

**COMMONWEALTH OF KENTUCKY  
TRANSPORTATION CABINET  
DEPARTMENT OF HIGHWAYS  
DIVISION OF PLANNING**



**ANNUAL PERFORMANCE AND  
EXPENDITURE REPORT  
FOR  
FISCAL YEAR 2021 ANNUAL WORK PROGRAM  
PROJECT SP 0020 (029)  
JUNE 16, 2020 THROUGH JUNE 15, 2021**

**SEPTEMBER 2021**

## Introduction

The Annual Performance and Expenditure Report is required under 23 CFR 420.117. This document outlines the transportation planning activities conducted by the Kentucky Transportation Cabinet (KYTC) under Planning (Part I) of the SPR work program for the period of June 16, 2020 through June 15, 2021 (Fiscal Year 2021).

The Division of Planning achieved a great deal in FY 2021. Many analyses, studies, and traffic forecasts were completed or initiated over the year to support the KYTC construction lettings. The Division continued to improve on data collection and storage initiatives. Intermodal planning was advanced, including scoping and beginning a riverport study and ADA barrier data collection effort, as well as assisting several communities with bike/ped planning. We worked closely with the Office of Local Programs on CMAQ, TE, and Safe Routes to School projects. The Division worked to improve upon the Strategic Highway Investment Formula for Tomorrow (SHIFT), which is a linchpin in Kentucky's implementation of Performance Based Planning and Programming. The Statewide Corridor Plan, which strives to identify critical arterials in regards to mobility, accessibility, and safety, to feed into SHIFT was also started.

All these activities occurred while the Division of Planning continued to collect necessary data, manage and report the data as required, respond to requests for data both within and outside the Cabinet, forecast future transportation demands, plan for the transportation needs within the Commonwealth, coordinate with our rural and metropolitan planning partners, address air quality concerns, support project selection for the Six-Year Highway Plan and Statewide Transportation Improvement Program, and address other State and Federal requirements.

FY 21 accomplishments are identified in this document by chapter in **red ink**. Initial budget and expenditures are also shown at the end of each chapter.

**FY 2021**  
**SPR CHAPTER FUNDING SUMMARY**

<b><u>CHAPTER AND TITLE</u></b>		<b><u>BUDGETED</u></b>	<b><u>EXPENDED</u></b>
1	SPR Work Program	\$115,000	\$20,319
2	Personnel Training	\$90,000	\$12,352
3	Traffic and Equipment Management	\$2,525,000	\$2,267,008
4	Roadway Systems	\$635,000	\$592,084
5	Cartography	\$361,000	\$101,510
6	Highway Information System	\$1,680,000	\$1,289,391
7	Strategic Corridor Planning	\$3,110,000	\$2,791,765
8	Statewide Transportation Planning	\$1,691,500	\$1,710,946
9	Metropolitan Planning Organizations	\$751,500	\$684,749
10	Performance Measures and Congestion/Mobility Analysis	\$240,000	\$145,265
11	Air Quality	\$27,000	\$30,841
12	Multimodal Transportation	\$722,000	\$256,874
13	Traffic Data Forecasting	\$780,000	\$994,374
14	Bicycle and Pedestrian Program	<u>\$192,000</u>	<u>\$110,832</u>
	Planning Total	\$12,920,000	\$11,008,310
	Percent Expended		85%
15	Highway Safety Improvement Program	\$500,000	\$571,884
16	Value Engineering and Quality Assurance	<u>\$500,000</u>	<u>\$408,407</u>
	Other Items Total	\$1,000,000	\$980,291
	Percent Expended		98%
	TOTAL	\$13,920,000	\$11,988,601
	Percent Expended		86%

## CHAPTER 1

## SPR Work Program

### RESPONSIBLE UNIT

Division of Planning  
Customer Service Branch

### PURPOSE AND SCOPE

The Customer Service Branch in the Division of Planning is responsible for administrative, budgetary, and expenditure tracking activities directly attributable to the completion of the SPR Planning Work Program chapters.

### PROPOSED ACTIVITIES FOR 2020-2021

- Coordinate with all other branches in the Division of Planning in order to prepare the annual SPR Planning Work Program. **The Customer Service Branch created well over 400 pieces of correspondence in the form of memos and letters. Almost all of which were related to processing contracts, MOAs, letter agreements and other activities related to the SPR Work Program. 100% Complete**
- Prepare monthly expenditure reports for each chapter of the SPR Planning Work Program. **Ran 12 expenditure reports, one per month. 100% Complete**
- Coordinate and prepare the annual SPR Planning Work Program and Accomplishments and Expenditures Report. **Ran final expenditure reports and reported total expenditures as well as percentage of budgeted amounts. Prepared FY 2021 Work Program. 100% Complete**
- Kentucky Transportation Center studies, as needed. **No studies were done.**

### PRODUCTS

The Internal Customer Service Section will coordinate and prepare the annual SPR Planning Work Program and the annual SPR Planning Work Program Accomplishments and Expenditures Report. This Section will also prepare and distribute to other Branches monthly expenditure reports for all chapters in the SPR Planning Work Program.

### DISTRIBUTION OF ESTIMATED COST FOR 2020-2021

	2020-2021	Expended	Percent Expended
<b>PERSONNEL</b>	<b>\$35,000</b>	<b>\$20,319</b>	<b>58%</b>
<b>OUTSOURCING</b>	<b>\$80,000</b>	<b>\$0</b>	<b>0%</b>
<b>OTHER</b>		<b>\$0</b>	<b>0%</b>
<b>TOTAL</b>	<b>\$115,000</b>	<b>\$20,319</b>	<b>17%</b>

### ESTIMATED OUTSOURCING EXPENSES AND PURCHASES

#### Outsourcing

- \$80,000 for various Kentucky Transportation Center studies.  
All studies will be submitted for eligibility review prior to funding.

**CHAPTER 2**

Personnel Training

**RESPONSIBLE UNIT**

Division of Planning

**PURPOSE AND SCOPE**

Training is essential to the transportation program in order to keep pace with changing techniques and evaluate new procedures and developments as well as to help better develop the abilities of employees as they assume the vacated duties brought on through mass retirements, promotions, and transfers. This is particularly essential to the Cabinet’s programs as more efficient and detailed technical analyses and assistance are required.

**PROPOSED ACTIVITIES FOR 2020-2021**

An effort will be made to continue a level of staff training which will maintain the integrity of professional career development and improvement of technological skills. Such training will include, but not be limited to the following workshops, classes, and conference or like training. This will not include registration fees to attend annual meetings or conferences except fees for portions of such conferences that do provide eligible training. We will also provide annual in-state Traffic Count Technician Training for District personnel. Training for Highway District Office Planning personnel, ADD personnel, and MPO personnel in procedures, regulations, technical issues, etc., may also be included as necessary to provide for improved coordination and efficiency within and between the Statewide and Metropolitan planning efforts.

**SEE THE FOLLOWING 7 PAGES FOR TRAINING AND CONFERENCES**

**PRODUCTS**

Personnel with career development opportunities, improved technological skills, broadened knowledge, enhanced capabilities, and more efficient operation.

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$60,000</b>	<b>\$12,242</b>	<b>20%</b>
<b>OTHER</b>	<b>\$30,000</b>	<b>\$110</b>	<b>1%</b>
<b>TOTAL</b>	<b>\$90,000</b>	<b>\$12,352</b>	<b>1%</b>

**Other**

- Other Operational Cost \$30,000  
For items such as travel, mileage, equipment and other cost directly associated with the completion of this work chapter.

## Chapter 2 Personnel Training

	SPR Work Program	Personnel Training	Traffic and Equipment Management	Roadway Systems	Cartography	Highway Information System	Strategic Corridor Planning	Statewide Transportation Planning	Metropolitan Planning Organizations	Performance Measures and Congestion/ Mobility Analysis	Air Quality	Multimodal Transportation	Traffic Data Forecasting	Bicycle and Pedestrian Program	Highway Safety Improvement Program	Quality Assurance
<b>Conferences</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
GIS T						A	X	X								
KYTC Arc-GIS One Day Summit				X	X		X	X				A	A	A		
Mid-America Freight Coalition												A				
Institute for Trade and Transportation Studies												A				
Highway Information Seminar			X			A										
Bicycle and Pedestrian Facilities							X	X	X					A		
Inland Marine Expo												A				
TRB Marine Board												A				
ACEC Partnering Conference			A				A	X	A				A			
TRB Annual Meeting							A	X	A	A			A			
TRB Tools of the Trade: Small and Medium Communities								X	X	X			X			
AREMA Annual Conference												A				
Annual Kentucky/Louisville Bike & Pedestrian Summit								X	X					A		
ITE Section Conference							X	X	X							
American Planners Association							X	X	X							
AMPO								X	X							
TRB Innovations in Freight Data Workshop												A				
North American Travel Monitoring Expo & Conf			A													
AASHTO Standing Committees							X	X	X			X		A		
Inland Rivers, Ports & Terminal Conference												A				
TRB Workgroups/Research/Webinars												A				
WVDOH Planning Conference								X	X				A			
Ohio Conference on Freight								X	X			A				



## Chapter 2 Personnel Training

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MAASTO CAV Summit													A			
Virtual Meetings & Online Engagement							A									
Kentucky's Nature's Call to Action IV Conference							A	A								
Lifesavers Conference							X	X	X					A		

X = Planned to attend but did not attend

A = Planned to attend and did attend

A = Did not plan to attend but did attend



Chapter 2 Personnel Training	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	SPR Work Program	Personnel Training	Traffic and Equipment Management	Roadway Systems	Cartography	Highway Information System	Strategic Corridor Planning	Statewide Transportation Planning	Metropolitan Planning Organizations	Performance Measures and Congestion/ Mobility Analysis	Air Quality	Multimodal Transportation	Traffic Data Forecasting	Bicycle and Pedestrian Program	Highway Safety Improvement Program	Quality Assurance
<b>Training Events</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
High Desert			A													
Microstation				X	X		X	X	X							
Bentley InRoads							X	X	X							
Public Involvement							X	X	X							
NEPA							X	X	X							
Fundamentals of Title VI/EJ							X	X	X							
Highway Capacity Manual							X	A	X				A			
KYTC Traffic Engineering Design							X	X	X				A			
Road Safety Audit Training							X	X	X							
NEPA Highway Safety Manual							X	X	X					A		
Microsimulation							X	X	X				A			
Administration of FHWA Planning and Research Grants							X	X	X							
Planning for Operations							X	X	X							
Congestion Management and Reliability							X	X	X	A						
Transportation and Land Use							X	X	X				A			
Climate Change							X	X	X							
STAQS								X	X		A					
MOVES								X	X		A					
TransCAD/Modeling								X	X				A			
Census Training					X			X	X				A			
CHAF Training							X	X	X							
R Programming Course													A			
Various ACEC Planning/Design							X	X	X							
Adobe Creative Suite							X	X	X							

## Chapter 2 Personnel Training

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TREDIS							X	X	X	A						
TRB Workgroups/Webinars							A	X	A							
Data Driven Safety Analysis							X	X	X							
Performance Based Planning									X							
FHWA Planning Webinars							X									
ArcGIS Pro Training						X										
Adobe Illustrator					X											
TransCAD GISDK												A				
EDC 5 VPI SE States Workshops							A		A							
Kentucky Statewide Transportation Planning Meetings							A	A	A							
KYTC Project Manager's Boot Camp							A									
TPM Webinars							A	A	A							
ASHE Bluegrass Luncheon							A									
NCHRP 20-44 (32) Workshop							A									
KYSITE Winter Meeting							A									
KYSITE Annual Meeting							A									
Achieving Transportation Equity Through GIS							A									
Winning Tactics for Community Engagement in the New Normal							A									
KBT Local Advocacy Webinar							A	A								
MetroQuest Webinar							A									
MetroQuest DOT Roundtable							A									
KYTC Effective Meetings							A									
Virtual Meetings & Online Engagement							A									
Kentucky Transportation Safety Planning Workshop							A	A	A							

Chapter 2 Personnel Training	SPR Work Program	Personnel Training	Traffic and Equipment Management	Roadway Systems	Cartography	Highway Information System	Strategic Corridor Planning	Statewide Transportation Planning	Metropolitan Planning Organizations	Performance Measures and Congestion/ Mobility Analysis	Air Quality	Multimodal Transportation	Traffic Data Forecasting	Bicycle and Pedestrian Program	Highway Safety Improvement Program	Quality Assurance
Urban Areas for the 2020 Census Webinar							A	A	A							
Performance Based Intersection Design & Operations Workshop							A	A	A							
Providing Resilience and Economic Vitality through Transportation Investments							A									
ASHE Bluegrass Meeting							A									
Roadside Design Guide Training								A	A							
Replica Training								A								
ESRI Hub Training								A								
NHI Training - Transportation Performance Management Overview								A								
KBT Air Cargo Webinar								A								
KBT Connecting Multi-modal partners to Move Kentucky Forward webinar								A	A							
Riverport Webinars								A								
KBT Training								A								
Remi Training								A								
Mobility, Economic Resilience, & Substance Use Disorder Training								A								
EADHS Cost-to- complete Data Input Workshop								A								
Applying NIST Cybersecurity Framework Webinar								A								
FHWA : Road Diet Webinar									A							
FHWA Peer Exchange: VPI to reach Underserved Populations							A		A							
SAFEKY Webinar - Aggressive Driving									A							

Chapter 2 Personnel Training	SPR Work Program	Personnel Training	Traffic and Equipment Management	Roadway Systems	Cartography	Highway Information System	Strategic Corridor Planning	Statewide Transportation Planning	Metropolitan Planning Organizations	Performance Measures and Congestion/ Mobility Analysis	Air Quality	Multimodal Transportation	Traffic Data Forecasting	Bicycle and Pedestrian Program	Highway Safety Improvement Program	Quality Assurance
AASHTO: MTAP - Success Strategies for Multimodal-Transit Statewide Planning									A							
OKI Electric Vehicle Infrastructure & Fleet Funding Workshop									A							
ITS Architecture Workshop									A							
Air Quality Conference Calls									A							
Air Quality Conformity							X	X			A					

## CHAPTER 3

## Traffic and Equipment Management

### RESPONSIBLE UNIT

Division of Planning  
Traffic and Equipment Management Branch

### PURPOSE AND SCOPE

The primary functions of the Traffic and Equipment Management Branch are to collect, process, and store traffic data. Traffic data is used in virtually every decision made in transportation engineering. Applications of this information include, but are not limited to: project/program planning, project selection, pavement design, safety analysis, capacity analysis, air quality assessment, and federal funding.

The Branch is comprised of two Sections: the Equipment Section and the Data Section.

The Equipment Section is responsible for the procurement, distribution, operation, maintenance, and repair of all equipment used at traffic data acquisition stations. Personnel perform data collection station designs, installations, construction inspections, and maintenance at traffic data acquisition stations throughout the state. Additional duties of Equipment Section personnel include providing technical expertise and training to District personnel and performing traffic counts as necessary.

The Data Section is responsible for performing quality control, processing, and maintaining data collected from data acquisition stations located statewide. Personnel generate several different reports from said data throughout the year. These reports are prepared for the Federal Highway Administration (FHWA), Kentucky Transportation Cabinet (KYTC), Kentucky Transportation Center (KTC), various planning agencies, and other governmental agencies. Data is also made available for public consumption.

### PROPOSED ACTIVITIES FOR 2020-2021

- Maintain, update, analyze, provide QA/QC, and make available data from approximately 18,500 traffic count stations including coverage, interstate, automatic traffic recorder (ATR), weigh in motion (WIM), ramp, and local road bridge stations. **100% Complete**
- Download, process, and analyze data for every day of the year from approximately 95 permanent ATR stations. **100% Complete**
- Submit monthly reports of hourly ATR records to FHWA. **100% Complete**
- With KYTC District Offices, collect and process vehicle volume data from approximately 5,000 short-duration, portable-machine, coverage and ramp counts. **100% Complete, completed 5,017.**
- With KYTC District Offices, review, assign, collect, process, analyze, and distribute data from special count stations that are requested by the highway districts and other divisions. The number of special counts varies from year to year with the average being approximately 100 total, each of which typically includes multiple volume and turning movement counts. **Lower due to COVID. ~10.**
- Concurrent with coverage, interstate, ATR, WIM, and ramp counts, collect and process vehicle classification data from approximately 1,000 stations, which complies with the FHWA, *Traffic Monitoring Guide* recommendation of 25%-30% for Minor Collectors and above. **935 class counts collected**
- Provide traffic data for annual FHWA-required Highway Performance Monitoring System (HPMS) report. **100% Complete**

## CHAPTER 3

## Traffic and Equipment Management

### RESPONSIBLE UNIT

Division of Planning  
Traffic and Equipment Management Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Update axle and monthly factors used in adjusting short-term counts from data collected at ATR and vehicle classification stations. **100% Complete**
- Update in-house databases to include any new stations or roadway alignment changes. Correct beginning and ending mile points to better represent traffic generators. **100% Complete**
- Collect, process, and analyze continuously collected data. Submit a minimum of one-week, WIM data from permanent WIM stations to FHWA quarterly. Periodically calibrate WIM data collection equipment, as needed, in order to assure quality data. **Not complete**
- Review proper operation and coverage of ATR stations. Install additional ATR stations as necessary. **100% Complete**
- Investigate and purchase new traffic data collection equipment to provide for safer, more efficient and more accurate methods of collection. **Completed but ongoing.**
- Certify, repair, and maintain approximately 800 traffic data recorders. **100% Complete**
- Inspect, repair, and maintain, where possible, approximately 585 vehicle sensor locations (~95 ATRs and ~490 semi-permanent) **100% Complete**
- Administer contracts and provide oversight of Contractor(s) for the repair and maintenance of ATR and semi-permanent vehicle sensor locations. **100% Complete**
- Track upcoming highway projects and produce plans, specifications, and construction cost estimates for new and replacement traffic sensor installations for submittal into construction and pavement rehabilitation contracts. **100% Complete**
- Provide construction oversight, when required, and perform final inspections of new and replacement traffic sensor installations. **100% Complete**
- Provide contract management and oversight of Consultant assisting with field data collection and other tasks. Process and provide quality assurance of the provided counts. **100% Complete**
- Provide traffic count technician training and support, as needed. **100% Complete**

### PRODUCTS

- Volume and classification data from ATR stations. **100% Complete**
- Volume, classification, and weight data from WIM stations. **Some issues with WIM data but the remainder is 100% Complete**
- Volume and classification data from short-duration machine count stations. **100% Complete**
- Volume and classification data from special counts. **100% Complete**
- Axle and monthly factors. **100% Complete**
- Databases containing traffic count station and traffic count data information. **100% Complete**
- Accurate local DVMT data for FHWA reporting through HPMS. **100% Complete**

**CHAPTER 3**

Traffic and Equipment Management

**RESPONSIBLE UNIT**

Division of Planning  
Traffic and Equipment Management Branch

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2019-2020</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$2,000,000</b>	<b>\$1,805,463</b>	<b>90%</b>
<b>OUTSOURCED PERSONNEL</b>	<b>\$300,000</b>	<b>\$347,998</b>	<b>115%</b>
<b>OTHER</b>	<b>\$225,000</b>	<b>\$113,547</b>	<b>50%</b>
<b>TOTAL</b>	<b>\$2,525,000</b>	<b>\$2,267,008</b>	<b>89%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

**Outsourcing**

- \$200,000 contract for outsourced traffic counts to be performed by consultant under Statewide Traffic Counting contract.
- \$100,000 for traffic data collection station installation and maintenance

**Other**

- \$150,000 for purchase of new traffic data collection equipment and supplies (e.g., piezoelectric sensors, road tube, modems)
- \$75,000 Other Operational Cost  
For items such as travel, mileage, equipment and other cost directly associated to the completion of this work chapter.

## CHAPTER 4

## Roadway Systems

### RESPONSIBLE UNIT

Division of Planning  
Transportation Systems Branch

### PURPOSE AND SCOPE

The Roadway Systems Team maintains the official Department of Highways records for the following: State Primary Road System (SPRS); Designated National Truck Network (NN); Coal Haul Highway System; and Forest Highway System. The team works with Highway District Office Planning Section (HDO) and Central Office Data Management staffs and other sources as available to track changes in roadways and highway systems, accomplish systems changes, and prepare official documents for approval. The team annually gathers and compiles source data on the transportation of coal by trucks in the Commonwealth of Kentucky to prepare the tables, maps and descriptive information published in the Coal Haul Highway System Annual Report and other coal transportation information.

### PROPOSED ACTIVITIES FOR 2020-2021

- Track roadway construction or maintenance projects to identify changes in roadways and their effect on roadway system designations. **Daily activity including contact and email with District Offices for project status updates. Posting notification for Data Management when traffic dates are changed as well as weekly updates of Project Authorizations. 100% Complete**
- Coordinate the two-way flow of information between the Highway District planning staffs and Central Office Transportation Systems and Data Management branch staffs regarding roadway construction and ownership status. **Communicate with Data Management personnel on activities regarding updating and/or revising H.I.S. based on District Planning recommendations. Phone calls, emails, and meet with Data Management Staff. 100% Complete**
- Generate official documentation recommending appropriate SPRS revisions to the Commissioner of the Department of Highways for approval. (KRS 177.020 and 603 KAR 3:030) **Currently Official orders are required for all changes to the SPRS. Created official orders for all new construction projects and began doing official orders for data review changes as well. Electronic change orders are created for routes with minor length changes or minor revision found during office data reviews 100% Complete**
- Ensure the SPRS reflects roadways of significance, and correlates with the functional classification system and the electronic base map coverage. **Reviewed SPRS and functional class for all new road alignments along with recommendations and input from the Districts to make classification changes. Evaluate as projects were opened and official orders were generated. 100% Complete**
- Prepare quarterly reports for publication on the internet of SPRS mileage and of the designated routes and mileage of roads in the NHS and NN systems. **Reports every quarter and made sure they were published on the website 100% Complete**
- Review revisions to the SPRS to discover any modifications made necessary to other systems such as functional classification, NHS, or NN classifications. **None required. Typically new alignment reviews check to see if any surrounding roads needed classification changes due to the new alignment. Changes to NHS and NN require a separate official order. This is a part of the process of doing an Official Order. 100% Complete**
- As requested by local public agencies or Highway Districts, coordinate review requests with Division of Maintenance and HDO's for revisions of NN. As appropriate, prepare request from Cabinet to FHWA for system revision. **Added US 127 in Pulaski County to the National Truck Network. 100% Complete**



## CHAPTER 4

## Roadway Systems

### RESPONSIBLE UNIT

Division of Planning  
Transportation Systems Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- As necessary or appropriate, review interstate frontage roads. Coordinate documentation by HDOs of suitability for transfer to local government and prepare request from Cabinet to FHWA for permission to complete transfer of property to local government. **Completed frontage roads approvals in five districts. 100% Complete**
- As necessary or appropriate, prepare and submit request for approval by AASHTO Standing Committee on Highways, U.S. Route Numbering Special Committee, for any significant change to routing of a U.S. numbered highway. **AASHTO Submitted Spring 2021 for US68 & US 68 Business in Bourbon/Nicholas County. 100% Complete**
- Provide all system revision information to the Data Management branch and others as appropriate. **Daily contact with Data Management to ensure that all Systems data is accurate in HIS. 100% Complete**
- Compile data to provide ton-mile statistics to the Governor's Department for Local Government for coal transported on Kentucky Highways as required by KRS 177.977 and KRS 42.455. **The Coal Haul Report and supporting maps were published in February 2020. 100% Complete**
- Publish Kentucky's Official Coal Haul Highway System Report as required by KRS 177.977 and KRS 42.455. **Reports are drawn in Exor forms from data entered for the previous calendar year. "Ton-Miles Table" to DLG will be published November 2020. 100% Complete**
- Provide the Division of Maintenance coal haul route information for their review of bridge weight limits. Develop the update of the Extended Weight Coal and Coal By-Products Haul Road System for replacement of the current system in the Highway Information System database. Prepare the Official Order for approval of the updated Extended Weight system. **The Extended Weight data was updated in HIS November 2020. Official Order updated with Secretary's signature in November 2020. 100% Complete**
- Review and coordinate right-of-way information between the HDO staffs and Central Office Transportation Systems and Division of Right-of-Way and Utilities staffs regarding request for official transfers. Compile data in Project Wise. **Reviewed over 85 request and completed over 34 transfers. 100% Complete**
- Compile and provide Governmental Accounting Standards Board (GASB) information on total mileage and estimate value of state roads removed from the SPRS for the FY 2020 to KYTC's Office of Budget and Fiscal Management. **Report(s) completed August 2021. There were 9.946 miles removed and 17.266 miles added to the State Systems for a total difference of 7.320 miles. 100% Complete**

### PRODUCTS

- Official Order Changes to the State Primary Road System **50 Official Orders were completed, including transfers, plus 33 Electric Official Orders for a total of 85 order prepared. Discovered and processed changes resulting from roadway data collection and roadway system data reviews. 100% Complete**
- State Primary Road System Official Order Listings **Update State Primary Road listings for each official order completed. Revise mileage totals and update revisions page to reflect current changes. Revised SPRS listing to the Planning webpage. 100% Complete**

**CHAPTER 4**

## Roadway Systems

**RESPONSIBLE UNIT**

Division of Planning  
 Transportation Systems Branch

**PRODUCTS (continued)**

- Quarterly Reports on internet: State Primary Road System Mileage, Designated National Truck Network routes and mileage. Updated NHS and NTN reports on web at beginning of each quarter. Put SPRS mileage report out on the web upon Districts requests. 100% Complete
- GIS map files incorporating project design files for decision-making and use by other Branches Incorporated project design files into GIS map documents to create decision-making maps for nearly 60 projects. Communicated with Data Management Branch on information obtained for input into HIS for HPMS reporting. 100% Complete
- Coal Haul System Report with associated maps and separate datasets to Department of Local Government, KYTC Budgets and KYTC Bridge Maintenance Compiled Coal Haul reports and shape files. Created maps of producing counties as well as a statewide map. Mailed out over 500 Coal Haul forms and under 300 Coal Haul Updates. 100% Complete
- Request to FHWA for modification of National Truck Network (NN) or Official Order Change to State Designated National Truck Network Added US 127 in Pulaski County 100% Complete
- Request to FHWA for modification of National Highway System US 127 in Pulaski County 100% Complete
- Request to FHWA for permission to relinquish interstate frontage road to local government Completed a few frontage roads in District 2,8, & 9 100% Complete
- Request for approval by AASHTO Standing Committee on Highways, U.S. Routes Numbering Special Committee, for any significant change to routing of a U.S. numbered highway. ASSHTO Submitted Spring 2021 for US68 & US 68 Business in Bourbon/Nicholas County. 100% Complete

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	2020-2021	Expended	Percent Expended
<b>PERSONNEL</b>	<b>\$625,000</b>	<b>\$585,943</b>	<b>93%</b>
<b>OTHER</b>	<b>\$10,000</b>	<b>\$6,141</b>	<b>61%</b>
<b>TOTAL</b>	<b>\$635,000</b>	<b>\$592,084</b>	<b>93%</b>

**Other**

- \$10,000 Other Operational Cost  
 For items such as travel, mileage, equipment and other cost directly associated to the completion of this work chapter.

## CHAPTER 5

## Cartography

### RESPONSIBLE UNIT

Division of Planning  
Transportation Systems Branch

### PURPOSE AND SCOPE

The Cartography Team meets the needs of the Division, Cabinet, other state agencies, and entities outside state government for general and special purpose maps. The team creates, updates, and distributes a wide variety of standard cartographic products in electronic and/or paper format. The team creates maps depicting various analyses of highway transportation data in digital and/or printed format. They also work to develop procedural and technical standards for digital mapping.

### PROPOSED ACTIVITIES FOR 2020-2021

- Provide electronic mapping for all city, county, district, state, and special-purpose cartographic products. Updated SPRS, and Functional Classification Maps and exported on the internet. 90% Complete
- Maintain and publish electronic formats of cartographic products for display on the Internet. Maps are updated regularly. Loading maps on Website after reviewing 80% Complete
- Update the Official State Highway Map electronic files and accomplish necessary publication. Monitor inventory at 17 locations and coordinate additional deliveries as needed. Obtained new printing contract from Finance, processed form for contract and updated RFP document for contract. New maps are being distributed to KYTC locations and mailed out the public 100% Complete
- Create reports and exhibits for various Division projects and studies to assist transportation decision-makers in their roles. Alternative Fuel Corridors - Kentucky Air Transportation System 2020 100% Complete
- Provide mapping and graphic assistance to other Divisions and Departments as requested. Prepared the County Quality Certification (KEDFA). Produced Official Highway Wall Maps for display in the Secretary's office. 100% Complete
- Develop and provide to outside entities digital maps as requested. Provided highway updates to Rand McNally and AAA. Fulfilled over 2,000 maps sales request and mailed over 6,000 free official Highway Maps. Provided the Lexington VA Hospital with a Regional Care Area map to assist their Mental Health Intensive Care Management operations. Provided Kentucky wall maps for the Department of Insurance, and the KY National Guard. 100% Complete
- Develop and provide geographic information systems (GIS) files locating other modes of transportation. As requested. 100% Complete

### PRODUCTS

- Official Highway Map New contract obtained for 2020-2021 map. Maps are distributed as needed. 100% Complete
- State Primary Road System Maps Updated county maps at least 120 times 100% Complete
- Functional Classification Maps Same as for State Primary Road Systems 90% Complete
- Other Highway Data Maps (i.e., traffic counts, NHS, NN, etc. maps) 100% Complete
- Cabinet and Planning Project Exhibit Maps/Displays As requested – See Comments above 100% Complete
- GIS Analyses of various data for transportation decision-making As requested – See Comments above 100% Complete

**CHAPTER 5**

Cartography

**RESPONSIBLE UNIT**

Division of Planning  
Transportation Systems Branch

**PRODUCTS (continued)**

- General and special purpose maps as requested by other agencies *As requested – See Comments above 100% Complete*
- Geographic information systems (GIS) electronic files *100% Complete*

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$200,000</b>	<b>\$101,510</b>	<b>50%</b>
<b>OUTSOURCED</b>	<b>\$161,000</b>	<b>\$0</b>	<b>0%</b>
<b>TOTAL</b>	<b>\$361,000</b>	<b>\$101,510</b>	<b>28%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

**Other**

- \$160,000 for Official Highway Map Publication.
- \$1,000 Other Operational Cost  
For items such as travel, mileage, equipment and other cost directly associated to the completion of this work chapter.

## CHAPTER 6

## Highway Information System

### RESPONSIBLE UNIT

Division of Planning  
Data Management Branch

### PURPOSE AND SCOPE

The Highway Information System chapter enables the Data Management Branch to oversee maintenance of the Transportation Cabinet's Highway Information System (HIS) database. This database serves as the Cabinet's storage unit for Geographic Information System (GIS) road centerlines and information about roadway characteristics, transportation systems, and roadway analysis. The branch contributes to the KYTC Asset Management program by providing an up-to-date route network of asset locations for other divisions and also providing asset extraction capabilities for updates to the network. The branch uses HIS information to produce the Highway Performance Monitoring System (HPMS) data submittal required annually by the Federal Highway Administration (FHWA). The HPMS submittal is also used within the Cabinet to assist with the analysis and measurement of highway system performance. The branch regularly reviews Functional Classification with the Highway District Offices, Metropolitan Planning Organizations (MPOs), and local officials. It also coordinates all Functional Classification and National Highway System (NHS) changes associated with road changes or external entity requests. The branch provides roadway information to many areas within the Cabinet, other governmental agencies, consultants, and the public via the Division's website, the Cabinet's Transportation Enterprise Database (TED), or direct requests. In order to support all of these functions with accurate and timely data, the branch routinely extracts and analyzes data from Computer-Aided Design (CAD) project construction plans, Cabinet Photo Van collection efforts, and on-site collection activities performed by branch staff.

### PROPOSED ACTIVITIES FOR 2020-2021

- Maintain the Cabinet's GIS route network for Kentucky's public highways. Improve processes and procedures for reviewing, editing, and updating the network. **Updated centerline locations and attributes impacted by 95 state road projects. Processed 4,400 local road centerline location and attribute changes in 106 counties. 100% Complete**
- Provide up-to-date route network locations, route lengths, and highway data for use by internal and external customers. Ensure accuracy of information provided. **Provided up-to-date information to customers inside and outside the Cabinet using CAD design files, Photo Van data, field collection, GIS tools, and aerial imagery. 100% Complete**
- Adapt CAD project construction plans and use GIS software to generate maps for resolving road ownership and highway data questions caused by road construction impacts. **Generated 62 maps for road construction projects and distributed to appropriate staff for review and response as appropriate. 100% Complete**
- Update the route network with newly acquired road centerline data extracted from CAD project construction plans, Global Positioning System (GPS) collection methods, and Photo Van collection methods. Update and verify roadway mileage and highway data. **Used CAD design files to update new state road centerlines, mileages, and inventory on pace with project openings for 110 projects. Used GPS collection methods to field-verify information obtained with CAD design files. Used Photo Van data and images to improve accuracy of road centerlines and inventory. 100% Complete**

## CHAPTER 6

## Highway Information System

### RESPONSIBLE UNIT

Division of Planning  
Data Management Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Utilize Photo Van images and data to verify accuracy and validity of route log entries, roadway features and information, and other highway data stored within HIS. **Data in HIS regularly reviewed and updated as necessary with more accurate and valid information captured from Photo Van images and data. 100% Complete**
- Perform office reviews to verify HIS data meets the required standards established by this Division and FHWA. **Reviewed weekly reports and quality control checks to ensure proper data maintenance. Utilized HPMS Field Manual to verify data quality and completeness. Performed checks to ensure local road centerline changes met standards. 100% Complete**
- Assist the Division of Maintenance in the implementation of pavement performance measures reporting and analysis via HPMS. **Adapted Division of Maintenance pavement data to meet HPMS software requirements and ensure its successful load into the software. 100% Complete**
- Assist in the implementation of national performance measures reporting and analysis in accordance with federal legislation, regulations, policies, and/or guidelines. **Attended webinars and meetings regarding implementation. Continuing to evaluate best methods for implementation within Kentucky's data environment. 60% Complete**
- Provide guidance to Cabinet leadership and the Office of Information Technology (OIT) regarding availability and appropriateness of highway data as it relates to the redevelopment of the Cabinet's SYP database. **Provided guidance regarding the availability and appropriateness of highway data to assist OIT in its implementation of the SYP redevelopment. 60% Complete**
- Develop appropriate Cabinet sources for providing data screening methods used in the assembly of the Cabinet's Highway Plan. Modify HIS data collection, storage, and analysis processes as needed in order to satisfy Highway Plan assembly requirements. **Recommended appropriateness of data items for use in data screening methods. Oversaw the Highway Plan "Data Verification" phase. 100% Complete**
- Assist with analyses of highway system performance and the Unscheduled Projects List. Provide an up to date route network for locating Unscheduled Projects. **Maintained up-to-date route network location of Unscheduled Projects. Created HIS data extraction procedures to satisfy Highway Plan project scoring. 100% Complete**
- Update Rating Indices, Capacities, and Volume/Service Flow ratios in the HIS database and distribute to customers. **Generated new capacity and V/SF values and made available to internal data customers. Final determination on best method for incorporating these into HIS was completed 100% Complete**
- Improve production methods used to calculate Rating Indices, Capacities, and Volume/Service Flow ratios. **Implemented the capacity and V/SF tool created by the Kentucky Transportation Center (KTC) to calculate the new capacity and V/SF values. 100% Complete**
- Process and submit annual HPMS report. **HPMS submitted on time, June 15th (2,226 sample sections). Gathered and processed data from other areas of the Cabinet. 100% Complete**
- Improve HPMS submittal production methods. Investigate results of HPMS report and analyze potential process changes to improve submittal. **Generated the HPMS data extract using Bentley's TIG tool, resulting in improved data extraction methods. 100% Complete**



## CHAPTER 6

## Highway Information System

### RESPONSIBLE UNIT

Division of Planning  
Data Management Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Maintain currency of HPMS software and update procedures as required by federal legislation, regulations, policies, and/or guidelines. Used web-based HPMS 8.0 and followed software validations and requirements. Used the latest edition of the HPMS Field Manual. Updated data storage model to reflect HPMS guidelines. 100% Complete
- Coordinate with other Cabinet Divisions regarding their asset management needs. Assist with Cabinet-wide asset management data collection and data dissemination. Coordinated data collection and dissemination efforts with Divisions of Maintenance, Traffic Operations, Highway Design, Right of Way and Utilities, Program Management, Motor Carriers, and Rural and Municipal Aid. Generated 55 maps for resolving road ownership and highway data questions caused by road construction impacts. Updated metadata in HIS to communicate information about data collection and usage to customers. 100% Complete
- Work with OIT to maintain the most current version of the HIS database. Perform acceptance testing and help deploy upgrades to other data owners within the Cabinet. Worked with OIT testing several HIS database fixes to confirm product reliability and functionality prior to installation. 100% Complete
- Work with OIT to improve HIS data exchange with TED and other Cabinet databases. Worked with TED and GIS Branches in OIT for reporting, mapping, and sharing of HIS data within the Cabinet. Supported OIT's implementation of new routines to more efficiently exchange data between HIS and TED. Continued development of a link between HIS and the Division of Maintenance's OMS/PMS databases (Bentley Systems contract). 96% Complete
- Review Functional Classification in cooperation with Highway Districts and MPO's. Review Functional Classification change requests from Highway Districts and other external entities. Updated HIS data to reflect FS changes. 100% Complete
- Coordinate changes to the NHS and Strategic Highway Network following proper procedures for approval from FHWA and the Department Of Defense. Two NHS requests or changes. 100% Complete
- Process Superload route network changes to support the Department of Vehicle Regulation's overweight/overdimensional permitting procedures. Superload implementation is now in production and have made route network changes were necessary. The related training for this task is currently is completed. The production environment went live in FY20. 100% Complete

### PRODUCTS

- Interstate Data Submittal by April 15 Submitted April 15th. 100% Complete
- Certification of Public Road Mileage by June 1 Submitted June 1 (80,006 centerline miles). 100% Complete
- HPMS submittal by June 15 Submitted June 15 (2,226 sample sections). 100% Complete
- Weekly snapshots of HIS route network and highway data HIS data extracted weekly and provided to TED for Cabinet-wide consumption. 100% Complete

**CHAPTER 6**

## Highway Information System

**RESPONSIBLE UNIT**

Division of Planning  
Data Management Branch

**PRODUCTS (continued)**

- Up-to-date and accurate route network locations, route lengths, and highway data to support Cabinet Performance Measures and Asset Management activities **Provided information to customers inside and outside the Cabinet with timely updates. 100% Complete**
- Maps for resolving road ownership and highway data questions caused by road construction **62 maps created. 100% Complete**
- Official Cabinet Route Logs **Updated timely due to on-the-ground changes. 100% Complete**
- Unscheduled Project locations and Highway Plan data screening outputs **Updated timely due to on-the-ground changes. 100% Complete**
- Rating Indices, Capacities, and Volume/Service Flow ratios **Generated new capacity and V/SF values and made available to internal data customers. 100% Complete**
- Route network and highway data Change Reports reflecting HIS processing activities **Completed in a timely manner for each processing activity that required notification to other stakeholders 100% Complete**
- Queries and routines for quality control of HIS data **Reviewed Quality Assurance report weekly and parameter-based inquiry (PBI) and TIG results monthly. 100% Complete**
- Functional Classification change requests **Updated HIS data to reflect FS changes. 100% Complete**
- Photo Van image locations **Updated timely due to on-the-ground changes. 100% Complete**

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$850,000</b>	<b>\$790,071</b>	<b>92%</b>
<b>OUTSOURCED</b>	<b>\$720,000</b>	<b>\$484,688</b>	<b>67%</b>
<b>OTHER</b>	<b>\$110,000</b>	<b>\$14,632</b>	<b>13%</b>
<b>TOTAL</b>	<b>\$1,680,000</b>	<b>\$1,289,391</b>	<b>76%</b>



## **CHAPTER 6**

Highway Information System

### **RESPONSIBLE UNIT**

Division of Planning  
Data Management Branch

### **ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

#### **Outsourcing**

- \$230,000 for Local Road Centerline collection with all of the 15 Area Development Districts, with contracts less than \$100,000 for each
- \$130,000 for data research and analysis projects
- \$100,000 for database development and enhancement projects
- \$150,000 for IT database support
- \$50,000 for special roadway data collection projects
- \$60,000 for production of FHWA 536 Report (Odd Years Only)  
All studies will be submitted for eligibility review prior to funding.

#### **Other**

- \$50,000 for Asset Management Data Collection (Photo Van Operation)
- \$50,000 for data expansion, improvement, and maintenance
- \$10,000 for Other Operational Costs  
For items such as travel, mileage, equipment and other costs directly associated to the completion of this work chapter

## CHAPTER 7

## Strategic Corridor Planning

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch  
Strategic Corridor Planning Team

### PURPOSE AND SCOPE

The Strategic Corridor Planning Team evaluates system and corridor needs for state maintained roadways. It enhances and continues to update scoring processes for prioritizing projects considered for inclusion in the Six-Year Highway Plan through the use of SHIFT (Strategic Highway Investment Formula for Tomorrow) and the District Transportation Plan (DTP). The DTP details SHIFT processes and lists the projects resulting from Statewide and Regional scoring methods. The Strategic Corridor Planning Team also conducts technical project studies consisting of large statewide studies to Data Needs Analysis (DNA) Studies in order to perform the necessary levels of planning to develop a conceptual and draft purpose and need statement, identify major environmental issues including environmental justice, initiate consultation with local officials, initiate agency coordination and conduct appropriate levels of public involvement. The Strategic Corridor Planning Team identifies and evaluates alternatives, generates project cost estimates and recommends phasing priorities where appropriate. Meaningful long-range planning and visioning of corridors of regional and statewide significance is a priority through the Statewide Corridor Plan, providing a stepping stone to a future corridor-based Statewide Long Range Transportation Plan. The team oversees outsourced activities and works with the Highway District Offices (HDOs), Metropolitan Planning Organizations (MPOs), and Area Development Districts (ADDs) as needed to complete necessary tasks. Through analysis of data, sustainable and fundable projects will be identified.

### PROPOSED ACTIVITIES FOR 2020-2021

- Continue to develop and update policy and procedures for evaluating corridor level needs. . This task is ongoing. We continue to evaluate the policy and procedures for each study, placing emphasis on the KYTC's push for Performance Based Flexible Solutions (PBFS). The newly developed Planning Guidance Manual enshrines these procedures. 100% Complete
- Conduct corridor, system, small urban area, district- and state-wide connectivity and accessibility, data needs analyses (DNA), and other studies. For a list of active studies and percent complete, please see the PRODUCTS below.
- Respond to inquiries about corridor planning issues. All inquiries to planning studies are responded to in a timely manner. Recently completed studies are available online for the public to view and posted on ProjectWise. 100% Complete
- Identify, evaluate and prioritize corridor, system, and small urban area needs through data analysis and public involvement. Corridor and Small Urban Area Studies involve the identification, evaluation, and prioritization of recommended roadway improvements through data analysis and involvement from the public, and/or local officials/stakeholders advisory committees. 100% Complete
- Oversee outsourced activities. Most of our studies are completed by consultants with district and Division of Planning assistance in the form of co-Project Managers who oversee the study. At the end of the FY 2021 fourth quarter, KYTC had 23 active planning studies outsourced to a consultant. 100% Complete

## CHAPTER 7

## Strategic Corridor Planning

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch  
Strategic Corridor Planning Team

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Continue to refine evaluation measures as an element of SHIFT 2022 to score and prioritize sponsored projects from HDOs, MPOs, and ADDs for programming in the Highway Plan. CHAFs are developed for long-term needs identified through our corridor and Small Urban Area studies. Our studies also provide cost estimates to be used in programming future projects. Several staff served on a workgroup which made changes to formulas and criteria used in scoring for SHIFT 2022. 100% Complete

### PRODUCTS

14 studies were completed during the period of July 1, 2020 to June 30, 2021 by consultants. The completed studies are as follows:

- 65-71 Regional Connector Study, Various Cos. – 5-564.00 – September 2020
- Boyd-Greenup Small Urban Area Study, Boyd/Greenup Cos. – 9-406.00 – October 2020
- Kentucky & Adams Street Improvement Study, Warren Co. – November 2020 (SPR)
- I-65 Conceptual Improvements Study, Bullitt/Jefferson Cos. – 5-550.00 – December 2020
- Lone Oak Road Reversible Lanes Feasibility Study, McCracken Co. – January 2021 (SPR)
- KY 1747 (Hurstbourne Parkway) Study, Jefferson Co. – 5-555.00 – March 2021
- Downtown Ashland Transportation Feasibility Study, Boyd Co. – 9-408.00 – March 2021
- District 4 Connectivity Study, Various Cos. – March 2021 (SPR)
- AA Highway Improvements Study, Various Cos. – April 2021 (SPR)
- Mayfield Small Urban Area Study, Graves Co. – May 2021 (SPR)
- US 25 Corbin-London Study, Laurel Co. – 11-8515.00 – May 2021
- I-65 & I-264 Interchange Study, Jefferson Co. – 5-559.00 – May 2021
- I-71 & I-264 Interchange Study, Jefferson Co. – 5-557.00 – June 2021
- Hamburg I-75 Crossing Feasibility Study, Fayette Co. – June 2021 (SPR)

Ongoing studies and their respective status at the end of FY 2021 are as follows:

<u>County(ies)</u>	<u>Route</u>	<u>Item No.</u>	<u>% Complete</u>
Various Counties	New Route	6-458.00	99%
Anderson, Franklin	KY 151	5-806.00	85%
Jefferson	I-64	5-553.00	85%
Daviess	Various Routes	2-402.00	80%
Oldham	KY 329	N/A (SPR)	80%
Franklin	Various Routes	5-570.00	70%
Fayette, Jessamine	Various Routes	7-445.00	70%
Jefferson	I-65	5-569.00	70%
Various Counties	WK 9001, LN 9008	N/A (SPR)	60%
Russell	US 127	N/A (SPR)	50%

## CHAPTER 7

## Strategic Corridor Planning

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch  
Strategic Corridor Planning Team

### PRODUCTS (continued)

<u>County(ies)</u>	<u>Route</u>	<u>Item No.</u>	<u>% Complete</u>
Boone, Kenton, Campbell	I-75/71/275/471	6-464.00	40%
Boyle, Garrard	KY 52	7-104.00	40%
Campbell	I-275, KY 9	6-448.00	30%
Rowan	KY 32	N/A (SPR)	30%
Warren	US 231, US 68, US 68X	N/A (SPR)	30%
Bath	KY 36	9-80101.00	10%
Rockcastle	US 25	N/A (SPR)	10%
Whitley	KY 92	N/A (SPR)	10%

<u>County</u>	<u>Small Urban Area</u>	<u>Item No.</u>	<u>% Complete</u>
Calloway	Murray	N/A (SPR)	10%

<u>Special Study</u>	<u>Item No.</u>	<u>% Complete</u>
Truck Network Procedures Study	N/A (SPR)	99%
Statewide Corridor Plan	N/A (SPR)	85%
Parkway Nomenclature Study	N/A (SPR)	85%
TSMO Program Plan	N/A (SPR)	30%

Many of the current studies are large-scale efforts that have included or will include agency coordination and significant public involvement activities. All of the studies have required or will require coordination with the Highway District Offices and Area Development District Offices to assemble the project team, provide input on study issues, assist with scheduling meetings, and review reports. The Area Development District Offices will also develop Socioeconomic Studies/Environmental Justice reports for many of the studies.

Those projects listed above followed by (SPR) were funded with SPR Work Program funds. In addition, some SPR funding was used for management, oversight, and review of strategic corridor planning activities.

Summarizing, 37 projects have been worked on during the past fiscal year, with 14 being completed and 23 in various stages of completion. With the start of the new fiscal year, additional studies will soon begin.

- **Data Needs Analysis (DNA) Studies**

Prior to Advertisement, a DNA study will be completed for all projects in the Highway Plan that have not been the subject of a planning study. 14 DNA studies were completed by District and Central Office Planners in FY 2021. These studies include projects identified by Item No.'s 1-398.00, 2-8305.00, 2-8854.00, 3-347.51, 3-8856.00, 5-80001.00, 5-8954.00, 6-105.00, 6-113.00, 7-80000.00, 7-80001.00, 9-8915.00, 9-80051.00, and 10-375.00.

**CHAPTER 7**

Strategic Corridor Planning

**RESPONSIBLE UNIT**

Division of Planning  
Strategic Planning Branch  
Strategic Corridor Planning Team

**PRODUCTS (continued)**

- Priorities for Highway Plan Programming that are sustainable and fundable. The above listed studies include improvement concept development leading to future projects for programming or continuing phases of project development. The 2022 SHIF'T process is continuing to utilize a data driven process to score and prioritize projects for the recommended highway plan in response to this sustainable and fundable priority need. 100% Complete

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$1,100,000</b>	<b>\$1,216,638</b>	<b>110%</b>
<b>OUTSOURCED PERSONNEL</b>	<b>\$2,000,000</b>	<b>\$1,574,695</b>	<b>78%</b>
<b>OTHER</b>	<b>\$10,000</b>	<b>\$432</b>	<b>4%</b>
<b>TOTAL</b>	<b>\$3,310,000</b>	<b>\$2,791,765</b>	<b>84%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

**Outsourcing**

- \$2,000,000 to outsource for Research and/or Planning Studies.

**Other**

- \$10,000 Other Operational Cost  
For items such as travel, mileage, equipment and other cost directly associated to the completion of this work chapter.

## CHAPTER 8

## Statewide Transportation Planning

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch

### PURPOSE AND SCOPE

The Statewide Planning Team conducts a comprehensive statewide transportation planning process with the Area Development Districts (ADDs), Metropolitan Planning Organizations (MPOs), and the Highway District Offices (HDOs). This process includes consideration of all modes and the development of a policy driven and data-based approach for the identification, analysis and prioritization of needs in accordance with FAST Act requirements. The team also updates a Long-Range Statewide Transportation Plan (LRSTP) as needed and ensures that the LRSTP and the Statewide Program are FAST Act compliant. This team coordinates directly with the ADDs for their assistance through various services in support of the KYTC Statewide and Regional planning processes. Through these processes and partnerships, this team provides meaningful input to the Draft Recommended Highway Plan that includes but is not limited to the following: Continuous Highway Analysis Framework (CHAF) database, Strategic Highway Investment Formula for Tomorrow (SHIFT), and District Transportation Plan (DTP).

### PROPOSED ACTIVITIES FOR 2020-2021

#### KYTC Activities:

- Review and update the Transportation Cabinet Strategic Plan as needed . **Ongoing review, no changes needed. Last updated September 2015. 100% Complete**
- Review and update the LRSTP as needed. **Ongoing review, FY22 update planned. Last updated November 2014. 100% Complete**
- Review and update the Public Involvement Plan (PIP) as needed. Develop and implement processes as needed to ensure FAST Act compliance. **Ongoing review. Update completed 2-22-21. 100% Complete**
- Coordinate with other transportation modes, land use, environmental, and other resource agencies as needed. **Ongoing Activity – Attended multi-modal planning committee meetings and worked directly with the ADDs, MPOs and HDOs to obtain and confirm data used in the Continuous Highway Analysis Framework (CHAF) projects database as part of the project prioritization process. 100% Complete**
- Enhance the statewide transportation planning process by including data collection and analysis, public involvement, and coordination. **Continuing Activity – Maintained the CHAF database with help from ADDs, MPOs and HDOs. Maintained the Your Turn Website at <http://transportation.ky.gov/YourTurn/Pages/default.aspx> with direct links to the LRSTP, PIP and LRSTP Public Involvement Notebook for public review. We also provided many of these documents along with links to the DTP and SHIFT prioritization process through the Transportation Planning link at <https://transportation.ky.gov/Planning/Pages/Transportation-Planning.aspx> located on the KYTC Division of Planning Webpage. With continued assistance from ADDs, MPOs and HDOs, the Highway Performance Monitoring System (HPMS) and Planning’s Highway Information System (HIS) databases were spot-checked. 100% Complete**

## CHAPTER 8

## Statewide Transportation Planning

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Recommend sustainable and fundable projects as part of the prioritization process through performance based planning. Ongoing activity – Continued to work with data driven SHIFT process that helps prioritize projects in need of improvement based on defined performance management areas to aid in project selection. 100% Complete
- Assist in the development of the KYTC draft recommended highway plan including update of project scoring, prioritization processes and other methods as needed. Continuing activity – Used SHIFT for project evaluation, scoring and prioritization as a tool to consider incorporating projects in a draft recommended plan for the Governor to review and revise. 100% Complete
- Maintain and oversee further development of the CHAF database, a tool used in project prioritization and analysis. Continuing activity to review, update, and improve upon the CHAF database to provide current project information. 100% Complete
- Maintain and oversee the DTP that summarizes the methodology behind the prioritization process known as SHIFT. The DTP continues to document and detail SHIFT evaluation, scoring and prioritization processes of projects. Final approval of current DTP is forthcoming. 100% Complete
- Coordinate with other Divisions, HDOs, and Agencies and incorporate applicable plans as necessary to ensure compliance with FAST Act . Ongoing activity – Coordinated through the SHIFT prioritization process to identify data driven projects using identified performance measures. 100% Complete
- Coordinate with and assist the HDOs as needed during the Prioritization Process. Continuing activity – Coordinating with planning partners to document SHIFT prioritization approach and outcomes. 100% Complete
- Coordinate and oversee the ADD Regional Transportation Program. Ongoing activity – Executed new ADD contracts. Provided ADDs guidance on deliverables. Attended and addressed Regional Transportation Committees on various KYTC Planning Processes. Completed invoice reviews, and facilitated ADD Planner Assessments. Coordinated between ADD's and HDO's on the development and presentation of the SHIFT prioritization processes. 100% Complete

### ADDs Activities (assisting KYTC):

- Review and update Annual Work Program and Contracts to include allocation of staff, staff time and timeline for task completion. The Division prepared the Annual Work Plan for the ADDs and awarded all ADDs contracts by July 2021. 100 % Complete
- Participate in an Annual Assessment Review. The Division reviewed and conducted the assessments of the ADDs at mid fiscal year (December 2020) and at the end of the fiscal year (June 2021). 100 % Complete
- Update Bicycle and Pedestrian Asset database. The Bicycle and Pedestrian Asset database was updated with the assistance of our ADD partners in May 2021. 100% Complete.
- Coordinate and note speaking engagements with other Planning Agencies and Groups. Speaking engagements held with various local agencies/groups across the state coordinated and delivered by the ADD planners. 100 % Complete



## CHAPTER 8

## Statewide Transportation Planning

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Coordinate Regional Transportation Committee (RTC) Meetings. RTC meetings (3 minimum) were coordinated by ADD planners. 100% Complete
- Review Regional Goals and Objectives. The Regional Goals and Objectives were reviewed and updated with the assistance of the ADD planners in October 2020. 100% Complete
- Review RTC Bylaws and maintain Membership List. The RTC Bylaws and Membership List was reviewed and updated with the assistance of the ADD planners by January 2021. 100% Complete
- Attend KYTC Statewide Transportation Planning Meetings and other approved training. STP meetings were held and attended with ADD, MPO and HDO planners in January, April, July, and October. Other approved training documented in Chapter 2 Training accomplishments. Virtual meeting technology was implemented to adapt to a Covid-19 pandemic. 100% Complete
- Maintain and update List of Rail Freight Loading/Unloading locations. The List of Rail Freight Loading/Unloading locations was reviewed and updated in February 2021. 100% Complete
- Perform socioeconomic updates. The socioeconomic profiles were reviewed and updated in April 2021. 100% Complete
- Maintain a Public Involvement Process. Public Involvement Plans were updated in June 2021. 100% Complete
- Review and update project information in the CHAF database. (1) Provided CHAF Database user access for forty-two (42) KYTC, ADD and MPO personnel; (2) Approved and created one hundred eighty one (181) new CHAF projects during this time period. The CHAF project database (formerly PIF) was updated during the SHIFT project identification/ranking process. 100% Complete
- Maintain and provide a List of Contacts. The List of Contacts was reviewed and last updated in January 2021. 100% Complete
- Assist KYTC as needed on special projects. ADDs attended meetings and assisted with planning studies in their respective areas during the time period. See Chapter 7, Corridor Planning Accomplishments, for a complete list of projects for this period. 100% Complete
- Perform regional data collection and/or analysis (as needed). Ongoing data collection for work program deliverables. 100% Complete
- Conduct a major update to the following in this fiscal year:
  - Long Range Plan – Your Turn Survey. The LRSTP/Your Turn Survey were reviewed and are ready to be updated in FY22.
  - Rural Consultation Review. The Rural Consultation Survey was updated in February 2021.
  - Bicycle/Pedestrian Plan Updates. The Bicycle/Pedestrian Plans were updated in September 2020.
  - KY Highway Freight Network. The KY Highway Freight Network was updated in November 2020.
  - NHS Intermodal Connectors. The NHS Intermodal Connectors were updated in November 2020.
  - Project Prioritization Data. The Project Prioritization Data was updated for FY21.
  - Rail Freight Loading/ Unloading Locations. The Rail Freight Loading/ Unloading Locations were updated in February 2021.



## CHAPTER 8

## Statewide Transportation Planning

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch

### PRODUCTS

#### KYTC Products:

- LRSTP review and update (as needed). **Reviewed, no changes needed in FY21. 100% Complete.**
- LRSTP Your Turn Survey Report (as needed). **Reviewed, no changes needed in FY21. 100% Complete**
- Transportation Cabinet Strategic Plan Update (as needed). **Reviewed, no changes needed in FY21. 100% Complete**
- Maintain CHAF database. **The Continuous Highway Analysis Framework (CHAF) database was updated with help from our planning partners' reviewing and updating their project information in the continuous development of the SHIFT prioritization process in FY21. 100% Complete**
- Annual Work Programs (AWP) and Contracts for 15 Area Development Districts. **Completed revisions for FY22 work program and forwarded for signatures. Clarified ADD deliverables and their due dates, and reviewed deliverables for completeness. 100% Complete**
- Quarterly Statewide Transportation Planning Meetings. **The Division conducted quarterly STP meetings in January, April, July, and October. 100% Complete**
- Individual ADD Planner Assessments (15 ADDs). **The Division reviewed and assessed the ADDs during June of FY21. 100% Complete**
- Public Involvement Plan Update (as needed). **Updated in FY21. 100% Complete**
- Draft Recommended Highway Plan and supporting SHIFT data. **The Division prepared for the next recommended Highway Plan with the ongoing SHIFT data collection process.**
- DTP containing the SHIFT Projects. **The final draft DTP documented the processes and products from SHIFT. 100% Complete**
- Rural Consultation Report (CFR 450.210b requires every 5 years; next submittal due by February 16, 2021). **The Rural Consultation Report was submitted in February, 2021. 100% Complete**

#### ADDs Products (assisting KYTC):

- Regional Goals and Objectives Update **100% Complete**
- AWP Timeline **100% Complete**
- Allocation of Resources (staff, salary, percent time charged, and percent overhead/administrative charges) **100% Complete**
- Annual Assessment Results **100% Complete**
- Quarterly Progress Report **100% Complete**
- RTC Agenda, Meeting Minutes, Bylaws and Committee Activities Plan **100% Complete**
- Projected Training List **100% Complete**
- Public Involvement Plan **100% Complete**
- Socioeconomic Profiles **100% Complete**

**CHAPTER 8**

Statewide Transportation Planning

**RESPONSIBLE UNIT**

Division of Planning  
Strategic Planning Branch

**PRODUCTS (continued)**

- Socioeconomic Studies (as needed) **100% Complete**
  - Fayette/NE Jessamine Connectivity Study **100% Complete by BGADD**
    - KY 52 Study **100% Complete by BGADD**
      - Hamburg / I75 Crossing Study **100% Complete by BGADD**
      - KY 151 Scoping Study **100% Complete by BGADD**
      - Western K Y Parkway Study **100% Complete by GRADD**
      - I264 / I65 Study **100% Complete by KIPDA**
      - US 127 Study **100% Complete by LCADD**
      - Cumberland Expressway Study **100% Complete by LCADD**
      - Western KY Parkway Study **100% Complete by LTADD**
      - I71 / I75 Interchange EJ **100% Complete by NKADD**
      - Mall Road Interchange EJ **100% Complete by NKADD**
      - I275 Wilder Exit Study **100% Complete by NKADD**
      - Mayfield SUA **100% Complete by PUADD**
- List of Resources **100% Complete**
- Materials for Special Studies (as needed) **100% Complete**
- List of Rail Freight Loading/Unloading Locations **100% Complete**
- Regional data collected and/or analyzed (as needed) **100% Complete**
- Provide the following major updates this fiscal year:
  - Rural Consultation Review **100% Complete**
    - Bicycle/Pedestrian Plan Updates **100% Complete**
    - KY Highway Freight Network **100% Complete**
    - NHS Intermodal Connectors **100% Complete**
    - Project Prioritization Data **100% Complete**
    - Rail Freight Loading/ Unloading Locations **100% Complete**

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$1,500,000</b>	<b>\$1,645,072</b>	<b>109%</b>
<b>OUTSOURCED PERSONNEL</b>	<b>\$91,000</b>	<b>\$57,255</b>	<b>62%</b>
<b>OTHER</b>	<b>\$100,500</b>	<b>\$8,619</b>	<b>8%</b>
<b>TOTAL</b>	<b>\$1,691,500</b>	<b>\$1,710,946</b>	<b>101%</b>

**CHAPTER 8**

Statewide Transportation Planning

**RESPONSIBLE UNIT**

Division of Planning  
Strategic Planning Branch

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

**Outsourcing**

- \$91,000 to outsource for studies and assistance related to the Statewide Planning SPR Work Program  
All studies will be submitted for eligibility review prior to funding.

**Other**

- \$37,500 for Economic Model License
- \$50,000 Public Outreach efforts
- \$13,000 Operational Costs for items such as travel, mileage, equipment and other costs directly associated with the completion and/or implementation of this work chapter.

## CHAPTER 9

Metropolitan Planning Organizations  
(Areas over 50,000 Population)

### RESPONSIBLE UNIT

Division of Planning  
Strategic Planning Branch  
MPO Team

### PURPOSE AND SCOPE

The MPO Team provides technical assistance to and coordination with the Metropolitan Planning Organizations (MPOs) for developing and maintaining a continuing, cooperative, and comprehensive (3C) transportation planning process in each of the urbanized areas. This process ensures that state and local transportation projects remain eligible to receive federal funding. Specific planning activities to be conducted in each MPO area are outlined in the MPOs' Unified Planning Work Programs (UPWPs).

### PROPOSED ACTIVITIES FOR 2020-2021

- Draft and administer contracts with MPOs and Local Public Agencies (LPAs), providing oversight for federal funds. **Administered existing contracts and drafted new contracts. 100% Complete**
- Provide technical assistance, oversight and review of MPO activities, programs, documents, models, and tools, promote planning processes in each MPO area that are consistent with current federal regulations, and coordinate with MPOs and other agencies on air quality issues as needed. **Provided technical assistance, oversight and review as needed. 100% Complete**
- Represent the Cabinet at technical, policy, and other committee meetings, and at certification reviews. **Attended multiple committee meetings and Evansville certification review. 100% Complete**
- Work with the MPOs, Highway District Offices (HDOs), other agencies, and representatives of various modes of transportation to collect data, identify needs (including connectivity gaps in access to essential services such as housing, employment, health care, education, and recreation), identify projects to address those needs, identify funding sources, and evaluate and rank projects, encouraging consistency between local, regional and state plans and programs and across various modes of transportation. **Participated in the development of a Statewide Corridor Plan. Refined methodologies for scoring projects for the 2022 Six-Year Highway Plan and worked with Districts and MPOs to select projects for sponsorship. Worked with TMAs to provide guidance on the use of CRRSAA funds. 100% Complete**
- Participate in planning studies affecting the metropolitan planning areas, including planning studies for rural and small urban areas near metropolitan planning area boundaries. **Participated in various planning studies affecting the metropolitan planning areas including: TARC transit study; Southeast Lexington Connectivity Study; US27 Corridor Study; Lexington Congestion Management/Bottleneck Study; Boyd-Greenup Freight Plan; Bowling Green Kentucky and Adams Street Improvement Study; Warren County I-65 New Interchange Study; Owensboro Outer Loop Study; East Elizabethtown Connectivity Study. 100% Complete**
- Conduct regular Statewide Transportation Planning meetings, to include discussions on current metropolitan planning issues. **Conducted quarterly Statewide Transportation Planning meetings. 100% Complete**

**CHAPTER 9**Metropolitan Planning Organizations  
(Areas over 50,000 Population)**RESPONSIBLE UNIT**Division of Planning  
Strategic Planning Branch  
MPO Team**PROPOSED ACTIVITIES FOR 2020-2021 (continued)**

- Collaborate with representatives of neighboring MPOs and transportation agencies to promote consistency in performance measures, performance targets, data collection and analysis, and transportation plans and programs within multi-state MPOs and between adjacent MPOs, as applicable. **Coordinated with MPOs on performance targets as needed. 100% Complete**
- Develop and update metropolitan planning agreements and performance-based planning procedures, as needed. **Reviewed Evansville planning agreement upon request of the MPO. 100% Complete**

**PRODUCTS**

- Contracts with 9 MPOs and other LPAs to carry out planning activities in the urbanized areas. **Contracts in place with all nine MPOs, TARC and Louisville Metro.**
- Quarterly MPO meetings in association with Quarterly STP Meetings. **Held four STP meetings.**
- Special studies as needed. **No special studies undertaken.**

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$720,000</b>	<b>\$674,376</b>	<b>93%</b>
<b>OUTSOURCED PERSONNEL</b>	<b>\$25,000</b>	<b>\$6,379</b>	<b>25%</b>
<b>OTHER</b>	<b>\$6,500</b>	<b>\$3,994</b>	<b>61%</b>
<b>TOTAL</b>	<b>\$751,500</b>	<b>\$684,749</b>	<b>91%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES****Outsourcing**

- \$25,000 various studies, as needed.  
All studies will be submitted for eligibility review prior to funding.

**Other**

- \$6,500 Other Operational Cost  
For items such as travel, mileage, equipment and other cost directly associated to the completion of this work chapter.

**RESPONSIBLE UNIT**

Division of Planning  
Multimodal Programs Branch

**PURPOSE AND SCOPE**

States are required to calculate and report performance measures/targets for the Interstate and non-Interstate National Highway System (NHS) for the purpose of carrying out the National Highway Performance Program (NHPP). The Multimodal Programs Team is responsible for NHPP areas related to system performance and traffic congestion, and freight movement. The analysis includes adopting performance measurements to comply with the final rule.

To assist in calculation of performance measures, KYTC participates in the Texas Transportation Institute's (TTI) Support for Urban Mobility Analyses (SUMA) pooled fund study to track and guide the mobility measure research. In addition, KYTC will participate in the pooled fund study lead by the Rhode Island Department of Transportation (Study Number: TPF-5(326)).

**PROPOSED ACTIVITIES FOR 2020-2021**

Using the National Performance Management Research Data Set (NPMRDS) provided by FHWA, available traffic counts, and the final NPRM Rule from 23 CFR Part 490, the Division of Planning calculates performance measures and performance targets for the following categories:

**System Performance**

- Calculate the Level of Travel Time Reliability (LOTTR) for four different travel time periods as a percent of the person-miles traveled on the interstate system and on the non-interstate NHS system statewide using NPMRDS. Track progress and set targets. **100% Complete**

**Freight**

- Measure Freight Reliability as a Truck Travel Time Reliability index (TTTR) for five different travel time periods using truck travel times from NPMRDS on the Interstate system. Track progress and set targets. **100% Complete**

**Congestion Mitigation (CM)**

- Assist MPO's with a population greater than 1,000,000 to estimate Annual Hours of Peak Hour Excessive Delay for the hours of 4:00 PM to 8:00 PM using NPMRDS. **100% Complete**
- Estimate the Percent of Non-Single Occupant Vehicle Travel (Non-SOV) based upon the American Community Survey data maintained by FHWA. Track progress and set targets. **100% Complete**

**SHIFT Performance Data**

KYTC will be partnering with the Kentucky Transportation Center to obtain new non-NPMRDS speed data for the next SHIFT cycle.

- Collect, process, and maintain non-NPMRDS travel time and speed data. **Project level data collected by drone or floating car methods.**
- Work with the Kentucky Transportation Center to obtain updated data (2 years). **This is an off year.**
- Work with the Kentucky Transportation Center to update locations of new data with Kentucky's HIS system. **100% Complete**
- Work with the Kentucky Transportation Center to use the data to calibrate and update the HERS (Highway Economic Requirement System) model and calculate relevant portions of the SHIFT congestion measure. **100% Complete**

**CHAPTER 10**

## Performance Measures and Congestion/Mobility Analysis

**RESPONSIBLE UNIT**

Division of Planning  
Multimodal Programs Branch

**PROPOSED ACTIVITIES FOR 2020-2021 (continued)****Maintenance and Distribution of Data**

- Download monthly NPMRDS data as supplied by FHWA to support the development of performance measures described in the final published NPRM, keep server current, and assist in implementing improved data locations. Check changes in network bi-annually. **100% Complete**
- In coordination with Data Management Branch, develop and maintain a GIS correlation between the data negotiated by FHWA and KYTC's Highway Performance Management System (HPMS). **100% Complete**
- Assist in efforts to make travel time/speed data readily available to personnel of KYTC and partners, as appropriate. **100% Complete**
- Participate in the Texas Transportation Institute's (TTI) pooled-funded Support for Urban Mobility Analyses (SUMA). Several elements of research affect measuring mobility, work with travel time data, and compliance with FastAct Performance Measures. **Attended virtual meetings.**
- Participate in Performance Measure educational opportunities including monthly webinars, as available. **100% Complete**

**PRODUCTS**

- Annual percent of the person-miles traveled on the Interstate System providing for Reliable Travel. **100% Complete**
- Annual percent of the person-miles traveled on the non-Interstate NHS providing for Reliable Travel. **100% Complete**
- Annual Truck Travel-time Reliability factor for the Interstate System. **100% Complete**
- Annual percent of the Interstate System in urbanized areas with a population over 1 million, where person hours of excess delay occur. **100% Complete**
- Simplify and legally share travel time data with KYTC staff, partners, and public. **100% Complete**
- Reports and targets as specified in the final PM3 rulemaking. **100% Complete**
- Submit PM3 results for inclusion with annual HPMS reports. **100% Complete**
- From KTC:
  - Updated non-NPMRDS Speed Data for 2018 and 2019 **100% Complete**
  - Updated non-NPMRDS Speed Data locations on Kentucky's HIS Congestion Measure calculations for SHIFT **SPR 20-597 100% Complete**

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$50,000</b>	<b>\$46,773</b>	<b>93%</b>
<b>OUTSOURCED PERSONNEL</b>	<b>\$165,000</b>	<b>\$98,492</b>	<b>59%</b>
<b>OTHER</b>	<b>\$25,000</b>	<b>\$0</b>	<b>0%</b>
<b>TOTAL</b>	<b>\$240,000</b>	<b>\$145,265</b>	<b>60%</b>

## CHAPTER 10

Performance Measures and Congestion/Mobility Analysis

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### ESTIMATED OUTSOURCING EXPENSES AND PURCHASES

#### Outsourcing

- \$50,000 Directional Speed data into Travel Demand Models to synthesize system reliability.
- \$115,000 for the Kentucky Transportation Center study to acquire new non-NPMRDS speed data and calculate relevant portions of SHIFT and update HERS model.

#### Other

- \$5,000 Other Operational Costs  
For items such as travel, mileage, equipment and other cost directly associated to the completion of this work chapter. **Travel curtailed due to COVID**
- \$10,000 TTI Support for Urban Mobility Analyses (SUMA) (pooled-fund study) **100% Complete**
- \$10,000 for participation in the Rhode Island Pooled Fund Study. **100% Complete**



## CHAPTER 11

## Air Quality

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PURPOSE AND SCOPE

The Air Quality Team coordinates and performs analyses necessary to determine regional air quality conformity. The team assists in the development of regulations, guidance, and best practices to ensure compliance with federal regulations and deliver transportation projects within designated nonattainment and maintenance areas. The team communicates and coordinates with KYTC Offices and partner Cabinets as needed.

### PROPOSED ACTIVITIES FOR 2020-2021

- Perform Regional Air Quality (AQ) Conformity Analysis for metropolitan and rural areas as needed. **100% Complete**
- Monitor AQ data submissions to other agencies – State, federal, local, and academic research. **Reviewed AQ conformity analysis reports from State, Federal, and Local agencies for the AQ affected area(s): Cincinnati and Louisville MPO's. 100% Complete**
- Provide Kentucky transportation-related data to KY Energy and Environment Cabinet – Division of Air Quality (EEC-DAQ). Data is commonly used for the development of the State Implementation Plans (SIPs) for AQ nonattainment and maintenance areas. **100% Complete**
- Review, comment, and participate during the preparation of mobile emission budgets for the development of SIPs, SIP amendments, maintenance demonstrations, and budget adjustments. **100% Complete**
- Work with KYTC-IT to develop annual updates to the Kentucky VIN/Fleet registration age/type distribution data for use with MOVES. Explore incorporation of other useful datasets. **Received 2018-2019 VIN data from KYTC-IT. 100% Complete**
- Maintain expertise in MOVES3 or current AQ model. Perform the emissions model analysis for ozone, Green House Gases (GHG), and PM<sub>2.5</sub> regional conformity analyses as needed. **Reviewed EPA MOVES3 Data Updates; Attended MOVES3 webinar and MOVES3 Executive Presentation. 100% Complete**
- Prepare Cabinet responses to citizen/a gency inquiries for signature by Governor, Secretary, or Director. **Prepared letters for Cabinet response to FHWA for requests for Transportation Conformity to the TTPs, MTPs and AQ analyses for Louisville and Cincinnati MPOs. 100% Complete**
- Attend necessary meetings and conferences to stay abreast of AQ issues. **Attended AQ related mtgs, webinar trainings including IAC mtgs, Kentucky Clean Fuels Coalition mtgs, KY's Regional AQ Conference, Alternative Fuel Corridor webinar, EV Charging Highway Signage webinar, KY's Nature Call to Action Conference, MOVES3 Executive Training. 100% Complete**
- Monitor changes and maintain a clearinghouse of knowledge for the Division/Cabinet concerning AQ regulations. Maintain a working knowledge of the National Ambient Air Quality Standard (NAAQS) for current standards including the 8-hour ozone and PM<sub>2.5</sub> standards, air quality regulations, and implementation guidance. **100% Complete**
- Inform KYTC staff, KYTC management, partner cabinets, MPOs, ADDs, public officials, and the general public about air quality, conformity analysis, federal guidelines, and new developments regarding greenhouse gas/climate change requirements. Disseminate information about same. **100% Complete**

## CHAPTER 11

## Air Quality

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Educate local governments regarding transportation impacts after adoption of new ozone standard. **100% Complete**
- Maintain AQ Website- Maintain appropriate active web-links. **Updated Tracking Sheets, IAC list, Conformity Determination letters to FHWA, MOVES3 documents. 100% Complete**
- Develop and maintain a KYTC AQ email distribution list for dissemination of AQ information. **100% Complete**
- Participate and/or facilitate monthly AQ conference calls and quarterly meetings. This includes participating in interagency consultation calls regarding transportation conformity for updates and amendments to MTP plans, SIPs, TIPs, and STIPs. **Participated in conference calls on conformity determination for various MPOs. Attended Air Quality webinars hosted by EPA and FHWA. 100% Complete**
- Assist with new programs as required by FAST Act, Clean Air Act Amendment (CAAA), NAAQS, and other federal, state or local legislation. **100% Complete**
- Coordinate with team members (travel demand modelers) to ensure all AQ TDM model data is ready for MOVES use. **100% Complete**
- Develop and maintain Park-n-Ride database for citizen/agency inquiries. **100% Complete**
- Develop and submit annual Alternative Fuel Corridor application on behalf of KYTC for FHWA. **100% Complete**
- Develop and maintain working knowledge of the ever-changing performance measures required by the FAST Act and how they could impact AQ. **100% complete**
- Coordinate special AQ/MOVES training when needed. **100% complete**
- Provide support to the KYTC Office of Local Programs and local agencies for Congestion Management and Air Quality (CMAQ) related issues, as requested. Assist District, ADD, MPO, and local government offices with the preparation of CMAQ applications including emission calculations and documentation. **Have not participated in any CMAQ applications**
- Participate in Congestion Management, Mobility, Speed, VMT, Green Initiatives, and Safety teams as needed. **100% Complete**
- Provide assistance with performance measures as needed when related to AQ. **100% Complete**
- Other duties and special projects as assigned. **100% Complete**

### PRODUCTS

- Ozone and PM<sub>2.5</sub> regional conformity analysis as required for projects in nonattainment and maintenance areas. **100% Complete**
- Conforming statewide and MPO planning documents. **100% Complete**
- Data to Division of Air Quality as requested. **None during this period**
- Emission calculations for CMAQ applications, Green House Gases/Cross Cutting (GHG/CC) as requested. **100% Complete**
- VIN/Fleet data for use with MOVES. **100% Complete**
- KYTC AQ website updates. **100% Complete**

**CHAPTER 11**

Air Quality

**RESPONSIBLE UNIT**

Division of Planning  
Multimodal Programs Branch

**PRODUCTS FOR 2020-2021 (continued)**

- Performance measures pertaining to AQ. **100% Complete**
- 2020 Alternative Fuel Corridor application for FHWA. **None this period**
- Park-n-Ride database. **100% Complete**

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$25,000</b>	<b>\$30,841</b>	<b>123%</b>
<b>OTHER</b>	<b>\$2,000</b>	<b>\$0</b>	<b>0%</b>
<b>TOTAL</b>	<b>\$27,000</b>	<b>\$30,841</b>	<b>114%</b>

**Other**

- \$2,000 Other Operational Cost  
For items such as travel, mileage, equipment and other costs directly associated to the completion of this work chapter. **Travel curtailed due to COVID**

## CHAPTER 12

## Multimodal Freight Transportation

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PURPOSE AND SCOPE

The Modal Team collects data, plans, promotes, and assists in the development of a multimodal and intermodal transportation system in Kentucky. The modal programs addressed in this chapter are public riverports, railroads, truck freight, and ferryboats. The team will administer and have oversight/support of ferry operations, Ferryboat Formula Funds (FBP), Kentucky Railroad Crossing Improvement (KRCI) grants, Kentucky Riverport Improvement (KRI) grants, and other federal or state multimodal contracts. The team serves as staff support for the Water Transportation Advisory Board (WTAB) and Kentucky Freight Advisory Committee for Transportation (KFACT).

### PROPOSED ACTIVITIES FOR 2020-2021

#### Public Riverports

- Maintain Kentucky's guidelines for KRI grant applications, as defined by current budget bill. **With input from the Water Transportation Advisory Board, updated guidance document. 100% Complete**
- Review any KRI grant applications received, request completion documents as needed. **Received seven applications. 100% Complete.**
- Provide staff support for the Water Transportation Advisory Board. **Held three meetings in FY 20. 100% Complete**
- Interface with the public and private riverports in the state by responding to information requests and serving as a member of the Kentucky Association of Riverports. **Participated in KAR meetings as requested and KBT Waterway Committee meetings. 100% Complete**
- Conduct annual on-site visits of active public riverports in the state. **Visited seven public Riverports and participated in KAR meetings as requested. 100% Complete**
- Actively participate on the AASHTO Council on Water Transportation. **Participated virtual Spring Meeting in May. 100% Complete**
- Maintain Kentucky's application for establishing a public riverport authority. Review and respond to applications for establishing a public riverport authority, as needed. **Application is revised and updated. No applications have been received to date. 100% Complete**
- Request and compile annual operations reports from riverports. **Requested in FY 17, updated as needed. 100% Complete**
- Update and participate in the KYTC Waterways Transportation Plan with Public Riverports. **Major update began in FY 20. Work well underway. Two virtual summits have been held providing updates on study findings. 100% Complete.**
- Plan and host riverport meetings, as needed. **Attended virtual KBT Waterway committee meetings, Kentucky Association of Riverport virtual meetings, and hosted three virtual Water Transportation Advisory Board meetings. 100% Complete**
- Coordinate with United States Coast Guard, US Corp of Engineers, and MARAD on issues impacting riverports. **US Corp of Engineers and MARAD serving on steering committee for Waterways Transportation Plan. 100% Complete**
- Maintain KYTC's Riverports website. **Updated as needed. 100% Complete**
- Maintain and update Riverports GIS datasets and maps. **Maintained and updated Public Riverport datasets and maps. 100% Complete**

## CHAPTER 12

## Multimodal Freight Transportation

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

#### Railroads

- Oversee KRCI program including maintaining program guidance, reviewing applications, and contract execution, as needed. **FY 21 & FY 22 Solicitation for projects issued concurrently. 45 total applications received. 24 crossings awarded. 5 contracts executed. 100% Complete.**
- Coordinate with Division of Right of Way to administer KRCI projects as defined by the current budget bill. **22 FY 21 & FY 22 grants transferred to RWU for administration and oversight. Remaining agreement awaiting signature by Secretary. 100% Complete.**
- Assist with development and maintenance of the statewide railroad GIS mapping and data set using RR GIS, RR maps, RR annual reports, and aerial photographs. **Major update completed. 100% Complete**
- Update the KYTC Rail Transportation Plan as needed. **100% Complete**
- Participate in various rail studies and research with KYTC involvement. **Participating in Hickman Rail Loop study for Surface Transportation Board. 100% Complete.**
- Collect railroad annual reports and rail accident/incident reports as directed in 603 KAR 7:090. **100% Complete**
- Actively participate on the AASHTO Council on Rail Transportation, American Railway Engineering and Maintenance-of-Way Association (AREMA), American Short Line & Regional Railroad Association (ASLRRA), and Kentucky Operation Lifesaver. **Participated in virtual AASHTO Rail Committee meetings. 100% Complete**
- Monitor, track, and distribute information about railroad line abandonments in Kentucky. **None received in FY 21. 100% Complete**
- Track and share (with KY Tourism, KY Economic Development, et. al.) information regarding rail abandonments, as appropriate. **None received in FY 21. 100% Complete**
- Respond to public inquiries on passenger and freight rail issues. **Responded to blocked crossing, poor crossing condition, rail location inquiries. 100% Complete**
- Plan and host rail industry stakeholder meeting as needed. **No separate meeting needed. Interfaced with railroad company representatives several times. 100% Complete**
- Maintain KYTC's Railroads website. **Updated as needed. 100% Complete**

#### General Freight

- Provide technical assistance and disseminate information to MPOs, ADDs, HDOs, and project teams regarding freight movement, planning, and safety. **Interfaced with MPOs, ADDs and HDOs on freight several times. Managing freight study for KYOVA. 100% Complete.**
- Evaluate, log, store, and update freight data from MPOs, ADDs, and HDOs as needed. **100% Complete**
- Coordinate designations to the National Highway Freight Network and the National Multimodal Freight Network, as required by FAST Act. **Updated, maintained, and reviewed as needed and updated in Highway Information System database as needed. 100% Complete**
- Review and maintain designation of the Kentucky Highway Freight Network. **Updated, maintained, and reviewed as needed, and updated in Highway Information System database as needed. 100% Complete**

## CHAPTER 12

## Multimodal Freight Transportation

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Participate in regional freight planning efforts. Served on several planning studies representing freight. Presented on freight to Appalachian Regional Commission. 100% Complete
- Continue involvement with Mid-America Freight Coalition (MAFC), Institute for Trade and Transportation Studies (ITTS), AASHTO Special Committee on Freight, AASHTO Committee on Planning Freight Planning Task Force, and National Cooperative Highway Research Program (NCHRP), as appropriate. Attended virtual MAFC Conference and participated in scheduled conference calls. Participated in monthly ITTS conference calls. Attended and presented at virtual ITTS Conference. Serving on ITTS Freight Bottlenecks study. Attended AASHTO Special Committee on Freight virtual Spring Meeting. Attend monthly AASHTO Committee on Planning Freight Planning Task Force conference calls. 100% Complete.
- Visit intermodal sites and communicate with rail, water, air, pipeline, and road modes to identify freight-related needs and concerns involving highways, as needed. Pandemic travel restrictions limited physical visits; virtual interactions were utilized. 100% Complete
- Continue relationships with Economic Development to identify and promote intermodal freight opportunities and locations. Partnering with Economic Development on Waterways Study. 100% Complete.
- Maintain the Kentucky State Freight Plan to be FAST Act compliant. Approved by FHWA on 12/4/2017. 100% Complete
- Update the KY Freight Modes book, as needed. Created, edited, and updated GIS maps and datasets. Posted updated maps on website. 100% Complete
- Review draft procedure and perform analysis for Freight Performance Measures. 100% Complete
- Maintain KYTC's Freight website. Updated as needed. 100% Complete
- Create and implement methodology for considering freight in PIFs, plans, and projects. Developed Freight LOS and used on multiple projects. KYTC Freight Network used in SHIFT freight scoring. 100% Complete
- Track and share information regarding automated and connected freight vehicles, as appropriate. 100% Complete
- Provide staff support for the KY Freight Advisory Committee for Transportation (KY FACT). Pandemic travel restrictions limited physical meeting. Virtual interactions were utilized when needed. Meeting planned for FY 22. 100% Complete
- Maintain and update Critical Urban Freight Corridor and Critical Rural Freight Corridor networks, as needed. Worked with MPOs for CUFC updates to NHFN. 100% Complete
- Maintain and update Critical Rural Freight Facilities, as needed. Worked with ADDs for CRFF updates to NHFN. 100% Complete
- Coordinate and participate in National Truck Network Procedures study. 100% Complete
- Coordinate and participate in Truck Parking Study and truck parking surveys. Major Truck Parking Study begun in March 2021. In FY 21, RFP was developed, consultant selected, and work now underway. Kickoff Meetings have been held. 100% Complete
- Maintain and update Kentucky Highway Freight Network (KHFN), National Highway Freight Network (NHFN), and National Highway System (NHS) assets in Highway Information System database (HIS) as needed. Updated as needed. 100% Complete



## CHAPTER 12

## Multimodal Freight Transportation

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

#### Ferryboats

- Coordinate the Kentucky Ferryboat Program writing contracts, reviewing invoices, and compiling traffic counts. Executed all FY 22 contracts. Developed and implemented Ferry Annual report. Compiled Annual Traffic Counts. 100% Complete
- Share information concerning Federal Ferryboat Formula Fund (FBP) program and administer FBP funds. Work with ferry authorities to develop fiscally constrained plans for FBP funds. Three FBP projects completed, three more in progress. 100% Complete
- Plan and host ferryboat operators meeting, as needed. Met with ferryboat operators several times. Created Ferry Annual Report form. 100% Complete
- Maintain and update Ferryboat (FB) asset in Highway Information System database (HIS) as needed. Maintained and updated Highway Information System database information as needed. 100% Complete
- Maintain and update Ferryboats GIS datasets and maps. Maintained and updated Ferryboat GIS datasets, maps, and posted on website to update as needed. 100% Complete
- Conduct annual on-site visits of Kentucky ferryboat operations. Visited six state funded ferry operations, and one privately funded operation. Pandemic travel restrictions limited physical visits; virtual interactions were utilized with other ferry operations. 100% Complete
- Coordinate with United States Coast Guard, US Corp of Engineers, and MARAD on issues impacting all ferries. 100% Complete
- Maintain KYTC's Ferryboat website. Updated as needed. 100% Complete

#### PRODUCTS

- Kentucky Riverport Improvement projects/contracts 100% Complete
- In-Progress Statewide Waterway Plan 100% Complete
- Updated railroad, riverport, freight, and ferryboat GIS datasets and maps for KYTC and public purposes Updates of rail GIS databases and maps was part of a larger effort that also updated riverport, freight, and ferryboat GIS databases and maps. 100% Complete
- Updated freight, railroad, riverport, and ferryboat webpages. Updates of rail GIS databases and maps was part of a larger effort that also updated riverport, freight, and ferryboat maps and posting them on appropriate websites. 100% Complete
- Annual Rail Report 100% Complete
- Annual Riverport Report 100% Complete
- Annual Ferryboat Report 100% Complete
- In-Progress Truck Parking Study 100% Complete
- Ferryboat operation and FBP awards' contracts, site inspections, and invoice review/approval 100% Complete
- Updated Intermodal Connectors documentation, as appropriate 100% Complete
- KFACT meetings as needed (one per year anticipated) 100% Complete
- Contracts and guidance for KRCI 100% Complete
- Updated website, meeting minutes, agendas, logistics, and guidance for Water Transportation Advisory Board. 100% Complete
- Maintain FAST Act Compliant Freight Plan 100% Complete

**CHAPTER 12**

Multimodal Freight Transportation

**RESPONSIBLE UNIT**

Division of Planning  
Multimodal Programs Branch

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$225,000</b>	<b>\$192,986</b>	<b>85%</b>
<b>OUTSOURCED PERSONNEL</b>	<b>\$400,000</b>	<b>\$63,435</b>	<b>15%</b>
<b>OTHER</b>	<b>\$97,000</b>	<b>\$453</b>	<b>1%</b>
<b>TOTAL</b>	<b>\$722,000</b>	<b>\$256,874</b>	<b>35%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

**Outsourcing**

- \$400,000 Truck Parking Study **15% Complete. Balance will be completed in FY 2022**

**Other**

- \$37,000 Mid America Freight Coalition, a MAASTO subcommittee paid as pooled fund study\* Renewed in FY 2019 with three-year commitment (FY 2019, FY 2020, FY 2021). **100% Complete**
- \$40,000 Institute for Trade and Transportation Studies, a SASHTO subcommittee paid as a pooled fund study\*. Renews in FY2019 with two-year commitment (FY2020, FY 2021). **100% Complete**
- \$5,000 Operation Lifesaver - Educational Material (for school children). **100% Complete**
- \$15,000 Other Operational Cost- For items such as travel, mileage, equipment, and other costs directly associated to the completion of this work chapter. **Travel curtailed due to COVID**

**Non Work-Program Expenses**

- Statewide Waterway Plan funded through Statewide Planning & Research (FD52 Federal-Aid \$1,000,000). **100% Complete**
- Tennessee Tombigbee Waterway Dues\* are paid through Regional Planning (EA51 General Fund \$50,000). **100% Complete**

\* Expenses paid via KYTC Research Arm/Innovation Engineer.



## CHAPTER 13

## Traffic Data Forecasting Statewide Transportation Modeling

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PURPOSE AND SCOPE

The Forecasting and Modeling Team analyzes traffic trends, provides current and projected traffic volume estimates for planning, project development, environmental analysis, operations, and other purposes. Local, regional, and statewide transportation models (KySTM) are updated and maintained. Data is collected, processed, and assembled for determining route location or relocation, running scenario analysis, or as input into KySTM. Cross training is performed to grow the team.

### PROPOSED ACTIVITIES FOR 2020-2021

#### Traffic Forecasting- Reports, Studies, and Analyzes

- Prepare traffic estimates for planning studies, design projects, maintenance, environmental, and other purposes, as requested. **Received 21 traffic forecast requests with 17 completed. 100% Complete**
- Administer statewide traffic forecasting contracts. Provide quality review for traffic projections prepared by the MPOs and consultants. **Provided quality review for 11 forecasting projects prepared by consultants for the Cabinet. Administered six statewide contracts during this year. 100% Complete**
- Maintain databases tracking traffic forecasts and traffic forecast parameters. Make databases available to other users and offices as appropriate. **Database maintained and a copy made available to other users within the Division of Planning. 100% Complete**
- Create, publish, and email monthly Traffic Forecast Status Report. Update Forecast milestone dates on Branch Calendar, at least monthly. **Status reports available upon request. 100% Complete**
- Maintain the traffic forecasting web page as a tool for other users. Maintain and update internal traffic forecasting tools (e.g. pavement design spreadsheets, turning movement spreadsheets) and Traffic Forecasting report. **100% Complete**
- Provide future year forecasting of K-factors/D-factors for the Highway Performance Monitoring System (HPMS) and compare result with TRADAS (or current software) outputs. **No HPMS comparison done this year. 100% Complete**
- Participate in Regional Forecaster User's Group. This group includes forecasters from surrounding states that are trying to identify the state of practice for traffic forecasts. **No Forecaster User's Group sessions held this year. 100% Complete**

#### Modeling- Reports, Studies, and Analysis

- Administer statewide modeling contracts. Provide quality review for models prepared by the MPOs and consultants. **Administered six statewide contracts during this year. 100% Complete**
- Maintain databases tracking traffic models, traffic modeling parameters, model use, and archive status. Make databases available to users. **Twelve modeling projects initiated during the year. 100% Complete**
- Assist MPOs by offering specialized training. **100% Complete**
- Create, publish, and monitor Traffic Data and Model Sharing Agreements. Update Sharing Status milestone dates, at least quarterly. **100% Complete**

## CHAPTER 13

### Traffic Data Forecasting Statewide Transportation Modeling

#### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

#### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Use and modify existing and create new transportation models as needed to facilitate traffic forecasts, planning/regional studies, as well as special projects such as SHIF'T. **Successfully migrated the Statewide, Owensboro, Warren, Etown, D-9, LPKWTDM and McCracken models to TransCAD version 7 and version 8. 100% Complete**
- Maintain the traffic modeling web page as a tool for users. **100% Complete**
- Obtain and use employment, traffic counts, speed data and travel time data for use in Transportation Demand Models. Research other available data sources. Evaluate benefit/cost of purchased data and TDM improvements. **100% Complete**
- Participate in Transportation Model Users Group and TransCAD workshops for traffic forecasters and traffic modelers composed of members from government, academia, and the private sector. Provide in-house training to new members of the Modal Branch Forecast & Model team. **No Model User group session held this year. Two new permanent members in the Forecast and Model team under training. 100% Complete**
- Update and modify multi-county and regional models scripts that run in TransCAD 5 or 6, and begin migration to TransCAD 7, or 8. **100% Complete**
- Research state of the practice leading to better-calibrated and validated models. Attend peer reviews of TMA-MPO models and coordinate model updates as needed for small MPO models. **100% Complete**
- Offer collaboration with Project Development to identify and utilize modeling where appropriate. **100% Complete**
- Further review and propose improved freight assignment in models. **100% Complete**
- Evaluate ongoing research by KTC regarding speed data, travel time, and other big data sources for possible future application. **100% Complete**
- Prepare inputs and perform Travel Demand & TREDIS modeling for the 2022 SHIF'T process. **100% Complete**
- Present first edition of Microsimulation Guidelines document to the modeling community for consistent application of microsimulation as a tool for cabinet projects. **100% Complete**

#### PRODUCTS

- Increase in-house expertise in Forecasting and Modeling **100% Complete**
- Project, Corridor, Road User Cost, and basic TREDIS Economic Modeling analysis as requested **100% Complete**
- Microsimulation Guidelines document and tool for cabinet projects **Forecasting Guidance Manual started 100% Complete**
- Provide VMT and VHT by road classification using KYSTM for MOVES2014b (or current version) as requested. **100% Complete**
- Model Sharing Status Report- (Upon Request) **100% Complete**
- Project Development coordination regarding models and forecasts **100% Complete**
- Traffic forecast factors for HPMS **100% Complete**
- Growth rate analysis by exponential, regression and straight line methods , of traffic stations using TFT **100% Complete**

**CHAPTER 13**

Traffic Data Forecasting  
Statewide Transportation Modeling

**RESPONSIBLE UNIT**

Division of Planning  
Multimodal Programs Branch

**PRODUCTS (Continued)**

- Develop/review as requested, Transportation Demand Models such as:
  - ♦ County or highway district area macro models **Six regional models updated to version 8**
  - ♦ Corridor and small area micro-simulation models **Eight Micro-Simulation models**
  - ♦ Continued validation and calibration of new and existing models **Microsimulation guidelines Phase 2 completed and Phase 3 started**

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$375,000</b>	<b>\$341,415</b>	<b>91%</b>
<b>OUTSOURCED PERSONNEL</b>	<b>\$400,000</b>	<b>\$652,959</b>	<b>163%</b>
<b>OTHER</b>	<b>\$5,000</b>	<b>\$0</b>	<b>0%</b>
<b>TOTAL</b>	<b>\$780,000</b>	<b>\$994,374</b>	<b>127%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

**Outsourcing**

- \$170,000 for **Owensboro model and Micro-simulation model Manual**
- **\$150,000 for Forecasting Guidance manual**
- **\$300,000 for TDM and TREDIS modeling for SHIFT 2022**
- **\$35,000 for temporary personnel**

**Other**

- \$5,000 Other Operational Cost - For items such as travel, mileage, meeting registration, and workshop fees. **Travel curtailed due to COVID**

**Non-Work Program Expenses**

- \$5,000 VISSIM Maintenance for PTV Micro-Simulation Software.
- \$17,000 Caliper License fees for TransCAD (8) and TransModeler (5)

## CHAPTER 14

## Bicycle and Pedestrian Program

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PURPOSE AND SCOPE

The Bicycle and Pedestrian Team coordinates, assists, and manages the state's Bicycle and Pedestrian Program within the Transportation Cabinet and coordinates associated efforts and works with other state agencies, local governments, organizations, and citizens of the Commonwealth. The coordinator works to expand active transportation opportunities in Kentucky by maximizing the use of roads, streets, parks, and other publicly and privately owned lands, abandoned road beds, and other resources in the development of bikeways and walkways. Assistance is in the form of technical advice, development/review of plans, and coordinating studies. The responsibility of the Kentucky Pedestrian and Bicycle Coordinator is to prepare, assist, and promote bike/ped programs throughout the state by working with project teams to recommend opportunities and options for bike/ped facilities for proposed and ongoing highway projects, local roadway projects, and other associated bicycle and pedestrian projects. The Bicycle and Pedestrian Coordinator acts as secretariat for the Kentucky Bicycle and Bikeway Commission.

The Bicycle and Pedestrian Team coordinates with the Cabinet for Tourism, Arts and Heritage, Department for Local Government, and the Cabinet for Health and Family Services to promote non-motorized travel within the state. The KYTC Office of Local Programs and the Kentucky Department for Local Government coordinate programs that support and encourage active/non-motorized transportation. The Team coordinates with these agencies regarding Scenic Byways, Transportation Alternative Projects, Recreational Trail Projects, and Congestion Mitigation & Air Quality Improvement Projects.

### PROPOSED ACTIVITIES FOR 2020-2021

#### Planning

- Assist local governments in the development and/or improvement of local bike/ped network facilities, provide assistance to local planning efforts, and provide guidance to/from KYTC, FHWA, and AASHTO. **Provided design plan templates to several communities throughout the state to assist with developing and/or improving their current bike/ped network and facilities. Provided templates, grant applications, and technical specification documents to KBBC members to distribute to their local areas of the state that help provide guidance for local government agencies, advocacy groups, and bike clubs in enhancing their bike/ped networks. 100% Complete**
- Participate in the KYTC Strategic Highway Safety Plan update and implementation. Pedestrian and Bicycle Safety are now stand-alone sections. **100% Complete**
- Participate in FHWA Pedestrian Fatality Focus Study for Louisville and Kentucky. **100% Complete**

## CHAPTER 14

## Bicycle and Pedestrian Program

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Assist with revision and updating of the United States Bicycle Route (USBR) tour system. Provide documentation, submit propose re-routes as needed, and provide other updates to the USBR system in KY by submittal to AASHTO for approval. **Finalized route revision efforts of USBR-21 in Bell County near the Cumberland Gap corridor and UBSR-76 in Madison/Garrard Counties near the Paint Lick community. Provided support and technical assistance to Dr. Fox and other local advocates for the revision. Collaborated with AASHTO to finalize route revisions. Completed spatial and tabular data updates for all USBR's (21, 23, 25, 35, and 76) in KYTC's Highway Information System (HIS) database, as well as Modal's GIS datasets on network drives. Created a statewide static map showing the alignments of each route through Kentucky and posted on KYTC's website. The Bicycle Comfort Index (BCI) dataset has been updated and improved to depict the level of cycling experience required to ride each section of the USBR's. Interactive maps of all USBR's in Kentucky have been developed and made available on KYTC's website and have been updated in regards to all alignments and have been symbolized with the BCI rating of each section. Completed all updates to maps, data, webpages, and publications to reflect the name change of USBR-21 to Daniel Boone Bike Tour. All necessary updates were submitted to AASHTO for approval. 100% Complete**
- Review, revise, and update the KYTC Pedestrian and Bicycle Travel Policy, as needed. Create, update, and review procedures for work associated with developing or improving bikeways and walkways. **KYTC's bike/ped travel policies were analyzed and the necessary updates were implemented. Participated with consultant for the Development of Pedestrian Action Plan. 100% Complete**
- Act as a Technical Liaison for municipalities to inform of the federal requirements for Americans with Disabilities Act (ADA) Transition Plans (in relationship to their pedestrian planning efforts) and provide resources and material for these plan developments. **Templates and technical specification documents have been created and updated annually for the use of local communities across the state to aid in the development and maintenance of bicycle and pedestrian facilities. Worked diligently with consultant Michael Baker in the development of a newly collected, thorough, statewide inventory of pedestrian facilities to ensure they meet or exceed ADA requirements. The statewide data collection of the new inventory was conducted utilizing LiDar technology and is now finished. The final product is a geodatabase with a complete schema. The new inventory identifies facilities that do and do not meet ADA requirements, and consequent plans are being developed to correct the deficient facilities not in compliance. Also assisted and advised communities on how to create a design plan for a bicycle and pedestrian facilities network, and provided information on how to improve the efficiency and effectiveness of current networks while abiding by ADA compliance standards. 100% Complete**

## CHAPTER 14

## Bicycle and Pedestrian Program

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Coordinate and assist the review of federal funding applications for the Transportation Alternatives Program (TAP). Assists in the determinations of proposed activities awarded through federal funding to plan, design, construct, and inspect non-motorized facilities and treatments. Collaborated frequently with Kim Tompkins (TAP Coordinator), Dr. John Fox (Friends of Boone Trace Inc.), Troy Hearn (KDHP), Shaw Evans (Central Seal), the Madison County Judge Executive, the Division of Traffic Operations, and various District Offices to begin fabrication and installation of signage along the entire route of USBR-21. Developed a master spreadsheet indicating precise locations of every sign, type of signs, and all other necessary information regarding the placement of each sign. The bike/ped program was instrumental in seeing this project come to fruition as many hurdles were encountered along the way. 100% Complete

### Engineering and Project Management

- Respond to requests concerning planning and design guidelines regarding bike/ped facilities. Provide reviews of bike/ped projects and facilities with KYTC's Highway District Office (HDO) and Central Office (CO) Divisions, Area Development Districts (ADDs), Metropolitan Planning Organizations (MPOs), and local governments. Provided technical guidance to District 5 personnel regarding the incorporation of shared lane striping on right hand turn lanes in order to keep the planned bike lanes for road construction projects in Louisville. Answered several requests from multiple ADD's asking for a current inventory of the Bicycle and Pedestrian Facilities (BKPD) inventory within their district; ran necessary queries in HIS and extracted all facilities, and provided an excel spreadsheet output report with the most up-to-date inventory for the ADD's to use. Provided technical guidance to the ADD's for their FY21 bike/ped inventory updates to satisfy work program requirements. Provided continued support to Michael Baker and KYTC OIT during the ADA facilities data collection and analysis efforts - provided technical explanations of blended transitions and incorporated these features into the schema and geodatabase. 100% Complete
- Review and comment on requests for signage or other options to recognize bike/ped facilities or on-road bicycle routes. Provided technical guidance to Districts 6, 7, 8, 9, and 11 as well as contractor Central Seal for signage specifications and installation processes for USBR-21 way-finding signage. Provided documentation and guidance to communities throughout the state for requirements to add "Sharrows" and Share the Road signs. Conducted analysis and completed a report for Share the Road sign requests in Kenton County on route KY-371 and in McLean County on routes KY-81, KY, 85, KY-138, KY-2110, and KY-2226. Provided report and recommendations to Traffic Operations, District 2, and District 6 personnel. 100% Complete
  - Provide technical assistance and training for all state agencies, local agencies, ADDs, and other organizations in policy related materials and subjects related to non-motorized travel planning, facility design (including ADA compliance), and inspection. Provided technical assistance and specification documents to KBBC members to distribute to communities across the state relating, but not limited to; bike/ped planning, design templates, advocacy, and network development. Provided assistance to ADD's regarding technical questions of bike/ped facilities and data collection techniques. Continued to work closely with Michael Baker to ensure ADA compliance data collection efforts were up to the Cabinet's standards and to ensure all data is highly accurate and attributed correctly. 100% Complete



## CHAPTER 14

## Bicycle and Pedestrian Program

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Review the list of proposed resurfacing projects for opportunities to improve bike/ped facilities or treatments through restriping and other improvements. Review for considerations within local bike/ped plans where appropriate as part of maintenance activities. Requested to review the current list of possible resurfacing projects to check against the list of local government's plans for bike/ped travel roadway improvements. Analyzed design plans utilizing Microstation and ArcGIS applications to ensure that bike/facilities were properly integrated. 100% Complete
- Provide bike/ped accommodation considerations within traffic forecasts, planning studies, and other Project Development reports. Administered KYTC's participation in a case study with the Western Transportation Institute and Montana State University that examines Communities with Less Than 10,000 People with Bicycle and Pedestrian Infrastructure. The KY communities involved in the study are Calvert City, Corbin, and Morehead. 100% Complete
- Develop, update, and standardized coordination protocols with the Divisions of Maintenance, Traffic Operations, Design, Planning, and HDOs concerning Share the Road (STR) sign placement procedures. Share The Road sign requests completed for McLean County (KY-81, KY-85, KY-138, KY-2110, KY-2226), Kenton County (KY-371). Provided completed reports to Traffic Operations and Highway District Office personnel. 100% Complete
- Develop and maintain a GIS of bike/ped network facilities and plans statewide. Document linkage between the local and regional network facilities. Use national and statewide data source (Strava or other applications) to confirm bike/ped travel activity. A multitude statewide GIS datasets have been created and regularly maintained, including bike/ped facilities, AASHTO designated US Bicycle Routes, Recreational Bike Routes, Full length multi-use paths (in and out of ROW), and Rail Trails. The full length multi-use path dataset was added as a layer to the GIS S-drive as well as the interactive Bike/Ped facilities map on Planning's website. All additional designated bike lane features were copied over from the auxiliary lane asset to the bike/ped facilities asset in HIS creating a more complete bike lane network across the state, depicted on the interactive map. The bike/ped facilities inventory includes complete local and regional networks across the state consisting of: sidewalks, crosswalks, designated bike lanes, multi-use paths, and other shared-use facilities. Strava heat maps are commonly referenced to monitor bicycle/pedestrian traffic. 100% Complete
- Identify and help obtain federal, state, local, or private funds available for developing active (bike/ped) transportation facilities or treatments. Frequently collaborated with Kim Tompkins, the Program Coordinator for the Transportation Alternatives Program (TAP), to help secure funding for fabrication and installation of signage for USBR-21 (United States Bicycle Route). The fabrication and installation of signage was done by Central Seal. 100% Complete

## CHAPTER 14

## Bicycle and Pedestrian Program

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Develop and maintain a functional system whereby all information related to non-motorized travel planning, design, and inspection (including ADA compliance) is available for consideration in local, state, and federal efforts. A statewide, interactive map of bike/ped facilities on KYTC's website has been created and is regularly updated from HIS (Highway Information System) database extracts. Users can view bike/ped networks across the state at a local level and can obtain attribute data of each feature within the network. A new multi-use path layer was added to the interactive map depicting the full length of multi-use path features across the state; this includes all alignments outside right-of-way. Attribute data of each feature includes, but is not limited to; type of feature, begin and end milepoint based on adjacent roadway, feature width, type of surface, side of roadway feature is located on (offset), total feature length, adjacent roadway information, and location information. ADA compliance data collection was completed by Michael Baker, and has been compiled into a geodatabase with multiple feature classes. ADA deficiencies found in the data will be implemented into future KYTC projects for correction. 100% Complete

### Education & Enforcement

- Provide technical training, including best practices and bike/ped design for planners, designers, local government staff, and other KYTC staff (statewide) as needed. Provided technical guidance to District planners, ADD planners, KBBC commissioners, Michael Baker staff, and other agency staff regarding bicycle and pedestrian facilities incorporation, design specifications, and ADA compliance specifications following PROWAG guidelines and technical requirements. 100% Complete
- Facilitate education of the public regarding non-motorized modes of transportation. Provide educational brochures and other resources to local government offices, bike shops, health departments, and other related groups. Provided KYTC's available resources, documents, and educational materials to entities upon request. Also, when necessary, directed entities to KYTC's Bike/Ped webpages and FHWA's webpages as additional sources for information. 100% Complete
- Coordinate with all levels of KY law enforcement to promote education and enforcement of bike/ped safety laws. Provide information brochures and make a presentation at the annual Life Savers Conference. Was not present at KYTC for Lifesavers Conference. COVID-19 presented many constraints on conference events during the year. 100% Complete
- Respond to citizens' requests for information, maps, bike routes, walking trails, availability of funds for projects, and other related information as requested. Promptly responded to all emails, phone calls, and mail correspondence received from the general public concerning bike/ped datasets, statistics, trail maps, locations of multi-use paths, bourbon trail/tourism maps, community design plan templates, technical specification documents, questions from KBBC commissioners, and Paula Nye Grant application process inquiries. 100% Complete



## CHAPTER 14

## Bicycle and Pedestrian Program

### RESPONSIBLE UNIT

Division of Planning  
Multimodal Programs Branch

### PROPOSED ACTIVITIES FOR 2020-2021 (continued)

- Develop and maintain a clearinghouse of information concerning active transportation for CO, HDOs, ADDs, MPOs, and local governments. The statewide Bike/Ped (BKPD) facilities dataset is regularly maintained and updated from ADD work program submissions, Microstation design plans, and Project Notification Reports. Updates are completed utilizing the HIS database. All BKPD data from HIS is then extracted on a weekly basis and updates the following resources: the Bike/Ped facilities interactive map on KYTC's website, the layerfiles on KYTC's SDE GIS server (bike / ped facilities, multi-use paths, and US Bicycle Routes), and the downloadable shapefile on KYTC's website for public consumption. 100% Complete
- Maintain [www.bikewalk.ky.gov](http://www.bikewalk.ky.gov) website. All bike/ped webpages were continually updated on a regular basis throughout the year to ensure that the most current data, information, statistics, and resources are always readily available. Webpages regularly updated include: Bike/Walk Home, KBBC, Laws and Policies, Bike Ped Plans and Clubs, Sidewalk and Bike Facilities Map, Bicycle and Pedestrian Travel Planning, Safety Information, Technical Information, Recreational Trail Information, and Road Cycling Events and Touring Routes. 100% Complete

### Kentucky Bicycle and Bikeways Commission (KBBC)

- Plan quarterly KBBC meetings. Prepare agenda before and minutes after each KBBC meeting. Successfully planned, coordinated, and conducted the quarterly KBBC meetings over the course of FY21. Each meeting was held virtually due to COVID-19 constraints and following guidelines from the Governor's Office and Boards and Commissions. Created and provided meeting agenda documents for each meeting, as well as meeting minutes following each meeting's conclusion. Updated the KBBC webpage with announcements, updated information, and posted meeting schedules, agendas, and minutes documents. The meetings were held in accordance with KRS 61.805 to 61.850. 100% Complete
- Plan annual KBBC Conference. Prepare agenda before and minutes after the KBBC conference. The annual conference was held virtually due to COVID-19 constraints to review the Paula Nye Grant applications. All Nye Grant applications received were reviewed and funds were successfully dispersed to grant recipients. All necessary accounting protocols were completed by KYTC. Prepared the agenda document for the annual meeting, took notes during the meeting, and prepared the minutes document after the meeting. Created the Memo for the Secretary with an expenditures table and overviews of amounts awards to each recipient. Posted agenda and minutes documents to the KYTC bike/ped and KBBC webpages. 100% Complete
- Assist KBBC on communication and technical matters via email and phone calls. Administered all communication with KBBC commissioners and answered all phone and email inquiries promptly. Provided technical specifications/design templates, coordinated efforts with conducting of the annual audit, maintained Nye Grant expenditures, processed/tracked Nye Grant applications, reviewed all Nye Grant progress reports received, and kept in regularly communication with all KBBC members being sure to clearly relay every important announcement. Promptly relayed all correspondence received from Boards and Commissions to the commissioners. 100% Complete

**CHAPTER 14**

Bicycle and Pedestrian Program

**RESPONSIBLE UNIT**

Division of Planning  
Multimodal Programs Branch

**PROPOSED ACTIVITIES FOR 2020-2021 (continued)**

- Assist in administering and reporting of the Paula Nye Memorial Education Grant program. Prepared and maintained a master spreadsheet to track all expenditures. Reviewed and processed newly received grant applications. Answered emails and phone calls from grant applicants. Reviewed and tracked progress reports and summary reports received from grantees. Contacted organizations/groups that were not submitting reports regularly and let them know they were not in compliance with the grant’s terms; requested progress and summary reports from the aforementioned organizations/groups. Kept in close communication with KBBC commissioners and gave regular updates regarding all aspects of the grant program. Coordinated with the KBBC Treasurer and provided all required documentation for the annual audit of Share the Road license plate funds conducted by KYTC’s Office of Audits. 100% Complete
- Post agenda and minutes to KYTC Bike/Walk website. The meeting schedule was regularly updated on the website once meeting dates were finalized. Draft agenda documents were prepared weeks in advance of each quarterly meeting and sent to all commissioners for their review and input. Final agenda documents were posted to the KBBC webpage in advance of each meeting. Thorough notes were taken during each meeting. Minutes documents were composed following each quarterly meeting and promptly posted on the KBBC webpage. The minutes were always approved by the commissioners during the following meeting. 100% Complete

**PRODUCTS**

- Guidance for local and regional bike/ped master plans. 100% Complete
- Clearinghouse/toolbox of bike & ped resources and related items for the creation or improvement of bike/ped projects or local master plans. 100% Complete
- Bike/ped brochures and promotional materials. 100% Complete
- Bike/ped transportation planning technical training courses. 100% Complete
- Walkability/Bikeability Audits. 100% Complete
- Quarterly and annual KBBC meetings. 100% Complete
- Nye Grant status reports. 100% Complete
- Continuous update of KYTC Bike/Walk web pages. 100% Complete
- Documentation for projects that include bike/ped components. 100% Complete
- Continuous update and maintenance of Bike/Ped GIS datasets. 100% Complete.

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	2020-2021	Expended	Percent Expended
<b>PERSONNEL</b>	<b>\$150,000</b>	<b>\$106,854</b>	<b>71%</b>
<b>OUTSOURCED</b>		<b>\$3,559</b>	
<b>OTHER</b>	<b>\$42,000</b>	<b>\$419</b>	<b>1%</b>
<b>TOTAL</b>	<b>\$192,000</b>	<b>\$110,832</b>	<b>57%</b>

**CHAPTER 14**

Bicycle and Pedestrian Program

**RESPONSIBLE UNIT**

Division of Planning  
Multimodal Programs Branch

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

**Other**

- \$2,000 bike/ped training course instruction with site field visits.
- \$10,000 for Kentucky Bicycle and Bikeway Commission meetings.
- \$5,000 for bike/ped brochures.
- \$5,000 for bike/ped educational and safety items for drivers, cyclists, and pedestrians.
- \$10,000 Other Operational Cost-For items such as travel, mileage, equipment, GIS data for bike/ped activity (Strava), and other costs directly associated to the completion of this work chapter
- \$10,000 for “Case Studies of Communities of Less Than 10,000 People with Bicycle & Pedestrian Infrastructure” through the Small Urban, Rural and Tribal Center on Mobility ([SURTCOM](#)).

## **CHAPTER 15**

## Highway Safety Improvement Program

### **RESPONSIBLE UNIT**

Division of Traffic Operations  
Traffic Engineering Branch  
Highway Safety Improvement Program Team

### **PURPOSE AND SCOPE**

The Highway Safety Improvement Program (HSIP) Team evaluates, develops, and implements safety improvements on all roadways. The team enhances and continues to update an evaluation process for prioritizing projects for consideration for inclusion in the Highway Safety improvement Program. The team also performs the necessary levels of evaluation to identify safety improvement opportunities, conducts Road Safety Audit Reviews, and develops a conceptual purpose and need statement. The team identifies and evaluates alternatives, generates project cost estimates, and recommends phasing priorities where appropriate. The team oversees outsourced activities and works with other Divisions, Offices, and Agencies as needed to complete necessary tasks. A new task the HSIP team is undertaking is the development of a tool that will be used to identify the roadway features that are highly correlated with crashes, to better establish safety hazards at the statewide and regional levels.

### **PROPOSED ACTIVITIES FOR 2020-2021**

- Continue to develop and update procedures for evaluating safety needs.
- Conduct Roadway Safety Audit Reviews.
- Respond to inquiries about safety improvement opportunities.
- Identify, evaluate, and prioritize safety needs through data analysis, and stakeholder and public involvement.
- Evaluate identified District-wide/State-wide needs to assist in prioritizing projects for programming of Highway Safety Improvement Program funded projects.
- Develop an Excel based tool to identify the roadway features highly correlated with crashes, which will be used to establish a list of safety hazards at the statewide and regional levels.

### **PRODUCTS**

- Network Screening
- Road Safety Audit Reviews
- Crash Analysis
- Alternatives Studies
- Feasibility Studies
- Special Studies
- Environmental Studies
- Utility Studies
- Project Estimates
- Proposal Packages for Construction Lettings
- Priorities for Highway Safety Improvement Program
- Annual Listing of HSIP Projects
- Listing of Safety Hazards at the Statewide & Regional Levels

**CHAPTER 15**

Highway Safety Improvement Program

**RESPONSIBLE UNIT**

Division of Traffic Operation  
Traffic Engineering Branch  
Highway Safety Improvement Program Team

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$500,000</b>	<b>\$472,565</b>	<b>94%</b>
<b>OUTSOURCED</b>		<b>\$99,033</b>	
<b>OTHER</b>		<b>\$286</b>	
<b>TOTAL</b>	<b>\$500,000</b>	<b>\$571,884</b>	<b>114%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

- Includes \$25,000 to each of 12 Districts to administer the Highway Safety Improvement Program (HSIP), including planning, implementation, evaluation, and reporting.

**SEE ATTACHED SPREADSHEET FOR ACCOMPLISHMENTS**

Dist	County	Roadway	BMP	EMP	Description	Item No.	Total Cost	Non-Hwy	Planning Cost	Design Cost	R/W Cost	Utility Cost	Const. Cost	Remarks
1	Various	Various	N/A	N/A	Various Counties   D-1 Thermoplastic Striping	01-00911.00	\$547,400						\$547,400	
1	Ballard	US 51	3.64	8.30	Various Counties   D-1 Targeted Guardrail End Treatments	01-00981.00	\$405,000						\$405,000	
1	Marshall	US 62	0.00	7.20	Marshall Co.   US 62 Low Cost Safety Improvements	01-09009.00	\$2,294,900						\$2,294,900	
1	Ballard	US 62	1.37	1.75	Ballard & McCracken Cos.   US 62 Low Cost Safety Improvements	01-09010.00	\$2,309,883						\$2,309,883	
1	Graves	KY 80	2.30	8.51	Graves Co.   KY 80 Box Culvert Extensions	01-09011.00	\$359,000						\$359,000	
1	Various	Various	N/A	N/A	McCracken, Calloway, Marshall   Study & Design of Intersection Improvements at Various Locations	01-09012.00	\$50,000			\$50,000				This modification provides an additional \$50,000 for Design
1	Graves	US 45	25.08	25.65	Graves Co.   US 45 & KY 408 RCUT	01-09013.00	\$1,080,244						\$1,080,244	
1	McCracken	US 45	2.20	3.00	McCracken Co.   US 45 at KY 1288 RCUT	01-09015.00	\$1,057,760						\$1,057,760	
1	Marshall	US 641	0.90	1.55	Marshall Co   US 641 & KY 402 RCUT	01-09016.00	\$1,331,824						\$1,331,824	
1	McCracken	US 60	3.10	4.20	McCracken Co   US 60 Intersection and Corridor Improvements	01-09017.00	\$2,665,450						\$2,665,450	
1	McCracken	I-24	4.45	4.80	McCracken Co.   I-24 Acceleration Lane	01-09018.00	\$1,089,031						\$1,089,031	
2	Union	US 60	0.00	26.07	Union Co.   US 60 Guardrail End Treatments	02-00917.00	\$10,000						\$10,000	This modification provides an additional \$10,000 to cover current expenditures
2	McLean	US 431	0.00	9.26	McLean Co.   US 431 Guardrail End Treatments	02-00918.00	\$45,000						\$45,000	This modification provides an additional \$45,000 to cover Change Order No. 1
2	Daviess	US431	0.00	10.25	Daviess Co.   US 431 Guardrail End Treatments	02-00919.00	\$30,000						\$30,000	This modification provides and additional \$30,000 to cover current expenditures
2	Muhlenberg	KY 171	12.10	12.24	Muhlenberg Co.   KY 171 Guardrail	02-00993.00	\$114,897						\$114,897	
2	Henderson	US 41	0.00	18.41	Henderson Co.   US 41 Targeted Guardrail End Treatments	02-00997.00	\$554,000						\$554,000	
2	Henderson	KY 2084	2.16	2.29	Henderson Co.   Targeted Guardrail End Treatments at Various Interchanges	02-00998.00	\$335,000						\$335,000	
2	Webster	US 41	6.04	12.23	Webster Co.   US 41 Targeted Guardrail End Treatments	02-00999.00	\$412,200						\$412,200	
2	Union	KY 130	9.58	15.66	Union Co.   KY 130 Low Cost Safety Improvements	02-09009.00	\$1,649,835						\$1,649,835	
2	Christian	KY 115	3.00	9.93	Christian Co.   KY 115 Low Cost Safety Improvements	02-09010.00	\$2,564,681						\$2,564,681	
3	Various	Various	N/A	N/A	Various Counties   D-3 Striping	03-00931.00	\$100,000						\$100,000	This modification provides an additional \$100,000 to cover Change Order No. 1
3	Simpson	KY 100	0.00	8.38	Simpson Co.   KY 100 Low Cost Safety Improvements	03-09008.00	\$63,000						\$63,000	This modification provides an additional \$63,000 to cover current expenditures
3	Barren	KY 63	6.34	13.17	Barren Co.   KY 63 Low Cost Safety Improvements	03-09011.00	\$1,834,716						\$1,834,716	
3	Warren	US 68	20.89	27.28	Warren Co.   US 68 Low Cost Safety Improvements	03-09012.00	\$1,239,060						\$1,239,060	
3	Allen	KY 100	0.00	8.83	Allen Co.   KY 100 Low Cost Safety Improvements	03-09014.00	\$2,172,823						\$2,172,823	
3	Warren	KY 234	0.00	7.22	Warren Co.   KY 234 Low Cost Safety Improvements	03-09015.00	\$2,670,700						\$2,670,700	
3	Warren	US 231	10.50	11.50	Warren Co.   US 231 Intersection Improvements	03-09018.00	\$125,000			\$50,000	\$75,000			This modification provides an additional \$50,000 for Design and initial R/W funds.
3	Warren	US 231	3.00	6.60	Warren Co.   US 231 Intersection & Corridor Improvements	03-09019.00	\$3,850,000						\$3,850,000	
3	Warren	US 231X	1.12	1.84	Warren Co.   US 231X Overlay & Roadway Reconfiguration	03-09022.00	\$18,000						\$18,000	This modification provides an additional \$18,000 to cover current expenditures
4	Hardin	CR-1100	1.80	2.00	Hardin Co.   CR 1100 High Friction Surface	04-00943.00	\$100,050						\$100,050	
4	Meade	KY 144	13.40	13.70	Meade Co.   KY 144 High Friction Surface	04-00944.00	\$101,850						\$101,850	
4	Hardin	KY 3005	1.10	1.70	Hardin Co.   KY 3005 & KY 1904 RCUT	04-09002.00	\$671,200			\$75,000			\$596,200	
4	Hardin	US 31W	18.03	26.19	Hardin Co.   US 31W Intersection and Corridor Improvements	04-09008.00	\$10,000			\$10,000				This modification provides an additional \$10,000 for Design

Dist	County	Roadway	BMP	EMP	Description	Item No.	Total Cost	Non-Hwy	Planning Cost	Design Cost	R/W Cost	Utility Cost	Const. Cost	Remarks
4	Hardin	US 31W	22.10	26.25	Hardin Co.   US 31W Intersection & Corridor Improvements	04-09008.40	\$285,000						\$285,000	This modification provides an additional \$285,000 to cover Change Order No. 1
4	Hardin	US 31W	18.03	21.14	Hardin Co.   US 31W Intersection & Corridor Improvements	04-09008.50	\$4,856,500						\$4,856,500	
4	Grayson	KY 259	0.00	11.76	Grayson Co.   KY 259 Low Cost Safety Improvements	04-09009.00	\$125,000			\$25,000		\$100,000		This modification provides an additional \$25,000 for Design and initial Utility funds
4	Hardin	Various	0.70	0.79	Hardin Co.   Mini-Roundabouts at Various Intersections in Elizabethtown	04-09012.00	\$500,000				\$200,000	\$300,000		
4	Hardin	CS-1320	0.17	0.27	Hardin Co.   N Main St & Crutcher St Mini Roundabout	04-09012.10	\$225,000						\$225,000	
4	Hardin	CS-1320	0.03	0.13	Hardin Co.   N Main St & Poplar St Mini Roundabout	04-09012.40	\$294,801						\$294,801	
4	Hardin	CS-1193	1.10	1.19	Hardin Co.   Woodland Dr & Layman Ln Mini Roundabout	04-09012.50	\$230,000						\$230,000	
4	Hardin	KY 251	0.00	1.46	Hardin Co.   KY 251 Roadway Reconfiguration and Mini Roundabouts	04-09016.00	\$120,000				\$20,000	\$100,000		
5	Franklin	KY 676	0.00	5.29	Franklin Co.   KY 676 Striping	05-00937.00	\$63						\$63	This modification provides an additional \$63.03 to cover current expenditures
5	Jefferson	I-264	12.10	22.93	Jefferson Co.   I-264 Pavement Markings	05-00938.00	\$923,000						\$923,000	
5	Shelby	KY 53	0.80	1.10	Shelby Co.   KY 53 High Friction Surface	05-00940.00	\$66,242						\$66,242	
5	Jefferson	KY 1819	12.40	12.60	Jefferson Co.   KY 1819 High Friction Surface	05-00941.00	\$46,987						\$46,987	
5	Various	Various	N/A	N/A	Various Counties   D5 Pavement Markers	05-00962.00	\$90,000						\$90,000	This modification provides an additional \$90,000 to cover current expenditures
5	Spencer	KY 44	0.00	7.54	Spencer Co.   KY 44 Low Cost Safety Improvements	05-09011.00	\$198,000						\$198,000	This modification provides an additional \$220,000 to cover Change Order No. 2
5	Oldham	KY 53	0.00	2.65	Shelby & Oldham Cos.   KY 53 Low Cost Safety Improvements	05-09012.00	\$115,000			\$15,000	\$50,000	\$50,000		This modification provides an additional \$15,000 for Design and initial R/W and Utility funds
5	Jefferson	Various	N/A	N/A	Jefferson Co.   Study & Design of Intersection Improvements at Various Locations	05-09013.00	\$13,000			\$13,000				This modification provides an additional \$13,000 for Design
5	Jefferson	KY 864	5.95	6.20	Jefferson   KY 864 Turn Lane	05-09016.00	\$352,770						\$352,770	
5	Shelby	KY 55	0.00	2.18	Spencer & Shelby Cos.   KY 55 Low Cost Safety Improvements	05-09017.00	\$1,748,900						\$1,748,900	
5	Various	Various	N/A	N/A	Franklin, Spencer, Oldham, Shelby   Study & Design of Intersection Improvements at Various Locations	05-09018.00	\$85,000			\$85,000				This modification provides an additional \$85,000 for Design
5	Jefferson	KY 1747	11.29	12.45	Jefferson Co.   KY 1747 Signal System Updates	05-09019.60	\$162,600						\$162,600	
5	Franklin	US 421	5.32	11.13	Franklin Co.   US 421 Low Cost Safety Improvements	05-09022.00	\$110,000				\$10,000	\$100,000		
5	Shelby	KY 1848	6.42	10.59	Shelby Co.   KY 1848 Low Cost Safety Improvements	05-09023.00	\$544,280			\$55,080	\$167,200	\$322,000		This modification provides an additional \$55,080 for Design and initial R/W and Utility funds
5	Jefferson	US 31E	14.50	16.00	Jefferson Co.   US 31E Roadway Reconfiguration	05-09030.00	\$50,000			\$50,000				
6	Kenton	KY 1501	0.30	1.00	Kenton Co.   KY 1501 Microsurface Treatment	06-00900.00	\$64,518						\$64,518	
6	Boone	I-275-323	0.00	0.30	Boone Co.   I-275 Ramp 323 High Friction Surface	06-00901.00	\$115,000						\$115,000	
6	Boone	US 25	7.59	7.69	Boone Co.   US 25 & KY 536 Intersection Improvements	06-09013.10	\$5,000						\$5,000	This modification provides an additional \$5,000 for current expenditures
6	Kenton	KY 17	23.56	23.74	Kenton Co.   KY 17 Signing & Striping	06-09013.30	\$5,000						\$5,000	This modification provides an additional \$5,000 for current expenditures
6	Kenton	KY 17	4.30	8.10	Kenton Co.   KY 17 Safety Improvements	06-09014.01	\$740,380						\$740,380	
6	Campbell	KY 9	16.30	16.80	Campbell Co.   KY 9 & Gloria Terrell Rd Intersection Improvements	06-09017.10	\$35,000						\$35,000	This modification provides an additional \$35,000 to cover Change Order No. 4
6	Kenton	KY 177	6.15	11.82	Kenton Co.   KY 177 Low Cost Safety Improvements	06-09018.00	\$1,910,036						\$1,910,036	
6	Kenton	KY 177	9.05	9.30	Kenton Co.   KY 177 & KY 536 Intersection Improvements	06-09018.01	\$10,000				\$10,000			
6	Grant	KY 1560	1.03	1.13	Grant Co.   KY 1560 Safety Improvements	06-09021.00	\$50,000			\$50,000				This modification provides an additional \$50,000 for Design
7	Various	Various	N/A	N/A	Various Counties   D7 Tree Trimming	07-00958.00	\$855,008						\$855,008	

Dist	County	Roadway	BMP	EMP	Description	Item No.	Total Cost	Non-Hwy	Planning Cost	Design Cost	R/W Cost	Utility Cost	Const. Cost	Remarks
7	Jessamine	KY 169	13.10	13.60	Jessamine Co.   KY 169 Microsurface Treatment	07-00959.00	\$38,064						\$38,064	
7	Jessamine	KY 1981	4.60	6.13	Jessamine Co.   KY 1981 Pavement Friction	07-00960.00	\$180,000						\$180,000	
7	Woodford	KY 33	3.02	11.69	Woodford Co.   KY 33 Low Cost Safety Improvements	07-09005.00	\$2,816,000						\$2,816,000	
7	Fayette	US 27	6.71	6.76	Fayette Co.   US 27 at W Main St Intersection Improvements	07-09006.20	\$21,500						\$21,500	
7	Fayette	US 27	6.40	6.45	Fayette Co.   US 27 at W Maxwell St Signal Rebuild	07-09006.50	\$277,880						\$277,880	
7	Scott	US 25	9.37	14.98	Scott Co.   US 25 Safety Improvements	07-09010.00	\$510,058						\$510,058	
7	Bourbon	KY 537	0.00	3.50	Bourbon Co.   KY 537 Safety Improvements	07-09011.00	\$353,601						\$353,601	
7	Fayette	US 27	5.60	5.80	Fayette Co.   US 27 & US 68 Traffic Signal Upgrades	07-09012.10	\$32,700						\$32,700	
7	Fayette	KY 353	0.00	0.10	Fayette Co.   KY 353 & New Circle Rd Signal Updates	07-09012.20	\$59,785						\$59,785	
7	Fayette	CS-4009	2.95	3.10	Fayette Co.   Alexandria Drive & US 60 Intersection Improvements	07-09012.30	\$40,365						\$40,365	
7	Fayette	KY 44	12.47	12.67	Fayette Co.   KY 4 & Eastland Parkway Signal Upgrades	07-09012.40	\$71,905						\$71,905	
7	Fayette	US 60	6.93	7.03	Fayette Co.   US 60 & S Forbes Rd Signal Updates	07-09012.60	\$32,000						\$32,000	
7	Jessamine	KY 169	11.98	16.56	Jessamine Co.   KY 169 Low Cost Safety Improvements	07-09014.00	\$330,000			\$80,000	\$150,000	\$100,000		This modification provides an additional \$80,000 for Design and initial R/W and Utility funds
7	Clark	I-64	98.00	104.26	Clark & Montgomery Cos.   I-64 Cable Median Barrier	07-09022.00	\$50,000			\$50,000				
7	Fayette	Various	N/A	N/A	Fayette Co.   KYTC-LFUCG Joint Roadway Safety Plan	07-09023.00	\$350,000		\$350,000					
8	Various	Various	N/A	N/A	Casey, Pulaski, Lincoln   KY 70 Striping	08-00945.00	\$748,216						\$748,216	
8	Pulaski	US 27	29.38	30.31	Pulaski Co.   US 27 & KY 70 RCUT	08-00946.00	\$1,510,000						\$1,510,000	
8	Pulaski	KY 39	3.54	12.81	Pulaski Co.   KY 39 Low Cost Safety Improvements	08-09007.00	\$2,013,726						\$2,013,726	
8	McCreary	US 27	8.97	9.22	McCreary Co.   US 27 at KY 478 Intersection Improvements	08-09008.30	\$35,000						\$35,000	This modification provides an additional \$35,000 for current expenditures
8	McCreary	US 27	7.71	7.81	McCreary Co.   US 27 at KY 92 Intersection Improvements	08-09008.60	\$35,000						\$35,000	This modification provides an additional \$35,000 for current expenditures
8	Pulaski	KY 70	3.54	11.96	Pulaski Co.   KY 70 Low Cost Safety Improvements	08-09009.00	\$3,287,000						\$3,287,000	
8	Russell	KY 80	3.70	3.80	Russell Co.   KY 80 @ KY 379 & KY 3017 Realignment	08-09012.00	\$346,663						\$346,663	
9	Rowan	US 60	7.00	10.15	Rowan Co.   US 60 Striping	09-00938.00	\$173,075						\$173,075	
9	Rowan	KY 158	0.00	2.77	Rowan Co.   KY 158 Low Cost Safety Improvements	09-09000.00	\$10,676						\$10,676	This modification provides an additional \$10,676.40 for Change Order No. 1
9	Boyd	US 60	11.20	11.30	Boyd Co   US 60 & Ramey St Intersection Improvements	09-09007.10	\$20,000						\$20,000	This modification provides an additional \$20,000 to cover current expenditures
9	Lewis	KY 9	7.90	8.20	Lewis Co.   KY 9 & KY 10 Intersection Improvements	09-09007.20	\$40,000						\$40,000	This modification provides an additional \$40,000 to cover current expenditures
9	Boyd	US 23X	1.55	1.80	Boyd Co.   US 23X & US 60 Intersection Improvements	09-09007.50	\$76,000						\$76,000	This modification provides an additional \$76,000 to cover Change Order No. 1
9	Boyd	CS-2350	0.83	0.95	Boyd Co.   Central Ave & 13th St Intersection Improvements	09-09007.60	\$20,000						\$20,000	This modification provides an additional \$20,000 to cover current expenditures
9	Rowan	US 60	10.83	17.11	Rowan Co.   US 60 Low Cost Safety Improvements	09-09008.00	\$2,371,193						\$2,371,193	
9	Bath	US 60	17.40	20.11	Bath & Rowan Cos.   US 60 Low Cost Safety Improvements	09-09009.00	\$1,582,674						\$1,582,674	
9	Bath	KY 801	0.00	0.10	Bath Co.   US 60 & KY 801 Mini Roundabout	09-09009.01	\$710,117						\$710,117	
9	Greenup	KY 693	4.88	4.98	Greenup Co.   KY 693 & KY 1093 Markings and Signal	09-09010.20	\$94,000						\$94,000	
9	Boyd	CS-2350	1.57	1.75	Boyd Co.   Central Ave & 23rd Street Intersection Improvements	09-09010.30	\$28,043						\$28,043	



Dist	County	Roadway	BMP	EMP	Description	Item No.	Total Cost	Non-Hwy	Planning Cost	Design Cost	R/W Cost	Utility Cost	Const. Cost	Remarks
9	Boyd	I-64	181.34	191.51	Boyd Co.   I-64 Cable Barrier	09-09012.00	\$312,000						\$312,000	This modification provides an additional \$312,000 to cover Change Order No. 1
9	Bath	KY 36	0.00	0.89	Nicholas & Bath Cos.   KY 36 Low Cost Safety Improvements	09-09013.00	\$1,943,970						\$1,943,970	
10	Powell	KY 1057	0.82	4.98	Powell Co.   KY 1057 Safety Improvements	10-09009.00	\$435,000						\$435,000	This modification provides an additional \$435,000 to cover Change Order No. 1
10	Magoffin	KY 7	18.90	19.28	Magoffin Co.   KY 7 @ KY 867 Safety Improvements	10-09011.10	\$537,700				\$5,000		\$532,700	This modification provides an additional \$5,000 for R/W and initial Construction funds
10	Estill	KY 82	0.00	5.03	Estill Co.   KY 82 Low Cost Safety Improvements	10-09014.00	\$200,000				\$75,000	\$125,000		
11	Knox	KY 3438	0.51	1.55	Knox Co.   KY 3438 Guardrail	11-00977.00	\$85,580						\$85,580	
11	Whitley	KY 1259	0.65	0.78	Whitley Co.   KY 1259 Guardrail	11-00978.00	\$38,170						\$38,170	
11	Various	Various	N/A	N/A	Knox, Laurel, Whitley   Intersection Improvements	11-09015.00	\$300,000			\$300,000				This modification provides an additional \$300,000 for Design
11	Laurel	KY 229	7.51	7.83	Laurel Co.   KY 229 & KY 1189 Mini Roundabout	11-09016.10	\$105,000				\$55,000	\$50,000		
11	Harlan	KY 38	0.00	0.15	Harlan Co.   KY 38 & KY 72 Mini Roundabout	11-09016.30	\$815,000				\$15,000		\$800,000	
11	Bell	KY 92	9.97	10.12	Bell Co.   KY 92 Guardrail	11-09021.00	\$63,800						\$63,800	
11	Bell	KY 441	2.17	2.34	Bell Co.   KY 441 Guardrail	11-09022.00	\$31,370						\$31,370	
12	Lawrence	KY 2565	3.20	3.35	Lawrence Co.   KY 2565 Realignment	12-00957.00	\$60,000						\$60,000	This modification provides an additional \$60,000 to cover Change Order No. 2
12	Pike	KY 194	22.00	29.21	Pike Co.   KY 194 Low Cost Safety Improvements	12-09003.00	\$0							This modification provides an additional \$75,000 for Design
12	Lawrence	US 23	18.35	18.65	Lawrence Co.   US 23 Acceleration Lane	12-09004.10	\$169,374						\$169,374	
12	Knott	KY 15	3.90	3.95	Knott Co.   KY 15 at KY 160 Beacon Improvements	12-09004.70	\$102,000						\$102,000	
12	Letcher	US 23	0.00	1.50	Letcher Co.   Resurface to Improve Pavement Friction on US 23	12-09011.00	\$518,650						\$518,650	
12	Various	Various	N/A	N/A	Johnson, Lawrence, Pike   Intersection Improvements	12-09012.00	\$25,000			\$25,000				This modification provides an additional \$25,000 for Design
99	Statewide	N/A	N/A	N/A	Various   Purchase Fluorescent Yellow Sign Sheeting for Statewide Signing to Address Lane Departure Collisions	99-00913.00	\$500,000						\$500,000	This modification provides an additional \$500,000 in support of this initiative
99	Statewide	Various	N/A	N/A	Statewide   Pavement Friction Study and Data Collection	99-00925.00	\$1,000,000	\$1,000,000						This modification provides an additional \$1,000,000 for continuation of this initiative
99	Statewide	N/A	N/A	N/A	Statewide   HSIP Consultant Design Services	99-00926.00	\$2,500,000			\$2,500,000				
99	Statewide	N/A	N/A	N/A	Statewide   HSIP Project Development	99-00927.00	\$1,000,000			\$1,000,000				
99	Statewide	N/A	N/A	N/A	Statewide   Technical Support for the Highway Safety Improvement Program. Support to be Provided by the Kentucky Transportation Center at UK (Program Code: 8396001N)		\$408,000	\$408,000						
99	Statewide	N/A	N/A	N/A	Statewide - Data Compilation and Redevelopment of the Statewide Road-Rail Crossing Inventory Database (Program Code: 8501101N)		\$200,000	\$200,000						
99	Statewide	N/A	N/A	N/A	Statewide   Intersection Database Update (Program Code: 1211801N)		\$115,000	\$115,000						
							<b>\$76,525,444</b>	<b>\$1,723,000</b>	<b>\$350,000</b>	<b>\$4,433,080</b>	<b>\$832,200</b>	<b>\$1,247,000</b>	<b>\$67,940,164</b>	

## CHAPTER 16

## Quality Assurance

### RESPONSIBLE UNIT

Division of Highway Design  
Quality Assurance Branch

### PURPOSE AND SCOPE

The purpose of the Quality Assurance Branch is to improve Kentucky Transportation Cabinet's (KYTC) project deliverables and design policy, processes and procedures. There are three programs within the QAB designed to reach these objectives: Value Engineering (VE), Constructability Review, and Post-Construction (PC) Review.

The KYTC **VE**) program was established in 1995 as an independent review process to examine potential ways to improve a project's value by increasing the design function and/or reducing its cost. The federal transportation law called MAP-21 specified that all roadway projects on the NHS that have a total phase cost exceeding \$50 million and bridge projects exceeding \$40 million will require a VE study when there are any federal funds used for the project. The total phase cost of a project is that which is estimated for planning, environmental, design, right-of-way acquisition, utility relocation, and construction.

Recommendations developed in a VE study are shared with the project development team to consider for implementation. QAB staff administers the VE program, including the monitoring of implementation of approved recommendations. Occasionally, the VE program is used to address other projects or to review processes, standards and/or specifications.

The **Constructability Review** program assists Project Managers by examining projects for errors, omissions, and issues related to the constructability of a project. Constructability reviews are conducted primarily for final joint inspection plans; however, preliminary line and grade plans and check prints may also be reviewed. Constructability reviews are conducted on both roadway and structure plans.

The **Post-Construction Review (PCR)** program was established to identify issues that arise during the construction phase that could have been prevented or improved during the design phase. It also serves to educate constructors about the reasons behind design features and objectives. This program may also be used to evaluate the performance of design objectives after a project is built.

QAB, along with District Office staff, identifies recently-built projects in which to review. A PCR meeting includes all design and construction professionals involved in the project. Participants discuss the issues that arose and solutions that were implemented. QAB documents this information and shares it with them on a document called a Fact Sheet. Some recurring or important issues are identified as **Elevated Issues (EI)** which are further considered for study and evaluation. Ultimately, EIs can lead to policy changes or educational material.

Data collected from each of the three programs are entered into the **Lessons Learned** database for each program. The collection of data is organized and shared with KYTC personnel and partners on QAB's website. The data is also analyzed to determine issues that may warrant further action that could lead to improvements, changes, or revisions to design processes that may improve overall project quality or cost savings. Lessons learned are also shared via the QAB newsletter, *Quality Matters*.

## CHAPTER 16

## Quality Assurance

### RESPONSIBLE UNIT

Division of Highway Design  
Quality Assurance Branch

### PROPOSED ACTIVITIES (Annually)

- Conduct **Constructability Reviews** to improve quality of designs and identify issues that may affect the constructability of a project. **There were 126 constructability reviews completed.**
- Conduct mandated **VE** studies to meet federal regulations. **There was one VE study completed: I-71 widening – Jefferson County**
- Conduct **PCRs** for each district. Enter PCR information into database. Issue Fact Sheets for each PCR. This activity is contingent on being able to hire an engineer to administer it. **There was one PCR conducted. This was done at special request. Otherwise, due to staff shortage, the PCR program has been suspended until which time qualified staff is hired.**
- Develop methodologies for measuring safety and traffic performance of projects after construction is complete. **Staff worked with statewide consultants to develop methodologies for safety performance measurement.**
- Evaluate projects, as identified, for performance of design objectives after construction is complete. Document lessons learned. **Two projects were evaluated for safety performance.**
- Assist project managers in safety and traffic analysis on highway design projects. **None requested during this period**
- Identify and follow up on issues identified as **EI**. **None needed during this period**
- Publish the **Quality Matters newsletter**, containing content about findings from program reviews and design innovations. **None during this period**
- Develop and publish **Tech Briefs**, each focused on a single, important topic identified through the reviews. **None during this period**
- Ensure consistency and quality of design products delivered by KYTC. **This was done through the Constructability Review Program and VE Program. Reviewed prequalification applications from consultant firms for the Advanced Traffic Engineering Design and Modeling category. Archived highway plans from past projects.**
- Oversee outsourced activities. **Oversaw consultant services for activities noted above.**

### PRODUCTS

- VE Studies **One VE study and report completed in FY21.**
- VE Punch Lists **One punch lists issued. Followed up with project managers on all VE recommendations in which final decisions had not yet been reached or implemented. Documented all findings.**
- VE Project Database **Database updated with VE recommendations.**
- VECF Database **No longer applicable.**
- FHWA Annual VE Report **FY29 data compiled and submitted to FHWA**
- Constructability Project Review Reports **126 reports including marked up plans issued to project managers statewide.**
- Constructability Review Database **Changes made to improve PDP Precon data connection**
- Post-Construction Review Fact Sheets **None during this period.**
- Post-Construction Review Database **None during this period.**
- Project Performance Measurement Reports **Two completed this period.**

**CHAPTER 16**

Quality Assurance

**RESPONSIBLE UNIT**

Division of Highway Design  
Quality Assurance Branch

**PRODUCTS (continued)**

- Quality Matters Newsletters **None during this period.**
- Tech Brief Publications **None during this period.**
- Special Studies **None during this period.**

**DISTRIBUTION OF ESTIMATED COST FOR 2020-2021**

	<b>2020-2021</b>	<b>Expended</b>	<b>Percent Expended</b>
<b>PERSONNEL</b>	<b>\$450,000</b>	<b>\$343,603</b>	<b>76%</b>
<b>OUTSOURCED</b>		<b>\$64,804</b>	
<b>OTHER</b>	<b>\$50,000</b>	<b>\$0</b>	<b>0%</b>
<b>TOTAL</b>	<b>\$500,000</b>	<b>\$408,407</b>	<b>81%</b>

**ESTIMATED OUTSOURCING EXPENSES AND PURCHASES**

- \$50,000 to outsource but not limited to the following: Publishing newsletter and briefs, travel to conduct normal QAB program business, training and training materials, special studies, SAVE International Membership fees, SAVE International Annual Conferences, AASHTO VE Committee Conferences, Transportation Research Board (TRB) attendance, VE studies that are state funded, participation in TRB committees, American Society for Quality (ASQ) membership and attendance to meetings, research or assistance related to Quality Assurance and Quality Control, research projects initiated by QAB.

Note: FHWA will be notified in advance when the Quality Assurance Branch needs to utilize the funds for activities other than those listed above.