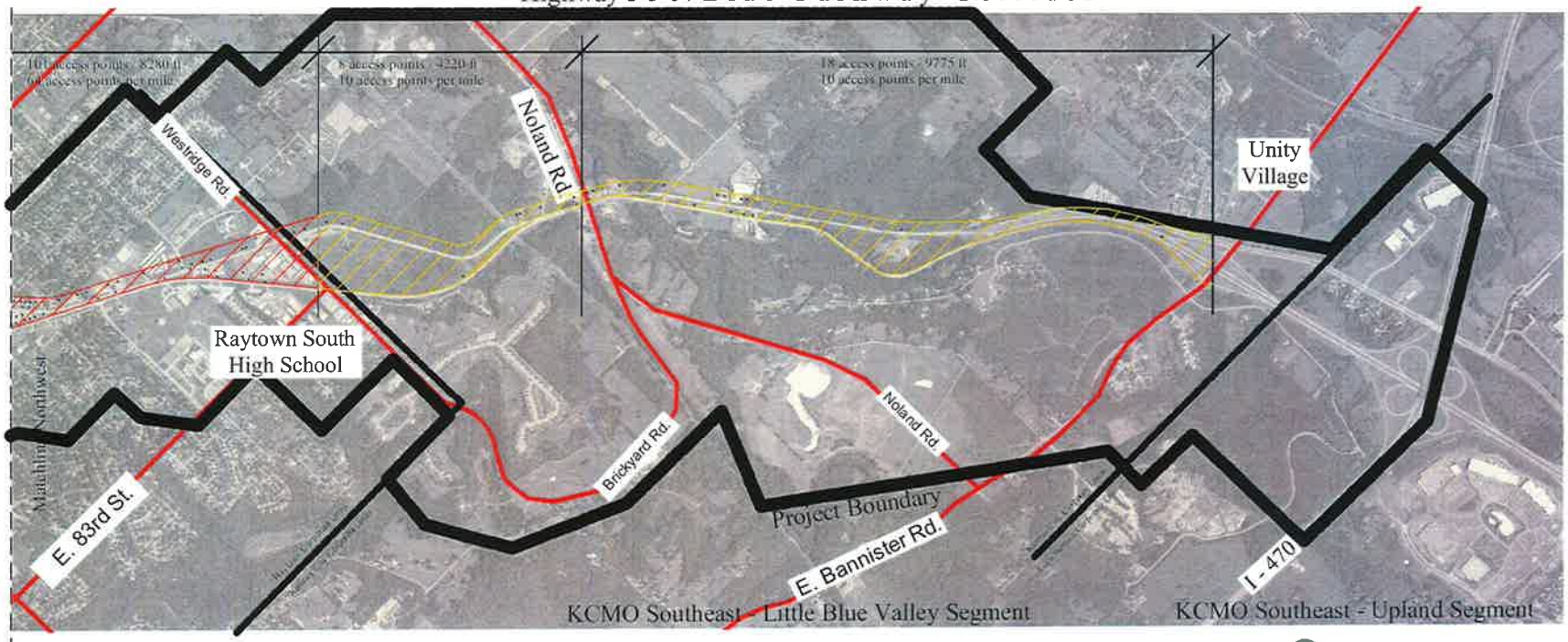
LEGEND:

- Project Boundary
- Corporate Limit Line
- 0 - 9 access points/mile
- 10 - 19 access points/mile
- 20+ access points/mile
- Access Point *

Roadway Access Analysis Map - Northwest 1 of 2

January 12, 2007

Highway 350/Blue Parkway Corridor



Description

This map indicates the location of the existing driveway locations on the roadway. It also indicates the number of access points per mile for individual segments of the roadway. Additionally, the map indcates the severity of potential conflicts base upon the rule of thumb:

0-9 access points per mile = conflicts are few, access is managed.

10-20 access points per mile = numerous conflicts exist, access should be better managed.

21+ access points per mile = significant conflict exists, resulting in significant reduction in safety, efficiency and ability to navigate access to properties. Access needs to be managed to reduce the conflicts.

NORTH

LEGEND:

Project Boundary	
Corporate Limit Line	
0 - 9 access points/mile	
10 - 19 access points/mile	
20+ access points/mile	
Access Point	*

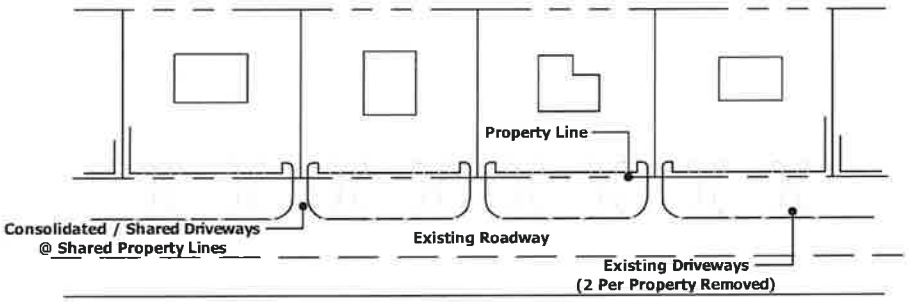
MoDOT MARC

Roadway Access Analysis Map - Southeast 2 of 2

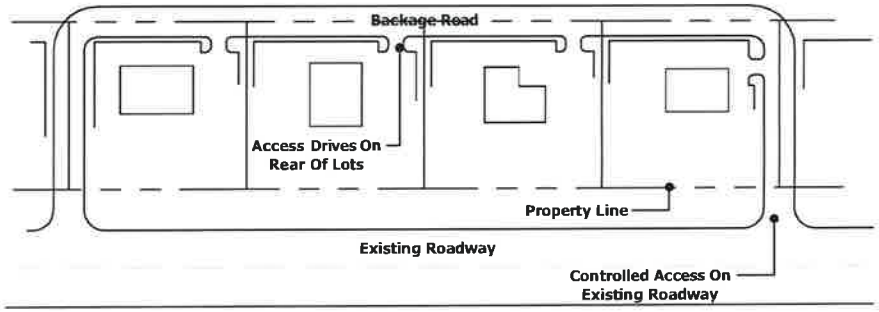
January 12, 2007

PARSONS

Consolidation / Sharing Drives

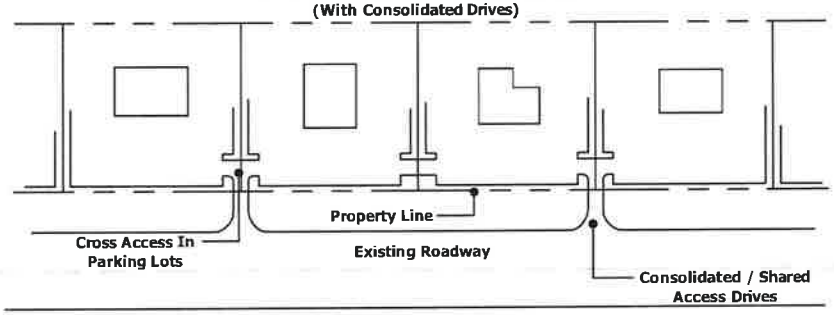


Backage Roads

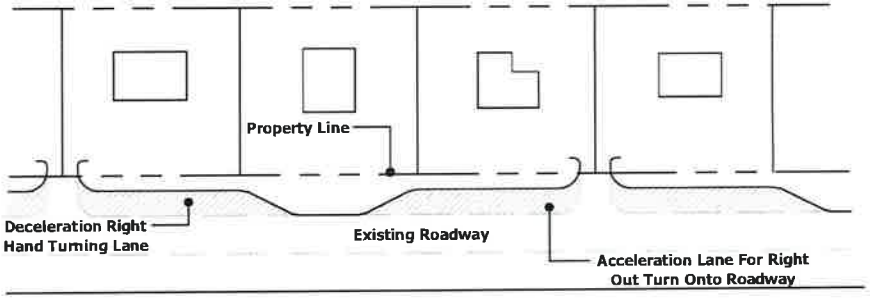


Internal Property Connections

(With Consolidated Drives)



Additional Turning Lanes



The transportation and land use recommendations address 'big picture' issues, ideas and solutions. These 'big ideas' are typically associated with a longer term goal and larger amounts of required funding to come to fruition. The next corridor plan component, the Aesthetics Plan, provides recommendations that could be implemented in a shorter time frame and at relatively less expense than the land use and transportation recommendations.

(this space left intentionally blank)