

SHARING

River Road

ALTERNATIVE ALIGNMENT STUDY
ZORN AVENUE TO INDIAN HILLS TRAIL

December 2011



Architecture Engineering Planning



ALIGNMENT STUDY - DRAFT

The project is to add on-street bike lanes to River Road between Zorn Avenue and Indian Hills Trail. Three Alternatives were studied:

1. Widening to the Left (north)
2. Widening to the Right (south)
3. Symmetric Widening

The project also includes the extension of the multi-use path on the right from the Peace Memorial to Indian Hills Trail which connects to the path from Indian Hills Trail to the Caperton Swamp.

Design Criteria

- Bike Lane Width = 5 feet
- Clear Zone = 3 feet
- Signing and Marking per 2009 MUTCD

There is an adjoining Kentucky Transportation Cabinet (KYTC) project that improves River Road from Beargrass Creek through the Zorn Avenue intersection. This project ties to existing River Road 700 feet east of Zorn Avenue (approximately at Mockingbird Valley Road). The profile grade of this KYTC project raises the existing grade approximately 2 feet. The plan does not include on-street bike lanes; however, there can be adjustments in lane widths to accommodate bike lanes.

Typical Section

The attached exhibits show the three alternatives. River Road travel lanes will be reduced from the existing 11 feet to 10 feet. The alternatives that widen either entirely left or right will correct the crown to the center; all alignments include an overlay of the existing road.

Comparison Matrix

Appendix A shows a comparison of each alternative broken out by segment.

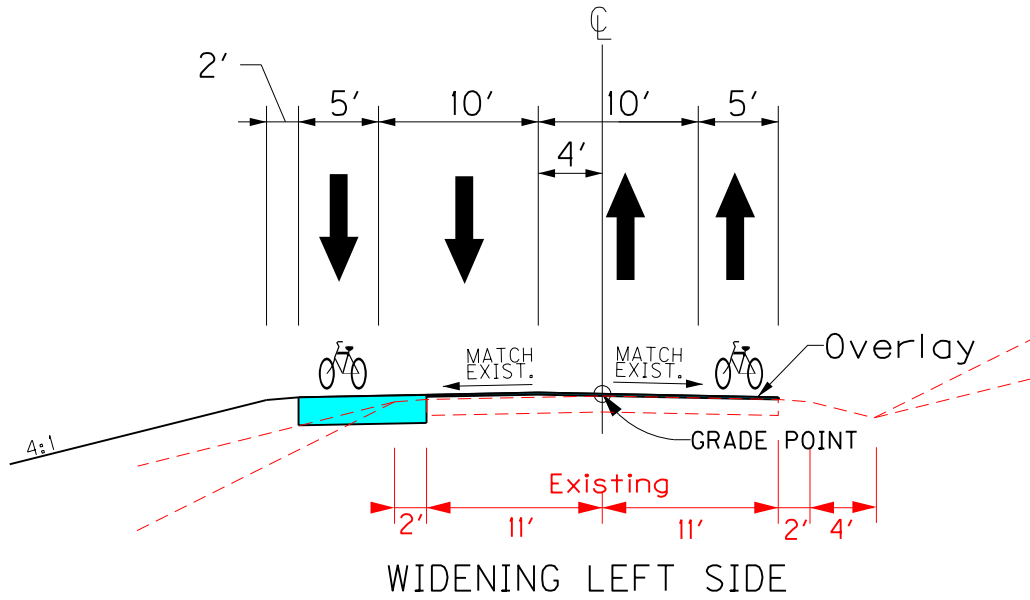
Photo Log

Appendix B is a Photo Log broken out by segment.

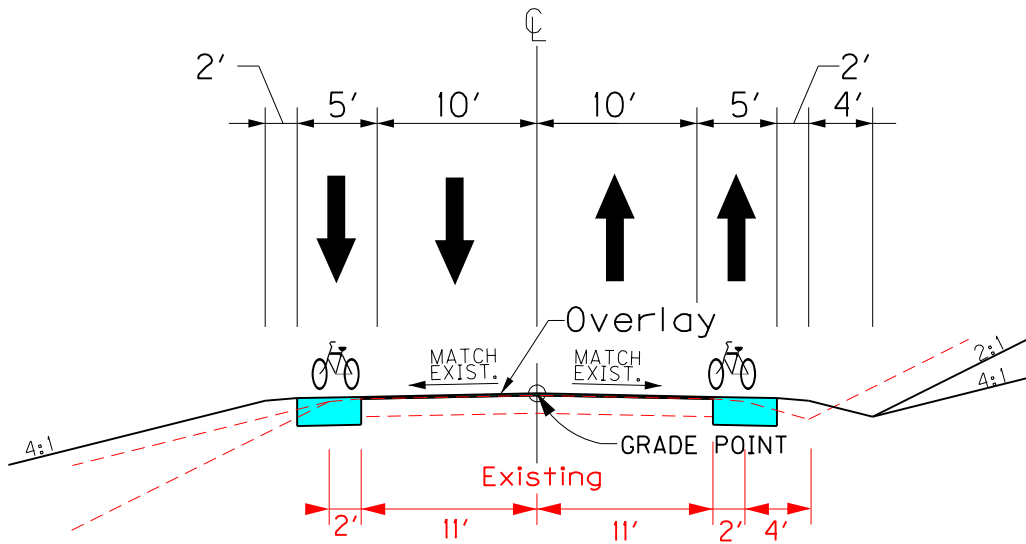
Utility Impacts

The gas line is on the north (left) side of River Road. The water line and utility pole line is on the south (right) side. The gas line is not impacted by all alternatives. Widening to the south (right) and symmetric widening impact the water line and or the pole line.

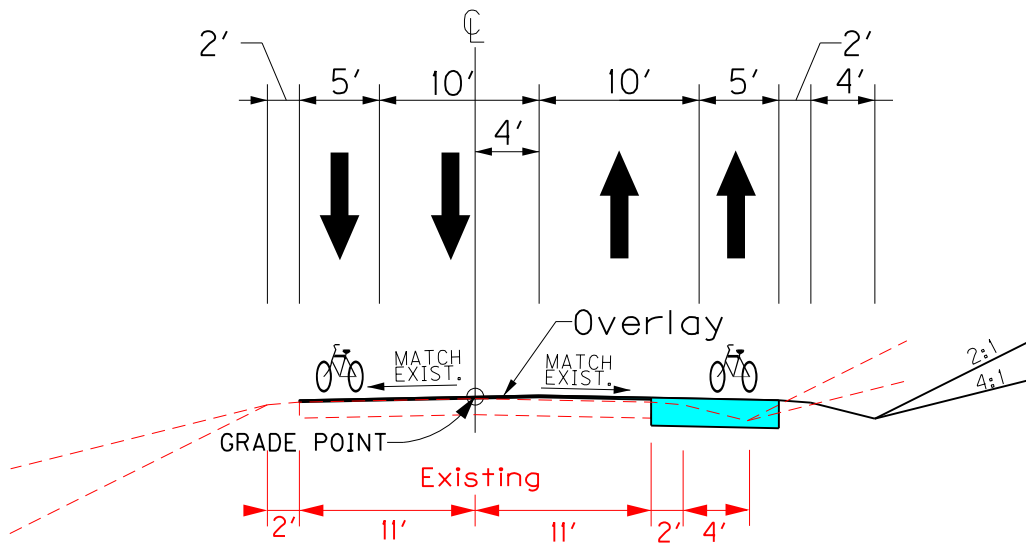
EXHIBIT 1 - TYPICAL SECTIONS



WIDENING LEFT SIDE



SYMMETRICAL WIDENING



WIDENING RIGHT SIDE

Tree Preservation

After a review of all the trees with diameters greater than 10 inches, it was determined that the alternative selection should primarily be determined by factors and conditions other than existing trees. Nearly 75% of the trees are in Fair or Poor condition, meaning in no construction work were to occur, their service lives are limited to 10 years or less. Over 30% are in Poor or Dead condition, and should be removed for public safety reasons regardless of any construction project activities. White ash trees comprise over 20% of the trees in the project area, and with Emerald Ash Borer confirmed in Jefferson County, they unfortunately can be considered expendable.

There are trees in Good condition that are providing valuable canopy cover and environmental benefits to River Road and the City as a whole, such as the London planes, black walnuts and newly planted trees. Trees under 6-inches in diameter can be physically relocated and other trees can be protected by implementing tree protection measures during the construction process.

Construction Considerations

A preliminary assessment of issues that will occur during construction are as follows:

- On-road bike traffic to be prohibited (provide signs to use multi-use path)
- One lane traffic to be used during non-peak hours
- Trees to be removed to grade and stumps/roots grinded below proposed subgrade to avoid disturbance of utilities or damage to existing roadbed
- Temporary easement is needed for construction equipment

It is estimated that construction will take 2 months.

Environmental Overview

The following is a summary of environmental studies on the project:

- No jurisdictional waters were identified in the study area.
- The study area contains habitat for the Indiana Bat. Impacts will require mitigation per coordination with the USFWS once final design and impacts have been established. Mitigation for tree clearing will be required no matter what time of year and a higher ratio will be required. Note: the report says “: “Tree clearing will not be allowed between June 1 and July 31”.
- Five areas of habitat for running buffalo clover were found north of the Indian Hills Trail terminus, so this should not be a factor.
- Phase I HAZMAT has been conducted and revealed 2 gas stations and the LWC pumping facility; nothing that will be a factor in construction.
- Coordinate with DOW for permitting requirements: General Construction Permit and Floodplain Permit
- SHPO package is complete – sent to Mike Jones (12/1/2011) – then confirm and send package to SHPO for No Effects Determination.

- PM2.5 Checklist complete - Project Exempt – waiting to hear on who will handle IAC group confirmation.

Cost Estimates

The construction cost estimate for each alternative is as follows:

1. Widening to the north (left) = \$580,000
2. Widening to the south (right) = \$640,000
3. Symmetric Widening = \$600,000

Pavement Costs are based on 1.5 inches of asphalt surface; 7.5 inches of asphalt base and 8 inches of DGA. An existing pavement core should be taken before finalizing the pavement design for the project.

Appendix C shows the preliminary costs estimate breakdown for each alternative.

Recommendation

The alternative of widening to the north (left) is recommended because it avoids relocation of utility poles and water line; minimizes drainage/ditch work; affects only 5 parcels – 3 are park property – with Temporary Easements and has the lowest construction cost. Construction work should begin where the adjacent project ends, since that project is raising the grade of River Road at Zorn Avenue. Existing River Road should be restriped at Zorn Avenue for the new bike lanes. Other items with this alternative are:

- The Temporary Easement will be 15 feet off existing R/W line.
- The existing fence and single cable barrier will need to be removed and replaced (or rebuilt).
- Bollards on existing Multi-use path will need to be relocated
- Probable barrier (concrete or earth) between new bike lane and existing multi-use path between Stations 110+00 and 124+00.

The recommended multi-use path extension in the southeast corner between River Road and Indian Hills Trail at the end of the project is the flatter alignment that removes tree #177 (the center of the three Crabapple trees).

APPENDIX A

Comparison Matrix

RIVER ROAD ALIGNMENT STUDY

SECTIONS:

UTILITIES RELOCATION				TREE CUTTING	TEMP. ESMNT.	NOTES
FARM TAP	GAS MAIN	WATER MAIN	UTILITY POLES	#	R/W	

Zorn Ave. to Mockingbird Road

STA.100+00 TO STA.109+35

- Gas Station (NOT IMPACTED)
- Multi use on Left
- Farm Tap (Station 102+87 Left, RELOCATED BY OTHERS)
- Farm Tap (Station 105+93 Left, RELOCATED BY OTHERS)
- Wooden platform (Station 107+85 Right)
- Entrance to Lebanese-American Club Sign (Station 109+36 Right)
- Utilities impacted

Note: Improvements also part of KYTC project

Widening Left
Widening Right
Symmetric Widening

YES	NO	NO	YES	2	NO	
NO	NO	NO	YES	2	YES	
NO	NO	NO	YES	4	NO	

Mockingbird Road to Turners Club Entrance

STA.109+35 TO STA.114+41

- Multi use on Left
- Farm Tap (Station 112+84 Left)
- Stone Wall (Station 114+50 Right), opposite of Turners Club Entrance
- Utilities impacted
- Entrance (STA. 112+29, Right)

Widening Left
Widening Right
Symmetric Widening

YES	NO	NO	NO	10	NO	
NO	NO	YES	NO	2	NO	
NO	NO	NO	NO	0	NO	

Turners Club Entrance to Waldoah Beach Road

STA.114+41 TO STA.120+57

- Multi use on Left
- Stone Walls Left & Right (Station 120+57 Left) @ Waldoah Beach Entrance
- Utilities impacted

Widening Left
Widening Right
Symmetric Widening

NO	NO	NO	NO	13	NO	
NO	NO	YES	YES	WOODED AREA, NO #	YES	
NO	NO	YES	YES	5	NO	

RIVER ROAD ALIGNMENT STUDY

SECTIONS:

UTILITIES RELOCATION				TREE CUTTING	TEMP. ESMNT.	NOTES
FARM TAP	GAS MAIN	WATER MAIN	UTILITY POLES	#	R/W	

Waldoah Beach Road to Wagner Beach Road

STA.120+57 TO STA.124+36

- Multi use on Left
- Utilities impacted
- Storm Sewer Pipe (C.L. STA. 123+56)

Widening Left

Widening Right Symmetric Widening

Symmetric Widening

NO	YES	NO	NO	6	YES	
NO	NO	YES	YES	WOODED AREA, NO #	YES	
NO	NO	YES	YES	1	NO	

Wagner Beach Road to T.H. Park Entr. #1

STA.124+36 TO STA.126+34

- Multi use on Left
- Utilities impacted

Widening Left

Widening Right

Symmetric Widening

NO	YES	NO	NO	3	NO	
NO	NO	YES	YES	WOODED AREA, NO #	YES	
NO	NO	YES	YES	3	NO	

T.H. Park Entr. #1 to Cox Park Entr. #1

STA.126+34 TO STA.132+56

- Utilities impacted
- Wooden fence impacted, Left side
- Multi use on Left
- Multi use on Right

Widening Left

Widening Right

Symmetric Widening

NO	YES	NO	NO	11	NO	
NO	NO	NO	YES	14	YES	
NO	NO	NO	NO	18	NO	

Cox Park Entr. #1 to T.H. Park Entr. #2

STA.132+56 TO STA.147+11

- Utilities impacted
- Wooden fence impacted, Left side
- Wooden posts with single cable barrier impacted, Left side
- Multi use on Right
- Entrance Pipe (STA. 147+11, Right)

Widening Left

Widening Right

Symmetric Widening

NO	YES	NO	NO	15	NO	
NO	NO	NO	YES	24	YES	
NO	NO	NO	NO	13	NO	

RIVER ROAD ALIGNMENT STUDY

SECTIONS:

T.H. Park Entr. #2 to Cox Park Entr. #2

STA.147+11 TO STA.151+33

- Utilities impacted
- Multi use on Right
- Police Station
- Storm Sewer Pipe with deep ditch rt. (C.L. STA. 148+05)

Widening Left

Widening Right

Symmetric Widening

UTILITIES RELOCATION				TREE CUTTING	TEMP. ESMNT.	NOTES
FARM TAP	GAS MAIN	WATER MAIN	UTILITY POLES	#	R/W	

NO	YES	NO	NO	7	NO	
NO	NO	NO	YES	11	NO	
NO	NO	NO	YES	8	NO	

Cox Park Entr. #2 to Golf Centers

STA.151+33 TO STA.159+44

- Utilities impacted
- Multi use on Right
- Entrance Pipe (STA. 151+33,Right)

Widening Left

Widening Right

Symmetric Widening

NO	NO	NO	NO	12	NO	
NO	NO	YES	YES	11	NO	
NO	NO	NO	YES	5	NO	

Golf Centers to Indian Hills Trail

STA.159+44 TO STA.165+63

- Patriot Peace Memorial Sign impacted (STA. 162+34,Right)
- Multi use on Right
- Utilities impacted
- Storm Sewer Pipe (C.L. STA. 164+73)

Widening Left

Widening Right

Symmetric Widening

NO	YES	NO	NO	8	NO	
NO	NO	YES	YES	13	YES	
NO	NO	NO	YES	15	NO	

SUMMARY

Widening Left

Widening Right

Symmetric Widening

NO	YES	NUMBER OF TREES	TEMP. ESMNT.	
31	9	87	YES	
18	22	77	YES	
30	10	72	NO	

APPENDIX B

Photo Log

RIVER ROAD ALIGNMENT STUDY PHOTO LOG

Zorn Avenue to Mockingbird Road
Sta. 100+00 to Sta. 109+35



Mockingbird road to Turners Club Entrance
Sta. 109+35 to Sta. 114+41



Turners Club entrance to Waldoah Beach Road
Sta. 114+41 to Sta. 120+57



Waldoah Beach Road to Wagner Beach Road
Sta. 120+57 to Sta. 1234+36



Wagner Beach Road to T.H. Park Entr. #1
Sta. 124+36 to Sta. 126+34



T.H. Park Entr. #1 to Cox park Entr. #1
Sta. 126+34 to Sta. 132+56



Cox Park Entr. #1 to T.H. park Entr. #2
Sta. 132+56 to Sta. 147+11



T.H. Park Entr. #2 to Cox Park Entr. #2
Sta. 147+11 to Sta. 151+33



Cox Park Entr. #2 to Golf Centers
Sta. 151+33 to Sta. 159+44



Golf Centers to Indian Hills Trail
Sta. 159+44 to Sta. 165+63

Multi use to match



APPENDIX C

Cost Estimates

LOUISVILLE METRO

Bureau of Highways

PRELIMINARY ESTIMATE OF CONSTRUCTION COSTS

Addition 8' of Pavement for Bike Lanes Left Side, Overlay & Drainage Improvements

County: **JEFFERSON**

Item No: **0-000.00**

UPN

Road Name: **RIVER ROAD**

From: **STA. 100+00**

To: **STA: 167+89.59**

Net Length, mile: **1.29** Type of Construction: **Grade & Drain & Surfacing** Class of Road: **Rural Arterial**

Item #	Item	Quantity	Unit	Unit Price	Amount
2200	Roadway Excavation	2,276	CU YD	\$15.00	34,140
0001	C.S.B. or DGA	3,935	TON	\$20.00	78,700
0212	Asph Base	2,000	TON	\$65.00	130,000
0301	Asph Surf	1,954	TON	\$75.00	146,550
0291	Emulsified Asphalt	3	TON	\$650.00	1,950
0100	Asphalt Seal Aggregate	29	TON	\$65.00	1,885
	Leveling and Wedging	65	TON	\$75.00	4,875
0520	12" Storm Sewer Pipe	5	LIN FT	\$45.00	225
0522	18" Storm Sewer Pipe	10	LIN FT	\$45.00	450
1517	DBI Type 5F	1	EACH	\$1,600.00	1,600
2723	Sidewalk 6" Concrete	111	SQ YD	\$31.00	3,441
	Maintain and Control Traffic	1	LP SUM	\$50,000.00	50,000
	Clearing and Grubbing	1	LP SUM	\$15,000.00	15,000
	Staking	1	LP SUM	\$6,000.00	6,000
	+ 5% for items not estimated				23,741
	SUB-TOTAL GRADE, DRAIN, AND SURFACING:				498,557
	Mobilization (@3%)				
	Demobilization (@ 1-1/2%)				7,478
SUB-TOTAL					506,035
+15% Engr. & Contg.					75,905
GRAND-TOTAL					581,940

Estimated by: Z. Ajanovic

Checked by:

Date: 11-29-2011

Date: 11-29-2011

① Cut = 2,276, Fill = 1,668

LOUISVILLE METRO

Bureau of Highways

PRELIMINARY ESTIMATE OF CONSTRUCTION COSTS

Addition 8' of Pavement for Bike Lanes_ Right Side, Overlay & Drainage Improvements

County: **JEFFERSON**

Item No: **0-000.00**

UPN

Road Name: **RIVER ROAD**

From: **STA. 100+00**

To: **STA: 167+89.59**

Net Length, mile: **1.29** Type of Construction: **Grade & Drain & Surfacing** Class of Road: **Rural Arterial**

Item #	Item	Quantity	Unit	Unit Price	Amount
2200	Roadway Excavation	3,007	CU YD	\$15.00	45,105
0001	C.S.B. or DGA	3,935	TON	\$20.00	78,700
0212	Asph Base	2,000	TON	\$65.00	130,000
0301	Asph Surf	1,954	TON	\$75.00	146,550
0291	Emulsified Asphalt	3	TON	\$650.00	1,950
0100	Asphalt Seal Aggregate	29	TON	\$65.00	1,885
	Leveling and Wedging	65	TON	\$75.00	4,875
0520	15" Storm Sewer Pipe	90	LIN FT	\$45.00	4,050
0522	18" Storm Sewer Pipe	70	LIN FT	\$45.00	3,150
1641	Junction Box 18"	13	EACH	\$1,883.00	24,479
0736	Metal End Section TY 3-18 Inch	4	EACH	\$1,114.00	4,456
1517	DBI Type 5F	2	EACH	\$1,600.00	3,200
2723	Sidewalk 6" Concrete	111	SQ YD	\$31.00	3,441
	Maintain and Control Traffic	1	LP SUM	\$50,000.00	50,000
	Clearing and Grubbing	1	LP SUM	\$15,000.00	15,000
	Staking	1	LP SUM	\$6,000.00	6,000
	+ 5% for items not estimated				26,142
	SUB-TOTAL GRADE, DRAIN, AND SURFACING:				548,983
	Mobilization (@3%)				
	Demobilization (@ 1-1/2%)				8,235
SUB-TOTAL					557,218
+15% Engr. & Contg.					83,583
GRAND-TOTAL					640,801

Estimated by: Z. Ajanovic

Date: 11-29-2011

Checked by:

Date: 11-29-2011

① Cut = 3,007, Fill = 1,605

LOUISVILLE METRO

Bureau of Highways

PRELIMINARY ESTIMATE OF CONSTRUCTION COSTS Addition 8' of Pavement for Bike Lanes_ Left & Right Side, Overlay & Drainage Improvements

County: **JEFFERSON**
Item No: **0-000.00**
UPN
Road Name: **RIVER ROAD**
From: **STA. 100+00**
To: **STA: 167+89.59**
Net Length, mile: **1.29** Type of Construction: **Grade & Drain & Surfacing** Class of Road: **Rural Arterial**

Item #	Item	Quantity	Unit	Unit Price	Amount
2200	Roadway Excavation	3,680	CU YD	\$15.00	55,200
0001	C.S.B. or DGA	3,791	TON	\$20.00	75,820
0212	Asph Base	1,800	TON	\$65.00	117,000
0301	Asph Surf	1,917	TON	\$75.00	143,775
0291	Emulsified Asphalt	7	TON	\$650.00	4,550
0100	Asphalt Seal Aggregate	57	TON	\$65.00	3,705
	Leveling and Wedging		TON	\$75.00	0
0522	18" Storm Sewer Pipe	70	LIN FT	\$45.00	3,150
1641	Junction Box 18"	4	EACH	\$1,883.00	7,532
0736	Metal End Section TY 3-18 Inch	4	EACH	\$1,114.00	4,456
1517	DBI Type 5F	1	EACH	\$1,600.00	1,600
2723	Sidewalk 6" Concrete	111	SQ YD	\$31.00	3,441
	Maintain and Control Traffic	1	LP SUM	\$50,000.00	50,000
	Clearing and Grubbing	1	LP SUM	\$15,000.00	15,000
	Staking	1	LP SUM	\$6,000.00	6,000
	+ 5% for items not estimated				24,561
	SUB-TOTAL GRADE, DRAIN, AND SURFACING:				515,790
	Mobilization (@3%)				
	Demobilization (@ 1-1/2%)				7,737
SUB-TOTAL					523,527
+15% Engr. & Contg.					78,529
GRAND-TOTAL					602,056

Estimated by: Z. Ajanovic
Checked by:

Date: 11-29-2011
Date: 11-29-2011

① Cut = 3,680, Fill = 1,287



Architecture Engineering Planning

Groundbreaking by Design.



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