





Preliminary
Engineering
Study
Boone County
Job No. 08-572



BARTLETTO —— WEST





January 6, 2009

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

Re:

Gans Road Preliminary Engineering Study - FINAL Report

Dear Mr. Campbell:

We appreciate the opportunity to partner with Boone County to accomplish the study on the future Gans Road extension. Attached with this letter is the report summarizing our study for the preliminary engineering phase of this project. We investigated three alignments available to the County and the City of Columbia.

All three alignments used a customized typical section that includes a two lane divided roadway with a water quality median. Roundabouts are preferred at all intersections, except for the west end where Gans Road would tie into the current Providence Road intersection. The recommended alignment is the "Red" Alignment, which has the lowest project cost opinion and minimizes impacts to utilities, environmental resources, and private property and access concerns. The main difference in this alignment is near Clear Creek where it is further north than the other two alignments. The total project cost opinion for this alignment is estimated to be \$14.8 million.

We look forward to working with you in the future. Please let us know if you have any questions or comments regarding this report.

Sincerely,

Bob Gilbert, P.E Project Manager

Attachment

cc: David Nichols, P.E. - City of Columbia Public Works

Matt Myers, P.E. - MoDOT District 5

Thad Yonke - Boone County Planning and Building

Scott Hanson - City of Columbia Planning and Development

Dustin Riechmann, P.E., PTOE - CBB

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# **EXECUTIVE SUMMARY**

Boone County commissioned this preliminary engineering study to develop a planning document for the future extension of Gans Road between Providence Road and Bearfield Road. This extension is needed to provide an alternative route to Grindstone Parkway for traveling east-west between Providence Road and US 63. This study was aimed to help Boone County and the City of Columbia define the corridor for the extension and obtain environmental clearance throughout the corridor. A project cost opinion was determined to assist the County and City with determining a budget to move forward with the project.

A customized typical section was defined for this project. The typical section was derived from the traffic analysis, the study team's objective to incorporate stormwater quality practices on the project and out of the public's input to limit the future commercial development throughout the corridor and provide a more scenic roadway. A divided roadway with a single lane in each direction was determined to be the recommendation for the extension. This roadway would include a stormwater quality median with native plantings and a bioswale to treat runoff before releasing it to the natural system. Figures 18 and 19 show the typical sections for the roadway.

To maximize the length of median and limit access and potential for commercial development, roundabouts were used as the typical full access intersection throughout the corridor. The roundabouts allow travelers to make a U-turn easily from the remaining access points, which will be right-in right-out access only between the full access roundabout intersections. The roundabouts also allow for breaks in the horizontal and vertical alignments which helped fit the roadway to the existing land more efficiently, reducing its overall footprint and cost.

Three different alignments were investigated during this preliminary study. Figure 1 on the next page shows the overall project location and the alignments and intersections. While there are some slight differences in the alignments throughout the corridor, the most notable difference between the alignments occurs near Clear Creek. This is the section of the corridor between Route 163 and the current terminus of Gans Road west of Rock Quarry Road. This section is also the most costly to construct due to the large amounts of earthwork and the bridge needed to cross the creek.

The "Blue" Alignment is the most southern alignment. The project cost opinion for this alignment is \$16.07 million, the highest of the three alignments. This alignment is the most costly due to the large amounts of earthwork that are required around the bridge and Clear Creek.

The "Yellow" Alignment is slightly north of the "Blue" Alignment. The project cost opinion for this alignment is slightly lower at \$15.94 million. This alignment saves some cost on earthwork, but has a bridge that is almost sixty-five percent longer than the "Blue" Alignment. This alignment is the most direct east-west route of the three alternatives.

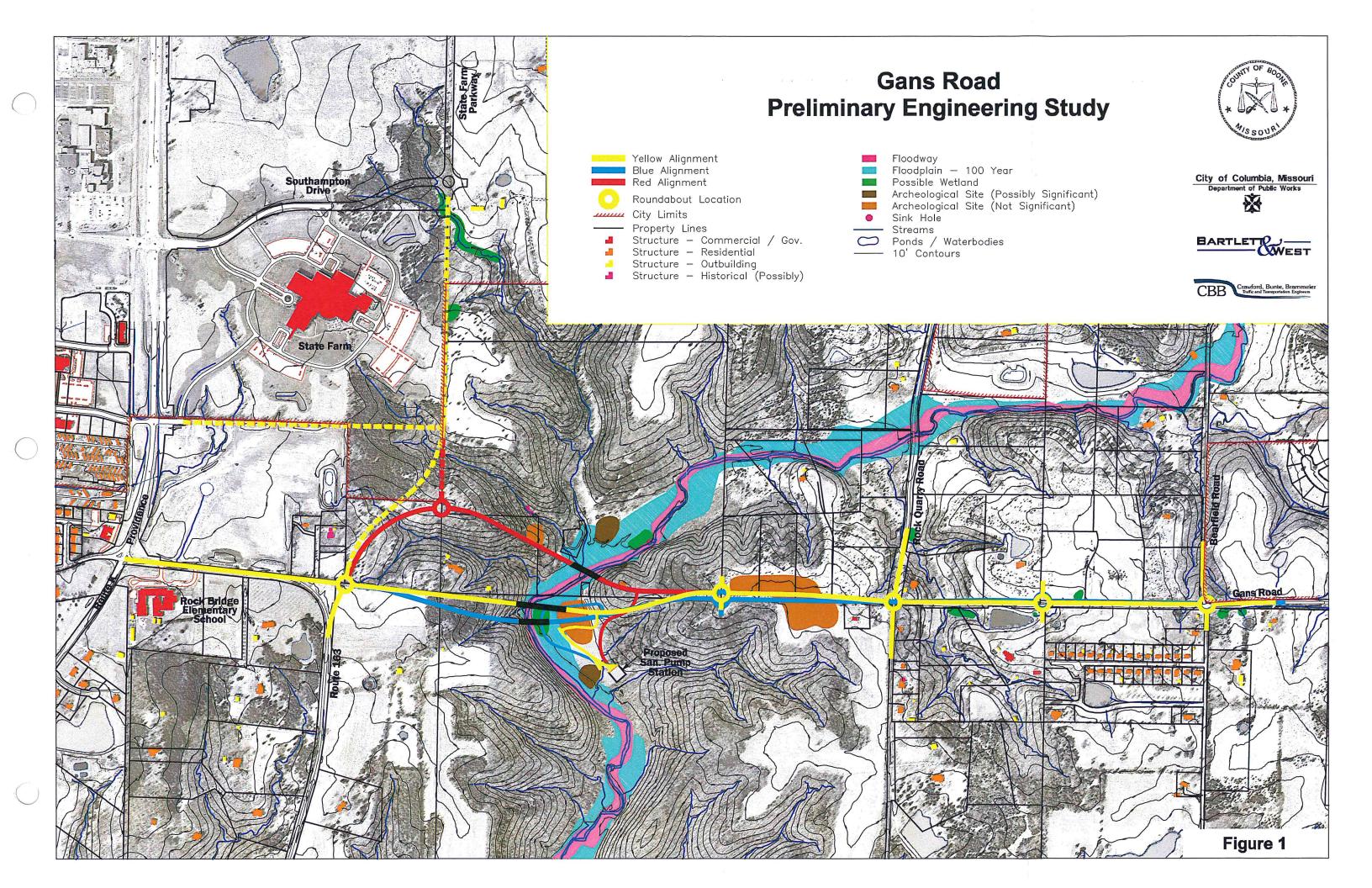
The "Red" Alignment is significantly north of the other two alignments in the area of Clear Creek. The project cost opinion for this alignment is \$14.82 million, significantly lower than the other two alternatives. This alternative has the least impact to the utilities and environmental resources. The main disadvantage to this alternative might be the large curve to the north that makes it less of a direct east-west route. However, the study team sees a possible advantage of this alignment being that traffic may be attracted more to State Farm Parkway and relieve Providence Road to some extent.

The recommendation from this study is to move forward with the "Red" Alignment. This alignment is the most beneficial to the County, City and public. With the proposed typical section and the use of roundabouts, the extension should limit future development and emphasize the environmental aspects of the area. The study team encountered support for this recommendation from a large majority of the public and area landowners during a public meeting held October 7, 2008.











## 1. INTRODUCTION

The purpose of this study is to create a planning document for an estimated 8,900' extension of Gans Road from Providence Road to Bearfield Road just south for the current Columbia city limits. This report was developed to help Boone County and the City of Columbia define the corridor for this extension so that proper planning and right-of-way preservation could be implemented. The study also provides a project cost opinion for alternatives so that the County and City can plan and budget for future phases.

This study was managed and paid for by Boone County Public Works with the involvement of the Boone County Planning and Building Department. Also, the City of Columbia Public Works and Planning and Development Departments were also involved because it is likely the project will only be built after being annexed into the City. MoDOT District 5 was also involved as the western portion of the project will be an upgrade to a state route – Route 163/Providence Road.

The following goals directed the project during this study phase:

- Navigate NEPA process (maintain forward progress to allow for future funding)
- Determine project constraints (environmental, geotechnical, utilities, etc.)
- Complete Preliminary Engineering Report with preferred alternative
- Obtain CE2 Classification from FHWA
- Provide project cost opinion for budgeting purposes
- Engage public input and County/City partnership in the process

To increase the efficiency of this phase and further develop the partnerships involved in the project, a "Core Team" was formed. The Core Team met seven times during the study that spanned from January to October of 2008. The team consisted of members from:

- Bartlett & West Prime Consultant
- Crawford, Bunte, Brammeier (CBB) Traffic Consultant
- Boone County Public Works and Planning and Building Departments
- City of Columbia Public Works and Planning and Development Departments
- MoDOT District 5

There were also two public meetings for this phase of the project to obtain the public's input regarding the project.

- Public Meeting #1 April 28, 2008
  - Purpose- This meeting was held to display the project constraints that had been developed and collect information from the public to combine with the information that had already been collected before alignments and alternatives were developed.
- Public Meeting #2 October 7, 2008
  - Purpose- This meeting was held to show the public the alignments and alternatives that were in consideration and gauge the public's opinion regarding the alternatives and preferred alignment.









# 2. BASIS FOR CONCEPT DESIGN

In development of the preliminary design, the following information was obtained and used throughout the study:

- Aerial photography and parcel lines for the area were obtained from Boone County.
- Topographic mapping with 2' contour intervals was obtained from the City of Columbia.
- The locations of the electric utilities were obtained from Boone Electric in the form of GIS digital files.
- The locations of the sewer lines were obtained from the City of Columbia as a combination of AutoCAD shape files and electronic versions of the as built plans.
- The locations of the water lines were obtained from CPWSD No. 1 and data on file with Bartlett & West.
- The locations of the fiber optic lines in the area were obtained from Charter Communication.
- The Federal Emergency Management Administration's (FEMA) Flood Insurance Study for Clear Creek was obtained by Bartlett & West.
- Roadway plans for the surrounding roads were provided by the City of Columbia.
- The City's travel demand model was utilized by the City of Columbia staff to assist with the traffic study.
- Cultural and environmental resource mapping was provided by Environmental Research Center of Missouri, Inc.
- Geotechnical information was provided by Terracon.

Along with the information obtained, the following standards were used to determine the design criteria and procedures:

- "Federal Emergency Management Administration Flood Insurance Guidelines and Specifications"
- MoDOT "Project Development Manual," and "Engineering Policy Guide" (EPG)
- AASHTO's "Manual on Uniform Traffic Control Devices" (MUTCD)
- AASHTO's "Highway Capacity Manual"
- AASHTO's "A Policy on Geometric Design of Highways and Streets"
- "Missouri Standard Specifications for Highway Construction"
- "Missouri Standard Plans for Highway Construction"
- "Missouri Department of Transportation Specifications for Computer Deliverable Contract Plans"
- MoDOT "Bridge Manual"

The following information was used as the design criteria throughout the study:

- Minor Arterial functional classification (from CATSO 2025 Transportation Plan)
- Minimum horizontal curve radius = 800 ft.
- 40 mph design speed (45-50 mph design speed was achieved when possible, but for some of the vertical curves this was unreasonable)
- 7% maximum grade, 6% maximum grade while on bridge
- 1% minimum grade
- Sag vertical curve rate of curvature (K)= 64
- Crest vertical curve rate of curvature (K)= 44
- WB-50 design vehicle for turning movements











# 3. EXISTING ROADWAY AND CORRIDOR

## 3.1. Existing Road Network

Gans Road begins just west of Rock Quarry Road, south of Columbia, MO. It then continues east crossing Rock Quarry Road and Bearfield Road before intersecting with Ponderosa Street, an outer road of U.S. Highway 63. Bearfield and Rock Quarry are north-south routes that lead to the busy Grindstone Parkway. Both of these roads have fairly high amounts of traffic north of Gans Road near Grindstone Parkway and Nifong Boulevard. However, in the southern regions around Gans Road, the traffic is very low at its present state.

Providence Road and Missouri Route 163 create the western limits of the project. Route 163 is a main north-south route through Columbia. It forms the western edge of the University of Missouri-Columbia campus and downtown Columbia. Through Columbia the highway is known as Providence Road. At the intersection where the Gans Road extension will tie into, Providence Road turns into Route K heading south, and Route 163 turns to the east.

State Farm Parkway is a new southern connection to Southampton Drive from Grindstone Parkway and Nifong Boulevard. This recently constructed route ends at a roundabout approximately halfway between Grindstone Parkway and the eastern leg of the Route 163 and Providence Road intersection. The roundabout currently has two legs that are not built, but stubbed out to the south and east for future roadways. The other legs of the roundabout are formed by State Farm Parkway to the north and by Southampton Drive which extends west to Providence Road.



Figure 2: Aerial Map from Google Maps showing the current road network









# 3.2. Existing Right-of-Way and Land Ownership

The existing right-of-way in the study area varies. County parcel mapping was utilized for existing right-of-way determinations. Starting on the west end of the extension corridor, the right-of-way width along Route 163 is approximately 60 ft. centered about the centerline of the roadway. Beyond the curve in Route 163 to the south, right-of-way for Gans Road does not exist until approximately 115 ft. west of Rock Quarry Road, where an approximate 20 ft. wide right-of-way exists to the intersection. South of Gans Road, Rock Quarry Road has approximately 35 ft. of right-of-way width offset somewhat to the east of the existing roadway, whereas on the north side of Gans Road, Rock Quarry Road has approximately 125 ft. centered about the roadway before narrowing to a 55 ft. right-of-way. East of Rock Quarry Road, Gans Road has varying right-of-way width from 30 ft. to about 70 ft.

The 30 ft. section of right-of-way is the result of a variance granted by the County to Mr. Tony Davis during a platting process in 2000. Throughout the majority of Mr. Davis's lot right-of-way was plotted for a 50 ft. corridor. However, Mr. Davis owns a pond in close proximity to the south side of Gans Road. The County granted a variance to only purchase a 30 ft. corridor along the pond, which kept the current right-of-way outside the limits of his pond. The variance does not preclude further right-of-way from being acquired in the future.

The existing land ownership in the project area was determined from the Boone County parcel data at the time the data was acquired (in February 2008). The existing ownership can be seen in Figure 4 on the next page.

# 3.3. Existing Land Uses

The land use varies throughout the corridor, starting with Rock Bridge Elementary School in the southeast quadrant of the intersection of Providence Road and Route 163 (A-1 agricultural zoning). The lot to the east of the school is a residence and pecan orchard, zoned A-1 agricultural. The property owner (Montgomery) has rows of pecan trees that start very near the road, and he desires to keep all of his trees if possible with the new roadway. The Smith's land on the north side of the Route 163 east of Providence is currently undeveloped and is zoned for mostly single family residential with a portion of multi-family residential (R-S and R-M zonings). The land northeast of the Smith tract is owned by State Farm Insurance and includes a large office building complex.



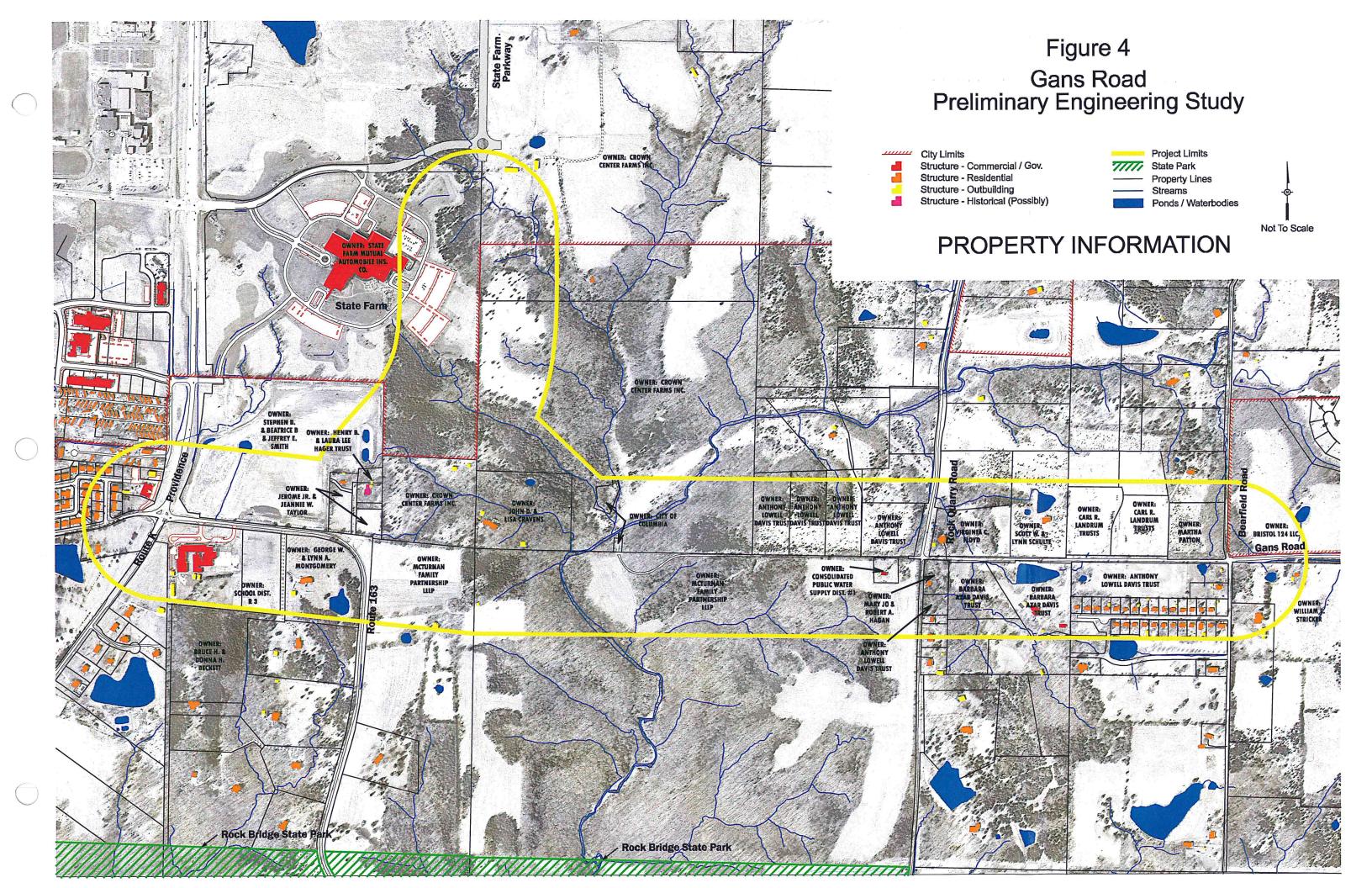
Figure 3: Sign for Rock Bridge Elementary School











Further to the east, after Route 163 turns to the south, all of the land is zoned either residential (R-S zoning) or agricultural (A-2 zoning) with primarily large lot residential use except for a few minor locations. Approximately halfway between Route 163 and Rock Quarry Road is a sewer pump station and overflow basin with land owned by the City of Columbia. This pump station operates the force main for part of the City of Columbia's sewer system which is gravity fed from the north and east of the pump station location. There is also a deep rock well and well house owned by the Consolidated Public Water Supply District #1 of Boone County on a tract of land in the southwest quadrant of the Gans Road and Rock Quarry Road intersection.



Figure 5: The CPWSD No. 1 well house west of Rock Quarry Road

The Country Day School, a summer camp owned by Tony and Barbara Davis, is located on the south side of Gans Road between Rock Quarry Road and Bearfield Road. There is a pond in front of the school and very near to Gans Road as shown in Figure 6, and the owners have expressed their desire to have it protected from impacts of this project. This is the location where the County granted Mr. Davis a variance on the right-of-way width near his pond.

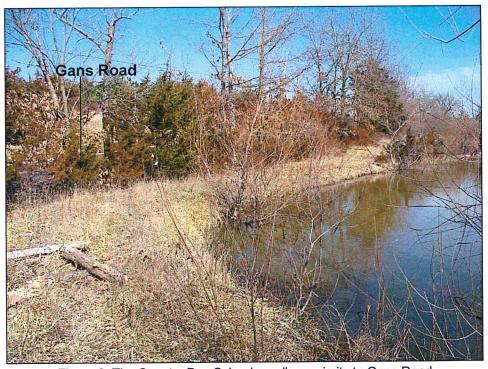


Figure 6: The Country Day School pond's proximity to Gans Road







Rock Bridge State Park is just south of the project area as well. One goal in the project was to minimize any impact the extension would have on the State Park. This would include staying as far away from the State Park as possible, creating a scenic route and minimizing the change in quantity and quality of storm water runoff.



Figure 7: Sign for Rock Bridge State Park south on Route 163

## 3.4. Topography

The terrain and topography differs greatly throughout the project corridor. On the west end of the study area, the land is fairly level and pasture or turf grass, with more forested areas to the north and east of Route 163. Just west of Clear Creek, a large bluff nearly 90 feet in elevation exists which drops down to the west bank of Clear Creek. The creek is followed by flat bottom land east of the creek as shown in Figure 8. This large elevation change creates some difficulty in the project's vertical alignment, resulting in large amounts of fill to reach the desired roadway elevation. Immediately adjacent to the creek, as one travels northward, the land cover is more pasture with cedar trees, and traveling southward, the land cover is more forested and rocky, similar to the character of Rock Bridge State Park.

The land around the current Gans Road east of the creek to Bearfield Road is best characterized as rolling hills primarily covered by pasture lands with some dense tree cover along property lines. The current vertical grade of Gans Road encounters sharp vertical curves that will need to be leveled off when the road is improved.









Figure 8: The bottom land east of Clear Creek - looking southwest toward bluff

The most substantial stream related to this project is Clear Creek. This creek is large enough that a FEMA Flood Insurance Study in this area denotes a 100-year floodplain and floodway. There is another small tributary of Clear Creek located just east of Rock Quarry Road, but it is small enough that a box culvert will carry the flow, while the crossing over Clear Creek will need a bridge. In a few other locations, the proposed alignments will cut through small watersheds. In these cases pipe culverts will be constructed to keep the natural drainage patterns.



Figure 9: Clear Creek in vicinity of road crossing - looking north







There are several ponds throughout the corridor. The main pond of concern is the one near the Country Day School. There are a few other ponds along the project including a pond in the southwest quadrant of the Gans Road and Bearfield Road intersection. This pond will be impacted by the construction.

#### 3.5. Utilities

**3.5.1 Water:** The water line through the area is owned by Consolidated Public Water Supply District #1 of Boone County and typically lies just outside of the right-of-way. The water line is just north of Route 163 on the west end of the project area and the existing Gans Road right-of-way on the east end. A single line connects the Gans Road section to the Route 163 section by running along the north edge of the McTurnan property line. Due to the location of the line lying just outside of the right-of-way, the water line will be significantly impacted by this project. Because the water line is in a private easement instead of in the right-of-way, any relocation would be a cost to the project.



Figure 10: Clearing near creek for the water line - looking west

**3.5.2 Electric:** The electric utilities in the area are owned by Boone Electric. These lines follow a similar path as the water line, but the cost due to impacts on the electric line might be slightly less than those on the water line because there are a few locations where the electric line is actually in the right-of-way and will have to be relocated at no cost to the project. At a couple of other locations, the electric line is slightly farther off the current right-of-way than the water line and may be able to be left untouched.







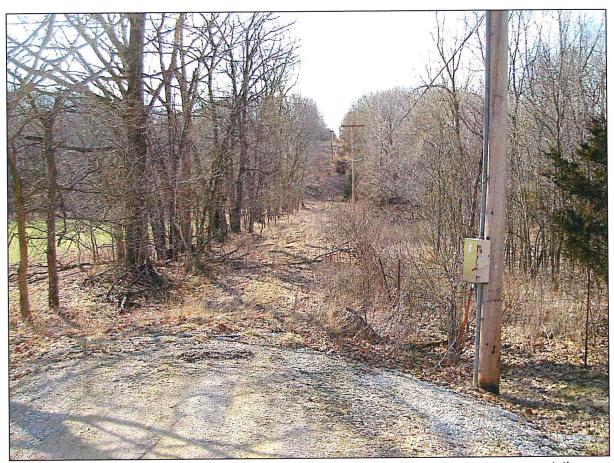


Figure 11: Gans Road ends and the electric lines continue - looking west at sewer pump station

**3.5.3 Sewer:** The sewer line in the area is owned by the City of Columbia. The existing sewer line in the area is composed of a gravity line and a force main. The force main is located near the City's pump station, but is going to be relocated in the near future. This new line may be affected depending on the final location of the force main in relation to the bridge that will be needed to cross Clear Creek. The gravity sewer line crosses the existing right-of-way twice, but never runs parallel to the roadway. The first crossing is located near the school on Route 163, and the other crossing under Gans Road just east of the Rock Quarry intersection.

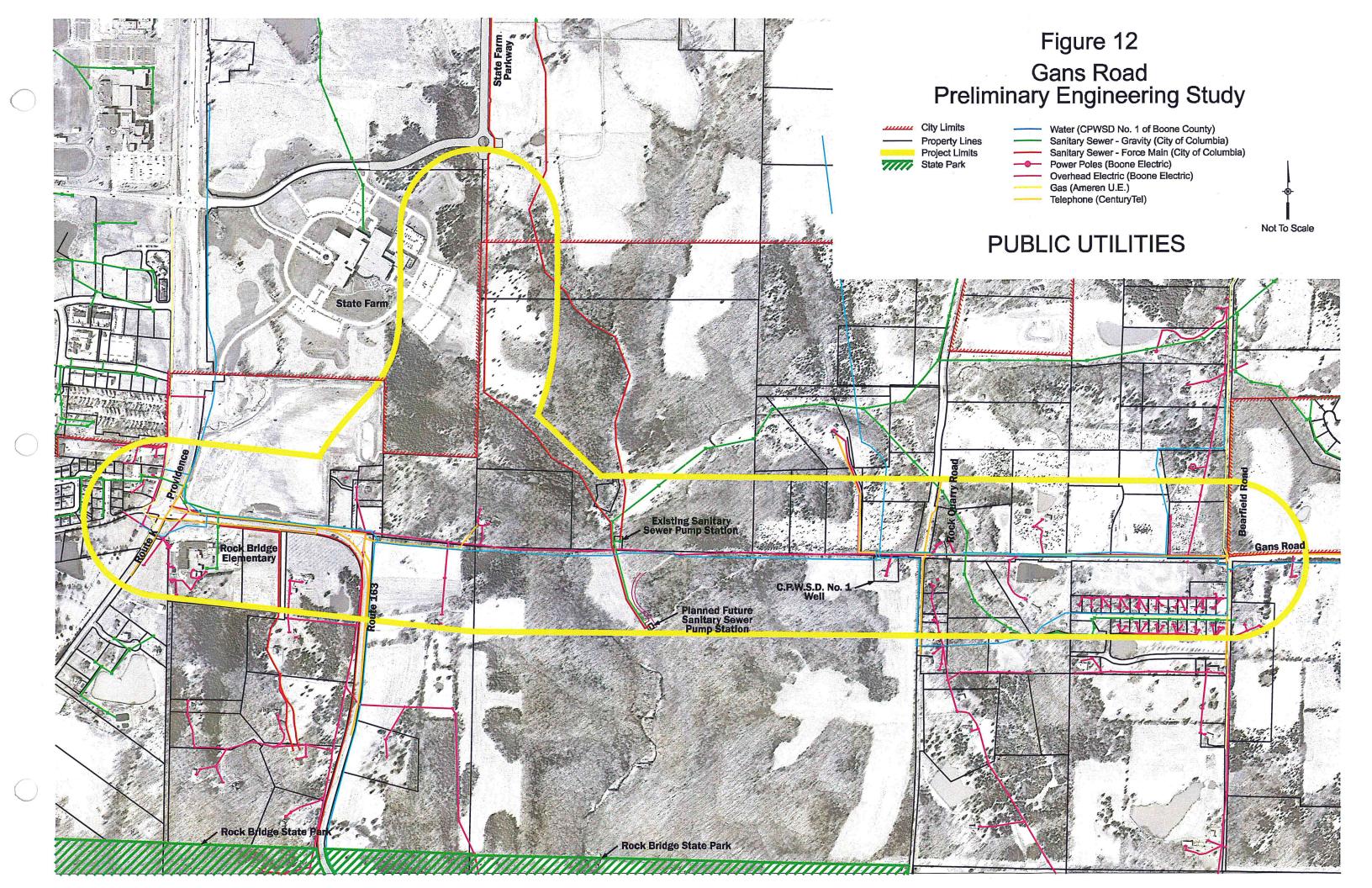
**3.5.4 Communications:** Both CenturyTel and MediaCom own cable and telephone lines in Boone County. Information on any MediaCom lines in the area was unavailable, but CenturyTel provided the location of their telephone lines in the area. On the west end, the telephone lines are mainly located inside the right-of-way before the Route 163 right-of-way turns to the south. At this point the telephone line continues to the east before stopping at the Craven residence. On the east end of the project, the telephone line is located on the north edge of the right-of-way. Portions of this line are located in the right-of-way, while other portions are just outside of the right-of-way.

**3.5.5 Natural Gas:** There is a natural gas line on the west end of the project just north of the existing right-of-way that will be impacted by any widening along the existing Route 163. The only natural gas line on the east end of the project is located east of the Bearfield intersection and is located inside of the right-of-way.









# **4. FUTURE PLANNED IMPROVEMENTS**

## 4.1 Improved Road Network

Along with the current need for an east-west alternative to Grindstone Parkway, development in and around the study area is creating the need to improve the road network. Currently, an interchange with U.S. 63 is under construction to provide Gans Road direct access to one of the two main thoroughfares in Columbia. This will greatly improve the accessibility to the area of interest and further facilitate growth.

Other new roads are planned on the western edge of the project area. State Farm Parkway currently ends at a roundabout with two legs, but the roundabout is constructed to have four legs in the future. The southern leg would be a continuation of State Farm Parkway to the south which would potentially connect to the Gans Road extension. The long term plans also include another east-west connector between Providence Road and State Farm Parkway south of Southampton Drive. There is currently a full access intersection with Providence Road built at the border between the Smith's tract and State Farm's property. It is expected that this access will be continued east as "Philips Farm Road" to connect to State Farm Parkway in order to accommodate future development in the area.

# 4.2 Development along the Corridor

The Smith's have expressed desire to change the zoning of their property in the past, as have Crown Center Farms. Crown Center Farms owns the majority of the northern area between the point Route 163 curves to the south and Gans Road. Both of these owners have submitted development plans in the planning stage previously that were not approved. However, it is believed that both owners still plan to develop the property in the future.

There is also some property along the current Gans Road that has the potential to develop. A subdivision just south of Gans Road on Bearfield Road has already been developed. The Davis' own another strip of land between the subdivision and Gans Road. They also own land in the northwest quadrant of the intersection of Gans Road and Rock Quarry Road. Both of these areas are zoned as single family residential (R-S zoning), and Mr. Davis has expressed interest to develop this land in the future.

Along with the extension of Gans Road, there are plans to construct a multi-use trail through the study area along Clear Creek for hikers and bicyclists. This could include a trailhead near Gans Road, which was accounted for during this preliminary design.

## 4.3 Development outside the Corridor

There is already development occurring east of Bearfield Road. An upscale subdivision known as the Bristol Lake Development has been started just east of the project limits. The forty acre Philips Lake owned by Columbia Parks and Recreation is located on the east side of this subdivision. This development is expected to continue and create more traffic through the area.

In the northwest quadrant of the interchange of Gans Road with U.S. 63, there is a large multi-use development known as the Bristol Lake Tract. On the east side of the interchange the University of Missouri-Columbia is developing an area known as the Discovery Ridge Research Park. Both of these developments are expected to create numerous jobs, especially laboratory and high-technology jobs.

There are other developments just outside of the project area that could lead to significant changes in traffic for the area, including plans to build two new schools in southern Columbia. A Catholic High School is planned to be built and opened in the fall of 2010 just east of Philips Lake. The Columbia Independent School has purchased land on Route K just south of the study area and intends to build a campus there in







the future. The City is also planning on constructing a regional park on the south side of Gans Road across from Philips Lake.

These planned and/or potential developments, some of which will be open in the next couple of years, will put pressure on the existing road system. This will increase the traffic on Grindstone Parkway that is already quite busy due to the commercial development along it. The extension of Gans Road will be needed to help relieve some of the current and future traffic.

#### 4.4 New Utilities

The City of Columbia is in the process of relocating the current pump station. The pump station would be moved approximately 750 ft. to the south. This will also include extending the gravity sewer and rebuilding the force main that heads north away from the pump station. The City of Columbia has worked closely with Bartlett & West on this project to insure that the new sewer plans will not impede the plans for the Gans Road extension. However, the sewer pump station project was on a different time line than the Gans Road study and easement acquisition for the force main alignment has already begun.

The Columbia Water and Light Department is also studying the possibility of a power transmission corridor in the vicinity of the Gans Road corridor. However, the Gans Road study was ahead of the schedule for the transmission study, and it is unknown if the transmission line will have any impacts to the Gans Road corridor.











# 5. ENVIRONMENTAL SCREENING

Craig Sturdevant of Environmental Research Center of Missouri, Inc. conducted the environmental screening for this project. Multiple field investigations were conducted as well as research of any available documents and records. A summary of the environmental screening can be seen on Figure 13 on the next page.

#### 5.1 USACE streams

Clear Creek begins approximately three miles northeast of the study area. The creek then continues for over one mile south of the study area before joining with Gans Creek to create Little Bonne Femme Creek. Clear Creek is fed by several small tributaries, including two within the study area. The first of these tributaries joins just north of the City's existing sewer pump station. The other tributary in the area joins Clear Creek to the north of the project area, but it crosses Gans Road just east of the intersection with Rock Quarry road. A 404 Permit would be required in future stages of this project. Clear Creek is a regulated water, and there would need to be a permit to cross the creek and its floodplain, along with its tributaries, as determined to be jurisdictional at the time of project construction.

#### 5.2 Wetlands

Several potential wetlands were found during field investigations. These areas exhibit hydrophytic vegetation and hydrology indicating a wetland. For a final wetland determination, a soil evaluation would be required to determine if hydric soil is present. Several of these potential wetlands are likely to be impacted. There is a wetland southwest of the City's current sewer pump station and east of a large bend in Clear Creek that would be impacted by alignments that cross the creek in this location. Another wetland may exist downstream and west of the pond on the Country Day School property.

## 5.3 Threatened or Endangered Species

There are no records of threatened or endangered species within the project area. However, both the gray bat and Indiana bat are present in Rock Bridge State Park nearby. Because Clear Creek is in the normal foraging range for these bats, the U.S. Department of the Interior Fish and Wildlife Service (FWS) recommends that no construction activities occur at night. Such activity could disrupt the normal feeding behavior of the bats.

#### 5.4 Cultural Resources

During the field investigations of the area, seven potentially significant cultural sites were found. One of the sites, 23BO2358, is located between the City's current sewer pump station and the station's future location. It was decided during the initial review of this site that it does not contain sufficient information to contribute in any meaningful way to the understanding of the region's cultural history. Therefore, this site does not meet eligibility for National Register of Historical Places (NRHP). A large site along the western portion of the current Gans Road, 23BO322, was only declared ineligible for NRHP after a Phase II analysis was conducted. During this analysis a few fragments of projectiles were found. Two more sites northwest of the Gans Road, 23BO2393 and 23BO2394, also required a Phase II analysis before being declared insignificant. One of these sites was a Native American burial mound that had been significantly disturbed. Site 23BO2395 was not analyzed further due to its southern location. Also, two northern sites, 23BO2393 and 23BO2399, were not submitted to the Phase II testing due to their distance from the potential alignment alternatives.

#### 5.5 Historical Resources

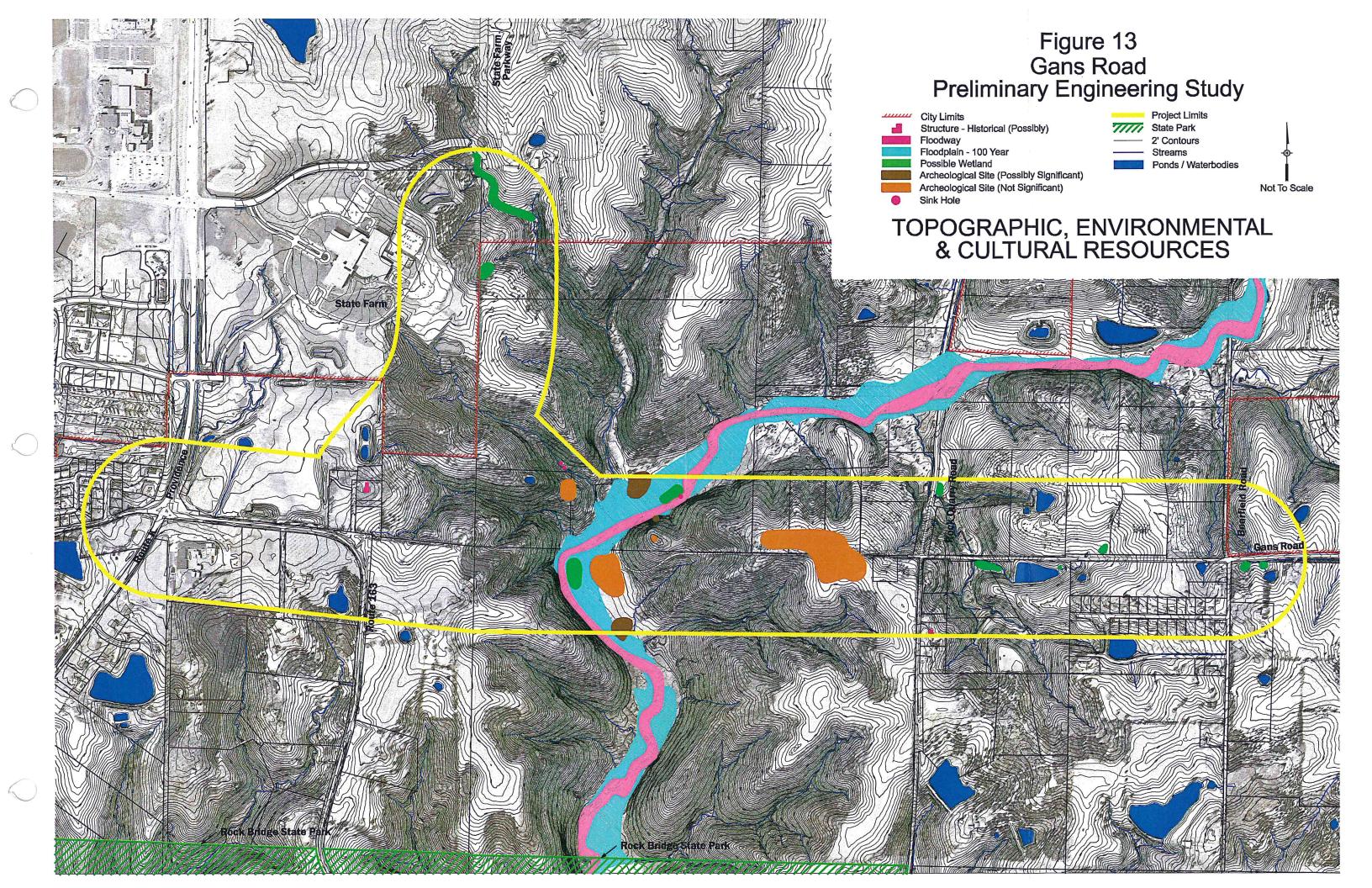
There is one house that is possibly of historical significance. The Hager residence, located at 5300 South Route 163, is over 100 years old. This site is in excellent condition and appears to be potentially eligible for NRHP status based on an exterior observation. The interior of the house was not investigated because it is unlikely that any alignment alternative would severely impact the house.













# 6. TRAFFIC ANALYSIS

Crawford, Bunte, Brammeier provided the traffic analysis for the project. The primary tasks completed included the projection of future traffic demands for the Gans Road corridor, the determination of an adequate typical section for the road with regards to laneage, the evaluation of intersection capacity needs to develop recommendations for traffic control and geometrics, and the establishment of appropriate access management guidelines for the study corridor.

## 6.1. Existing Traffic Conditions

As an initial step in the traffic analysis for the Gans Road extension, information was gathered regarding the existing traffic conditions within the surrounding road system. The majority of this data was provided courtesy of the Department of Planning and Development at the City of Columbia via the City's website. Specifically, the City provided average daily traffic (ADT) counts on all of the significant area-wide roadways. These counts were collected in 2006 or, in some cases, 2003.

Figure 14 summarizes the existing ADT volumes on the area road network. As can be seen, Grindstone Parkway currently carries more than 25,000 vehicles per day (vpd) and Providence Road carries nearly 20,000 vpd. Conversely, the existing portion of Gans Road has very limited connectivity and carries less than 300 vpd to the west of Bearfield Road.

In addition to this ADT information, peak hour turning movement counts that were collected in conjunction with previous studies in the area were reviewed. Finally, driveway counts were collected at Rock Bridge Elementary School during both an arrival (7:15-9:00 a.m.) and dismissal (3:15-5:30 p.m.) period to quantify conditions at the school and along Route 163.

Field observations were also conducted throughout the regional road system during the peak traffic periods in order to gain an understanding of the existing operating conditions. However, the extension of Gans Road and the completion of a new interchange on U.S. Highway 63 would be expected to significantly alter the existing travel patterns within the area. In order to quantify these changes, it was necessary to employ the City's travel demand model.

## 6.2. Forecasted Traffic Conditions

The Year 2030 was chosen as the design year for the purposes of generating traffic forecasts for the study corridor. This horizon accounts for more than twenty years of growth, which is a standard design objective. Furthermore, the Year 2030 is consistent with the goals for the completion of the City's Major Roadway Plan, including the extension of Gans Road to Providence Road, as reflected in the City's 2030 travel demand model.

The City of Columbia's Planning and Development Department provided a great deal of input into the development of the Year 2030 traffic volumes within the study area. Specifically, the projections were based upon output from the City's TransCAD travel demand model for the year 2030. This approach ensured that the forecasted conditions analyzed reflected the completed Major Roadway Plan as well as the completion of planned or anticipated developments in the greater Columbia area.

The Traffic Analysis Zones (TAZ) used by the travel demand model include information pertaining to assumed land uses and densities within the study area. This TAZ information is developed by the City staff based upon the long-term land use and roadway plans within the greater Columbia region. The baseline TAZ data was reviewed by the core study team and deemed to generally reflect anticipated growth trends as well as specific planned developments within the area. The only modification deemed necessary was the addition of several hundred additional single-family homes to reflect the potential for residential development within









Figure 14: Existing Average Daily Traffic

TAZ 272 and 21. The traffic generated by these homes was manually added to the traffic forecasts generated by the travel demand model, though their impact was nominal.

The Planning and Development Department provided ADT volumes for the turning movements at each of the significant intersections within the study area as well as the ADT projections for key roadway segments. The Year 2030 ADT forecasts are summarized in Figure 15.

As can be seen, it is anticipated that Gans Road would ultimately carry approximately 8,600 to 9,200 vehicles per day between Bearfield and Providence Road. Traffic would be substantially heavier near the U.S. Highway 63 interchange as a result of activity associated with the major development planned in that immediate vicinity. Of note is that Grindstone Parkway is projected to carry 34,000 vpd (near the capacity of a five-lane roadway) even with the Gans Road extension in place, which demonstrates the need for the extension in accommodating area-wide traffic demands.

Although the travel demand model provides outputs based on daily volumes, capacity analyses are generally focused on conditions during the morning and afternoon peak periods of a typical weekday since these time periods tend to be the most critical with regards to traffic operations. In order to analyze forecasted peak period operations, the 2030 ADT volumes were converted to a.m. and p.m. peak hour volumes.

As a basis for this conversion, daily traffic counts (by movement) from previous studies within the region were reviewed. The percentage of daily traffic that occurs during each peak hour at these locations was calculated for each movement using the existing traffic counts. Applying engineering judgment, these "K-factors" (which typically ranged from 8% to 12%) were then applied to comparable movements at each of the study intersections to obtain peak hour projections. For example, if a particular movement was projected to have an ADT of 1,000 vehicles and a K-factor of 10% was applied for a given peak hour, the result would be an estimate of 100 vehicles per hour for that movement.

The resulting 2030 peak period traffic forecast is summarized in Figure 16. As can be seen, peak hour traffic along the study segment of Gans Road is expected to total approximately 450-600 vehicles per hour in either direction. With the exception of the intersections with Providence Road and Route 163, relatively light to moderate side-street traffic would be expected.

# 6.3. Traffic Analysis & Recommendations

Based on the projected ADT of approximately 9,000 vehicles per day and the directional peak hour volumes of less than 600 vehicles per hour, it was concluded that a single travel lane in each direction would readily accommodate the projected 2030 traffic demands within the study corridor. However, in order to thoroughly evaluate forecasted operating conditions and assess the traffic control needs along Gans Road, it was necessary to complete capacity analyses for each study intersection.

Therefore, each of the study intersections was evaluated to quantify forecasted operating conditions. The analysis was based upon the methodologies outlined in the "Highway Capacity Manual" (HCM) published in 2000 by the Transportation Research Board. This manual, which is used universally by highway and traffic engineers to measure roadway capacity, establishes six levels of traffic service: "Most Desirable" (Level A), to "Fully Loaded" (Level F). Levels of traffic service are measures of traffic flow, which consider such factors as speed and delay time, traffic interruptions, safety, driving comfort, and convenience.

Level C, which is normally used for highway design, represents a roadway with volumes ranging from 70% to 80% of its capacity. However, Level D is considered acceptable for peak period conditions in urban areas. Level of Service (LOS) and vehicular delay are key Measures of Effectiveness (MOE) in the analysis of alternatives.

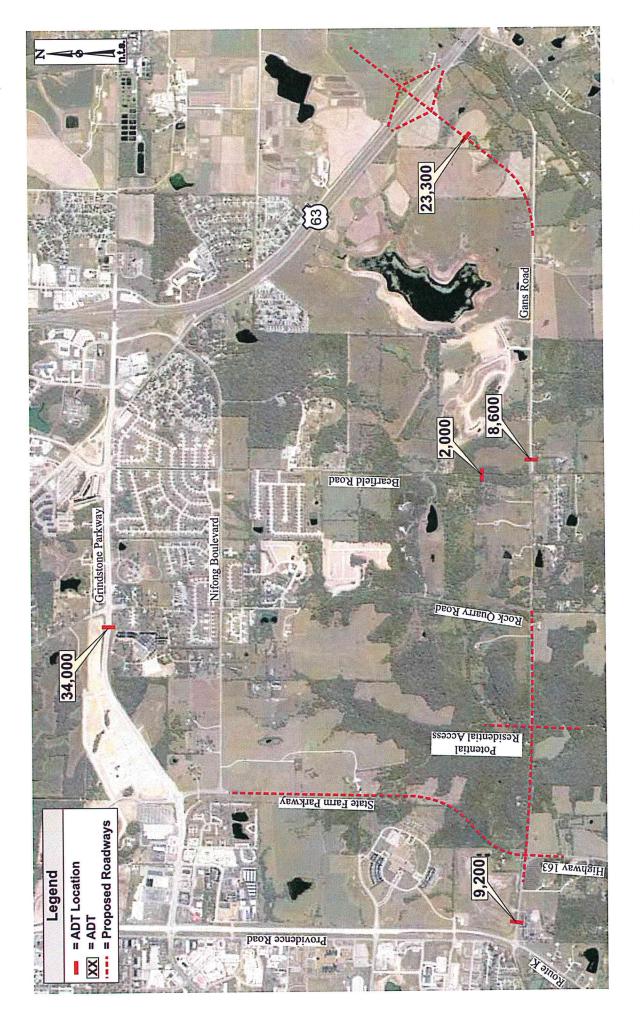
















The thresholds which define LOS are based upon the type of traffic control used at an intersection, i.e. whether it is signalized or unsignalized. For signalized intersections, the average control delay per vehicle is estimated for each movement and aggregated for each approach and the intersection as a whole. At intersections with partial (side-street) stop control, the delay for each minor movement is determined instead of for the intersection as a whole since motorists on the main road are not required to stop.

LOS is directly related to control delay. At signalized intersections, the LOS criteria differ from that at unsignalized intersections primarily because different transportation facilities create different driver expectations. The expectation is that a signalized intersection is designed to carry higher traffic volumes and, consequently, may experience greater delay than an unsignalized intersection. Table 1 summarizes the LOS thresholds used in the analysis.

Table 1: Level of Service Thresholds

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	Control Delay per Vehicle (sec/veh)	
Level of Service (LOS)	Signalized Intersections	Unsignalized Intersections
А	<u>≤</u> 10	0-10
В	> 10-20	> 10-15
С	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

Based on the capacity analysis, it was concluded that either a mixture of signalized and side-street stop control or the use of single-lane roundabouts would provide satisfactory LOS for each of the study intersections (with the exception of Providence Road which is discussed separately below). Under the former alternative, the projected side-street traffic would not satisfy the standard warrants for the installation of traffic signals. However, side-street movements at the intersections of Gans Road with Route 163/State Farm Parkway and Bearfield Road would be subject to lengthy delays and poor LOS without signalized control.

Although either traffic control alternative could provide adequate service, the use of roundabouts was deemed most appropriate for both capacity and other pertinent operational considerations unique to the Gans Road corridor (traffic calming, safety, access control, etc.). The specific criteria considered in the selection of roundabouts as the preferred traffic control option within the corridor are discussed in detail in a later section of this report.

The analysis of roundabout operations requires specialized software, so aaSIDRA capacity analysis software was utilized. The results of the analysis assuming single-lane roundabouts under the 2030 peak hour traffic demands are provided in Table 2.

As can be seen, each of the study intersections would be expected to operate very favorably with LOS A if single-lane roundabouts are constructed. In fact, further analysis demonstrated that acceptable operating conditions could be maintained at each location with traffic demands more than double those projected for the corridor. Consequently, the use of roundabouts was concluded to serve the travel needs of Gans Road while providing a substantial amount of additional capacity should volumes exceed the Year 2030 projections.









Table 2: Forecasted Operating Conditions - Year 2030

Single-Lane Roundabouts Boone County, Missouri				
Intersection/Approach	AM Peak Hour	PM Peak Hour		
Gans Road & Route 163/State Farm Parkwo	ay			
Northbound Approach	B (12.6)	B (12.6)		
Southbound Approach	B (12.2)	B (12.2)		
Eastbound Approach	A (6.3)	A (6.5)		
Westbound Approach	A (7.1)	A (6.8)		
Overall Intersection	A (8.0)	A (7.5)		
Gans Road & Potential Residential Connect	tor			
Northbound Approach	B (12.5)	B (12.5)		
Southbound Approach	B (12.7)	B (13.6)		
Eastbound Approach	A (5.6)	A (6.0)		
Westbound Approach	A (5.7)	A (6.0)		
Overall Intersection	A (6.4)	A (6.5)		
Gans Road & Rock Quarry Road				
Northbound Approach	B (11.4)	B (11.4)		
Southbound Approach	B (11.1)	B (12.1)		
Eastbound Approach	A (5.8)	A (5.7)		
Westbound Approach	A (5.7)	A (5.8)		
Overall Intersection	A (6.2)	A (6.2)		
Gans Road & Bearfield Road				
Northbound Approach	B (10.9)	B (10.7)		
Southbound Approach	B (10.6)	B (12.1)		
Eastbound Approach	A (6.6)	A (6.7)		
Westbound Approach	A (6.2)	A (6.3)		
Overall Intersection	A (7.2)	A (7.2)		

X (XX.X) - Level of Service (Average vehicular delay in seconds per vehicle)

**6.3.1. Intersection of Providence Road & Gans Road:** The only exception to the use of single-lane roundabouts within the study corridor was the intersection of Gans Road with Providence Road. Due to the combination of relatively heavy north-south flows along Providence Road and significant turning movements in most directions, a single-lane roundabout would not provide sufficient capacity to accommodate the projected 2030 traffic demands at that location.

Further analysis demonstrated that a two-lane roundabout would operate satisfactorily, although the resulting intersection reconstruction would likely require substantial additional cost and modification to the existing access. The conversion to a dual-lane roundabout may be prudent to pursue in the future; however, that level of reconstruction would not be necessary to accommodate the additional demands created by the Gans Road extension.







Instead, the addition of separate right-turn lanes to the northbound, southbound and westbound approaches to the existing signalized intersection would adequately accommodate projected 2030 traffic needs. With the addition of these auxiliary turn lanes, the intersection would be expected to operate at LOS C during both the a.m. and p.m. peak periods under the forecasted 2030 traffic demands. Intersection improvements are depicted in Figure 27 in Appendix A.

#### 6.4. Access Management

Based on input received from the public and discussions within the core study team, the primary mobility goals pertaining to the corridor were the maintenance of local access to individual properties, the limiting of commercial development potential and the accommodation of through traffic in a safe and efficient manner. The adherence to sound access management principles is key to addressing these needs.

Access management involves the thoughtful planning and design of points of access to the public roadway system, including both public roads and private driveways. Sound access management can have a profound impact on roadway safety and the ability of roads to successfully carry traffic. Failure to properly manage access can result in safety concerns and diminish the public's investment in the roadway system.

The proposed roundabout locations (as discussed in detail in the discussion of proposed alignments) should provide an appropriate level of access to accomplish the stated goals. As further development occurs along the corridor, it is important that adequate internal road systems are constructed within adjoining developments to limit the number of individual access points on Gans Road.

To the east of Route 163, it is recommended that no additional full access locations be allowed aside from the roundabouts specified in the alignment plan. In effect, full access between Route 163 and Bearfield Road would be limited to roundabouts at the public street locations (Route 163/State Farm Parkway, Rock Quarry Road and Bearfield) as well as two additional roundabouts at the approximate midpoint between these intersections. All additional access would be accommodated via right-in/right-out driveways located between the roundabouts, and left-turn movements would be accommodated via u-turns at the roundabouts.

In order to preserve intersection spacing, direct access should be moved to the side streets where possible. Access can often be better accomplished on major streets through such means as frontage and backage roads, joint access, cross access, and shared driveways. Driveways should not be allowed where sight distance is inadequate even if the driveway spacing guideline would allow them.

Where direct access to Gans Road is permitted (through right-in/right-out drives), it is recommended that driveways be located outside the influence area of adjacent roundabouts, preferably outside the limits of the splitter islands used at the intersection. Furthermore, it is recommended that all right-in/right-out drives be separated by a minimum of 220-330 feet based on *MoDOT's Access Management Guidelines* (2006).

These access management guidelines are applicable to the majority of the study corridor. However, unique considerations are required within the segment between Providence Road and Route 163/State Farm Parkway. It is recommended that the access to Rock Bridge Elementary School be maintained in its current configuration. Capacity analyses of the school's driveways indicated that motorists entering and exiting the campus should not be subject to lengthy delays. However, the presence of a roundabout at Route 163 would provide an additional option for motorists exiting the site to the west. If left-turn delays were problematic, a right turn could be made followed by a u-turn at the roundabout.

In order to maximize the safety and efficiency of the school's access, it is recommended that a separate westbound left-turn lane and eastbound right-turn lane be constructed at the entrance. These auxiliary lanes would also accommodate some off-site queuing (should a blockage occur internal to the site) without blocking through traffic on Gans Road.









In addition to the presence of Rock Bridge Elementary School, the individual homeowners and the large open tract on the north side to the west of Route 163 would not have the benefit of a roundabout in both directions, thereby limiting one left-turn movement for their driveways.

Given the variables that could impact this issue over time, it is recommended that the specific solution to this constraint be addressed as part of the final design phase. Several options that should be investigated include the following:

- Reconstruct the intersection with Providence Road and make it a multi-lane roundabout, allowing for U-turns.
- Move the access for the Hager's, the Montgomery's and the Manson's to Route 163 or State Farm Parkway. The Smith's land could have an access point at both State Farm Parkway and Philips Farm Road on the north side of their property. It is important to note that for the Hager's and Smith's that easements or right-of-way through the Crown Center Farms and/or State Farm property would be necessary for this.
- Eliminate the median through the area. However, this would eliminate some of the access control benefits.
- Eliminate the median through the area, and purchase access rights from the undeveloped properties.
- Allow a three quarter (allowing only one left turn movement) access break in the median for the
  current residents of the area. This would include the Hager's driveway and the shared driveway for
  the Montgomery and Manson properties. At this time the Smith's property is undeveloped and would
  not be included in this access plan.





# 7. PROPOSED TYPICAL SECTION

The proposed typical section is a customized design for Gans Road. This particular typical divided roadway section was developed based on traffic forecasts, the desire to treat stormwater runoff and comments from the first public meeting which was held on April 28, 2008. At this meeting the public made it clear that one of the most important aspects of this design should be to limit the development in the corridor by limiting access and the number of lanes. To limit access to the roadway and keep the development that occurred on Grindstone Parkway from occurring on this future extension, a divided roadway is proposed with a 28' median. This would control the access on the roadway and create only right-in/right-out potential.

Based on the public comments and the traffic analysis, the road was trimmed from the County's assumed four lane section to a two-lane section. Each lane will be 11' wide with an 8' shoulder/bike lane and a 2' shy distance as shown in Figure 18. There will also be a 5' sidewalk on one side with an 8' pedway on the other side. The right-of-way required will be the 50' on each side of the alignment's centerline as the County had originally assumed.

Another common sentiment at the April 28<sup>th</sup> meeting was that the road should be sensitive to the environment and more "scenic" in character. These feelings were mainly brought about due to the concern of a new road in such close proximity to Rock Bridge State Park and the presence of Clear Creek and karst topography. These comments further reinforced the use of the median and also led to the use of a water quality median. This median would contain an 18' wide strip of native plantings and a 6' wide infiltration bioswale. This would emphasize the scenic roadway, but would also help manage the quality of the stormwater runoff created by the extension. Everything within the purchased right-of-way will drain towards the median in order to help control the runoff. In areas of roadway cut, a ditch on the outside of the right-of-way would be needed to limit runoff crossing the lanes of the road and keep the hydraulic loading of the median to a minimum.



Figure 17: Route 163 on the west end of the project area

This typical section will be used throughout the project except for two locations. The first of these locations is the first 650' on the west end consisting of the Providence Road intersection to Rock Bridge Elementary School's eastern entrance. This will allow the school traffic to maintain full access, and without reconstructing the Providence intersection, a divided road is impractical for this area. The typical section through this area will consist of two lanes along with a center turn lane as shown in Figure 18. These lanes will also be 11' wide and will have a 6' wide bike lane on each side of the road. The sidewalk and pedway will be present here as well, but will be flipped so that the pedway can be on the south side adjacent to the school.

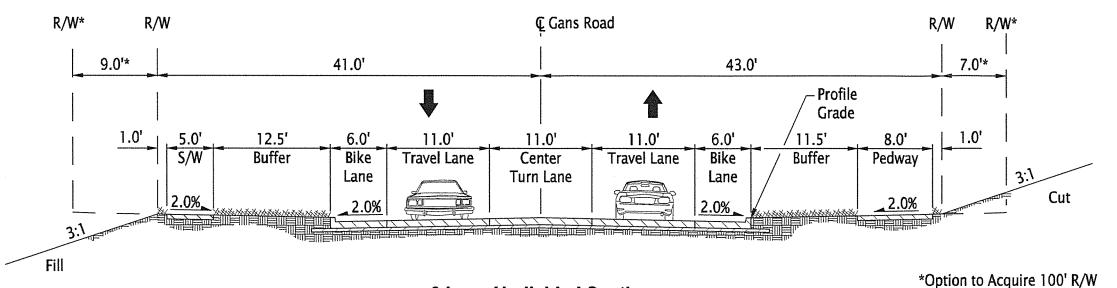
The other location that will have a different typical section is around the bridge that crosses Clear Creek. As shown in Figure 19, the bridge typical section will consist of two 11' lanes, 4' shoulders and no median. The sidewalk and pedway are 1' wider across the bridge to accommodate the pedestrian fence. There is a transition zone on each end of the bridge between the bridge's typical section and the standard section for the roadway.



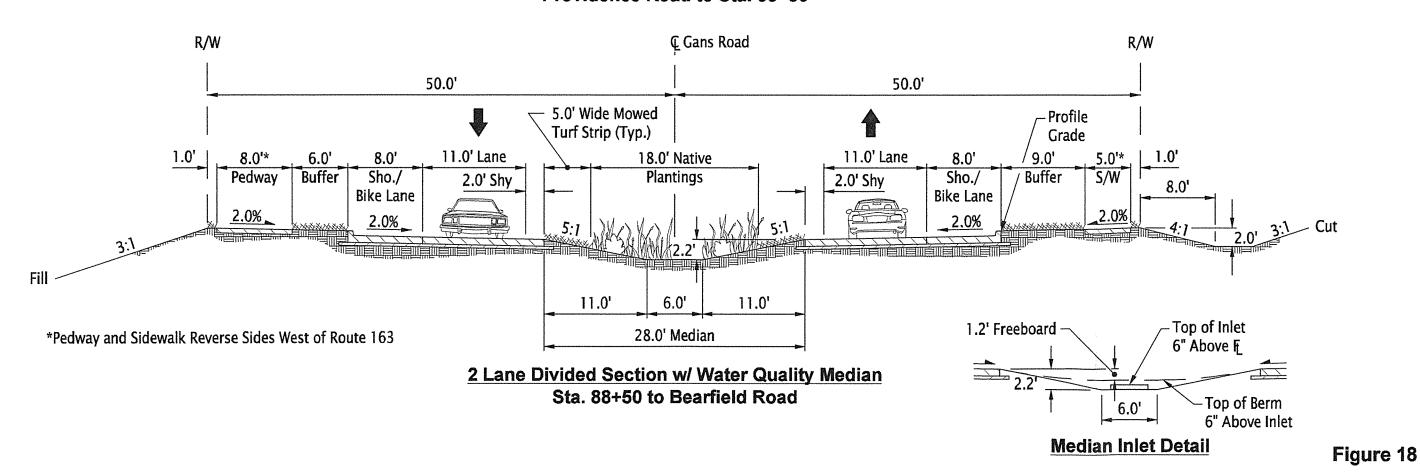


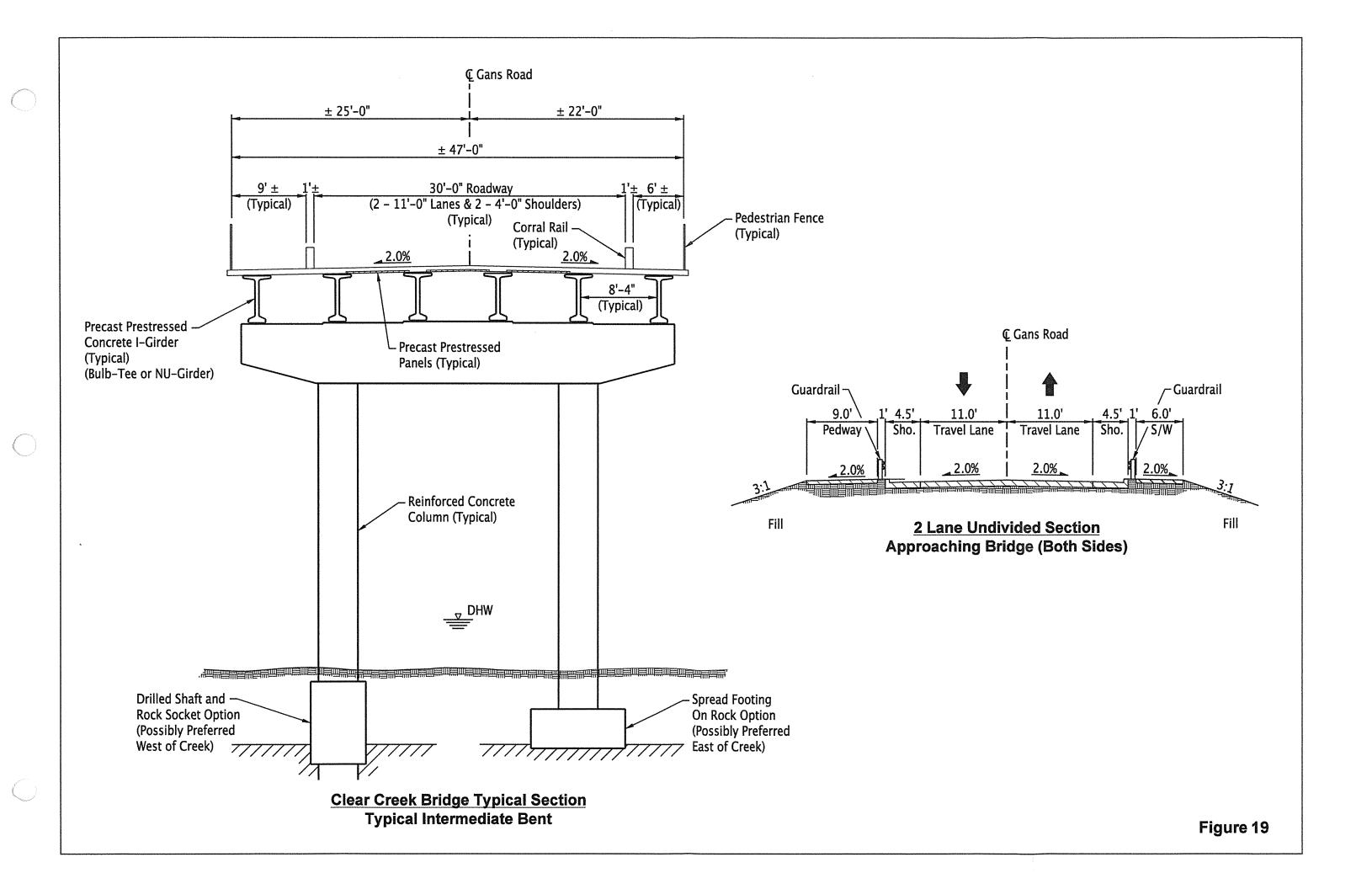


# Gans Road Preliminary Engineering Study TYPICAL SECTIONS



# 3 Lane Undivided Section Providence Road to Sta. 88+50







## 8. PROPOSED INTERSECTIONS

Roundabouts will be used as the intersection control throughout the corridor. They will serve many purposes and create several benefits to the design of the extension, including improving the access management throughout the corridor. The divided roadway would not be as practical without the use of roundabouts. The roundabouts will be placed every quarter of a mile to provide a place for vehicles to make a U-turn. This creates at most a half of a mile increase in driving distance for the current residents of Gans Road. The only location the quarter mile spacing is not consistent is around Clear Creek. A full access intersection with a roundabout is not necessary or practical in this area because of the proximity to the creek, bridge and roadway fills. However, the only access point currently planned for this section of roadway is for the City's new sewer pump station. Therefore, the extra distance between roundabouts is not a significant issue.

Another benefit to the design process created by using roundabouts is they provide a place to change the horizontal alignment and vertical grade without gradual curves. When using a roundabout, there is no need to have a continuous horizontal and vertical alignment through the intersection. This allowed the horizontal alignment and vertical grades of the new roadway to more closely match the topography. Therefore, the amount of cut and fill required was reduced, leading to a smaller footprint of disturbance and a reduced project cost. Roundabouts will further help reduce the cost of the project, by eliminating the need to install signals. There will also be a long term cost savings by eliminating the maintenance and electric costs that are associated with operating a signalized intersection.

Roundabouts also have other general benefits as recognized on many projects throughout the country. A roundabout has less conflict points and slower speeds than a signalized intersection, making the roundabout a safer intersection for both pedestrians and vehicles. Because traffic moves continually at a roundabout, there is less fuel consumption and pollution from the vehicles at a roundabout than there is for a signalized intersection or a four-way stop. Roundabouts can also be attractive elements in a roadway corridor if the central islands are landscaped, which will further emphasize the scenic nature of the Gans Road corridor.

At the second public meeting held on October 7, 2008, the public comments were unanimously supportive of the use of roundabouts along the corridor. The public felt that the use of roundabouts, along with the typical section, would control both the traffic through the area and the future development. The public generally felt that their comments from the first meeting were heard and the study was headed in the right direction. Public Meeting summaries from both public meetings are enclosed in the Appendix of this report











# 9. PROPOSED ALIGNMENTS

Three different alternatives were investigated during the study. The three horizontal alignments are shown in Figure 1. More detailed exhibits of the plan and profiles of these alignments are located in Appendix A.

### 9.1. "Yellow" Alignment

**9.1.1. Horizontal Alignment:** The Gans Road extension would start on the west end of the project by connecting into the current intersection of Providence Road, Route 163, and Route K. At this point Gans Road would closely follow the centerline of the existing Route 163 alignment east until the existing road begins to curve south. Instead of curving to the south, Gans Road would continue eastward on the same bearing until it intersects a modified Route 163 alignment. The south leg of this roundabout would serve Route 163, and the east and west legs would connect Gans Road. The northern leg of this roundabout is intended for the future extension of State Farm Parkway, which is depicted in the project exhibits as a dashed line.



Figure 20: Existing intersection of Providence Road, Route 163 and Route K

Gans Road would then continue in a straight alignment on the same bearing through the crossing of Clear Creek. This alignment intersects the creek at the northern edge of the large just downstream of the City's existing sewer pump station. The bridge across the creek is on tangent and normal (not-skewed), but long, a length of 410', due to the floodway present around this bend and the high vertical grade which would spill into the creek and floodway for shorter bridge lengths.

East of the bridge, the alignment curves to the northeast toward the existing roadway through a curve with a radius of 1300 ft. and a reverse curve of 800 ft. radius with an approximately 325 ft. tangent between curves. A roundabout would be placed at the property line of the Crown Center Farms and Davis properties. This roundabout will only have the roundabout and the east and west legs fully constructed in order to carry Gans Road. The north and south legs are potential nodes for future access and will be constructed to a point just outside the roundabout's limits, similar to the roundabout at the present end of State Farm Parkway, depending on the levels of existing or planned development at the time of construction. This roundabout is









needed for access control purposes (U-turns) as well as to help with the vertical grade change to better match existing topography.

At this intersection the alignment is approximately 40 ft. offset north of the current Gans Road alignment. The southern edge of the new right-of-way matches the existing property line between the Davis and McTurnan properties for approximately 750' before bending back south in a sweeping curve of 8000 ft. radius to connect to the current intersection of Gans Road and Rock Quarry Road. The northern shift of the Gans Road centerline through this section saves a majority of the 12" water line that is presently on the south edge of Gans Road in a private easement.

In final design, the northern offset of Gans Road west of Rock Quarry Road may be reduced to still avoid the water line, while limiting the right-of-way taking from the Davis property.

From the Rock Quarry Road intersection to the east, the alignment approximately matches the existing Gans Road alignment. The south edge of the new right-of-way will match the southern edge of the existing right-of-way, except for the area near the Country Day School pond where a variance was granted during a previous platting process. The construction limits for this alignment would slightly encroach upon the pond.

Both the Rock Quarry Road intersection and the Bearfield Road intersection are to be replaced with roundabouts. There will also be a roundabout placed at the entrance to Country Day School, which is approximately halfway between Bearfield and Rock Quarry spaced at one quarter of a mile in accordance with MoDOT's access management guidelines. Both the north and south legs of this roundabout will be potential nodes for future access. However, these legs will be used to serve the current residents in the meantime. The south leg will be the access point for Country Day School, while the north leg will connect to the Schulte's driveway.

**9.1.2. Vertical Alignment:** The vertical alignment generally follows the existing Route 163 profile before Route 163 turns south. The vertical adjustment was set to accommodate driveways throughout the corridor, and in particular with this section of roadway, the vertical alignment was set to keep construction limits approximately at the proposed southern right-of-way lines to avoid impacts to the first row of pecan trees in the Montgomery property orchard. Another key control was the Craven driveway west of Clear Creek.



Figure 21: Curve in Route 163 alignment







East of the point in which Route 163 curves to the south, large amounts of earthwork are required until the alignment matches the current Gans Road alignment. There is a significant section of fill followed by an even larger section of cut leading up to the bridge, but the east side of the bridge is where the most earthwork will be required.

The roundabout on the east side of the bridge matches the existing grade fairly close. However, there is a large section of fill that will be needed to raise the grade between this roundabout and the bridge. On the west side of the creek, there is a considerable drop in elevation followed by some bottom land and a steep hill east of the creek. A large sag curve was centered over the bottom land to match the existing grade as closely as possible given a 40 mph design, but there is still a large amount of fill required to achieve the desired grade. The fill height is approximately thirty-five feet at the east end of the bridge.

East of the roundabout at the top of the hill, the vertical alignment is reasonably close to the existing Gans Road profile. There is some cut required west of Rock Quarry Road in the section where the alignment is shifted to the north, but the most prominent changes are east of this point. On the current Gans Road profile, there is a sharp vertical sag curve just east of the Rock Quarry Road intersection. This curve is too sharp for a road with the desired design speed, and much of this curve will need to be filled in with fill heights reaching almost twenty feet. The other significant change is a crest curve just west of the Bearfield Road intersection. Approximately ten feet will need to be cut off the top of this curve before connecting to the roundabout.



Figure 22: Large sag curve between Country Day School and Rock Quarry Road

**9.1.3. Clear Creek Bridge:** The bridge for this alignment would be 410 ft. long on a tangent alignment with a span arrangement of 60'-100'-100'-100-50'. This span arrangement would avoid any substructure units in the floodway. One unit would be placed at the bottom of the bluff west of the creek. Two more substructure units would be placed in the bottom land east of the creek, while the fourth unit would be placed on the assumed 2.5:1 fill slope on the east side. The substructure units would be tall for this alternative with









some pier heights reaching approximately 40 ft above the groundline. A 115 ft. long mechanically stabilized earth (MSE) wall on either side of the roadway would be needed on the west side of the bridge to retain the fill required to achieve the desired grade. This MSE wall would serve as an approximately 23 ft. tall vertical abutment for the west end of the bridge. The MSE wall allows the footprint of the project to be limited on the steep west side of the creek.

The potential future trail along Clear Creek was accounted for in the design of each alternative. The trail would pass under the bridge at the bottom of the fill slope on the eastern end of the bridge. There would be a 20 bench at the bottom of this slope, but above the design high water elevation. This bench would have approximately 22 ft. of clearance to the bottom of the bridge superstructure.

At this time the superstructure is expected to be composed of slab on six prestressed I-girders spaced at 8'-4" centers. A corral rail or barrier curb would be placed along both sides of the roadway to separate vehicular and pedestrian traffic. A pedestrian fence would then be placed on the edge of both the sidewalk and the pedway. The cross section of the bridge is shown in Figure 19.

- **9.1.4. Impacts to Utilities:** The impacts to utilities that will be at cost to the project are summarized below for this alignment (this does not include utilities in the right-of-way because they will be replaced at no cost to the project):
  - Water line replacement length of approximately 8424 ft. (combination of 8" and 12" lines)
  - Replacement of approximately 23 electric poles and the corresponding electric line
  - Replacement of approximately 221 ft. of gravity sewer line
  - Telephone line replacement length of approximately 1475 ft.
- **9.1.5. Impacts to Environmental and Cultural Resources:** The impacts to the environmental and cultural resources in the area caused by this alignment are summarized below:
  - Clear Creek tributary modification that is just east of the Gans Road and Rock Quarry intersection through a box culvert approximately 225 ft. long (current culvert is about 75 ft. long)
  - Approximately .85 acre of potential wetlands within construction limits
  - Approximately 1.68 acre of non-significant cultural site 23BO322 within construction limits
  - Approximately 1.23 acre of non-significant cultural site 23BO2358 within construction limits

### 9.2. "Blue" Alignment

**9.2.1.** Horizontal Alignment: This alignment is the same as the "Yellow" Alignment west of the Gans Road and Route 163 roundabout. East of this roundabout is a reverse curve with a radius of 1200' followed by a tangent distance of 490 ft. and a long horizontal curve with a radius of 2500 ft. that bends the alignment to the south. These curves allow the alignment to intersect Clear Creek in the middle of the bend instead of at the northern edge of the bend. With this alignment the bridge is potentially shorter, but it would require a curved structure, while the previous alignment had a tangent bridge. The proposed bridge for this alignment is shorter at a length of 250', but this assumes that a large amount of fill can be placed in the bottom land east of the creek. This fill would be placed outside the floodway but in the floodplain and may cause an excessive increase in the base flood elevation. A hydraulic analysis was not included in this phase of the design and the length of the structure would have to be confirmed during final design. Other options that could be considered during final design to reduce the fill in the floodplain are an MSE wall on the east end of the bridge or a longer bridge.

The other advantage of curving this section of the alignment farther to the south is that it saves some of the utilities that are present in this area. The construction limits for the ""Yellow" Alignment impact most of the utilities. However, with the "Blue" Alignment a large portion of the utilities are saved, especially around the creek where replacement costs are high.









As in the previous "Yellow" Alignment there would be a roundabout placed between Clear Creek and Rock Quarry Road. However, the roadway between this roundabout and the one at Rock Quarry Road follows the current Gans Road alignment more closely. The previous "Yellow" Alignment shifted the road to the north to save the water line, but with the "Blue" Alignment this water line would need to be replaced. The "Blue" Alignment would balance the right-of-way needs on either side of Gans Road.

The only other major difference between this alignment and the "Yellow" Alignment is a very slight adjustment. Near the Country Day School pond, this alignment shifts approximately 20' to the north to prevent construction from impacting the pond. This shift is very minor but would avoid impacts to this water feature.

**9.2.2. Vertical Alignment:** Because the horizontal alignments of the two alternatives are very similar for a large portion of the extension, the vertical alignments are also very similar. The horizontal shift to the south near the creek causes a significant increase in earthwork. While the "Yellow" Alignment had a bridge that is almost sixty-five percent longer, the shorter bridge creates more earthwork required to fill in the bottom land east of the creek.

The change in the alignment on the section just west of Rock Quarry Road also increases the amount of earthwork required. There was some cut required for the portion of the roadway that was shifted to the north for the "Yellow" Alignment, but for the "Blue" Alignment that amount of cut required increased.

**9.2.3. Clear Creek Bridge:** The bridge for the "Blue" Alignment would be 250 ft. long on a curved alignment with a radius of 2500 ft. This bridge is expected to be a two span structure with a span arrangement of 125'-125'. The approximately 35 ft. tall pier for this span arrangement would be located just east of Clear Creek. A 150 ft. long MSE wall on either side of the roadway would be needed on the west end of the bridge to retain the fill required to achieve the desired grade. This MSE wall would serve as an approximately 17 ft. tall vertical abutment for the west side of the bridge. As in the previous alternative the east end of the bridge would be supported on an assumed 2.5:1 fill slope. The proposed superstructure for this bridge is similar to the one for the "Yellow" Alignment with six lines of prestressed I-girders.

The accommodation for the trail along Clear Creek is very similar to the one for the "Yellow" Alignment. This one will include the 20 ft. bench on the east side of the bridge, but the clearance for this trail is slightly different, with 21 ft. to the bottom of the superstructure. For the "Blue" Alignment the trail will also serve as the access road to the City's future sewer pump station.

The bridge for this alignment is proposed to be shorter than the bridge for the "Yellow" Alignment. To achieve a structure of this length, fill will have to be placed within the limits of the flood plain which may not work with the hydraulics of the stream. If this alignment is selected, a hydraulic analysis would need to be conducted to confirm whether or not this structure length is possible.

- **9.2.4. Impacts to Utilities:** The impacts to utilities that will be at cost to the project are summarized below for this alignment (this does not include utilities in the right-of-way because they will be replaced at no cost to the project):
  - Water line replacement length of approximately 7944 ft. (combination of 8" and 12" lines)
  - Replacement of approximately 19 electric poles and the corresponding electric line
  - Replacement of approximately 221 ft. of gravity sewer line
  - Telephone line replacement length of approximately 1475 ft.
- **9.2.5.** Impacts to Environmental and Cultural Resources: The impacts to the environmental and cultural resources in the area caused by this alignment are summarized below:









- Clear Creek tributary modification that is just east of the Gans Road and Rock Quarry intersection through a box culvert approximately 225 ft. long (current culvert is about 75 ft. long)
- Approximately .96 acre of potential wetlands within construction limits
- Approximately 1.66 acre of non-significant cultural site 23BO322 within construction limits
- Approximately 1.51 acre of non-significant cultural site 23BO2358 within construction limits

### 9.3. "Red" Alignment

**9.3.1.** Horizontal Alignment: This alignment is also the same as the "Yellow" Alignment west of the Route 163 and Gans Road intersection. However at the first roundabout this alignment takes a dramatic change as compared to the other alternatives. Gans Road connects to the north leg of the roundabout for this alignment. The east leg would be a potential node for future access and would serve the Craven residence's driveway in the meantime. As Gans Road heads north away from the roundabout, it begins to curve towards the east through a radius of 800 ft. Just before the road begins to head back towards the south, there is an additional roundabout as compared to the other alternatives. The east and west legs of this roundabout connect Gans Road. The south leg of this roundabout is another potential node for future access, but the north leg serves as the potential connection to the future extension of State Farm Parkway.

East of this roundabout the road curves again through a radius of 800 ft. to head towards the southeast. The bridge to cross Clear Creek for this alternative is located just north of the City's current sewer pump station and the confluence point of Clear Creek and a small tributary. This is a 250' tangent bridge and is expected to be two spans. The pier for this bridge would actually be located between Clear Creek and its tributary.



Figure 23: The confluence point where the bridge would be located

Immediately after crossing the creek, the road turns to the east through a curve with a radius of 800 ft. and connects to a roundabout in the exact same location as the "Yellow" Alignment. The portion of the alignment









between this roundabout on the Crown Center Farms/Davis property line and the Rock Quarry Road roundabout is identical to the same section in the "Yellow" Alignment, including the northern offset that saves part of the water line.

This alignment will be nearly identical to the "Blue" Alignment from Rock Quarry Road to the Country Day School entrance. Both the "Red" Alignment and the "Blue" Alignment will leave the pond on the Davis tract intact with no disadvantage to the project cost.

East of the Country Day School intersection, the "Red" Alignment returns to the "Yellow" Alignment through the Bearfield intersection to the east.

- **9.3.2. Vertical Alignment**: The vertical alignment of this alternative is comprised of portions of the "Yellow" and "Blue" Alignments except for the section around the creek where it shifts to the north. This section between the Route 163 intersection and the roundabout just east of the creek balances the cut and fill much better than the other two alternatives. There is a moderate section of fill just west of the bridge, and there are also some portions that require similar amounts of cut. Overall this section of the roadway fits the land much better, and the total earthwork quantities are less and more balanced.
- **9.3.3. Clear Creek Bridge:** The "Red" Alignment has a 250' bridge on a tangent alignment. As with the "Blue" Alignment, this bridge is anticipated to be a two span structure with a span arrangement of 125'-125'. The pier for this span arrangement would be between Clear Creek and its tributary and be approximately 23 ft. tall. The west end of this bridge would feature a 2.5:1 spill slope. The east end of the bridge would be supported by an 8 ft. high MSE wall. This MSE wall is also shorter in length than the other two alternatives at only 15 ft. long on either side of the roadway. Unlike the previous two alignments that had substructure units normal to the roadway, the substructure units for this bridge would be skewed to line up more appropriately with the stream and the floodway. The superstructure of this bridge is similar to the bridges of the previous two alignments.

The trail for this alignment is on a 15 ft. bench on the west side of the both Clear Creek and its tributary. Unlike the "Yellow" Alignment and "Blue" Alignment this trail would not be above Clear Creek's design high water elevation. The clearance to the bottom of the superstructure is 23 ft. for this alternative.

- **9.3.4. Impacts to Utilities:** The impacts to utilities that will be at cost to the project are summarized below for this alignment (this does not include utilities in the right-of-way because they will be replaced at no cost to the project):
  - Water line replacement length of approximately 5544 ft. (combination of 8" and 12" lines)
  - Replacement of approximately 15 electric poles and the corresponding electric line
  - Replacement of approximately 221 ft. of gravity sewer line
  - Force main replacement length of approximately 615 ft. (20" line)
  - Telephone line replacement length of approximately 610 ft.
- **9.3.5. Impacts to Environmental and Cultural Resources:** The impacts to the environmental and cultural resources in the area caused by this alignment are summarized below:
  - Clear Creek tributary modification that is just east of the Gans Road and Rock Quarry intersection through a box culvert approximately 225 ft. long (current culvert is about 75 ft. long)
  - Approximately .29 acre of potential wetlands within construction limits
  - Approximately 1.68 acre of non-significant cultural site 23BO322 within construction limits
  - Approximately 0.03 acre of non-significant cultural site 23BO2398 within construction limits
  - Approximately 0.23 acre of non-significant cultural site 23BO2394 within construction limits









### 10. COST OPINIONS

A project cost opinion was prepared for each alignment as displayed in Table 4. This was prepared for budgetary purposes to help the County and City determine the amount of funding that will be needed in the future phases of the process. The cost opinion also serves for comparison purposes to help determine which alternative the County and City should proceed with in the preliminary and final design phase.

Based on the total project cost opinion prepared, the "Red" Alignment, the northern alternative near Clear Creek, was the least expensive alternative. The construction cost opinion is \$11.16 million with a total project cost opinion of \$14.82 million. The next lowest cost opinion was for the "Yellow" Alignment with a total project cost over \$1.12 million higher than the "Red" Alignment.

One of the primary differences in cost between the three alternatives is the cost of earthwork. The "Blue" Alignment had the highest cost opinion for earthwork at \$2.92 million. The "Yellow" Alignment lowers the number to \$2.25 million, but the "Red" Alternative lowers the earthwork cost to \$1.92 million.

Structure cost plays a large role in the cost opinions as well. The additional fill needed for the "Blue" Alignment is offset by the structure cost reduction. However, the "Red" Alignment not only has the least earthwork but also has the least structure costs. The bridge for this alignment is the same length as the one for the "Blue" Alignment, but the "Red" Alignment requires less MSE wall around the bridge. The structural cost opinion for the "Red" Alignment is \$1.37 million, while it is \$2.17 million for the "Yellow" Alignment and \$1.47 million for the "Blue" Alignment. This savings combined with the savings on the earthwork more than offsets the cost of the additional roundabout and roadway length required for the "Red" Alignment.

The construction cost opinions are broken down between the main roundabouts in Table 3 below. One of the advantages of using the roundabouts as the intersection type was the option to adjust the alignment between two roundabouts without affecting the rest of the alignment. To maximize this ability the east end of the "Red" Alignment is composed of the optimal sections of the other two alignments. This created an alignment that maximized the cost savings throughout the corridor. In the table below, the McTurnan/Davis roundabout is the one between Clear Creek and Rock Quarry Road, and the Country Day School Roundabout is the one between Rock Quarry Road and Bearfield Road.

Table 3: Construction cost opinions broken down by segment of the extension

Ī		(	Cons	struction Cost Opinion		
Section of Gans Road	BLU	JE ALIGNMENT	YE	LLOW ALIGNMENT	RE	D ALIGNMENT
Providence to Route 163	\$	1,728,087	\$	1,727,933	\$	1,727,493
Route 163 to McTurnan/Davis	\$	5,556,965	\$	5,657,052	\$	4,843,120
McTurnan/Davis to Rock Quarry	\$	1,712,990	\$	1,587,434	\$	1,587,110
Rock Quarry to Country Day School	\$	1,311,616	\$	1,353,202	\$	1,311,328
Country Day School to Bearfield	\$	1,460,158	\$	1,402,531	\$	1,402,275
East of Bearfield	\$	374,093	\$	332,756	\$	332,660
Total	\$	12,143,908	\$	12,060,909	\$	11,203,985







Table 4: Detailed Project Cost Opinions

			BLUE ALI	GNMENT	YELLOW A	LIGNMENT	RED ALIC	SNMENT
ITEM DESCRIPTION	UNIT COST	UNIT	ESTIMATED QTY.	TOTAL COST	ESTIMATED QTY.	TOTAL COST	ESTIMATED QTY.	TOTAL COST
Earthwork and Site Preparation	THE COLUMN TWO		to the second second	No of the latest and		No. of the last		
Unclassified Excavation (Roadway)*	\$ 4.00	CY	130,218	\$ 520,872	99,328	\$ 397,312	119,282	
Rock Excavation (Pvmt Removal)	\$ 5.00	SY	17,075	\$ 85,375	17,075		17,075	
Rock Excavation (Roadway)*	\$ 20.00	CY	32,556	\$ 651,120	24,833	\$ 496,660	29,822	\$ 596,440 \$ 279,915
Embankment	\$ 1.50	CY	319,987	\$ 479,981 \$ 1,013,850	239,274 149,856	\$ 358,911 \$ 749,280		\$ 319,045
Contractor Furnished Embankment	\$ 5.00 \$ 0.10	CY SF	202,770 1,646,752	\$ 1,013,850 \$ 164,675	1,640,782	\$ 164,078		\$ 162,365
Clearing and Grubbing		SUBTOTAL	1,040,732	\$ 2,915,873	1,0 10,1 02	\$ 2,251,616	1,020,000	\$ 1,920,268
Pavement		<b>计等级数据</b>	THE REPORT	F / 25 / 5 / 5			Market State of the State of th	
Concrete Pavement (8", Non-Reinf, with Integral Curb)	\$ 55.00	SY	45,462		44,355		44,540	
4" Type 1 Aggregate for Base	\$ 4.50	SY	52,879	\$ 237,956	51,562	\$ 232,029		\$ 233,010 \$ 23,805
6" Concrete Drive	\$ 45.00	SY	529 7,109	\$ 23,805 \$ 241,706	529 6,864	\$ 23,805 \$ 233,376	7,104	\$ 241,536
8' Multi-Use Path (4" Concrete) 5' Sidewalk (4" Concrete)	\$ 34.00 \$ 34.00	SY	5,522	\$ 241,706 \$ 187,748	5,377	\$ 182,818	5,527	\$ 187,918
5 Sidewalk (4 Concrete)		SUBTOTAL		\$ 3,191,625		\$ 3,111,553		\$ 3,135,969
Drainage	Victory Co.	HALLET OF						
Inlets (4'x4')	\$ 3,500.00		97		97	\$ 339,500	104	
End Section	\$ 750.00	EA	22	\$ 16,500	20	\$ 15,000	19	
24" RCP (Storm Sewer)	\$ 40.00	LF	10,884	\$ 435,360 \$ 19,000	10,884 475	\$ 435,360 \$ 19,000	11,995 292	\$ 479,800 \$ 11,680
24" RCP (Culvert)	\$ 40.00 \$ 55.00	LF LF	475 1,071	\$ 19,000 \$ 58,905	834	\$ 45,870		\$ 35,915
30" RCP (Culvert) 36" RCP (Culvert)	\$ 75.00			\$ -	0	\$ -	158	\$ 11,850
TO TO COMMENT		SUBTOTAL		\$ 869,265		\$ 854,730		\$ 917,495
Structures	1		September 1					
Bridge	\$ 100.00		11,750	\$ 1,175,000	19,270	\$ 1,927,000		
MSE Wall	\$ 45.00		4,570	\$ 205,650	3,475	\$ 156,375	2,370	\$ 106,650
Reinforced Concrete Box Culvert (7'x7')	\$ 450.00		202	\$ 90,900		\$ 90,900	202	\$ 90,900 \$ 1,372,550
	Target Maria	SUBTOTAL	A CONTRACTOR OF THE REAL VALUE	\$ 1,471,550	LANCE PROPERTY.	\$ 2,174,275	54 W/ (47) hards 1908 V	\$ 1,372,330
Intersection Control	\$ 260,000.00	EA	5	\$ 1,300,000	5	\$ 1,300,000	6	s 1,560,000
Roundabout**	\$ 260,000.00	SUBTOTAL		\$ 1,300,000		\$ 1,300,000		\$ 1,560,000
Day and Marking	er installed	SOBIOTAL		1,000,000		The second second	100000000000000000000000000000000000000	The state of the state of
Pavement Marking	\$ 2.50	LF	39,491	\$ 98,728	39,056	\$ 97,640	39,499	\$ 98,748
Striping Arrows	\$ 300.00		15	\$ 4,500	15	\$ 4,500	15	\$ 4,500
7410110		SUBTOTAL		\$ 103,228		\$ 102,140		\$ 103,248
Signing						<b>"一种"</b>	THE PERSON NAMED IN	
Permanent Signs	\$ 200.00	EA	135					
		SUBTOTAL		\$ 27,000		\$ 27,000		\$ 27,000
Lighting	<b>的现在分词有关</b>				70	420,000	70	\$ 420,000
Pole and Luminaire	\$ 6,000.00		70			\$ 420,000 \$ 420,000		\$ 420,000
	and the same of th	SUBTOTAL		\$ 420,000		3 420,000	State of the state of the state of	420,000
Water Quality Enhancements	s 30.00	LF	6,712	S 201,360	6,230	\$ 186,900	6,614	\$ 198,420
Infiltration Bioswale (Soil Mixture and Underdrain) Native Planting (Hydroseeding)	\$ 30.00 \$ 4.00		6,712			\$ 24,920		\$ 26,456
Native Flanting (Hydroseeding)	1.00	SUBTOTAL		\$ 228,208		\$ 211,820		\$ 224,876
Incidentals		MAN TERM	OF THE WAY IN SEC.					REPORT OF
Construction Staking	-	LS		\$ 70,000		\$ 70,000		\$ 70,000
Mobilization	2.5%	PERCENT		\$ 263,169		\$ 261,328 \$ 50,000		\$ 242,035 \$ 50,000
Traffic Control	-	LS	-	\$ 50,000 \$ 50,000		\$ 50,000 \$ 50,000		\$ 50,000
Erosion and Sediment Control	\$ 12,000.00	LS EA	- 5			\$ 60,000		\$ 72,000
Landscaping (in Roundabouts) Seeding and Mulching	3 12,000.00	LS		\$ 20,000		\$ 20,000		\$ 20,000
Decamy and Matering		SUBTOTAL		\$ 513,169		\$ 511,328		\$ 504,035
	CONSTRUCTION	SUBTOTAL		\$ 11,039,916		\$ 10,964,463		\$ 10,185,441
Construction Contingency	10.0%	PERCENT	-	\$ 1,103,992		\$ 1,096,446	The second secon	\$ 1,018,544
PROJECT CONSTRUCTION	COST		BLUE	\$ 12,143,908	YELLOW	\$ 12,060,909	RED	\$ 11,203,985
Utility Relocation	A PARTY N	SIL DET		The Paragraphy		VA SAME SHA	SAN THE EAST OF	PERSONAL PROPERTY.
Water Line (8" and 12")***	\$ 50.00		7944	\$ 397,200		\$ 421,200		\$ 277,200
Power Line***	\$ 10,000.00	POLE	19	\$ 190,000		\$ 230,000		\$ 150,000
Gravity Sewer Line East of Rock Quarry***	-	LS	-	\$ 60,000		\$ 60,000		\$ 60,000
Force Main Sewer Line near Clear Creek***	-	LS	-	\$ .	•	\$	•	\$ 67,000
Telephone Line***		LS	-	\$ 25,000		\$ 25,000		\$ 25,000
		SUBTOTA		\$ 672,200		\$ 736,200		\$ 579,200
Right-of-Way	State of the last	88843	M Carl Clark	The state of the	NAME OF THE OWNER, OF THE OWNER,		22.22	E 500 005
R/W Purchasing	\$ 25,000.00	ACRE	23.68					
	- Not should be a second	SUBTOTA	No. of Control of Control	\$ 592,000		\$ 498,750	STATE OF STREET	\$ 580,825
Environmental/Cultural Mitigation	<b>公司</b> 100 100 100 100 100 100 100 100 100 10	10	CONTRACTOR OF THE	\$ 50,000		\$ 50,000		\$ 50,000
Mitigation Costs		SUBTOTA	-	\$ 50,000		\$ 50,000		\$ 50,000
Santicas	A CONTRACT	JOBIOIA		35,000	·三菱纹 (2.4%) (3.4%		March Change	The second
Survices	1.5%	PERCENT	T -	S 182,159	-	S 180,914		S 168,060
Surveys Geotechnical Investigation	1.0%	PERCEN		\$ 121,439		\$ 120,609	-	\$ 112,040
Environmental / Cultural Permiting	1.0%	PERCEN	т -	\$ 121,439	-	\$ 120,609	-	\$ 112,040
Engineering Design	8.0%	PERCEN	Γ -	\$ 971,513		\$ 964,873		\$ 896,319
Construction Administration	4.0%	PERCEN		\$ 485,756		\$ 482,436		\$ 448,159 \$ 560,199
Construction Observation	5.0%	PERCEN		\$ 607,195 \$ 121,435		\$ 603,045		\$ 112,040
Contingency	1.0%	PERCEN		\$ 121,439		\$ 2,593,095		\$ 2,408,857
GRAND TOTAL PROJECT	COCT	0001017		\$ 16,069,048			REI	\$ 14,822,867

Note: This estimate is based on 2008 dollars. Inflation should be added for budgetary purposes based on projected project timeline. This estimate does not include costs for the State Farm Parkway north of Gans Road.









<sup>\* 20%</sup> of the total excavation was assumed to be in rock, and the rest was assumed unclassified.

\*\* Includes pavement, paths, sidewalks, and pavement markings at each roundabout to a point approximately 150' in all directions from the center of the roundabout.

\*\*\* Quantities determined for utilities not in R/W per county mapping.

### 11. EVALUATION MATRIX

An evaluation matrix shown in Table 5 below was created to analyze the three different alignments. The first step in creating the matrix was to develop some categories that should be used to determine which alternative best serves the County, City and public. Cost was one of the main factors used in differentiating the alternatives, but the matrix also takes into account such things as impacts to the environment, cultural resources, utilities and private property. A category that was used specific to this project is "context sensitive design". The topography and vegetation to the south of the section line near the Clear Creek crossing is a more appealing natural resource, as it is very near Rock Bridge State Park and begins to take on the character of the land in the park. The "Red" Alignment minimizes the impact to the southern stretch of Clear Creek by traversing further north where the topography and vegetation appear to be less appealing. It also provides for an opportunity to view the creek and floodplain as a driver would be traveling along the ridge.

After determining the categories to include in the matrix, each category was given a weight. The weight allows for a very important category such as cost to play a more prominent role in the decision. The last step was to rank each alignment from one to three in each category with one representing the best alignment for that category. This rank was then multiplied by the weight to create the weighted rank. Finally, all of the weighted ranks were summed for each alternative. The alignment with the lowest weighted rank is the most beneficial alignment score for the City, County and public.

The "Red" Alignment was the convincing choice based on the evaluation matrix. The weights used in Table 5 are the original weights developed for each category. For some projects, the outcome of the matrix depends heavily on the weights that are assigned. To account for this, a sensitivity analysis was done to determine how large of a role the weighting played in this matrix. It was found for this matrix the "Red" Alignment had the best ranking with several different weighting scales. This is due to the "Red" Alignment ranking number one in all but two categories. The first of these categories is the impacts to cultural resources. The "Red" Alignment passes through the most archeological sites, but none of these sites are considered significant so this rank of third is not of any practical significance. The "Red" Alignment was also ranked poorly for travel delay and convenience. This ranking was intended for those travelers that would be trying to travel east to west. This alignment would take them slightly farther off a straight line route and through an additional roundabout. However, at the second public meeting, many citizens actually felt it was more convenient because that would allow the use of the State Farm Parkway extension to avoid traveling on Providence Road. Even considering these two ranks of third, the "Red" Alignment was evaluated heavily as the preferred alignment. The public comments from the second Public Meeting (meeting summary is contained in Appendix F) overwhelmingly favored the "Red" Alignment as well.

Table 5: Evaluation Matrix

	147 1 1 7		Blue		Yellow		Red
Evaluation Item	Weight	Rank	Weighted Rank	Rank	Weighted Rank	Rank	Weighted Rank
Utility Impacts	5%	2	0.10	3	0.15	1	0.05
Environmental Permitting	10%	3	0.30	2	0.20	1	0.10
Cultural Resource Impacts	5%	1	0.05	2	0.10	3	0.15
Context Sensitive Design	20%	3	0.60	2	0.40	1	0.20
Private Property Impacts	5%	2	0.10	3	0.15	1	0.05
Property Acquisition	15%	2	0.30	3	0.45	1	0.15
Travel Delay and Motorist Convenience	5%	2	0.10	1	0.05	3	0.15
Project Cost	35%	3	1.05	2	0.70	1	0.35
Total	100%		2.60		2.20		1.20

Notes: Alternatives are ranked 1, 2 and 3, and the rank integer is multiplied by weight. Lowest total weighted rank represents the suggested recommended alternative on a ranking/evaluation basis.











### 12. CONCLUSIONS AND RECOMMENDATIONS

Three different alignments were evaluated to find the best alternative for which Boone County and the City of Columbia to proceed forward. All three alternatives used a divided two-lane roadway with a water quality median. This typical section helps control future development by limiting the access and the number of lanes. Each alternative also uses roundabouts as the intersection of choice. The roundabouts will help with the access management by providing a place for travelers to make U-turns since there will be no ability to make left turns between the full access roundabout intersections. This also helps with the vertical alignment and reduces the amount of earthwork for each alignment.

The "Red" Alignment, which is the northern most alignment, is recommended based on the evaluation matrix in Table 5. This alignment has the lowest project cost opinion and reduces the impact to property owners and the utilities in the area. The project cost opinion for this alignment is \$14.82 million, which includes a construction cost opinion of \$11.20 million.

There is one main issue that needs to be investigated further during the final design phase. The divided roadway is proposed east of the Rock Bridge Elementary School and creates some access concerns for owners between the school and the roundabout at Route 163. Along the rest of the project, owners have a roundabout both east and west of their access point. However, the owners east of Rock Bridge Elementary only have a roundabout toward the east side of their property. This eliminates the ability to make one turning movement for all of these owners. For example, George Montgomery, the owner of the pecan orchard on the south side of the road, will not be able to access his property while traveling westbound without turning around in the school's parking lot. The owners affected by this access issue are the Montgomery's, the Smith's, the Hager's and the Manson's who share a driveway with the Montgomery's. Due to the changing nature of land developing in the area and unknown traffic patterns for the potential developments, it is best to consider options for their concerns later at the time of final design. Options that could be investigated during final design are as follows:

- Reconstruct the intersection with Providence Road and make it a multi-lane roundabout, allowing for U-turns.
- Move the access for the Hager's, the Montgomery's and the Manson's to Route 163 or State Farm Parkway. The Smith's land could have an access point at both State Farm Parkway and Philips Farm Road on the north side of their property. It is important to note that for the Hager's and Smith's that easements or right-of-way through the Crown Center Farms and/or State Farm property would be necessary for this.
- Eliminate the median through the area. However, this would eliminate some of the access control benefits.
- Eliminate the median through the area, and purchase access rights from the undeveloped properties.
- Allow a three quarter (allowing only one left turn movement) access break in the median for the
  current residents of the area. This would include the Hager's driveway and the shared driveway for
  the Montgomery and Manson properties. At this time the Smith's property is undeveloped and would
  not be included in this access plan.

There is already a need for an east-west alternative to Grindstone Parkway, and the Columbia Area Transportation Study Organization (CATSO) has identified Gans Road as a solution to this concern. This need will continue to grow as the proposed development throughout the area continues. The Gans Road extension would alleviate some of the traffic on Grindstone Parkway, while emphasizing the environmental and scenic value of the area.





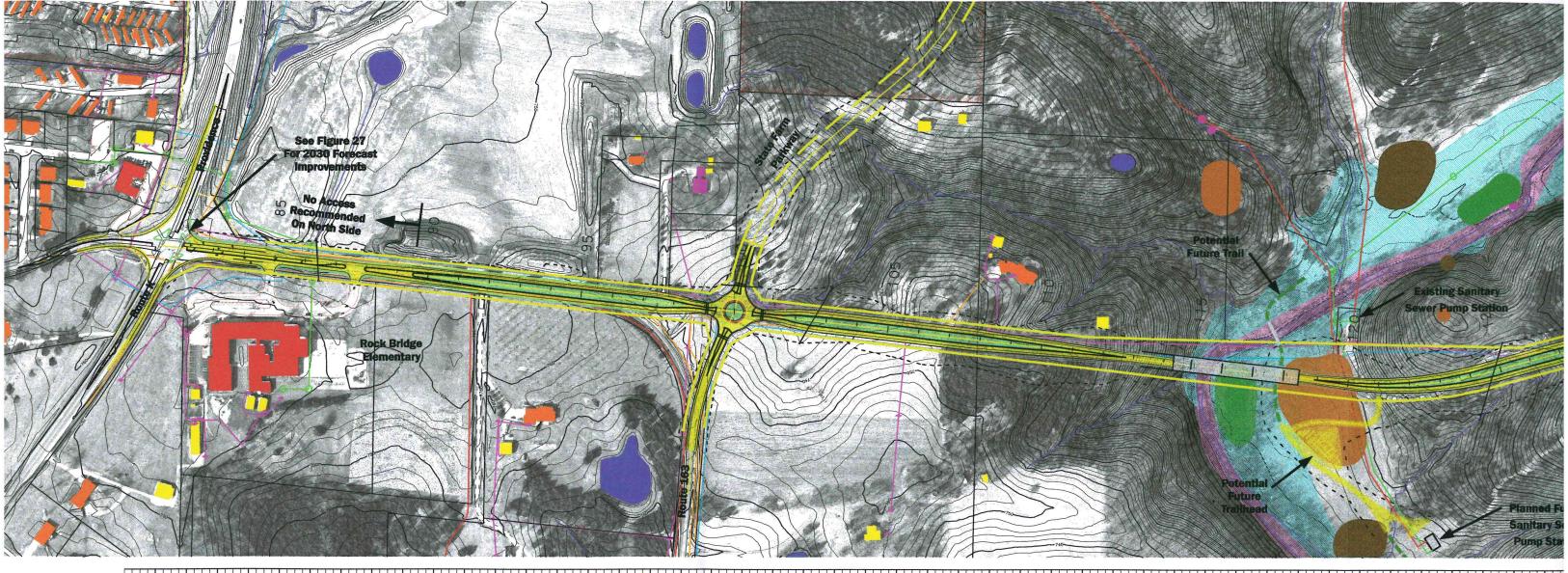


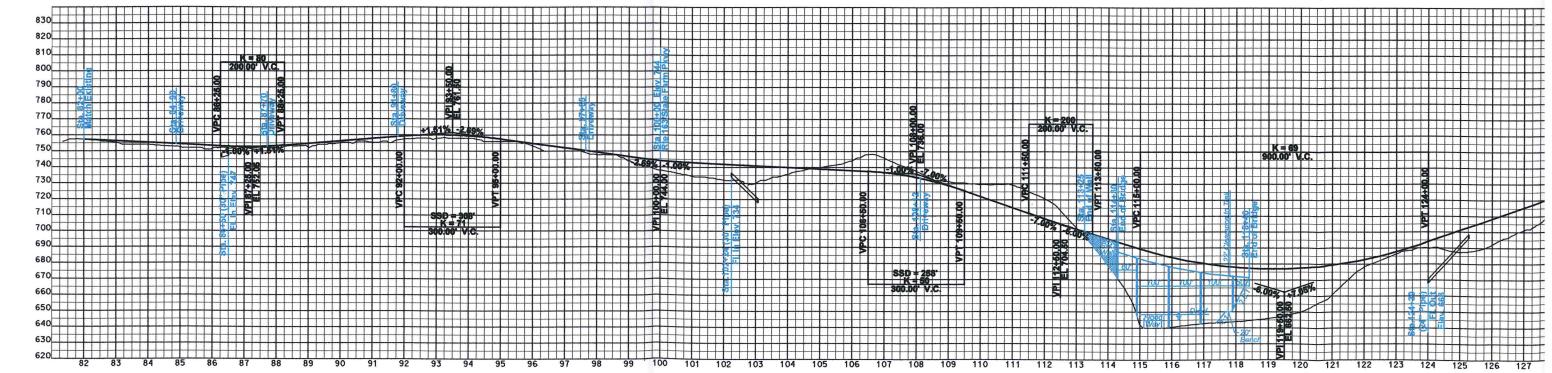




### APPENDIX A: ALIGNMENT PLANS/PROFILES

Figure 24- Pose 1





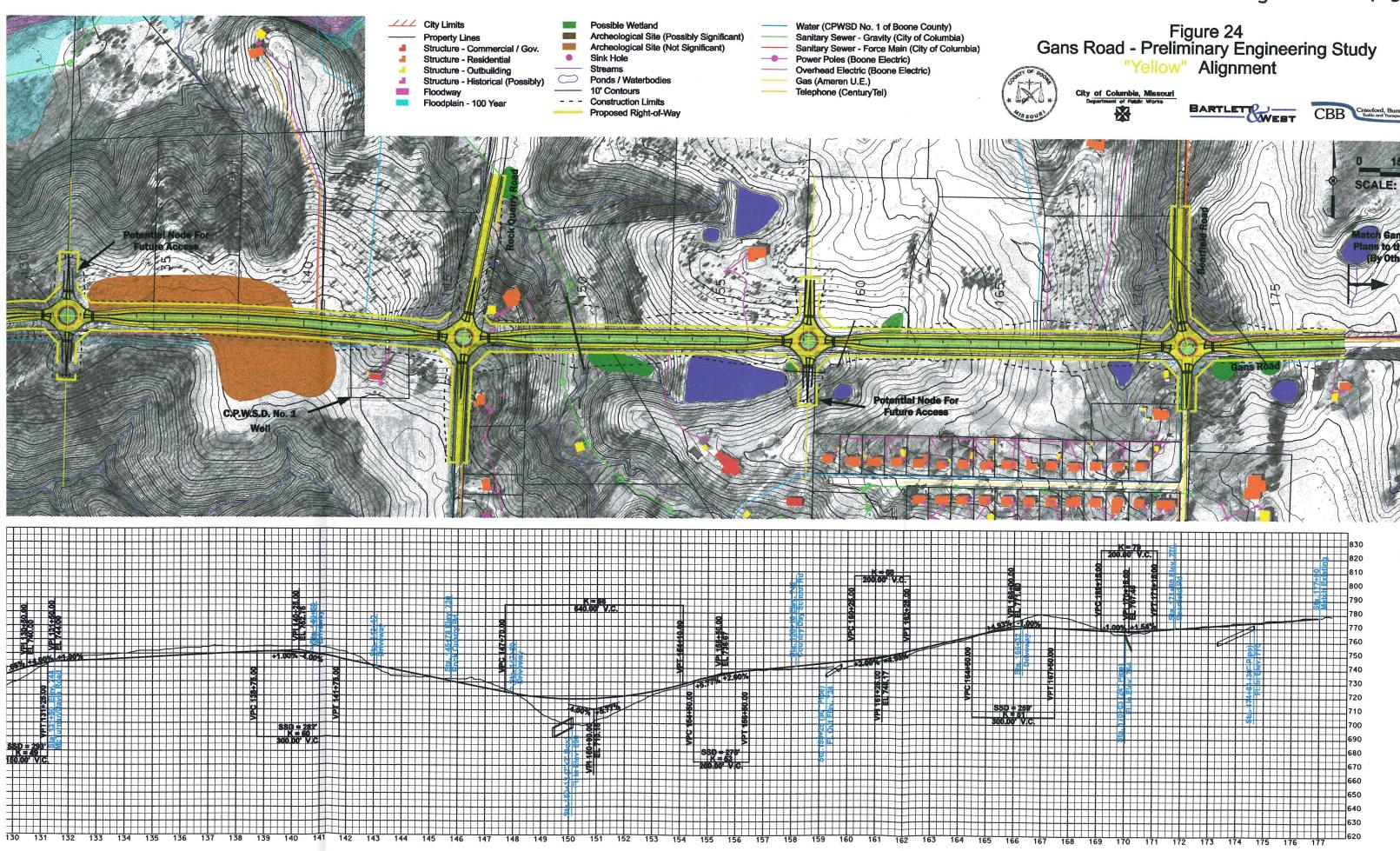
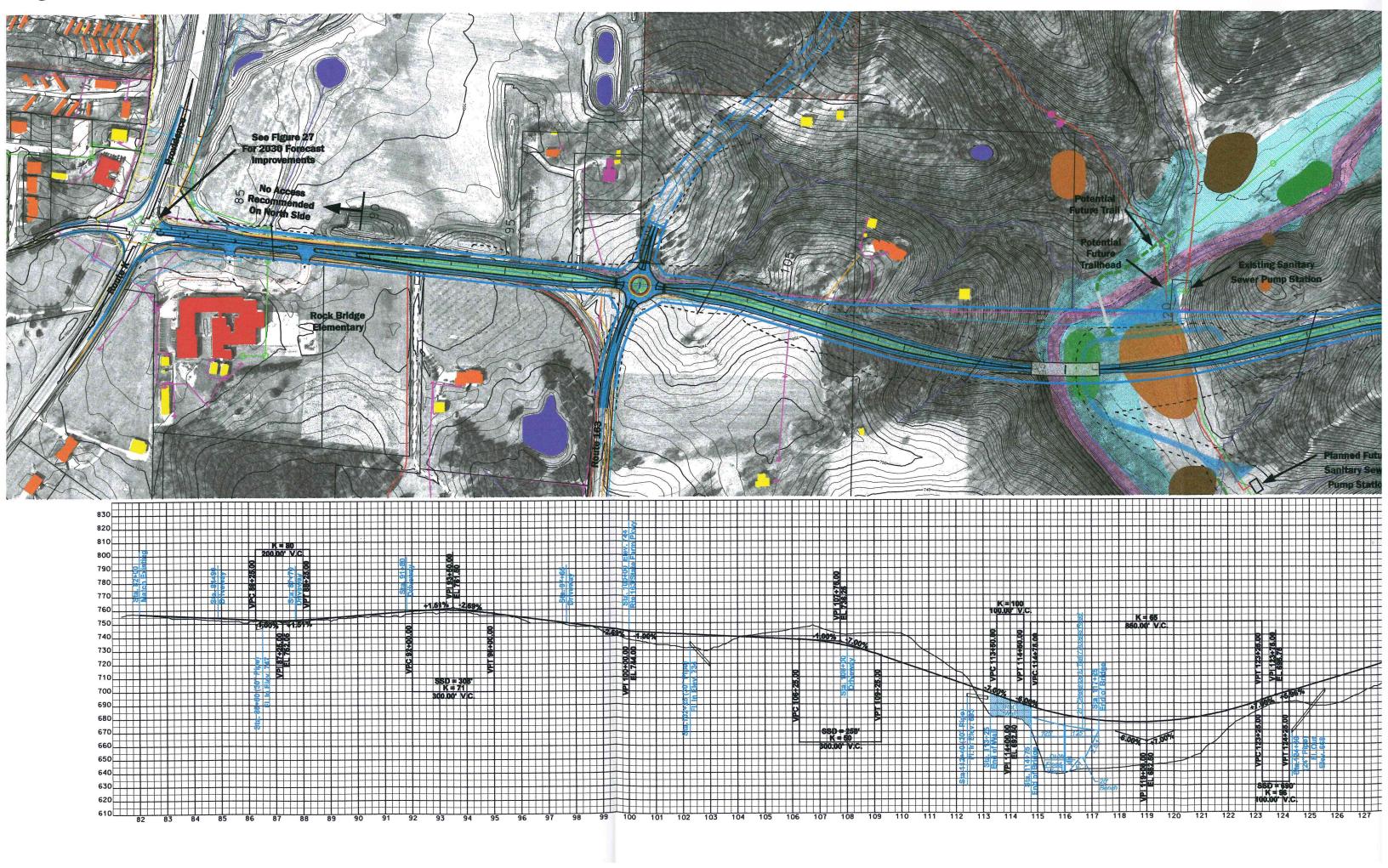


Figure 25- Page 1



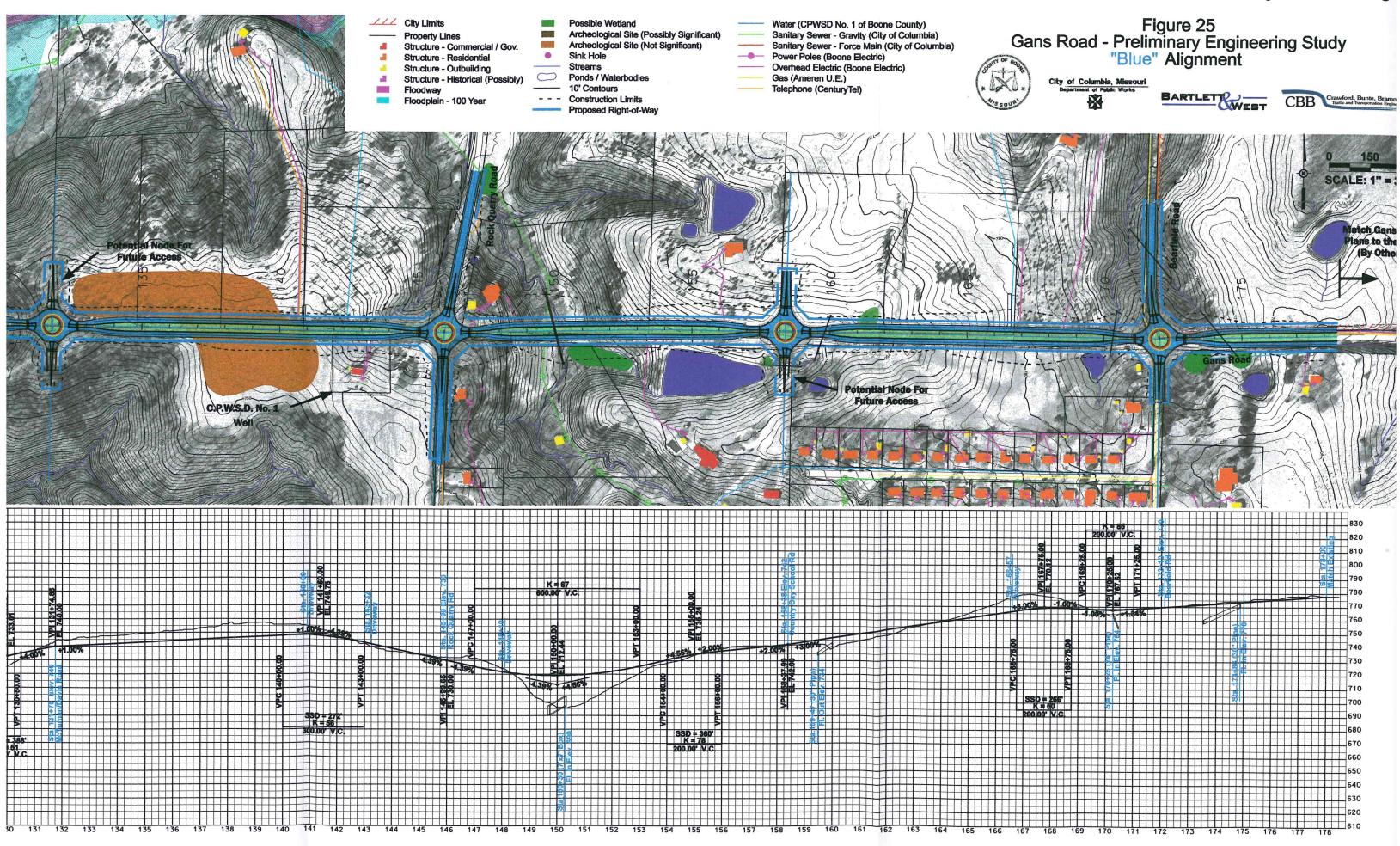
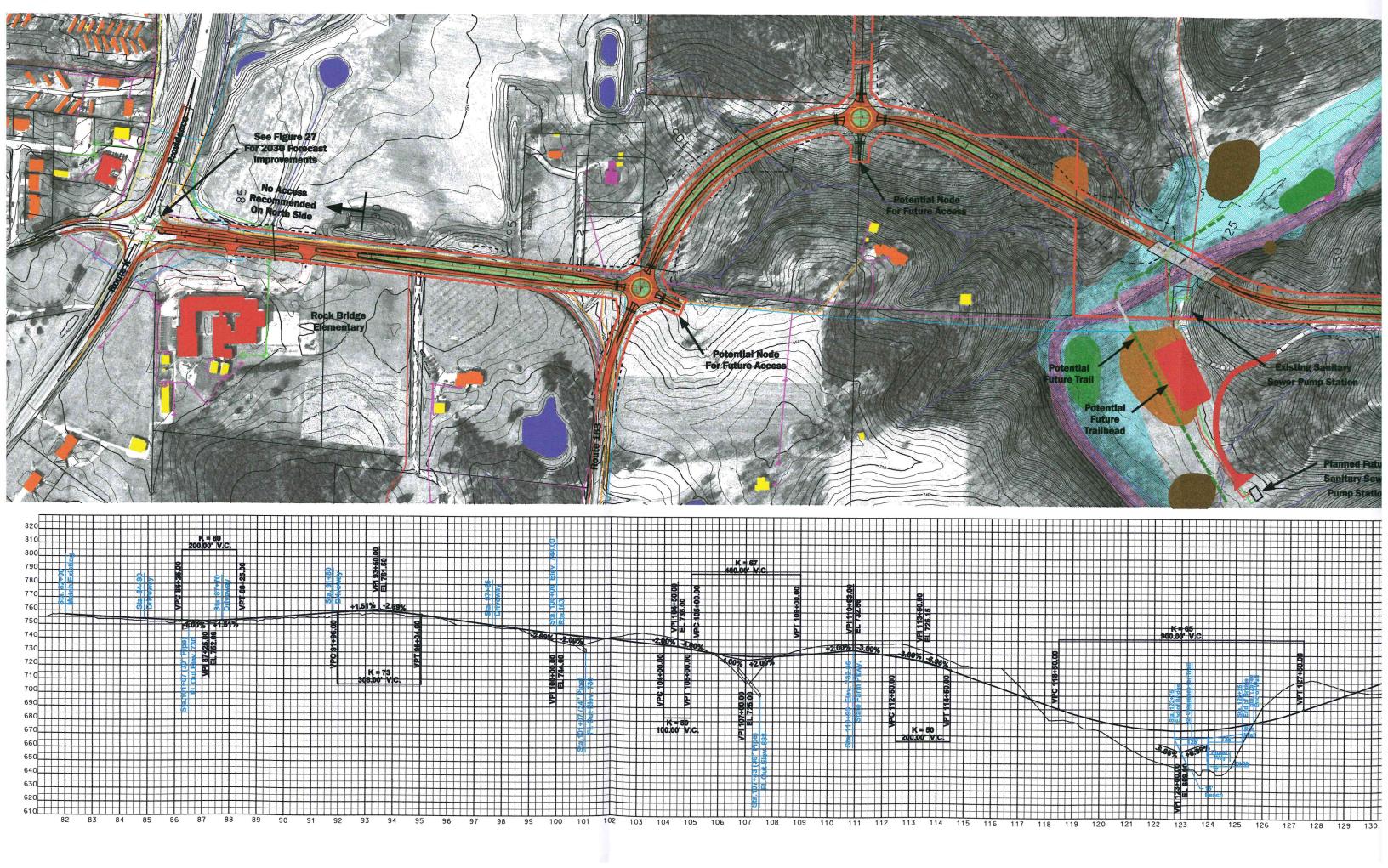
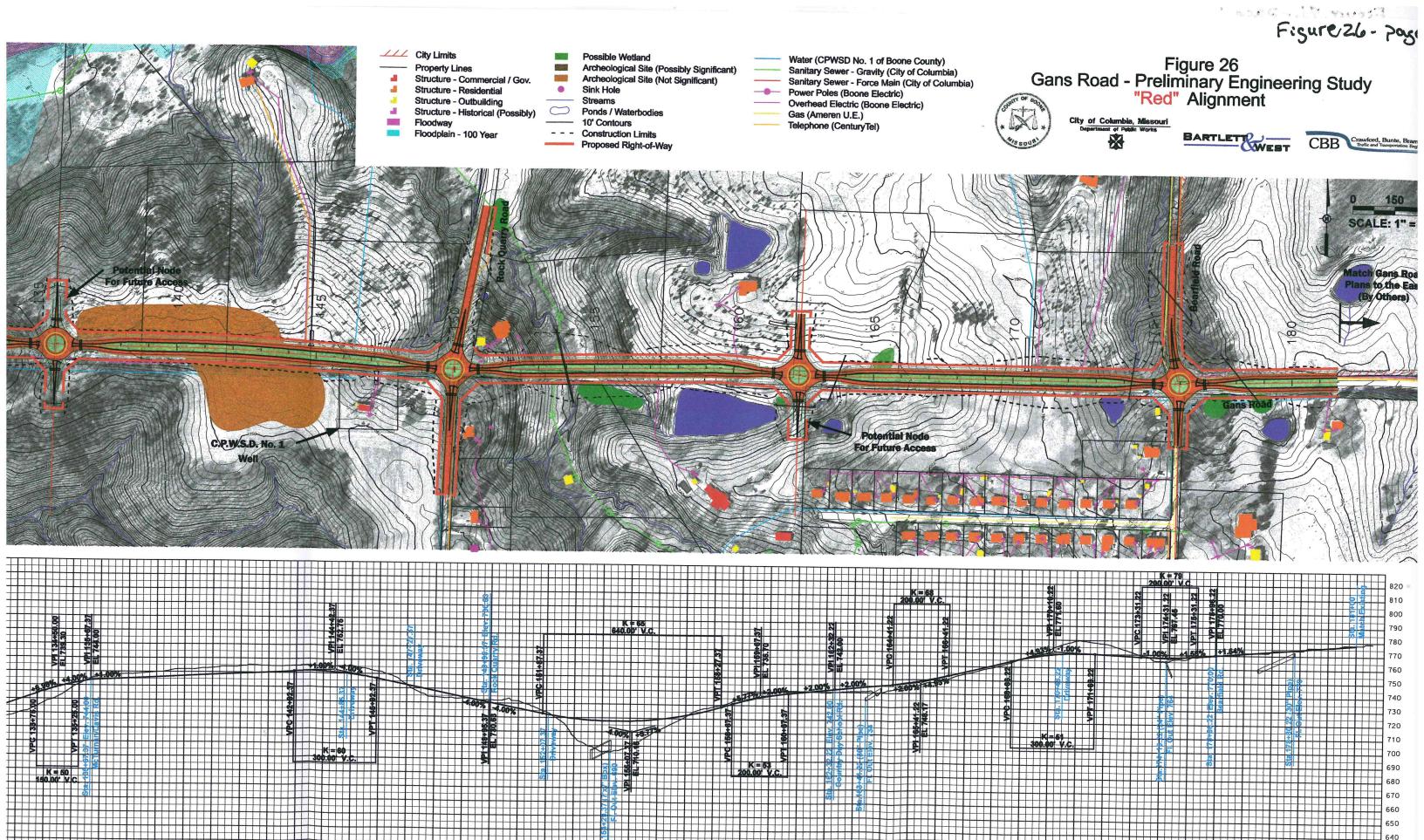
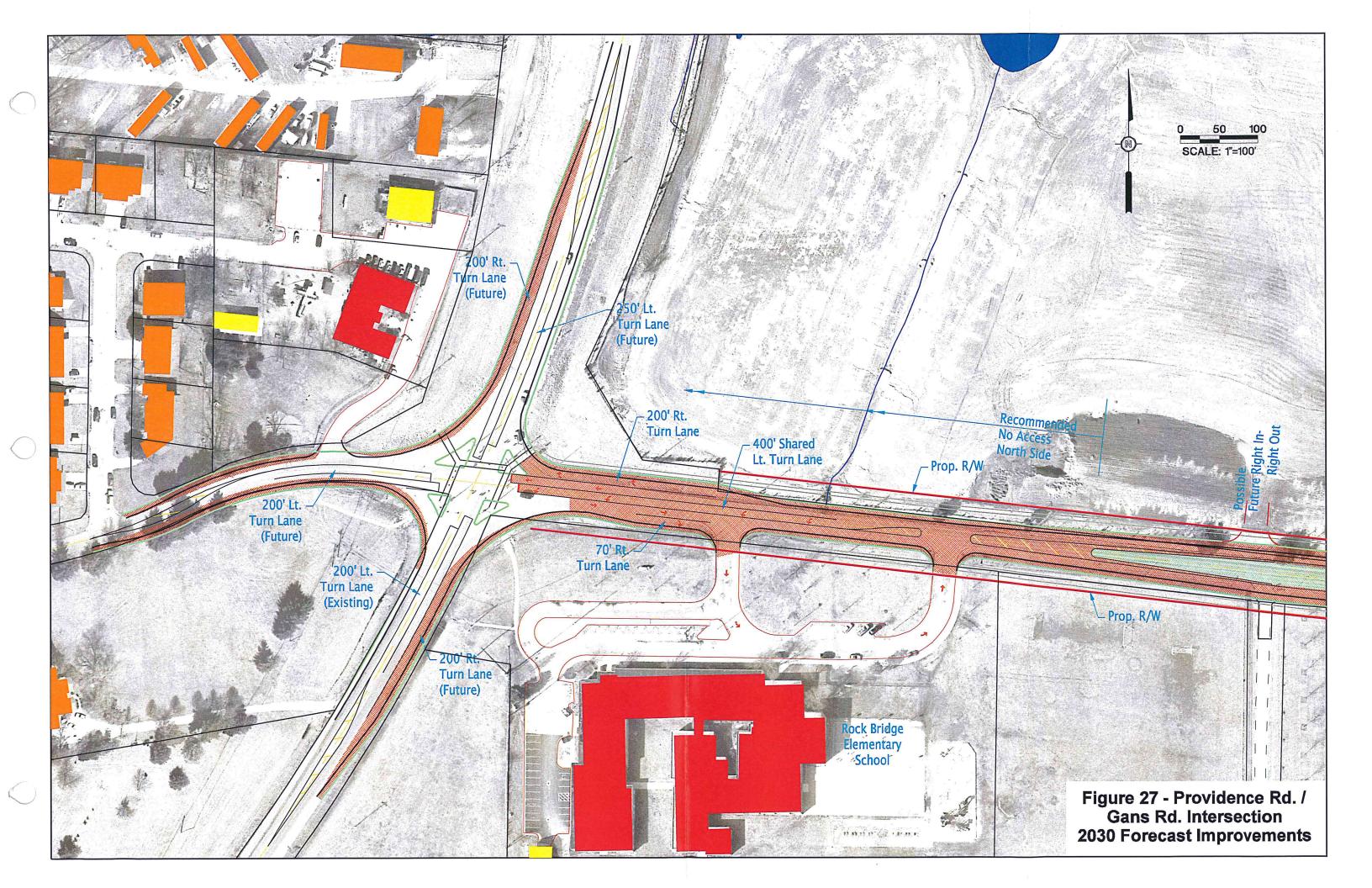


Figure 26- Page 1









### APPENDIX B: CATEGORICAL EXCLUSION (CE2) FORM AND CLEARANCE LETTERS

### CATEGORICAL EXCLUSION DETERMINATION [As per 23CFR771.117(d)]

Job Number:

Route: Gans Road

County: Boone

Project Termini and Length: Providence Road to Bearfield Road (8900 ft.)

Project Description: The east end of the project will be the current Gans Road and Bearfield intersection. On the west end, the extension will tie into the current Providence Road and Route 163 intersection. The typical section for the Gans Road extension is a two-lane divided roadway. This section includes a 28' water quality median, two 11' lanes, two 8' shoulders, an 8' pedway and 5' sidewalk. There will be six roundabout intersections spaced approximately every quarter of a mile. The route will mainly travel east-west and includes a bridge over Clear Creek. Just west of Clear Creek, the alignment bends to the north to match the terrain.

Current ADT: <300 (Rock Quarry Rd. to Bearfield)

Future ADT: 9000 (2030 Forecast)

3200 (Providence to curve in Route 163)

Right of Way Required (Acres):

Existing – 7.5 Acres

New - 23.5 Acres

Permanent Easement – 0.5 Acres Temporary Easement – 30 Acres

Displacements (Number and type): None

Farmland Impacts (Type and Area): The project corridor crosses fallow fields, pasture, and timber. Approximately 2/3 of the project corridor will incorporate existing old roadways with the remainder crossing timber and brush vegetation settings. There will be no impact to current agricultural croplands.

Wetland Impacts: The proposed project contains illustrated NWI mapped wetlands. The corridor includes no hydric soils as defined by the USDA SCS county soils map. Field investigations produced evidence of the presence of hydrophytic vegetation and hydrology indicating a wetland in a number of locations within the project boundaries. The wetland illustrated on the NWI map to be in the northeast quadrant of the Providence Road and Route 163 intersection was found to be nonexistent during the field investigations. This wetland was previously a pond that has since been drained. The impact to possible wetlands is approximately 0.29 Acres.

Water Quality Impacts: Possible water contamination to streams, ponds, lakes or other impoundments will be prevented by immediate temporary or permanent pollution control measures as outlined by the DNR Sediment and Erosion Control Program.

**404 Permit Required:** The project corridor crosses jurisdictional Clear Creek and floodplain and possibly one other jurisdictional tributary. The Corps of Engineers, Kansas City District will require a 404 Permit.

Air Quality Impacts: Mobile source emission investigation has not been implemented to determine if the National Ambient Air Quality Standards (NAAQS) are exceeded. On the basis of the ADT estimates, the less than 0.50 parts per million (PPM) in 2006 of carbon monoxide (CO) emission and dispersion would not exceed the NAAQS of 35 PPM. The project is not within a nonattainment area.

**Noise Impacts** Federal Highway Administration (FHWA) limits average sound level occurring during each day's noisiest hour (Leq) to 67 dBA for the exterior of residences, schools, churches, libraries, hospitals, recreational areas and playgrounds. With the exception a small number of residences, none of these apply to the proposed project. Should it be determined that noise levels exceed 65 dBA in subject areas, a noise abatement program will be developed and implemented as outlined by FHWA-approved noise abatement policy.

Cultural Resources: The Osage Nation and the Missouri State Historic Preservation Officer (SHPO) requested that a Phase I cultural resource survey be carried out for the proposed project area. Prehistoric sites located within the preferred project corridor have been evaluated regarding National Register eligibility by Phase II testing. Prehistoric sites 23BO322, 23BO2394, and 23BO2398 identified within the project boundaries have been determined not eligible for National Register listing by the SHPO. There are no structures over 50 years old within the proposed right of way.

Section 4(f) Involvement (Types and Area): The project corridor does not cross public lands and there will be no Section 4(f) or 6(f) involvement.

Threatened and Endangered Species: The U.S. Department of the Interior Fish and Wildlife Service (FWS) and Missouri Department of Conservation (DOC) have determined that there are no recorded threatened and endangered species or identified critical habitat within the project zone. However, nearby Rock Bridge State Park contains habitats for federally listed endangered gray bat (Myotis griscescens) and Indiana bat (Myotis sodalist) and the portion of Clear Creek that will be crossed by this project is well within the normal foraging range of these bats. The FWS recommends that no construction activities occur at night to prevent disruption of normal feeding behavior by loud noises or bright lights. Also, the Indiana bat is known to use large trees in riparian areas for roosting and bearing offspring. The removal of such trees, particularly white oak and shagbark hickory in the vicinity of the stream is highly discouraged by the FWS. Any vegetation that is removed adjacent to the stream should be replaced as quickly as possibly along with the implementation of any other necessary measures to prevent erosion in and around the streambed.

In addition to the FWS requests with which the DOC concurs, the DOC recommends that the project area be checked for presence of karst features (caves, springs, and sinkholes) and take all

necessary steps to avoid impacts to water quality that could harm cave fauna of DOC concern. Further, the DOC recommends that all necessary steps be taken to keep exotic species from invading streams and karst features.

Hazardous Waste: A Records review for the project zone has been conducted using the Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) February 2008; DNR Missouri Hazardous Waste Sites 2008. No recorded hazardous waste sites have been identified.

**Comments:** In terms of federal and state agency concerns, the project will require a completed Department of the Army (DA) permit application in order to conduct an approved jurisdictional determination prior to the initiation of any construction on the portion of the proposed project that is within the Corps of Engineers' regulatory jurisdiction.



### United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Columbia Ecological Services Field Office 101 Park DeVille Drive, Suite A Columbia, Missouri 65203-0057 Phone: (573) 234-2132 Fax: (573) 234-2181 March 27, 2008



Craig Sturdevant
Environmental Research Center of Missouri, Inc.
1201 Morcau Drive
Jefferson City, Missouri 65101

Dear Mr. Sturdevant:

The U.S. Fish and Wildlife Service (Service) has reviewed the information provided in your February 4, 2008, letter regarding endangered species information for a preliminary engineering study of the construction of a new road between Providence and Bearfield Roads with a possible Nifong connection in Columbia, Boone County, Missouri. The following comments are provided under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347), and the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).

The proposed road construction is located roughly 1.5 miles North of Rock Bridge State Park which contains well known habitats for the federally listed endangered gray bat (Myotis grisescens) and Indiana bat (Myotis sodalis). Therefore, the portion of Clear Creek that will be crossed by this project is well within the normal foraging range of these bats. This should be taken into consideration in the planning of this project. The Service recommends that no construction activities occur at night to prevent the disruption of normal feeding behavior by loud noises or bright lights. In addition, the Indiana bat is known to use large trees in riparian areas for roosting and bearing offspring. The removal of such trees, particularly white oak (Quercus alba) and shagbark hickory (Carya ovata), in the vicinity of the stream is highly discouraged. Any vegetation that is removed adjacent to the stream should be replaced as quickly as possible along with the implementation of any other necessary measures to prevent erosion in and around the streambed. Please see the enclosed Best Management Practices, developed by the Missouri Department of Conservation, for additional recommendations that should be implemented for the protection of both species as well as aquatic resources in the State of Missouri.

As streams and wetlands occur within the proposed project area, additional permitting and appropriate mitigation may be necessary under section 404 of the Clean Water Act (33 U.S.C. ss/1251 et seq.). Please contact the U.S. Army Corps of Engineers, Kansas City District Office at (816) 389-3664 for more information.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination Section, P.O. Box 180, Jefferson City, Missouri 65102-0180) for information concerning Missouri Species of Conservation Concern.

Thank you for your interest in the conservation of threatened and endangered species. Should you have questions concerning this response, please contact Jennifer Ballard at (573) 234-2132, ext. 117.

Sincerely,

Charles M. Scott Field Supervisor

Enclosures

cc: MDC, Jefferson City, MO, (Policy Coordination)

O:\STAFF Folders\Ballard\March 2008\Gans Road.doc



### Missouri Department of Conservation

## leritage Review Repor

February 8, 2008– Page 1 of 3 – Page 1 of 3

Jefferson City, MO 65102 Policy Coordination Unit shannon.cave@mdc.mo.gov Prepared by: Shannon Cave 573-522-4115X3250 P. O. Box 180

Craig Sturdevant, President **Environmental Research Center** Jefferson City, MO 65101 1201 Moreau Drive

Project type: Road Construction

Location/Scope: S6 T47N R12W;S1 T47N R13W S31 T48N R12W; and S36 T48N R13 W

2-8-2008

County: Boone

Query reference: Gans Road Preliminary Engineering Study, Boone County, Missouri

Query received: February 5, 2008

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it indicates whether or not public lands and sensitive resources are known to be located

close to and potentially affected by the proposed project.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Consult with the U.S. Fish and Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132). STATE ENDANGERED species are listed in and protected under the Wildlife Code of Missouri (3CSR10-4.111).

## Records of federal listed or state endangered species/habitats or unlisted species/habitats of conservation ear the project site (near sections including or adjacent to sections with part of the study corridor):

Name Common Name Federal State State Quad	Common Name	Federal	State	State Rank	Quad	Section	Twp/Rng	Spec. Hab.
Myotis sodalis	Indiana Bat	П	П	S1	Ashland	.7	T47N R12W	Savanna/Shrub/Woodland matrix
Myotis grisescens	Gray Bat	П	Ш	S3	Ashland	7	7 T47N R12W Cave	Cave
Myotis grisescens	Gray Bat	m	<u></u>	S3	Columbia	7	7 T47N R12W	Cave
Macrocotyla glandulosa	Pink Planarian		v Ag	S1	Ashland	7	T47N R12W	Cave
Mustela frenata	Long-tailed Weasel	_	es Mariana Ma Mariana Ma Ma Ma Mariana Mariana Mariana Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma	S2	Columbia	25	T48N R13W	Savanna/Shrub/Woodland matrix
Carex triangularis	Triangular Sedge			S2.	Ashland	12	12   T47N R13W   Swamp	Swamp
Speyeria idalia	Regal Fritillary.			S3	Ashland	<b>7</b>	T47N R12W	7 T47N R12W Grassland Native Prairie
Elodea canadensis	Broad Watenweed		48	⊗ US	Columbia	6	T47N R12W	6 T47N R12W Spring/spring branch
Wolffia columbiana	Columbia Water-meal			SU	Columbia	6	T47N R12W	Pond/lake/deep oxbows & slough
12 P	Cave spring			S4	Ashland	7	T47N R12W	Spring/spring branch
	Cave			S4	Ashland	7	T47N R12W   Cave	Cave

STATUS CODES: "Federal status" reflects listing under the federal Endangered Species Act as: E = Endangered, T = Threatened, C = Candidate, PE = Proposed Endangered for Federal listing. "State Status" is either E, for "endangered," or blank. "State Rank" codes are:

- S2=Imperiled in the state due to rarity or factor(s) making it very vulnerable to extirpation from the state. (6 20 occurrences or few remaining individuals or acres, S1=Critically imperiled in the state due to extreme rarity or factor(s) making it especially vulnerable to extirpation (typically <5 occurrences or very few remaining individuals)
- S3=Rare and uncommon in the state. (21 to 100 occurrences)
- S4=Uncommon (more than 100 occurrences)
- SU= unclassified but tracked
- Gray bats (myotis grisescens, federally and state listed "endangered") are likely to occur in the project area, as they forage over streams, rivers, and reservoirs in this part of Missouri. Avoid entry or disturbance of any cave inhabited by gray bats and when

http://www.mdc.mo.gov/documents/nathis/endangered/graybat.pdf for best management recommendations. possible retain forest vegetation along the stream and from the gray bat cave opening to the stream. See

- especially from September to April. If large trees with loose bark need to be removed by your project, that should be done between bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality southern half of Missouri. They spend summer months, primarily north of the Missouri River, roosting and raising young under the and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats, Indiana bats (myotis sodalis, federally and state listed "endangered") hibernate during winter months, in caves primarily in the October and March. Additional information to incorporate in planning documents is available at http://www.mdc.mo.gov/documents/nathis/endangered/indianabat.pdf. A
- were designated because they are important to maintaining, restoring, or avoiding future listing of species of conservation concern. Gans Creek is one of 138 state-designated spawning stream segments. Activities that alter, destabilize or destroy stream bottoms times, avoid habitat destruction or introducing heavy sediment loads, chemical or organic pollutants. Spawning stream segments or banks should be avoided from March 15 to June 15 in order not to disrupt spawning (laying and fertilizing fish eggs). At all A

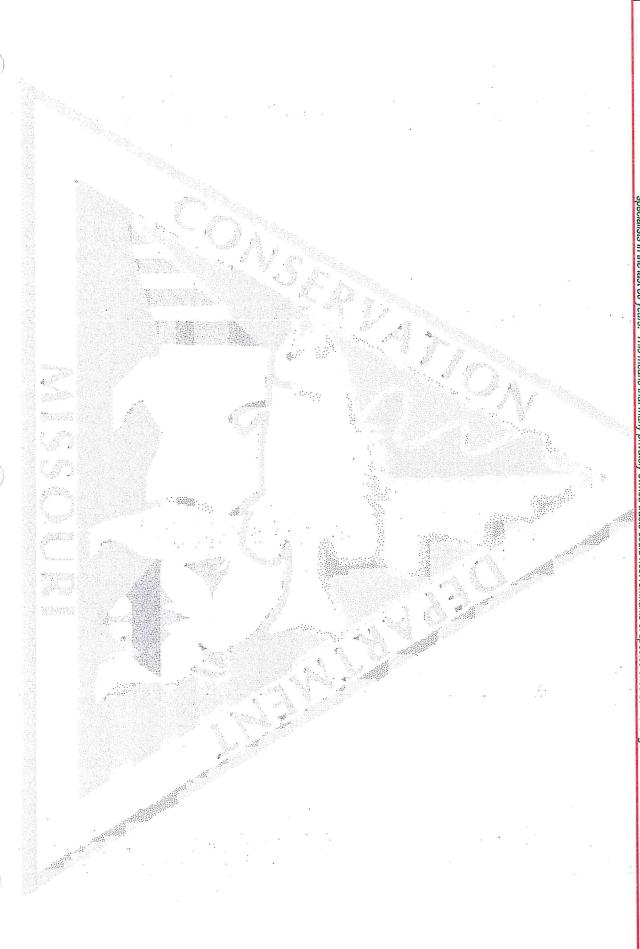
Heritage records were identified at some date and at a more or less precise location. This report includes information about records near but not necessarily on the project site. Animals move and, resources. However, these records only provide one reference and other information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Compare biological and habitat needs of records listed to planned project activities to avoid or minimize impacts. More information may be found at <a href="https://www.mdc.mo.gov/nathis/endangered">www.mdc.mo.gov/nathis/endangered</a>, and something not recorded. On-site verification is the responsibility of the project. Incorporating information from Heritage records into plans can help reduce adverse impacts to sensitive natural over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean the project will not encounter mdc4.mdc.mo.gov/applications/mofwis/mofwis search1.aspx.

# Recommendations related to this project or site (not to specific heritage records):

- project site for any karst features that could introduce pollutants (including sediment, chemicals and petroleum products) to groundwater in the project movement). Few karst features are recorded in heritage records, and ones not noted here may be encountered at the project site or affected by the area, and take all necessary steps to avoid impacts to water quality. See http://www.mdc.mo.gov/documents/nathis/endangered/karst.pdf for best project. Cave fauna (many of which are species of conservation concern) are vulnerable to even transitory changes to water quality. Check your The project area is in region with known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water management information.
  - management recommendations relating to streams and rivers may be found at http://www.mdc.mo.gov/documents/nathis/endangered/streams.pdf. Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. Best
- boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites. Especially important at this time is Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on the zebra mussel, known in the Missouri and Mississippi Rivers and Lake of the Ozarks, but missing from many inland streams and most lakes.
  - Remove any mud, soil, trash, plants or animals before leaving any water body or work area.
- Before leaving a project site, drain water from boats and machinery (that has operated in the water), checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT (104° F or more) water, like that found at a do-it-yourself carwash and dry in the hot sun before using again. Please help prevent the spread of invasive species by inspecting and cleaning equipment thoroughly before moving between project sites.
- and rarity of species and habitats present, and the comparative likelihood/importance of projects to maintain them in the area over time. COAs have no regulatory role, but do reflect interest from multiple government agencies and citizen groups to work for conservation in the area. There may be The project is within Bonne Femme Karst Conservation Opportunity Area, one of 35 in the state. COAs have been identified based on the diversity A

ways your project or agency can contribute to or benefit from this COA. More information about it is available on line at <a href="http://www.mdc.mo.gov/nathis/cws/coa/">http://www.mdc.mo.gov/nathis/cws/coa/</a>.

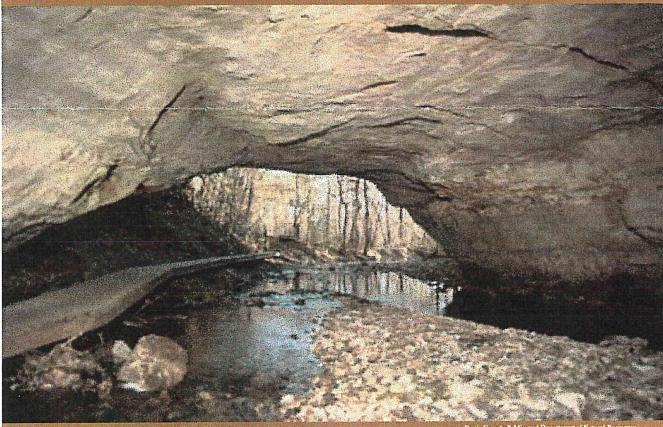
These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Heritage records largely reflect only sites visited by species once but no longer common.



### Bonne Femme Karst

**Conservation Opportunity Area** 





The rock bridge at Rock Bridge State Park was created when a portion of cave roof collapsed.

loxis Campbell, Missouri Dopertosant of Natural Researces

People have long been drawn to the cool, clear waters of Bonne Femme and Little Bonne Femme Creeks. A grist mill and whiskey distillery once operated along the stream flowing from Devil's Icebox Cave. Today, small farms and residential neighborhoods surround the nearby city of Columbia.

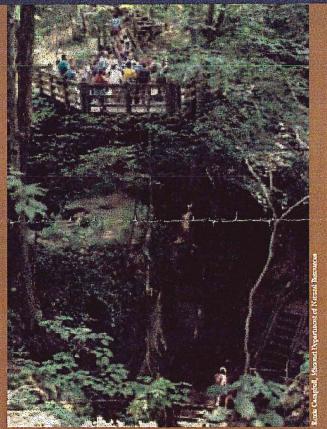
The western half of the Bonne Femme watershed (the area of land that drains to the creek) is dominated by forest and woodland cover. Bonne Femme's forests and woodlands support over 65 species of migrating birds. Glades and sinkhole ponds add diversity to the landscape. A broad prairie plain occupies the eastern half of the watershed. Agricultural cropland has replaced most of the

original native prairie.

Like many cave-rich landscapes, surface water drains into the ground to form underground rivers and streams. Water quality on the surface can affect cave life below the ground. There are 42 known caves in the Bonne Femme Karst Conservation Opportunity Area (COA). Devil's Icebox Cave is ranked 3rd in the state for its high biological diversity. The cave is home to federally endangered Indiana bats, gray bats and the endemic pink planarian (known only to live in the stream of Devil's Icebox Cave). An existing initiative, the Bonne Femme Watershed Partnership, strives to "use watershed planning as a tool to prevent further water resource degradation."

### **Bonne Femme Karst Conservation Strategies**

- Establish or improve forested stream banks.
- Reduce water pollution and water flow changes that threaten streams.
- Control and eradicate unwanted invasive and exotic species.
- Restore and improve the condition of existing forested natural communities.
- Reduce tall fescue and other nonnative cool-season pasture forage coverage in favor of native grasslands, forests and woodlands.



The Devil's Icebox is a double sinkhole that offers a view of the underground stream and cool, refreshing air. Devil's Icebox Cave contains over seven miles of underground passageways.

### Priority Research and Inventory Needs

- Inventory cave life in Hunter's Cave and Spring Cave.
- Investigate the habitats and life histories of cave species of conservation concern.
- Expand water quality monitoring capabilities and guidelines.
- Update land use inventory through remote sensing technology.
- Test for the presence of harmful bacteria in water samples.
- · Gather water flow information.

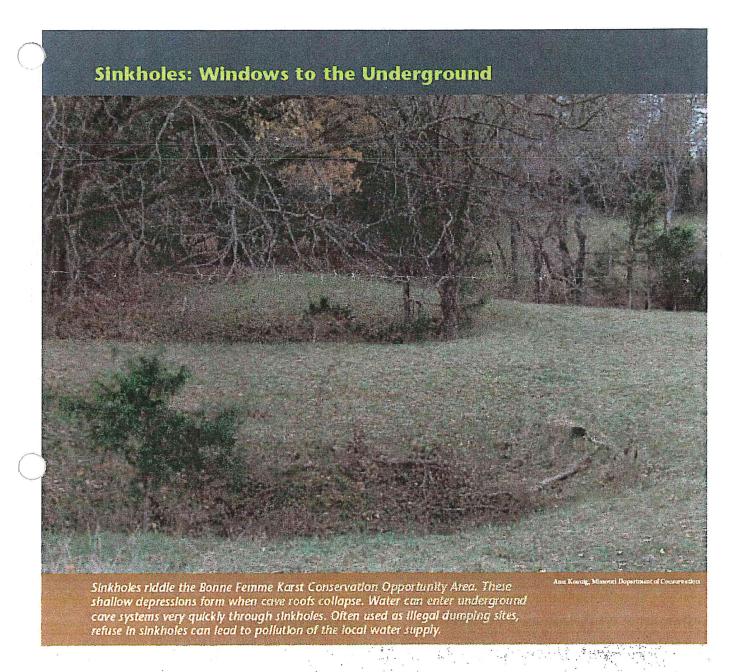
### **Conservation Partners**

**Existing:** Bonne Femme Watershed Project; Friends of Rock Bridge State Park; Greenbelt Land Trust; Missouri Department of Natural Resources (DNR); Missouri Department of Conservation (MDC)

The pink planarian is a flatworm found only in Devil's icebox Cave. The cave also supports a maternity colony of the federally endangered gray bat.



Scott W. Schulte, Missouri Department of Natural Resources File Photo



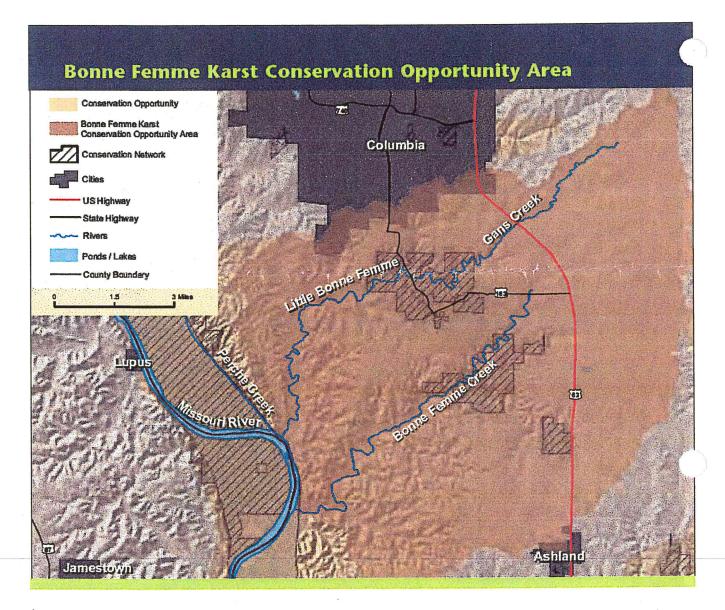
### **Conservation Challenges**

The Bonne Femme watershed faces many threats from its close proximity to the growing cities of Columbia and Ashland. Additional obstacles include limited staff time and budgets, variable attitudes of landowners, uncertain local political support, restrictive management plans on public lands, expense of water quality monitoring and existing high real estate values.

To learn more about the Bonne Femme Karst Conservation Opportunity Area, please contact:



Missouri Department of Conservation Wildlife Division P.O. Box 180 Jefferson City, MO 65102-0180



Potential: Private landowners: Missouri Master Naturalist Program - Boone's Lick Chapter; National Wild Turkey Federation (NWTF); Missouri Native Plant Society; Missouri Environmental Education Association; Ozark Regional Land Trust; Missouri River Communities Network; Columbia Audubon Society; Audubon Missouri; Chouteau Grotto; Missouri Stream Teams; Missouri Forestkeepers; Sierra Club; Boone County Smart Growth Coalition; Show-Me Clean Streams; Community Storm Water Project; Natural Resources Conservation Service; Boone County Soil and Water Conservation District; U.S. Geological Society; City of Columbia; Boone County Planning Department; U.S. Department of Agriculture -Agricultural Research Service; Environmental Protection Agency

### **Funding Sources**

Existing: DNR annual budget; DNR 319 Grant; USFWS Partners for Fish and Wildlife Program; MDC annual budget; MDC Private Lands Cost Share Program; MDC Wildlife Diversity Fund Promising Future Sources: Quail Unlimited Quail Habitat Incentive funds; NWTF Wild Turkey Super Fund; DNR 319 Grants; MDC State Wildlife Grants

### **Existing Conservation Network**

Rock Bridge Memorial State Park; Katy Trail State Park; Three Creeks Conservation Area; Charles Green Conservation Area; Nifong Park; University of Missouri: South Farm, Bradford Farm, Equine Center

### Best Management Practices





### Indiana bat

Myotis sodalis

Common name • Indiana bat Scientific name • Myotis sodalis Federal status • Endangered State status • Endangered

### Ecology .

Indiana bats use two types of habitat depending on season. Summer habitat consists of wooded or semi-wooded areas, often along streams. Solitary females or small clusters of females, called maternity colonies, bear their offspring in hollow trees or under loose bark of living or dead trees. Dead trees in either sunny openings or in the forest interior with a somewhat open canopy are selected over live trees. When available, live shagbark hickory (Carya ovata) and large white oaks (Quercus alba) are often the preferred tree species for maternal roost sites because of their loose bark. The white oaks should have a diameter at breast height of at least 9 inches; greater than 21 inches would be best. Indiana bats forage on insects in and around the tree canopy of flood plain, riparian and upland forest. Streams associated with flood plain forests and impounded bodies of water such as ponds, reservoirs and wetlands are preferred foraging habitats for pregnant and lactating bats.

During the winter, Indiana bats hibernate in cold trap caves or mines referred to as hibernacula. Bats have the ability to lower their metabolism during hibernation, thereby reducing the amount of energy and food they use. However, they enter hibernation with only enough fat reserves to last until spring. Any disturbance to bats while they are hibernating can arouse them and possibly result in their starvation if critical fat reserves are depleted.

### Reasons for Decline

Indiana bat populations were first surveyed in the late 1950s. Since then, many hibernacula populations have decreased, especially in Missouri. A serious cause of the decline has been human disturbance while bats are hibernating. Even well-meaning recreational cavers and researchers may arouse the bats. Direct mortality due to human vandalism also has been documented. Some hibernacula are unavailable to bats because humans have built solid gates in the cave entrances that prevents entry of the bats and

of adequate air flow. Natural hazards, such as river flooding and below freezing temperatures, also have likely decreased Indiana bat populations.

### Specific Recommendations

Although studies have shown that Indiana bats preferentially use forested areas along streams for maternity roosts during the summer, it is important to manage upland forested areas as well. In addition, protection of caves and karst habitat is essential to provide for bat winter roosting sites.

- → Retain large, dead trees with a diameter of more than 12 inches in forested areas along streams to provide maternal roost trees. Snag retention guidelines developed by the U.S. Forest Service at the Daniel Boone National Forest are adequate.
- → Retain live shagbark hickories for use by the bats.
- → Tree removal should occur between October 1 and March 31 to prevent disturbing bats during the maternity season.
- → Minimize access to areas known to contain roost sites to prevent bats from abandoning the roost trees.
- → Avoid access to hibernacula from September 1 through April 30.
- → Minimize road and trail construction, logging and urban development near hibernacula in the 100 foot buffer zone to avoid water runoff, siltation and adversely changing the climate of the cave.

### General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Karst Habitat and Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

### Information Contacts

For a more detailed description of Indiana Bat habitat requirements and management, please refer to the Best Management Practices guide sheet written in 1998 by the Missouri Department of Conservation. For further information regarding guidelines for construction projects, please contact:

Missouri Department of Conservation Policy Coordination Section P.O. Box 180 2901 W. Truman Blvd Jefferson City, MO 65102-0180 Telephone: 573/751-4115

Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone:573/526-3315

U.S. Army Corps of Engineers Regulatory Branch 700 Federal Building Kansas City, MO 64106-2896 Telephone:816/983-3990

U.S. Environmental Protection Agency Water, Wetlands, and Pesticides Division 901 North 5th Street Kansas City, KS 66101 Telephone:913/551-7307

> U.S. Fish and Wildlife Service Ecological Services Field Office 608 E. Cherry Street, Room 200 Columbia,MO 65201 Telephone:573/876-1911

### Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat. Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

### Best Management Practices MISSOURI DEPARTMENT OF CONSERVATION



### Gray bat

Myotis grisescens

Common name • Gray bat
Scientific name • Myotis grisescens
Federal status • Endangered
State status • Endangered

### Ecology

Gray bats inhabit caves throughout the year. Most of Missouri's winter population hibernates in three caves, all of which are in the southern part of the state. In the spring, usually in April and May, these bats migrate to over 50 other caves scattered throughout the Ozarks. Migration from summer caves to winter hibernacula is more drawn out, beginning in August and going through early November. Adults mate in the fall prior to hibernating. Hibernation lasts from October through April. Gray bats hibernate in deep, vertical caves that trap cold air. Bats have the ability to lower their metabolism during hibernation, thereby reducing the amount of energy and food they use. However, they enter hibernation with only enough fat reserves to last until spring. Any disturbance to bats while they are hibernating can arouse them and possibly result in death by starvation if fat reserves are depleted.

In summer, pregnant females form maternity colonies in caves that have domed ceilings where the mothers can cluster together to keep their babies warm. Females produce only one offspring per year, usually in June. Males and first-year females (which do not bear young) form bachelor colonies in separate caves or, sometimes, in cooler portions of maternity caves. Gray bats forage up to 12.4 miles (20 km) from their summer roosts and feed on aquatic and terrestrial flying insects. They generally feed over water or in adjacent riparian vegetation.

### Reasons for Decline

Gray bats are sensitive to human disturbance of their roosts. In hibernacula, human disturbance causes the bats to use up vital fat reserves, their only source of energy throughout winter. In maternity caves, pregnant females may abort unborn young or panicked mothers may drop babies to their deaths if forced to flee from intruders. Severe or repeated disturbance may

cause reproductive failure of an entire colony. Other reasons for the decline in gray bat populations include a decrease in the number of suitable caves because of climate changes in caves due to nearby deforestation. Deforestation between caves and rivers or reservoirs along migration and foraging routes also may increase the risk of predation on bats. Use of pesticides and insecticides may not only reduce food supply for bats but also will introduce poisons into the food chain.

### Specific Recommendations

It is important to protect caves and riparian corridors because gray bats use these areas for roosting and foraging.

- → Avoid human entry into gray bat caves during the season in which the bats are present. This is dependent upon whether the cave is a maternity or hibernation cave. Maternity and bachelor caves should be closed to human entry April 1 through October 1. Winter hibernacula should be closed to human entery October 1 through March 31.
- → Retain corridors of mature trees between bat caves and waterways to provide protection from avian predators between roosts and foraging areas.
- → Minimize logging and other deforestation activities, especially within a 100 foot buffer of the river or reservoir, to protect stream quality so the aquatic insect community remains healthy.
- ightarrow Avoid or minimize pesticide use where gray bats forage.

### General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Karst Habitat and Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

### Information Contacts

For further information regarding regulations for development near caves, streams and rivers, contact:

Missouri Department of Conservation Policy Coordination Section P.O. Box 180 2901 W. Truman Blvd Jefferson City, MO 65102-0180 Telephone:573/751-4115 Missouri Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
Telephone:573/526-3315

U.S. Army Corps of Engineers Regulatory Branch 700 Federal Building Kansas City, MO 64106-2896 Telephone:816/983-3990

U.S. Environmental Protection Agency Water, Wetlands, and Pesticides Division 901 North 5th Street Kansas City, KS 66101 Telephone:913/551-7307

U.S. Fish and Wildlife Service Ecological Services Field Office 608 E. Cherry Street, Room 200 Columbia,MO 65201 Telephone:573/876-1911

### Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat. Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

### Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers

MISSOURI DEPARTMENT OF CONSERVATION



### Introduction

The streams and rivers of Missouri support a wide and diverse community of wildlife that includes many species of mammals, birds, fishes, mussels, crayfish, and insects. The continued diversity and health of this community is dependent upon how well Missourians manage and protect this resource. While water quality is essential, maintaining a diverse array of habitat features also is essential for aquatic wildlife to persist. Since implementation of the Clean Water Act, point source pollution has been greatly reduced, but polluted and sediment-laden runoff (non-point source) from rural and urban development is still a serious problem.

There are management practices that can be implemented to prevent degradation of our streams and rivers. By adapting these best management practices we can prevent the loss of species diversity and maintain the quality of our lives as well. Preventative measures may require extra effort initially, but they provide long-term dividends by eliminating costly damage resulting from poor management practices.

### Access and Staging Area Management Recommendations

Staging areas are those short- or long-term sites within a construction or development area where most equipment and materials are stored. These areas often are accessed frequently; and when fuel and oil are stored here, the potential for runoff and erosion in these areas may be high.

- → Erosion and sediment controls should be installed and maintained to prevent discharge from the site.
- → Staging areas for crew, equipment, and materials should be established well away from streams and rivers or highly erodible soils.
- → Stationary fuel and oil storage containers should remain within a staging area or another confined area to avoid accidental spills into the stream systems.
- → Excess concrete and wash water from trucks and other concrete mixing equipment should be disposed of where this material cannot enter the stream systems.
- → If temporary roadways must be built, ensure that roadways are of low gradient with sufficient roadbed and storm water runoff drains and outlets. Containment basins, silt fences, filter strips, etc. should be included for retention of storm water runoff for reducing sediment introduction into natural waterways.

→ Avoid stream crossings. If unavoidable, temporary crossings should be used. Temporary crossings should not restrict or interrupt natural stream flow. If temporary in-channel fill is necessary, culverts of sufficient size should be employed to avoid water impoundment and allow for fish passage.

### Riparian Corridor Management Recommendations

The riparian corridor is the vegetation adjacent to a stream or river. This area is critical to the health and quality of the aquatic environment because of its ability to slow and reduce sediment and chemical runoff into the stream or river channel. A riparian corridor with a minimum width of 100 feet from the edge of the stream or river should be maintained along both sides of streams and rivers.

- → Limit clearing of vegetation, including both standing and downed timber, to that which is absolutely necessary for construction purposes.
- → Heavy equipment use within the riparian corridor should be restricted to minimize vegetation destruction and compaction of soils. Flagging or fencing areas that are not to be disturbed is helpful in alerting construction personnel.
- → General application of pesticides, herbicides, or fertilizers within the riparian corridor should be prohibited to avoid water contamination due to overspray or runoff. Fertilizer use or spot application of pesticides and herbicides is acceptable if appropriate non-restricted chemicals are used.
- → Riparian areas located down slope of construction zones should be physically screened with sediment controls, such as silt fences or filter strips. Sediment controls should be monitored after rain and maintained for the duration of the project.
- → All riparian corridors disturbed by the project should be revegetated immediately following or concurrent with project implementation.

  Appropriate native bottomland or riparian trees, shrubs, and grasses should be planted to ensure long-term stability in areas where the soil erosion threat is not critical. Annual non-native grasses such as rye or wheat may be planted in conjunction with native species to provide short-term erosion control. Areas judged to be subject to immediate soil loss due to steep slopes or other factors causing critical erosion conditions may be planted with non-native mixtures to assure rapid establishment and erosion control.

- → Post-construction evaluation of vegetation establishment should be conducted at one month intervals for at least three months after completion of the project. Any recommended sediment controls should be inspected at these times. If determined beneficial to soil stability and not adversely impacting site function and/or aesthetics, recommended sediment controls should remain permanent.
- → All temporary erosion and sediment controls should be removed (unless removal would cause further disturbance) and properly disposed of within 30 days after final site stabilization is achieved or after temporary practices are no longer needed.

# Bank and Channel Management Recommendations

The structure of a bank is an important feature of a stream or river. It defines and provides stability for the channel.

- → Bank stability will vary depending on height, slope, and soil conditions. Project engineers and hydrologists should thoroughly investigate the physical properties and hydrologic record of the proposed site before construction begins.
- → Limit clearing of vegetation, including both standing and downed timber, to that which is absolutely necessary for construction purposes.
- → Projects in which bank alteration is necessary should employ, to the highest degree possible, erosion prevention measures before actual excavation activities begin. These preventative measures should be monitored regularly and maintained for the duration of the project.
- → Use of riprap for stream bank stabilization should be limited to those areas that could experience substantial erosion before adequate vegetation becomes established. The material for the rock blanket should consist of durable stone or broken concrete that is well graded. It is preferable that 40-60 percent of the material be as large as the thickness of the blanket, with enough smaller pieces of various sizes to fill the larger voids. It should not contain more than 10 percent of earth, sand, shale, and non-durable rock. Bank stabilization materials should allow for continuous passage of fish and other aquatic species.
- → No permanent fill materials, other than designapproved structures and related bank stabilization materials, should be placed in the stream channel. Avoid channelization. Excavated materials should not be stored or stockpiled below the high bank.
- → Work should be conducted during low flow periods when possible.

- → Care should be taken to keep machinery out of the waterway as much as possible.
- ightarrow Do not alter or remove natural stream features, such as riffles and pools.
- → Large woody debris is an important habitat component of a stream and should not be removed unless absolutely necessary for construction and maintenance purposes.

#### Information Contacts

For further information regarding regulations for development near streams and rivers, contact:

Missouri Department of Conservation Policy Coordination Section P.O. Box 180 2901 W. Truman Blvd. Jefferson City, MO 65102-0180 Telephone: 573/751-4115

Missouri Department of Natural Resources Division of Environmental Quality P.O. Box 176 Jefferson City, MO 65102-0176 Telephone: 573/526-3315

> U.S. Army Corps of Engineers Regulatory Branch 700 Federal Building Kansas City, MO 64106-2896 Telephone: 816/983-3990

U.S. Environmental Protection Agency Water, Wetlands, and Pesticides Division 901 North 5th Street Kansas City, KS 66101 Telephone: 913/551-7307

> U.S. Fish and Wildlife Service Ecological Services Field Office 6101 Park DeVille Dr, Suite A Columbia, MO 65203 Telephone: 573/234-2132

#### Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat. Compliance with Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

#### STATE OF MISSOURI DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

October 22, 2008

Craig Sturdevant, President Environmental Research Center of Missouri, Inc. 1201 Moreau Drive Jefferson City, Missouri 65101

Gans Road Extension Bearfield to Providence (FHWA) Boone County, Missouri Re:

Dear Mr. Sturdevant:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which requires identification and evaluation of cultural resources.

We have reviewed the October 2008 report entitled Cultural Resource Investigations, Phase II Testing of 23BO2394 & 23BO2398, Gans Road Extension - Bearfield to Providence, Boone County,. Based on this review it is evident that a thorough and adequate testing program has been conducted within the project area. We concur with your recommendation that archaeological sites 23BO2394 and 23BO2398 are not eligible for inclusion in the National Register of Historic Places. There will be no historic properties affected and we have no objection to the initiation of project activities.

Please be advised that, should project plans change, information documenting the revisions should be submitted to this office for further review. In the event that cultural materials are encountered during project activities, all construction should be halted, and this office notified as soon as possible in order to determine the appropriate course of action.

If you have any questions, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call 573/751-7862. Please be sure to include the SHPO Log Number (020-BO-08) on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Mark A. Miles Director and Deputy

State Historic Preservation Officer

MAM:jd

c Peggy Casey, FHWA Bob Reeder, MoDOT

#### STATE OF MISSOURI MENT OF NATURAL RESOURCES

www.dnr.mo.gov

July 3, 2008

Craig Sturdevant Environmental Research Center of Missouri, Inc. 1201 Moreau Drive Jefferson City, Missouri 65101

Re: Gans Road Extension, Bearfield to Providence (FHWA) Boone County, Missouri

Dear Mr. Sturdevant:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which require identification and evaluation of cultural resources.

We have reviewed the addendum to the report entitled Cultural Resource Investigations, Phase I Survey, Gans Road Extension - Bearfield to Providence, Boone County, Missouri. We concur with your recommendation that archaeological sites 23BO2398 and 23BO2399 may be eligible for inclusion in the National Register of Historic Places under Criterion D, potential to yield information important to the understanding of prehistoric settlement patterns and subsistence strategies.

If at all possible, the proposed project should be designed to avoid archaeological sites 23BO2398 and 23BO2399. Plans detailing the redesign of the project corridor should be submitted to this office in order to document the successful avoidance. If avoidance is not feasible, subsurface archaeological testing should be conducted in order to determine if these sites are eligible for inclusion in the National Register of Historic Places. The results of the evaluation should be submitted to the State Historic Preservation Office in accordance with the Council's regulations. Pending completion of this process, no actions should be taken that would foreclose consideration of alternatives to avoid or satisfactorily mitigate any adverse effects to historic properties.

If you have any questions, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call 573/751-7862. Please be sure to include the SHPO Log Number (027-BO-08) on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Mark A. Miles Director and Deputy

State Historic Preservation Officer

MAM:jd

c Peggy Casey, FHWA Bob Reeder, MoDOT





#### DEPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

April 7, 2008

Gob Gilbert, P.E. Bartlett & West 1719 Southridge Drive, Suite 100 Jefferson City, Missouri 65109

Re: Gans Road Extension - Bearfield to Providence, Boone County, Missouri

Dear Mr. Gilbert:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which requires identification and evaluation of cultural resources.

We have reviewed the March 2008 report entitled *Cultural Resource Investigations, Phase II Testing 23BO322, Gans Road Extension – Bearfield to Providence, Boone County, Missouri* by Environmental Research Center of Missouri, Inc. Based on this review it is evident that a thorough and adequate Phase II testing program has been conducted at archaeological site 23BO322. We concur with the investigator's recommendation that 23BO322 is not eligible for inclusion in the National Register of Historic Places. There will be **no historic properties affected** and we have no objection to the initiation of project activities.

Please be advised that, should project plans change, information documenting the revisions should be submitted to this office for further review. In the event that cultural materials are encountered during project activities, all construction should be halted, and this office notified as soon as possible in order to determine the appropriate course of action.

If you have any questions, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call 573/751-7862. Please be sure to include the SHPO Log Number (027-BO-08) on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Mark A. Miles

Director and Deputy

State Historic Preservation Officer

MAM:jd

c Craig Sturdevant, ERC



#### STATE OF MISSOURI ARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

March 24, 2008

Craig Sturdevant, President Environmental Research Center of Missouri, Inc. 1201 Moreau Drive Jefferson City, Missouri 65101

Re:

Gans Road Extension, Bearfield to Providence (FHWA) Boone County, Missouri

Dear Mr. Sturdevant:

Thank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which requires identification and evaluation of cultural resources.

We have reviewed the February 2008 report entitled Cultural Resource Investigations, Phase I Survey, Gans Road Extension - Bearfield to Providence, Boone County, Missouri. Based on this review it is evident that a thorough and adequate cultural resources survey has been conducted of the project area. We concur with your recommendation that 23BO322, 23BO2393, 23BO2394 and 23BO2395 and the J.S. Johnson House are eligible for inclusion in the National Register of Historic Places. We also concur that site 23BO2358 and Historic Sites Nos. 2, 3, 4, 5 and 6 are not eligible for inclusion in the National Register

If at all possible, the proposed project should be designed to avoid that 23BO322, 23BO2393, 23BO2394 and 23BO2395 and the J.S. Johnson House. Plans detailing the redesign of the project corridor should be submitted to this office in order to document the successful avoidance of these properties. If avoidance is not feasible, subsurface testing should be conducted in order to determine if these sites are eligible for inclusion in the National Register of Historic Places. The results of the evaluation should be submitted to the State Historic Preservation Office in accordance with the Council's regulations. Pending completion of this process, no actions should be taken that would foreclose consideration of alternatives to avoid or satisfactorily mitigate any adverse effects to historic properties.

If you have any questions, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call 573/751-7862. Please be sure to include the SHPO Log Number (027-BO-08) on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

ash a Mile

Mark A. Miles Director and Deputy

State Historic Preservation Officer

MAM:jd

c Peggy Casey, FHWA Bob Reeder, MoDOT



#### EPARTMENT OF NATURAL RESOURCES

www.dnr.mo.gov

February 7, 2008

Craig Sturdevant
Environmental Research Center of Missouri, Inc.
1201 Moreau Drive
Jefferson City, Missouri 65101

Re:

Gans Road Extension, Bearfield to Providence (FHWA) Boone County, Missouri

Dear Mr. Sturdevant:

Triank you for submitting information on the above referenced project for our review pursuant to Section 106 of the National Historic Preservation Act (P.L. 89-665, as amended) and the Advisory Council on Historic Preservation's regulation 36 CFR part 800, which require identification and evaluation of cultural resources.

We have reviewed the information provided concerning the above referenced project. We have determined that there is a moderate to high potential for the presence of archaeological sites near and within the area of the proposed project, as indicated by the topographic location, and that an archaeological survey should be conducted. This survey should be completed prior to the initiation of project-related construction activities.

A list of independent archaeological contractors who can perform such services is available through the Department of Natural Resources, Division of Administrative Support. The list can be obtained by calling (573) 751-0958 and requesting the "archaeological contractors list." Note that any 36 CFR Part 61 qualified archaeologist may perform an archaeological survey. If you choose a contractor not on the list, please be certain to include his or her curriculum vitae in the report. We would appreciate one (1) hard copy and one (1) pdf copy of the archaeological survey report when it is finished so we may complete the review and comment process.

If you have any questions, please write Judith Deel at State Historic Preservation Office, P.O. Box 176, Jefferson City, Missouri 65102 or call Ms. Deel at 573/751-7862. Please be sure to include the SHPO Log Number (020-BO-08) on all future correspondence or inquiries relating to this project.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Mark A. Miles

Director and Deputy

State Historic Preservation Officer

MAM:jd



#### TRIBAL HISTORIC PRESERVATION OFFICE

Date:

March 17, 2008

File: 0708-251MO-3

RE:

Preliminary Planning - Gans Rd. Extension, Boone County, Missouri

Environmental Research Center of Missouri, Inc. Craig Sturdevant 1201 Moreau Drive Jefferson City, Missouri 65101

Dear Mr. Sturdevant,

The Osage Nation Historic Preservation Office received your letter on February 13, 2008 notifying the Nation of the proposal for the project referenced as Project Preliminary Planning – Gans Rd. Extension, Boone County, Missouri.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. The Osage Nation requests that a Phase I cultural survey be conducted for the project referenced as Project Preliminary Planning – Gans Rd. Extension, Boone County, Missouri. Please contact the Osage Nation Historic Preservation Office with your response to this request. The Osage Nation looks forward to receiving and reviewing the cultural resource survey report for the proposed project referenced as Project Preliminary Planning – Gans Rd. Extension, Boone County, Missouri. The Osage Nation requires that cultural resource survey personnel and reports follow the Secretary of Interior's standards and guidelines.

Should you have any questions or need any additional information please feel free to contact me at the number and/or email address listed below. Thank you for consulting with the Osage Nation on this matter.

Dr. Andrea A. Hunter

Tribal Historic Preservation Officer



#### **DEPARTMENT OF THE ARMY**

# KANSAS CITY DISTRICT, CORPS OF ENGINEERS STATE REGULATORY PROGRAM OFFICE - MISSOURI

221 BOLIVAR STREET, SUITE 103
JEFFERSON CITY, MISSOURI 65101
February 27, 2008

REPLY TO ATTENTION OF:

Missouri State Regulatory Office (2008-00251)

Craig Sturdevant Environmental Research Center of Missouri, Inc. 1201 Moreau Drive Jefferson City, Missouri 65101

Dear Mr. Sturdevant:

This is in reply to your request for Corps of Engineers concerns regarding the proposed Gans Road Preliminary Engineering Study and the proposed approximate two mile corridor area for a three to five lane road. The project is located in Section 6, Township 47 north, Range 12 west; Section 1, Township 47 north, Range 13 west; Section 31, Township 48 north, Range 12 west; and Section 36, Township 48 north, Range 13 west, Boone County, Missouri.

The Corps of Engineers has jurisdiction over all waters of the United States. Discharges of dredged or fill material in waters of the United States, including wetlands, require prior authorization from the Corps under Section 404 of the Clean Water Act (Title 33 United States Code Section1344). The implementing regulation for this Act is found at Title 33 Code of Federal Regulations Parts 320-331.

Should the proposed improvements require the discharge of dredged or fill material in any waters of the United States, including wetlands, a Department of the Army (DA) permit may be required. However, if the proposed improvements do not require the discharge of dredged or fill material in any waters of the United States, including wetlands, a DA permit will not be required.

Federal regulations require that a DA permit be issued by the Corps of Engineers prior to the initiation of any construction on the portion of a proposed activity which is within the Corps' regulatory jurisdiction.

It appears that Clear Creek and two tributaries of Clear Creek, at a minimum, may be impacted by the proposed project. We would require a completed Department of the Army (DA) permit application in order to conduct an approved jurisdictional determination.

Enclosed is a copy of our brochure entitled "Activities Requiring Permits."

U.S. Department of Agriculture

#### **FARMLAND CONVERSION IMPACT RATING**

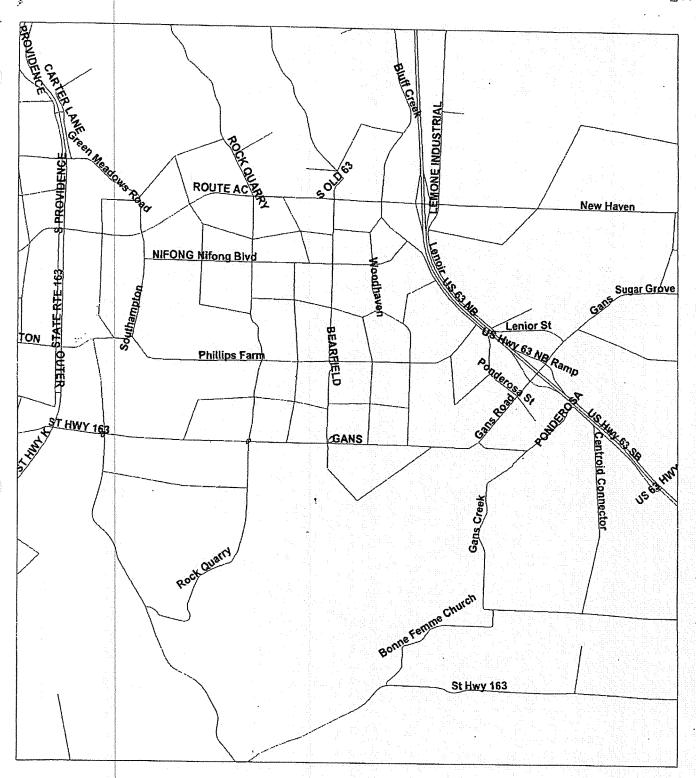
PART I (To be completed by Federal Agency)		Date Of Lar	nd Evaluation Re	equest 12/03/	08	
Name Of Project Gans Road Extens	ion	Federal Age	ency Involved N	one at pres	ent - Pote	ntial FHW
Proposed Land Use New road constr		County And		ne, Missou		
PART II (To be completed by NRCS)		Date Reque	est Received By	NRCS	moor edamo. Tenty co.	y 0 5
Does the site contain prime, unique, statewid (If no, the FPPA does not apply — do not cor	e or local important t	armland? ts of this form).		No Acres Irrigate	ed Average Far	m Size
Major Crop(s)	Farmable Land In Acres:	Govt. Jurisdiction	%	Amount Of F Acres:	armland As Defir	ned in FPPA %
Name Of Land Evaluation System Used	Name Of Local Si	te Assessment Sy	stem	Date Land E	valuation Returne	d By NRCS
PART III (To be completed by Federal Agency)			*	Alternative	Site Rating	
			Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly						
B. Total Acres To Be Converted Indirectly						
C. Total Acres In Site			29.05	30.07	32.31	
PART IV (To be completed by NRCS) Land Ev	aluation Information					
A. Total Acres Prime And Unique Farmland			-			
B. Total Acres Statewide And Local Importa	nt Farmland			11		
C. Percentage Of Farmland In County Or Lo	cal Govt. Unit To Be	Converted	9		2.27	
D. Percentage Of Farmland In Govt. Jurisdiction V	With Same Or Higher R	elative Value			=	
PART V (To be completed by NRCS) Land Eva Relative Value Of Farmland To Be Con-		100 Points)			-	ı
PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained	in 7 CFR 658.5(b)	Maximum Points			0 4	
Area In Nonurban Use			12	12	12	
2. Perimeter In Nonurban Use		•	8	8	8	
3. Percent Of Site Being Farmed			20	20	20	^
4. Protection Provided By State And Local C	Government		0	0	0	
5. Distance From Urban Builtup Area			5	5	5	
6. Distance To Urban Support Services	in the second		- 0	0	0	, , , , , , , , , , , , , , , , , , ,
7. Size Of Present Farm Unit Compared To	Average		8	8	8	
8. Creation Of Nonfarmable Farmland			0	0	0	
9. Availability Of Farm Support Services			5	5	5	
10. On-Farm Investments			0	0	0	
11. Effects Of Conversion On Farm Support	Services		0	0	0	<u> </u>
12. Compatibility With Existing Agricultural Us			5	5	5	
TOTAL SITE ASSESSMENT POINTS			63	63	63	
PART VII (To be completed by Federal Agency)						
Relative Value Of Farmland (From Part V)	e !		×			·
Total Site Assessment (From Part VI above or a los site assessment)	cal				7	
TOTAL POINTS (Total of above 2 lines)	72					
Site Selected: A - Preferred	Date Of Selection		×	The state of the s	Assessment Us	ed? lo 🔲

Reason For Selection:

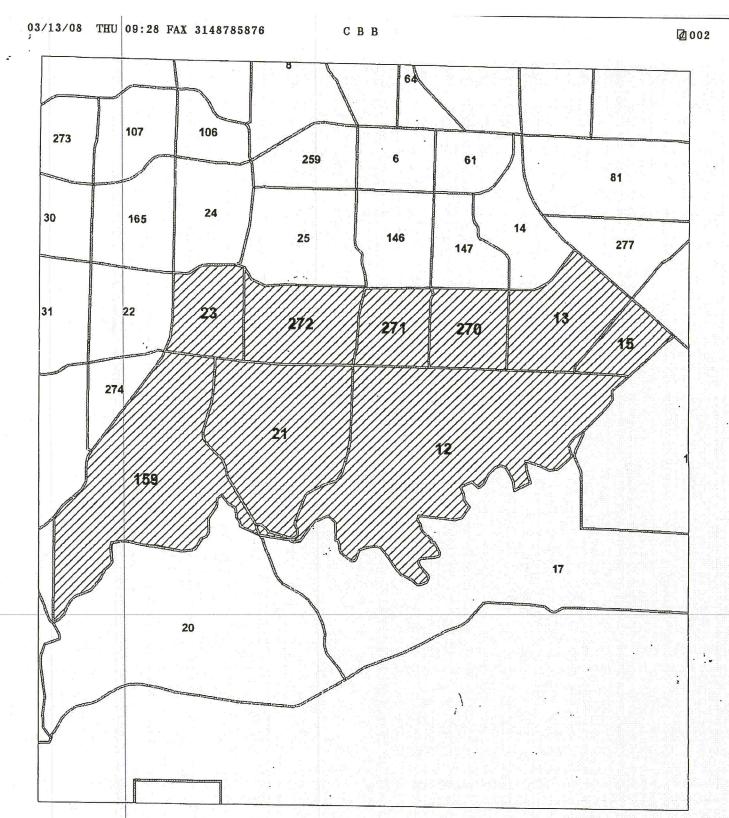
A is the preferred corridor for the Bearfield Road to Providence Road extension of Gans Road. Less acreage and lower construction costs will be required for A than for B or C. All three use the same corridor where Gans Road and Route 163 currently exist. All three corridors would have approximately the same farmland impact.



# APPENDIX C: TRAVEL DEMAND MODEL - TRAFFIC ANALYSIS ZONES



Metro Area 2030 Network



2030 TAZs in Gans Road vicinity

1	<u> </u>	4Z  0 13	MEDU	Retail	Regional Malls N	onretail	Office Corpo	irate Hi	adquarters	Medical :	Schools
1	<u> </u>	13	9 0	, 0	778	115	225		0	0	
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		12 23	6 87	0	0	0	0		n		Š
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-					~	70			U	U	425



APPENDIX D: TRAFFIC COUNTS

# Crawford, Bunte, Brammeier 1830 Craig Park Ct.

St. Louis, Missouri

File Name: Loc1 0208 ENT AM

Site Code : 00020822 Start Date : 01/29/2008

Page No : 1

N/S Street: school entrance E/W Street: Route 163

City/State: Columbia, Missouri

Job Number: 02-08

Groups Printed- Unshifted

Start   Left   Thr   Rig   Pe   App.   Left   Thr   Rig   Pe								R	oute 1	63			scho	ol entr	ance				oute 1			
Time			So	uthbou	und			W	estbou	ınd			No	rthbou	ınd			E				
Time   Left   u   ht   ds   Total   Total   Left   u   ht   ds   Total   Left   u   ht   ds   Total   Total   Left   u   ht   ds   Total   Left   u   ht   ds   Total   Total   Left   u   ht   ds   Total   Left   u   ht   ds   Total   Total   Total   Left   u   ht   ds   Left   u   ht   ds   Total   Left   u   u   ht   u   u   ht	Start	1 - 6	Thr	Rig	Pe	App.	Lot	Thr	Rig	Pe	App.	Loft	Thr	Rig	Pe		l off	Thr		Pe		
07:30 AM	Time	Len	u	ht	ds		Leit	u	ht	ds		Leit		ht								
07:45 AM         0         0         0         0         58         0         0         58         0         0         0         0         16         19         0         35         93           Total         0         0         0         0         5         212         0         0         217         6         0         0         0         0         16         19         0         35         93           08:00 AM         0         0         0         0         47         0         0         0         0         0         37         84           08:15 AM         0         0         0         0         3         53         0         0         56         0         0         0         0         24         53         0         77         133           08:30 AM         0         0         0         0         0         18         100         0         0         0         0         0         177         0         0         87         205           08:45 AM         0         0         0         0         0         0         0         0         0	07:15 AM	0	0	0	0	0	2	80	0	0		4	0	0	0		_			-		
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08:15 AM	Total	0	0	0	0	0	5	212	0	0	217	6	0	0	0	6	0	64	58	0	122	345
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	rotar %	0.0	0.0	0.0	0.0	0.0	3.4	5	0.0	0.0	51.5	0.0	0.0	0.0	0.0	5.0	1 0.0	2	1	0		

#### Crawford, Bunte, Brammeier 1830 Craig Park Ct.

St. Louis, Missouri

File Name: LOC102~1 Site Code : 00020822

Start Date:

City/State: Columbia, Missouri 001/2191/2000er: 02-08

E/W Street: Route 163

N/S Street: school entrance

Groups Printed- Buses

Page No : 1

		So	outhbou	und				oute 16					ool entr					oute 10			
Start Time	Left	Thr u	Rig ht	Pe ds	App. Total	Left	Thr	Rig ht	Pe ds	App. Total	Left	Thr u	Rig ht	Pe ds	App. Total	Left	Thr	Rig ht	Pe ds	App. Total	Int. Total
07:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	. 1	1	0	2	3
08:15 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	4	0	4	6
08:30 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	1	3	0	4	11
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	. 1	2	0	3	5
Total	0	0	0	0	0	1	11	0	0	12	0	0	0	0	0	0	3	10	0	13	25
Grand Total	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	0	3	10	0	13	26
Apprch %	0.0	0.0	0.0	0.0		7.7	92. 3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	23. 1	76. 9	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	3.8	46. 2	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	11. 5	38. 5	0.0	50.0	

#### Crawford, Bunte, Brammeier 1830 Craig Park Ct.

St. Louis, Missouri

File Name: Loc1 0208 EXIT AM

Site Code : 00020821 Start Date : 01/29/2008

Page No : 1

N/S Street: school exit E/W Street: Route 163

City/State: Columbia, Missouri Job Number: 02-08

Groups Printed- Unshifted

							R	oute 1		7 1111100			chool e	exit			R	oute 1	63		
1		So	uthbo	und			W	estbou	und			No	orthbo	und			E	astbou	ınd		
Start	Left	Thr	Rig	Pe	App.	Left	Thr	Rig	Pe	App.	Left	Thr	Rig	Pe	App.	Left	Thr	Rig	Pe	App.	Int.
Time	Len	u	ht	ds	Total	Len	u	ht	ds	Total	Leit	u	ht	ds	Total	Leit	u	ht	ds	Total	Total
07:15 AM	0	0	0	0	0	0	74	0	0	74	9	0	0	0	9	0	23	0	0	23	106
07:30 AM	0	0	0	0	0	0	64	0	0	64	15	0	1	0	16	0	23	0	0	23	103
07:45 AM	0	0	0	0	0	0	53	0	0	53	6	0	0	0	6	0	15	0	0	15	74
Total	0	0	0	0	0	0	191	0	0	191	30	0	1	0	31	0	61	0	0	61	283
MA 00:80	0	0	0	0	0	0	41	0	0	41	8	0	1	0	9	0	14	0	0	14	64
08:15 AM	0	0	0	0	0	0	35	0	0	35	- 25	0	2	0	27	0	25	1	0	26	88
08:30 AM	0	0	0	0	0	0	46	0	0	46	82	0	7	0	89	0	14	0	0	14	149
08:45 AM	0	0	0	0	0	0	34	0	0	34	32	0	1_	0	33	0	17	0	0	17	84
Total	0	0	0	0	0	0	156	0	0	156	147	0	11	0	158	0	70	1	0	71	385
Grand	0	n	Λ	0	0	0	347	0	0	347	177	0	12	0	189	0	131	1	0	132	668
Total	U	U	U	Ū	J			J	Ū	041		·	1 444	·	100			•	•		
Apprch %	0.0	0.0	0.0	0.0		0.0	100	0.0	0.0		93.	0.0	6.3	0.0		0.0	99.	8.0	0.0		
Appleti 70	0.0	0.0	0.0	0.0		0.0	.0	0.0	0.0		7	0.0	0.0	0.0		0.0	2	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	51.	0.0	0.0	51.9	26.	0.0	1.8	0.0	28.3	0.0	19.	0.1	0.0	19.8	
, otal 70	0.0	0.0	5.0	0.0	5.0	5.0	9	0.0	0.0	51.0	5	٥.٠			_0.0		6				

# Crawford, Bunte, Brammeier 1830 Craig Park Ct.

St. Louis, Missouri

File Name: Loc1 0208 EXIT AM

Site Code : 00020821 Start Date : 01/29/2008

Page No : 1

N/S Street: school exit E/W Street: Route 163

City/State: Columbia, Missouri

Job Number: 02-08

Groups Printed- Buses

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		So	uthbo	und			W	estbou	ınd			No	rthbou	und			E	astbou	ınd		
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Time	Leit	u	ht	ds	Total	Leit	u	ht	ds	Total	Leit	· u	ht	ds	Total	Leit	u	ht	ds	Total	Total
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						1				4.5					-						
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MA 00:80	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	1	0	0	1	8	0	0	0	. 8	0	1	0	0	1	10
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	3	0	0	3	9	0	1	0	10	0	2	0	0	2	15
Grand Total	0	0	0	0	0	0	4	0	0	4	9	0	1	0	10	0	2	0	0	2	16
Apprch %	0.0	0.0	0.0	0.0		0.0	100	0.0	0.0		90. 0	0.0	10.	0.0		0.0	100	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	25. 0	0.0	0.0	25.0	56. 3	0.0	6.3	0.0	62.5	0.0	12. 5	0.0	0.0	12.5	

#### Crawford, Bunte, Brammeier 1830 Craig Park Ct.

St. Louis, Missouri

File Name: Loc1 0208 ENT PM

Site Code : 00020812 Start Date : 01/28/2008

Page No : 1

N/S Street: school entrance E/W Street: Route 163

City/State: Columbia, Missouri Job Number: 02-08

Groups Printed- Unshifted

Start   Left   Thr   Rig   Pe   App.   Left   Thr   Time   Left   Thr   Rig   Pe   App.   Left   Thr   Rig   Pe   App.   Int.   Total   Color   Total   Total   Color   Total   Total   Color   Total   Total   Total   Total   Total   Total   Color   Total   Tota									~		Printec	J- U115	meu									
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Time Left u ht ds Total U ht ds Total Left u ht ds Total U ht ht ds	Start		Thr	Ria	Pe	App.		Thr	Ria	Pe	App.		Thr	Ria	Pe	App.		Thr	Ria	Pe	App.	Int.
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# Crawford, Bunte, Brammeier 1830 Craig Park Ct.

N/S Street: school entrance

E/W Street: Route 163

City/State: Columbia, Missouri

Job Number: 02-08

St. Louis, Missouri

File Name: Loc1 0208 ENT PM

Site Code : 00020812

Start Date : 01/28/2008

Page No : 1

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#### Crawford, Bunte, Brammeier 1830 Craig Park Ct.

St. Louis, Missouri

File Name: Loc1 0208 EXIT PM

Site Code : 00020811 Start Date : 01/28/2008

Page No : 1

E/W Street: Route 163 City/State: Columbia, Missouri Job Number: 02-08

N/S Street: school exit

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# Crawford, Bunte, Brammeier 1830 Craig Park Ct.

St. Louis, Missouri

File Name: Loc1 0208 EXIT PM

Site Code : 00020811 Start Date : 01/28/2008

Page No : 1

N/S Street: school exit E/W Street: Route 163

City/State: Columbia, Missouri

Job Number: 02-08

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SERVICE. THE BARTLETT & WEST WAY.

# APPENDIX E: PUBLIC MEETING #1 SUMMARY

#### PUBLIC INFORMATION MEETING SUMMARY

#### Public Meeting #1 Rock Bridge Elementary School 6:00 - 8:00 p.m., April 28, 2008

#### **Gans Road Preliminary Engineering Study**

A public meeting was held to gather input regarding a preferred road alignment for the **Gans Road Preliminary Engineering Study**. This public meeting was scheduled to collect information from interested parties to combine with the data the study team has already collected along the corridor. Project exhibits identifying the known project issues were on display at the meeting, and the study team was present to review information and accept comments from meeting attendees. A comment form was also distributed at the meeting. The exhibits at the meeting contained information on aerial views showing the property ownership information, environmental, utilities, topographic, and cultural resources.

#### Attached with this summary are:

- Frequently Asked Questions distributed at the meeting
- Public Meeting Exhibits
- Comment forms received at the meeting and within 14 days after the meeting
- Verbal comment notes from study team members
- Sign-in sheet
- 2 comment letters/emails received at or after the meeting
- 2 newspaper articles related to the meeting.
- Press Release announcing the meeting

Generally, the public meeting was well received by attendees and the comments raised were primarily focused on the following issues:

- Limiting the development potential of the corridor to residential in nature by limiting access and the number of lanes for traffic. Most attendees expressed a desire to not create another commercial corridor.
- 2. Property owners were concerned on maintaining access to their properties for their current use or future use (potentially more access points).
- 3. The road should be sensitive to the environment and be more "scenic" in character. There were expressed concerns regarding impacts to Rock Bridge State Park.

The study team members present at the public meeting were as follows:

#### **Boone County Public Works**

David Mink Derin Campbell

#### **Boone County Planning**

Thad Yonke

#### City of Columbia Public Works

**David Nichols** 

#### City of Columbia Planning

Tim Teddy

#### Bartlett & West, Inc.

Bob Gilbert Herb Bailey Chris Criswell John Conway

#### Crawford, Bunte, Brammeier

**Dustin Riechmann** 

#### **Environmental Research Center**

John Carrol

Other government officials present at the meeting were:

#### **Boone County Commission**

Ken Pearson Karen Miller Skip Elkin

#### Columbia City Council

Barbara Hoppe

#### Columbia City Manager

Bill Watkins

#### Gans Road (Providence Road to Bearfield Road)

#### **Preliminary Engineering Study**

#### Frequently Asked Questions

#### 1. Why is the Gans Road improvement project needed?

This portion of Gans Road will provide a connection between Providence Road and the proposed Gans Road that is partially under construction to the east, including the new interchange with Highway 63. This project will create the final connection that will be a southern alternative to Grindstone Parkway to get from Providence Road to Highway 63. The project was identified in the Columbia Area Transportation Study Organization (CATSO) 2025 Transportation Plan and will serve as an access to regional destinations, such as Rock Bridge State Park and the new proposed City Park east of Bearfield Road, Rock Bridge Elementary, the proposed Columbia Independent School campus and the proposed Catholic High School.

#### 2. How will the new road be incorporated into the existing roadway system?

This road is expected to have full access intersections with Providence Road, Highway 163, Rock Quarry Road, Bearfield Road, and potentially one future intersection west of Rock Quarry Road. Gans Road east of Bearfield Road is currently under design and is expected to have 2 lanes in each direction separated by a median. However, it is expected that Gans Road east of Bearfield may initially be constructed with only 1 lane in each direction without a median, with plans to add more lanes in the future.

#### 3. What does the Gans Road Preliminary Engineering Study include?

This study includes the identification of project issues, such as the crossing of Clear Creek, steep topography, existing development, environmental or cultural resources, and accommodating existing and future traffic. After determining the project issues, the study team will develop alternatives for Gans Road, with the ultimate goal to have a preferred alternative that can be used to plan for funding, right-of-way acquisition and preservation, and environmental clearances.

## 4. What property development is expected when the Gans Road improvement project is completed?

It is unknown how the properties in the corridor will develop precisely, but several of the tracts have already been subdivided as large tract residential properties, and the presence of Rock Bridge State Park and the steep terrain limits the overall development potential of the corridor. The zoning map for the County in this area shows primarily single family residential and urban agriculture zonings.

### 5. Will there be any impact to the Rock Bridge State Park or planned City Park east of Bearfield Road?

There are no direct impacts expected to the parks, except better regional access through the proposed road system. Measures to protect from the affects of soil erosion during construction will be addressed in later phases of the project.

#### 6. How is the project being funded?

Boone County is funding this preliminary engineering study, with coordination with the City of Columbia. Funding for right-of-way acquisition or construction of the project has not been determined.

- 7. When will the project be constructed?
  - It is unknown when the project will be constructed. This phase of the work only pertains to studying the reasonable alternatives and selecting a preferred alignment and layout of the roadway.
- Will there be limited access to existing properties (a median)?
  This section of Gans Road is identified in the CATSO 2025 Transportation Plan as a Minor Arterial roadway. This classification allows both roadways with or without a median, depending on the need for access and mobility through the corridor. The study team will be investigating the need for limited access in this corridor.
- 9. How many lanes will the new roadway have and how wide will the road and right-of-way be?

The Minor Arterial roadway classification allows for roads with 1 lane in each direction with the possibility of a third lane for turning movements and right-of-way widths varying from 84 feet to 100 feet. The study team will be investigating the appropriate number of lanes and right-of-way width as the study progresses.

- 10. Will my property be affected by this project? If so, how? At this time, it is unknown how properties will be affected. The road right-of-way width will increase from the existing width, but it is unknown how much or at what locations. More information on this will be available after the study progresses.
- 11. How will this project connect to Highway 163 and the new roundabout at Southampton Drive?

At this time, it is believed that a single intersection with Highway 163 and the extension of a future north-south roadway from the roundabout will be preferred. More information on this will be available after the study progresses.

- 12. What impacts will the project have on the environment and cultural/historic resources?

  The study team has identified the environmental and cultural/historic resources in the project corridor, following federal guidelines in the National Environmental Policy Act (NEPA). A possibly historic residence and some possibly significant archeological sites have been found in the corridor, but it is believed that these resources will not be affected by potential alignments. Other archeological sites have been investigated further and found to be not significant. Wetland delineations will be proceeding this spring to identify the wetland resources. The study team will use this information during analysis to determine the best overall solution, including the consideration of these resources.
- 13. When will we be able to see possible roadway alignment alternatives in this corridor?

  The study team will take comments from the public meeting and then use them in conjunction with the other project issues presented at the meeting and develop alternatives. Another public meeting is scheduled for October 2008 to present these alternatives.

MAY - 6 2008

#### **COMMENT FORM**

#### PUBLIC INFORMATION MEETING

Rock Bridge Elementary School 6:00 - 8:00 p.m., April 28, 2008

#### Gans Road Preliminary Engineering Study

Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

You may make your comments on this form and leave it with City/County personnel at the meeting, or mail it within 10 days to the address below.

1.	Was the information and discussion tonight helpful in understanding
	the project issues? Why or Why not?
	425 the session was helpful in the respect that
	you are taking many things into consideration
	Yes the session was helpful in the respect that you are taking many thinks into consideration for the placement, feaseability, and impact the road would have on the area.
	toad would have on other area.
	•
2.	Are there other project issues that should be considered? Please
	explain.
	I think that the team is considering all pertinent aspects at this time
	pertinent aspects at this time.
	·

3. What are your primary concerns or goals the study team should keep in mind with the project? Please explain.

Our concern is That since we are one of the very few homeowners whose house could be directly affected, we would prefer that the placement of any roads could be as far from our house as possible, Placing the road too close to the house would possibly cause a loss of value, or Naicy, and quality of life.

The first that	\/
4. Are you a property owner within	the project corridor?XYesNo
Additional Comments:	
5. Although we have like time and very much a we would prefer to se having the road took	L here a short period of enjoy the location and house, if the house rather than lose
Your comments can be anonymous, but contact information in case the study tea	
NAME	Organization (if any)
John Cravens	None - property owner
Address	
5320 S. HWY 163 CC	JLUMBIA, MO 65203
Phone Number/Email Address	
875-0647 JCR	AVE & socketine-f
Signature John Carrer	Date 5/1/08
If mailing the comment form, please sen	d to:
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# COMMENT FORM

# PUBLIC INFORMATION MEETING

Rock Bridge Elementary School 6:00 - 8:00 p.m., April 28, 2008

Gans Road Preliminary Engineering Study

Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

You may make your comments on this form and leave it with City/County personnel at the meeting, or mail it within 10 days to the address below.

1.	Was the information and discussion tonight helpful in understanding the project issues? Why or Why not?
	(SEE ATTACHED)
	that should be considered? Please
2.	Are there other project issues that should be considered? Please explain.
	(SEE ATTAGLED)
3.	What are your primary concerns or goals the study team should keep in mind with the project? Please explain.
	(SEE ATTHAMBO)

CC! WAYNE HOLDEN

4. Are you a property owner within th	e project corridor? <u> </u>
Additional Comments:	
5.	
Your comments can be anonymous, but we contact information in case the study team	would appreciate having your needs to make contact with you.
NAME	Organization (if any)
ANGELD PROVENZANO	STATE FARM INSURANCE
Address	24 bruness Mo 65217
Phone Number/Email Address	
(573) 441-3659 angelo, prov	GNZAMO, CMOX BSIA+EFARO, COM
Signature	Date 5/6/08
If mailing the comment form, please send t	:o:

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

- The maps were helpful in outlining the scope of the proposed project and the
  potentially affected land areas.
- 2) At this time, there are a couple of issues regarding this study that affect State Farm as one of the landowners in the study area:
  - o If a north/south connection is made from the current round-a-bout on State Farm Parkway, will the proposed connection with Gaus Road and Highway 163 be a continuation of State Farm Parkway and retain-the same name? Will State Farm be involved in the discussion as to how State Farm Parkway is extended?
  - o If an extension is built from the south spoke of the current round-a-bout on State Farm Parkway, will the center of the road follow the property lines as far as possible prior to certing across State Farm's property to intersect with Gans/163?

Additional questions/concerns may arise in the future as more information is learned from the study and proposed recommendations.

- 3) How will the city and county coordinate the development of the land in the proposed study area? Are there any plans for the city to annex the land in the proposed study area currently in the county? Where do the proposed roadways cross State Farm's land?
- 4) Yes

#### **COMMENT FORM**

#### **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:00 - 8:00 p.m., April 28, 2008

#### **Gans Road Preliminary Engineering Study**

Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

You may make your comments on this form and leave it with City/County personnel at the meeting, or mail it within 10 days to the address below.

1.	Was the information and discussion tonight helpful in understanding the project issues? Why or Why not?		
.=			
2.	Are there other project issues that should be considered? Please explain.		
3.	What are your primary concerns or goals the study team should keep in mind with the project? Please explain.		

Additional Comments.	
5. One preference for road would be one north boundary of	that follows the
Your comments can be anonymous, but we wo contact information in case the study team nee	ould appreciate having your ds to make contact with you.
NAME Jim Me Turnun	Organization (if any) McTuraha Fanil, Ptsg. LLLP
Address 36 Byron St., Oakville,	Ontario, Canada L6J 7P9
Phone Number/Email Address  416 - 744-553/ jmc	turnan @ shawcor. com
Signature A	

4. Are you a property owner within the project corridor?\_XYes \_\_\_No

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

If mailing the comment form, please send to:

#### **COMMENT FORM**

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Additional Comments:	•
Your comments can be anonymous,	but we would appreciate having your team needs to make contact with you.
NAME	Organization (if any)
Address	
Phone Number/Email Address	
Signature	Date
If mailing the comment form, please s	send to :

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

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Address 701 E Brandwy	(Africe)
Phone Number/Email Address るマイーオスに多	·.
Signature	Date 4/25/68
If mailing the comment form, please send to	<b>):</b>

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

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Rock Bridge Elementary School 6:00 - 8:00 p.m., April 28, 2008

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NAME C	Organization (if any)
· Jan breaver 7	Triends of Book Bridge Memorial State Pour
Address	
4/21/2 W. Walnut Countin	MO 66203
Phone Number/Email Address	
373-874-0171 weaverjeemis	somi.edu
Signature Jan.C. hear	Date April 28,2508
If mailing the comment form, please send to:	

If mailing the comment form, please send to :

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

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# **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:00 - 8:00 p.m., April 28, 2008

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If mailing the comment form, please send to:		

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

# Record of Verbal Comments April 28, 2008 Public Meeting Gans Road (Providence Road to Bearfield Road) Rock Bridge Elementary School, Columbia, MO

customer concerns regarding the above referenced project. Although the individuals attending the meeting were encouraged to fill out comment cards, many individuals made verbal comments that were recorded by the County and City design teams in attendance. On Monday evening, from 6:00 PM to 8:00 PM, Boone County conducted a Public Meeting to gather information and listen to Following is a list of the verbal comments:

John & Lisa Cravens 5320 S. Hwy 163 Columbia, MO 65201 (573) 875-0647 Icrave@socket.net

The Cravens are property owners along Gans Road. Both work for State Farm Insurance.

have lived at this location for one year. There is county water and sanitary sewer on the property. Cravens said he would rather the road take their house than come within 20 ft. The Cravens Herb Bailey Lisa Cravens said they want to keep the road out of their front yard. John They have a 30 years old, 4700 sq. ft. home (circular asph drive, swimming pool) located on a wooded lot of several acres. There is a separate workshop building and an old barn.

road came close to their house, they would prefer that the house be taken. Mrs. Cravens like being [Chris Criswell] Talked to Lisa Cravens. They have lived along Gans Road for one year. If the able to live in a rural setting (quiet, secluded, wooded, etc.) so close to town.

> Jim Gast 3009 Lynnwood Dr Columbia, MO 65203 (573) 442-1481 igast@centurytel.net

to the State Park.

[Herb Bailey] Mr Gast's concern is with zoning and the long term impact of Gans Road

Mr. Gast is the Superintendent of Rock Bridge State Park.

Jan Weaver
412-1/2 W. Walnut
Columbia, MO
(573) 874-0171
weaveric@missouri.edu

[Herb Bailey] Ms. Lieber is against the road. She is worried about box store development.

Ms. Weaver is with a group called Friends of Rock Bridge.

Valerie Barnes

2600 Rutherford Dr. (573) 449-0205 Columbia, MO

[Herb Bailey] Ms. Barnes is for the road. She has no issues.

Ms. Barnes is a resident of Bristol Lake.

val@valbarnes.com

607 Bluffdale Dr. Barbara Hoppe

Columbia, MO 65203 (573) 424-9668 ward6@gocolumbiamo.com

Mr. Hoppe is a City Council member. Gans Road is in her ward.

[Herb Bailey] Ms. Hoppe wants to protect Rock Bridge State Park. She thinks the road would be suitable for a scenic parkway. She wants the road to be sensitive to the environment.

Thomas Norling

Columbia, MO 65201 1909 E. Gans Rd (573) 881-8763

tnorling@septegon.com

Mr. Norling is a property owner along Gans Road.

Davis lake and at the NE quadrant of the Rock Quarry Road and Gans Road intersection. [Herb Bailey] Mr. Norling owns the property and home directly across from the Tony He is against the road and would be fine if the road remained the same as it is.

Septagon projects in Jeff City and near Kansas City. The house is close to the road now. He [Chris Criswell] Mr. Norling is Virginia Floyd's son. Talked to Mr. Norling. He works for wonders how they will be affected?

**Fony and Barbara Davis** 

School in the area

oarbaraadavis@gmail.com 4655 Rock Quarry Road Columbia, MO 65201 (573) 449-4970

[Herb Bailey] The Davis' have lived in this area for 25 years. The own several unimproved

The Davis' are property owners along Gans Road. They operate Neighborhood Country Day

ots that are platted for 5 acres that abut Gans Road. Mr. Davis expressed concern about box keep a green thoroughfare that is in keeping with the character of the land. He would like to see the County study other alternatives. He said that his pond is located close to the existing stores. He would like to see consistency in zoning. His property is zoned residential and he development. He needs access for his 5 acre lots. There is a provision in the deeds to break would like to see that carried through for entire route rather than spot-zoned for commercial the large lots into 7,000 sq. ft lots along the frontage. He emphasized that he would like to see the growth in the area to have managed planning so as to protect the State Park and to road and he would like to see it left undisturbed [Thad Yonke] Mr. Yonke explained to the Davis' that Boone County has identified Gans Road as a traffic corridor to be studied. They are gathering neighborhood input. The plan is to integrate unique aspects of the area. The county is studying alternatives. The project could be eliminated in the preliminary phase if the cost is too high, but that is the idea behind the preliminary study.

[Chris Criswell] Talked to Tony and Barbara Davis about March 5th site visit. Also the site visit on April 10th. Consistent with comments above.

# Karen Miller

District 1 Commissioner
Boone County, MO
801 E. Walnut, Room 245
Columbia, MO 65201
(573) 886-4308
kmiller@boonecountymo.org

# Ms. Miller is a County Commissioner.

[Herb Bailey] Ms. Miller offered no comments other than to mention that she was on the Boone County Commission.

stop by to explain the process. Sent documents with cover letter to contact you (Derin) if she had [Karen Miller] (email to Derin Campbell) Told Mrs. Patton that if she wanted, someone would any questions.

[Karen Miller] (email to Derin Campbell) Heard consistently the desire for the road to be more of a parkway without a commercial corridor. Agrees. Thinks commercial nodes at the interchange and at the Smith property on Hwy 63 would be all that is appropriate for an area transitioning to the park.

# John & Patti Blakemore

(no address given) (573) 442-4673 Johnb@stephens.edu

# Steve & Bea Smith (no address given) (573) 445-3100 beasmith@missouri.edu

Ms. Blakemore is a property owner near Gans Road.

[Herb Bailey] Ms. Blakemore wants to keep the area pristine and unspoiled.

# Mr. Smith owns a CPA company. Mrs. Smith is a retired environmental scientist and professor. The Smith's own property along Providence Road just south of State Farm and north of M-163.

[Herb Bailey] The Smith's have owned their property since 1978. The historical home was part of the original property. They sold that portion off a few years ago. Steve grew up in this area and hunted on the McTurnan property as a boy. The Smith's have had a dispute with the City

over a sanitary sewer issue.

[Bob Gilbert] The Smith's expressed concerns about access to their property from a future north-south connector to the east side of their property. They indicated that they were participating in the study of road networks to serve the Crown Center Farms property and their own. This is the study being performed by AllState Consultants (not being released per Crown Center Farms). Mr. Smith also indicated that the wetland feature shown on the south side of his property (from the NWI maps) is no longer there. They bull dozed the dam and drained the water feature.

# Kevin & Nancy Holman

(no address given) (573) 446-3360

The Holman's are property owners along Gans Road east of the project.

[Herb Bailey] The Holman's are concerned with what is going on with Gans Road at Ponderosa. They mentioned that during high water events that heavy rains close the roads out to US63. They are also concerned about how the road was going to get over Clear Creek. He said it had a tremendous drop in elevation.

# Jose & Joe Lindner

Forum Development Group P.O. Box 1037
1400 Forum Boulevard Columbia, MO 65205
(573) 446-5500
jose@forumgroup.com

The Lindner's own Forum Development and developed the Bristol Lake area.

[Herb Bailey] Jose Lindner mentioned that he was part of a Transportation Development District (TDD) that is doing a roundabout at the interchange at US63.

[Bob Gilbert] Jose Lindner confirmed that they are planning to construct a roundabout on Gans Road at the connection to Gans Creek Road. It will be a change order to the current construction contract.

# George Montgomery

(no address given)
Columbia, MO 65101
(573) 449-6974
montgomg@yahoo.com

Mr. Montgomery is a property owner along Gans Road and a former City Engineer.

[Dustin Reichman] Mr. Montgomery wants the City to avoid excessive and particularly commercial development within the corridor. He also wants to maintain access. He planned to send a letter expressing his comments.

# Joe Bindbeutel

Mr. Bindbeutel is a property owner along Gans Road.

(did not sign in)

[Dustin Reichman] Mr. Bindbeutel is interested in avoiding excessive development and particularly commercial. Mr. Bindbeutel was most adamant about access to his property which is north of the 5 acre Davis lots north of Gans Rd and west of Rock Quarry Rd. Mr. Bindbeutel requested general information for land use within the travel demand model.

[Chris Criswell] Power poles shown going to his house are not correct. Power lines are underground. Mr. Bindbeutel has a long driveway to Gans Road. He had questions about the sewer pump station and how he'd have access to roads in the future.

Mr. McTurnan and his son (same name) are property owners along Gans Road.

[Chris Criswell] The McTurnan's reviewed the display boards thoroughly but didn't offer any opinions one way or another. There was some general discussions about roundabouts. They had lived in England and were familiar with them.

Oakville, Ontario, Canada

(416) 744-5531

Jim McTurnan

36 Bryan Street

Jim McTurnan, son

1868 S. Pearl Street Denver, CO 80210

# General Comments

mcturnan@hotmail.com

(303) 818-5699

[Herb Bailey] Comments were generally positive toward having a road. The discussions were about protecting the area from commercial development, access to their homes, and protecting Rock Bridge Park from environmental impacts.

[Chris Criswell] Heard only good comments about the public meeting and good or neutral comments about the project itself. In general, questions heard again and again were about access to their property and about the City's plans for the sanitary sewer pump station.

# BOONE COUNTY, MISSOURI Public Meeting 6:00-8:00 P.M., April 28, 2008

# GANS ROAD PRELIMINARY ENGINEERING STUDY

County Job No. 08-572

**Boone County Public Works** 

Name	Address	Email Address	Phone No.
TYM PAGAGNATH	STOO S, PROWNERCE		573-499-2254
Angolo Rovenzaro	FULL S. PROVIDENCE		573 441-3659
I'M McTurnan	36 Byrenst, Date, Me, OM 462, 1289	The instument of Shimen, 100 a 416 744 STS	100 416 744 ST31
Jim METLINGS	\~\y	meter non @hotmail.com	303-818-5499
Johnathisa Grayens		JCRAVE @ SOCKET. net	573.875.0447
Listin Book wel		TRARLES & AC. COM	572-445-4862
interspecifice.	15 D. Am Street	Ssemelka @ tibrail , om	573-415-1717
Mary Of Mri Out	19886 ANS RJ	[Nothing Denteunan 573-EGI-8763	573-861-8763
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Christing de Look	3902 Buth Nowood of # 9102	cajatzamizzau.edu	012-532-7559
J'm Gary		1944 @ Centry tel. net	573-442-1481
Jan weaver	412 12 h. ma/mit : 03	weaver 10 @ missouni.educ	873-874-0171
Malis Stowns	2600 Letherton Mr.	THALD THALLANDED. COM	59-449-0205
Color Lacos	<del> </del>		573-817-1393
Barbara Doope	607 Bluffdale De	ward6 Q gocolumbiamo.com	com 424946P
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# GANS ROAD PRELIMINARY ENGINEERING STUDY

County Job No. 08-572 Boone County Public Works

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# **Bob Gilbert**

From: George Montgomery [montgomg@yahoo.com]

Sent: Monday, May 05, 2008 9:29 AM

To: Bob Gilbert
Subject: Gans Road Study

A few comments for you to consider in your report which are in addition to my previous letter to you.

As we discussed in our phone conversation I have a problem with the commentary that this corridor links two commercial nodes. I feel this statement lends credence to potential rezonings of the Smith Tract to commercial which has already been voted down (9-0) and would be in contradiction to current established county and city land use documents.

The parkway section you are considering for the majority of the Gans alignment may not be appropriate or necessary for the section of Gans between Providence and the proposed round about or signalized intersection near my northeast corridor. Options to reduce right of way takings along my property should be utilized. Removing the center median would be a solid step in this direction. You will not be able to install a median in front of the school. continue this section east to the round about and use the round about feature as the gateway to the medianed section to the east.

A single cross section is probably not appropriate for the entire project.

I am concerned that a right of way taking will render my property as non conforming (less than 10 acres) and will restrict my ability to fully utilize my property. This issue will definitely have to be addressed as it could constitute a major damage to the property. It is important to maintain my property at a 10 acre minimum to avoid this issue.

A specific land use plan or overlay should precede any consideration for right of way acquisition or construction such that the construction of this major roadway does not cause the unintended consequence of stripped out commercial zoning along the corridor.

Limited access management must be utilized on this entire corridor. This should be an

integral part of your report and recommendations.

I really would prefer a right of way section along my property less than the 50 foot half width shown at the meeting. I believe this could be done. Really do not want to loose trees and/or the ability to harvest from these trees.

Be a better friend, newshound, and know-it-all with Yahoo! Mobile. Try it now. http://mobile.yahoo.com/; ylt=Ahu06i62sR8HDtDypao8Wcj9tAcJ

April 10, 2008

Bob Gilbert, P.E. Bartlett & West 1719 Southridge Drive Suite 100 Jefferson City, MO 65109-4000

Anthony & Barbara Davis 4655 Rock Quarry Road Columbia, MO 65201

Dear Mr. Gilbert,

Thank you for the prompt return of the two survey copies of our properties that borders the Gans Road corridor.

The first property borders the south side of Gans Road from Bearfield Road toward Rock Quarry Road for a continuous distance of 2500 feet, more or less.

The second property borders the north side of Gans Road from Rock Quarry Road going west for a continuous distance of 1500 feet, more or less.

Both of these properties have a zoning classification that is different from all other property that borders the Gans Road corridor from Bearfield Road to Providence Road. Our property is zoned RS Residential whereas the rest of the property along the Gans corridor (to the best of my knowledge) is zoned Agricultural.

We purchased this property and have lived in this immediate area for more than 25 years. Both properties were zoned RS Residential prior to our purchase. We understand that the highest value is for Residential development.

I would like to follow up on the points that we discussed when we met in March. I appreciate the invitation to provide history and information to help determine the best alignment for the roadway.

The first property runs 2500 feet east of Rock Quarry and on the south side of Gans. Provisions should be made for but not limited to the following:

- 1. Protect the lake that has an easement variance noted on the County Subdivision Plat. This decision was made by County officials to protect the lake when the improvements to Gans Road occur.
- 2. Country Day School has a double access entry with periods of high traffic use that should continue to intersect at the present location on Gans Road.
- 3. The border from Bearfield Road to the Country Day School entrance fronts 8 acres that will require adequate access from Gans Road for future residential development. When we

met the possibility was discussed that the intersection of Bearfield and Gans Roads needs to be aligned and moved to the north in order to improve access to this tract of land.

The second property runs 1500 feet west of Rock Quarry Road and on the north side of Gans Road. Provisions should be made for but not limited to the following:

- 1. Since this property is designated RS Residential, it will require adequate access to Gans Road to accommodate future residential development. I look forward to further discussion to determine access locations.
- 2. This corridor provides easement and access to an existing home on 11 acres that enjoys the same RS Residential zoning. Provisions for access for future development of that tract of land -- traffic, etc.-- should be incorporated at the time that Gans Road is realigned.

We expect that the alignment of Gans Road will maintain the current and future use of our properties as was intended when we purchased them with the existing favorable zoning. The proposed realignment should not restrict in any way our current personal and business access nor should it limit the designated and permitted County zoning guidelines for property use.

We look forward to sharing information with you and other interested parties on April 28. If you need to reach me before that meeting, please give me a call at home (573 449 4970) or by cell phone (573 289 6600).

Regards,

Anthony Davis

Barbara A. Davis

P.S. After meeting with other residents in the area there is a strong concensus that a two borne road with a turning lune at the two intersections, would meet future traffic needs. I look forward to discussion any truffic study or traffic Projections from Bearfield west to providence.

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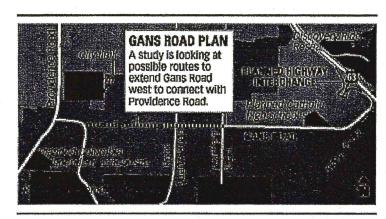
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BoCoMo Buzz Class Notes

# Gans plan stirs development concerns

By SARA SEMELKA of the Tribune's staff

Published Tuesday, April 29, 2008



Lora Wegman graphic

Concern about looming commercial development dominated discussions last night at a public meeting for neighbors and property owners along a corridor under study as a location for the possible expansion of Gans Road west to Providence Road.

The meeting, called by the Jefferson City firm Bartlett and West, aimed to gather input to inform the firm's road alignment study.

High on the list of priorities for several property owners was their desire to keep the corridor just north of Rock Bridge Memorial State Park free of commercial development.

Boone County Southern District Commissioner Karen Miller said several people told her they would like the road to be a parkway with green space that connects nodes of commercial activity rather than a strip where commercial developments will take hold.

The corridor is part of unincorporated Boone County, but the endpoints of possible connections at Providence and Bearfield roads are adjacent to Columbia city limits.





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"We can't anticipate the future and annexations that might occur, but the working assumption is that any future work on this project will be administered by the city," said David Mink, Boone County public works director.

Still, Boone County is taking the lead on this phase of the project, paying Jefferson City firm Bartlett and West about \$132,000 to study the area's topographic, environmental and cultural aspects, as well as document comments by property owners.

Joe Bindbeutel, chief agriculture and environment counsel for the Missouri attorney general, has lived in a home near the corridor since 1991. He said the design of the road will dictate the future of the area.

"The way the road is designed, it can be transportation-friendly or development-friendly," Bindbeutel said, explaining a two-lane road with few feeder roads and access points would move traffic through the area, not encourage development.

County Planner Thad Yonke told a group of area residents the study is meant to lay out a plan that takes property owners' concerns into account before development decisions force road construction.

"This is not based on development requests," Yonke told residents last night. "The county ... wanted to take the reins and be out in front, get input documented before the vested interests for X,Y or Z" are involved.

Yonke also pointed out that the road project, which lacks funding, is not a certainty. "The project could eliminate itself if the bridge" over Clear Creek "is too expensive ... to move only that much traffic," he said.

Dustin Riechmann, a project engineer examining traffic for the study, said he is using the Columbia Area Transportation Study Organization traveldemand model, which predicts land use for the year 2030. Riechmann said the model shows the need for a connecting road, but it would likely be a two-lane option with a possible turn lane at intersections.

Bartlett and West engineers collected written comments and took notes from residents' discussions. They will include them as they work on alignment alternatives. Project Engineer Bob Gilbert said there likely will be three alignment options presented at another meeting in October, when the public will have another chance to comment.

Reach Sara Semelka at (573) 815-1717 or ssemelka@tribmail.com.

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# County, city get public input about Gans Road extension

BY SARAH PALMER April 28, 2008 | 10:30 p.m. CST

Providence Road with U.S. 63.

COLUMBIA- Curious residents asked questions of engineers and public officials Monday night about the different ways to extend Gans Road from Bearfield Road to Route K, or Providence Road.

Boone County and the city of Columbia held the public information meeting at Rock Bridge Elementary School to get input about the Gans Road Preliminary Engineering Study. The study, which should be completed by the end of the year, looks for the best alignment of the extension of Gans Road, which would eventually connect

to view topographical images produced in the first stages of the study.

Greeted with a comment form and a handout listing answers to frequently asked questions as they walked in the door, members of the public were invited into the open house-style meeting

"We're doing a study to check the best alignment.," county Public Works Director David Mink said of the meeting. "We want to let the public know that this work is going on."

Some residents were in favor of the project after looking at the information provided. Valerie Barnes said the extension was needed in the area.

"I think it will take some traffic off of Grindstone and provide easier access to Discovery Ridge," Barnes said.

Other residents on hand were not as positive. Tom Norling and his wife, Carol, own property adjacent to Gans Road, near where the proposed construction would take place. Their house is near the street on the north side of Gans, and Norling's concern was how an extension of the road would affect his property.

"The reason we bought the property was because it was beautiful and isolated," he said. "We're not against them taking it through; we're against them making it wider."

Bartlett & West, the engineering firm hired by the county to conduct the study, created the images on display at the meeting. The three maps included information such as property lines, utilities and environmental and cultural resources. Representatives from the firm were on hand to answer the public's questions and gather further comments on the project.

"The purpose of the study is just to identify the environmental, the cultural issues," said Chris Criswell, lead project engineer from Bartlett & West. Environmental issues include the crossing of Clear Creek, which runs through the proposed area of the extension.

The firm has no definite plan for where the extension of Gans Road will go, but they are looking at three different routes, Criswell said, one a bit to the north, one down the center and one a bit



to the south.

Comments on this article

Norling said he would continue to follow the progress of the project and would attend future meetings. The county has scheduled another public information meeting in October, when more complete plans of a possible route will be presented.

Contact an editor with corrections or additional information

Username:	
Password:	(Forgotten your password?)
You must be logged in to con	mment. If you don't have an account, you can register here.
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Preview comment

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### March 21, 2008

# FOR IMMEDIATE RELEASE

For more information contact: Bob Gilbert Project Manager Bartlett & West, Inc. 573.634.3181

# PUBLIC INPUT SOUGHT FOR GANS ROAD STUDY

COLUMBIA — Input is being sought from surrounding landowners and the public regarding a preferred road alignment for the Gans Road Study. A public meeting has been scheduled for Monday, April 28, 2008 from 6:00 to 8:00 pm and will be held in the gymnasium at the Rock Bridge Elementary School located at 5151 S. Highway 163.

An extension of Gans Road between Providence Road and Bearfield Road in southern Columbia is being studied by officials from Boone County in cooperation with officials from the City of Columbia. Gans Road is identified to extend from Providence Road to Bearfield Road in the Columbia Area Transportation Study Organization (CATSO) 2025 Transportation Plan. The study's objectives include identifying the project's constraints and determining the best alignment for the roadway. Some of the constraints include the crossing of Clear Creek, steep topography, existing development, environmental or cultural resources, and accommodating existing and future traffic.

The public meeting is being scheduled to collect information from interested parties to combine with the data the study team has already collected along the corridor. Project exhibits identifying the known project constraints will be on display at the meeting, and the study team will be present to review information and accept comments from meeting attendees.



# APPENDIX F: PUBLIC MEETING #2 SUMMARY DOCUMENT

# **PUBLIC INFORMATION MEETING SUMMARY**

# Public Meeting #2 Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

# **Gans Road Preliminary Engineering Study**

A public meeting was held to gather input regarding a preferred road alignment for the **Gans Road Preliminary Engineering Study**. This public meeting was to scheduled show the public the alternatives developed by the study team and receive comments to gauge the public opinion of the alignments. Project exhibits identifying the known project issues and the three alternatives were on display at the meeting, and the study team was present to review information and accept comments from meeting attendees. A comment form was also distributed at the meeting. The exhibits at the meeting contained information on aerial views showing the property ownership information, environmental, utilities, topographic, cultural resources, and alignments alternatives.

## Attached with this summary are:

- Frequently Asked Questions distributed at the meeting
- List of exhibits displayed at the meeting
- · Comment forms received
- Verbal comment notes from study team members
- Sign-in sheet
- 5 comment letters/emails received related to the meeting
- 3 newspaper articles related to the meeting.
- Press Release announcing the meeting

Generally, the public meeting was well received by attendees and the general comments heard at the meeting were:

- 1. The "Red" Alignment was preferred by the majority of the attendees. Of those who responded with a preferred option, Red was preferred 9 times vs. the Blue alignments 3 times and the Yellow 1 time.
- 2. The roundabouts were a good choice for the intersections because it will help limit the impacts and the public felt the roundabouts will lower speeds through the area.
- 3. The public felt that their comments from the previous meeting were heard and taken into account.

The study team members present at the public meeting were as follows:

Boone County Public Works
David Mink
Derin Campbell

Boone County Planning

Thad Yonke

<u>City of Columbia Public Works</u> David Nichols

City of Columbia Planning Tim Teddy

Bartlett & West, Inc.
Bob Gilbert
Todd Kempker
Chris Criswell

<u>Crawford, Bunte, Brammeier</u> Dustin Riechmann

Other government officials present at the meeting were:

Boone County Commission Ken Pearson

Columbia City Council Barbara Hoppe

# Gans Road (Providence Road to Bearfield Road)

# **Preliminary Engineering Study**

# Frequently Asked Questions

1. Why is the Gans Road improvement project needed?

This portion of Gans Road will provide a connection between Providence Road and the proposed Gans Road that is partially under construction to the east, including the new interchange with Highway 63. This project will create the final connection that will be a southern alternative to Grindstone Parkway to get from Providence Road to Highway 63. The project was identified in the Columbia Area Transportation Study Organization (CATSO) 2025 Transportation Plan and will serve as an access to regional destinations, such as Rock Bridge State Park and the new proposed City Park east of Bearfield Road, Rock Bridge Elementary, the proposed Columbia Independent School campus and the proposed Catholic High School.

- 2. How will the new road be incorporated into the existing roadway system?

  This road is expected to have full access intersections with Providence Road, Highway 163, State Farm Parkway, Rock Quarry Road, Bearfield Road, and potentially a future intersection east and west of Rock Quarry Road approximately an eighth mile. Gans Road east of Bearfield Road is currently under design and is expected to have 2 lanes in each direction separated by a median. However, it is expected that Gans Road east of Bearfield may initially be constructed with only 1 lane in each direction without a median, with plans to add more lanes in the future.
- 3. What does the Gans Road Preliminary Engineering Study include?

  This study includes the identification of project issues, such as the crossing of Clear Creek, steep topography, existing development, environmental or cultural resources, and accommodating existing and future traffic. After determining the project issues, the study team developed alternatives for Gans Road, with the ultimate goal to have a preferred alternative that can be used to plan for funding, right-of-way acquisition and preservation, and environmental clearances.
- 4. What property development is expected when the Gans Road improvement project is completed?

It is unknown how the properties in the corridor will develop precisely, but several of the tracts have already been subdivided as large tract residential properties, and the presence of Rock Bridge State Park and the steep terrain limits the overall development potential of the corridor. The zoning map for the County in this area shows primarily single family residential and urban agriculture zonings.

5. Will there be any impact to the Rock Bridge State Park or planned City Park east of Bearfield Road?

There are no direct impacts expected to the parks, except better regional access through the proposed road system. Measures to protect from the affects of soil erosion during construction will be addressed in later phases of the project.

6. How is the project being funded?

Boone County is funding this preliminary engineering study, with coordination with the City of Columbia. Funding for right-of-way acquisition or construction of the project has not been

determined.

7. When will the project be constructed?

It is unknown when the project will be constructed. This phase of the work only pertains to studying the reasonable alternatives and selecting a preferred alignment and layout of the roadway.

8. Why was a divided roadway chosen?

The divided roadway allows for limited access throughout the roadway. Safety is also increased with the addition of a median. The median will allow for storm water quality enhancements along the corridor by allowing more storm water to infiltrate into the median. This was an important goal of the study team due to the runoff flowing into Clear Creek and the proximity of Rock Bridge State Park.

9. Why were roundabouts chosen at the intersections?

The roundabouts work well with the limited access roadway by allowing for U-turns every quarter mile. Roundabouts are also safer for both pedestrians and traffic than conventional intersections. Roundabouts also created a place for the study team to easily adjust the vertical grade of the road. This helped fit the alignments to the topography better, reducing the construction limits of the project. Finally, the roundabouts have a good capacity for present and future traffic, and they are attractive elements in the roadway corridor, when the central island is landscaped.

10. How many lanes will the new roadway have and how wide will the road and right-of-way be?

The road will consist of one 11' lane in each direction. For the majority of the corridor there will be a 28' median between the lanes. The road also includes an 8' shoulder on each side along with an 8' pedway on one side and a 5' sidewalk on the other. Near Providence Road there will be an additional center turn lane instead of the median. The right-of-way width for the majority of the project will be 100'.

11. Will my property be affected by this project? If so, how?

The right-of-way that will need to be purchased varies between alignments. Right-of-way will be purchased generally 50' from the centerline of the chosen alignment. Temporary Easements may need to be purchased during the construction of the road as well. There are currently no plans to begin right-of-way acquisition.

12. What impacts will the project have on the environment and cultural/historic resources? The study team has identified the environmental and cultural/historic resources in the project corridor, following federal guidelines in the National Environmental Policy Act (NEPA). A possibly historic residence and some possibly significant archeological sites were found in the corridor, but these resources have either been avoided, or been determined insignificant by field investigations. Some wetlands exist along the corridor, and some of the alternatives will have minor impacts to them. These impacts will need to be mitigated for during later phases of the project.

13. Is there a preferred alignment?

The study team evaluated each alignment on many different factors including: project cost, private property impacts, context sensitive design, travel delay and motorist convenience, utility impacts, etc. Based on all of the evaluations completed, the Red Alignment appears to be the preferred alignment. Comments from this public meeting will be used to further evaluate the alternatives.

# **List of Exhibits**

- 1. CATSO Board/ Standard City Typical Sections for Minor Arterials
- 2. Gans Road "Custom" Typical Sections
- 3. Why Roundabouts?- A bard with benefits listed
- 4. Property Information Map
- 5. Utilities Map
- 6. Topographic Map
- 7. "Yellow" Alignment Alternative Board
- 8. "Blue" Alignment Alternative Board
- 9. "Red" Alignment Alternative Board
- 10. Cost Opinion and Evaluation Matrix

# **COMMENT FORM**

# **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

# **Gans Road Preliminary Engineering Study**

Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

You may make your comments on this form and leave it with City/County personnel at the meeting, or mail it within 10 days to the address below.

1.	Was the information and discussion tonight helpful in understanding the project issues and solutions? Why or Why not?
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2.	Are there other project issues or solutions that should be considered? Please explain.
3.	What is your preferred Alignment: Yellow, Blue, Red, or Other (if other, please describe)? Why?
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Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

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1. Was the information and discussion tonight helpful in understanding

••	the project issues and solutions? Why or Why not?
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4. Are you a property owner within the	project corridor? <u> </u>					
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5. I think the process open, fair, and	has been very informative					
Your comments can be anonymous, but we would appreciate having your contact information in case the study team needs to make contact with you.						
NAME	Organization (if any)					
John + Lisa Cravens	hone					
Address	•					
5320 S. HWY 163	.3					
Phone Number/Email Address						
573-875-0647						
Signature John Diavur						
If mailing the comment form, please send to						

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

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Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

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Address 607 Bluffdale De	<u>.</u>			
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Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

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### **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

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Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

1.	Was the information and discussion tonight helpful in understanding the project issues and solutions? Why or Why not?  Nes. Foth engineering firm people and Gov. people were very knowledgable and helpful.
2.	Are there other project issues or solutions that should be considered? Please explain.  Presentations seemed very thorough.
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NAME Organization (if any)
Nancy Boon
Address
8251 South Rout N, Columbia Mo 65203
Phone Number/Email Address
nlb 343 @ mizzou, edu
Signature Nancy Lee Boo Date 10/07/08

If mailing the comment form, please send to:

### **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

### **Gans Road Preliminary Engineering Study**

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Address	
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Phone Number/Email Address	
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If mailing the comment form, please send to :

### **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

### **Gans Road Preliminary Engineering Study**

Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

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### **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

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Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

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1.	Was the information and discussion tonight helpful in understanding the project issues and solutions? Why or Why not?
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2.	Are there other project issues or solutions that should be considered? Please explain.
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Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

### **Gans Road Preliminary Engineering Study**

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South corridor from 63
Your comments can be anonymous, but we would appreciate having your contact information in case the study team needs to make contact with you.
NAME Organization (if any)
Address
2600 Rutherford DrivE Col Mo 65202
Phone Number/Email Address
Signature Date 10 - 7-08
If mailing the comment form, please send to:

### **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

### **Gans Road Preliminary Engineering Study**

Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

You may make your comments on this form and leave it with City/County personnel at the meeting, or mail it within 10 days to the address below.

1.	Was the information and discussion tonight helpful in understanding the project issues and solutions? Why or Why not?	
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2.	Are there other project issues or solutions that should be	
	considered? Please explain.	<b>0</b>
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3.	What is your preferred Alignment: Yellow, Blue, Red, or Other (if
	other, please describe)? Why?
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	SO. HAIN 163) I FORGET WHICH COLOR IS THAT
	CHOICE. I THOUGHT ALL THE SOLUTIONS WEAR
	LOGICAL.

4. Are you a property owner within	the project corridor?YesNo
Additional Comments:	
5. OURS IS THE OLD FAR WAS HOPE ITS INTEGRIFF THE COMMITTE DID ITS FROM DISTURBING OURS	RAST TO KEED THE ALIGNMENTS
Your comments can be anonymous, but contact information in case the study tea	we would appreciate having your m needs to make contact with you.
NAME	Organization (if any)
HENRY B. HAGER	RETIRED J-SCHOOL PROFESSOR
Address	
5300 SOUTH HIGHWAY 163	COLUMBIA MD 65203
Phone Number/Email Address  442-2889 haged	e Missouel - Edi
Signature bong B. Hazar	
If mailing the comment form, please ser	id to:
Manager, De Boone Cou 5551 High	ampbell, P.E. sign and Construction inty Public Works way 63 South a, MO 65201

### Record of Verbal Comments October 7, 2008 Public Meeting Gans Road (Providence Road to Bearfield Road) Rock Bridge Elementary School, Columbia, MO

customer concerns regarding the above referenced project. Although the individuals attending the meeting were encouraged to fill out On Tuesday evening, from 6:30 PM to 8:30 PM, Boone County conducted a Public Meeting to present alternatives and listen to comment cards, many individuals made verbal comments that were recorded by the County and City design teams in attendance. Following is a list of the verbal comments:

John & Lisa Cravens	
5320 S. Hwy 163	
Columbia, MO 65201	
(573) 875-0647	
icrave@socket.net	

The Cravens are property owners along Gans Road. Both work for State Farm Insurance.

[Todd Kempker] Mr. Craven still was not thrilled with the idea of the road. He was hoping that the road did not happen for quite a few years. Mrs. Craven was happy with the red alignment. She felt like her voice at the last meeting was heard, and this alignment was investigated to avoid their house.

Jan Weaver
412-1/2 W. Walnut
Columbia, MO
(573) 874-0171
weaveric@missouri.edu

Ms. Weaver is with a group called Friends of Rock Bridge.

[Todd Kempker] Ms. Weaver commented that she was happy with the work that was done. She seemed to like the new information that was presented.

Barbara Hoppe
607 Bluffdale Dr.
Columbia, MO 65203
(573) 424-9668
ward6@gocolumbiamo.com

Ms. Hoppe is a City Council member. Gans Road is in her ward.

[Todd Kempker] She note dthat she was happy with the new developments. She felt that the proposed road would limit commercial development and environmental impacts.

first public meeting. In particular, she felt the proposed road would limit commercial development Dustin Riechmann] Ms. Hoppe expressed that she thought we had developed a good plan. She was pleased that we had modified the plan to satisfy the concerns that we heard at the and was responsive to environmental concerns.

Thomas Norling

Mr. Norling is a property owner along Gans Road.

1909 E. Gans Rd Columbia, MO 65201 (573) 881-8763 Inorling@septegon.com

would be hit by the alignment, but due to the alignment and use of roundabouts at the intersection, He was concerned after the first public meeting that his home (NE Cor of Rock Quarry and Gans) and typical section and wanted a PDF of the section, which I sent to him after the public meeting. [Bob Gilbert] Tom was really pleased with the alternatives. He especially liked the roundabouts the limits of construction could be pulled in to save the home.

> Tony and Barbara Davis 4655 Rock Quarry Road Columbia, MO 65201 (573) 449-4970 barbaraadavis@gmail.com

The Davis' are property owners along Gans Road. They operate Neighborhood Country Day School in the area.

(less earthwork) resulting in over \$100K of cost savings. He would like us to look into that further intersection to the west. The Red and Yellow alignment both push into his property further than and accomodate. He also liked the options that were further north in aligment east of Rock he would like. I explained it was because of water line impacts and better vertical grade [Bob Gilbert] Tony would like to see the blue alternative between Rock Quarry and the Quarry as they impact his pond and property less.

Steve & Bea Smith (no address given) (573) 445-3100 beasmith@missouri.edu

The Smith's own property along Providence Road just south of State Farm and north of M-163. Mr. Smith owns a CPA company. Mrs. Smith is a retired environmental scientist and professor.

Timothy Teddy
City of Columbia Planning
(573) 874-7318
ttteddy@GoColumbiaMO.com

Mr. Teddy is part of the City of Columbia's Planning Department

City as an additional access to its investments in the southeast regional parks (Gans Creek Recreation [Todd Kempker] Mr. Teddy passed on to me that he feels Gans Road is of great importance to the Are and A. Perry Phillips Park), the Discovery Parkway interchange, and the Discover Ridge university research park.

> George Montgomery (no address given) Columbia, MO 65205 (573) 449-6974

montgomg@yahoo.com

Mr. Montgomery is a property owner along Gans Road and a former City Engineer.

[Todd Kempker] Mr. Montgomery said that he would take the comment form home, think about it, and then send the completed form back. He seemed to be happy with most of the work, but was still concerned with access issues near his house.

Mr. Montgomery acknowledged that this aspect of the median would be attractive to him. I explained He said he was not sure if he liked the median in front of his drive or not, but he would think about it full access, commercial driveway opposite Mr. Montgomery's home on the north side of Gans Road. address comments he expressed as part of the first public meeting and subsequent correspondence. that he could use the roundabout at Route 163 to effectively make left-turn movements out of his In general, he thought the plan for Gans Road was a good one. However, he did have concerns property, but he would not be able to make left turns into his property with the median in place. benefits, and we also wanted to restrict access between Route 163 and the school to prevent a [Dustin Riechmann] I spoke with Mr. Montgomery several times during the public meeting. Specifically, we wanted to maximize the length of the median section and its environmental about access to his driveway which serves his house and another home further to the south. so their access was not impacted, but it was in place in front of his driveway in an effort to He asked why the planted median started to the west of Route 163 since it will restrict his driveway to right-in/right-out movements. I told him that it began just east of the school and follow up by mailing in a comment form with his thoughts.

[Bob Gilbert] Concur with Dustin's comments.

Chad Sayre

Allstate Consultants

Columbia, MO

(573) 875-8799

Mr. Sayre is an employee with Allstate Consultants and he provides consultant services to Crown Center Farms.

[Dustin Riechmann] Mr. Sayre said he really like the plan for Gans Road and particularly liked the roundabouts. He thought he liked the red alignment best. Mr. Sayre will present the concepts to the owners of Crown Center chadsayre@allstateconsultants.n Farms and advise them that he thinks the project looks good.

Tom Satalowich

Dr. Satalowich lives south of Gans Rd. on Rock Quarry

6030 Rock Quarry Rd.

Columbia, MO (573) 442-8747 FTSat@centurytel.net

[David Mink] Dr. Statalowich was generally pleased with the work and was ok with the "Red" Alignment

Mr. and Mrs. Hager live in the "historic" house just north of 163.

[David Mink] They seemed generally pleased with the work and thought the "Red" Alignment was ok.

Henry and Laura Hager 5300 S. Highway 163 (573) 442-2889 Columbia, MO

\_auraleehager@yahoo.com

### General Comments

understood that the bridge cost and earthwork played a large role in the cost difference. Everyone [Todd Kempker] The meeting seemed to be very successful. The majority of people were happy with the red alignment. People were surprised it was cheaper because it is not a straight line, but seemed very happy about the use of roundabouts. I heard many comments that the use of roundabouts will slow/calm down traffic in the area.

did not promote much discussion about alignment options, but based on the conversations I had with those Dustin Riechmann] I felt the meeting went very well, and I heard almost exclusively positive feedback. about the numerous benefits of using roundabouts within the corridor. My placement in the room I only heard positive comments about the use of roundabouts and had several good conversations In general, most attendees really liked the proposed cross section and inverted drainage concept. that had made it through the room/boards, they all seemed to prefer the red alignment.

[Bob Gilbert] I concur with Todd and Dustin's general comments. Very positive response related to listening to attendees at the first public meeting.

## BOONE COUNTY, MISSOURI

Public Meeting

6:30-8:30 P.M., October 7, 2008

# GANS ROAD PRELIMINARY ENGINEERING STUDY

County Job No. 08-572

**Boone County Public Works** 

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Address	1007 COAT (T 65431	12/1 M. Monella 2201E State HW-163 650	6030 Rock Grang Rd	Hos Barll (July)	SUB CAND PO	ALSS ROCKGOWN PCA	3100 W. So then 21-115 Dr.	1, 2, 1	12 5300 5. HWY 163	8251 S. Routed Col. 65203	5330 S. Hwy	TELOME THANNE TAYLOR SUITHIN HOLLOW KD	THE BREAKARTH 4700 S PROUDERUE LOLONINA	4700 S. PROVIDENCE PO	and Searborn L 2307 BEDREIGUS SUB	2301 REARFIELD SUB	1112 Fans Strait
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# GANS ROAD PRELIMINARY ENGINEERING STUDY County Job No. 08-572

**Boone County Public Works** 

Email Address Phone No.
Freuds of Rod Bridge 1989 wissouried
Kob Ferdussett Elvin Sapla

Bob Gilbert
Bartlett & West
1719 Southridge Drive, Suite 100
Jefferson City, MO 65109
Via E-mail and U.S. Mail

Darren Campbell Boone County Public Works 5551 Hwy. 63 South Columbia, MO 65201 Via E-mail and U.S. Mail

Re: Proposed Extension/Upgrade

Dear Messrs. Gilbert and Campbell:

I am writing in response to your request for input on the proposed extension/upgrade of Gans Road from Bearfield Road to Providence Road in south Columbia. I have lived at 1701 East Gans Road since 1991.

My understanding of the aim of this project, as reported by city and county decision-makers, is to provide an east-west thoroughfare through south Columbia without putting unnecessary development pressure on Gans Road's current environs, including environmentally sensitive areas and those areas immediately adjacent to Rock Bridge Park. Of course, the road configuration and design must take into account the rights of those landowners who possess the current, lawful opportunity to change their land's use. The use of roundabouts - at existing intersections - goes a long way towards accomplishing these ends.

However, I would urge all involved in the planning process to:

- 1. Eliminate the planned construction of the roundabouts other than those at existing intersections of Bearfield and Rock Quarry. The other proposed roundabout locations border areas which have been substantially restricted by private covenants and thus may never be developed with any degree of appreciable density, or if same is accomplished, it may not occur for years into the future. Thus, traffic would be slowed and energy expended for those years while roundabouts are negotiated by travelers seeking to simply traverse this section of road across town...primarily to and from US 63. At the outset, of course, sufficient easement acquisition for other roundabouts to serve future development could proceed and construction later initiated as development proceeds, if ever.
- 2. Evaluate the energy costs of the alignments' alternatives, particularly the red alignment. Diverting traffic that far north when most drivers will simply be trying to travel cross-town is a tremendous 'hidden cost' of that alignment. The red alignment belies the notion

that this improvement is aimed at moving traffic efficiently across town. Again, if future development indicates the need, State Farm Parkway could be extended south to join either of the other two alternatives.

- 3. Access to property with existing zoning approvals should be provided for, but again, not necessarily constructed. Should landowners exercise their right to develop to previously authorized densities, they should not face problems in acquiring sufficient access to the road once improved. For instance, my driveway immediately west of Rock Quarry on the north side and the only existing use of Gans Road west of Rock Quarry should be allowed left and right turn access on to Gans Road (And if a roundabout were built in the future near that point, my left turn access could and should be eliminated). Also, any alignment and construction decisions should allow for ready use of this or some other access point(s) to facilitate the zoning densities currently provided for on my and Mr. and Mrs. Davis' surrounding property.
- 4. To the extent possible, the exiting roadway configuration should be utilized to minimize disruption of the current setting. The yellow alignment appears to move the roadway northward for little apparent reason....surely the either alternative bridge locations (over Clear Creek) could be accommodated with an alignment along the existing roadway up to a point at or near where the blue and yellow alignments split a few hundred feet east of the creek
  - 5. I join in the comments of the Davis' as expressed in their previous letter.

I appreciate the opportunity to express my thoughts on this project and would be happy to meet with city and/or county officials to discuss the above.

Let us hope we can serve the transportation needs of the community while avoiding the mistakes we all now recognize took place in the process of the Grindstone "Parkway" development process.

Sincerely yours,

JOSEPH P. BINDBEUTEL

1701 E. Gans Road Columbia, MO 65201 (573) 443-1593

c: Tom Schneider
Karen Miller
Tony and Barb Davis
Barbara Hoppe

### **Todd Kempker**

From: Jim McTurnan [JMcTurnan@ShawCor.com]

Sent: Friday, October 03, 2008 3:06 PM

To: Derin Campbell

Cc: Margaret McTurnan Fritz

Subject: Gans Road - Preliminary Engineering Study

### Dear Derin,

We received the recent letter from David Mink advising us of the public meeting planned for October 7th. Although we had hoped to be there, neither my sister nor I will be able to attend to represent the McTurnan Family Partnership.

We have, however, reviewed the drawing enclosed with the letter, and based on what we can see, we would prefer the alignment marked in yellow over either the red or blue alignments. This seems to follow most closely the northern property line of our farm, which as I indicated in my comments at the April meeting would be our most favored route.

I will try to contact you by phone later next week to see how the meeting went.

Best regards, Jim

James H. McTurnan Vice President, Legal ShawCor Ltd. 25 Bethridge Road Toronto, Ontario M9W 1M7

Tel: 416 744-5531 (direct)

Fax: 416 744-9989

e-mail: jmcturnan@shawcor.com

Barbara Azar Daris
Revocable Trus

### **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

### **Gans Road Preliminary Engineering Study**

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3.	What is your preferred Alignment: Yellow, Blue, Red, or Other (if other, please describe)? Why?

Barbara Azar Davis Barbara Azar Davis Revocable Trust 4655 Rock Quarry Road Columbia, MO 65201

October 17, 2008

Dear Mr. Campbell,

Please note, this same letter also represents the interests of the Anthony L. Davis Revocable Trust.

Enclosed please find the following information that should be included in the Gans Road Preliminary Engineering Study.

- 1. The Minutes of the Boone County Board of Adjustment granting approval of the revised easement for the Country Day Subdivision.
- 2. A letter dated April 10, 2008 to Mr. Bob Gilbert, Project manager for Bartlett and West Engineers that expressed our interests and concerns. (*Please see that the attached letter as it has been a matter of record since April of '08.*)

### Comments:

At the Public Hearing on October 6, 2008, three preliminary, color-coded drawings were presented for consideration. I am only addressing the proposed alignments that will have a direct effect on the property that is owned by my Trust and the Trust of my spouse. It is worth noting that our property accounts for almost 25% of all of the property included in the Study. Consequently, this has a major impact on our property.

The Blue alignment appears to essentially maintain the existing road alignment and it addresses some of the provisions that will be necessary to finalize before any actual road location can be determined. Of the three options, this is my selection.

My spouse and I have lived on and owned this property for more than 25 years and we have always anticipated a major improvement of Gans Road. To this end we have always been actively involved in discussion and planning with both the City of Columbia and the County. We have been especially involved over the past year. And during the last 9 months, we've worked with Bartlett and West to express our concerns regarding the upcoming plans. We have paid close attention to the Preliminary Engineering Study and plan to remain very involved.

Thank you for your time and again we request that you review the materials that are included with this letter.

Regards

Barbara Azar Davis of the Barbara Azar Davis Revocable Trust

Bob Gilbert, P.E. April 10, 2008

Bartlett & West

1719 Southridge Drive

Suite 100

Jefferson City, MO 65109-4000

Anthony & Barbara Davis

4655 Rock Quarry Road

Columbia, MO 65201

Dear Mr. Gilbert,

Thank you for the prompt return of the two survey copies of our properties that borders the Gans Road corridor.

The first property borders the south side of Gans Road from Bearfield Road toward Rock Quarry Road for a continuous distance of 2500 feet, more or less.

The second property borders the north side of Gans Road from Rock Quarry Road going west for a continuous distance of 1500 feet, more or less.

Both of these properties have a zoning classification that is different from all other property that borders the Gans Road corridor from Bearfield Road to Providence Road. Our property is zoned RS Residential whereas the rest of the property along the Gans corridor (to the best of my knowledge) is zoned Agricultural.

We purchased this property and have lived in this immediate area for more than 25 years. Both properties were zoned RS Residential prior to our purchase. We understand that the highest value is for Residential development.

I would like to follow up on the points that we discussed when we met in March. I appreciate the invitation to provide history and information to help determine the best alignment for the roadway.

The first property runs 2500 feet east of Rock Quarry and on the south side of Gans. Provisions should be made for but not limited to the following:

- 1. Protect the lake that has an easement variance noted on the County Subdivision Plat. This decision was made by County officials to protect the lake when the improvements to Gans Road occur.
- 2. Country Day School has a double access entry with periods of high traffic use that should continue to intersect at the present location on Gans Road.
- 3. The border from Bearfield Road to the Country Day School entrance fronts 8 acres that will require adequate access from Gans Road for future residential development. When we met the possibility was discussed that the intersection of Bearfield and Gans Roads needs to be aligned and moved to the north in order to improve access to this tract of land.

The second property runs 1500 feet west of Rock Quarry Road and on the north side of Gans Road. Provisions should be made for but not limited to the following:

- 1. Since this property is designated RS Residential, it will require adequate access to Gans Road to accommodate future residential development. I look forward to further discussion to determine access locations.
- 2. This corridor provides easement and access to an existing home on 11 acres that enjoys the same RS Residential zoning. Provisions for access for future development of that tract of land -- traffic, etc.-- should be incorporated at the time that Gans Road is realigned.

We expect that the alignment of Gans Road will maintain the current and future use of our properties as was intended when we purchased them with the existing favorable zoning. The proposed realignment should not restrict in any way our current personal and business access nor should it limit the designated and permitted County zoning guidelines for property use.

We look forward to sharing information with you and other interested parties on April 28. If you need to reach me before that meeting, please give me a call at home (573 449 4970) or by cell phone (573 289 6600).

Regards,

nr Davis Barbara A. Davis

Anthuy C. Dawi Revocable Trust

### **COMMENT FORM**

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Anthony Davis Anthony L. Davis Revocable Trust 4655 Rock Quarry Road Columbia, MO 65201

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Thank you for your time and again we request that you review the materials that are included with this letter.

Anthony L. Davis of the Anthony L. Davis Revocable Trust

Bob Gilbert, P.E. April 10, 2008

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Suite 100

Jefferson City, MO 65109-4000

Anthony & Barbara Davis

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Regards,

Barbara A. Davis

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OCT - 9 2008

B&W, INC.

# **COMMENT FORM**

# **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

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<ol><li>Are you a prop</li></ol>	erty owner withir	n the project corridor?XYes	_No		
Additional Comments:					
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Lleage / Mong	meny				
Address		, A			
5205 S. H	wy 163	Columbia, 170 6	5203		
Phone Number/Email A	Address				
573-449	9-6974				
Signature <u>Jeorge</u>	Mongome	Date 10/7/08			

If mailing the comment form, please send to :

Mr. Derin Campbell, P.E. Manager, Design and Construction Boone County Public Works 5551 Highway 63 South Columbia, MO 65201

## **GANS ROAD COMMENTS**

Median blocking access to my driveway/property is problematic. No access into property when westbound on Gans Road. Possible solutions to be considered are listed below and could be used in combination:

Pull nose of median to the east to allow full access at my driveway

Eliminate median completely from the western end of project

Purchase access rights (to some extent ) from the property to the north (Smith property) so that excessive trips ie turning movements would not occur and medians intended function is eliminated

Make a break in the median to allow left ins, a three quarter access .

The owners of the Smith Tract have made it known they wish to develop their property commercially. They have submitted a planned commercial request in 1999 which was rejected by the City Planning and Zoning Commission. (they had also planned to annex and develop in the City. The City has an established practice of requiring planned zoning along major corridors. With planned zoning access can be controlled without cost to the City/County. So another option is to eliminate the median, not negatively affecting access to my property, and control access to the Smith tract through planned zoning. By the way the Smith tract is now zoned about half single family residential and half multifamily residential.

Current proposed median is not acceptable. Please include me in talks and discussions as alternates are looked into. Thank You.

## **COMMENT FORM**

# **PUBLIC INFORMATION MEETING**

Rock Bridge Elementary School 6:30 - 8:30 p.m., October 7, 2008

# **Gans Road Preliminary Engineering Study**

Individual citizens or community groups and organizations are encouraged to submit written comments regarding the project discussed at the public informational meeting.

You may make your comments on this form and leave it with City/County personnel at the meeting, or mail it within 10 days to the address below.

1.	Was the information and discussion tonight helpful in understanding the project issues and solutions? Why or Why not?
2.	Are there other project issues or solutions that should be considered? Please explain.
	No access to my white way from West bound direction is very under rable. The proposed median blocks both left turn in and out of my drive was Should by my neighbor at 5205 Silltwy 163,
3.	What is your preferred Alignment: Yellow, Blue, Red, or Other (if other, please describe)? Why?  Red alignment appears to reduce the nounclabent
	Also ned seems to avoid what lands and cachelogical Sites better, and the shorter bridge must be
	Cheapen?

	Your comments can be anonymous, but we would appreciate having your contact information in case the study team needs to make contact with you.		
	NAME Leonard H. Manson	Organization (if any)	
	Address		
	52015: Hwy 163, Col.	<u>, MO 65203-9328</u>	
	5201 Si Hwy 163, Col.  Phone Number/Email Address e-mail N	nanson Lömissouriledu	
#:	573-449-8151 W:573-886		
	Signature Jewind H. Manson III	Date <u>29 - 007 - 08</u>	
	If mailing the comment form, please send to:		

Mr. Derin Campbell, P.E.

5551 Highway 63 South Columbia, MO 65201

Manager, Design and Construction Boone County Public Works

4. Are you a property owner within the project corridor? Yes No

**Additional Comments:** 

OCT 3 1 2008

October 29, 2008

Derin Campbell **Boone County Public Works** 5551 Hwy 63 South Columbia, MO. 65201

RECEIVED NOV 0 4 2008 B&W, INC.

Dear Mr. Campbell,

It was a pleasure to speak with you on the phone, and I appreciate your time and effort in sending me the information related to the Gans Road (Providence to Bearfield Road ) project. I have had time to look it over and fill out the comment form you requested (enclosed). Please keep me informed of future meetings, or changes to the direction of the project.

My overall impression of the project is that it appears very well though out and includes options that appear to minimize impact to the fragile environment, while maximizing access by pedestrian, bike, and motor vehicle. At first look I would choose the "red alignment" option because it reduces the number of access points to the traffic circle nearest my house and because it avoids the wetlands and archeological sites identified on the map you provided.

I do have a significant concern related to the proposed median which limits access options to my property and home. I believe it would be a significant inconvenience to be limited to "right in - right out" drive way access with no access from the east, while traveling west on the new Gans Road. I would hope that some accommodation could be made to allow the full access I currently have to my shared driveway. While I appreciate the function of the median, I would hope that it could simply be reduced to end slightly to the east of my drive, or have a cutout allowing full access similar to the one at the exit from Rock Bridge Elementary School.

Thanks again for your time on the phone and the information you provided. Again please do keep me informed of progress and option related to the project.

4. Maison TU

Sincerely,

Leonard H Manson III 5201South Highway 163 Columbia, MO 65203-9328

Enc: I (comment form)

CC: NATAUR

BOB: PROJECT FILE

# **COLUMBIA MISSOURIAN**

# Gans Road extension plans will involve landowners, public

By Amanda Woytus September 24, 2008 | 6:09 p.m. CDT

Pecan farmer, owner of Civil War-era home unsure of potential impact.

George Montgomery, a local pecan farmer, might have to say goodbye to a few of his 200 pecan trees and welcome a new extension of Gans Road in their place.

Montgomery is one of several landowners who could be directly affected by the Gans Road extension, which will connect Providence and Bearfield roads. A retired chief engineer for the Columbia Public Works Department, Montgomery has designed many roads for Columbia over the course of his career. Since retiring, however, pecan farming is his source of income. But now his trees might fall within the direct line of the road, which city and county officials plan to establish as a major east-west thoroughfare between U.S. 63 and Providence Road.

Montgomery's 10 acres of property along Missouri 163 is right next door to Rock Bridge Elementary School. The brick house with brown trim where Montgomery lives with his wife, Lynn, also features numerous rows of lean, identical brown and green pecan trees, some of which he planted 20 years ago as saplings. They still will have the capacity to produce pecans for at least 100 more years, he said.

Montgomery, who mostly sells the nuts to individuals, does all the work by himself.

"The work is year-round," he said, and the pruning, mowing, trimming, irrigation and pest control keeps him busy. With harvest season approaching and continuing through November, Montgomery can expect to spend a minimum of 16 hours a day in the next six to eight weeks working in his pecan grove.

"You pretty much have to be out in the orchard every day," Montgomery said.

The extension of Gans Road, however, could cost Montgomery a lot of money in lost pecan production. Because a specific plan for the extension has not yet been decided, though, the extent of the impact remains unknown to him.

Other landowners are also undecided about how the expansion will affect their properties. Henry Hager, a professor emeritus of journalism at MU, lives across the road from Montgomery on 1.5 acres.. Like his pecan-growing neighbor, Hager's property also has an atypical feature on his property.

"What's interesting about the house is that it was built during the Civil War," Hager said.

Tucked away on a gravel road only wide enough for one car to pass and surrounded by trees, is the Hager's 1863 white-sided farmhouse. When he and his wife, Laura, bought the house in 1985, it was

already restored and in good enough condition, and Hager chose not to remodel.

"It's was in good shape, and I think we've done a good job in keeping it up."

Like Montgomery, he is unsure how the new Gans Road will affect his property. But the Hagers and their neighbors, might soon have a better idea what to expect.

Three different alignments developed by a study team for the extension will be presented in a public meeting from 6:30 to 8:30 p.m. Oct. 7 in the Rock Bridge Elementary School gymnasium.

Surrounding landowners and the public are invited to provide input on which alignment they prefer, according to a city news release. Bartlett & West, the engineering firm hired to conduct the \$132,000 study, will present the alignments, along with factors that might constrain the project.

Project constraints include steep topography, proximity of existing developments, environmental concerns related to commercial development, the difficulty of crossing Clear Creek and the ability to accommodate existing and future traffic. The study team will also be available totake questions from the public.

Each of the three possible alignments would include a road with one travel lane in each direction, a median and roundabouts at primary intersections. The differences in the three alignments occur differ between Missouri 163 and Rock Quarry Road. Two of the alignment options are located closely to one another, while the third extends farther to the north, arching around problematic topography. David Mink, director of Boone County Public Works, said a plan would probably selected by the end of the year.

Montgomery and Hager plan to attend the upcoming meeting to see the different plans and to assess the possible impacts on their property.

The county is trying to involve the public as much as possible in the selection of an alignment, Mink said. In some cases, the county has been working with landowners one-on-one to avoid or minimize any impact that might occur. Hager said he greatly appreciates the effort the county has made to allow landowners and the public to participate and be a part of the decision.

In a meeting last April, members of the public were asked to identify possible issues related to the project, Bartlett & West project manager Bob Gilbert said. Although the alternative alignments were not yet created, the public was asked to look at the topography, utilities and existing developments and give feedback.

"Generally, we heard about the impact to the environment and the road proximity to Rock Bridge State Park," Gilbert said. "Residents were also concerned about managing access points along the road."

Both Montgomery and Hager attended the April meeting to learn about the study and provide input. Based on what he saw in April, Montgomery said he has mixed feelings on the project. He agrees the extension will eventually be needed, but the new road could come at a cost to him.

"I don't know if I'm for or against it," he said.

Residents also expressed concern about the roadway becoming a commercial corridor and becoming too congested.

"The integrity and character of the land is valuable," Gilbert said.

Montgomery, speaking from his experience with the Public Works Department, said there are underlying issues that accompany the extension of a major roadway. More specifically, when a major road is built, development is sure to follow, such as the commercial development that accompanied the extension of Forum Boulevard and Grindstone Parkway. Along the proposed Gans Road extension, commercial building could potentially be built near Rock Bridge Memorial State Park and the Gans Creek watershed.

"This type of development may not be appropriate," Montgomery said, adding that the city and county should adopt measures now to address the issue.

The alignment proposals contain features that address some of these issues the public has voiced. Onelane roads with medians are designed to limit access and avoid congestion, while roundabouts allow drivers to make U-turns. The landscaped median, not a common feature in Columbia roadways, is intended to address environmental concerns. The road will be pitched toward the median, Gilbert said, so that rainwater will flow from the roads and enhance the quality of storm water runoff.

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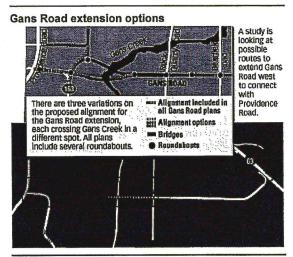
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# Road plan puts up speed bump Gans design would hinder development.

By JODIE JACKSON JR. of the Tribune's staff Published Wednesday, October 8, 2008



Lora Wegman graphic

Engineers unveiled a proposed extension of Gans Road west to Providence Road that aims to limit development in the rapidly growing area just south of the Columbia city limits.

Three alignment options presented last night during an open house for the project at Rock Bridge Elementary School have a series of roundabouts that would limit access and steady traffic flow. Engineer Bob Gilbert said the roundabouts are less expensive to build and maintain than signal-controlled intersections.

The design is a response to public comment in the spring from residents who were concerned that the Gans extension could encourage commercial development and diminish their quality of life in the environmentally sensitive area.

"To me, it looks like a good study," Boone County Presiding Commissioner Ken Pearson said. "It's responsive to the concems" that were expressed in April.

Two of the three alignment alternatives call for five roundabouts on the nearly 9,000 foot corridor. A third option, the "red" alternative preferred by engineers, has six roundabouts, or one every quarter mile. The estimated project costs range from \$14.7 million for the "red" option to just more than \$16 million for the "blue" option. A "yellow" option would cost \$15.9 million.

County commissioners previewed the plans yesterday afternoon. Gilbert, chief consulting engineer with the Jefferson City firm Bartlett & West, told commissioners that comments from April's public meeting weighed heavily in selecting alignment alternatives for the Gans Road expansion plans. Those comments focused on environmental concerns and the area's proximity to Rock Bridge Memorial State Park, as well as imminent commercial development.

"It was pretty clear from the comments that this was not seen as another commercial corridor," Gilbert said. Any potential commercial or residential development was not a focus of the engineering study, he said, "because



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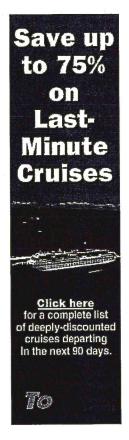
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that depends on the property owners. The main goal of the project is to decide on alignment."

About 90 percent of the corridor would be a two-lane, divided roadway with a "native plant" median all the way to Bearfield Road. Each alternative shows a bridge over Clear Creek, along with sidewalks and bike paths on both lanes.

The city and county public works departments joined forces to interview and select Bartlett & West to study alternatives for connecting Providence with Gans where it joins Bearfield Road just west the Bristol Lake commercial and residential development.

It sits across Highway 63 from the University of Missouri's Discovery Ridge Research Park, which will connect to Bristol Lake with a new interchange. The Gans corridor, just north of Rock Bridge Memorial State Park, is part of unincorporated Boone County, and possible connection points at Providence and Bearfield roads are adjacent to Columbia city limits.

The \$132,000 study is being entirely funded by the county. The next step, after the study is completed and a preferred alignment is accepted, would be the design phase, which the city will direct. Although there are no immediate plans for construction, the study adhered to federal guidelines in case planners want to qualify for any federal funding that might be available.

The project was identified as a need by the Columbia Area Transportation Study Organization 2025 Transportation Plan.

"What I've seen so far, and what they've mailed to me, I'm in favor of," said Tom Norling, whose home sits at the corner of Rock Quarry and Gans roads. "I like the roundabouts. It would limit the speed."

Reach Jodie Jackson at (573) 815-1713 or jejackson@columbiatribune.com.





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## E E-mail P Print

# Public gets close look at Gans Road plan

Tuesday, October 7, 2008 | 10:10 p.m. CDT BY Amanda Woytus

Property owners, as well as interested members of the public, gathered in the gymnasium of Rock Bridge Elementary School on Tuesday evening to view three different options for the extension of Gans Road.

The meeting, which was open-house style, allowed members of the public to ask the study team questions about the alignments and view display boards with topics addressing the project, such as the benefits of roundabouts. Attendees were also asked to fill out comment forms, which sought opinion about preferred alignments and other issues that need to be addressed.

"The response was very positive," said David Mink, director of Boone County Public Works, "and we had a good turnout and lots of interest."

One issue of public concern about the extension was the amount of commercial development that may follow the building of a major roadway.

Bartlett & West, the engineering firm hired to design the alignments, addressed this issue by limiting access points along the roadway. The two-lane road, median and roundabouts that create limited access may control commercial development by making it less attractive to prospective developers.

"There is nothing in the plan to exclude commercial development," project manager Bob Gilbert said, "but the access plan is limited."

Dustin Riechmann, a project engineer with Crawford, Bunte and Brammeier, a firm working with Bartlett & West to tackle the issue of traffic, said that the plan is unattractive to commercial developers because the median and roundabouts make it less convenient to add access.

The hilly topography may also deter commercial developers, Riechmann added. The topography, he said is "more accommodating of residential development."

Jan Weaver, president of Friends of Rock Bridge Memorial State Park, attended the meeting and recognized the concern of commercial development. She said she thinks the road design tries to minimize the attractiveness to commercial developers, as well as help with safety. The median is discouraging to commercial development, she said.

Henry and Laura Hager, who live along Missouri 163, attended the meeting and were pleased with the alignment proposals. They said the study group seemed to take great pains to carefully plan the extension.

"It looks reasonable and makes sense," Henry Hager said. "They really sorted it all through."

"The bike lanes are really great," Laura Hager added.

Regarding commercial development, the Hagers hope it will be sensible and a combination of commercial and residential development.

Two other area landowners, Alycia McGee and Penny Scarborough, went to the meeting to see the impact of the extension on their land. The proposed road will run behind their house, but both McGee and Scarborough like the plan, especially the limited access points the roundabouts offer. Because of these features, they think the land will not be attractive to commercial developers.

Presiding Boone County Commissioner Ken Pearson attended the meeting as well and was pleased with the plan because he felt the study team was very sensitive to the area, including the Karst topography and Clear Creek. He also said that he thought Rock Bridge Memorial State Park is far enough away from the roadway that it won't have an impact on it.

With the meeting completed, the next step for the study team is to review the public comments and based on the available information, select a preferred alignment.

»Contact an editor with corrections or additional information

## Comments

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## September 17, 2008

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For more information contact: Bob Gilbert Project Manager Bartlett & West, Inc. 573.634.3181

## PUBLIC INPUT SOUGHT FOR GANS ROAD STUDY

COLUMBIA — Input is being sought from surrounding landowners and the public regarding a preferred road alignment for the Gans Road Study. A public meeting has been scheduled for Tuesday, October 7, 2008 from 6:30 to 8:30 pm and will be held in the gymnasium at the Rock Bridge Elementary School located at 5151 S. Highway 163.

An extension of Gans Road between Providence Road and Bearfield Road in southern Columbia is being studied by officials from Boone County in cooperation with officials from the City of Columbia. Gans Road is identified to extend from Providence Road to Bearfield Road in the Columbia Area Transportation Study Organization (CATSO) 2025 Transportation Plan. The study's objectives include identifying the project's constraints and determining the best alignment for the future roadway. Some of the constraints include the crossing of Clear Creek, steep topography, existing development, environmental or cultural resources, and accommodating existing and future traffic and access.

The public meeting is being scheduled so that interested parties can view the alternative alignments developed by the study team. Three alternative alignments using a roadway with one travel lane in each direction, divided by a vegetated median designed to enhance water quality of storm water runoff, and roundabouts for the primary intersection controls were developed based on the project's constraints and input gathered from the first public meeting held in April of this year. Project exhibits identifying the known project constraints and alternative alignments will be on display at the meeting, and the study team will be present to review information and accept comments from meeting attendees.