

Appendix B

I-64 Interchange and New Connector Alternatives Study Project Goals

The project goals were developed through discussions with KYTC officials, key persons/local officials interviews, public comments, resource agency comments, on-site visits, traffic records and other studies, and project team meetings. Traffic congestion from a lack of the roadway connectivity was consistently the top identified issue and concern.

Following are the project goals:

- 1) Mitigate Congestion
- 2) Connectivity of the Road and Interstate Network
- 3) Plan for the Future
- 4) Improve Safety
- 5) Environmental Preservation
- 6) Proactive and Joint Planning

These project goals are addressed below.

1) Mitigate Congestion

The goal is to reduce congestion of US 60, KY 155/KY 148, and the I-265 interchanges with US 60, I-64, and KY 155. Existing traffic congestion concerns (and the anticipated future increases) emerged as a key project issue among those interviewed and others familiar with the area roadways. The study area and the region surrounding it has been actively growing and developing for many years, with a corresponding increase in traffic volume. Existing highways and interchanges are at or near their capacity, and backups are common. Public officials expressed a growing concern that the ever-increasing traffic volumes will soon adversely impact roadway and interchange functionality even more, thereby generating additional congestion concerns. A new I-64 interchange with a connector road would provide additional capacity to the existing road network. The increased capacity and interstate access would relieve some of the pressure on the existing roadways and interchanges, thereby improving their effectiveness to service the region.

2) Connectivity of the Road and Interstate Network

The goal is to improve the local road network and its connectivity to the interstate network to provide travel options for local people seeking access to the employment, educational, health care, retail, and other travel destination. Improving the local road network servicing the area, and its interstate access, is a key goal of the proposed project, and was strongly endorsed by local officials and others familiar with existing conditions. There is no access to the existing I-64 interstate for approximately 9-miles between I-265 and KY 1848. This is one of the larger gaps in access to an interstate highway anywhere in the state. The study area is situated at approximately the midpoint of this length, near the periphery of a rapidly growing region of eastern Jefferson County. The study area and surrounding area, especially to the

west, is projected to continue its rapid growth and development. Commuters using the existing road network are provided limited options for east-west travel; north-south travel options are even more restricted. Specifically, bottlenecks occur at the existing I-265/KY 155 (Taylorsville Road) interchange and the I-265/US 60 (Shelbyville Road) interchange. These are the only two nearby points of access to the interstate network for the study area and beyond. These two interchanges and approach roads are already heavily congested, with backups routinely occurring. These interchanges and intersections service a region much larger than the study area, and have met or exceeded their original design capacity. A new I-64 interchange and connector road would add additional capacity, taking pressure off these existing facilities.

While local citizens expressed a strong desire to preserve the area's rural character and minimize impacts to existing property and resources, the lack of connectivity and interstate access was also considered a hindrance to meeting the travel needs of the area. Improving connectivity would play an important role in serving not only the existing transportation needs but also the region's future growth and development, projected traffic demands, and access to emergency services, jobs, health care, education, retail, and other travel designations in the region. Local officials and the public generally viewed a new I-64 interchange and connector road as necessary to add additional capacity and take pressure off the existing facilities.

Louisville and Shelbyville are regional economic activity, employment, health care, and educational centers. I-64 is the major interstate connector between Louisville Metro and Shelbyville, and to other destinations beyond; while US 60 and KY 155/KY 148 are the major state and county connector roads. Commuters in and surrounding the study area have limited opportunities for other north-south, and east-west travel. Consequently, all three roadways attract a substantial amount of commuter, employee, and commercial traffic from throughout Jefferson County and Shelby County.. Because I-64 cannot be accessed between I-265 and KY 1848, traffic proceeds along the local road network toward the I-64 interchanges, creating a funneling effect and generating heavy traffic congestion on major roads and at the interchanges. A new I-64 interchange and connector road would provide an additional access point to I-64, relieve traffic congestion pressure on local major roadways and interstate interchanges, thereby, improving local commuters' access to the opportunities available in the urban activity centers.

3) Plan for the Future

The goal is to provide a facility that is capable of serving recent growth, and sustaining current and projected (year 2030) traffic demands. The study area, and much of the area surrounding it, has experienced, and is expected to continue to experience, continual growth. Multiple subdivisions are already established in the north, with others are under construction or planned throughout the area. At least two new major subdivisions are planned for the heart of the study area. Many existing parcels are for sale, and the area is already zoned for R4 (approximately 4 single family dwellings per acre). Located outside the study area to the east and west, especially in the north along the Shelbyville Road corridor, multiple residential subdivisions are already well established, rapidly expanding, and more are planned. Louisville Metro, along with several non-profit organizations, are acquiring thousands of acres of land along Floyds Fork to construct a multi-mile, multi-use recreational area that will extend between US 31E and US 60. This effort is changing the landscape, and generating a significant amount of interest in residential development along this corridor. Traffic forecasts

indicate traffic will continually increase through the year 2030 on every major and minor road in the area.

4) Improve Safety

This goal is to provide a facility that meets current design standards, which is used to divert traffic from the substandard roads to the interstate network. Statistically, both the proposed connector and the interstate have lower crash rates than rural surface streets. Another element of improved safety is the improvement of emergency response times, both on I-64 and the land uses in the study area.

The sub-standard geometrics of existing roadways is also a major safety concern, especially as the area continues to develop. As the area develops and traffic increases, then driver and public safety are expected to decrease, while emergency response times/access are expected to increase. Except for the major roads (*i.e.*, I-64, US 60, KY 155/KY 148), other existing roads are very narrow two-lane rural roads with no shoulders, winding through rolling terrain with sharp turns/curves and steep grades. These roads do not meet current design standards, and have poor vertical and horizontal geometrics. The driver's sight distance is frequently limited or obstructed by terrain features such as hills and curves, and other restrictions.

Crash statistics from the "Analysis of Traffic Crash Data in Kentucky (1998-2002) and (2002-2006);" by the Kentucky Transportation Center shows, as can be seen in Table B.1, that interstates and parkways have lower crash rates than other types of facilities. Therefore, any of the Build Alternatives are expected to result in lower crash rates over the Do Nothing alternative. Further, Table B.2 shows that the higher the functional classification in rural areas the lower the crash rate.

Table B.1: Statewide Crash Rates by Highway Type Classification

Highway Type	Rural (1998-2002)	Rural (2002-2006)	Urban (1998-2002)	Urban (2002-2006)
Interstate	49	52	91	94
Parkway	58	63	105	111
Four-Lane Divided	124	116	295	277
Four-Lane Undivided	267	245	484	445
Two-Lane	248	230	290	263
All	172	160	247	236

Table B.2: Statewide Crash Rates by Highway Functional Classification

Highway Type	1998-2002	2002-2006
Rural Interstate	39	42
Rural Principal Arterial	102	92
Rural Minor Arterial	191	177
Rural Major Collector	213	206
Rural Minor Collector	218	224

Rural Local	175	189
Urban Interstate	73	75
Urban Freeway	80	100
Urban Principal Arterial	327	297
Urban Minor Arterial	270	242
Urban Collector	130	106
Urban Local	190	230

Because the crash rates on freeways are lower than other functional class facilities, the greater the amount of total travel on these facilities the greater the improvement in safety. Table 7 shows that the western corridor of build alternatives attracts the most traffic to I-64 from lower functional class facilities. Thus, the western corridor of alignments would be the most effective in improving safety.

Because the shift of traffic to interstates is not a conclusive performance measure in demonstrating an improvement in safety over the No Build Condition, geometric features of the Build Alternatives compared to the No Build Condition must be examined relative to their effectiveness in improving safety. Median width and access control have been correlated to crash rates as shown in Table B.3. Based on this data, the introduction of a median and an increase in the median width results in lower crash rates. While a facility with full access control (i.e., I-64) has the lowest crash rate, the introduction of partial access control for the proposed connector road would be expected to result in a 25 percent to 35 percent reduction in the crash rate over the existing conditions.

Table B.3: Statewide Crash Rates by Median Type and Access Control

Median Type (rural multi-lane roads)	1998-2002	2002-2006
Undivided	163	143
Divided, median less than 30 feet, no median barrier	102	103
Divided, median greater than 30 feet, no median barrier	51	61
Access Control	1998-2002	2002-2006
Full	70	75
Partial	222	183
None	293	271

Emergency response is also a safety issue for two different areas: I-64 itself and the land uses in the area, especially south of I-64. Fire and emergency response service in the study area and on I-64 is currently jointly provided by the Eastwood and Simpsonville Fire Departments under a mutual aid agreement. Access to crashes/incidents on I-64, and to properties south of I-64, is very limited. Response to I-64 crashes can only be accomplished through using US 60 and relatively long, circuitous routes via the interchanges at I-265 or KY 1848, and then driving additional miles to the incident site. Depending upon whether the incident is located on the eastbound or westbound I-64

side, and prevailing weather conditions, additional travel time by the responding unit may be required to reach the incident site. Emergency incidents occurring during peak traffic congestion events (e.g., morning or evening commuter traffic, or I-64 traffic diversions onto US 60) render a timely and rapid emergency response very difficult. The return trip to the department's home station usually requires driving to the next interchange to exit I-64 and then re-enter in the opposite direction (round trips of 20-25 miles are common). Additionally, this nine-mile stretch of I-64 itself has few crossing points and thus acts as a barrier to hinder north-south travel. A new I-64 interchange in the study area would provide emergency response crews convenient and rapid access to I-64 incidents, drastically reducing both distance traveled and response time. Additionally, a new interchange and connector road would also improve access to properties located south of I-64. Emergency response to these locations within the study area is hampered by limited access points, sub-standard roadways, limited connectivity, and circuitous routes.

5) *Environmental Preservation*

This goal is in regard to identifying alternative locations that avoid or minimize impacts to community resources, natural resources, and historic properties and districts. Historic cultural resources in the area are considered significant links to the past and represent a rich cultural heritage. Discussions with local officials and citizens indicated a desire to preserve these areas and the traditions they represent. Local officials and citizens also expressed a desire to avoid or minimize impacting established residential neighborhoods and communities. Efforts will be made to avoid community impacts, and to minimize property impacts in general by following property lines to the maximum extent possible. Natural resources are also recognized as valuable commodities, important not only to the communities themselves, but to the health of the natural environment. State and federal guidelines will be followed to minimize impacts to the natural resources.

6) *Proactive and Joint Planning*

This goal is in regard to providing a roadway network consistent with local and regional land use, community, and transportation plans, and identifying a preferred alternative corridor local officials can preserve before development and land use changes occur in the study area.

Local, county, and regional land use plans and transportation plans were consulted in the development of this alternatives planning study. Elected officials at various government levels, as well as county planning and design representatives, were consulted to ensure the alternatives planning study was complementary to future plans.

The proposed new interchange and connector road is situated in a rapidly developing area, which, in turn, has generated the need for the project. The area is developing so rapidly that, in order to minimize residential and property impacts, facilitate an optimal alignment, and balance future associated expenses, it is important to identify and preserve a preferred alternative corridor early on. Identifying and preserving a preferred corridor now will permit development to continue in a fashion harmonious with a future interchange and connector road, which would ultimately be less disruptive to area residents. Several elected officials also remarked about the need for a sense of urgency to identify and preserve a preferred alternative corridor to avoid "missing opportunities" to reduce costs and minimize impacts, while simultaneously serving the public good by providing an essential road network.