

# Bannister Road Redevelopment

Phase 1 - Highway 71 to White Avenue

## Feasibility Report

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**3-Trails**  
Community Improvement District

**Sponsor**

Presented to  
**CITY OF KANSAS CITY, MISSOURI**

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This report was prepared with the input of the 3-Trails Community Improvement District, Missouri Department of Transportation, and City of Kansas City, Kansas City Area Transportation Authority, Southern Communities Coalition, Aventis, Santa Fe Industrial Park and affected businesses and neighborhood stakeholders.

# Bannister Road Redevelopment

## **Abstract**

*Bannister Road is unattractive. There are too many signalized intersections too close together. The adjacent Mall, retail areas, and Marion Park are doing poorly. There are many unknowns in the area such as the major road works at the I-435 and Highway 71 interchange, rapid development in Lee's Summit, Overland Park, Lenexa etc., and possible redevelopment or new development in and around the 3-Trails Community Improvement District that will affect traffic along Bannister Road. Although the original objective of the review was to develop two options, an interim and then a final layout, three options have been developed. First is a low cost beautification between Highway 71 and I-435 with some minor beautification from I-435 to White Street. Next is a continuation of the beautification plus a two-lane roundabout at Marion Park Drive. The third option involves widening those sections of Bannister Road that are not six lanes, removal of the signals at Marion Ridge Drive, a three-lane roundabout at Marion Park Drive. Additionally roundabouts could be considered to replace signals at the Highway 71 interchange and at an intersection east of Hillcrest Road. Widening Bannister Road to six lanes could be implemented at low cost without widening the bridge over I-435 by narrowing vehicle lanes to 10 feet.*

## ***Introduction***

To compliment the proposed redesign of 87<sup>th</sup> Street, create a second front door to the 3-Trails Community Improvement District (CID), upgrade the entrance to Marion Park, a future entrance to the Santa Fe Industrial Park development, and promote economic development and revitalization of the area, the 3-Trails Community Improvement District asked for a review of Bannister Road to consider various possibilities for upgrading it from Highway 71 to White Street. Essential parts of this review were improving traffic flow, improving aesthetics, and improved facilities for pedestrians, bicyclists, and transit riders.

During the preparation of the three concept plans, future development scenarios that could occur along this corridor and within the 266 acre CID were considered with their likely impact on Bannister Road. It is envisaged that the CID could become, with community support, a village straddling the Santa Fe Oregon and California National Historic Trails where thousands of people will live, work, play, go to school, and fulfill many of their needs. Within this village, there will be a mixture of building types with balconies, porches, narrow streets, wide sidewalks, sidewalk cafes, neighborhood stores, larger stores and a new multi-storey mall. Parking will be on both sides of each street or inside parking garages. Surface parking lots would be eliminated, or severely restricted, so walking to facilities is shorter and more attractive. There will be many big trees in the whole area, music in Schumachen Park on Sundays, Buskers (street entertainers), and buildings that have style and create an identity for the area.

The type of development that occurs is important to the future health and vitality of the area. If the typical car based development of past years is implemented, roads could become overloaded and congested. A village style development with a highly interconnected street system based upon the principles of transit supportive development will minimize traffic impacts and enable a more successful development with a lower probability of overloading the roads.

To get there will require a lot of work and a grand vision shared by many people. Although Bannister Road, the southern entry to Banister Mall, is an ugly highway with considerable number of vacancies within the retail area, rejuvenating Bannister Road is a great first step towards revitalizing the area.

Bannister Road is also the front door to Marion Park, an area that has the necessary infrastructure to enable mixed commercial development but has few customers. Prospective customers indicate that they do not want to move into Marion Park because of the ugliness of Bannister Road. Low cost aesthetic improvements between Highway 71 and I-435 are an important part of attracting new tenants and customers to Marion Park.

## ***Existing Conditions***

Due to past road design and development patterns, Bannister Road was designed solely to move vehicles. Money spent on landscaping was considered wasted as it took money away from roads. Roads became ugly, concrete fields, with little to no greenery. Old-fashioned development patterns that separated development by function increased trip generation causing urban sprawl. As a result, everyone is forced to travel further, and more often, making a number of scattered stops for even simple things. The tax code rewarded developers for constructing buildings that are designed to only last 12 years instead of buildings that had style and lasted lifetimes. As a result, buildings are mostly cheap and ugly when compared to buildings of past eras. As a result, people move on as

“new, cleaner, and prettier” developments open in surrounding areas because people had no relationship with the ugliness of the past.

Due to the migration of businesses to newer and “prettier” buildings, many of these first tier “grey field” subdivisions, such as the Bannister Mall, that lose tenants are being leveled, in whole or part, converted to other uses, or left empty for considerable periods. Current land use patterns that separate residential areas from retail areas eliminate any permanent customer base.

Bannister Road has a mixed lane arrangement. Beginning with four lanes to the east, it then widens to six lanes with turn lanes at Hillcrest Road, narrows to five lanes with dual turn lanes on the I-435 Bridge, continues on as a five lane road to Highway 71 Interchange ,after which it narrows to four lanes. It also has seven signalized intersections in less than a mile. The concentration of signals is a major problem for managing traffic along Bannister Road. For optimum operation, signalized intersections should be located at least a quarter to a half mile apart. Closer spacing substantially reduces capacity, accessibility, delay, the number of stops and increases ugliness. There are a number of other problems along Bannister Road. First, there are trap lanes, lanes in which drivers are forced into a direction they may not wish to take, causes weaving. Second, there are too many turn lanes and median openings. Third, sidewalks are not continuous and restrict walking. Forth, there are no bicycle facilities. Lastly, bus stops are of low quality and hard to find.

The retail area is depressed with a lack of residential units that could provide potential customers for the Mall. Infrastructure for transit riders, pedestrians, and bicyclists is poor. Property values are depressed, sales tax is down, and both, the CID and the Marion Park development have trouble finding businesses that are willing to move into a depressed, unattractive area.

## ***Bannister Road Improvements***

### **Traffic Analysis**

The Missouri Department of Transportation collected traffic data from their database and from the City of Kansas City traffic data. They undertook a series of capacity analyses to test the effectiveness of the proposed changes to Bannister Road. Their conclusion was that the proposed design alternatives are feasible. Alternate Street Design, P.A. undertook the capacity analysis for the roundabout at Marion Park Drive.

At this stage, it is difficult to predict traffic volumes because there are so many unknowns such as the completion of the improvements to the I-435, I-470, and Highway 71 interchange that could alter traffic volumes and patterns, and even reduce traffic through the study area. Various developments and their rate of implementation, the success of any road improvements to bring development to Marion Park, and the traffic reductions due to a mixed-use development with many interconnected roads will all affect the traffic volumes and operation of Banister Road. Therefore, at this stage, the road design was based on existing traffic counts.

### **Marion Park Drive Roundabout**

Although a two-lane roundabout at the intersection of Bannister Road/Marion Park Drive is feasible, as shown in the table below, vehicle queues from the Home Depot signal can back traffic into the roundabout where less courteous drivers could block the roundabout. The Missouri Department of Transportation is uneasy about agreeing to a roundabout that may be blocked by vehicle queue from a signalized intersection. Therefore, removal of the signals from Home Depot is necessary.

In the future, the 500-acre Santa Fe Industrial Park immediately to the north will be developed. Currently, the traffic generation from this development and its connections to the surrounding road network is uncertain. The two-lane roundabout has limited spare capacity and may need to be enlarged to a three-lane roundabout as development to the north proceeds.

	AM Peak			PM Peak		
	LOS	Delay	Max Queue	LOS	Delay	Max Queue
Roundabout	A	9.9	384 ft (E)	A	5.3	191 ft (W)

## ***Road Development Options***

### **Option 1**

A simple method of beautifying Bannister Road between Highway 71 and I-435 is to:

- Replace the concrete within the medians with trees, grass, and flowers.
- Plant additional trees along both sides of Bannister Road.
- Landscape Highway 71 interchange.
- Add some form of entrance walls, or other structures on both sides of Bannister Road between the Highway 71 and the creek to notify people that they are entering the 3-Trails Community, a unique and special place that has pride in itself and welcomes them.
- Extend the landscaping as close to I-435 as is feasible.
- Add a sidewalk, curb, and gutter to the north side of Bannister Road between Highway 71 and I-435 where they are missing. These additions provide a defining edge and convert a rural looking road into a more attractive urban road.
- Construction of the mixed-use trail (the 3-Trails Corridor of the Metro Green Regional Trails System) on the north side would improve the appearance of the area. The north side was chosen because of greater amount of flat right-of-way is available. The trail crossing of Bannister Road was chosen at Marion Park Drive because it is a Tee intersection where conflicts between pedestrians and vehicles are fewer than at 4-way intersections.
- In the short term, improvements to the Marion Park Drive signalized intersection are desirable to enhance its appearance by landscaping the islands and painting the signal pole a dark green. Where landscaping cannot be provided, replace the concrete paving with brick pavers.
- Removal of the existing concrete median, reshaping it to a smoother flow and landscaping would also improve the appearance of Bannister Road.
- Cleaning the area around Hart Grove Creek and the access road to the creek on the north side of Bannister Road and east of the creek is also necessary and even some cleanup and plantings along the creek banks would help to improve the overall image.
- Beautification of the Hart Grove Creek by removing the cement slab walls and restoration of the natural streambed to enhance the visual appearance and emphasize the historic trails legacy of the area.

- Narrowing vehicle lanes to 10 or 11 feet would gain road space for planter strips and wider medians.
- Construct a short wall on the Home Depot side to support the sidewalk so trees can be planted between the sidewalk and Bannister Road, consistent with the rest of Bannister Road.

This option will greatly enhance the appearance of Bannister Road at a relatively low cost.

## **Option 2**

This option includes the changes proposed in Option 1, but also includes a roundabout at the intersection of Bannister Road and Marion Park Drive. This option includes:

- Install a roundabout at Marion Park Drive. Because traffic from the signals at Home Depot entrance would back into the roundabout it will be necessary to remove the Home Depot signals as part of the installation of the roundabout. The intersection would be redesigned as shown in the mater plans to permit right turns in and out, and left turns in. Only left turns out of Home Depot and Taco Bell would be prohibited. Alternate routes for these vehicles are provided to the north and the south through the roundabout as shown. This new connection to Home Depot from Marion Park Drive will save drivers to the south travel time because they will no longer have to use Bannister Road.
- Change the lane arrangement across the bridge to two through lanes in each direction plus dual left turn lanes. This will provide additional green space along Bannister Road on both sides of I-435.
- Narrowing vehicle lanes to 10 or 11 feet and reshaping the medians will greatly increase the available landscape space and may slow traffic.
- Reshape the I-435 northbound off-ramp to eliminate one of the major problems that existed when people tried to merge across several lanes to reach the left turn lane into Bannister Mall. This redesign will remove the uncertainty that eastbound traffic had as they approached the Mall from the west. The new northbound off-ramp allows drivers to exit the ramp and drive across two lanes while the off-ramp signal is green to northbound ramp traffic. Other drivers could turn right during the Bannister Road through phase. These drivers have the option of selecting one of the many gaps in the vehicle flow and then move across to the left turn lanes, or use the left turn lanes at Drury Avenue. In the future, it may become necessary to provide dual right turn lanes.
- Opposite the fire station, the strip shopping center has an unnecessary median opening because it left turn access is available on both sides of the shopping area at Marion Ridge Drive and Drury Avenue. Eliminating this left turn lane, albeit a short left turn lane, simplifies emergency access to and from the fire station, and increases the median width for landscaping.
- Realign pedestrian crosswalks where possible, so the pedestrian crossings pass though the median and provide pedestrians with a refuge as they cross Bannister Road.

- Reshape the I-435 on-and off-ramps to slow vehicles and provide safer pedestrian crossings. The new shape reduces the extent to which drivers have to turn their heads and therefore reduces the strain on a driver's neck. Drivers are then able to see approaching gaps better, select smaller gaps and increase right turn lane capacity within a safer environment.
- Adding right turn slip lanes at other major intersections would improve right turn access and egress, reduce pedestrian crossing distances, and provide safer pedestrian crossings. Some suggested right turn slip lanes are shown in this alternative. Other possible locations are shown in Option 3.

### **Option 3**

If the area develops as envisaged, traffic will increase. As traffic volumes increase, there will come a time when it will be necessary to widen Bannister Road to six lanes from Hillcrest Road to Highway 71. Additional lanes can be added without right-of-way by redesigning the available space with narrower lanes and more refined turn lanes. Removal of the signals at Marion Ridge Drive would be highly desirable to improve traffic flow. This option uses all of the elements of the previous options but includes the following.

- Widen Bannister Road to a full six lanes throughout the project area but as a road that is friendlier than the typical six-lane road. By narrowing the vehicle lanes to ten-feet, which is acceptable where truck volumes are not high, three travel lanes are now 30 feet wide, only 6 feet wider than a standard road with two 12-foot wide lanes. The benefit of three, 10-foot wide lanes is that pedestrians do not have to walk a long way to cross the highway. Secondly, narrower lanes can help to slow drivers, the wider medians, and planter strips help to beautify the area.
- Removing the signals at Marion Ridge Drive solves a number of weaving and other problems with drivers accessing the Mall. However, the removal of these traffic signals forces traffic currently using Marion Ridge Drive to use Drury Avenue. Removal of these signals only eliminates the left turn in and out of Marion Ridge Drive. The left turn into Marion Ridge Drive is a very low left turn volume, only nine and 43 vehicles per hour in the respective AM and PM peak hours. The left turn out from Marion Ridge Drive is higher and can be accommodated at the Drury Avenue signals. The benefit of this change is improved traffic flow along Bannister Road and a large increase in landscaping space within the median. The widening of Drury Avenue by one lane is recommended.
- Removal of the signals at Marion Ridge Drive improves signal spacing and thus improves two-way signal coordination and will help to reduce delay through the corridor. Because two left turn lanes are retained, access to the Mall is unaffected. This redesign of the median will also provide considerable space for landscaping.
- Right turn slip lanes were added at several intersections to improve right turn movements, reduce pedestrian crossing distances and to improve pedestrian and vehicle safety.
- Historic lighting is used throughout, with up lighting of the median trees.

- A roundabout was added to replace the signal at Marion Park Drive and Hickman Mills Drive to create a more attractive feature within Marion Park, and provide a quality cross-driveway to the Home Depot site and the property to the east of that roundabout.
- In conjunction with the removal of the Marion Park Drive signals, add a roundabout at E. 96<sup>th</sup> Place and Marion Ridge Drive intersection to facilitate the change in traffic flow is an option.
- Over time, as development in Marion Park increases and traffic to Home Depot increases, a roundabout should be considered on Marion Park Drive just south of Bannister Road as shown on the Option 3.
- An idea for a road network was added to the north side of Bannister Road opposite Marion Park Drive. This road network is designed to improve access to the Santa Fe industrial Park and the retail development on the northwest corner of Bannister Road and I-435. Improving this development between Bannister Road and 87<sup>th</sup> Street, will enhance the whole area and improve access to the retail areas. However, the Marion Park Drive extension, for a better name, could become a speedway. To avoid this situation and to improve overall access for the ultimate users of that area, constructing roundabouts at regular intervals through the development will help to control vehicle speeds and provide safer access from the side streets onto the new road. It avoids costly wiggly streets that wind all over the place with no real pattern and unnecessarily increase travel distances and service costs.
- A two-lane bridge over I-435 is highly recommended as it adds a necessary connection within the road network that would draw people directly from the residential areas to the east of the Mall into this new development, without them having to use Bannister Road. It would enable employees or residents of this development area to have direct access to the Mall. Because of the easy access to the Mall, adding a considerable residential area to the region west of I-435 should improve returns to the developer while providing a permanent customer base for the Mall and surrounding retail areas. A residential component in this area is a real necessity to ensure the long-term viability of the area.
- The long continuous turn lane on the south side of Bannister Road between I-435 and Hillcrest Road eventually becomes a trap lane that can be a problem for those drivers who find themselves in the wrong lane and react by darting out into the adjacent lane. Breaking this long continuous lane into a series of dedicated right turn lanes takes right turning traffic out of the through lanes and reduces rear end and driveway crashes.
- Retail and commercial buildings on the north side of Bannister Road are moved forward to the right-of-way line or a maximum of 15 feet back with all parking located in the rear and indented on-street parking provided along Bannister Road.
- In conjunction with the moving of buildings back to the property line or a maximum of 15 feet back, the on street parking can be provided on Bannister Road. Because of the topography, only the north side of Bannister Road is suitable for this treatment. The most visionary of developers would see the drop-off on the south side of Bannister Road as a

huge benefit because they could build their parking garage underneath the buildings so the building is at ground level with far greater exposure to passing vehicles.

Moving buildings, especially 4 to 6 storey buildings to, or very close to, the right-of-way creates an edge to Bannister Road. This change provides a far more pedestrian friendly environment, maximizes development, and in conjunction with on street parking, creates a friendlier and attractive road that will help draw people into the area. It would be so different to what exists elsewhere that people could not help but notice. All buildings built in the area must have a long lasting and common style. No more non-descript buildings should be permitted if this area is to have “style” and convey a sense “special place.” A maximum of no more than 30 percent glass should be permitted in buildings, causing architects to think more about their design, about horizontal and vertical lines, color, and how windows and door can compliment each other, just like the old days we remember so fondly.

To calm the fears of highway designers the addition of a 3-foot wide safety lane between the parking lane and the travel lane is recommended to permit drivers to open their doors without interfering with through traffic. I invented this “safety lane” for a project for Route 62, in the Village of Hamburg, New York. Route 62 is a two-lane, State Highway with on street parking on both sides that passes through the Village of Hamburg. The safety lane was designed for use next to 10-foot wide travel lanes in the “Main Street” area to provide drivers with a margin of safety as they exited their vehicles and to reduce interference with through vehicles. The New York State Department of Transportation has accepted the “safety lane” and has included it within the reconstruction of Route 62.

Major crossroads should be at Marion Park Drive, Drury Avenue, and Hillcrest Road. In this scenario, they would be signalized to compliment the compact design of the area. As much as possible, post-mounted signals should be used to reduce their scale and should be painted green, such as British racing green so the signal pole blend into the background.

Instead of a trap lane eastbound at Hillcrest Road the merge from three to two lanes should occur east of Hillcrest Road. The third eastbound lane should merge.

A significant benefit of this design is that the bridge over I-435 does not need to be widened.

## **Development**

Bannister Mall and the surrounding area, like so many malls across the US, is faltering because many of the customers have moved away or shop at newer Malls or strip shopping centers in “new” areas where the stores and roads are prettier. Malls in similar situations across the US are being converted to Main Streets, Town Centers, or multi-storey, mixed-use developments. One feature of many mall redevelopments is a high level of residential component included to provide an inbuilt customer base. They also feature a grid-based street network that provides an opportunity for a wider variety of uses and residential units to gain a more diverse mix of people who will support a wider range of retail and commerce.

Creation of a grid-based street network, as shown in the attached plans, with many residential units, a mixture of large, and small stores with indoor and outdoor shopping and abundant commercial and civic facilities is one vision for the CID. The denser the development, the greater the variety of retail stores and commercial developments. The greater the number and variety of residential units within the CID area the more successful the area will become. The City of Charlotte is a living

example of how good design, and a good grid street system facilitates an economic revival, but like Charlotte, one man or a group needs to have a vision and to work for its implementation.

## **Master Plan**

Only with a master plan that includes extraordinary measures, can an area in decline be turned around. Therefore, it is critical that the stakeholders, Aventis, Santa Fe Industrial Park, Specialty Restaurants Properties, and the neighborhoods work together, coordinated by the CID, to create a master plan.

This CID sponsored master plan would create a new vision for the area that incorporates current CID projects, initiatives, and street enhancements as a first step in changing the current situation. This master plan must be ambitious; it must break from past trends, and include concepts that have been proven to work in similar situations. After all, it is the past practices that have created the current situation of the area in decline so it is time for a new direction.

Only a master plan can avoid the existing piecemeal development and irrational street network and create certainty for developers to develop a master plan in stages knowing that those who follow will be required to follow the same plan supporting their investment. It is certain that if every advantage of the area is maximized, such as the view over the valley, the value of the property and investment will increase along with tax revenues for the City. The best vehicle for repositioning the CID for maximum economic development and opportunity starts with a CID Master Plan that is subsequently adopted by the City of Kansas City.

## **Transit**

Improving transit operations, under the principles of transit orientated development, is important to help this area prosper and to minimize traffic. Large bus shelters in a distinctive “3-Trails” style similar to the proposed “3-Trails” Transit Station at the Mall, with seats, bus schedules, trashcans that are regularly cleaned are important to tell bus passengers that they are important.

## **Mixed Use Trail**

The proposed mixed-use trail, which is part of the “3-Trails Corridor of the Metro Green Regional Trails System,” was located on the north side of Bannister Road because the area is relatively flat and wide, and no right-of-way maybe required. A pedestrian bridge is proposed across I-435 north of the existing road bridge. A single crossing at Marion Park Drive is recommended because it is a tee intersection now, and later could become a roundabout.

## **Cost Estimates**

Appendix A contains detailed cost estimates prepared by HNTB based on the three concept plans. These are approximate costs prepared to provide a reasoned estimate of the cost of each option. These costs only relate to work on Bannister Road. Other improvements would be part of the development of those areas.

Overall the costs of the three options are:

Option 1.....	\$360,000
Option 2.....	\$5,800,000
Option 3.....	\$6,600,000