

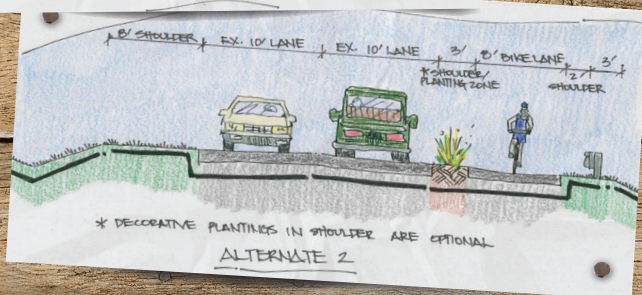
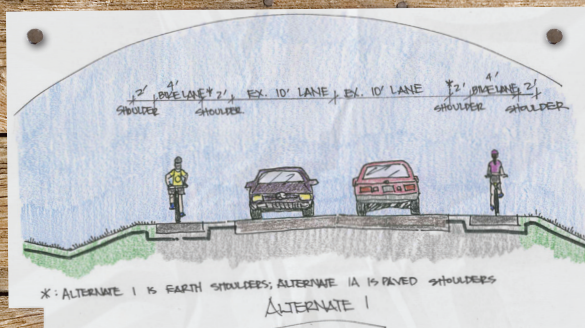


## KY 109

from Old Hospital Road to Old KY 398 Road

# Final Bicycle Feasibility Study

November 2013



“State officials  
have named  
Dawson Springs  
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1<sup>st</sup> Trail Town.”

Posted on May 8, 2013 at 6:03 AM  
Dawson Springs, KY  
(AP) Associated Press

**KY 109**  
**from Old Hospital Road to Old KY 398 Road**  
**Christian County, KY**

**BICYCLE FEASIBILITY STUDY**



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| KY 109

**Final**  
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## EXECUTIVE SUMMARY

The city of Dawson Springs, located in western Kentucky (see Exhibit 1, Appendix A), historically has been a destination mineral springs resort community known throughout the South for healthy and recreational lifestyles. Continuing the tradition of promoting healthy lifestyles, among the city's notable features today is its system of trails and recreation areas. Toward the goal of expanding its existing trail facilities and access to recreational areas, city officials are focusing on creating bicycle facilities to connect the city to local parks and natural areas for the benefit of community residents and visitors.

The purpose of this study is to determine the feasibility of providing a safe and cost effective bicycle facility along approximately 3.7 miles of KY 109, south from Old Hospital Road (milepoint 33.4), just south of the Dawson Springs city limit to Old KY 398 Road (milepoint 29.7) in Christian County. The completion of the project would provide a major link in the bicycle network in and around Dawson Springs by connecting the city to near the Pennyryle Forest State Resort Park in the heart of the Pennyryle Forest.

There are three primary alignment concepts—Alternatives 1, 1A, and 2, with varying typical sections. Each alternative provides for a “verge” of varying widths. A verge is the area of separation between the existing pavement and the bicycle path.

**Alternatives 1 and 1A** are “on-road” (i.e., on KY 109) bicycle lane alternatives that would expand the KY 109 roadway width to accommodate a four-foot wide, one-way bike lane on both sides of the road and adjacent to each travel lane. These alternatives are more traditional bicycle lanes.

**Alternative 2** is also an “on-road” alternative, but unlike Alternatives 1 and 1A, it provides for a two-way bike lane located on one side of KY 109. Additionally, this alternative concept allows for several spot alignment options (2A-2E) located off of, but parallel to, KY 109.

After a review of alternative concepts and preliminary cost estimates, a discussion was conducted regarding possible funding for the bicycle facility. Alternative 2 with the off-road options may be eligible for Recreation Trails Program funding. If the project was selected, the grant could support 100% of the construction costs; design, right of way and utility relocation costs would need to be funded separately. Design, right of way, and utility relocation funds could be supported by additional project funds. The bicycle facility may also be eligible for Transportation Alternatives funding.

Alternative 2 with off-road options 2A, 2B, 2C, 2D and 2E and aesthetic plantings was selected as the “**preferred alternative**” by the Project Team. This alternative was selected because it is (1) safer for the cyclists, (2) provides an ideal location for crossing the roadway, (3) is more in keeping with the character of the area, and (4) would be expected to increase bicycle use.



## 1.0 PURPOSE OF THE STUDY

This study examines options for constructing a bicycle facility from the south side of Dawson Springs, in Hopkins County, south along the KY 109 corridor for approximately 3.7 miles to Old KY 398 Road, which provides access to the Pennyryle Forest State Park, in Christian County, Kentucky.

The city of Dawson Springs, located in western Kentucky (see Exhibit 1, Appendix A), historically has been a destination mineral springs resort community known throughout the South for healthy and recreational lifestyles. Continuing the tradition of promoting healthy lifestyles, among the city's notable features today is its system of trails and recreation areas. Toward the goal of expanding its existing trail facilities and access to recreational areas, city officials are focusing on creating bicycle facilities to connect the city to local parks and natural areas for the benefit of community residents and visitors.

Given that community-wide objective, the purpose of this study is to determine the feasibility of providing a safe and cost effective bicycle facility along approximately 3.7 miles of KY 109, south from Old Hospital Road (milepoint 33.4), just south of the Dawson Springs city limit to Old KY 398 Road (milepoint 29.7) in Christian County.

The completion of this project would provide a major link in the bicycle network in and around Dawson Springs by connecting the city to near the Pennyryle Forest State Resort Park in the heart of the Pennyryle Forest.

### Northern Terminus

The northern terminus of this project is Old Hospital Road because it is an established bicycle route into the southern limits of Dawson Springs (Figure 1). Old Hospital Road is closed to vehicular traffic and for the last/northern most 0.4-mile (to KY 109) it shares the alignment of the Pennyryle Nature Trail (PNT). The PNT begins on the east side of KY 109 with a trailhead and a parking lot. Bicycle use from the trailhead east for the initial 0.4 mile is permitted. At the 0.4-milepoint, the trail, which is for foot traffic only, separates from Old Hospital Road. Therefore one could ride a bike from the trailhead, along Old Hospital Road south to the proposed KY 109 bicycle facility.

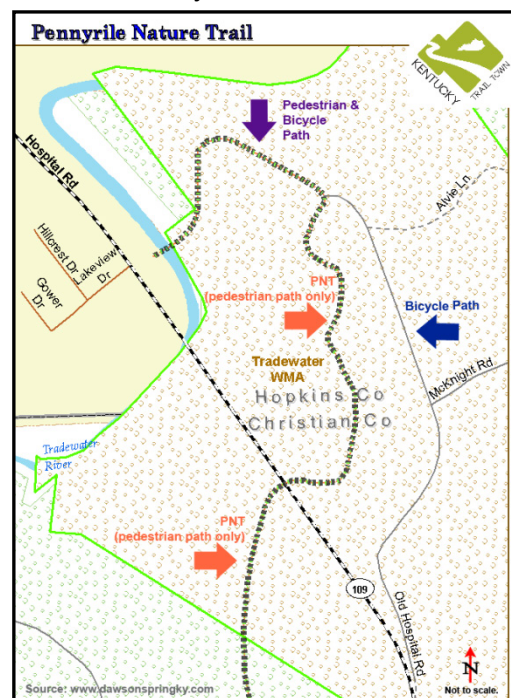


Figure 1: Map of the Northern Terminus and Existing Bicycle Facility into Dawson Springs



## Southern Terminus

The southern terminus of the project is Old KY 398 Road at milepost 29.7 (Figures 2 and 3). This road is 0.5-mile long and ends at KY 398 (Bainbridge Road), which leads to the State Park, through the State Forest. Both Old KY 398 Road and KY 398 are two-lane, rural, low volume routes (the average daily traffic volume on KY 398 was only 49 in 2012).

The goal is to provide a bicycle facility toward the State Park because it is the largest in the area and features hiking and bicycle trails, as well as a golf course, camping, tennis, basketball, a lodge, equine trails, and aquatic recreation on Pennyryle Lake.

## Project Scope

The tasks for this study include the following:

- Inventorying existing conditions.
- Analyzing bicycle trail alternative alignment concepts.
- Developing cost estimates.
- Participating in project meetings.
- Developing a technical report to document the study process and results.

A brief history of Dawson Springs, and descriptions of the natural and recreational areas noted above are provided in further detail in Section 2.0, Project Area Setting.



**Figure 2: Map of the Southern Terminus of the Proposed Bicycle Facility**



**Figure 3: Southern Terminus: Looking South at the Intersection of KY 109 and Old KY 398 Road**



## 2.0 PROJECT AREA SETTING

### 2.1 Dawson Springs—A Brief History

Founded in 1874 as Dawson City, the discovery of mineral springs in 1881 put the town on the map as a destination spa and resort community. Capitalizing on its new reputation, Dawson City became Dawson Springs in 1889.

Though no longer a mineral springs resort destination, today, in the words of Mayor Jenny Sewell on the city's web site, Dawson Springs is...

*...a "Very Special Place" - boasting a rich heritage as the "health resort of the upper south" in former days and offering a treasure trove of heritage tourism and recreation today. Located in the heart of the Pennyriple Region at the gateway of the Western Water Land Region of Kentucky, the city is bordered to the south by one of the largest state forests in Kentucky, the Pennyriple State Forest, a 15,000 acre forest ready to offer a vast opportunity for adventure tourism....*



Figure 4: Dawson Springs' Trail Town Status Promotional Material

The city's notable trail system garnered statewide and national recognition when, on May 9, 2013, Dawson Springs was declared Kentucky's First Trail Town.<sup>1</sup> (See the announcement, Appendix B and Figure 4.)

Dawson Springs joined other towns across the nation, including Las Vegas, Nevada, and Gatlinburg, Tennessee, in receiving that declaration. Councilwoman Rhonda Mills noted: "Dawson Springs is at an advantage over some trail towns because of the naturally occurring and previously established walking, hiking, biking, and water trails in the area."

This vision of the city's rich heritage as a health resort and its recent recognition as a leading proponent of hiking and biking trails provide the rationale for this bicycle-oriented feasibility study.

<sup>1</sup> "A Trail Town is a destination along a long-distance trail or adjacent to an extensive trail system." (Source: Kentucky Trail Towns: A How-to-Guide for Communities, p. 4. [www.kentuckytourism.com](http://www.kentuckytourism.com))



## 2.2 Pennyrile Nature Trail (PNT) at Dawson Springs



The PNT is an off-road hiking trail of over 13.5 miles connecting the Pennyrile Forest State Park Lodge and Dawson Springs. Constructed in 1998, the PNT is related to the proposed KY 109 bicycle project because they would share an alignment at the northern terminus, and both would connect Dawson Springs to the State Park. Except for the northern portion, the PNT is west of KY 109 and traverses land owned by the Kentucky Division of Forestry, the Kentucky Department of Fish

and Wildlife Resources (KDFWR), and the Kentucky Department of Parks. The trail is regularly marked (marker shown above), and the northern 0.4 mile of the trail is handicapped accessible. The northern 0.4 mile is within the City, shares the alignment of Old Hospital Road, includes a bridge over the Tradewater River, and a trailhead at KY 109 (Figure 5). Besides the northern 0.4 mile, the trail was designed for foot traffic only, to minimize soil erosion. Most of the trail is in a forest, which is managed for multiple uses such as wildlife, clean water and air, timber production, recreation, and aesthetics. The trail is considered to be moderate in difficulty due to the slopes and walking time needed.



Figure 5: The PNT trailhead at KY 109

### Pennyrile Trail Head at Dawson Springs

From the late 1800s through the early 1930s Dawson Springs was the best known health resort in the upper south. At its peak more than 40 hotels and boarding houses catered to the thousands who came to drink and bathe in its mineral waters and to enjoy its many social and recreational activities. The railroad was chiefly instrumental in their promotion of the development of Dawson Springs as a health resort. In 1901, during the 12 week peak tourism season there were 51,000 passenger train tickets sold to Dawson Springs... In 1881, W. Hamsby discovered the first mineral well that made Dawson Springs famous.... In 1898 "Springs" was added to the town's name.... The resort atmosphere attracted the Pittsburg Pirates baseball team who came (1915-1917) for spring training and to play other major league teams. In the 1960s...Lake Beshear was formed and the Western Kentucky Parkway was located to the city's northern border. Today, the 15,000 acre Pennyrile State Forest along with the Pennyrile Resort Park, Lake Beshear, Tradewater River, and the Jones Keeney/Tradewater Wildlife Reserves provide a tremendous opportunity for outdoor adventure and enjoyment and Dawson Springs is one of the few "health resort towns" in the state of Kentucky that continues to enjoy thriving commercial and residential districts.

(Source: Division of Forestry placard at Pennyrile Nature Trailhead, Dawson Springs.)



## **2.3 *Riverside (Tradewater) Park***

Riverside Park is located off KY 672 west of Dawson Springs along the Tradewater River. The park has a trail system that includes sections along Lake Beshear and sections through the state park. It has educational events for children, and its association with the Tradewater River and Lake Beshear links it to water sports such as canoeing and kayaking.

A re-created early 1900s baseball park is a featured attraction. The original facility was built in 1914 as a spring training park for the Pittsburgh Pirates. Hall of Famers Honus Wagner, Babe Ruth, "Shoeless" Joe Jackson, Casey Stengel, and Ty Cobb all played baseball in Dawson Springs. From grandstand to dugout, the entire ballpark was made completely from wood. A flood destroyed the original stadium in the 1930s; however, the park has been reconstructed according to the original blueprints, and built completely from wood.<sup>2</sup>

The city has plans to construct a bicycle facility from Dawson Springs west to Riverside Park, but that plan is separate from the bicycle project addressed in this study.

## **2.4 *Lake Beshear***

Lake Beshear is an approximately 715-acre man-made lake just south of Dawson Springs, and on the northern end of the Pennyryle State Forest. The lake is west of and generally parallel to KY 109 and the proposed bicycle facility. The PNT is located between the eastern edge of the lake and KY 109. Owned by KDFWR, the lake was open to public fishing in 1964 and is known for being one of the best fishing lakes in Kentucky. Boating access is provided at a boat ramp off County Road 672 on the west side of the lake. It is about a four mile drive from Dawson Springs to the boat ramp.

## **2.5 *Pennyryle Forest State Resort Park***

Pennyryle Forest State Resort Park is an 863-acre forest that became part of the state parks system in 1954. Surrounded by more than 14,000 acres of the Pennyryle State Forest, the park includes nature activities, mountain biking, horseback riding, canoeing, hiking, swimming, golf, tennis, camping, and connects to 40+ miles of horse trails in the Pennyryle State Forest. The park has a 24-room lodge, a swimming pool, and the 56-acre Pennyryle Lake.

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<sup>2</sup> Source: [http://www.timesleader.net/sports/pirates-have-history-heritage-on-their-side/article\\_240cef00-89cb-5074-b697-b22cb3bde039.html](http://www.timesleader.net/sports/pirates-have-history-heritage-on-their-side/article_240cef00-89cb-5074-b697-b22cb3bde039.html)



### 3.0 EXISTING CONDITIONS INVENTORY

Within the project area, beginning at Old KY 398 Road (milepoint 29.7) and heading north to Old Hospital Road (milepoint 33.4), KY 109 is classified as a Rural Major Collector and is on the State Secondary System for maintenance. KY 109 is a two-lane facility (see Figure 6) with driving lanes ranging in width from nine to eleven feet, with three-foot-wide combination shoulders, and a posted speed limit of 55 miles per hour. The most recent traffic count in KYTC's Highway Information System, conducted in 2010, is 1,167 vehicles per day. In addition, KY 109 has a truck weight class of AA (62,000 lbs). KY 109 is part of the Midland Kentucky Bike Tour, which stretches across the Commonwealth from west to east. Highway data regarding KY 109 is presented in tabular format in Appendix C.



Figure 6: Typical Views of KY 109

### 4.0 BICYCLE FACILITY ALTERNATIVES

The purpose of this report is to address the feasibility of providing approximately 3.7 miles of bicycle facility along KY 109 from just south of Dawson Springs to Old KY 398 Road. There are three primary alignment concepts—Alternatives 1, 1A, and 2, with varying typical sections. Each alternative provides for a “verge” of varying widths. A verge is the area of separation between the existing pavement and the bicycle path.



**Alternatives 1 and 1A** are “on-road” (i.e., on KY 109) bicycle lane alternatives that would expand the KY 109 roadway width to accommodate a four-foot wide, one-way bike lane on both sides of the road and adjacent to each travel lane. These alternatives are more traditional bicycle lanes.

**Alternative 2** is also an “on-road” alternative, but it provides for a two-way bike lane located on only one side of KY 109. Additionally, this alternative concept allows for several spot alignment options (2A-2E) located off of, but parallel to, KY 109, as described in Section 4.2.

Typical sections and construction cost estimates are provided in this report for evaluating all of the proposed improvement alternatives. Cost estimates include a bicycle path comprised of a 6” layer of DGA (dense graded aggregate) with a 2” bituminous surface. Also, paved entrances were estimated extending back 10 feet from existing KY 109.

#### 4.1 **Alternative Concepts and Cost Estimates**

**Alternative 1** follows the KY 109 alignment from Old KY 398 Road (milepoint 29.7), north 3.7 miles to Old Hospital Road (milepoint 33.4). As shown in the typical section (Figure 7), Alternative 1 provides a four-foot-wide, one-way bike lane on both sides of KY 109, with a two-foot verge from the existing edge of pavement and within the existing right-of-way of KY 109. The verge (two-foot-wide separation) would be earth/grass. Alternative 1 is estimated to have a total cost of \$522,000.

**Alternative 1A** is similar to Alternative 1 with one exception: the verge (area between the edge of shoulder and the left edge of the bicycle lanes) would be paved. Alternative

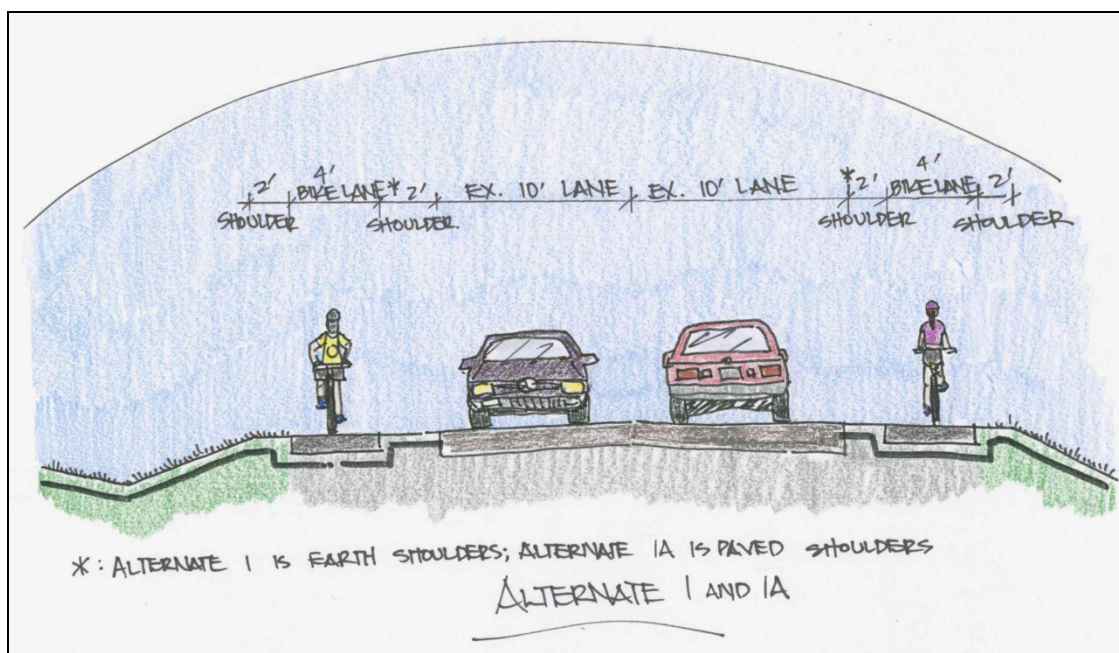


Figure 7: Typical Section Showing Alternatives 1 and 1A

1A is also 3.7 miles long and is estimated to have a total cost of \$759,000. For Alternatives 1 and 1A, since the bike lane is proposed as one-way, a cyclist traveling to or from the Pennyryle Forest State Park from Old Hospital Road depending on their direction of travel, would need to cross KY 109 at least at one location – either at the northern or southern terminus of this project (Old Hospital Road or Old KY 398 Road).

Alternative 1 and 1A are expected to require minimal, if any, right of way. According to the existing “as built” plans, there is currently 100 feet of existing right of way along KY 109.

**Alternative 2**, provides for an eight-foot-wide two-way bike lane, with a three-foot verge. Unlike Alternatives 1 and 1A, the Alternative 2 bicycle path is on one side of KY 109, as shown in Figure 8 below. This option has a total cost of approximately \$1,286,500. It begins at milepoint 29.7 on the west side of KY 109. At milepoint 32.6, the path crosses KY 109 to the east side just south of Outwood Road, in a long sag curve to maximize sight distance. Then the path continues north to terminate at milepoint 33.4. Like Alternatives 1 and 1A, it is also 3.7 miles long. As illustrated in Figure 8, this alternative’s verge could include a curb with grass for \$17.50/linear foot. This price is not included in the construction cost above. Figure 9 is a picture of a similar type facility located in South Carolina.

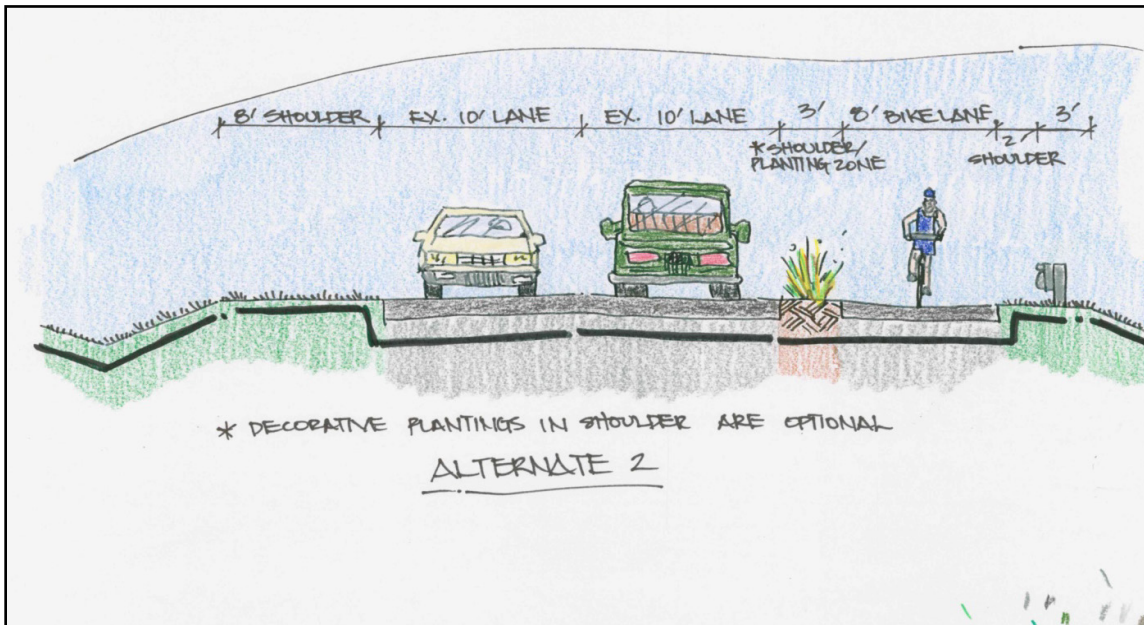


Figure 8: Typical Section for Alternative 2



Figure 9: Picture of Existing Similar Facility in South Carolina



The current KY 109 was constructed in the late 1940's, replacing a dirt road. Remnants of the dirt road still parallel KY 109 and provide spots to place this two-way option further off of the main road, which would provide a benefit to bicyclists and motorists. To take advantage of these opportunities, the following off-road "spot" alignments could be used in combination with Alternative 2: **Alternatives 2A, 2B, 2C, 2D, and 2E**. Each of these alternative spot alignments were examined for their feasibility to provide a safe, efficient, and cost effective bicycle facility that meets the purpose of the study. Appendix A contains exhibits that illustrate the alternative spot alignments. A description of each alternative is presented below. Because of the exhibit scale in this report, Alternatives 1, 1A and 2 are not illustrated in detail, only described.

## **4.2 Alternative 2 Variations and Cost Estimates**

There are five variations of Alternative 2—2A, 2B, 2C, 2D, and 2E—examined in this study. These variations follow KY 109's general alignment but include off-road bike lane segments in select "spot" locations. These off-road spot alignments allow for enhanced safety by increasing the distance between the bike path and the KY 109 travel lanes (verge), where practical. They also offer enhanced aesthetic features by placing the bicycle facility adjacent to forested and other generally rural areas. These spots could provide rest areas for bicycles (See Exhibit 1 and the following Exhibits in Appendix A for detail).

An effort was made to choose off-road locations where the roadway would be below the bicycle facility providing for safe travel for the bicyclist. Cost estimates for these facilities were based on utilizing a 5% maximum grade for both the on-road and off-road alternatives and may vary beyond 5% where topographic conditions dictate, but slopes and lengths beyond the 5% maximum were minimized.

As mentioned before, at one location, Alternative 2 will cross to the opposite side of KY 109. With safety in mind, the crossing was placed at a location with a long sag curve to provide adequate sight distance to allow for bicyclists to safely cross KY 109. With the exception of Alternatives 2A and 2E, those "spot" locations either follow the original earth roadbed that was in use prior to the construction of existing KY 109, or make use of flat terrain to reduce construction costs. Figure 10 is taken from the 1948 construction plans that show the original earth road in relation to the construction plans for the current KY 109. The five variations of Alternative 2 are described beginning on pages 10-12 and illustrated on Exhibit 1 and in detail on the following exhibits in Appendix A.



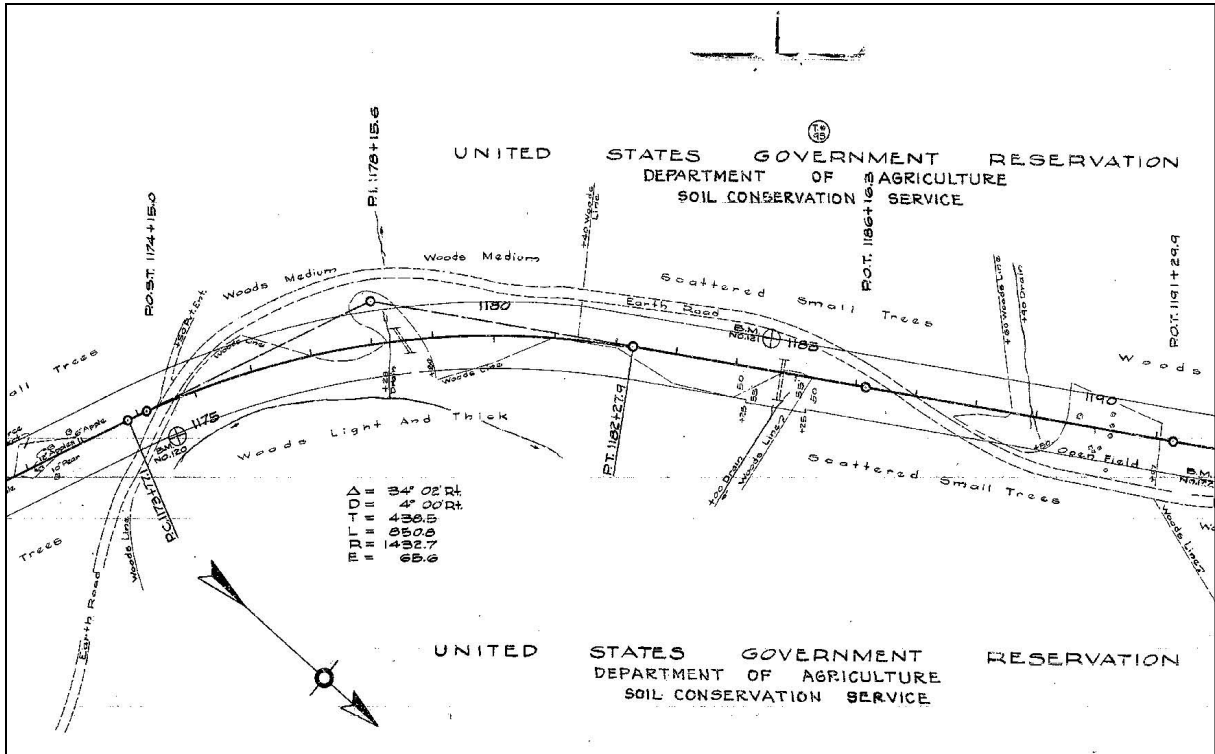


Figure 10: 1948 Road Plans Showing Locations of the Dirt Road and (Now Existing) KY 109

**Alternative 2A**, shown in Exhibit 2A, is a 2,730-foot-long, off-road segment option that would use the existing city-owned Outwood Road (along the east side of KY 109) at the northern end of the project with “Share the Road” signs. Alternative 2A (Outwood Road) deviates from KY 109 beginning at milepoint 32.8 and rejoins at milepoint 33.3. Since this alternative uses an existing road and includes only the addition of signage, and minimal construction, the cost estimate to use Outwood Road is minimal. The additional cost for Alternative 2A is \$22,000 more than Alternative 2.

**Alternative 2B**, shown in Exhibit 2B, is a 2,810-foot-long, off-road alignment option on the west side of KY 109. It deviates from KY 109 at milepoint 32.1 and rejoins at milepoint 32.6. The additional cost for Alternative 2B would be \$24,500 more than Alternative 2.

**Alternative 2C**, shown in Exhibit 2C, is a 1,240-foot-long, off-road spot alignment on the west side of KY 109. It deviates from KY 109 at milepoint 31.8 (just north of the Hopkins Park Road intersection) and rejoins at milepoint 32.0—approximately 400 feet south of Alt. 2B. The additional cost for Alternative 2C is \$19,000 more than Alternative 2.

**Alternative 2D**, shown in Exhibit 2D, is a 1,560-foot-long, off-road spot alignment to the west of KY 109. It deviates from KY 109 at milepoint 30.8 (just north of the Logan



Bennett Road intersection) and rejoins at milepoint 31.1. The cost estimate for Alternative 2D would be \$23,000 more than Alternative 2.

**Alternative 2E**, shown in Exhibit 2E, is technically south of the southern terminus of the project. It would involve improvements to Old KY 398 Road from KY 109 (milepoint 29.7, the southern terminus of the project) south approximately 2,810 feet to KY 398 (Bainbridge Road). Similar to Alternative 2A, this would not involve trail construction, only striping and signage. Because of the short distance and low volume of traffic on this road, “Share the Road” signs would be used along it, and “Bike Lane” directional signs could be placed on KY 109 and KY 398 leading to it. With these improvements Old KY 398 Road would provide an acceptable bicycle facility. To establish a bicycle route along Old KY 398 Road, Alternative 2E would cost approximately \$8,000 more than Alternative 2.

**Table 1: Comparison of Alternative Concepts and 2013 Estimated Alternative Cost Estimates**

Cost Estimates for KY 109 Bicycle Path Alternatives						
Alternatives	Approximate Linear Feet and Milepoints (MP)	Design	Right of Way	Utilities	Construction	TOTAL
<b>Alternative 1</b>	19,900' (MP 29.7 – MP 33.4)	\$50,000	\$0	\$0	\$472,000	\$522,000
<b>Alternative 1A</b>	19,900' (MP 29.7 – MP 33.4)	\$50,000	\$0	\$0	\$709,000	\$759,000
<b>Alternative 2*</b>	19,900' (MP 29.7 – MP 33.4)	\$100,000**	\$50,000	\$330,000+	\$806,500	\$1,286,500
Each of the following options would be an additional cost to Alternative 2 above						
<b>Alternative 2A</b>	2,730' (MP 32.8 – MP 33.3)	included in Alt 2 above	\$10,000	included in Alt 2 above	\$12,000	\$22,000
<b>Alternative 2B</b>	2,810' (MP 32.2 – MP 32.6)		\$10,000		\$14,500	\$24,500
<b>Alternative 2C</b>	1,240' (MP 31.8 – MP 32.0)		\$10,000		\$9,000	\$19,000
<b>Alternative 2D</b>	1,560' (MP 30.8 – MP 31.1)		\$10,000		\$13,000	\$23,000
<b>Alternative 2E</b>	2,810' (MP 30.2 – MP 29.7)		\$0		\$8,000	\$8,000

\* May include a curb with grass plantings in the three-foot-wide earth shoulder that separates the vehicles from the bicyclists for \$17.50/linear foot (not included in Table 1 totals).

\*\* \$100,000 will be required for design of Alternative 2 regardless of how many off-road options are selected, if any.

+ The utility estimates are based on overhead utilities and known water and sewer lines. It assumes all utility poles will be relocated.

Alternative 2 may require additional right of way, beyond the 100 feet shown in the existing “as built” plans, therefore, a right of way estimate for Alternative 2 and its options was developed using property information from the local Property Valuation Administrator, the proposed typical sections, and KYTC Digital Elevation Models (DEMs)



generated from topographic maps. In summary, many combinations of Alternative 2 and the spot alignments are possible. For example, if a combination of Alternative 2 and all the spot alignments (2A, 2B, 2C, 2D, and 2E) were constructed, the total cost estimate would be approximately \$1,383,000. If aesthetic plantings were desired, an additional \$350,000 (\$17.50/per lf x 19,900 lf) would be added to the total for a construction cost of \$1,733,000. Table 1 provides estimated costs of the alternative concepts.

## 5.0 PUBLIC INVOLVEMENT

### 5.1 *Bicycle and Local Support*

Interviews with area cyclists, business owners, cycling groups and local city officials conducted by KYTC's Bicycle and Pedestrian Coordinator (BPC), indicate positive support for a trail or road connection from Dawson Springs to the Pennyriple Forest State Resort Park. The area mountain bike club has experienced consistent growth in the past three years. Similarly, the local bike shop has had consistent sales growth for both on-road and off-road bicycles in the past three years. Additionally, the non-profit volunteer group Friends of Pennyriple Forest Foundation also favors this project. The group supports developing recreational opportunities that will increase tourism in Western Kentucky. Additional public involvement will be handled through coordination with the mayor of Dawson Springs.

### 5.2 *KYTC Project Team Meeting*

A Project Team Meeting was held September 3, 2013, at the Dawson Springs City Hall (minutes located in Appendix D). Following a presentation of alternatives, a discussion ensued regarding possible funding for the bicycle facility. KYTC's Bicycle Pedestrian Coordinator (BPC) stated that Alternative 2 with the off-road options may be eligible for Recreation Trails Program funding. If the project was selected, the grant could support 100% of the construction costs; design, right of way and utility relocation costs would need to be funded separately. It was noted that KYTC cannot be the project sponsor. The current preliminary study would suffice to support the grant. This grant is a reimbursable program. Design, Right of Way, and Utility funds could be supported by additional project funds.

The bicycle facility may also be eligible for Transportation Alternatives funding. The BPC felt that more cyclists would use Alternative 2 with off-road options. It was also recommended that "share the road" signs not be used; instead use the "BIKES MAY USE FULL LANE" signs and sharrows (see right) on the pavement.



Maintenance of the bike path will be an issue with either grass or plantings. If an individual or entity other than KYTC maintains the path, they must obtain a permit to do so. If KYTC maintains the path it will be maintained two to three times per year, which may not be acceptable to the community. The BPC suggested that the Mountain Bike Association may be willing to provide maintenance.

After additional discussion, Alternative 2 with off-road options 2A, 2B, 2C, 2D and 2E and aesthetic plantings was selected as the preferred alternative by the Project Team. This alternative was selected because it is (1) safer for the cyclists, (2) provides an ideal location for crossing the roadway, (3) is more in keeping with the character of the area, and (4) would be expected to increase bicycle use.

This alternative will require design monies added to the total cost because the off-road solutions will most likely require some design.

### **5.3 Local Officials Input**

A Local Officials' Meeting was held September 3, 2013, at the Dawson Springs City Hall (minutes located in Appendix E). The local leaders provided the following comments and input:

- The group was very much in favor of Alternative 2 with off-road segments, supporting the most separated facility possible.
- The Mayor stated that if there were plantings proposed, she recommended the location between Alternatives 2B and 2C.
- Concern was expressed regarding right of way acquisitions for this project. The consultant conveyed that right of way acquisitions is expected to be very minimal.
- A question raised was if this trail could be used for horses. Mayor Sewell said that the purpose of the new trail would be for bicycles. The BPC suggested signage that makes clear that there are no motorized vehicles allowed.
- It was also mentioned that there may be the opportunity for another trailhead at Macedonia Cemetery.



**Figure 11: Macedonia Cemetery**

As in the Project Team Meeting, maintenance of the bicycle facility was also a point of discussion. The Mayor stated that the city of Dawson Springs would not be opposed to assisting in providing maintenance even though the bicycle facility construction is located in Christian County. An emphasis was placed on



the need to pursue commitments for maintenance funding for aesthetic planted areas, and support of the off-road segments, which would be part of a planned maintenance agreement.

## **6.0 CONCLUSION AND RECOMMENDATIONS**

This study presents a range of alternatives that meet the project's purpose of determining the feasibility of constructing a safe and cost effective, 3.7-mile-long bicycle facility along KY 109. Alternative 2 with all of its off-road options was selected as the preferred alternative by the Project Team and local officials. Alternative 2 was selected as the preferred alternative because it is (1) safer for the cyclists, (2) provides an ideal location for crossing the roadway, (3) is more in keeping with the character of the area, and (4) would be expected to increase bicycle use. However, the project does not have a funding source at this time.



# APPENDIX A

Exhibits

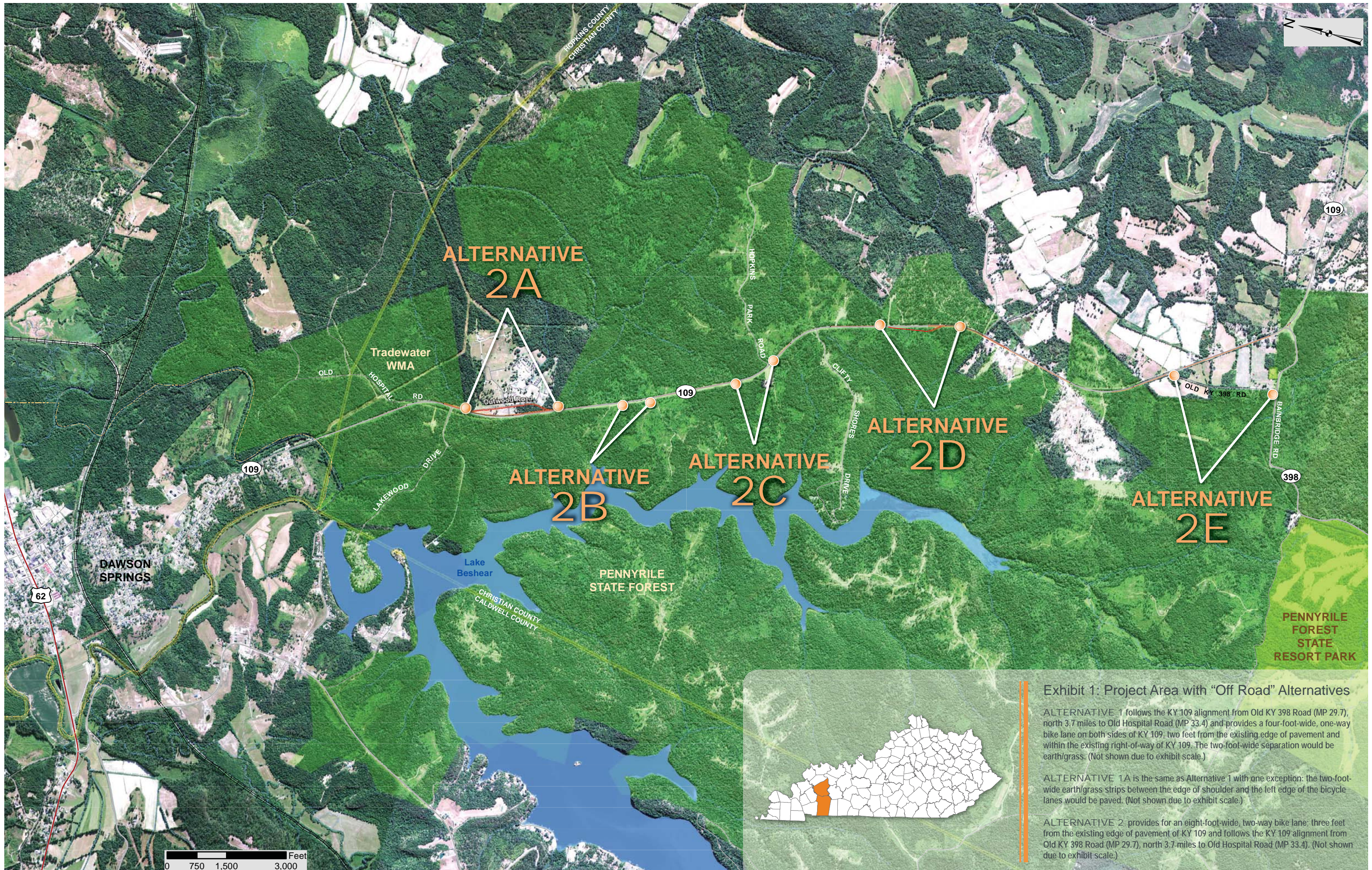








Exhibit 2C KY 109 (BIKE PATH)  
ALTERNATE 2C  
STA. 0+00 TO STA. 12+41.95

SCALE: 1"=50'



Exhibit 2D KY 109 (BIKE PATH)  
ALTERNATE 2D  
STA. 0+00 TO STA. 15+57.26

SCALE: 1"=50'

BAINBRIDGE RD. (KY 398)

ALT. 2E  
OLD KY 398 RD.

KY 109

TO DAWSON SPRINGS

SCALE: 1"=100'

Exhibit 2E KY 109 (BIKE PATH)  
ALTERNATE 2E  
STA. 0+00 TO STA. 28+12.13



# **APPENDIX B**

Dawson Springs designated  
“Trail Town” announcement



## Dawson Springs designated 'Trail Town'

Associated Press

Posted on May 8, 2013 at 6:03 AM

DAWSON SPRINGS, Ky. (AP) — State officials have named Dawson Springs the commonwealth's first Trail Town.

The city will be recognized May 9 by Kentucky's first lady.

"It will be a full day of celebration, I tell you," said Mayor Jenny Sewell. "We are expecting Jane Beshear and a host of people to come into our community."

Dawson Springs joins other towns across the nation, including Las Vegas and Gatlinburg, Tenn., in receiving the declaration.

Tourism, jobs and community involvement are expected to increase as a result of the honor, said Councilwoman Rhonda Mills.

Mills said Dawson Springs is at an advantage over some trail towns because of the naturally occurring and previously established walking, hiking, biking and water trails in the area.

Other towns have to make their own trails in order to qualify for the designation, she said.

"It is very exciting," Mills said. "To me, this is activity, this is working for Dawson Springs and you have got to start somewhere if you want people to come in and take advantage of what we already have. It just makes sense to me."

Visitors from across the nation and even the world may one day visit the town because of the designation, she said.

"I think it will become like the state parks, where people want to see every state park," Mills said. "I think eventually people will want to see what every trail town has to offer and I think that this is an opportunity."

Area commerce may see an increase because of the new traffic.

Mills said a homeowner with a vacant house has suggested opening a bed and breakfast, and there will be canoe and kayak rentals for visitors of the Tradewater River.

"There are business opportunities," she said. "I think this is going to bring people in. We are going to stay here and we are going to be here."

Sewell believes the Trail Town event will be a party to remember.

A tent and stage will be set up near the gazebo in the downtown area, which will serve as the trail head.

Hikers and community members are encouraged to gather in the area around 1 p.m. to hear Beshear speak.

Artisans and special products will also be available in the downtown area.

After the event, tours of three trails, the blue trail (along the Tradewater River), the Jones-Keeney trail (which features a natural bridge) and the Pennyrile State Park trail in Dawson Springs.

At 6 p.m. there will be a food tasting at various Dawson Springs restaurants with entertainment to follow, Sewell said.

The evening will end with a bonfire and hay ride.

"I think that will be one of the biggest parties this area has seen," Mills said. "The day of the celebration will be huge. We need as many people as we can to come and help out because we are going to have a lot of people there."

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Information from: The Messenger, <http://www.the-messenger.com>

# **APPENDIX C**

## **KY 109 Existing Conditions Data**

## EXISTING CONDITIONS INVENTORY

Route	Begin MP	Beginning	Ending MP	Ending	Length	Signal (Y/N) Type	# of Lanes	Lane Width (feet)	Pavement Type	Shoulder Type	Shoulder Width (feet)	ROW Width (feet)	Median Type	Median Width	Speed Limit (mph)	Traffic Count (ADT)	Estimate / Actual (Year)	% Total Trucks	Terrain	%Sight Difference > or = 1,500 feet	Federal System	State Highway System	Truck Weight Class	Scenic Byway
KY 109	29.664	OLD KY 398 RD	30.625	LOGAN BENNETT RD	0.961	None	2	9/10	High Flexible	Combination	3	100	None	None	55	1,135	2013	7.60%	Rolling	45	Rural Major Collector	State Secondary	AA (62,000 lbs max.)	No
	30.625	LOGAN BENNETT RD	31.727	HOPKINS PARK ROAD	1.102			10																
	31.727	HOPKINS PARK ROAD	33.007	OUTWOOD	1.280			10/11																
	33.007	OUTWOOD	33.185	OUTWOOD	0.178			11																
	33.185	OUTWOOD	33.282	NO OUTLET ROAD	0.097																			
	33.282	NO OUTLET ROAD	33.377	OLD HOSPITAL RD	0.095																			

# **APPENDIX D**

## **Project Team Meeting Minutes and Handouts**

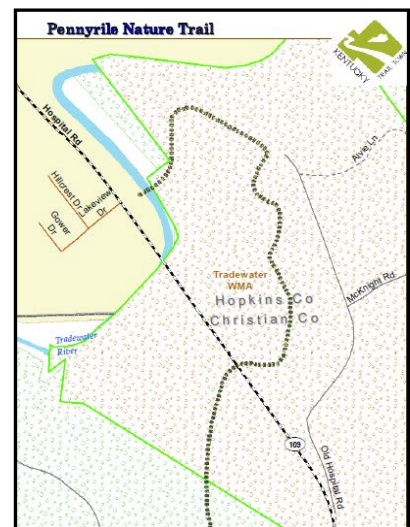


*Groundbreaking by Design.*

<b>Project:</b>	Dawson Springs Bicycle Feasibility Study	
<b>Purpose:</b>	Project Team Meeting #1	
<b>Place:</b>	Dawson Springs City Hall	
<b>Meeting Date:</b>	September 3, 2013	
<b>Time:</b>	9:30 C.D.T.	
<b>Prepared By:</b>	Annette Coffey	
<b>In Attendance:</b>	Kevin McClearn	District 2 - CDE
	Nick Hall	District 2 - Planning
	Steve Ross	Central Office Division of Planning
	Mikael Pelfrey	Central Office Division of Planning
	Troy Hearn	Central Office Division of Planning
	Shane McKenzie	Central Office Division of Planning
	David Reed	Qk4
	Taylor Kelly	Qk4
	Annette Coffey	Qk4

To allow time to prepare for this meeting, on August 16, 2013, Qk4 provided each attendee an electronic draft report with information to date for the subject project. At the beginning of this meeting, handouts were distributed from that report to the Project Team that included an overall map of alternatives, a narrative description of alternatives with typical sections, and a map of utilities along the corridor and an agenda.

Annette Coffey kicked off the meeting with a description of alternatives and their associated costs (see handouts 1, 2 and 3) with termini from Old Hospital Road south to Old KY 398. The northern terminus (see right) of this project is Old Hospital Road because it is an established bicycle route





*Groundbreaking by Design.*

into the southern limits of Dawson Springs. Old Hospital Road is closed to vehicular traffic and for the last/northern most 0.4-mile (to KY 109) it shares the alignment of the Pennyryle Nature Trail (PNT). The PNT begins on the east side of KY 109 with a trailhead and a parking lot. Bicycle use from the trailhead east for the initial 0.4 miles is permitted. At the 0.4-milepoint, the trail, which is for foot traffic only, separates from Old Hospital Road. Therefore one could ride a bike from the trailhead, along Old Hospital Road south to the proposed KY 109 bicycle facility. The following alternatives were developed.

- **Alternative 1** follows the KY 109 alignment from Old KY 398 Road (MP 29.7), north 3.7 miles to Old Hospital Road (MP 33.4). Alternative 1 provides a four-foot-wide, one-way bike lane on both sides of KY 109, two feet from the existing edge of pavement and within the existing right-of-way of KY 109. The two-foot-wide separation would be earth/grass. Estimated construction cost is \$472,000.
- **Alternative 1A** is the same as Alternative 1 except that the two-foot-wide earth/grass strips between the edge of shoulder and the bicycle lanes would be paved. Alternative 1A is also 3.7 miles long and is estimated to have a construction cost of \$709,000.
- **Alternative 2**, provides for an eight-foot-wide, two-way bike lane; three feet from the existing edge of pavement of KY 109 on one side of KY 109. This option has a construction cost of approximately \$806,500. It begins at MP 29.7 on the west side of KY 109. At MP 32.6, the path crosses KY 109 to the east side just south of Outwood Road, in a long sag curve where grades and sight distance are most suitable. The path continues north to terminate at MP 33.4. Like Alternatives 1 and 1A, it is also 3.7 miles long. This alternative could include a curb with grass plantings in the three-foot-wide earth shoulder that separates the vehicles from the bicyclists for \$17.50/linear foot, not included in the construction cost above.
- **Alternative 2 Off-Road Options** –There are five variations of Alternative 2 - 2A, 2B, 2C, 2D, and 2E - examined in this study. These variations follow KY 109's general alignment but include off-road segments in select locations sometimes following old road beds. These off-road spot alignments allow for enhanced safety by increasing the distance between the bike path and the KY 109 travel lanes, where practical. They also offer enhanced aesthetic features by placing the bicycle facility adjacent to forested and other generally rural areas. Alternative 2A would reduce the construction cost by \$77,000. The remaining alternatives vary in additional cost from \$8,000 (Alternative 2E) to \$14,500 (Alternative 2B). Options 2A and 2E would consist of share the road signs.



*Groundbreaking by Design.*

Each alternative cost does not include right of way or utility estimates. Based on the existing plans, there appears to be 50 feet of right of way for existing KY 109 in the project area. Existing KY 109 has two 10-foot-wide lanes with eight-foot-wide shoulders. From the mapping, and existing plans Alternative 1 can most likely be constructed within the existing right of way. Alternative 2 may very well fit within the existing right of way also, and if not, design measures could be taken to minimize any right of way takings. More accurate mapping will be required to make that determination. Alternative 2 off-road options 2B, 2C, and 2D will require right of way from the Pennyryle Forest State Park. Any estimates do not include those costs. Utilities will be affected with Alternative 2 and is estimated to be \$325,000 both with and without off-road options. Qk4 will provide right of way and utility costs in the final report.

Following the presentation of alternatives, a discussion ensued regarding possible funding for the bicycle facility. Troy Hearn, Bicycle and Pedestrian Coordinator, Division of Planning, stated that Alternative 2 with the off-road options may be eligible Recreation Trails Program funding. If the project was selected, the grant could support 100% of the construction costs; design, right of and utility relocation costs would need to be funded separately. It was noted that KYTC cannot be the project sponsor. Mr. Hearn stated that the current preliminary study would suffice to support the grant request, and decisions will be made in November, 2013. Last year, only \$8 million of \$12 million was requested. This grant is a reimbursable program. Design, Right of Way and, Utility funds could be supported by additional project funds or perhaps LPA project funding.

There was also mention of the bicycle facility being eligible for Transportation Alternatives funding. Mr. Hearn communicated that he felt that more cyclists would use Alternative 2 with off-road options. He also recommended that “share the road” signs not be used; instead use the “BIKES MAY USE FULL LANE” signs and sharrows on the pavement.



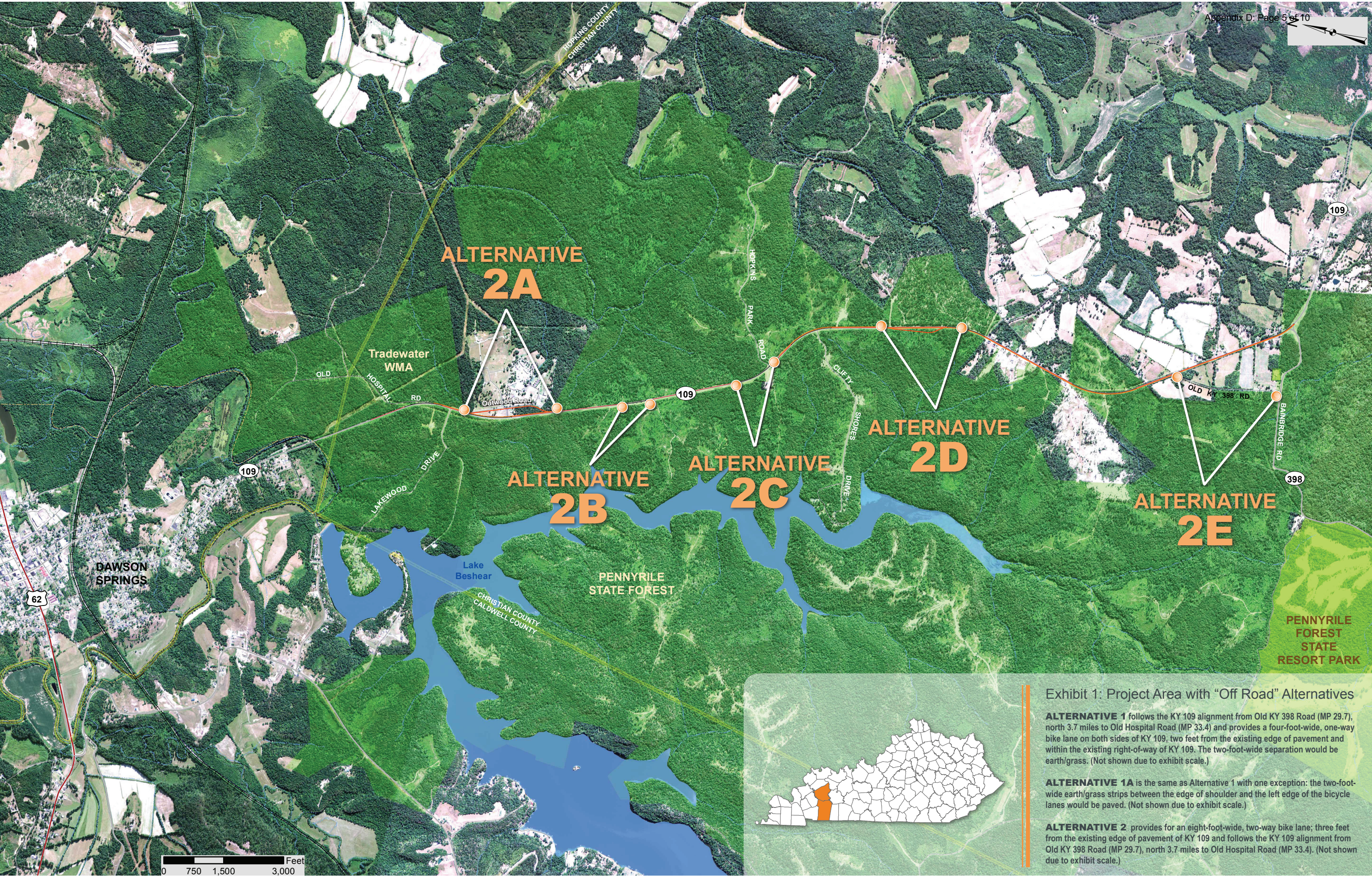
Maintenance of the bicycle facility was also a point of discussion. Mr. McClearn stated maintenance of the bike path will be an issue. If Alternative 1 or 2 is chosen with either grass or plantings, someone or some entity



*Groundbreaking by Design.*

would have to maintain that area, and obtain a permit to do so. If KYTC maintains that area, they only mow two to three times per year, which may not be acceptable to the community. Mr. Hearn suggested that the Mountain Bike Association may be willing to provide maintenance. Mr. McClearn also indicated it may be nice to add some visible aesthetic feature to add visibility and notability to the project.

After additional discussion, Alternative 2 with off-road options 2A, 2B, 2C, 2D and 2E and aesthetic plantings was selected as the preferred alternative by the Project Team. This alternative is safer for the cyclists, crossing the roadway at an ideal location, more in keeping with the character of the area, maximizes the usage of cyclists, and minimizes roadside debris. This alternative will need to have design monies added to the total cost because the off-road solutions will most likely require some design. Alternative 2 and all the spot alignments (2A, 2B, 2C, 2D, and 2E) have an estimated construction cost of approximately \$774,000. If aesthetic plantings were desired, along the entire length, an additional \$350,000 would be added to the total for a cost of \$1,124,000 (minus right of way and utility funding).



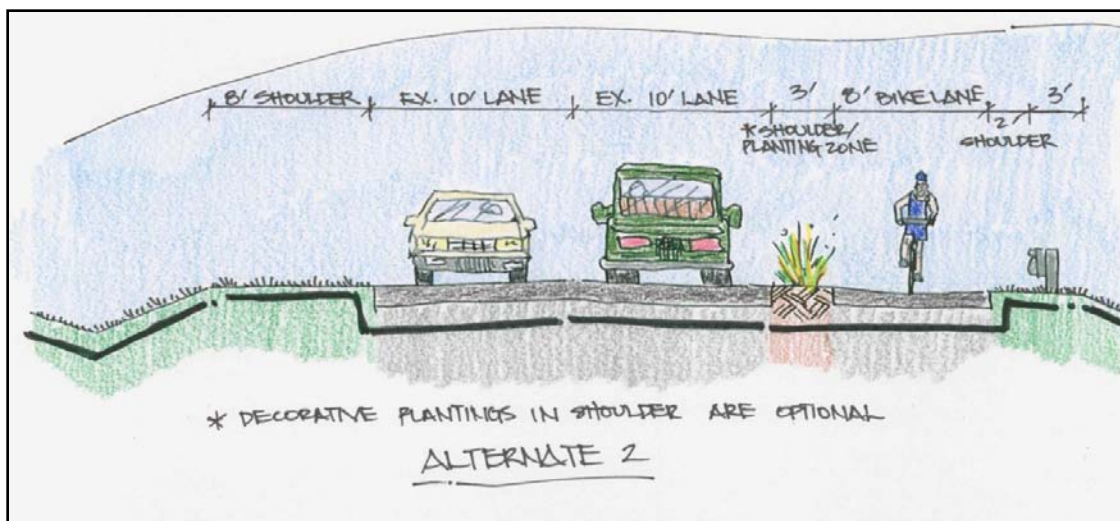
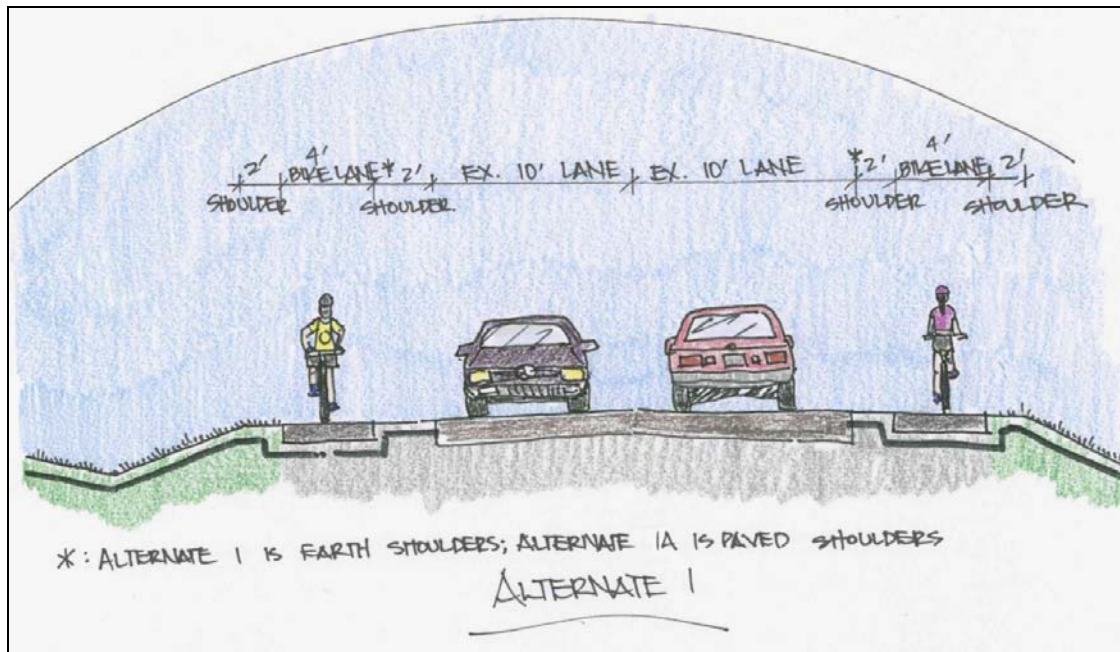


## Dawson Springs KY 109 Bicycle Trail Meeting Handout – September 3, 2013

Preliminary Construction Estimates for KY 109 Bicycle Path Alternatives		
Alternatives	Approximate Linear Feet and Milepoints (MP)	Approximate Construction Cost
Alternative 1	19,900' (MP 29.7 – MP 33.4)	\$472,000
Alternative 1A	19,900' (MP 29.7 – MP 33.4)	\$709,000
Alternative 2	19,900' (MP 29.7 – MP 33.4)	\$806,500*
Alternatives 2A, 2B, 2C, 2D, 2E are options that may be used in any combination with Alternative 2		<b>+/- \$806,500</b>
Alternative 2A	2,730' (MP 32.8 – MP 33.3)	-\$77,000 = \$729,500
Alternative 2B	2,810' (MP 32.2 – MP 32.6)	+\$14,500 = \$821,000
Alternative 2C	1,240' (MP 31.8 – MP 32.0)	+\$9,000 = \$815,500
Alternative 2D	1,560' (MP 30.8 – MP 31.1)	+\$13,000 = \$819,500
Alternative 2E**	2,810' (N/A* – MP 29.7)	+\$8,000 = \$814,500

\* May include a curb with grass plantings in the three-foot-wide earth shoulder that separates the vehicles from the bicyclists for \$17.50/linear foot.

\*\* This alternative is along Old KY 398 Road between KY 398 and KY 109.



**Alternative 1** follows the KY 109 alignment from Old KY 398 Road (milepoint 29.7), north 3.7 miles to Old Hospital Road (milepoint 33.4). Alternative 1 provides a four-foot-wide, one-way bike lane on both sides of KY 109, two feet from the existing edge of pavement and within the existing right-of-way of KY 109. The two-foot-wide separation would be earth/grass. Estimated construction cost is \$472,000.

**Alternative 1A** is the same as Alternative 1 except that the two-foot-wide earth/grass strips between the edge of shoulder and the bicycle lanes would be paved. Alternative 1A is also 3.7 miles long and is estimated to have a construction cost of \$709,000.

**Alternative 2**, provides for an eight-foot-wide, two-way bike lane; three feet from the existing edge of pavement of KY 109. The Alternative 2 bicycle path is only on one side of KY 109. This option has a construction cost of approximately \$806,500. It begins at milepoint 29.7 on the west side of KY 109. At milepoint 32.6, the path crosses KY 109 to the east side just south of Outwood Road, in a long sag curve to maximize sight distance. The path continues north to terminate at milepoint 33.4. Like Alternatives 1 and 1A, it is also 3.7 miles long. This alternative could include a curb with grass plantings in the three-foot-wide earth shoulder that separates the vehicles from the bicyclists for \$17.50/linear foot, not included in the construction cost above.

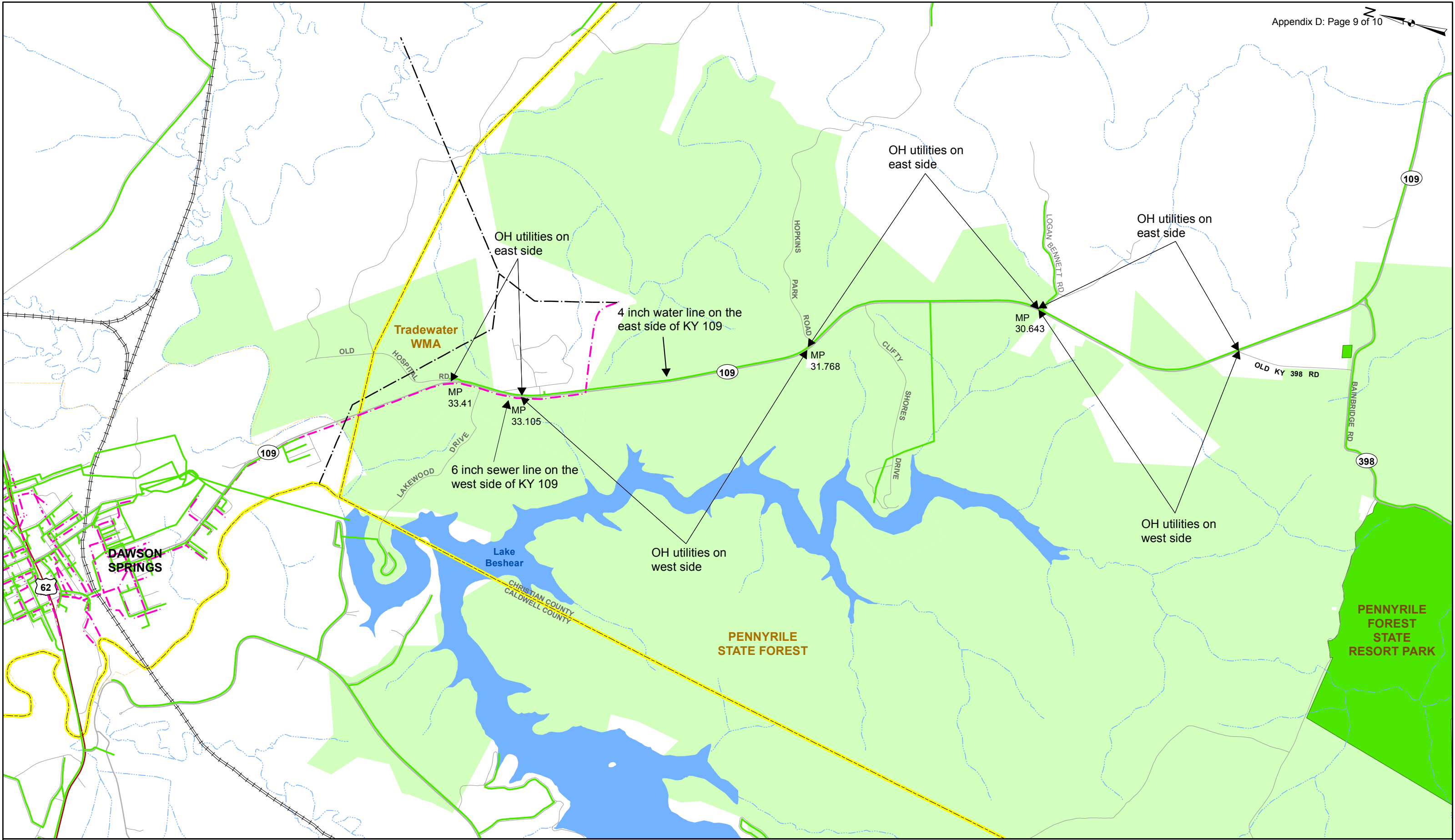
**Alternative 2A**, is a 2,730-foot-long, off-road segment option that would use the existing city-owned Outwood Road (along the east side of KY 109) at the northern end of the project with “Share the Road” signs. Alternative 2A (Outwood Road) deviates from KY 109 beginning at milepoint 32.8 and rejoins at milepoint 33.3. Since this alternative uses an existing road and includes only the addition of signage, and minimal construction, the cost estimate to use Outwood Road is minimal. If combined with Alternative 2, the estimated construction cost is \$729,500, which is approximately \$77,000 less than Alternative 2.

**Alternative 2B**, is a 2,810-foot-long, off-road alignment option on the west side of KY 109. It deviates from KY 109 at milepoint 32.1 and rejoins at milepoint 32.6. The construction cost estimate is \$14,500 more than Alternative 2, approximately \$821,000.

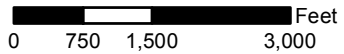
**Alternative 2C**, is a 1,240-foot-long, off-road spot alignment on the west side of KY 109. It deviates from KY 109 at milepoint 31.8 and rejoins at milepoint 32.0. The construction cost estimate is \$9,000 more than Alternative 2, approximately \$815,500.

**Alternative 2D**, is a 1,560-foot-long, off-road spot alignment to the west of KY 109. It deviates from KY 109 at milepoint 30.8 and rejoins at milepoint 31.1. The construction cost estimate of Alt. 2D would be \$12,800 more than Alternative 2, approximately \$819,500.

**Alternative 2E**, is technically south of the southern terminus of the project. Similar to Alternative 2A, it would involve striping and signage improvements to Old KY 398 Road from KY 109 (milepoint 29.7, the southern terminus of the project) south approximately 2,810 feet to KY 398 (Bainbridge Road), at a cost of approximately \$8,000. Because of the short distance and low volume of traffic on this road, “Share the Road” signs could be placed along it, and “Bike Lane” directional signs could be placed on KY 109 and KY 398 leading to it, and it would provide an acceptable bicycle facility.



- Transmission Lines
- Water Line
- Sewer Line



**Existing Utilities**  
**Dawson Springs Bicycle Feasibility Study**



# **APPENDIX E**

## **Local Officials Meeting Minutes and Handouts**



*Groundbreaking by Design.*

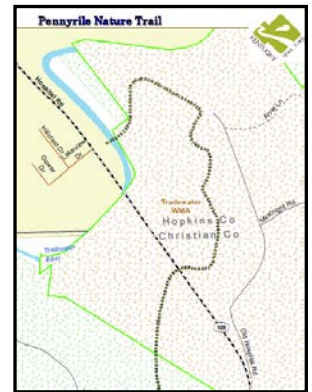
<b>Project:</b>	Dawson Springs Bicycle Feasibility Study	
<b>Purpose:</b>	Local Officials Meeting #1	
<b>Place:</b>	Dawson Springs City Hall	
<b>Meeting Date:</b>	September 3, 2013	
<b>Time:</b>	10:30 C.D.T.	
<b>Prepared By:</b>	Annette Coffey	
<b>In Attendance:</b>	Mayor Jenny Sewell	Dawson Springs
	Virginia Chaney	Dawson Springs
	Melissa Heflin	Dawson Springs
	Charlie G. Beshears	Hopkins County Fiscal Court
	William Crider	City of Dawson Springs
	Kevin McClearn	District 2 - CDE
	Nick Hall	District 2 - Planning
	Steve Ross	Central Office Division of Planning
	Mikael Pelfrey	Central Office Division of Planning
	Troy Hearn	Central Office Division of Planning
	Shane McKenzie	Central Office Division of Planning
	David Reed	Qk4
	Taylor Kelly	Qk4
	Annette Coffey	Qk4

The meeting began with introductions. Kevin McClearn gave an overview of the bicycle feasibility study. Currently the project is not funded beyond this study. Qk4 was asked to study the feasibility of on-road and off-road alternatives for a bicycle facility from Old Hospital Road to Old KY 398. This meeting was to present those alternatives and costs and garner input from this group. The attendees were given handouts from the draft report, an overall map of alternatives, a narrative description of alternatives with typical sections, and an agenda.



*Groundbreaking by Design.*

Annette Coffey provided a description of alternatives and their associated costs (see handouts 1, 2 and 3) with termini from Old Hospital Road south to Old KY 398. The northern terminus of this project is Old Hospital Road because it is an established bicycle route into the southern limits of Dawson Springs (see figure to right). Old Hospital Road is closed to vehicular traffic and for the last/northern most 0.4-mile (to KY 109) it shares the alignment of the Pennyryle Nature Trail (PNT). The PNT begins on the east side of KY 109 with a trailhead and a parking lot. Bicycle use from the trailhead east for the initial 0.4 miles is permitted. At the 0.4-milepoint, the trail, which is for foot traffic only, separates from Old Hospital Road. Therefore one could ride a bike from the trailhead, along Old Hospital Road south to the proposed KY 109 bicycle facility. The following alternatives were presented.



- **Alternative 1** follows the KY 109 alignment from Old KY 398 Road (MP 29.7), north 3.7 miles to Old Hospital Road (MP 33.4). Alternative 1 provides a four-foot-wide, one-way bike lane on both sides of KY 109, two feet from the existing edge of pavement and within the existing right-of-way of KY 109. The two-foot-wide separation would be earth/grass. Estimated construction cost is \$472,000.
- **Alternative 1A** is the same as Alternative 1 except that the two-foot-wide earth/grass strips between the edge of shoulder and the bicycle lanes would be paved. Alternative 1A is also 3.7 miles long and is estimated to have a construction cost of \$709,000.
- **Alternative 2**, provides for an eight-foot-wide, two-way bike lane; three feet from the existing edge of pavement of KY 109 on one side of KY 109. This option has a construction cost of approximately \$806,500. It begins at MP 29.7 on the west side of KY 109. At MP 32.6, the path crosses KY 109 to the east side just south of Outwood Road, in a long sag curve where grades and sight distance are most suitable. The path continues north to terminate at MP 33.4. Like Alternatives 1 and 1A, it is also 3.7 miles long. This alternative could include a curb with grass plantings in the three-foot-wide earth shoulder that separates the vehicles from the bicyclists for \$17.50/linear foot, not included in the construction cost above.



*Groundbreaking by Design.*

- **Alternative 2 Off-Road Options** –There are five variations of Alternative 2 - 2A, 2B, 2C, 2D, and 2E - examined in this study. These variations follow KY 109's general alignment but include off-road segments in select locations sometimes following old road beds. These off-road spot alignments allow for enhanced safety by increasing the distance between the bike path and the KY 109 travel lanes, where practical. They also offer enhanced aesthetic features by placing the bicycle facility adjacent to forested and other generally rural areas. Alternative 2A would reduce the construction cost by \$77,000. The remaining alternatives vary in additional cost from \$8,000 (Alternative 2E) to \$14,500 (Alternative 2B). Options 2A and 2E would consist of share the road signs.

Each alternative cost does not include right of way or utility estimates. Based on the existing plans, there appears to be 50 feet of right of way for existing KY 109 in the project area. Existing KY 109 has two 10-foot-wide lanes with eight-foot-wide shoulders. From the mapping, and existing plans Alternative 1 can most likely be constructed within the existing right of way. Alternative 2 may very well fit within the existing right of way also, and if not, design measures could be taken to minimize any right of way takings. More accurate mapping will be required to make that determination. Alternative 2 off-road options 2B, 2C, and 2D will require right of way from the Pennyryle Forest State Park. Any estimates do not include those costs. Utilities will be affected with Alternative 2 and is estimated to be \$325,000 both with and without off-road options. Qk4 will provide right of way and utility costs in the final report.

Following the presentation of alternatives, Mr. McClearn conveyed that Alternative 2 with plantings was the Project Team's preferred alternative. This alternative is safer for the cyclists, crossing the roadway at an ideal location, more in keeping with the character of the area, maximizes the usage of cyclists, and minimizes roadside debris. This alternative will need to have design right of way and utilities monies added to the total cost. The off-road solutions will most likely require some design. Alternative 2 and all the spot alignments (2A, 2B, 2C, 2D, and 2E) has an estimated construction cost of approximately \$774,000. If aesthetic plantings were desired, along the entire length, an additional \$350,000 would be added to the total for a cost of \$1,124,000 (minus right of way and utility funding). Local funding options should be sought for approximately \$1.1 million construction only).

The local leaders provided the following comments and input:



*Groundbreaking by Design.*

- The group was very much in favor of Alternative 2 with off-road segments, supporting the most separated facility possible.
- The Mayor stated that if there were plantings proposed, she recommended the location between Alternatives 2B and 2C.
- There was a concern expressed regarding right of way takings for this project. Qk4 stated that any right of way takings is expected to be very minimal, if any.
- A question raised was if this trail could be used for horses. Mayor Sewell said that the purpose of the new trail would be for bicycles. Mr. Hearn suggested signage that makes clear that there are no motorized vehicles allowed.
- It was also mentioned that there may be the opportunity for another trailhead at Macedonia Cemetery.

Maintenance of the bicycle facility was also a point of discussion. Mr. McClearn stated maintenance of the bike path will be an issue. If Alternative 1 or 2 is chosen with either grass or plantings, someone or some entity would have to maintain that area, and obtain a permit to do so. If KYTC maintains that area, they only mow two to three times per year, which may not be acceptable to the community. Mr. Hearn conveyed that the Mountain Bike Association may be willing to provide maintenance. Mayor Sewell stated that the city of Dawson Springs would not be opposed to assisting in providing maintenance even though the bicycle facility construction is located in Christian County. Mr. McClearn emphasized the need to think about commitments for maintenance funding for aesthetic planted areas, and support of the off-road segments, which would be part of a planned maintenance agreement.

Mr. McClearn said that County Judge Executive Tribble will receive a copy of the report. The final document will be made available in one to two months.

Everyone was thanked for their participation and the meeting concluded.

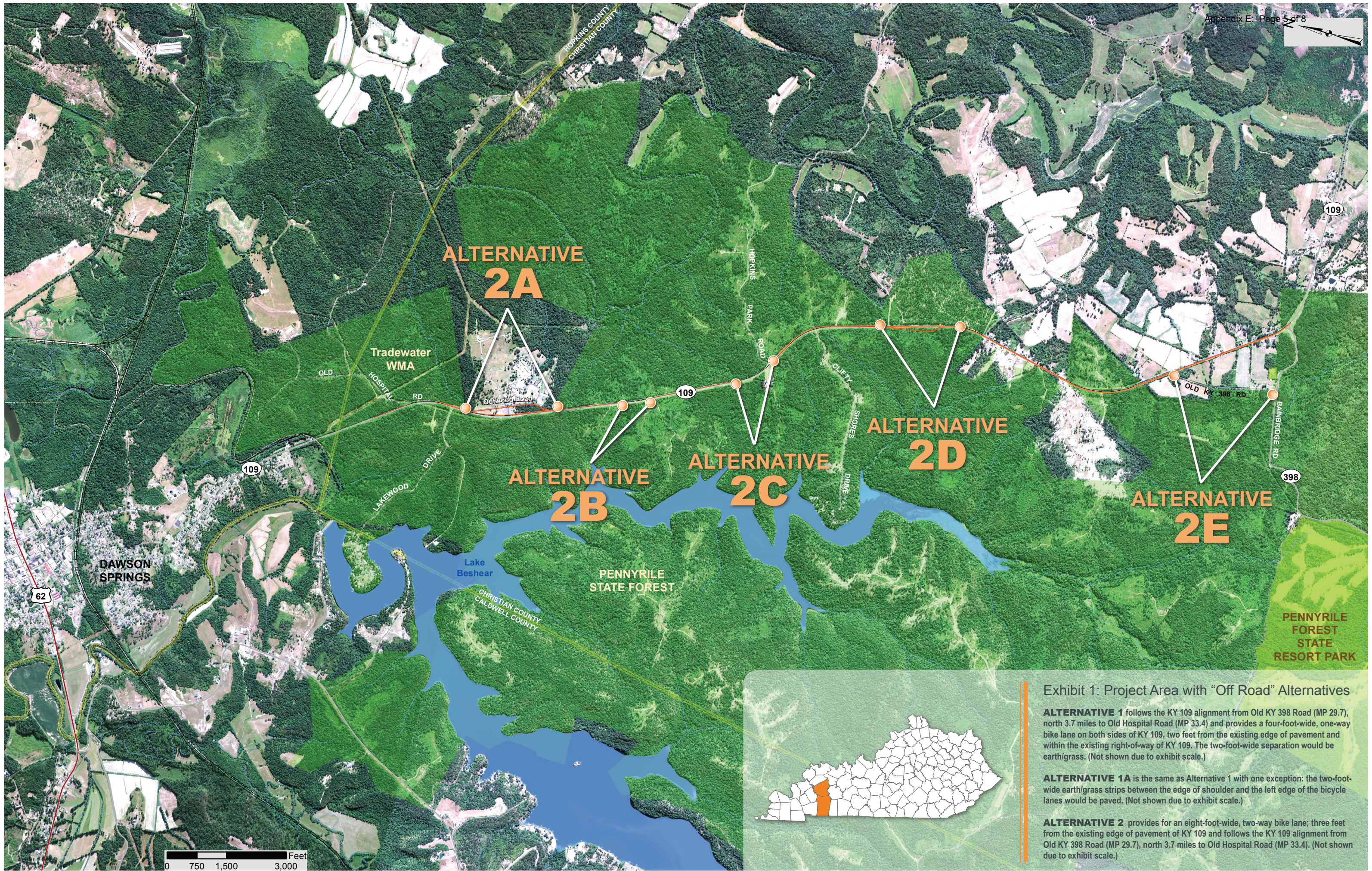


Exhibit 1: Project Area with "Off Road" Alternatives

**ALTERNATIVE 1** follows the KY 109 alignment from Old KY 398 Road (MP 29.7), north 3.7 miles to Old Hospital Road (MP 33.4) and provides a four-foot-wide, one-way bike lane on both sides of KY 109, two feet from the existing edge of pavement and within the existing right-of-way of KY 109. The two-foot-wide separation would be earth/grass. (Not shown due to exhibit scale.)

**ALTERNATIVE 1A** is the same as Alternative 1 with one exception: the two-foot-wide earth/grass strips between the edge of shoulder and the left edge of the bicycle lanes would be paved. (Not shown due to exhibit scale.)

**ALTERNATIVE 2** provides for an eight-foot-wide, two-way bike lane; three feet from the existing edge of pavement of KY 109 and follows the KY 109 alignment from Old KY 398 Road (MP 29.7), north 3.7 miles to Old Hospital Road (MP 33.4). (Not shown due to exhibit scale.)

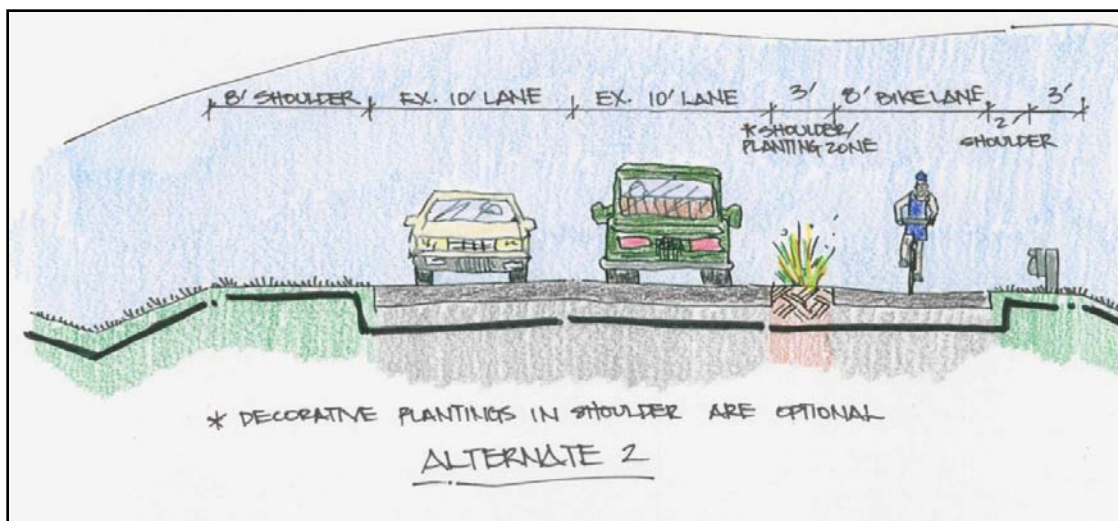
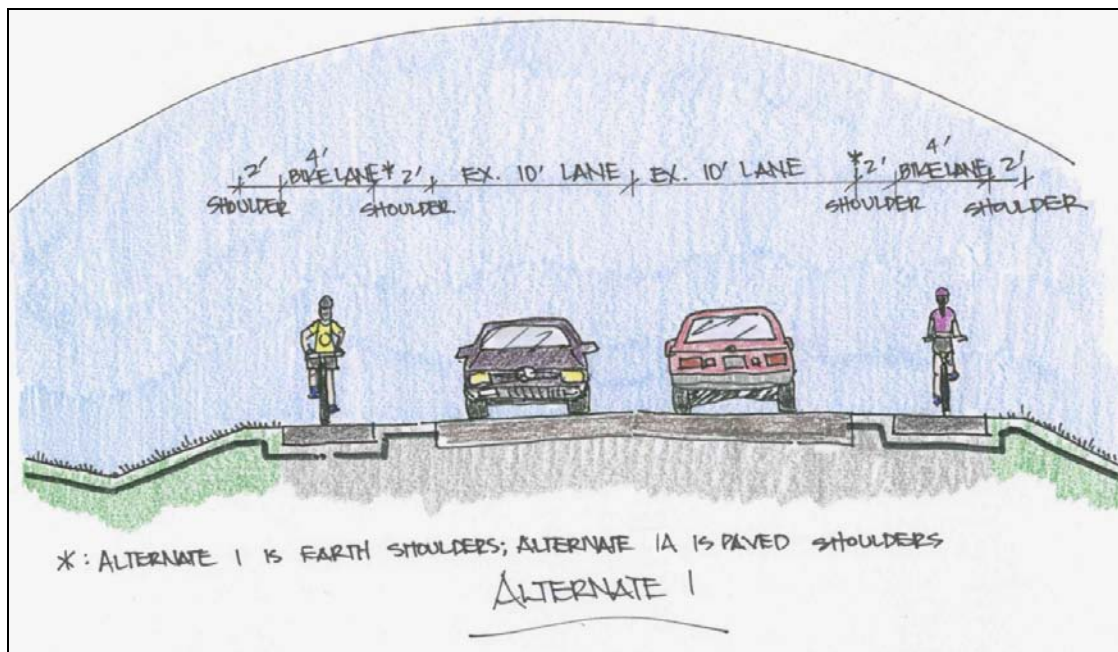


## Dawson Springs KY 109 Bicycle Trail Meeting Handout – September 3, 2013

Preliminary Construction Estimates for KY 109 Bicycle Path Alternatives		
Alternatives	Approximate Linear Feet and Milepoints (MP)	Approximate Construction Cost
Alternative 1	19,900' (MP 29.7 – MP 33.4)	\$472,000
Alternative 1A	19,900' (MP 29.7 – MP 33.4)	\$709,000
Alternative 2	19,900' (MP 29.7 – MP 33.4)	\$806,500*
Alternatives 2A, 2B, 2C, 2D, 2E are options that may be used in any combination with Alternative 2		<b>+/- \$806,500</b>
Alternative 2A	2,730' (MP 32.8 – MP 33.3)	-\$77,000 = \$729,500
Alternative 2B	2,810' (MP 32.2 – MP 32.6)	+\$14,500 = \$821,000
Alternative 2C	1,240' (MP 31.8 – MP 32.0)	+\$9,000 = \$815,500
Alternative 2D	1,560' (MP 30.8 – MP 31.1)	+\$13,000 = \$819,500
Alternative 2E**	2,810' (N/A* – MP 29.7)	+\$8,000 = \$814,500

\* May include a curb with grass plantings in the three-foot-wide earth shoulder that separates the vehicles from the bicyclists for \$17.50/linear foot.

\*\* This alternative is along Old KY 398 Road between KY 398 and KY 109.



**Alternative 1** follows the KY 109 alignment from Old KY 398 Road (milepoint 29.7), north 3.7 miles to Old Hospital Road (milepoint 33.4). Alternative 1 provides a four-foot-wide, one-way bike lane on both sides of KY 109, two feet from the existing edge of pavement and within the existing right-of-way of KY 109. The two-foot-wide separation would be earth/grass. Estimated construction cost is \$472,000.

**Alternative 1A** is the same as Alternative 1 except that the two-foot-wide earth/grass strips between the edge of shoulder and the bicycle lanes would be paved. Alternative 1A is also 3.7 miles long and is estimated to have a construction cost of \$709,000.

**Alternative 2**, provides for an eight-foot-wide, two-way bike lane; three feet from the existing edge of pavement of KY 109. The Alternative 2 bicycle path is only on one side of KY 109. This option has a construction cost of approximately \$806,500. It begins at milepoint 29.7 on the west side of KY 109. At milepoint 32.6, the path crosses KY 109 to the east side just south of Outwood Road, in a long sag curve to maximize sight distance. The path continues north to terminate at milepoint 33.4. Like Alternatives 1 and 1A, it is also 3.7 miles long. This alternative could include a curb with grass plantings in the three-foot-wide earth shoulder that separates the vehicles from the bicyclists for \$17.50/linear foot, not included in the construction cost above.

**Alternative 2A**, is a 2,730-foot-long, off-road segment option that would use the existing city-owned Outwood Road (along the east side of KY 109) at the northern end of the project with “Share the Road” signs. Alternative 2A (Outwood Road) deviates from KY 109 beginning at milepoint 32.8 and rejoins at milepoint 33.3. Since this alternative uses an existing road and includes only the addition of signage, and minimal construction, the cost estimate to use Outwood Road is minimal. If combined with Alternative 2, the estimated construction cost is \$729,500, which is approximately \$77,000 less than Alternative 2.

**Alternative 2B**, is a 2,810-foot-long, off-road alignment option on the west side of KY 109. It deviates from KY 109 at milepoint 32.1 and rejoins at milepoint 32.6. The construction cost estimate is \$14,500 more than Alternative 2, approximately \$821,000.

**Alternative 2C**, is a 1,240-foot-long, off-road spot alignment on the west side of KY 109. It deviates from KY 109 at milepoint 31.8 and rejoins at milepoint 32.0. The construction cost estimate is \$9,000 more than Alternative 2, approximately \$815,500.

**Alternative 2D**, is a 1,560-foot-long, off-road spot alignment to the west of KY 109. It deviates from KY 109 at milepoint 30.8 and rejoins at milepoint 31.1. The construction cost estimate of Alt. 2D would be \$12,800 more than Alternative 2, approximately \$819,500.

**Alternative 2E**, is technically south of the southern terminus of the project. Similar to Alternative 2A, it would involve striping and signage improvements to Old KY 398 Road from KY 109 (milepoint 29.7, the southern terminus of the project) south approximately 2,810 feet to KY 398 (Bainbridge Road), at a cost of approximately \$8,000. Because of the short distance and low volume of traffic on this road, “Share the Road” signs could be placed along it, and “Bike Lane” directional signs could be placed on KY 109 and KY 398 leading to it, and it would provide an acceptable bicycle facility.



Engineering Planning

*Groundbreaking by Design.*



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