

### **III. PROJECT PURPOSE AND NEED**

The general purpose of this project is to improve safety throughout the study area. Due to the dual nature of the project, each distinct component of the project – the rockfall hazard and the intersection improvements – relates to the primary goal independently. The following sections elaborate on the project purpose and need for each of these components.

#### **A. Purpose of Rockfall Catchment Component**

Improving safety is the primary purpose of the rockfall component of this project. Along KY 1426 between KY 1460 and Combs Drive, rocks and other debris routinely erode and fall from an existing rock cut located 12.5-22 feet east of the edge of pavement. In 2007, this portion of KY 1426 had to be closed due to a rockfall event. Maintenance forces routinely must remove fallen stones along the route.

While improving safety, the additional goals should be supported by the rockfall component. These include (1) avoiding negative operational impacts along KY 1426 (e.g. road/lane closures); (2) minimizing negative environmental impacts; (3) avoiding impacts to adjacent businesses; and (4) providing an aesthetically pleasing solution.

#### **B. Purpose of Intersection Improvement Component**

Improving safety is also the primary purpose of the intersection improvement component of the project. Crashes occur on the study roadways at higher frequencies than on similar roads throughout the state. Both KY 1460 and KY 1426 south of the KY 1460 intersection exhibit a CRF greater than 1.00. A 1/10-mile spot occurs on KY 1426 and includes the intersections with Huffman Avenue/Summit Drive and KY 1460; this spot has a CRF of 2.47. Within the identified high-CRF spot, 21 of 27 reported crashes involve a vehicle stopping on the mainline, resulting in either a rear end crash or a second vehicle being forced to depart the driving lane to avoid impact.

Additional goals supplement the primary purpose – improving safety – for the intersection component of this study. These goals, discussed in the following subsections, include (1) improving traffic operations; (2) providing adequate storage for school traffic queues; (3) preserving access to surrounding streets and driveways; and (4) minimizing environmental impacts.

##### **1. Improved Traffic Operations**

High volumes of traffic utilize KY 1426 during peak AM and PM hours and cause the roadway to operate under congested conditions. Closely spaced signalized intersections increase delay time and vehicle queue lengths. Vehicle queues are also reported to occur along KY 1460, particularly during the AM peak hour as traffic volumes accessing Pikeville Elementary School are highest. Improvements to the roadway network should focus on improving vehicle traffic flow in the network, concentrating on providing arterial benefits along KY 1426 to service high through volumes.

##### **2. Access To Surrounding Streets and Driveways**

A number of local streets and businesses currently rely on KY 1426 for access, directly or indirectly. Summit Drive, KY 1460, Huffman Avenue, and Combs Avenue, in addition to commercial entrances, are reached via KY 1426. This access should be maintained before, during, and after any future phases of the project.

**3. Adequate Storage for School Queues**

The existing access road to Pikeville Elementary School provides 2,000 feet of storage for vehicles dropping off and picking up students. Any roadway improvements should put back at least this length of storage so that the school queue does not create additional impacts on other roadways.

**4. Environmental Impacts**

Environmental impacts should be avoided or minimized if at all possible. Chloe Creek runs alongside the study area roads, so any changes to the road may have potential negative impacts.