

Appendix L: Minutes from Project Team Meetings



December 15, 2018

Stephen G. De Witte
Kentucky Transportation Cabinet
Division of Planning
200 Mero Street
Frankfort, Kentucky 40622

RE: Status Meeting #1 - I-65 bridges from I-264 to Ohio River Bridges, Jefferson County

Dear Stephen:

On Thursday December 13, 2018, a status meeting for the above referenced project we held in KYTC District 5 conference room. Those in attendance were:

Steve De Witte	KYTC – CO Division of Planning
Mikael Pelfrey	KYTC – CO Division of Planning
Steve Ross	KYTC – CO Division of Planning
Carl Van Zee	KYTC – CO Division of Structural Design
Royce Meredith	KYTC – CO Bridge Maintenance
Tom Hall	KYTC – D5 Planning
Judi Hickerson	KYTC – D5 Planning
Pat Matheny	KYTC – D5 Design
Lindsay Ashby	KYTC – D5 Environmental
Donna Hardin	KYTC – D5 Environmental
Andrea Clifford	KYTC – D5 PIO
Natalie House-Lewis	KYTC – D5 Structures
Eddie House	KYTC – D5 Structures
Russell Whatley	KYTC – D5 Utilities
Sarah Haynes	KYTC – D5
Larry Chaney	KIPDA
David Waldner	Palmer Engineering
Chris Blevins	Palmer Engineering
Gary Sharpe	Palmer Engineering
Aaron Thomas	Palmer Engineering
Brad Robson	Palmer Engineering

After introductions, Mikael Pelfrey gave a brief overview of the study then Brad Robson presented on Palmer Engineering's findings so far in the study. A copy of the presentation is attached. The items below were discussed in addition to the presentation.

- Update the Purpose and Need Statement to include a brief summary of the bridges' conditions and also include the phrase 'asset management'.
- Current study's focus is on fixing bridge deficiencies. Ramp improvements recommended in the 2008 I-65 Ramp Modifications Scoping should be listed as secondary area improvements if compatible during bridge repairs. A Ramp improvement project was ranked in the SHIFT program but did not make the current 6-year plan.
- Item No. 5-378.00 (I-65 SB Ramp to Brook Street and Floyd Street) is an active project that could affect bridge 056B00196N and is being monitored.
- Homeless camps exist under several of these bridges. The city will lead efforts for relocation if adequate time is given before construction begins.
- Replacement options for bridge 056B00183N (I-65 over Brook St. and Kentucky St.) should be studied without reconfiguring the city-owned intersection below.
- District 5 Structures would like to look at a replacement option for Bridge 056B00179N (I-65 over CSX RR, Burnett, and Hill St.) due to the widespread deterioration, the number of joints, bridge geometry, and deterioration of the south abutment that has caused an emergency repair.
- When more than one repair scheme is possible, study should discuss initial cost, construction duration, and life expectancy of the repair. If funding allows, the preferred alternate would be a long-term fix for bridges on interstate 65.
- District 5 Structures prefers to use an FRP wrap or Cat-Strong when patching concrete. Patches that are not wrapped have poor performance in some instances.
- Bearing replacements: If beam seat concrete is in good condition, using a steel stub column with an elastomeric bearing to replace steel bearings can avoid concrete work. Keeper plates can be used to provide lateral restraint if elastomeric pads are used.
- KYTC Structures – Preference is to eliminate abutment joints, when feasible, by extending the bridge slab over the backwall, with bond breaker between the two and a waterproofing membrane over the joint.
- Study will include conceptual repair details, but not construction plans.
- Repairs for the three priority bridges were anticipated for summer of 2019, but depending on the results of the study, how extensive the repairs will be, and how much structural design will be required, a longer schedule may be required. Funding is currently available for repairs, but not for bridge replacements.
- KYTC is open to multiple options for maintenance of traffic such as: complete interstate

closure over multiple weekends, lane shifts to the shoulders, and / or lane closures as needed.

- The next Team Meeting will be on or near March 1st, 2019. An executive summary will be submitted for review a few days prior to the meeting. The final report will be submitted by May 1st, 2019.

We are pleased to report on our progress and gather feedback to further this study. Please do not hesitate to call or email with any questions or comments.



Brad Robson, PhD, PE, SE
Vice President

CC: Attendees



I-65 Bridges Planning Study
Thursday, December 13, 2018 – 9:30 A.M. EST
KYTC District 5 – Louisville

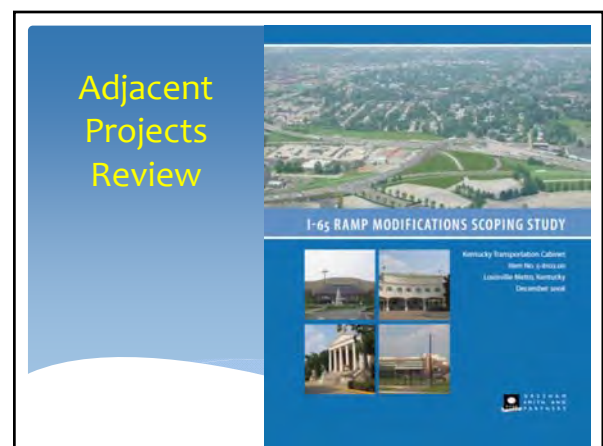
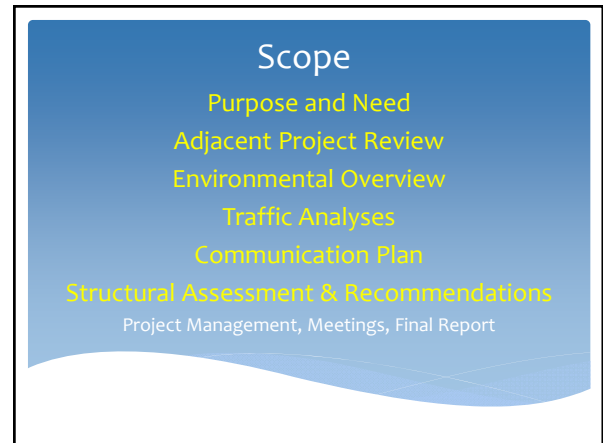
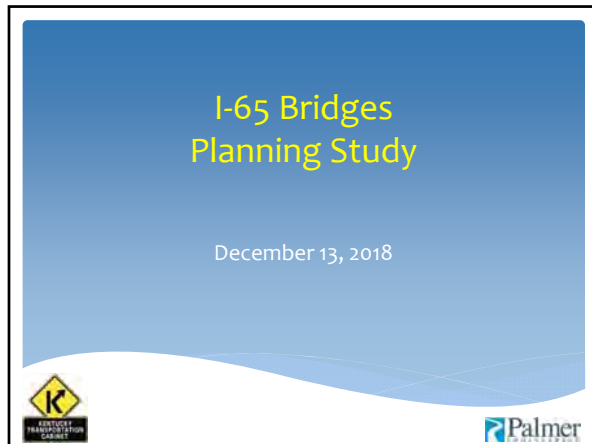


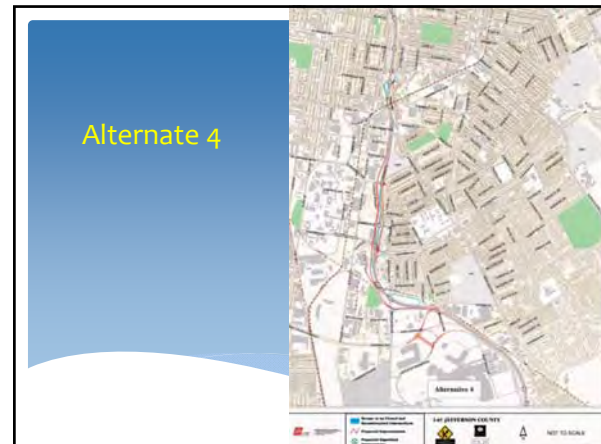
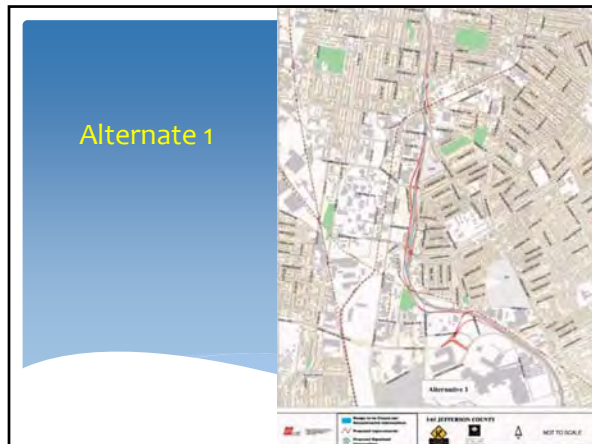
Name	Organization	Telephone	Email
Carl Van Zee	KYTC structures	502 782 5505	carl.vanzee@ky.gov
Chris Blecher	Palmer	159 979 6661	chlecher@palmer.net.com
Dave Walchner	Palmer	855 744 1218	dawalchner@palmer.net.com
Lindsay Ashby	KYTC Environmental	502 782 5029	lindsay.ashby@ky.gov
GARY SHARPE	PALMER	259-744-1218	gsharpe@palmer.net.com
Steve Ross	KYTC C.O. Planning	502-782-5080	steve.ross@ky.gov
STEVE DEWITTE	KYTC CO PLANNING	502-782-5056	STEPHEN.DEWITTE@KY.GOV
JERI HICKESON	KYTC D-5 PLANNING	502-210-5429	JERI.HICKESON@KY.GOV
LARRY CHANEY	KIPDA	502-266-6174	larry.chaney@kipda.org
Mikael Pelfrey	KYTC C.O. PLANNING	502-782-5073	mikael.pelfrey@ky.gov
Eddie House	D-5 Structures	502-210-5474	eddie.house@ky.gov
Tom Hall	D-5 PLANNING	502 210 5479	tom.hall@ky.gov
PAT MATHENY	D-5 Design	502-210-5488	patrick.matheny@ky.gov
Donna Haden	D-5 Environmental	210-5487	Donna.haden@ky.gov
Andrea S. Clifford	D-5 PIO	210-5403	andrea.clifford@ky.gov
Russell Whatley	D-5 Utilities	210-5416	Russell.Whatley@ky.gov
Sarah Haynes	D-5	210-202-3453	Sarah.haynes@ky.gov
Aaron Thomas	Palmer	859-744-1218	aaron@palmer.net.com
BRAD ROBSON	PALMER ENGINEERING	" " "	BRADSON@PALMERNET.COM



Thursday, December 13, 2018 – 9:30 A.M. EST
KYTC District 5 – Louisville

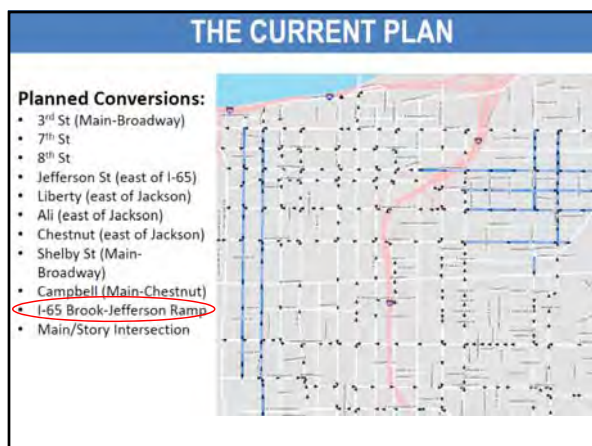
[illegible]





PRELIMINARY ESTIMATES OF PROBABLE COSTS						
PRIORITY	ALTERNATE NO. 1	ITEM 1 ROADWAY	ITEM 2 UTILITIES	ITEM 3 EASEMENT	ITEM 4 OTHER	TOTAL
1	I-65 Connector to Citrusland Dr/Central Ave.	17,000,000	885,000	111,000	2,475,000	18,471,000
2	Arthur Street Southbound I-65	11,110,000	205,000	541,000	1,405,000	13,261,000
3	Citrusland Drive Ramp to Northbound I-65	12,750,000	115,000	65,000	1,410,000	14,340,000
4	I-65 Northbound Ramp to Warnock Street	4,800,000	1,745,000	164,000	675,000	7,384,000
5	Proctor Street Ramp to Northbound I-65	9,850,000	1,000,000	980,000	1,080,000	12,910,000
6	Warnock Street Ramp to Northbound I-65	13,900,000	1,800,000	175,000	68,000	16,743,000
	TOTALS	46,960,000	7,445,000	1,776,000	5,699,000	61,880,000
	ALTERNATE NO. 4					
1	I-65 Connector to Citrusland Dr/Central Ave.	17,230,000	1,085,000	162,000	1,895,000	20,372,000
2	Arthur Street to Southbound I-65	11,335,000	204,000	531,000	1,395,000	13,465,000
3	I-65 Northbound Ramp to Warnock Street	4,800,000	1,745,000	164,000	675,000	7,384,000
4	Proctor Street Ramp to Northbound I-65	11,110,000	1,650,000	1,300,000	1,300,000	15,360,000
5	Warnock Street Ramp to Northbound I-65	13,900,000	1,800,000	175,000	68,000	16,743,000
	TOTALS	58,375,000	7,484,000	2,232,000	5,238,000	73,329,000

Notes: (A) Priority 1 does not include cost for reconstruction of KREC entrance or toll booth.
 (B) Signing and lighting are included in Item 1.
 (C) Item 4 (Engineering) is estimated as 10% of Item 1 through 5.
 (D) Date of estimates is August 2007.



Alternate



Environmental Overview

- * Environmental Overview Document
- * Environmental Justice Investigations
 - o Outreach to agencies that serve the homeless
 - o Interviewed neighboring shelters and agencies



Environmental Justice Investigations

- * Mayor's office - Chief Resilience Officer, Eric Friedlander, will lead relocations
- * Louisville Police - Lieutenant Heady
- * December 3 - homeless not present at priority bridges
- * Other bridges - some homeless present

Environmental Justice Investigations

- * Wayside Mission - Mark Miller
- * Soccer stadium construction mitigation for homeless - hotel vouchers
- * Mixed reviews - not recommended
- * Warm weather for Bridge Repairs

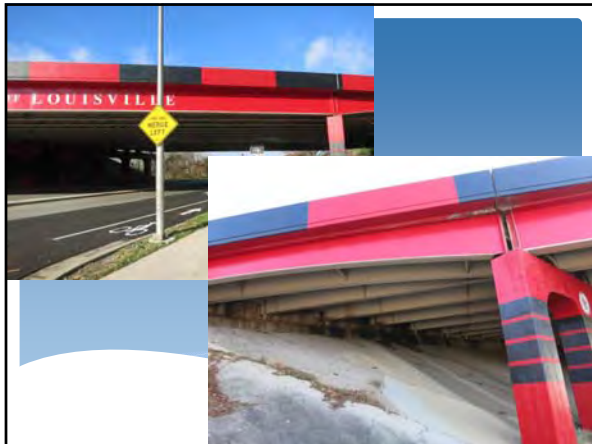
Environmental Justice Investigations

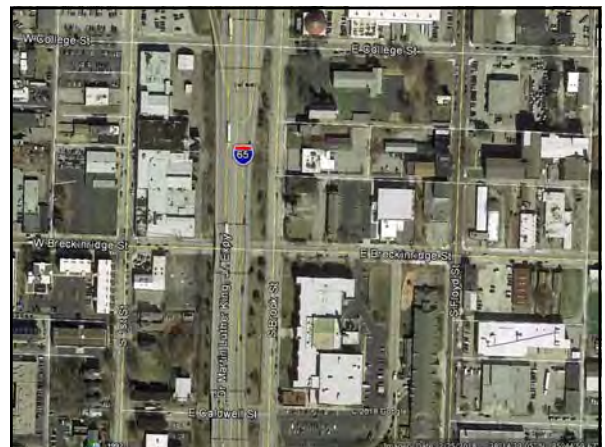
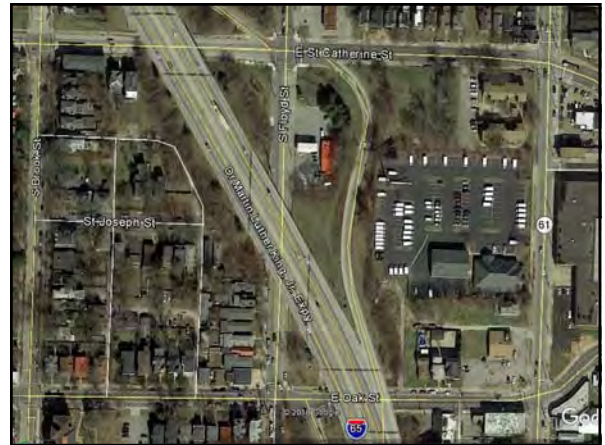
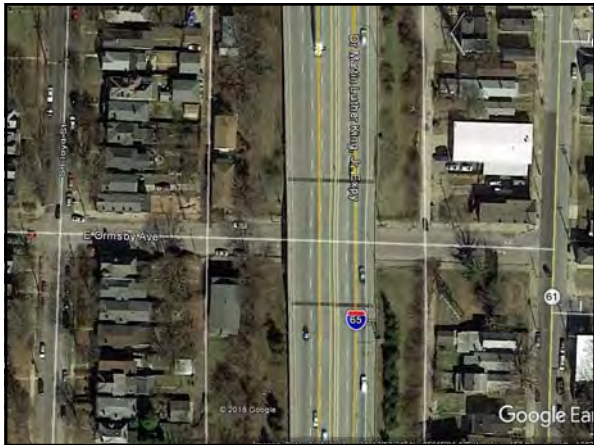
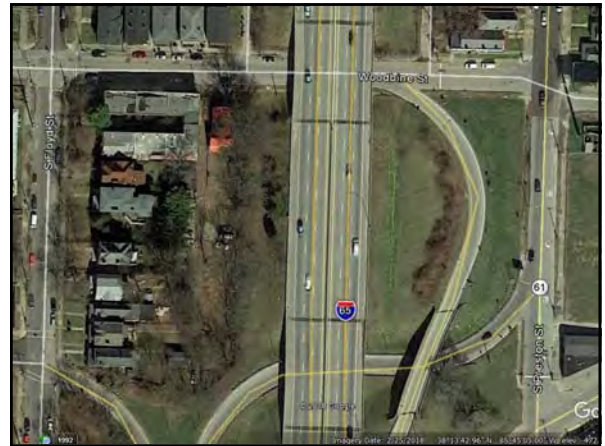
- * Coalition for the Homeless - Mary Frances Schaefer
- * Additional insights; welcomes coordination from Mayor's Office (Eric Friedlander)

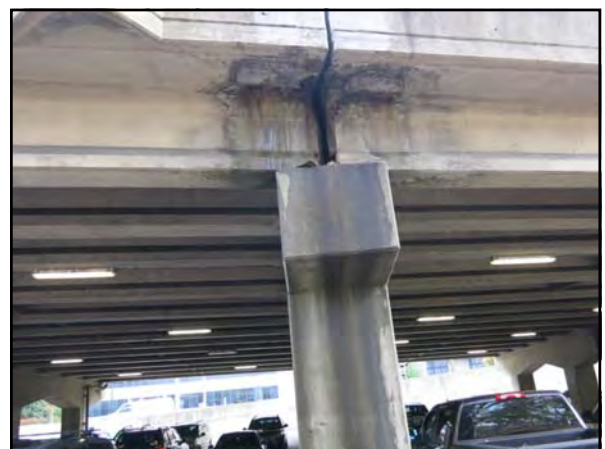
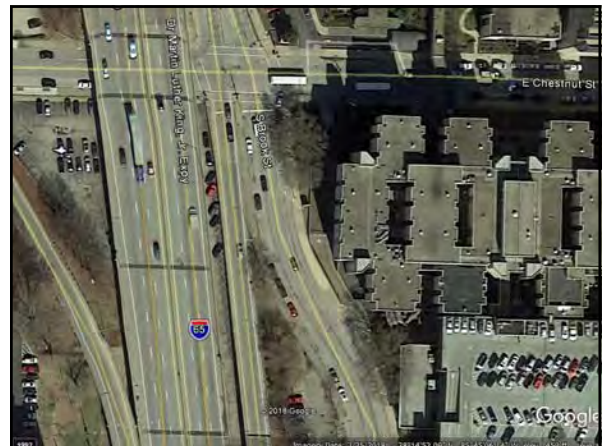
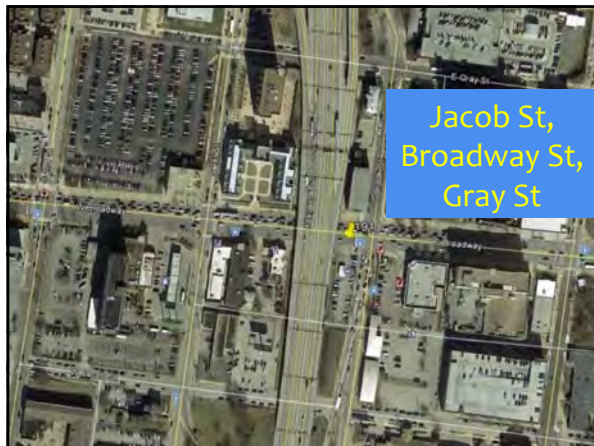
Root of All Bridge Evil

Joints

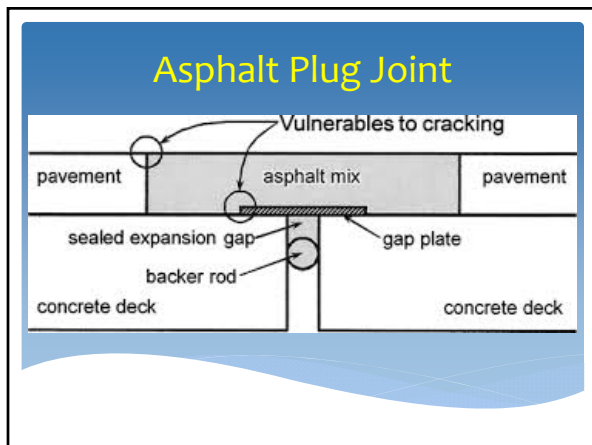


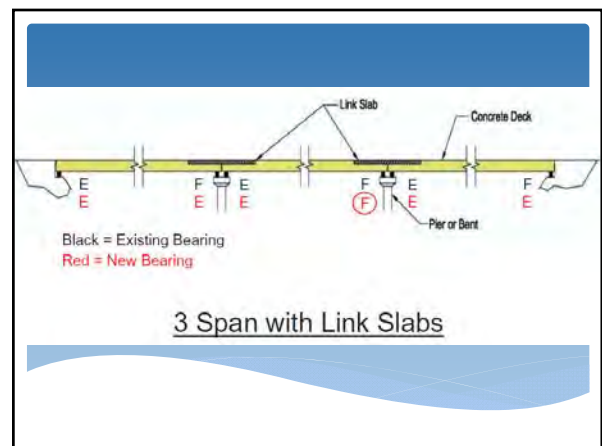
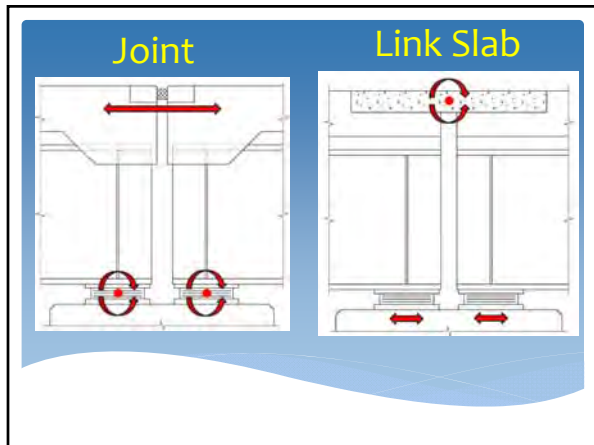
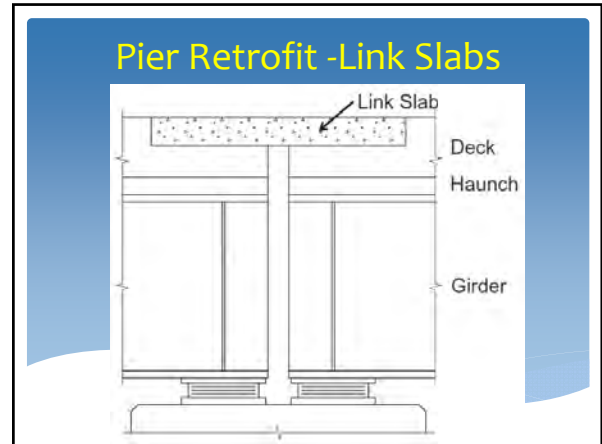


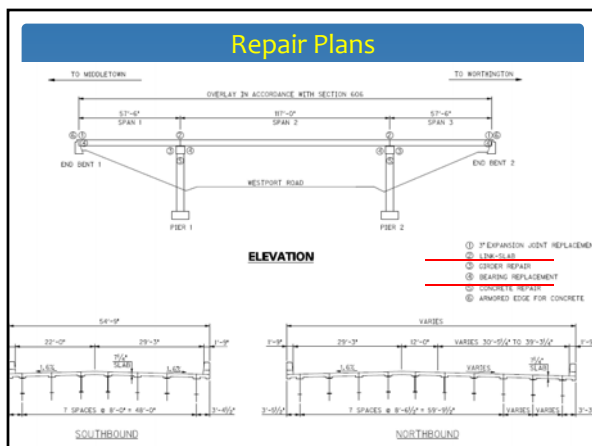
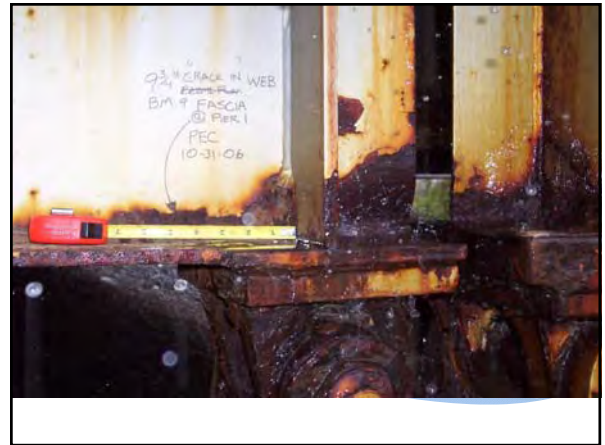














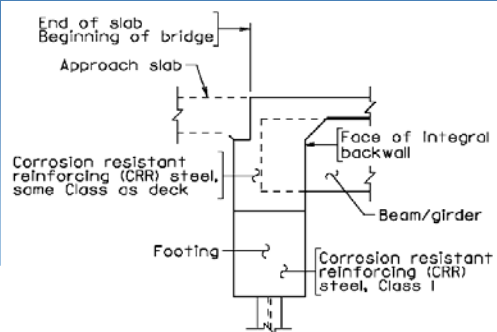


Bridges of all geometry shall eliminate joints to the greatest extent possible.

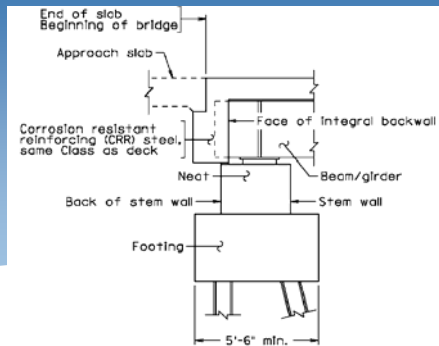
Jointless Bridges

	FULL INTEGRAL STRAIGHT	SEMI-INTEGRAL STRAIGHT	CONVENTIONAL CANTILEVER ABUTMENT WITH DECK SLAB EXT.	
			STRAIGHT	CURVED
Steel bridges	300 feet for 0° skew 150 feet for 30° skew	450 feet 30° max. skew	450 feet 45° max. skew	300 feet 30° max. skew
Concrete bridges	500 feet for 0° skew 250 feet for 30° skew	750 feet 30° max. skew	750 feet 45° max. skew	n/a
Total movement at abutment	1 1/2"	2 1/4"	2 1/4"	1 1/2"

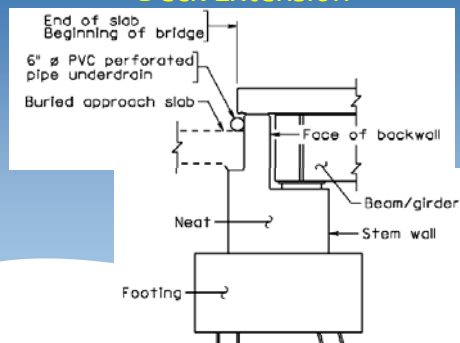
Integral Abutment



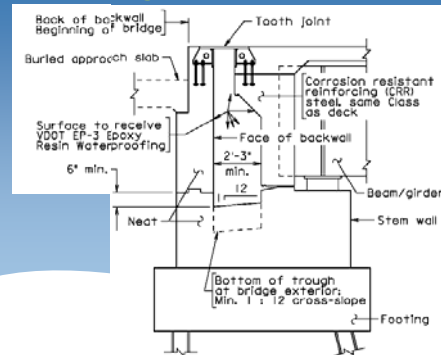
Semi-Integral Abutment



Conventional Abutment + Deck Extension

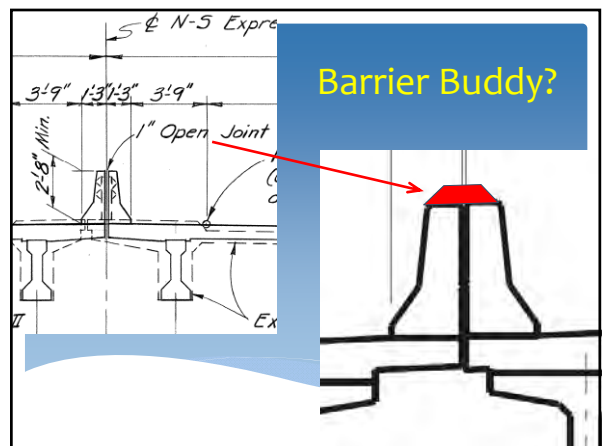
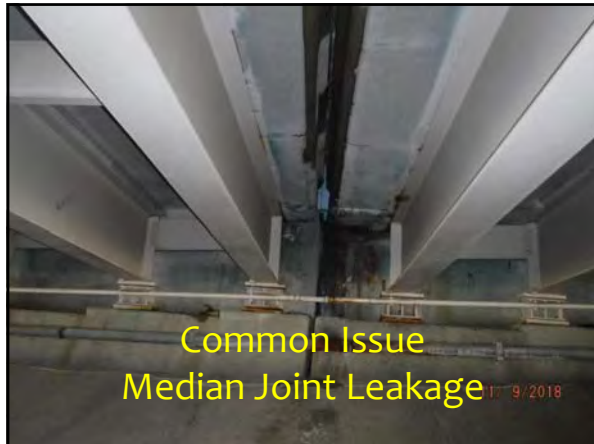


Virginia Abutment



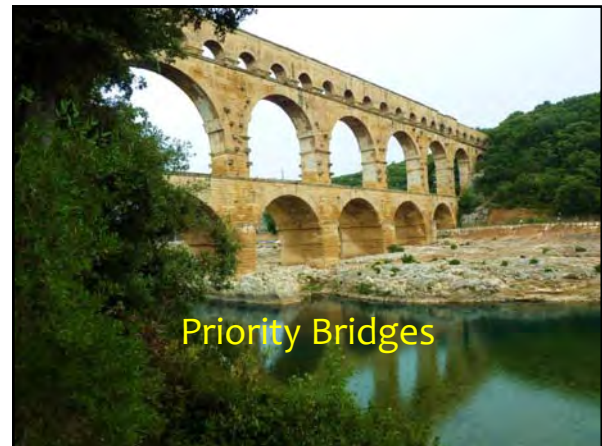
Before





Common Issue Bearings Not in Contact

Phillips Lane Bearing
KFEC Gate 6 Bearing



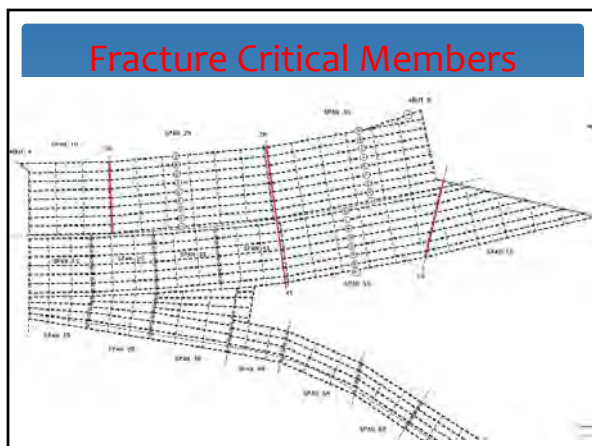
Priority Bridges



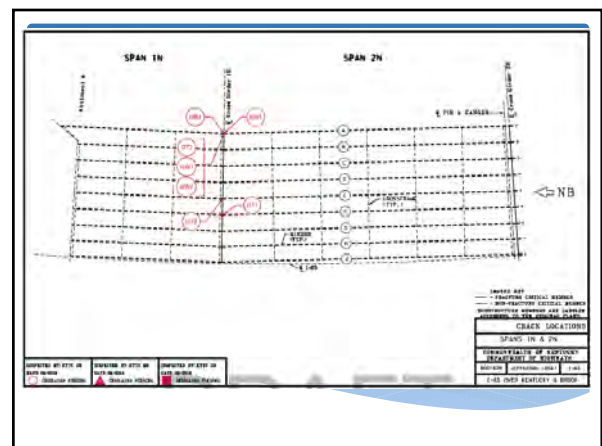
Priority Bridge - #183

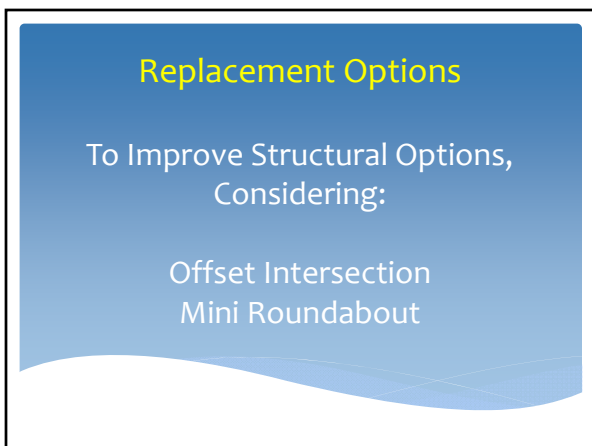
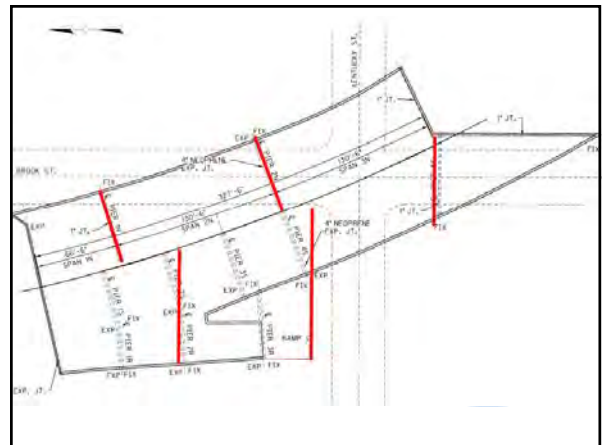
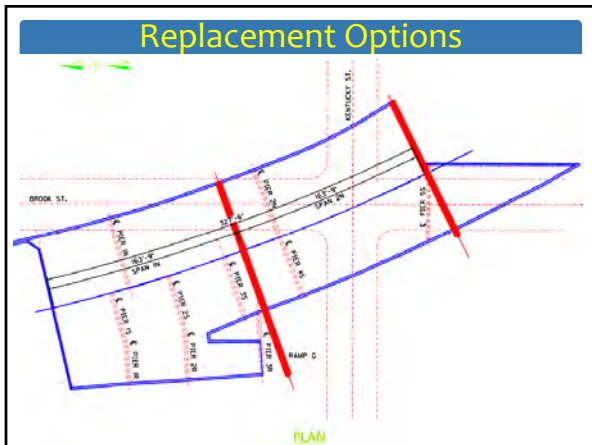


Extensive List of
Undesirable
Features



Fracture Critical Members







Options:

- Conventional Repair
 - Concrete Patch w/ Rebar
 - Concrete Patch w/ FRP Reinforcement
- Replace Girder



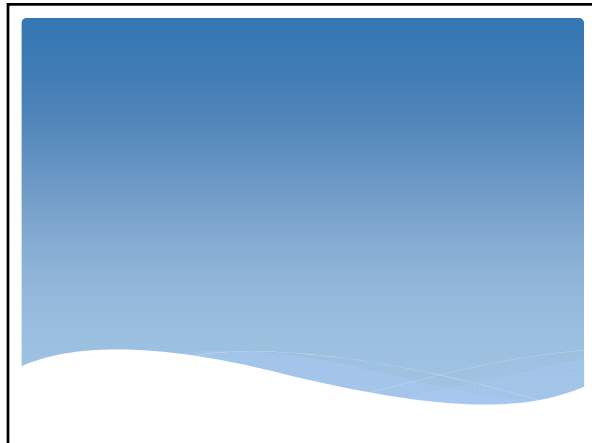
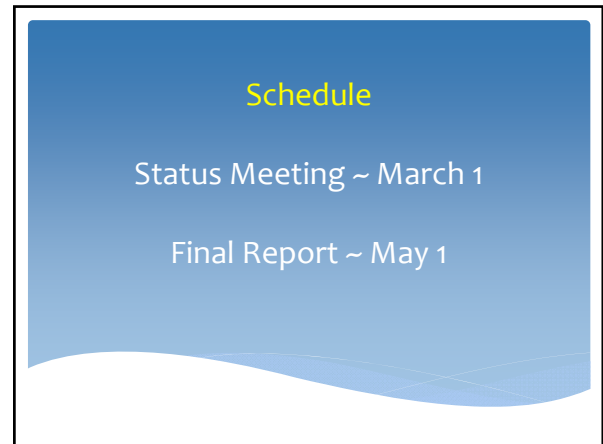


Communication Plan

Restore 64
Revive 65

Traffic Analyses

Mainline I-65 Closures
Cross-Street Closures
Part-Width Construction





March 25, 2019

Stephen G. De Witte
Kentucky Transportation Cabinet
Division of Planning
200 Mero Street
Frankfort, Kentucky 40622

RE: Project Team Meeting No. 2
I-65 bridges from I-264 to Ohio River Bridges, Jefferson County

Dear Stephen:

On Tuesday, March 19, 2019 the second Project Team Meeting for the above referenced project was held in KYTC District 5 conference room. Those in attendance were:

Stephen De Witte	KYTC – CO Division of Planning
Mikael Pelfrey	KYTC – CO Division of Planning
Tom Hall	KYTC – D5 Planning
Judi Hickerson	KYTC – D5 Planning
Tom Wright	KYTC – D5 PD&P
Lindsay Hoskins	KYTC – Environmental (via teleconference)
Donna Hardin	KYTC – D5 Environmental
Andrea Clifford	KYTC – D5 PIO
Eddie House	KYTC – D5 Structures
Russell Whatley	KYTC – D5 Utilities
Cody Davis	KYTC – D5 Utilities
Heath Phillips	KYTC – D5 Construction
Larry Chaney	KIPDA
David Waldner	Palmer Engineering
Gary Sharpe	Palmer Engineering
Aaron Thomas	Palmer Engineering
Brad Robson	Palmer Engineering

After introductions, Palmer Engineering reported findings and recommendations from the study (copy of the presentation is attached). The following discussions and decisions were made:

- On March 11, 2019 there was a fire in a homeless camp under bridge 189N, Breckinridge St. The fire damaged the paint and caused some warping of 4 girders, and caused some spalling to the abutment and bottom of the deck. The inspection report after that incident should be reviewed and additional repairs incorporated into this study.

- NBI Condition ratings (Good, Fair, or Poor) should be added to the chart presented in the Executive Summary (Table ES 1) for the deck, superstructure, substructure, and the overall bridge with definitions below the table (per Moving Ahead for Progress in the 21st Century (MAP-21) Act).
- Although the University of Kentucky's product "CatStrong" - Fiber Reinforced Polymer (FRP) was mentioned as a repair material, generic FRP fabric should be referenced instead of a proprietary product for repair contracts.
- If possible, include published data, reports, etc. showing that galvanic cathodic protection has worked for bridge protection in other states.
- Check into the possibility of using crossovers of one direction of traffic for MOT.
- The airspace agreement under bridge 183N might be with the owners before the Hearing Institute moved in. Parking agreements are still being researched – see if the Ohio River Bridges Project had special procedures for parking management.
- Include a cost and time estimate for the Design phase preparation of proposal package, any structural design, and maintenance of traffic plan, etc. for each bridge. Identify which bridges will need structural design of repairs and which can use standard details with standard and/or special notes for the proposal package.
- Include cost estimates for Design, ROW, Utilities, and Construction phases and approximate construction duration for each bridge.
- Project will likely not have funding to go to construction this year but KYTC will use the results of the study and try to get into the budget for future years.
- Draft report will be submitted by May 1, KYTC will have three weeks to review, then consultant will address comments and submit Final Report within two weeks.

We are pleased to report on our progress and gather feedback to finish this study. Please do not hesitate to call or email with any questions or comments.

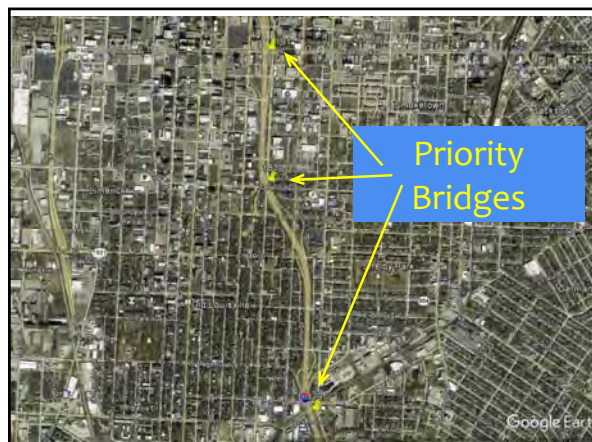


Brad Robson, PhD, PE, SE
Vice President

CC: Attendees

I-65 Bridges Planning Study

March 19, 2019



Scope

Assess conditions, prioritize and develop conceptual repair strategies for 28 Interstate 65 bridges from Watterson to New Kennedy I-chng

- Adjacent Project Review
- Environmental Overview
- Traffic Analyses
- Communication Plan
- Repair/Replace & Costs

Purpose and Need

The purpose of the project is to address deficiencies in 28 bridges on Interstate 65 between Phillips Lane and the rebuilt Kennedy Interchange in Louisville.

This project is needed to maintain safe and efficient travel through the I-65 corridor. Bridge inspections show declining conditions over time for most of the bridges in the study. Two bridges have sufficiency ratings less than 50 and an overall condition rating of Poor: namely bridge 179N over CSX RR, Burnett Ave. and Hill St. and bridge 183N over Brook St. and Kentucky St.

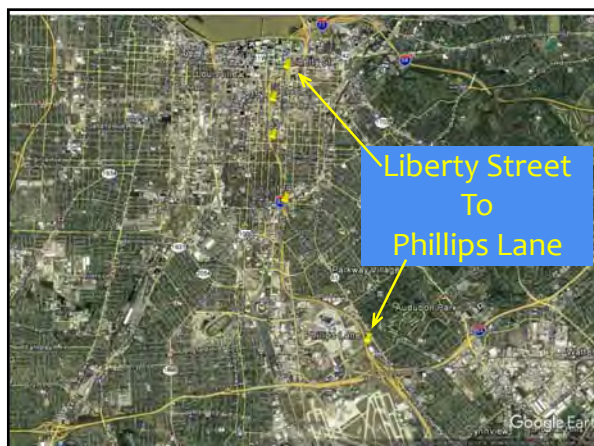
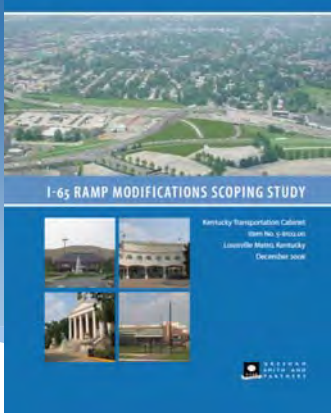


Table 1: Sufficiency Ratings

Bridge ID	Route Under	Sufficiency Rating	Bridge ID	Route Under	Sufficiency Rating
183N	S BROOK, E KENTUCKY ST	46.7	207N	S PRESTON ST ON RAMP	80
179N	CSX RR, BURNETT, HILL ST	49	188N	COLLEGE ST	80.1
208N	PRESTON RAMP TO 65 SB	66	187N	E ORMSBY AVE	80.2
186N	OAK ST	69	211N	E ENT TO FAIRGROUNDS	81.4
206N	WOODBINE ST	70	185N	FLOYD ST	81.6
205N	NORFOLK SOUTHERN RR	72	212N	BRADLEY AVE, N ENT FRGRND	82
210N	MANNING RD	73	181N	WARNOCK ST	82
191N	JACOB, BROADWAY, GRAY ST	73.9	184N	ST CATHERINE ST	82
182N	BRANDEIS AVE	74.7	180N	EASTERN PKWY	84
196N	FLOYD ST	75.7	190N	CALDWELL ST	86.8
209N	PHILLIPS LN	75.9	213N	CRITTENDEN DR (KY 163)	94
193N	BROOK ST, MUHAMMAD ALI	76	194N	MUHAMMAD ALI	96
192N	CHESTNUT ST	77.1	197R	LIBERTY ST	96
189N	E BRECKINRIDGE ST	78.2	195R	FLOYD ST	96.9

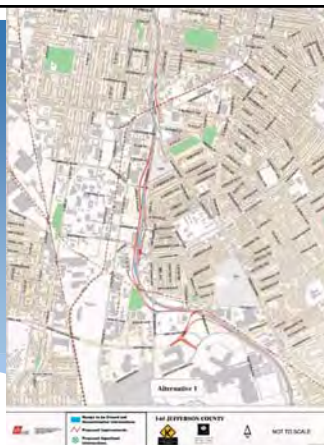
Adjacent Projects



Status

- None Implemented to Date
- SHIFT – 123rd in North
- \$100,400,000 to Complete

Alternate 1



Louisville Metro 2-Way Street Conversion



PRELIMINARY ESTIMATES OF PROBABLE COSTS

PRIORITY	ALTERNATE NO. 1	ITEM 1 ROWAY	ITEM 2 R/W	ITEM 3 UTILITIES	ITEM 4 ENGR.	TOTAL
1	I-65 Connector to Citicenter Dr./Central Ave.	13,000,000	686,000	111,000	3,470,000	16,277,000
2	Arthur Street Southbound I-65	13,155,000	208,000	141,000	1,400,000	15,495,000
3	Citicenter Drive Ramp to Northbound I-65	12,750,000	115,000	65,000	1,400,000	15,690,000
4	I-65 Northbound Ramp to Warnock Street	4,300,000	1,740,000	164,000	670,000	7,374,000
5	Proton Street Ramp to Northbound I-65	9,850,000	1,000,000	980,000	1,180,000	13,110,000
6	Warnock Street Ramp to Northbound I-65	1,390,000	1,800,000	175,000	36,000	3,401,000
	TOTALS	46,395,000	7,484,000	1,741,000	5,459,400	61,481,400
	ALTERNATE NO. 4					
1	I-65 Connector to Citicenter Dr./Central Ave.	17,130,000	1,081,000	162,000	3,393,400	21,543,400
2	Arthur Street to Southbound I-65	13,155,000	304,000	111,000	1,397,400	15,571,400
3	I-65 Northbound Ramp to Warnock Street	4,300,000	1,740,000	165,000	670,000	7,375,000
4	Proton Street Ramp to Northbound I-65	13,121,000	1,650,000	1,300,000	1,807,000	29,882,000
5	Warnock Street Ramp to Northbound I-65	1,390,000	1,800,000	175,000	36,000	3,401,000
	TOTALS	45,020,000	8,476,000	6,817,000	6,244,300	60,644,300

Notes: (A) Priority 1 does not include cost for reconstruction of KFC entrance or toll booth.
 (B) Signing and lighting are included in Item 1.
 (C) Item 4 (Engineering) is estimated as 10% of Item 1 through 5.
 (D) Date of estimates is August 2001.

THE CURRENT PLAN

Planned Conversions:

- 3rd St (Main-Broadway)
- 7th St
- 8th St
- Jefferson St (east of I-65)
- Liberty (east of Jackson)
- Ali (east of Jackson)
- Chestnut (east of Jackson)
- Shelby St (Main-Broadway)
- Campbell (Main-Chestnut)
- I-65 Brook-Jefferson Ramp
- Main/Story Intersection



Status

- Contacted Jeff O'Brien - Metro
- Current Plan – Only Jefferson
- Others considered in future
- Public Works for Street Work Coordination

Environmental Overview

- * Repairs within existing ROW
- * Literature and database review conducted
- * Bridges not eligible for NRHP
- * Adjacent properties not to be affected



Environmental Overview

- * Field reconnaissance for existing conditions
- * Temporary impacts/inconvenience to commuters, residences, businesses
- * No significant concerns identified, other than homeless populations

Status

- Contacted Brian Meade, AECOM
- Construction as early as 2021
- Alternates replace bridge
- Recommend delaying repairs

Environmental Overview

- * Homeless not present at priority bridges
- * Concentrations at Oak St. and College St.
- * Few located at Floyd St., Chestnut St.

Environmental Overview



Environmental Overview

* Environmental Justice Investigations

- Outreach to agencies that serve the homeless
- Interviewed neighboring shelters and agencies



Environmental Justice Investigations

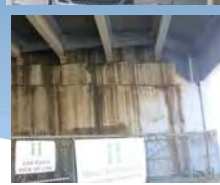
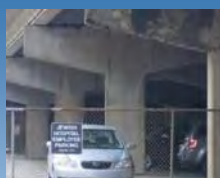
- * Mayor's office - Chief Resilience Officer, Eric Friedlander, will lead relocations
- * Louisville Police - Lieutenant Heady
- * Coalition for the Homeless - Mary Frances Schaefer
- * Wayside Mission - Mark Miller



Environmental Justice Investigations

- * Soccer stadium construction mitigation for homeless - hotel vouchers
- * Mixed reviews - not recommended
- * Additional insights; welcomes coordination from Mayor's Office (Eric Friedlander)
- * Warm weather for Bridge Repairs

Traffic & Parking



Bridges



MOT

		Existing Conditions					Proposed Conditions					
Route	Time	Volume	Adjusted Capacity	Average Speed	Density	LOS	Volume	Adjusted/Workzone Capacity	Average Speed	Density	Queue	LOS
		veh/hr	pc/hr/ln	mph	pc/mi/ln		veh/hr	pc/hr/ln	mph	pc/mi/ln	VeH/Day	
I-64 east of I-65	Weekend	2094	2141	51.2	23.7	C	3671	2141/-	47.7	44.7	N/A	E
I-64 west of I-65	Weekend	2368	2133	50.4	18.2	C	3955	2133/-	50.4	30.4	N/A	D
I-264 east of I-65	Weekend	4333	2132	50.2	25.1	C	3220	2132/-	50.2	34.3	N/A	D
I-264 west of I-65	Weekend	3048	2138	50.9	23.2	C	4035	2138/-	50.9	35.3	N/A	E
I-65 w/ 3 Lanes	Week Day	4379	2204	50.4	33.7	D	4379	2204/2294	-	-	52.1	F
I-65 w/ 4 Lanes	Week Day	4379	2204	50.4	25.3	C	4379	2204/2349	47.9	35.4	D	F

Root of All Bridge Evil

Joints

Throughout Corridor ->

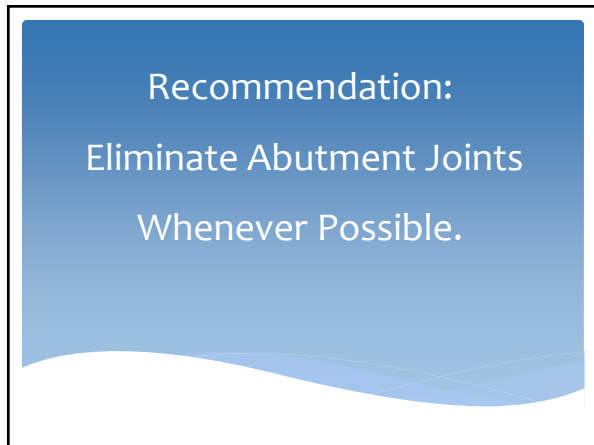
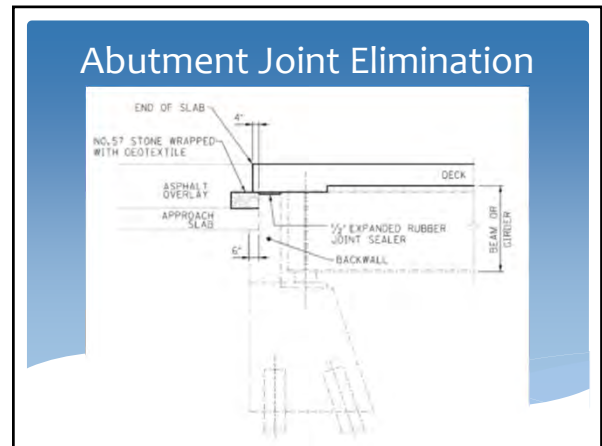
Abutment Joint Leakage
& Deterioration

MOT

- One Lane Closure & Shift
- Weekend Directional Closures
 - LOS decline similar
- Recommend One Lane Closure and Continuous Work Zones



Phillips Lane



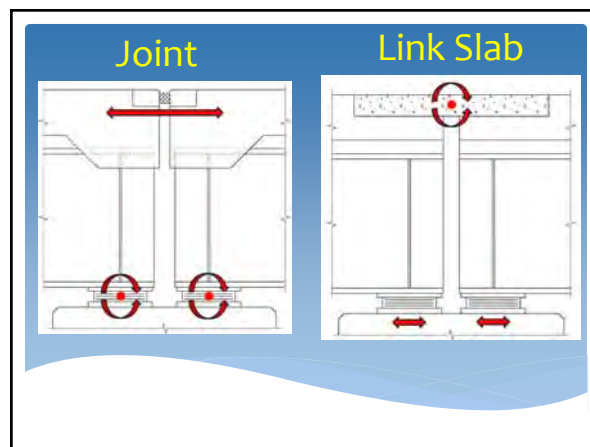
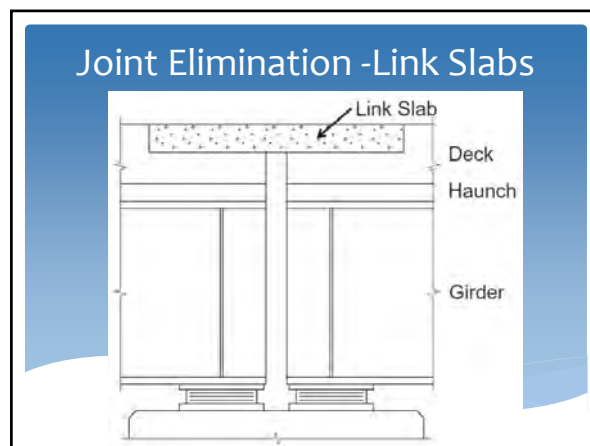
Criteria

	FULL INTEGRAL STRAIGHT	SEMI-INTEGRAL STRAIGHT	CONVENTIONAL CANTILEVER ABUTMENT WITH DECK SLAB EXT.	
			STRAIGHT	CURVED
Steel bridges	300 feet for 0° skew 150 feet for 30° skew	450 feet 30° max. skew	450 feet 45° max. skew	300 feet 30° max. skew
Concrete bridges	500 feet for 0° skew 250 feet for 30° skew	750 feet 30° max. skew	750 feet 45° max. skew	n/a
Total movement at abutment	1 1/2"	2 1/4"	2 1/4"	1 1/2"

*Adapted from VDOT

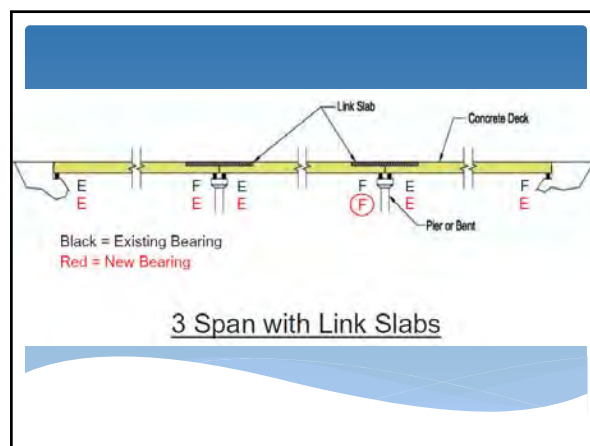
23 Bridges Meet Criteria

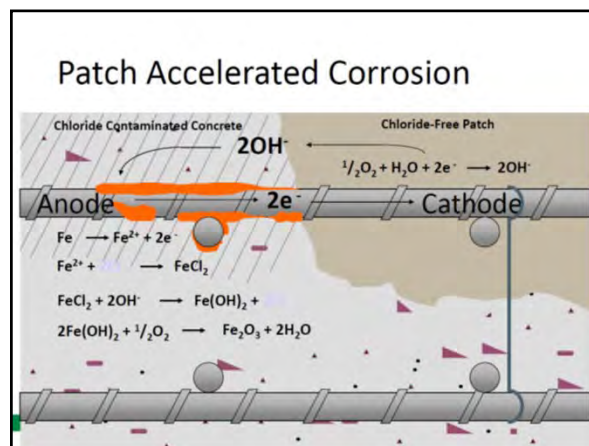




Criteria

- Only 6 Bridges have Joints at Piers
- Recommend Elimination if Possible
- Requires Further Study
 - Link-Slab
 - Bearing Conversions
 - Lateral Force Resisting System (Thermal, Wind, Braking)





Embedded Galvanic Anodes

Type 1 Anodes

- Concrete Repairs
- Joint Repairs
- Bridge Widening

Type 2 Anodes

- Installed in Sound Concrete
- Proactive, targeted protection of active corrosion

Source: Installation of Embedded Galvanic Anodes (ACI RAP Bulletin 8, 2010)

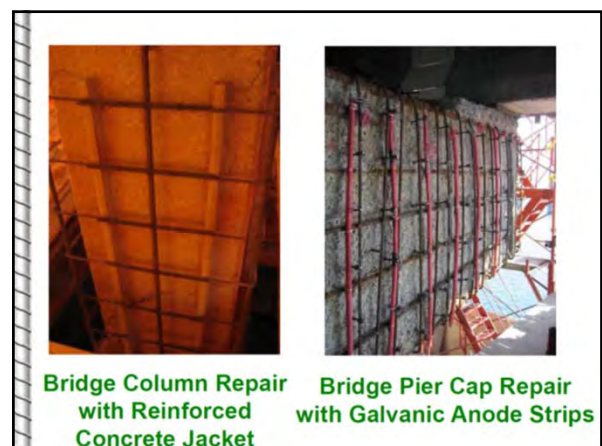
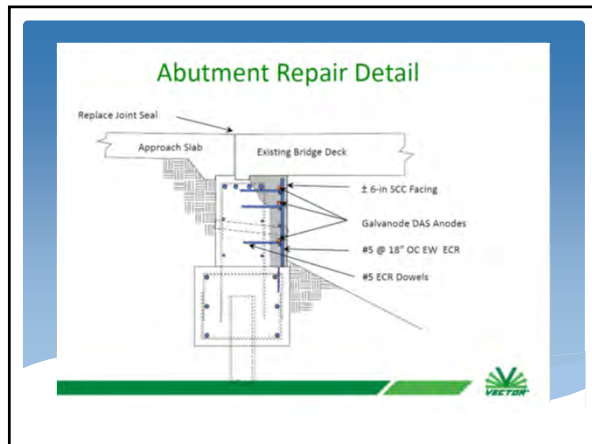
VECTON

Improvement

Recommend Galvanic Cathodic Protection at all Abutments & Piers Where Joints have Leaked

Abutment Conditions

VECTON





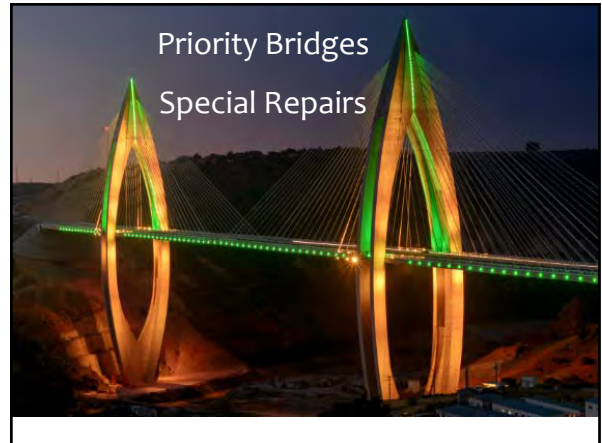
Cathodic Protection

- Base Design Minimum 20-year
- Recommend Minimum 30-year for marginal increase
- Estimate < 10% added cost
- Grant County Friday

Galvanic Encasement of Abutments

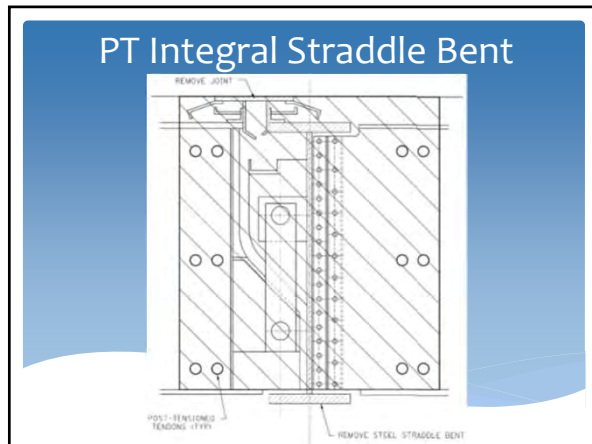


Priority Bridges Special Repairs



Priority Bridge - #183







Repair Options:

1. CatStrong – Carbon Fiber Fabric
 - Concrete Patch w/ cathodic protection
 - Apply CatStrong FRP Fabric
 - Apply Sealer
2. Replace Girderline with PCIB



KY 81 Bridge, McLean County, KY



Beam After Repair (9/18/17)





Prioritization & Estimates

- Structural Condition
 - High Priority = 3
 - Moderate = 7
 - Low = 18
- Geographic Groupings
- Adjust Based on Funding

Repair Package No. 1

Priority of Repairs based on Deterioration

- 1 - High: There is advanced deterioration
 2 - Moderate: Moderate deterioration throughout the bridge.
 3 - Low: Bridge is in fair condition with little deterioration.

Bridge ID	Milepoint	Route On	Route Under	Priority of Repairs	Structural Repair Total
056B00179N (1)	133.873	I-65	CSX RR, BURNETT, HILL ST	1	\$2,759,568
056B00183N-A (2)	134.744	I-65	S BROOK, E KENTUCKY ST	1	\$3,960,217
056B00183N-B (3)	134.744	I-65	S BROOK, E KENTUCKY ST	1	\$4,320,217
056B00191N-A (4)	135.273	I-65	JACOB, BROADWAY, GRAY ST	1	\$4,060,123
056B00191N-B (5)	135.273	I-65	JACOB, BROADWAY, GRAY ST	1	\$4,053,523
TOTAL Structural Repair Cost =					\$11,139,908
ADDITIONAL for MOT, Mobilization, Demobilization, Clean/Repair Drainage, etc. =					\$1,306,995
Contingency @ 10% =					\$1,244,690
APPROXIMATE TOTAL CONTRACT to REPAIR =					\$13,690,000

- (1) Abutment 1 bearings (Girders 8-10) excluded due to active repair.
 (2) Includes Crack Repairs using Structural Covering.
 (3) Includes Crack Repairs via encasement into a PT Integral Straddle Bent.
 (4) Estimate uses CA Strong on the Span 114 Girder 8 repair.
 (5) Estimate replaces Span 114 Girder 8 with a prestressed beam.

Repair Package No. 4

Bridge ID	Milepoint	Route On	Route Under		
056B00208N	134.016	I-65 RAMP	PRESTON RAMP TO 65 SB	3	\$211,996
056B00207N	134.017	I-65	S PRESTON ST ON RAMP	3	\$582,773
056B00206N	134.088	I-65	WOODBINE ST	3	\$616,889
056B00187N	134.24	I-65	E ORMSBY AVE	3	\$718,557
056B00186N	134.435	I-65	OAK ST	3	\$845,532
056B00185N	134.507	I-65	FLOYD ST	3	\$443,234
056B00184N	134.619	I-65	ST CATHERINE ST	3	\$753,691
056B00190N	134.856	I-65	CALDWELL ST	3	\$720,030
056B00189N	134.956	I-65	E BRECKINRIDGE ST	3	\$694,503
056B00188N	135.073	I-65	COLLEGE ST	3	\$1,042,761
TOTAL Structural Repair Cost =					\$6,629,964
ADDITIONAL for MOT, Mobilization, Demobilization, Clean/Repair Drainage, etc. =					\$2,831,498
Contingency @ 10% =					\$946,146
APPROXIMATE TOTAL CONTRACT =					\$10,407,608

Repair Package No. 2

Bridge ID	Milepoint	Route On	Route Under		
056B00192N	135.435	I-65	CHESTNUT ST	2	\$1,358,904
056B00193N	135.584	I-65	BROOK ST, MUHAMMAD ALI	2	\$1,224,928
056B00194N	135.601	I-65 SB RAMP	MUHAMMAD ALI	3	\$150,504
056B00196N	135.764	I-65 SB RAMP	FLOYD ST	2	\$318,095
056B00195R	135.755	I-65 NB	FLOYD ST	3	\$438,188
056B00197R	135.814	I-65 NB	LIBERTY ST	3	\$415,830
TOTAL Structural Repair Cost =					\$3,588,354
ADDITIONAL for MOT, Mobilization, Demobilization, Clean/Repair Drainage, etc. =					\$1,429,418
Contingency @ 10% =					\$501,777
APPROXIMATE TOTAL CONTRACT =					\$5,519,549

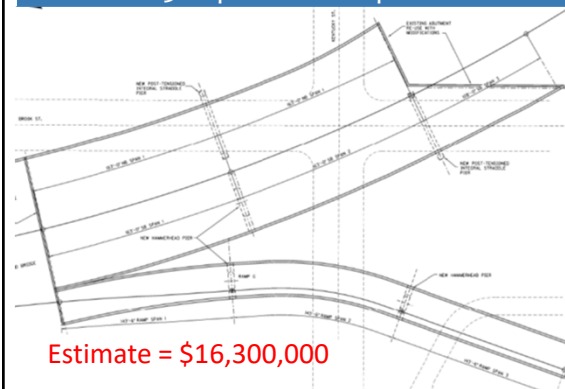
New Bridges



Repair Package No. 3

Bridge ID	Milepoint	Route On	Route Under		
056B00209N	131.24	I-65	PHILLIPS LN	2	\$1,138,618
056B00210N	131.296	I-65	MANNING RD	3	\$831,441
056B00211N	131.396	I-65	E ENT TO FAIRGROUNDS	3	\$782,233
056B00212N	132.191	I-65	BRADLEY AVE, N ENT FRGRND	2	\$897,508
056B00213N	132.533	I-65	CRITTENDEN DR (KY 1631)	3	\$229,192
056B00205N	132.643	I-65	NORFOLK SOUTHERN RR	2	\$400,204
056B00180N	132.911	I-65	EASTERN PKWY	2	\$1,937,326
056B00181N	133.059	I-65	WARNOCK ST	3	\$564,038
056B00182N	133.334	I-65	BRANDEIS AVE	3	\$580,607
TOTAL Structural Repair Cost =					\$7,361,167
ADDITIONAL for MOT, Mobilization, Demobilization, Clean/Repair Drainage, etc. =					\$2,618,058
Contingency @ 10% =					\$997,923
APPROXIMATE TOTAL CONTRACT =					\$10,977,148

183 Replacement Option 1



Estimate = \$16,300,000

