

STATE FISCAL YEAR

2023

STATE PLANNING AND RESEARCH (SPR)

WORK PROGRAM AND COST ESTIMATE



ARKANSAS DEPARTMENT OF TRANSPORTATION

Transportation Planning and Policy and System Information and Research Divisions
in cooperation with U.S. Department of Transportation,
Federal Highway Administration, and Federal Transit Administration

FHWA PROJECTS

Y550 and Y560 Apportionments
and other federally assisted programs

Disclaimer Statement

The Federal Highway Administration's (FHWA) approval of reports constitutes acceptance of such reports as evidence of work performed, but does not imply endorsement of a report's findings or recommendations. This report is prepared for FHWA-funded work and includes appropriate credit references and disclaimer statements. The preparation of this report has been financed in part through grant(s) from FHWA, U.S. Department of Transportation under the State Planning and Research Program, Section 505 of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official view or policy of the U.S. Department of Transportation.

ARKANSAS DEPARTMENT OF TRANSPORTATION

**TRANSPORTATION PLANNING AND POLICY DIVISION
SYSTEM INFORMATION AND RESEARCH DIVISION**

**STATE PLANNING AND RESEARCH (SPR)
WORK PROGRAM AND COST ESTIMATE
STATE FISCAL YEAR 2023**

FOR

**FEDERAL APPORTIONMENTS
Y550 AND Y560**

AND

OTHER FEDERALLY ASSISTED PROGRAMS

**PART I
PLANNING**

**PART II
RESEARCH**

**PART III
ARKANSAS LOCAL TECHNICAL ASSISTANCE PROGRAM**

**PART IV
PUBLIC TRANSPORTATION PROGRAMS**

**PART V
HIGHWAY SAFETY IMPROVEMENT PROGRAM**

**in cooperation with
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL TRANSIT ADMINISTRATION**

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INTRODUCTION

This work program has been developed in compliance with United States Code Titles 23 and 49 and in cooperation with the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA).

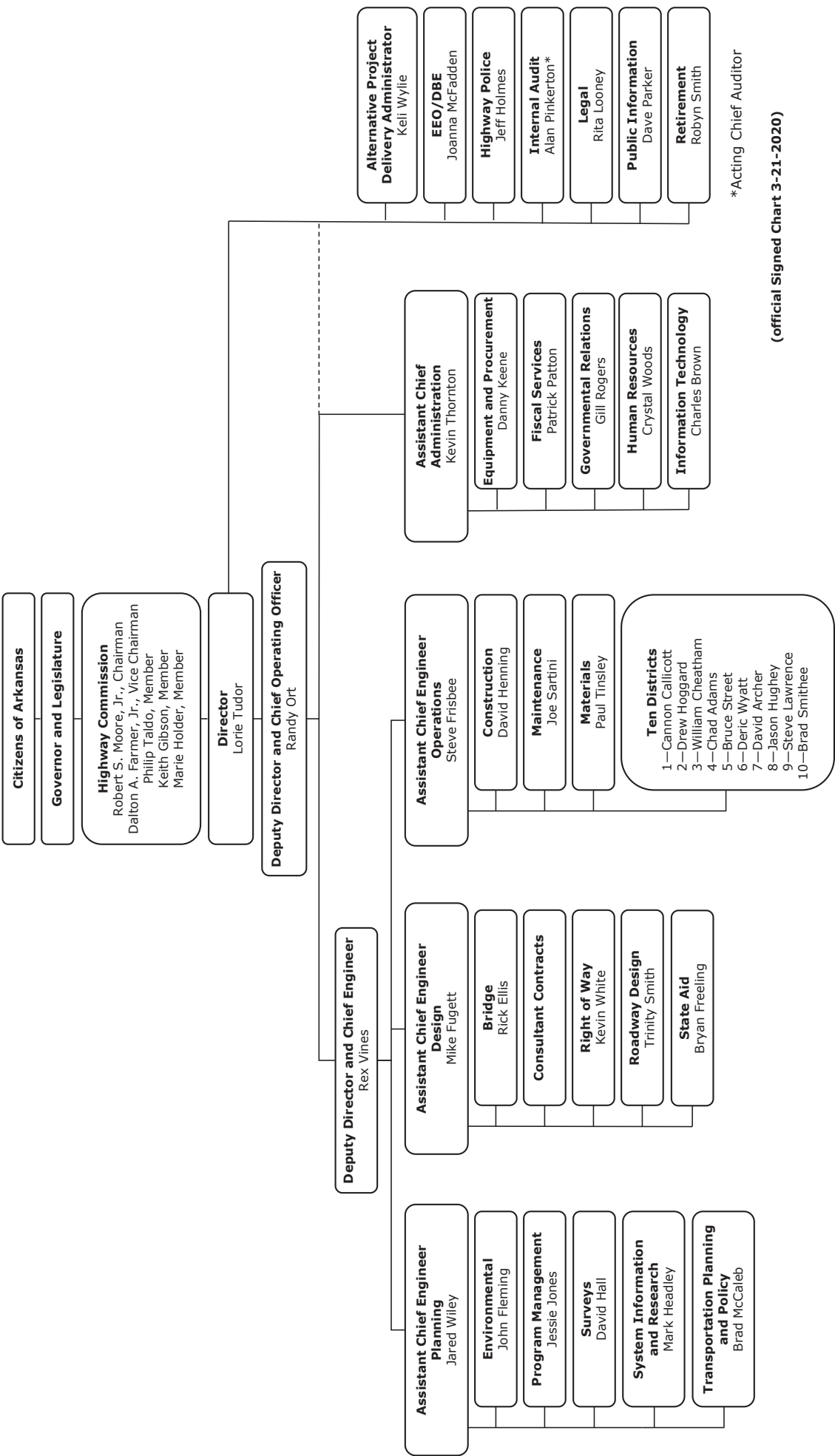
The contents of this document are guided by 23 Code of Federal Regulations 420 and describe proposed planning and research activities of the Arkansas Department of Transportation (Department) for State Fiscal Year 2023 (July 1, 2022 through June 30, 2023). It contains Part I, the Planning portion of the State Planning and Research (SPR) Work Program and Cost Estimate and Part II, which describes Research activities. Other programs included are the Local Technical Assistance Program (LTAP), the planning portion of the FTA Program under Public Transportation Programs, and other federal and state-funded projects.

The Transportation Planning and Policy (TPP) Division is composed of Geographic Information Systems and Mapping, Multimodal Planning, Project Planning, Traffic Safety, and Public Transportation Programs. All activities carried out by these sections are described in this document under Parts I, IV, and V.

The System Information and Research (SIR) Division is composed of the Research, Traffic Information Systems, and Asset Management Sections. SIR activities are described in this document under Parts I, II, and III.

In general, the goals and objectives of this program describe and implement the type of planning and research that are essential to maintaining and improving the state's transportation system. The system is part of the unified, interconnected National Intermodal Transportation System, in accordance with the policies set forth in the Infrastructure Investment and Jobs Act (IIJA) of 2021 and its preceding congressional transportation authorization acts. FHWA supported highway and transportation planning continues as the dominant activity. The Department will continue to give proper attention to the development of other modes of transportation as outlined in the various line items. Special efforts will be given to develop and implement a performance-based planning and programming process that focuses on supporting transportation system performance outcomes. The Department's planning effort is an on-going operation, instrumental to the formulation of short- and long- term policies, plans, and procedures to achieve the goals and objectives under each work function.

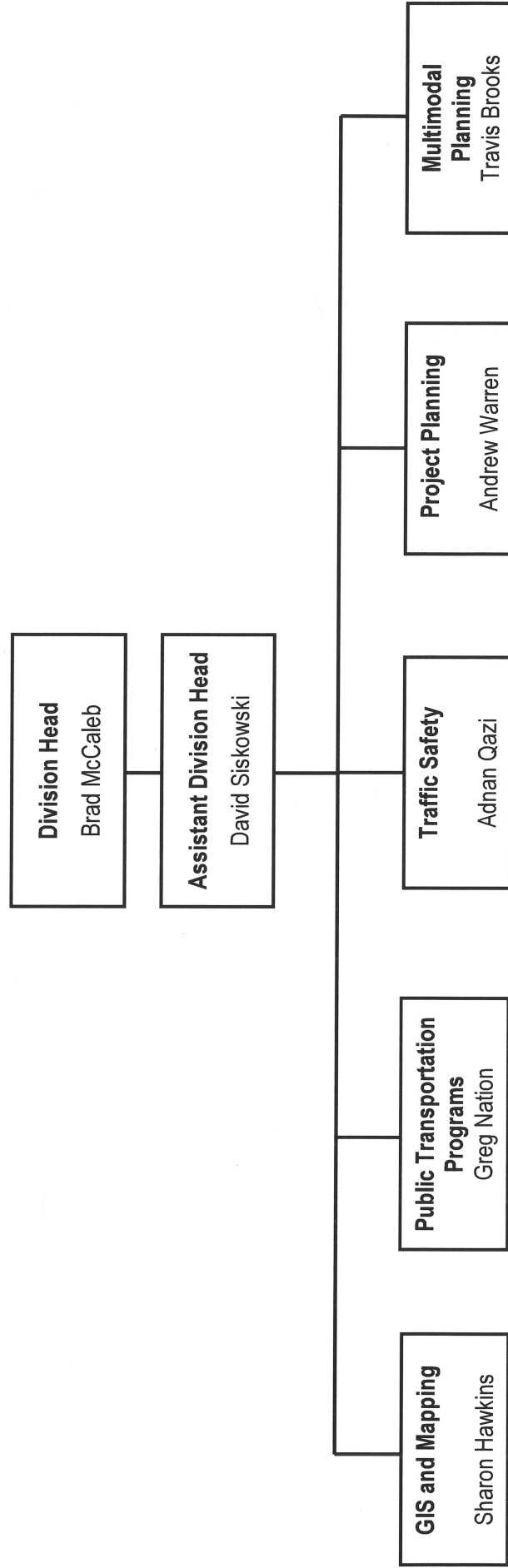
ARKANSAS DEPARTMENT OF TRANSPORTATION
ORGANIZATION CHART



* Acting Chief Auditor

(official Signed Chart 3-21-2020)

**TRANSPORTATION PLANNING AND POLICY DIVISION
ORGANIZATION CHART**

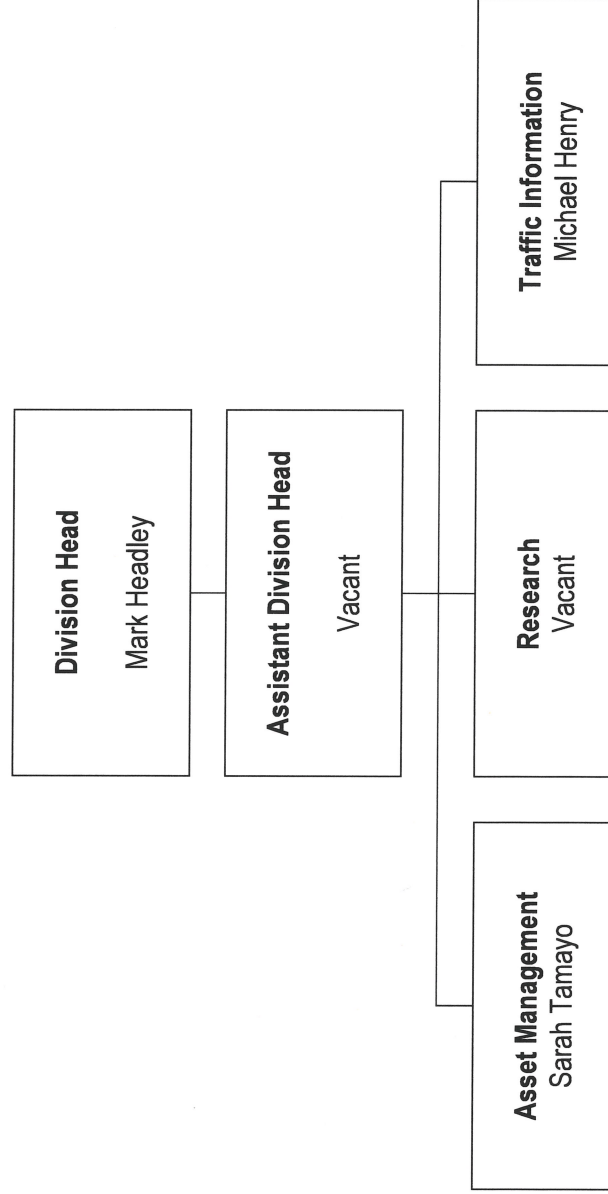


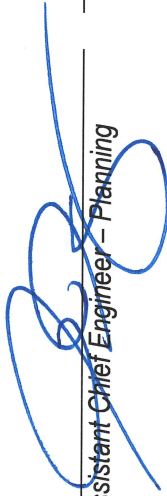
Approved _____

Assistant Chief Engineer – Planning

Date

SYSTEM INFORMATION AND RESEARCH DIVISION ORGANIZATION CHART



Approved  Assistant Chief Engineer - Planning _____ Date _____

TRANSPORTATION PLANNING AND POLICY DIVISION

GEOGRAPHIC INFORMATION SYSTEMS AND MAPPING SECTION

The Geographic Information Systems (GIS) and Mapping Section is responsible for coordinating the management of geospatial data and preparing maps and related products required by the Department. These consist of design and compilation for 75 counties, and 512 municipal or community area maps; statewide maps; the State Highway Map (Tourist Map) and State General Highway Map; and GIS datasets, special projects, displays, and presentations as needed.

MULTIMODAL PLANNING SECTION

The Multimodal Planning Section is responsible for developing and implementing statewide, long-range, multi-modal transportation plans; coordinating bicycle and pedestrian planning, policy development, and accommodations; coordinating planning activities in urbanized areas in partnership with the eight Metropolitan Planning Organizations (MPOs); supporting Department efforts to meet system performance standards; and working with rail companies to make highway improvements at railroad crossings. Major activities and work products include the Long-Range Intermodal Transportation Plan, State Freight Plan, State Rail Plan, Statewide Bicycle and Pedestrian Transportation Plan, and State Highway-Rail Grade Crossing Action Plan; the Arkansas Statewide Travel Demand Model; coordination of a continuing, cooperative, and comprehensive (3-C) planning process in urbanized areas; federal performance reporting; and coordination of safety projects (Section 130) and other construction projects at rail-grade crossings.

PROJECT PLANNING SECTION

The Project Planning Section evaluates transportation needs at the project and corridor level. Planning studies consider engineering, social and economic factors of proposed transportation improvements for use in the decision-making process.

PUBLIC TRANSPORTATION PROGRAMS SECTION

The Public Transportation Programs (PTP) Section is responsible for the oversight of all state, van pool initiatives, and Federal Transit Administration (FTA) programs. Various FTA grants and state programs to assist transit and paratransit service providers are administered through this office. This Section also coordinates state public transit activities providing necessary technical assistance.

TRAFFIC SAFETY SECTION

The Traffic Safety Section is responsible for administering the Highway Safety Improvement Program (HSIP). This office oversees the development of the Strategic Highway Safety Plan, coordinates a multi-disciplinary statewide safety steering committee, collaborates with Arkansas State Police – Highway Safety Office for the state's traffic crash data collection and quality control, and identifies highway safety improvement needs using data-driven processes. Studies are conducted to identify and measure engineering, social and economic factors of proposed transportation improvements for use in the decision-making process.

SYSTEM INFORMATION AND RESEARCH DIVISION

ASSET MANAGEMENT SECTION

The Asset Management Section has various responsibilities falling under two categories: pavement performance information and asset inventory management. This data is used to determine the condition of the pavement and develop rehabilitation or preservation strategies and to aid in the decision-making process. The Section is also responsible for Pavement Acceptability Verification Profilograph Program. This information is used for both the Transportation Asset Management Plan (TAMP) and for the Highway Performance Monitoring System (HPMS) data submissions.

RESEARCH SECTION

The Research Section is responsible for conducting the Department's Transportation Research and Development Program and the Arkansas Local Technical Assistance Program (LTAP). Other responsibilities include participation in the National Cooperative Highway Research Program (NCHRP), various pooled fund studies, managing contract project activities, conducting in-house research projects, installing and evaluating test sections of roadways, implementing findings of research projects, conducting Department support operations as assigned or requested, and other research-related activities.

TRAFFIC INFORMATION SYSTEMS SECTION

The Traffic Information Systems Section is responsible for monitoring, collecting, analyzing, managing, and disseminating system-wide traffic data. The Section is responsible for the Traffic Monitoring System for Highways. Additionally, the section is responsible for data pertaining to the highway and roadway network of the state. The section updates and maintains the Roadway Inventory Database, processes and disseminates the Multi-Media Highway Information System (MMHIS), and prepares and submits the Department's Highway Performance Monitoring System (HPMS) data. The Division's Geographic Information System (GIS) applications are developed, updated, and maintained in the Traffic Information Systems Section.

**TRANSPORTATION PLANNING AND POLICY DIVISION
ESTIMATED MANPOWER REQUIREMENTS
STATE FISCAL YEAR 2023**

	FULL TIME	PART TIME
ADMINISTRATION		
NUMBER SUPERVISORY	2	0
NUMBER STAFF	1	0
NUMBER ADMINISTRATIVE SUPPORT	2	0
GEOGRAPHIC INFORMATION SYSTEMS AND MAPPING		
NUMBER SUPERVISORY	2	0
NUMBER STAFF	10	0
MULTIMODAL PLANNING		
NUMBER SUPERVISORY	5	0
NUMBER STAFF	10	1
PROJECT PLANNING		
NUMBER SUPERVISORY	1	0
NUMBER STAFF	7	1
NUMBER ADMINISTRATIVE SUPPORT	1	0
PUBLIC TRANSPORTATION PROGRAMS		
NUMBER SUPERVISORY	3	0
NUMBER STAFF	11	0
TRAFFIC SAFETY		
NUMBER SUPERVISORY	2	0
NUMBER STAFF	11	2
NUMBER ADMINISTRATIVE SUPPORT	1	0
TOTAL SUPERVISOR	15	0
TOTAL STAFF	50	4
TOTAL ADMINISTRATIVE SUPPORT	4	0
GRAND TOTAL	69	4

**SYSTEM INFORMATION AND RESEARCH DIVISION
ESTIMATED MANPOWER REQUIREMENTS
STATE FISCAL YEAR 2023**

	FULL TIME	PART TIME
ADMINISTRATION		
NUMBER SUPERVISORY	2	0
NUMBER STAFF	0	0
NUMBER ADMINISTRATIVE SUPPORT	1	0
ASSET MANAGEMENT		
NUMBER SUPERVISORY	4	0
NUMBER STAFF	20	3
NUMBER ADMINISTRATIVE SUPPORT	0	0
RESEARCH		
NUMBER SUPERVISORY	3	0
NUMBER STAFF	16	0
NUMBER ADMINISTRATIVE SUPPORT	1	0
TRAFFIC INFORMATION SYSTEMS		
NUMBER SUPERVISORY	6	0
NUMBER STAFF	23	4
NUMBER ADMINISTRATIVE SUPPORT	0	0
TOTAL SUPERVISOR	15	0
TOTAL STAFF	59	7
TOTAL ADMINISTRATIVE SUPPORT	2	0
GRAND TOTAL	76	7

FUNDING SUMMARY TABLE

PART I PLANNING

PART II RESEARCH


PART III LOCAL TECHNICAL ASSISTANCE PROGRAM


PART IV PUBLIC TRANSPORTATION PROGRAMS

PART V HIGHWAY SAFETY IMPROVEMENT PROGRAM

FUNDING SUMMARY TABLE
ARKANSAS DEPARTMENT OF TRANSPORTATION
STATE PLANNING AND RESEARCH WORK PROGRAM
STATE FISCAL YEAR 2023
USING FEDERAL FISCAL YEAR 2022 FUNDS

PART AREA AND TYPE OF FUNDS	FTA FUNDS	FHWA	STATE MATCH	OTHER MATCH	100% STATE FUNDS	TOTAL
Part I						
PLANNING		\$13,590,518	\$3,218,380	\$179,250	\$350,000	\$17,338,148
FY23 Estimated SPR Funds (Y550)		12,580,000	3,145,000		350,000	16,075,000
TPF-5(326) Develop and Support TPM Capacity Development		37,000				
TPF-5(371) Develop Highway Capacity Adjustments for C/AV Technologies		15,000				
TPF-5(390) Institute for Trade and Transportation Studies		39,800				
TPF-1500 Econworks		20,000				
Other Federal Funds - NEVI, STBGP and CMAQ		1,010,518	73,380	179,250		1,263,148
Part II						
RESEARCH		\$6,246,175	\$1,245,400		\$285,000	\$7,776,575
FY23 Estimated SPR Funds (Y560)		5,141,602	1,285,400			6,427,002
Total Previous Programmed Funds		1,264,573				1,264,573
NCHRP Contribution		708,290				
TPF-5(473) TRB Core Program Services		141,283				
AASHTO TSP Technical Services Program		164,000				
TPF-5(375) Pavement Preservation Techniques (MnROAD/NCAT Joint Study - Ph		50,000				
TPF-5(399) Improve Pavement Surface Distress - Phase II (FY20-24)		20,000				
TPF-5(463) Pavement Surface Properties Consortium: Phase III		20,000				
TPF-5(467) Research Project Tracking System - Phase II		46,000				
TPF-5(488) Southeast Transportation Consortium - Phase II (FY21-25)		15,000				
TPF-5(486) Steel Bridge Research, Inspection, Training and Education Engineerir		100,000				
Other Funds - State Funded Projects					285,000	285,000
Transfer to LTAP in Part III		(160,000)	(40,000)			(200,000)
Part III						
LOCAL TECHNICAL ASSISTANCE PROGRAM (LTAP)		\$310,000	\$40,000			\$350,000
LTAP FUNDS		150,000				150,000
SPR FUNDS (Y560)		160,000	40,000			200,000
Part IV						
PUBLIC TRANSPORTATION	\$3,036,602		\$40,025	\$719,126		\$3,795,753
FHWA/FTA Metropolitan Planning	2,876,503			719,126		3,595,629
FTA Statewide Planning	160,099		40,025			200,124
Part V						
HIGHWAY SAFETY IMPROVEMENT PROGRAM		\$1,664,831	\$184,981			\$1,849,812
GRAND TOTAL	\$3,036,602.40	\$21,811,523.80	\$4,728,786	\$898,376	\$635,000	\$31,110,288


 Mark Headley, Division Engineer
 System Information and Research Division


 Brad McCaleb, Division Engineer
 Transportation Planning and Policy Division


 Lorie Tudor, Director
 Arkansas Department of Transportation
 Date 



PART I

PLANNING

Transportation Planning and Policy

**PART I - PLANNING
SUMMARY OF PARTICIPATION
FISCAL YEAR 2023 (Y550)**

Job No.	Work Function	Federal	State / Local Match	Total Estimated Cost
Transportation Planning and Policy (Budget 500, Function 970)				
ADMINISTRATION AND OTHER		1,100,000	425,000	1,525,000
000400	Administration	0	150,000	150,000
000401	GIS and Mapping	680,000	170,000	850,000
000404	Travel, Training and Seminars	12,000	3,000	15,000
000405	Legislative Review	8,000	2,000	10,000
000406	Finance	120,000	30,000	150,000
000419	GIS Data Management	280,000	70,000	350,000
MULTIMODAL PLANNING		1,348,000	337,000	1,685,000
000402	Performance Management	200,000	50,000	250,000
000408	Statewide Planning	160,000	40,000	200,000
000409	Travel Demand Modeling	120,000	30,000	150,000
000411	Freight Planning	104,000	26,000	130,000
000412	Railroad Crossing Coordination	184,000	46,000	230,000
000413	Cities Over 50,000 Population	280,000	70,000	350,000
000414	Air Quality Activities	60,000	15,000	75,000
000418	Miscellaneous Planning Support	40,000	10,000	50,000
000420	Bicycle and Pedestrian Planning and Coordination Planning	200,000	50,000	250,000
PROJECT PLANNING		876,000	219,000	1,095,000
000403	Reference Library and Publications	16,000	4,000	20,000
000410	Highway System Planning	800,000	200,000	1,000,000
000415	Local Planning Technical Assistance	60,000	15,000	75,000
PLANNING BY CONSULTANTS		3,200,000	800,000	4,000,000
Unknown	General Planning Studies	3,200,000	800,000	4,000,000
TOTAL		\$6,524,000	\$1,781,000	\$8,305,000
System Information and Research (Budget 530, Function 970)				
ADMINISTRATION AND OTHER		16,000	204,000	220,000
000468	Administration	0	200,000	200,000
000469	Travel, Training and Seminars	16,000	4,000	20,000
TRAFFIC INFORMATION SYSTEMS		3,852,000	963,000	4,815,000
000473	Data Acquisition/Technology Integration	260,000	65,000	325,000
000474	Traffic Data Analysis	520,000	130,000	650,000
000475	Automated Traffic Data Collection	624,000	156,000	780,000
000476	Contract Collection of Turning Movement Counts	140,000	35,000	175,000
000477	Contract Collection of Traffic Volume Counts	708,000	177,000	885,000
000478	Contract Collection of Vehicle Classification Counts	680,000	170,000	850,000
000479	Traffic Data Collection	420,000	105,000	525,000
000491	Multimedial Highway Information System (MMHIS)	160,000	40,000	200,000
000494	Highway Performance Monitoring System (HPMS)	200,000	50,000	250,000
000495	Highway Condition Inventory and Analysis	100,000	25,000	125,000
000496	System Information - Program Coordination	40,000	10,000	50,000
ASSET MANAGEMENT		2,188,000	547,000	2,735,000
000480	Asset Management System	280,000	70,000	350,000
000481	Asset Management System Analysis	100,000	25,000	125,000
000482	Data Quality Management Plan (DQMP)	80,000	20,000	100,000
000483	Pavement Structural Testing	172,000	43,000	215,000
000484	Pavement Friction Data Collection Equipment	60,000	15,000	75,000
000485	Nondestructive Subsurface Investigation	120,000	30,000	150,000
000486	Automatic Road Analyzer (ARAN)	240,000	60,000	300,000
000487	Pavement Management System (PMS)	240,000	60,000	300,000
000488	Pavement Engineering Data Processing	216,000	54,000	270,000
000489	Pavement Engineering Data Analysis	560,000	140,000	700,000
000490	Transportation Asset Management Plan	40,000	10,000	50,000
000497	Profilograph Studies	80,000	20,000	100,000
TOTAL		\$6,056,000	\$1,714,000	\$7,770,000
PART I - PLANNING (Y550)		\$12,580,000	\$3,495,000	\$16,075,000
PART I SPR FUNDS AVAILABLE				
		FHWA SPR	STATE/LOCAL MATCH	TOTAL
FHWA FFY22		11,165,031	3,141,258	14,306,289
Unobligated/Released Funds from Previous Years		1,437,545	359,386	1,796,931
Total Available		\$12,602,576	\$3,500,644	\$16,103,220
Estimated Balance Available for Programming		22,576	5,644	28,220

000400 – ADMINISTRATION

Purpose and Scope: To set objectives, measure accomplishments, and provide administrative support for all work activities of the Division, including records, payroll, attendance reports, and all other required administrative and secretarial functions. Activities necessary to carry out planning requirements in accordance with all state and federal regulations will be executed. Activities performed under this job number are 100% State funded.

Accomplishments for FY22: Administrative guidance and controls were accomplished in accordance with the goals and objectives set forth for the Division. The necessary purchasing, storing, and distribution of supplies continued. An accurate inventory was maintained for the Division. Federal Registers were reviewed for information affecting Department operations, planning, and the administration of funds.

Proposed Activities for FY23: Continue to provide guidance and assistance in the development and analysis of transportation-related projects and information, including improving communication and supporting information exchange through new technologies. Efficiency initiatives will be developed and implemented. The FY22 Final Performance and Expenditure Report will be developed and submitted to FHWA. The FY24 SPR Work Program and Cost Estimate will be developed and submitted to FHWA for approval and work authorization.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$150,000	\$74,431	\$150,000

CONTACT: Brad McCaleb, P.E.
Division Engineer
Transportation Planning and Policy Division
brad.mccaleb@ardot.gov
501-569-2201

Purpose and Scope: To meet the various needs of the Department by providing products and services related to GIS and Mapping. The preparation of GIS data, projects, and maps involves utilizing the latest information available, researching methodologies to ensure that best practices are being used to meet the Department's goals, and keeping up with the latest technologies to ensure that the Department is utilizing the best techniques available.

Products and data associated with GIS and Mapping are available to the general public through the State GIS clearinghouse (www.gis.arkansas.gov) and the Department's website (www.ardot.gov) as PDF images or web applications. In addition, the GIS and Mapping Section helps to upload and maintain layers on the Department's traveler's information website www.idrivearkansas.com. Other data requests are fulfilled throughout the year for other state agencies, private firms, and the public via direct requests to the GIS and Mapping Section.

Accomplishments for FY22:

- State Highway Map (Tourist Map) was updated, and 300,000 copies were printed. Copies are available at Arkansas Welcome Centers and Parks and Tourism facilities but can also be distributed by request either in person, in writing, by telephone, or through the Department's website.
- Migrating away from using Microstation to update and display the section's cartographic products. The ArcGIS platform is utilized to maintain the statewide, county, and city mapping templates. Staff have been compiling the new map versions in the Department's GIS platform, ESRI's ArcMap.
- Maintaining and collecting information for the all public road Intersection MIRE FDE dataset. The GIS and Mapping Section partners with the Traffic Safety Section to maintain the dataset. GIS and Mapping personnel are currently populating the traffic control and junction geometry for each intersection location.
- GIS base map templates maintained to ensure consistent mapped products, including state, district, route, and section, county route and section, county general highway, and city maps.

Other Duties/Special Projects/Regular Maintenance:

- Creating, updating, and posting layers for the IDrive Arkansas website (Public Information Office).
- Prepare study maps and figures for planning studies and public involvement maps and displays (Project Planning and Multimodal Planning).
- Director's book maps (Governmental Relations).
- Arkansas Highway Police District Map (Traffic Management Center).
- Provide guidance and training opportunities regarding GIS software (Department-wide).
- Collaborate with other sections and divisions on data enterprise and asset collection efforts (Department-wide).
- Update the Intranet and Internet with PDF images of most recently updated city and county maps.
- Provide printed versions of all city and county maps produced for distribution (Map Sales).

Proposed Activities for FY23:

- Update and commercially print up to 500,000 copies of the State Highway Map (Tourist Map).
- Reflect all modifications made to the State Highway System on all statewide, city, and county maps.
- Record minor updates and revisions on all city and county maps as needed.
- Conduct other duties, special projects, and regular maintenance as requested.
- Continue to create, update, and deploy the mapped layers needed for the IDrive Arkansas website.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$965,000	\$731,765	\$850,000

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000402 – PERFORMANCE MANAGEMENT

Purpose and Scope: To monitor current and proposed performance measure requirements, identify applicable performance measures, and advise the Department as necessary to ensure compliance. Activities performed under this job include reporting national performance measures and targets to FHWA, developing a Transportation Performance Management (TPM) Program, coordinating TPM activities within the Department and with other stakeholders (including MPOs), providing project programming recommendations based on statewide analyses of highway capacity and reliability, and supporting the incorporation of TPM into the Department's business practices.

Accomplishments for FY22: Staff continued to identify, monitor, and report as needed on performance measures. The Department continued participation in AASHTO's TPM Technical Assistance Pooled Fund Program. A Corridor Prioritization Tool for National Highway System (NHS) corridors within Arkansas was migrated to the Department's network with the assistance of the Information Technology Division. Programming recommendations for the upcoming Statewide Transportation Improvement Program were developed from analysis of reliability data. Numerous reports were compiled, including the Travel Time Reliability report for the HPMS submittal, the CMAQ TPM report, the Act 789 Report for the Arkansas Legislature, quarterly Traffic Incident Management (TIM) reports, and a federal grant performance report.

Proposed Activities for FY23: Staff will continue to identify, monitor, and report on performance measures and provide guidance to the Department as necessary to ensure compliance with the most current federal requirements. Efforts to develop the Department's TPM Program will continue, including refinement of performance measures, creation and enhancement of performance targets, and target-setting techniques. Assistance will be provided to establish an enterprise data management system for TPM. The Department will participate in and support relevant pooled fund studies and the AASHTO's TPM Technical Services Program. Necessary services for performance data processing and dashboards will be procured or developed. Evaluation and refinement of processes and techniques to link projects to setting and achieving performance (for instance, using Decision Lens) targets will continue. Travel time data for the National Highway System will be secured and analyzed through the Regional Integrated Traffic Information System (RITIS) platform.

TPF-5(326) Develop and Support TPM Capacity Development TPM Technical Service Program

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$200,000	\$115,359	\$250,000

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000403 – REFERENCE LIBRARY AND PUBLICATIONS

Purpose and Scope: To provide and maintain a reference library including all planning studies and transportation-related subjects, in published or electronic format, for use by the Department and the public. Budget under this job includes participation in professional organizations for access to the most up-to-date technical and policy publications.

Accomplishments for FY22: Staff maintained the planning study library and the GIS-based web application for the library. All relevant transportation data, reports, and notices were collected, scanned, and filed. Professional articles on transportation issues were reviewed, and reports were prepared as necessary.

Proposed Activities for FY23: Staff will continue to maintain the planning study library and the Web Application. Additional transportation-related publications and data will be purchased, assembled, and reviewed as needed. Professional articles on transportation issues will be reviewed and reports prepared as necessary.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$50,000	\$4,892	\$20,000

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000404 – TRAVEL, TRAINING, AND SEMINARS

Purpose and Scope: To acquire additional up-to-date knowledge and the latest techniques to stay abreast of available information and/or technology in order to provide the best transportation system for the movement of people and goods in and through Arkansas.

Accomplishments for FY22: Time was allocated to virtually attend transportation-related meetings and seminars to acquire training, to update knowledge and techniques, and to network with others involved in planning and financing transportation programs and systems.

Proposed Activities for FY23: Division personnel will make necessary and pertinent in- and out-of-state trips to attend seminars and meetings. Federal participating funds that are used for these seminars and meetings will be tracked. Charging trips and training seminars to one job number improves record keeping. Registration fees, salaries, meals and lodging, the cost of the trip, and miscellaneous expenses will be tracked.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$15,000	\$28,564	\$15,000

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000405 – LEGISLATIVE REVIEW

Purpose and Scope: To provide analyses of impacts on program requirements, implementation, and funding related to state and federal legislative actions and to assist other divisions and sections relative to federal and state legislation and regulations.

Federal and state legislation is closely monitored for changes related to the authorization, apportionment, requirements, and allocation of funding, and implementation of the national and state transportation programs. When the Arkansas State General Assembly is in session, special reports are prepared as requested.

Accomplishments for FY22: State and federal legislative actions were monitored and analyzed for their impact to the Department. Prepared comments for federal notices of proposed rulemaking.

Proposed Activities for FY23: State and federal legislative actions will continue to be monitored, particularly in the areas of planning, safety, and transit programs.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$10,000	\$0	\$10,000

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000406 - FINANCE

Purpose and Scope: To provide fiscal oversight for the Division and coordinate with other divisions to ensure proper management of federal-aid programs.

Accomplishments for FY22: Federal and state regulations are being monitored to ensure the proper use of federal funds in support of the Division's programs. The FY23 SPR Work Program and the FY21 Performance and Expenditure Report were developed in compliance with federal requirements and submitted to FHWA.

Proposed Activities for FY23: Federal and state regulations will continue to be monitored to ensure the proper use of federal funds in support of the Division's programs. The FY24 SPR Work Program and the FY22 Performance and Expenditure Report will be developed in compliance with federal requirements and submitted to FHWA.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$150,000	\$100,165	\$150,000

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000408 – STATEWIDE PLANNING

Purpose and Scope: To provide guidance and coordination between the various planning efforts conducted at the statewide level, including the Statewide Long Range Intermodal Plan, the State Rail Plan, State Transportation Systems Management and Operations (TSMO) Plan, and others; to ensure statewide planning documents are prepared under the most current federal regulations and guidelines; to participate in relevant pooled fund projects and provide necessary training; to research and evaluate innovative financing options for transportation infrastructure. Staff time for statewide freight planning efforts is programmed separately under Job 000411.

Accomplishments for FY22: Staff continued coordination with state, local, and federal agencies regarding transportation needs and plans. Planning activities were performed in preparation for the next Arkansas Transportation Planning Conference. Continued implementation efforts associated with the delivery of the PlanWorks Pooled Fund Study, including a performance dashboard and corridor prioritization tool. Initiated update to the State Rail Plan and development of an ARDOT TSMO Plan. Entered into an agreement with AASHTO to initiate the Econworks Pooled Fund Study, coordinated with AASHTO and other DOTs on the scope and execution of the study, and monitored the financial aspects of the study.

Proposed Activities for FY23: Work will continue related to implementation of the Statewide Long Range Intermodal Transportation Plan. Draft final documents for the State Rail Plan will be delivered and presented to the Administration and the Commission. The Department will continue to act as lead agency for management of EconWorks pooled fund study. Necessary data may be purchased to support statewide planning activities. Planning and preparation for the 2022 Arkansas Transportation Planning Conference will continue. Work may begin on the development of a State Resiliency Improvement Plan.

TPF-5(456) Econworks: Improved Economic Insight

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$300,000	\$183,295	\$200,000

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000409 – TRAVEL DEMAND MODELING

Purpose and Scope: To provide travel demand modeling results, census data, and related analyses and information for use in the planning process; to provide support for the development and use of the Arkansas Travel Demand Model (ARTDM); and to provide coordination and support for the development and use of regional travel demand models.

Accomplishments for FY22: Staff performed and coordinated model runs for corridor planning studies using the ARTDM, CARTS TDM, and NARTS TDM. On-going model maintenance was performed. A two-day travel demand modeling course was developed and led by a consultant. General staff training continued. LOI and RFP documents were drafted in anticipation of upcoming model update procurement.

Proposed Activities for FY23: The ARTDM will be used for the development of statewide plans, economic impacts assessments, transportation system feasibility studies, and response to specific requests. Other agencies will be assisted with modeling activities, model development, and training. Origin-destination, demographic, freight, and socio-economic data may be purchased to assist in planning studies and model development. Funding for an anticipated ARTDM update is programmed under a separate budget line item.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$145,000	\$93,328	\$150,000

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000410 – HIGHWAY SYSTEM PLANNING

Purpose and Scope: To identify and evaluate engineering, social, economic, and environmental features of various proposals for use in the Department's decision-making processes. This includes conducting feasibility studies for use in determining the need for specific highway improvements as well as responding to requests for information such as traffic forecasts and traffic operating conditions. Staff time for coordination and oversight of consultant studies is included in this budget line item.

Accomplishments for FY22: Various studies analyzed route and corridor feasibility in order to maintain the highest quality highway system and to provide the best service for the safe and efficient movement of people and goods within and through the State.

Proposed Activities for FY23: The Department will continue to identify and analyze the engineering, environmental, social, and economic features of various proposals for use in the Department's decision-making processes. Activities will continue toward the completion of planning studies that are in progress as well as requested additional studies. It is anticipated that during the course of the year, numerous other studies will be initiated based on need. Updated versions of traffic analysis software currently in use will be acquired, and new software products will be evaluated and acquired as needed to support the activities related to planning studies.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$900,000	\$726,662	\$1,000,000

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000411 – FREIGHT PLANNING

Purpose and Scope: To support the development and implementation of State freight plans and provide for the optimum use of the State's transportation modes for freight. Additional planning activities focus on providing improved intermodal connections, enhancing shipping choices, and conducting intermodal studies to aid local and regional economic development efforts.

Accomplishments for FY22: Technical assistance was provided to state freight partners. Support functions were provided to AASHTO standing committees. Department input was provided in developing the Institute for Trade and Transportation Studies (ITTS) five-year work program and execution of ITTS activities. Updates to the State Freight and Rail Plans were initiated.

Proposed Activities for FY23: Project planning and development assistance will be provided to federal-aid intermodal transportation projects. Technical assistance will be given to local communities and regional intermodal authorities to develop freight transportation assets. Freight data and modal maps will be provided upon request. NHS Intermodal Connector routes will be monitored for changes. Freight transportation studies in progress will be completed, and new studies will be initiated as requested. Support activities will be provided as needed for AASHTO Standing Committees and other special projects. Coordination with other modal agencies will continue for freight flow in, around, and through the State. Staff will continue to monitor and support economic development through freight movements. Staff will continue to participate in the ITTS Transportation Pooled Fund Study. State Freight and Rail Plan Updates will be drafted and presented to the Administration and Commission.

TPF – 5(390) Institute for Trade and Transportation Studies

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$400,000	\$48,700	\$130,000

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000412 – RAILROAD CROSSING COORDINATION

Purpose and Scope: To monitor Department construction projects ranging from district sealing projects to overpass replacement; to ensure that all railroad coordination is accomplished prior to bid letting; to prepare Special Provisions for construction contract bid documents and to develop Construction and Maintenance (C&M) Agreements including Overpass Agreements for all Department projects involving railroad crossings; and to respond to requests from the public and private sectors concerning railroad crossing issues.

Accomplishments for FY22: Special Provisions were prepared for over 85 projects. C&M Agreements were obtained for two overpass construction projects, and others were submitted. Preliminary Engineering agreements were executed for 13 projects. More than 20 requests were submitted for Maintenance Consent Letters (MCLs) required for Pavement Preservation projects on UPRR's right-of-way. All District installation activities were completed for the FRA CRISI grant.

Proposed Activities for FY23: Construction and preservation projects will continue to be monitored for railroad involvement. Railroad Special Provisions for construction contract documents will continue to be prepared. MCLs for Pavement Preservation projects within UPRR right-of-way will continue to be requested and managed. Construction projects that include railroad involvement will be coordinated with the railroad companies and appropriate divisions and districts. C&M agreements will continue to be developed. Project closure activities for the CRISI grant will continue to be managed.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$120,000	\$159,113	\$230,000

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000413 – CITIES OVER 50,000 POPULATION

Purpose and Scope: To provide a continuing, cooperative, comprehensive (3-C) planning process with the eight Metropolitan Planning Organizations (MPOs) that supports the development of multi-modal transportation systems that provide mobility for people and goods within and through urbanized areas.

Accomplishments for FY22: The Metropolitan Planning Process (23 USC 134 (c)(3)) was coordinated in all urbanized areas, and necessary activities were carried out for each area as explained in each MPO Unified Planning Work Program (UPWP). UPWPs, various funding agreements, performance and expenditure reports, data analyses, and the Annual Listing of Obligated Projects were developed for each metropolitan area. Department staff attended MPO Committee meetings, participated in regular conference calls, reviewed MPO documents, and approved reimbursement requests. Department staff continued to work with the MPOs to establish a performance-based planning process, including cooperatively developing and sharing information related to transportation performance data, the selection of performance targets, and performance reporting. The MPOs adopted the required performance targets for their areas, and Metropolitan Transportation Plans (MTPs) were amended to incorporate the performance measures.

Proposed Activities for FY23: Cooperative efforts will continue among the Department, MPOs, and local agencies to accomplish the objectives of the Metropolitan Planning Process. In developing transportation plans and programs pursuant to 23 USC 134, all planning factors in current law will be considered. Transportation Management Areas will continue to monitor STBGP- Attributable and TAP projects to ensure obligation of funds in a timely manner. Activities related to the administration of metropolitan planning funds will continue in all areas. Necessary activities will be conducted to maintain certification for all urbanized areas. Efforts will continue toward meeting federally-mandated requirements, including a review of environmental justice issues and addressing air quality issues in the WMATS area. The Department will continue to share information on performance measures and will coordinate with the MPOs in establishing safety performance targets. Work programs, annual reports, agreements, and other products necessary to maintain the Metropolitan Area Transportation Planning Process will be developed as appropriate. The UPWPs for each area and the FTA Work Program contain detailed budget items and describe specific goals to be accomplished for each work element by the MPOs. Reimbursement requests will be processed for all MPOs. The Department will coordinate with MPOs on TIP development and adoption.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$400,000	\$288,317	\$350,000

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000414 – AIR QUALITY ACTIVITIES

Purpose and Scope: To coordinate air quality planning statewide. Activities performed under this job include compiling and analyzing data for emissions modeling, coordinating air quality activities with ADEE and relevant MPOs (WMATS and CARTS), planning for alternative fuels infrastructure (including electric vehicle infrastructure), and development of carbon reduction strategies.

Accomplishments for FY22: CMAQ funds were awarded to the WMATS and CARTS areas to support air quality planning efforts. Specific activities in the CARTS area included coordination with Metroplan for the Ozone Action Days Program. In WMATS area, air quality planning and monitoring activities performed relate to ongoing coordination of the planning process and designation as a Maintenance Area. Staff participated in regional and national meetings, webinars, and peer exchanges relating to electric vehicle infrastructure, and coordinated with the ADEE on upcoming Alternative Fuel Corridor designations and implementation of the National Electric Vehicle Infrastructure Program.

Proposed Activities for FY23: Staff will provide coordination and support for air quality planning activities and programs, including those in the urbanized areas and on behalf of the Department. Activities will include developing implementation strategies for air quality programs within the Department, coordination with MPOs in developing and implementing programs and strategies, and coordination with ADEE and other entities. Staff training will be pursued as available. Emissions analyses as part of the CMAQ program or in support of other air quality planning activities will be performed as required. Regional and statewide planning for alternative fuels infrastructure (including electric vehicle infrastructure) will continue. Work may begin on the Development of a State Carbon Reduction Strategy.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$30,000	\$417	\$75,000

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000415 – LOCAL PLANNING TECHNICAL ASSISTANCE

Purpose and Scope: To coordinate, review, and provide technical assistance to local agencies to ensure the linkage between land use, access management, and transportation are maintained

Accomplishments for FY22: Efforts were made to enhance coordination with local planning agencies in the areas of transportation planning, access management, and traffic engineering.

Proposed Activities for FY23: Activities will include coordination with MPOs to develop and implement access management plans, and review Master Street plans and other locally-developed transportation or land-use plans.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$75,000	\$0	\$75,000

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000418 – MISCELLANEOUS PLANNING SUPPORT

Purpose and Scope: To provide planning support activities by other Divisions and Districts for environmental and right-of-way reviews and conceptual plan schematic development. These are important functions to ensure proper planning products are being developed.

Accomplishments for FY22: This job was utilized by other Divisions to support the Project Planning and Multimodal Planning Sections.

Proposed Activities for FY23: This job will continue to be utilized by other Divisions to support the Project Planning and Multimodal Planning Sections.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$50,000	\$6,391	\$50,000

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000419 – GIS DATA MANAGEMENT

Purpose and Scope: To create and maintain geographic enterprise datasets and data documentation for departmental and public consumption. Enterprise datasets are defined as datasets shared and used widely across the Department. Examples of these datasets include The All Road Network of Linear Referenced Data (ARNOLD), intersection/interchange MIRE FDEs, sign database, data dictionaries, and data catalogs.

Accomplishments for FY22:

- Update, maintain, and publish the ARNOLD dataset with changes as needed.
- Manage the intersection MIRE FDE database.
- Collect, maintain, and oversee the database for the ADA ramp and sidewalk inventory efforts.
- Identify and advance GIS data management and best practices.
- Update the network base map as changes occur for the oversize/overweight permitting system. GIS and Mapping took on this responsibility in August 2018 from the Information Technology Division. The network base map utilizes the State Highway LRS and the bridge inventory information. Bentley's SUPERLOAD software is used to build and distribute the network.
- Begin maintaining the new highway sign database
- Developed the speed limit database and map application
- Developed a field app to test for sign location collection in the field

Proposed Activities for FY23:

- Update, maintain, and publish the ARNOLD dataset with changes as needed.
- Continue to manage the intersection MIRE FDE database.
- Continue to develop and manage the interchange MIRE FDE database.
- Continue to maintain and oversee the database for the ADA ramp and sidewalk inventory efforts.
- Continue to develop and maintain official data dictionaries and data catalogs for the various datasets within the section.
- Continue to identify and advance GIS data management and best practices.
- Continue to maintain the oversize/overweight permitting system network.
- Continue to maintain the sign and speed limit databases

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$200,000	\$192,852	\$350,000

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000420 - BICYCLE AND PEDESTRIAN PLANNING AND COORDINATION PLANNING

Purpose and Scope: To provide planning and coordination for bicycle and pedestrian safety and mobility, including: statewide, regional, and local planning and policy development efforts (including complete streets planning, consistent with the requirement in Section 11206 of the IIJA to use 2.5% of SPR for such activities); project selection and development; education; data collection and analysis; and other related and supportive activities.

Accomplishments for FY22: Historically, these activities have been charged to Job 000408. Related efforts included coordination of bicycle and pedestrian accommodations in highway construction projects; review of applications for Transportation Alternatives Program and Recreational Trails Program funding; Complete Streets research; participation in regional bicycle and pedestrian planning efforts; participation in the development of bicycle and pedestrian elements of the Strategic Highway Safety Plan; walk audits; and others.

Proposed Activities for FY23: Activities performed in the previous year will continue. Additional emphasis will be placed on the development of complete streets policies and plans.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
N/A	N/A	\$250,000

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012219 – PERFORMANCE DRIVEN PROJECT PRIORITIZATION SYSTEM

Purpose and Scope: To allow the Department to have a performance-driven project prioritization system to prioritize objectives, evaluate investments, and optimize current resources for the state.

Accomplishments for FY22: Decision Lens was used to aid in the development of the Statewide Transportation Improvement Program (STIP).

Proposed Activities for FY23: Decision Lens will continue to be used to aid in the development of the next STIP.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$158,103	\$0	\$50,000

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012277 – CENTRAL ARKANSAS MANAGED LANE FEASIBILITY STUDY*

Purpose and Scope: To determine the need for and feasibility of various techniques to address congestion in central Arkansas. Metroplan will fund half of the total project costs.

Accomplishments for FY22: Completed draft documentation.

Proposed Activities for FY23: Finalize analysis on potential corridors, present to the Arkansas Highway Commission and the Metroplan Board. Complete the Executive Summary and the full report. Present to the Arkansas Highway Commission and Metroplan Board.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$127,913	\$0	\$127,913

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*Funding was obligated in a previous fiscal year.

040851 – HIGHWAY 64 STUDY

Purpose and Scope: To determine the need and feasibility for connectivity improvements to Highway 64 in and around downtown Fort Smith, including the feasibility for constructing a new river crossing north or south of the existing bridge.

Accomplishments for FY22: Continued the study effort. Began technical analysis and held initial Public Involvement Meeting.

Proposed Activities for FY23: Continue the study effort. Develop alternatives and make final recommendations. Complete the Executive Summary and the full report.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$160,121	\$224,098

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*Funding was obligated in a previous fiscal year.

101112 – JONESBORO SOUTH AND WEST CONNECTOR STUDY*

Purpose and Scope: To determine the need for and feasibility of an improved connection south and west of Interstate 555 in the Jonesboro area.

Accomplishments for FY22: Initiated Study. Developed traffic forecasting methodologies. Developed purpose and need report. Conducted initial public involvement meeting and stakeholder outreach. Began developing improvement alternatives.

Proposed Activities for FY23: Continue developing alternatives. Conduct public outreach as needed. Review of consultant deliverables.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$125,327	\$163,184

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*Funding was obligated in a previous fiscal year.

101113 – INTERSTATE 555 CORRIDOR STUDY*

Purpose and Scope: To determine the need for and feasibility of improvements to the Interstate 555 corridor and interchanges in Jonesboro.

Accomplishments for FY22: Initiated study. Developed traffic forecasting methodologies. Developed purpose and need report. Conducted initial public involvement meeting and stakeholder outreach. Began developing improvement alternatives.

Proposed Activities for FY23: Conduct a second public involvement meeting. Review of consultant deliverables.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$117,024	\$150,905

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*Funding was obligated in a previous fiscal year.

012353 – ARKANSAS RAILROAD STATE ACTION PLAN*

Purpose and Scope: To develop the State highway-rail grade crossing action plan (SAP) in accordance with the Federal Railroad Administration (FRA) requirements and guidance. Consultant services will be utilized to complete this plan.

Accomplishments for FY22: Review of the Department's current hazard rating formula, grade-crossing inventory, and safety trends was completed. Review continued on a proposed replacement for the current approach to hazard rating and prioritization. Draft final documents were delivered and are under review and revision.

Proposed Activities for FY23: Submit to FRA for review and comment. Present final documents to Commission for adoption. Project Closeout.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$100,164	\$36,779	\$22,863

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*Funding was obligated in a previous fiscal year.

012370 – TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TMSO) PLAN*

Purpose and Scope: To develop statewide and regional plans that identify strategic, programmatic, and tactical requirements for optimizing the performance of the existing transportation system and integrating planning and design with maintenance and operations. Consultant services will be utilized to develop this plan.

Accomplishments for FY22: Task Order 1 was executed for the development of an ARDOT TSMO Plan. Existing plans, best practices, and peer practices were reviewed. A capability-maturity reassessment workshop was held with Department staff and stakeholders. Task Order 2 was executed for the development of an NWARPC TSMO Plan. Staff participated in stakeholder meetings, document reviews, and other coordination activities.

Proposed Activities for FY23: Development of the ARDOT TSMO Plan will continue, including strategic, programmatic, and tactical elements. Staff will continue to participate in the development of the NWARPC TSMO Plan, including attendance of stakeholder meetings, performing document reviews, and other coordination. Work may begin on an update to the State ITS Architecture.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$52,905	\$644,880

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*Funding was obligated in a previous fiscal year.

012401 – ARKANSAS STATE FREIGHT AND RAIL PLANS UPDATE*

Purpose and Scope: To update the Arkansas State Freight Plan and Arkansas State Rail Plan, consistent with current statutory and regulatory requirements. Consultant services will be utilized to update this plan.

Accomplishments for FY22: A Task Order to update these plans was executed, and plan development was initiated. Existing plans were reviewed, and data was collected. Modal profiles and other technical reports were developed for the State Freight Plan. Stakeholder engagement activities were conducted, including meetings with advisory committees, roundtables, and interviews.

Proposed Activities for FY23: For the State Rail Plan, stakeholder engagement activities will continue and technical reports will be delivered. Draft Executive Summary documents will be delivered for both plans. Updated plans will be presented to the Administration for review and revisions and subsequently to the Commission for adoption.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$137,495	\$356,812

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*Funding was obligated in a previous fiscal year.

012452 – DEPARTMENT STRATEGIC PLAN UPDATE*

Purpose and Scope: To update the Department's Strategic Plan, including the Mission, Vision, Core Values, Goals, Objectives, and Implementation Strategies. High Street consulting firm will assist and guide the Department through this process.

Accomplishments for FY22: No activity.

Proposed Activities for FY23: High Street will conduct interviews with executive management, coordinate meetings with the Department's Core Team, develop an employee survey, and provide reference materials in order to accomplish the updated Strategic Plan.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$0	\$168,938

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*Funding is included within Unknown General Planning Studies.

012XXX – COMPLETE STREETS PLANNING*

Purpose and Scope: To perform complete streets planning activities, including the development of complete streets policies or standards and complete streets plans, consistent with current statutory and regulatory requirements as established by the Infrastructure Investment and Jobs Act (IIJA) and related guidance. Consultant services will be utilized for this work. Staff time will be charged to Jobs 408, 420, or others, as appropriate.

Accomplishments for FY22: Historically, multimodal planning activities (including bicycle, pedestrian, freight, transit, and others) have been charged across multiple jobs, including Jobs 408, 410, 411, 413, 415, and FTA 5304, as well as various multimodal planning efforts led by consultants.

Proposed Activities for FY23: A scope of work and fee estimate for use of on-call consultant planning services will be developed. Anticipated activities include project kickoff, stakeholder coordination, and development and review of deliverables. Work activities are expected to carry over to FY24.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$0	\$300,000

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*Funding is included within Unknown General Planning Studies.

012XXX – STATE RESILIENCY IMPROVEMENT PLAN*

Purpose and Scope: To develop a State Resilience Improvement Plan, consistent with current statutory and regulatory requirements as established by the Infrastructure Investment and Jobs Act (IIJA) and related guidance. Consultant services will be utilized for this work. Staff time will be charged to Job 408 or others, as appropriate.

Accomplishments for FY22: No activity.

Proposed Activities for FY23: A scope of work and fee estimate for consultant services may be developed. Activities may include project kickoff, stakeholder coordination, and development and review of deliverables. This work may be deferred to FY24.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$0	\$300,000

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*Funding is included within Unknown General Planning Studies.

012XXX – ARKANSAS TRAVEL DEMAND MODEL UPDATE*

Purpose and Scope: To update the Arkansas State Travel Demand Model. Consultant services will be utilized for this work. Staff time will be charged to Job 409 or others, as appropriate.

Accomplishments for FY22: On-going model maintenance was performed. LOI and RFP documents were drafted.

Proposed Activities for FY23: Procurement documents will be finalized. The procurement process will be initiated, culminating in the selection of a consultant team. A scope of work and fee estimate for consultant services will be developed. Activities may include project kickoff, data acquisition, and initial model refinement steps. This work is expected to continue in FY24, and additional funding may be added in future years for additional phases of this project.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$0	\$500,000

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*Funding is included within Unknown General Planning Studies.

UNKNOWN – GENERAL PLANNING STUDIES

Purpose and Scope: To conduct transportation planning studies, needs assessments, organizational plans, and other planning activities, as needed, including (but not limited to) implementation of the planning requirements of the IIJA (such as the requirement to use 2.5% of SPR funds to carry out complete streets planning activities). Consultant services will be utilized as needed.

Accomplishments for FY22: Task orders were issued for consultant planning studies. Once a planning study was identified for consultant services, a job number was established. These task orders were tracked by their job numbers.

Proposed Activities for FY23: Use on-call consultant services to conduct planning studies discussed above. Task orders will be issued for studies. They will be tracked and reported under those job numbers.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$4,500,000	\$2,638,920	\$4,000,000

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System Information and Research

000468 - ADMINISTRATION

Purpose and Scope: To set objectives, measure accomplishments, and provide administrative support for all work activities of the Division. This project also provides training and auxiliary functions necessary for Division work activities, including records, payroll, attendance reports, and all other required administrative, bookkeeping, and secretarial functions. Activities necessary to carry out requirements in accordance with all state and federal regulations will be executed. Activities performed under this job number are 100% state funded.

Accomplishments for FY22: Administrative guidance and controls were accomplished in accordance with the goals and objectives set forth for the Division. The necessary purchasing, storing, and distribution of supplies continued. An accurate inventory was maintained for the Division.

Proposed Activities for FY23: Continue to provide guidance and assistance in the development and analysis of transportation-related projects and information, including improving communication and supporting information exchange through new technologies. The FY24 SPR Work Program and Cost Estimate will be developed and submitted to FHWA for approval and work authorization

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$200,000	\$116,726	\$200,000

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000469 – TRAVEL, TRAINING, AND SEMINARS

Purpose and Scope: To acquire additional, up-to-date knowledge and the latest techniques to stay abreast of available information and/or technology in order to provide the best transportation system for the movement of people and goods in and through Arkansas.

Accomplishments for FY22: Both virtual and in-person conferences, meetings, and webinars were attended to acquire training, update knowledge and techniques, and network with others involved in Traffic Information, Research, and Asset Management related programs.

Proposed Activities for FY23: Division personnel will make necessary and pertinent in-state and out-of-state trips to attend seminars and meetings. Federal participating funds that are used for these seminars and meetings will be tracked. Training seminars will be done for employees within the Division to enhance knowledge on data collection and operation of equipment. Registration fees, salaries, meals and lodging, the cost of the trip, and miscellaneous expenses will be charged to this line item.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$20,000	\$8,777	\$20,000

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000473 – DATA ACQUISITION/TECHNOLOGY INTEGRATION

Purpose and Scope: To modernize the workflow utilizing technology and support the development of the enterprise data system. This includes preparing the scope of work to integrate Division data for GIS analysis; creating and maintaining databases and projects; researching tools for advanced analytical analysis for multiple large datasets; assisting in the research of best practices and newer technology; developing advanced applications to present data to internal and external customers and assisting with the development of new databases and front-end applications. This also includes assisting other Sections in the Division with end-of-year close-out of databases, new database development, and integration of these datasets with each other.

Accomplishments for FY22: Continue enhancements to the SIR Division centralized Geodatabase. Continue the conflation process of Road Inventory and Traffic databases to ARNOLD. Improve the model to process ARAN data, assist HPMS reporting, assist end-of-year close-out and maintain various GIS web applications. Evaluated an application of artificial intelligence/machine learning technology intended to assist in the development of ADT estimates for all public roadways.

Proposed Activities for FY23: Build on the development of the Roadway Inventory and Traffic Databases. Research advanced analytical tools for faster processing and data visualization for the large datasets. Build front-end tools for easier data entry into the new SQL databases, move advanced QA/QC functions, and a change management system to track manual edits of the database.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$350,000	\$267,920	\$325,000

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000474 – TRAFFIC DATA ANALYSIS

Purpose and Scope: To analyze the various types of traffic-related data collected on the State's roadway network, including the State Highway System, city streets, and county roads. This includes maintaining traffic count databases and analyzing traffic volume counts, vehicle classification counts, video counts, turning movement counts, special counts and surveys, weight data, and other data collection efforts. This project also includes collecting and analyzing the permanent collection site data along with reporting the data to the Federal Highway Administration as required. Additionally, traffic projections are calculated, and load spectra files are generated to support highway and bridge design efforts.

Accomplishments for FY22: All statewide coverage counts, special counts, turning movement counts, video counts, and vehicle classification counts were processed, including 2,679 classification counts, 118 video counts, 9,102 volume counts, and 145 turning movement counts. Truck weight data and associated vehicle classification data from the Automatic Traffic Recorders (ATR) were collected, analyzed, and reported. Seasonal and axle adjustment factors were calculated using the permanent count station data. Traffic forecasts and load spectra files were provided to the Design Branch as requested. Traffic count databases were maintained, and scopes of work for FY 2022 were developed. The ADT Web App was updated to include 2021 ADT, and paper maps of traffic data were developed. Miovision Central was used to submit and track special counts collected by the Traffic Group.

Proposed Activities for FY23: Traffic Information Systems will analyze approximately 2,880 48-hour classification counts throughout the State, including some weekend and holiday samples. Approximately 140 video counts, 120 turning movement counts, and 9,600 traffic volume counts will be analyzed. Traffic data from the ATR stations will be collected, analyzed, and reported. Special traffic counts will be processed. Traffic and load spectra data will be calculated to support the Design Branch Divisions. Traffic count databases and traffic count applications will be updated. A Traffic Data Management System will be acquired following standard Department procedures, and implementation will begin. Any station that is determined to be unsafe for collection with standard traffic counters and tubes will be converted to a video count station.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$915,000	\$846,664	\$650,000

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000475 – AUTOMATED TRAFFIC DATA COLLECTION

Purpose and Scope: To collect vehicle volume, weight, speed, and classification traffic data at permanent, site-specific locations. The types of Automated Traffic Data Collection sites are Smart Sensor radar detectors, Volume-only, Automatic Vehicle Classifier (AVC), and Weigh-in-Motion (WIM). The AVC sites collect volume and classification data, and the WIM sites collect volume, classification, and weight data. The scope of activities includes the purchase of testing equipment, piezoelectric sensors, and other equipment deemed necessary to support the collection of data, repair of equipment and the installation of monitoring stations, upgrade of existing stations, and replacement of obsolete and non-functional equipment. Currently, there are a total of 51 automatic data collection sites around the State. Of these, 9 are non-operational due to construction. Two are smart sensor sites, 6 are volume-only sites, 6 are AVC sites, and 28 are WIM sites.

Accomplishments for FY22: The Recorder Shop maintained all records of repairs to all data collection devices and maintained supplies for the installation of permanent data collection sites. WIM sites that went down were converted to Miovision video classification counts to ensure data was collected. One site was rehabilitated, and three sites were repaired in the fiscal year. Additional data collection equipment was purchased to replace equipment past its useful life. An additional ATR and WIM site was added on I-49 near the Missouri state line.

Proposed Activities for FY23: All automatic data collection sites will be maintained and repaired as needed. The benefit-cost of installing future WIM sites with concrete pavement sections in flexible pavement roadways will be evaluated. The Recorder Shop will maintain all records of repairs to data collection devices as well as items necessary for the repair and installation of permanent data collection sites. WIM sites will be evaluated for sampling adequacy. Two new locations will be selected, and 4 existing sites will be rehabilitated. These activities are in addition to the normal maintenance and repair of existing sites. New radar and WIM hardware will be purchased to replace older equipment.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$750,000	\$562,998	\$780,000

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000476 – CONTRACT COLLECTION OF TURNING MOVEMENT COUNTS

Purpose and Scope: To collect turning movement counts using contract forces. Video cameras are utilized to collect 24-hours of data for all movements.

Accomplishments for FY22: Approximately 145 turning movement counts were completed during the fiscal year.

Proposed Activities for FY23: The consultant will collect approximately 120 turning movement counts as requested from other Divisions and Sections.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$270,000	\$150,099	\$175,000

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000477 – CONTRACT COLLECTION OF TRAFFIC VOLUME COUNTS

Purpose and Scope: To collect 48-hour traffic volume counts statewide using contract forces. Both annual and special counts will be performed.

Accomplishments for FY22: Collected approximately 9,102 traffic volume counts.

Proposed Activities for FY23: Collect approximately 9,600 traffic volume counts.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$900,000	\$390,465	\$885,000

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000478 – CONTRACT COLLECTION OF VEHICLE CLASSIFICATION COUNTS

Purpose and Scope: To provide contract collection of 48-hour vehicle classification counts and 48-hour video counts. These counts include multi-lane, undivided State Highways, many of the high volume multi-lane HPMS sample segments within urban areas, and certain Interstate and freeway counts with significantly high volumes and truck traffic. The contractor will perform the counts supporting all ongoing urban transportation studies and HPMS segment locations.

Accomplishments for FY22: Collected 494 vehicle classification counts and 118 video classification counts.

Proposed Activities for FY23: Collect approximately 580 vehicle classification counts and 140 video classification counts.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$850,000	\$587,977	\$850,000

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000479 – TRAFFIC DATA COLLECTION

Purpose and Scope: To collect traffic data, including vehicle classification counts, railroad crossing delay studies, and other special data collection efforts. The traffic counting effort will include normal coverage counts (48-hour counts), weekend counts, and holiday counts.

Accomplishments for FY22: Classification counts were collected at 2,185 stations by Department personnel. Speed data was collected at all classification sites. Special counts, including holiday counts, were also conducted. Additional data collection equipment was purchased as part of the replacement cycle.

Proposed Activities for FY23: Traffic Information Systems will conduct approximately 2,300 48-hour machine classification counts, including some weekend and holiday samples. Speed data will be collected at all classification sites. Special counts will be performed as requested. One hundred short-term counters will be upgraded with new equipment.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$575,000	\$403,276	\$525,000

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000480 – ASSET MANAGEMENT SYSTEM

Purpose and Scope: To provide for all charges accruing to the Asset Management Program within the Department. It may include charges for data reduction, organization, and presentation, associated transportation costs, travel and subsistence, materials, supplies and services, contracts, salaries, equipment and/or rental fees, and all other charges necessary and pertinent to the proper function of the Asset Management Program. The Asset Management System (AMS) is responsible for the coordination of activities required to achieve the highest quality pavements, bridges, and other assets throughout the state at the lowest feasible cost. The AMS will coordinate the collection and reporting of assets throughout the Department to ensure the requirements of MAP-21 and the FAST Act are being met. The legislation requires that all states report the condition of their pavement and bridge assets on the enhanced National Highway System (NHS). MAP-21 requires states to maintain their assets in a state of good repair. These assets may or may not be located within the right-of-way of the state highway system.

Accomplishments for FY22: The Pavement Performance and Imagery Data Collection contract was signed, and collection and reporting of the APHN and part of the Non-APHN was completed. A comprehensive QA/QC analysis was performed on the data and imagery. The parameters used in Deighton's Total Infrastructure Management System (dTIMS) to perform pavement and bridge data analyses were refined and adjusted for the Arkansas system.

Proposed Activities for FY23: The parameters used in dTIMS to perform pavement and bridge data analyses will continue to be refined and adjusted for the Arkansas system. Further pavement data collection by the vendor will provide pavement performance data and imagery on the NHS and various APHN routes, as well as approve the new pavement management segments.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$350,000	\$402,372	\$350,000

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000481 – ASSET MANAGEMENT SYSTEM ANALYSIS

Purpose and Scope: To provide system-level pavement condition information as well as system-level forecasts on future trends. This job does not cover project-level analyses. This includes any use of software packages that provide system projections (such as dTIMS), as well as any by-hand analysis of the system as a whole.

Accomplishments for FY22: New pavement management segments have been developed/refined and are under review. The “sandbox” was used for training purposes with dTIMS. The Department has moved to a 3D data collection system for pavement distresses and is in the process of updating the internal dTIMS parameters used in the pavement analyses. Asset Management hired a database analyst. A consultant was hired to complete the dTIMS analysis for the 2022 TAMP update.

Proposed Activities for FY23: System performance will be further modeled and will be loaded into the dTIMS database. Analysis variables, methodologies, and scenarios will be further refined and corrected. Modifications to the internal dTIMS parameters used in pavement analyses based on the new 3D data will be completed. Once approved, the newly created pavement management sections will be loaded into dTIMS.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$75,000	\$91,799	\$125,000

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000482 – DATA QUALITY MANAGEMENT PLAN (DQMP)

Purpose and Scope: To implement the Department's Pavement Performance Data Quality Management Program (DQMP) in compliance with Federal Highway Administration's requirements (23 CFR 490.319). This activity will involve the creation and implementation of data collection, processing, and reporting standards and protocols. It is expected that these protocols will lead to better compliance with data standards, improved completeness, accuracy, consistency of data, and increased data credibility within the Department. This line item will provide for all charges accruing to the DQMP. This project may include charges for data collection, data reduction, organization and presentation, travel subsistence, materials, supplies and services, contracts, salaries, equipment and/or rental fees, and all other necessary activities pertinent to the proper function of the DQMP.

Accomplishments for FY22: Initial control sites were identified, and manual distress data collection was completed. ARAN equipment operators were trained by equipment manufacturer. Data processors and analysts received training in pavement distress software. Impacts from COVID-19 limited progress on many aspects of DQMP objectives.

Proposed Activities for FY23: Continue to develop the necessary protocols, control sites, and in-house training for distress raters, equipment operators, data processors, and data analysts as required for implementation of the DQMP.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$100,000	\$49,973	\$100,000

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000483 – PAVEMENT STRUCTURAL TESTING

Purpose and Scope: To collect and provide structural qualities of the pavement for analysis purposes. A falling weight deflectometer (FWD) is used to perform non-destructive dynamic testing, which simulates traffic by applying a load to the pavement surface and providing deflection values of the pavement, imparting structural information on the remaining life, suggested overlay thickness, and resilient modulus. FWD testing can provide the variables for determining the effective static k-values, joint load transfer efficiency, and void detection in the pavement structure. FWD data will be collected on pavements based on specific job requests that can range from pre-construction sites, weight-restricted roads, research projects, and pavement monitoring.

Accomplishments for FY22: FWD data was collected on bond jobs, construction jobs, weight-restricted routes, Fayetteville shale routes, research projects, and other areas where pavement preservation or rehabilitation was considered. The normal calibration and maintenance schedule resumed this year after a delay due to the COVID-19 pandemic and subsequent travel restrictions.

Proposed Activities for FY23: Deflection data will be collected as requested for construction jobs and will continue to be collected for research projects, weight-restricted routes, and Fayetteville shale routes for monitoring purposes. The Department will also collect deflection data on proposed State Transportation Improvement Plan (STIP) jobs. It is anticipated that the FWDs will resume the alternating year schedule with respect to destinations for calibration and preventative maintenance. Consideration is being given to replacing one FWD with either a new hydraulic or electric FWD.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$200,000	\$157,687	\$215,000

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000484 – PAVEMENT FRICTION DATA COLLECTION EQUIPMENT

Purpose and Scope: To provide the Department with information regarding the skid resistance of pavement surfaces around the state. The Pavement Friction Tester (PFT) will provide skid number (SN) data from the National Highway System (NHS), state-maintained routes, and special projects to monitor pavement performance and subsequently maintain a database of historical records. The Dynamic Friction Tester (DFT) and the Circular Track Meter (CTM) will be utilized in locations where the PFT cannot safely collect the needed information. The SN data will allow the Department to proactively identify friction problems in pavements through early detection of weathering and/or accelerated deterioration of the pavement. The PFT lends itself to accident site investigation and the determination of International Friction Index (IFI) values when coupled with additional devices for the measurement of macrotexture. Currently, one PFT, one DFT, and one CTM are used to measure skid resistance.

Accomplishments for FY22: The PFT collected data requested by the Traffic Safety Section, Maintenance Division, and various District offices and provided SNs of pavement surfaces. The DFT and CTM were used to collect friction data in locations where the geometry of the highway prevented collection using the PFT. The data collected was processed and loaded into a statewide database and mapped for internal use. The normal statewide network data collection was interrupted due to the COVID-19 pandemic and a nationwide shortage of tires.

Proposed Activities for FY23: Pavement friction data will be collected as requested. The DFT and CTM will continue to be utilized for friction data collection where the geometry of the highway prevents collection using the PFT. The data collected will be processed and loaded into a statewide database and mapped for internal use. It is anticipated that normal statewide network data collection will resume. Data from the PFT will now be collected in the left wheel path instead of the right.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$75,000	\$87,881	\$75,000

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000485 – NONDESTRUCTIVE SUBSURFACE INVESTIGATION

Purpose and Scope: To collect nondestructive subsurface data for pavement structure and other underground structures analyses. Ground Penetrating Radar (GPR) is a nondestructive evaluation tool that scans the subsurface using radio waves. The Department's two GPR units, Subsurface Analysis Vehicle (SAV) and Ground-coupled Radar (GcR), are maintained and operated by the Asset Management Section. The SAV probes pavement layers at highway speeds using antennas mounted in front of the vehicle. The information from the SAV is used to determine the thickness of pavement layers as well as to detect underground utilities and voids in the pavement structure. This information is essential for other structural analyses, such as Falling Weight Deflectometer (FWD) analysis. In order to better calibrate pavement layer thickness data obtained by the GPR equipment, efficient and judicious use of core data is utilized. Coring data is obtained via coring machines owned and operated by Department personnel and charged to this project number. Both SAV and GcR provide continuous coverage of subsurface structure. The GcR is primarily used to detect underground utilities and voids in the right of way, determine the thickness of concrete cover and the overall thickness of bridge decks, investigate the alignment of dowel bars, and determine core locations for concrete and HMA structures. This line item will provide for all charges accruing to nondestructive subsurface investigations. This project may include charges for data collection, data reduction, organization and presentation, travel subsistence, materials, supplies and services, contracts, salaries, equipment and/or rental fees, and all other necessary activities pertinent to the proper implementation of nondestructive subsurface investigations.

Accomplishments for FY22: The SAV finished collecting pavement thickness data for weight-restricted routes and other roads in the APHN. Additionally, SAV data was collected and analyzed for FWD analyses. The GcR system continued to assist in various project level surveys for the Districts, as well as the State Aid, Right of Way, and Environmental Divisions. A coring rig was also acquired in order to supplement GPR layer data.

Proposed Activities for FY23: The SAV will continue to collect data to support other Divisions and Districts for QC, maintenance, construction efforts, and project-level FWD analyses. A new SAV will be purchased due to increasing mileage on the older SAV. A 3D Radar system from 3D Radar is currently being evaluated for possible purchase.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$150,000	\$92,112	\$150,000

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000486 – AUTOMATIC ROAD ANALYZER (ARAN)

Purpose and Scope: To collect pavement performance data, including, but not limited to, roughness, rutting, cracking, curve, grade, and geographic location. In addition to the performance data, the ARAN also collects right-of-way imagery. A 3D pavement imaging system provides high-definition 3D imagery of the pavement surface that can be processed into pavement, range, and intensity images, with the range image providing a depth (3D) component that allows enhanced pavement cracking detection. Pavement performance data is processed and imported into the Pavement Management System. The data is also provided to the Department ad-hoc and through the Multimedia-based Highway Information System (MMHIS). This project may include charges for data collection, data reduction, organization and presentation, travel subsistence, materials, supplies and services, contracts, salaries, equipment and/or rental fees, and all other necessary activities pertinent to the proper function of the ARAN.

Accomplishments for FY22: Previous issues with the ARAN purchased in 2021 were resolved, and collection efforts were continued. The ARAN collected pavement performance data and imagery on several Interstates and other routes on the Arkansas Primary Highway Network (APHN).

Proposed Activities for FY23: The FY23 data collection effort is anticipated to include the Interstate, other APHN routes, and as much of the remaining system as is possible. All software and equipment maintenance are handled in this project as well as insurance premiums for the ARAN.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$350,000	\$217,946	\$300,000

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000487 – PAVEMENT MANAGEMENT SYSTEM

Purpose and Scope: To maintain a Pavement Management System (PMS) for state highways in a systematic process that provides, analyzes, and summarizes information for use in selecting, scoping, and implementing cost-effective pavement preservation and construction, rehabilitation, and maintenance programs. The PMS functions include, but are not limited to, database development, pavement evaluations, establishment of preferable maintenance treatment strategies, and the identification of projects for consideration in developing statewide transportation plans and improvement programs.

Accomplishments for FY22: Data from the NHS and Secondary Systems were used to report to FHWA and provide to District offices and other Divisions. The PMS database was used to provide the most current International Roughness Index (IRI), rutting, faulting, cracking, and geometric data on the state-maintained highway network to the Highway Performance Monitoring System (HPMS). The data from all routes collected with the ARAN have been entered into a PMS database, and the images were loaded into the Multimedia-based Highway Information System (MMHIS).

Proposed Activities for FY23: The ARAN data collection process will continue with the data incorporated into the PMS database for use in the dTIMS asset management software. Work will continue on enhancing pavement deterioration curves for use in dTIMS to allow more reliable analyses of the highway system. The QC/QA procedures incorporated in the Vision software will continue to be developed and implemented to ensure the quality and accuracy of ARAN-provided distress data. This data will be used to establish pavement cracking indices in combination with IRI and rutting data to develop a pavement condition index. The PMS database will be used to provide necessary data for the HPMS. Interstate performance data provided through the Pavement Performance and Imagery Data Collection contract will be checked for quality acceptance, consistency, and reasonableness, and provided for the HPMS. All data used to fulfill the MAP-21 pavement performance requirements will be reported through the HPMS. Asset Management personnel will continue to assist the Department with the Preventive Maintenance Plan (PMP), including the IRI, rutting, and cracking data, along with assistance in selecting the location of preventive maintenance treatments. Support for research projects administered by the Research Section and state universities will be provided as required.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$300,000	\$137,167	\$300,000

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000488 – PAVEMENT ENGINEERING DATA PROCESSING

Purpose and Scope: To assemble and collate all data collected for the Asset Management System (AMS) and to apply quality assurance measures to that data. This includes but is not limited to ARAN, FWD, GPR, and PFT data. This project is limited to the typical processing of information and does not cover any data analysis.

Accomplishments for FY22: The 3D ARAN data collected in-house was processed, and the contract data was imported. FWD data was processed and reported to Design, Construction, Permits, and Research. GPR data was processed to support FWD analysis and reported to Construction. PFT data was processed and reported to Traffic Safety and various Districts.

Proposed Activities for FY23: Data from ARAN, FWD, GPR, and PFT will continue to be processed. Quality-control measures, process flows, and tools, both inside and outside of Vision software, will need continued development to ensure that these data elements are high quality. Data-driven quality control measures and processes will also continue to be implemented. The database that was created will be expanded to house all other data the section has collected and processed; it will also be used to augment quality control and data analysis as well as facilitate upgrades to tools such as the MMHIS.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$270,000	\$297,465	\$270,000

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000489 – PAVEMENT ENGINEERING DATA ANALYSIS

Purpose and Scope: To analyze the various types of data collected on the National Highway System (NHS), state-maintained routes, and through special projects. Evaluating the collected data provides pavement surface and structural properties, including pavement texture properties, right-of-way imagery, cracking, pavement profile properties, pavement structural properties, sub-surface properties, and pavement friction characteristics. According to MAP-21, the Department is required to report International Roughness Index (IRI), rutting, faulting, and cracking for asphalt and concrete pavements.

Accomplishments for FY22: The data from the ARAN was evaluated to determine pavement conditions and was reported for the Preventive Maintenance Plan (PMP) and the HPMS. The data from the FWD was used to perform an analysis of overweight loading on restricted routes for the Highway Police's Permit Section and the analysis on the Fayetteville Shale (FS) Maintenance Assessment and Fee Calculation for 2021-2022. The data was also provided to Roadway Design to aid in their decision-making processes. The GPR vehicle provided sub-surface properties when needed to supplement layer data and void detection for FWD analysis as well as initiating the collection of network-level data. Thickness data was analyzed from the Interstate Work Priority list, weight-restricted routes, and others. A series of computer programs continued to be developed for analysis and visual representation of the analyzed and raw GPR data. The Pavement Friction Tester (PFT) collected skid numbers for pavements as requested. Skid numbers were reported to the Traffic Safety Section and the Maintenance Division when requested. The data was also used for development of the State Transportation Improvement Plan (STIP). It was also used to analyze project-level jobs such as Interstate Rehabilitation jobs, weight-restricted routes, STIP projects, and research projects.

Proposed Activities for FY23: The Pavement Engineering Data Analysis group will analyze network-level data through the operation of the ARAN, FWD, GPR, and PFT equipment. Data will also be analyzed as needed for project-level jobs such as Interstate Rehabilitation, STIP, state aid jobs, weight-restricted routes, active poultry industry routes, FS routes, and research projects. This data is expected to provide a more current representation of the pavement condition throughout the state. The GPR data from weight-restricted routes and the network level GPR data will continue to be analyzed.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$600,000	\$330,419	\$700,000

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000490 – TRANSPORTATION ASSET MANAGEMENT PLAN

Purpose and Scope: To develop and implement the Department's TAMP in compliance with the Federal Highway Administration's requirements (23 CFR Part 515). This activity will involve the compilation of all required TAMP-related information, identification of additional assets to be included in future TAMP reports, and coordination with internal and external stakeholders to cost-effectively manage the infrastructure to achieve the Department's strategic goals. This project will provide for all charges accruing to the TAMP. It may include charges for data reduction, organization and presentation, travel subsistence, materials, supplies and services, contracts, salaries, equipment and/or rental fees, and all other necessary activities pertinent to the proper function of the TAMP.

Accomplishments for FY22: The Department's fully compliant TAMP was approved by the FHWA – Arkansas Division on August 28, 2019. The annual submittal included documentation demonstrating consistency and implementation between the TAMP and the Department's investment strategy. A contract was signed to have Deighton run the TAMP-related dTIMS analysis. Also included in this contract was dTIMS training provided by Deighton. The quadrennial TAMP update was started.

Proposed Activities for FY23: Submit quadrennial TAMP update along with annual implementation documentation. Deighton will provide dTIMS analysis for the TAMP.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$200,000	\$26,747	\$50,000

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000491 – MULTIMEDIA-BASED HIGHWAY INFORMATION SYSTEM

Purpose and Scope: The Multimedia-based Highway Information System (MMHIS) is designed to provide the Department's users with highway imagery collected by the ARAN along with data from various Department databases. The data is synchronized with the imagery, and MMHIS is made accessible to all users who are connected to the Department's fiber-optic network. It is also accessible across the state at offices with the MMHIS data and imagery for their area of responsibility loaded on a local hard drive. This allows Department personnel to review the roadway and other associated features without the travel required for a field investigation. The scope of work includes continuous updates to the MMHIS along with expanding the number of MMHIS users within the Department.

Accomplishments for FY22: Redevelopment and migration of the MMHIS application and program to a SQL Server environment, which will create a more robust platform and aid in the development of new data reporting tools, continued. The development and enhancement of a web version of MMHIS were also completed.

Proposed Activities for FY23: Make enhancements to the new MMHIS application and continue to use the program to process the data from the ARAN.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$275,000	\$81,899	\$200,000

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000494 – HIGHWAY PERFORMANCE MONITORING SYSTEM (HPMS)

Purpose and Scope: To investigate, design, develop, document, and implement a continuing system capable of assessing the performance of the State Highway System with respect to safe, efficient, and economical movement of people and goods, and to determine how existing highway programs and policies impact highway performance. The scope of this project includes developing and monitoring a panel of sample sections year to year, making necessary updates when changes occur in the physical highway conditions, and reporting this data to the FHWA annually, along with statewide summaries of mileage travel by functional system and rural, small urban and urbanized areas.

Accomplishments for FY22: The HPMS data package was submitted via the HPMS software in June. Field validations were performed on approximately 1/3 of the HPMS sample sections, and ongoing sample adequacy checks and reviews were conducted. HPMS samples were reviewed to ensure they were compatible with the All Roads Network of Linear Referenced Data (ARNOLD). HPMS data was developed and assessed for quality. Field data collection was conducted to ensure all HPMS data fields were reported.

Proposed Activities for FY23: Software applications will be developed to aid in quality control and analysis of the HPMS data prior to submittal. Field reviews of sample sections will be continued, and sample adequacy will be maintained. Preparations will be made to ready the Department's data sources for inclusion in the upcoming HPMS reassessment that will allow data from the HPMS to be used to evaluate the state of the NHS according to the MAP-21 data reporting requirements and the Department's TAMP. Additional field data collection will be performed as needed. Coordination will be provided, as needed, to Traffic Data Staff during the procurement process for the Traffic Database Management Software.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$260,000	\$186,022	\$250,000

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000495 – HIGHWAY INVENTORY AND ANALYSIS

Purpose and Scope: To provide the Department with data for a more precise means of evaluating the State Highway System in response to users' needs. A database will be maintained for information pertaining to the individual roadway's footprint and design. The scope of the inventory encompasses the gathering and compiling of information used in the needs evaluation process for each highway section. The inventory will be used to update and maintain the Department's highway road log.

Accomplishments for FY22: Activities included the continuation of updating and maintaining roadway inventory data and the job record database. Public road mileage calculations and updates were performed utilizing GIS and mapping-based technologies. GPS-enabled tablets were successfully used to perform various data collection efforts.

Proposed Activities for FY23: Development of a new roadway inventory database designed with a modular concept that will work in conjunction with the Department's ARAN data collection vehicle, and the new ARNOLD and asset management efforts will continue. Develop tools to aid in the updating of the database. Continued research and development of the GPS-enabled tablets for field data collection and reporting. Additional enhancements will be made to current quality control and analysis.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$270,000	\$133,144	\$125,000

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000496 – SYSTEM INFORMATION – PROGRAM COORDINATION

Purpose and Scope: To provide administrative support for work activities related to System Information, including administrative maintenance and reporting of the National Highway System (NHS), Functional Classification, and U.S. Route Numbering. Additional activities involve initiating changes to the State Highway System through the Highway System Change Minute Order process, administrative maintenance, and analysis of the Arkansas Primary Highway Network (APHN).

Accomplishments for FY22: Provided administrative support and analysis of the APHN and published annual reports and maps. Provided administrative support for the Highway System Change Minute Order through the U.S. Route application process with AASHTO. Continued cross-training programs to aid in staff development for the System Information Group. Updates were made to the off-system inventory to ensure ARNOLD compatibility.

Proposed Activities for FY23: Provide administrative support and analysis of the APHN and publish annual reports and maps. Provide administrative support for the Highway System Change Minute Order through the U.S. Route application process with AASHTO. Continue cross-training programs to aid in staff development for the System Information Group and updates to the off-system inventory to ensure ARNOLD compatibility.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$75,000	\$10,315	\$50,000

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000497 – PROFILOGRAPH STUDIES

Purpose and Scope: To provide the Department with the collection and analysis of pavement smoothness data. This project includes funding for refurbishing, recalibrating, and replacement of the Profilograph if needed. This project includes the purchase of equipment, travel, and other necessary expenditures incurred in support of the Design and Construction Divisions, Districts, and the Research program.

Accomplishments for FY22: Successful evaluations were completed at various construction sites throughout the state, both currently under construction and long completed. Data was collected and analyzed using a high-speed profiler, walking profiler, and software.

Proposed Activities for FY23: Smoothness verification jobs for the state will be done, and all equipment currently owned for Profilograph Studies will continue to be utilized.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$100,000	\$7,802	\$100,000

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Other Federal Funds

OTHER FEDERAL FUNDS FY23 Funding Summary

Job No.	Project Name	Federal	State Match	Other Match	Total Cost
NEVI Funds		\$293,518	\$73,380	\$0	\$366,898
Carbon Reduction Program Funds		\$240,000	\$60,000	\$0	\$300,000
STBGP GT 200K Funds		\$504,000	\$0	\$126,000	\$630,000
060630	CARTS Planning Study	200,000	0	50,000	250,000
110273	WMATS Transportation Planning	104,000	0	26,000	130,000
012193	NARTS Planning Study	200,000	0	50,000	250,000
CMAQ Funds		\$213,000	\$0	\$53,250	\$266,250
110481	WMATS Air Quality - MPO	165,000	0	41,250	206,250
012178	CARTS Ozone Awareness	48,000	0	12,000	60,000
Total Other Federal Funds		\$1,250,518	\$133,380	\$179,250	\$1,563,148

012432 – ARKANSAS ELECTRIC VEHICLE INFRASTRUCTURE DEPLOYMENT PLAN

Purpose and Scope: The National Electric Infrastructure (NEVI) Formula Program Guidance, released on February 10, 2022 requires each State to submit an Electric Vehicle (EV) Infrastructure Deployment Plan (referred to herein as the Plan) to describe how the State intends to use its apportioned NEVI Formula Program funds. The Department is preparing a state-specific Plan that will determine how the state administers federal funding in accordance with NEVI requirements and state laws.

Accomplishments for FY22: The Department and Arkansas Department of Energy and Environment (E&E) created a Public Engagement plan. This effort consists of creating the Arkansas Electrification Working Group, the Department landing webpage, a Public Involvement Meeting, and presenting at various stakeholder meetings.

Proposed Activities for FY23: The Plan will undergo internal reviews by the Department, E&E, and the Joint Office. The final Plan will be submitted on August 1st, 2022. Following plan approval, the Department will continue to develop the state's procurement process in coordination with its state agency partners and with input from stakeholders. Plan updates will occur as required.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$0	\$366,898

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012XXX – CARBON REDUCTION STRATEGY

Purpose and Scope: To develop a Carbon Reduction Strategy (CRS), consistent with current statutory and regulatory requirements as established by the Infrastructure Investment and Jobs Act (IIJA) and related guidance. Consultant services will be utilized for this work. Staff time will be charged to Jobs 402 and 414, as appropriate.

Accomplishments for FY22: No activity.

Proposed Activities for FY23: A scope of work and fee estimate for use of on-call consultant planning services will be developed. Anticipated activities include project kickoff, stakeholder coordination, and development and review of early deliverables. The deadline for submitting a CRS is November 15, 2023, and some work activities are expected to carry over to FY24.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$0	\$0	\$300,000

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060630 – CARTS PLANNING STUDY

Purpose and Scope: To supplement the Metropolitan Planning Funds in the CARTS area to conduct the 3-C Transportation Planning Process as required by 23 USC 134.

Accomplishments for FY22: STBGP 200K funds were used to support various work tasks identified in the CARTS UPWP.

Proposed Activities for FY23: Portions of the transportation planning activities described in the CARTS UPWP will be accomplished using STBGP GT 200K Funds.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$250,000	\$0	\$250,000

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110273 – WMATS PLANNING STUDY

Purpose and Scope: To supplement the Metropolitan Planning Funds in the WMATS area to conduct the 3-C Transportation Planning Process as required by 23 USC 134.

Accomplishments for FY22: STBGP 200K funds were used to support various work tasks identified in the WMATS UPWP.

Proposed Activities for FY23: Portions of the transportation planning activities described in the WMATS UPWP will be accomplished using STBGP GT 200K Funds.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$130,000	\$3,321	\$130,000

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012193 – NARTS PLANNING STUDY

Purpose and Scope: To supplement the Metropolitan Planning Funds in the NARTS area to conduct the 3-C Transportation Planning Process as required by 23 USC 134.

Accomplishments for FY22: STBGP GT 200K funds were used for transportation planning activities in the NARTS area for the following Work Elements: General Development and Comprehensive Planning, Short- and Long-Range Transportation Planning (including ITS-TSMO), and Transportation Improvement Program development.

Proposed Activities for FY23: Portions of the transportation planning activities described in the NARTS UPWP will be accomplished using STBGP GT 200K funds.

FY22 Programmed Amount	FY22 Expenditure	FY23 Estimated Cost
\$250,000	\$163,873	\$250,000

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110481 – WMATS AIR QUALITY (CMAQ)

Purpose and Scope: To supplement the Metropolitan Planning Funds in the WMATS area to conduct the air quality planning activities in the UPWP.

Accomplishments for FY22: Coordination with ADEE, EPA, and Memphis-Shelby County air quality planning groups continued in the West Memphis-Marion area to ensure that the requirements of the current NAAQS attainment status are being met.

Proposed Activities for FY23: Coordination activities listed above will continue.

FY22 Programmed Amount	FY22 Expenditures	FY23 Estimated Cost
\$206,250	\$10,689	\$206,250

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012178 – CARTS OZONE AWARENESS (CMAQ)

Purpose and Scope: To conduct air quality planning activities in the CARTS Area.

Accomplishments for FY22: The use of CMAQ funds in the CARTS area continued the cooperative effort among the MPO, the Department, ADEE, and other agencies for an Awareness and Public Education campaign stressing voluntary actions to reduce seasonal emissions (ridesharing, refueling during the evening, etc.). Public relations, an advertising campaign, and notifications to local media and major employers of potential high ozone days were continued.

Proposed Activities for FY23: Coordination activities listed above will continue.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$60,000	\$16,401	\$60,000

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PART II

RESEARCH

**PART II
RESEARCH
Financial Summary Y560**

Project Name	Federal SPR	State Match	100% State	Total Cost
PART II SPR FUNDS AVAILABLE				
FHWA FFY22	6,406,175	0	0	6,406,175
Previously allocated funds*	less 1,264,573	0	0	1,264,573
Total Available for Programming	5,141,602	1,285,400	0	6,427,002
Programmed Amount	less 4,777,600	1,194,400	0	5,972,000
Contingency	364,002	91,000	0	455,002
State Program			285,000	285,000

Breakdown of Previously Allocated Funds*

NCHRP Contribution	708,290			708,290
TPF-5(473) TRB Core Program Services	141,283			141,283
AASHTO TSP Technical Services Program**	164,000			164,000
Transportation Pooled Fund Studies***	251,000			251,000
*All programs listed are 100% federally funded.	\$1,264,573	\$0	\$0	\$1,264,573

AASHTO TSP Technical Services Program**

AASHTO re:source	20,000			20,000
Development of AASHTO Materials Standards (DAMS)	10,000			10,000
Equipment Management Technical Services Program (EMTSP)	5,000			5,000
Highway Safety Policy and Management Technical Service Program (SAFETY)	10,000			10,000
Load and Resistance Factor Design (LRFD) Bridges and Structures Specification Maintenance (LRFDSM)	15,000			15,000
National Transportation Product Evaluation Program (NTPEP)	20,000			20,000
National Operations Center of Excellence (NOCoe)	15,000			15,000
Transportation Curriculum Coordination Council (TC3)	20,000			20,000
Transportation System Preservation Technical Service Program (TSP2)	20,000			20,000
Transportation and Civil Engineering Program (TRAC) and Roadways Into Developing Elementary Students Prc	14,000			14,000
Transportation Performance Management Program (TPM)	15,000			15,000
	\$164,000	\$0	\$0	\$164,000

Transportation Pooled Fund Studies***

TPF-5(375) Pavement Preservation Techniques (MnROAD/NCAT Joint Study – Phase II)	50,000			50,000
TPF-5(399) Improve Pavement Surface Distress - Phase II (FY20-24)	20,000			20,000
TPF-5(463) Pavement Surface Properties Consortium: Phase III	20,000			20,000
TPF-5(467) Research Project Tracking System - Phase II	46,000			46,000
TPF-5(488) Southeast Transportation Consortium - Phase II (FY21-25)	15,000			15,000
TPF-5(486) Steel Bridge Research, Inspection, Training and Education Engineering Center - S-BRITE	100,000			100,000
	\$251,000	\$0	\$0	\$251,000

PART II - RESEARCH
FISCAL YEAR 2023 (Y560)

Project	Work Description	Federal	State	Total
IN-HOUSE RESEARCH AND SUPPORT ACTIVITIES				
00A456	Project Development	240,000	60,000	300,000
00B456	TRC Project Development	360,000	90,000	450,000
00C456	Program Support Services	240,000	60,000	300,000
00D456	Departmental Support Services	320,000	80,000	400,000
00E456	Library Services	120,000	30,000	150,000
00F456	Implementation of Research	120,000	30,000	150,000
00G456	Project Monitoring	80,000	20,000	100,000
00H456	Bridge Research	80,000	20,000	100,000
00J456	Materials Research	80,000	20,000	100,000
00K456	Pavement Research	80,000	20,000	100,000
00L456	Subsurface Drainage Research	40,000	10,000	50,000
00M456	Traffic Safety Research	120,000	30,000	150,000
00N456	Product Evaluation	160,000	40,000	200,000
00P456	Department Innovation	80,000	20,000	100,000
00R456	Performance Measures	4,000	1,000	5,000
00W456	Peer Exchange Team Activities	4,000	1,000	5,000
00X456	Local Research Initiative	20,000	5,000	25,000
Subtotal		2,148,000	537,000	2,685,000
CONTINUING TRC PROJECTS				
00F467	TRC1802 - Performance Based Asphalt Mix Design	160,000	40,000	200,000
00G467	TRC1803 - Mapping Subsurface Conditions for Transportation	160,000	40,000	200,000
00S467	TRC1902 - Capillary Pressure Sensor Testing to ID Curing Regimen	4,000	1,000	5,000
00T467	TRC1903 - Investigating Concrete Deck Cracking	56,000	14,000	70,000
00W457	TRC2001 - Determining Costs Attributable to Overweight Axle Loads	40,000	10,000	50,000
00Y457	TRC2002 - Investigating CSA Cement & Sacrificial Anodes	60,000	15,000	75,000
00Z467	TRC2003 - Data Driven Methods to Assess Transportation System Resilience	96,000	24,000	120,000
00N467	TRC2101 - Update ARDOT Workforce Forecasting	140,000	35,000	175,000
00S458	TRC2102 - Effect of Aggregate-Binder Compatibility on Performance of Asphalt Mixes In Arkansas	160,000	40,000	200,000
00J467	TRC2103 - Dev Guidelines for Evaluating Weathering Steel Bridges	120,000	30,000	150,000
00M467	TRC2104 - Maintenance Guidelines for MSE Walls	140,000	35,000	175,000
00D457	TRC2105 - Innovative Countermeasures to Deter Wrong-Way Driving	200,000	50,000	250,000
00L467	TRC2106 - UAS LiDAR for Developing Small Project Elevation Models	120,000	30,000	150,000
00K467	TRC2107 - Non-Nuclear Moisture Content And Density Determination	173,600	43,400	217,000
00A467	TRC2201 - Update to ARDOT Superpave Gyratory Compaction Spec	120,000	30,000	150,000
00B467	TRC2202 - Updating ARDOT Liquefaction Evaluation and Mitigation Procedures	120,000	30,000	150,000
00P467	TRC2203 - Low Shrinkage Concrete Mixtures for Arkansas	120,000	30,000	150,000
00Q467	TRC2204 - Materials and Testing Specifications for Drilled Shaft Concrete	120,000	30,000	150,000
Subtotal		2,109,600	527,400	2,637,000
NEW PROJECTS				
TBD	TRC2301 - Automated Work Zone System Specifications, Components, and Estimates	120,000	30,000	150,000
TBD	TRC2302 - Development of Pedestrian and Bicyclist Flow Volumes and Risk Factors	120,000	30,000	150,000
TBD	TRC2303 - Daily impacts of a bridge closure: A case study of the 2021 I-40 bridge in Arkansas	120,000	30,000	150,000
Subtotal		360,000	90,000	450,000
020050	Local Technical Assistance Program (LTAP)	160,000	40,000	200,000
Subtotal		160,000	40,000	200,000
TOTAL PART II FUNDING		\$4,777,600	\$1,194,400	\$5,972,000
TOTAL PART II BUDGET LESS LTAP TRANSFER		\$4,617,600	\$1,154,400	\$5,772,000

**PART II - RESEARCH
NON-SPR IN-HOUSE & CONTRACT ACTIVITIES
FY2023**

Job No.	Work Description	100% State Funds
00A556	Administration	225,000
00A557	Support Services	20,000
Subtotal		245,000
Continuing In-House Projects		
00X556	Engineering and Research Services (EARS)	40,000
Subtotal		40,000
Total Non-SPR In-House Budget (100% State)		\$285,000

00A456 – PROJECT DEVELOPMENT

Purpose and Scope: To provide for expenditures incurred for the Research and Development Program in efforts to develop or procure studies and projects that do not meet criteria for a TRC project. This project includes the development, preparation, review, and processing of research ideas for the Research Program. It includes Departmental meetings to discuss possible research needs, determination of actions needed to provide appropriate research of ideas, and writing work plans for research projects, studies, and proposals.

Accomplishments for FY22: This is a new project number for FY23.

Proposed Activities for FY23: Meetings will be held with Divisions and Districts to determine the Research needs of the Department. Ideas will be evaluated to determine actions for in-house research.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
NA	NA	\$300,000

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*Separated non-TRC related tasks from FY22 00B456.

00B456 – TRC PROJECT DEVELOPMENT

Purpose and Scope: To provide for expenditures incurred for the Research and Development Program in efforts to develop or procure studies and projects. This project includes the development, preparation, review, and processing of Problem Statements for the TRC Program. It includes library searches and maintenance, on-line information retrieval, preparation of problem statements, request for proposals, and writing of contracts and work plans for research projects, studies, and proposals. This project also includes expenditures related to the presentation of TRC funded research.

Accomplishments for FY22: Development was completed on four new TRC projects for FY22. Development began on new TRC projects for FY23. Three research projects were selected for inclusion in the FY23 TRC Program.

Proposed Activities for FY23: Three FY23 TRC Research projects are on schedule to begin in January 2023. Additional work will include the development of new TRC Research projects for FY24.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$450,000	Unknown	\$450,000

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*Separated non-TRC related tasks into FY23 00A456.

00C456 – PROGRAM SUPPORT SERVICES

Purpose and Scope: To cover costs associated with work directly related to the Research Program. This project may be used for support staff activities such as the development of the work program, payment processing, federal and fiscal reporting, inventory management, and regular staff update meetings.

Accomplishments for FY22: This is a new project number for FY23. Activities were completed in FY22 under various other projects, including inventory management, the development and approval of the FY23 Work Program, submittal of Annual Reports to FHWA, completion of the Census R&D survey, and other various reports required by Fiscal Services.

Proposed Activities for FY23: Planned activities include inventory management, the development and approval of the FY24 Work Program, submittal of Annual Reports to FHWA, completion of the Census R&D survey, and other various reports as required by Fiscal Services.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
NA	NA	\$300,000

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*Split FY22 00A457 in to FY23 00C456 & 00D456.

00D456 – DEPARTMENTAL SUPPORT SERVICES

Purpose and Scope: To cover costs associated with work done for Divisions, Districts, and other agencies that are not directly related to the Research Program. This project may be for site evaluations, pavement studies, design evaluations, failure mode investigations, forensic investigations, and other activities that may be required. Charges for data collection and evaluation, sample taking, conditioning, storing and delivering, and the conducting of tests may be included in this project. The project covers salaries and wages, travel costs, equipment purchase and equipment rental, report preparation, supplies and services, and other costs related to functions conducted in support of other programs.

Accomplishments for FY22: This is a new project for FY23. Activities were completed in FY22 under various other projects, including site evaluations, data collection, and traffic surveys.

Proposed Activities for FY23: Continued support when the Research Section is called upon for many relatively small jobs that are of concern to the Department or other agencies

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
NA	NA	\$400,000

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*Split FY22 00A457 in to FY23 00C456 & 00D456.

00E456 – LIBRARY SERVICES

Purpose and Scope: To cover library-related costs in service to the Department. The Research Librarian is assigned as the AASHTO publications Gatekeeper and will purchase and distribute AASHTO publications. The Research Librarian shall be responsible for entering new research projects into the TRB Research in Progress (RiP) database. Completed project reports will be distributed as directed by FHWA. New publications are cataloged and stored in the Library for department use. The Research Informer Newsletter is prepared in cooperation with Public Information. Subscriptions to OCLC (a full-service online cataloging tool) and EOS.Web (an integrated library system) are managed to maintain an up-to-date library. A subscription to Grammarly is purchased as a tool to assist the Section in creating, editing, and reviewing quality papers and reports.

Accomplishments for FY22: The Research Library continued collecting, cataloging, and distributing new publications to the Department. The RiP database was updated with new and ongoing project information. Final reports were distributed in accordance with SP&R guidance. Subscriptions to OCLC, EOS.Web, and Grammarly were renewed.

Proposed Activities for FY23: Further development of the library and resources will continue. New publications will continue to be distributed. The RiP database will be updated with new and ongoing project information. Final reports will be distributed. Subscriptions to OCLC, EOS.Web, and Grammarly will be renewed.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$100,000	Unknown	\$150,000

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*FY22 Programmed Amount and Estimated Expenditure - 00P456

00F456 – IMPLEMENTATION OF RESEARCH

Purpose and Scope: To provide for expenditures incurred in association with the implementation of research results. This project is used to accumulate expenses incurred for implementation tracking and monitoring. The preparation of reports reflecting findings, recommendations, and actions of any project results shall be included. Charges for documentation and dissemination of how products and processes function, roles they may fulfill, and their benefits to the Department's construction and maintenance programs shall be included. Activities designed to put research results into practice shall be included in this project. Any charges related to providing information to a user shall be included in this project. This project may include equipment purchase and rental, supplies and services, reproduction costs, and any other pertinent charges for the implementation of research findings. The documentation of activities related to monitoring the implementation of research results shall be included in this project.

Accomplishments for FY22: Five Transportation Research Committee (TRC) projects were completed.

Proposed Activities for FY23: Any implementation of research findings will be tracked and documented.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$150,000	Unknown	\$150,000

CONTACT: Vacant
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00G456 – PROJECT MONITORING

Purpose and Scope: To provide for expenditures incurred for the Research and Development Program in monitoring projects where charges to a specific project would be inappropriate. This project includes the review and preparation of responses to various specifications, letters, questionnaires, and general information requests. It may include arranging meetings and demonstrations. It may include expenditures for all follow-up actions on projects whose funding has otherwise expired. It includes all activities in monitoring contract studies and in-house studies where funding for the Department effort is not included elsewhere.

Accomplishments for FY22: The Research Section monitored or evaluated several projects to determine if updates were needed.

Proposed Activities for FY23: Work will include the continued monitoring of contract studies and in-house projects.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$100,000	Unknown	\$100,000

CONTACT: Vacant
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00H456 – BRIDGE RESEARCH

Purpose and Scope: To provide research or project monitoring regarding bridge decks, foundations, or railings. The work may include the assessment of the potential impacts of using LRFD and the Department specifications on deep foundation jobs and the longevity of polymer overlays of bridge decks to develop best practices guidance.

Accomplishments for FY22: Reviewed polymer bridge deck overlays to determine the quality of overlays over time.

Proposed Activities for FY23: Continue in-depth research into the implementation of LRFD in the Bridge Division and review of polymer overlays throughout the state.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$100,000	Unknown	\$100,000

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00J456 – MATERIALS RESEARCH

Purpose and Scope: To assist the Department in ensuring that all highway construction and maintenance materials meet established specifications. Additional responsibilities are reviewing and approving a blend or mixture ratio of materials for producing acceptable pavement. Soil investigations produce roadway and bridge foundation information for the design divisions.

Accomplishments for FY22: This is a new project number for FY23.

Proposed Activities for FY23: Activities may include any materials related research as needed by the Department.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
NA	NA	\$20,000

CONTACT: Vacant
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00K456 – PAVEMENT RESEARCH

Purpose and Scope: To provide for expenditures incurred for the research and performance monitoring of multiple pavement sections. Areas of research may include Alkali-Silica Reaction (ASR) treatment and monitoring, low volume route evaluation, calibration of the new pavement design guide, and Next 25 test sections evaluation.

Accomplishments for FY22: This is a new project number for FY23 to continue research and monitoring previously performed in specific jobs.

Proposed Activities for FY23: Continue monitoring test sections along Interstate 49 and Interstate 30 to evaluate the effectiveness of lithium and silane treatment products' application for mitigating damage or deterioration due to ASR. Determinations will be made for the next steps in the calibration of the new pavement design guide and the low volume route evaluation.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
NA	NA	\$100,000

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*FY22 Programmed Amount and Estimated Expenditure – Combined from 00K456 ASR Monitoring, 00M456 Low Volume Route Evaluation, 00N456 Calibration of the New Pavement Design Guide

00L456 – SUBSURFACE DRAINAGE RESEARCH

Purpose and Scope: To cover the cost of research, maintenance, departmental support services, fabrication equipment, and monitoring of pavement subsurface drainage. The purpose of this project is to evaluate the performance of pavement subsurface drainage under various conditions and make determinations regarding their effectiveness.

Accomplishments for FY22: Assisted with Districts' maintenance activities. Utilized an edge drain camera to provide support for District maintenance activities. The tethered camera transporter was used in investigations of roadway culverts.

Proposed Activities for FY23: Performance evaluation of existing subsurface drainage will continue to determine future construction and maintenance activities. Sites will be selected for testing the effects of concrete pavement joint maintenance and pervious asphalt pavement on subsurface drainage.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$100,000	Unknown	\$50,000

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*FY22 Programmed Amount and Estimated Expenditure - 00L456

00M456 – TRAFFIC SAFETY RESEARCH

Purpose and Scope: To improve safety across all modes of surface transportation. This project will cover all relevant traffic safety expenses, including purchasing equipment for data collection.

Accomplishments for FY22: Ongoing Wrong-Way Driver research and mumble strip monitoring continued. Various webinars were attended; topics included wrong-way driving, toward zero deaths, pedestrian and bicyclists' safety, use of the Highway Safety Manual, application of Crash Modification Factors, and work zone planning and safety. Proposed changes to the MUTCD were reviewed, particularly for impacts to signing at freeway exit ramps. Three traffic data collection devices were purchased, and two were deployed for testing. Calibration of their solar panels and batteries continues. The ability to deploy devices within a construction zone or on rural minor highways is still lacking. Installation of one device at I-430 is planned for FY22.

Proposed Activities for FY23: Countermeasures to deter wrong-way drivers will continue to be researched, and mumble strip use will continue to be monitored. Research will be prioritized based on the potential for crash, fatality, and injury reductions, which is aligned with national mandates and the Department's performance goals. Installation and monitoring of traffic data collection devices continue.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$150,000	Unknown	\$150,000

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*FY22 Programmed Amount and Estimated Expenditure - 00Q456

00N456 – PRODUCT EVALUATION

Purpose and Scope: To provide for expenditures incurred in support of the Product Evaluation Committee. All expenditures related to the evaluation of products or processes for highway construction and maintenance when the Research Section is called upon to evaluate a particular product will be included in this project. The preparation of reports reflecting evaluation findings and actions of the Product Evaluation Committee are included. Charges for documentation, dissemination of how products and processes function, roles they may fulfill, and their benefits to the Department's Construction and Maintenance Program may be included.

Accomplishments for FY22: Work included supporting the Product Evaluation Committee related to the evaluation of products or processes for highway construction and maintenance. Monitoring continued for trackless tack, safety edge, fog seal, polymer overlays, reflective crack prevention fabric, bond breaker fabric, chip seal fabric, concrete slip lining for culverts, HDPE slip lining for culverts, and polyethylene culverts.

Proposed Activities for FY23: Work includes supporting the Product Evaluation Committee related to the evaluation of products or processes for highway construction and maintenance when the Research Section is called upon to evaluate a particular product. Monitoring of current products for material performance will continue.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$300,000	Unknown	\$200,000

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*FY22 Programmed Amount and Estimated Expenditure - 00E456

00P456 – DEPARTMENT INNOVATION

Purpose and Scope: To support research conducted in-house by Research staff in order to advance the innovation and capabilities of the Department. Projects have included uses of Rice Hull Ash and determining potential applications for which UAS can be used by the Department. Further projects will be proposed by Research staff or assigned by the Staff Research Engineer as needs arise. Demonstrations of potential techniques, equipment, and materials may be included in this project

Accomplishments for FY22: In-house research opportunities in support of Department activities.

Proposed Activities for FY23: Continue in-house research already in progress. Conduct new research projects as Department needs arise.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$175,000	Unknown	\$100,000

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*FY22 Programmed Amount and Estimated Expenditure – Combined from 00U456 Unmanned Aircraft Systems (UAS) and 00V456 Department Innovation

00R456 – PERFORMANCE MEASURES

Purpose and Scope: To provide for expenditures incurred by developing a way to track performance measures of the Research Section. This project includes the development of a project tracking system, a review of procedures and policies in place to calculate Return on Investment (ROI), and other performance-related tasks.

Accomplishments for FY22: Participation in a Research Project Tracking System pooled fund study was authorized.

Proposed Activities for FY23: Activities are pending the conclusion of the pooled fund study.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$100,000	Unknown	\$5,000

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*FY22 Programmed Amount and Estimated Expenditure - 00C456

00W456 – PEER EXCHANGE TEAM ACTIVITIES

Purpose and Scope: To accumulate the charges incurred from participation in peer exchange activities as required by 23 CFR Part 420, Subpart B. This project may include costs incurred by Department personnel and by non-Department personnel named to participate in Peer Review activities. Costs may include salaries and wages, travel and subsistence, equipment purchase and rental, meeting facilities and amenities, and supplies and services as may be pertinent and necessary for the conduct of peer reviews of the research program in any state.

Accomplishments for FY22: Follow-up activities related to the 2019 Peer Exchange.

Proposed Activities for FY23: Potential Peer Exchange activity with Research Advisory Committee Region 2 states.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$5,000	Unknown	\$5,000

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*FY22 Programmed Amount and Estimated Expenditure - 00R456

00X456 – LOCAL RESEARCH INITIATIVE

Purpose and Scope: To establish and develop the new Local Research Initiative (LRI) program at the Department. Following in the footsteps of other state DOTs with similar programs, the LRI program in Arkansas will conduct short-term, limited, in-house research that focuses on issues facing local transportation agencies. City, county, regional, and state transportation professionals and agencies will be solicited annually for LRI research proposals. The number of projects selected for research each year will depend on the current number of in-house projects being conducted by the Department and funding availability.

Accomplishments for FY22: This program remains under development. It will be based on local needs determined by the LTAP Coordinator and Research staff.

Proposed Activities for FY23: Assistance will be given to local transportation agencies as needs are identified.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$50,000	Unknown	\$25,000

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TRC Projects

00F467 – TRC1802 – PERFORMANCE BASED ASPHALT MIXTURE DESIGN

Purpose and Scope: To develop procedures for implementing performance-based asphalt mixture design in Arkansas. The project will identify laboratory tests related to cracking resistance and resistance to moisture damage for implementation in current Department mixture design procedures. It will also develop a Performance-Based Mixture Design Handbook for use by the Department. The successful implementation of the project findings procured will result in consistently enhanced performance of asphalt mixtures placed in the field that will provide significant cost savings for ARDOT.

Accomplishments for FY22: The PI moving to a new position and the implementation of a new fiscal system by the university delayed progress. The following tasks were accomplished in FY22, including the contractor conducting a new request for bids, selecting a vendor, and procuring the equipment needed for full project implementation. A testing procedure and specimen preparation protocols were recommended to ARDOT for the implementation of a cracking test (IDEAL-CT) in the asphalt mixture design process.

Proposed Activities for FY23: Anticipated receipt of final report and selected testing equipment (IDEAL-CT) and setup for nine Districts and Materials Division Lab required to implement the findings and recommendations. The testing equipment will be transferred to ARDOT through the equipment capitalization procedure.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$250,000	Unknown	\$200,000

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00G467 – TRC1803 – MAPPING SUBSURFACE CONDITIONS FOR TRANSPORTATION

Purpose and Scope: To examine the applicability of using various geophysical methods to map problematic soil and rock conditions along highway alignments.

Accomplishments for FY22: Work continued on publications for the project, and a draft final was submitted. LiDAR surveys for the Round Mountain site were completed, and PI continued working on slope stability models.

Proposed Activities for FY23: Anticipated project reporting completion.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$150,000	Unknown	\$200,000

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00S467 – TRC1902 - CAPILLARY PRESSURE SENSOR TESTING TO ID CURING REGIMEN

Purpose and Scope: To investigate the use of a Capillary Pressure Sensor System (CPSS) to monitor the development of capillary pressures on the surface of fresh concrete bridge decks. This capillary pressure can be used to determine if plastic shrinkage cracking is likely to occur and alert the user when moisture should be added to the surface to prevent cracking. The sensor will be tested in the lab to verify its ability to measure plastic shrinkage pressures. Then lab testing will be performed to compare curing techniques. A field study will help determine if the sensor is useful in practice to the Department and contractors.

Accomplishments for FY22: The Implementation Report and Final Report were completed and submitted.

Proposed Activities for FY23: The project has ended, and the Final Report is under review.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$60,000	Unknown	\$00,000

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00T467 – TRC1903 – INVESTIGATING CONCRETE DECK CRACKING IN CONTINUOUS STEEL BRIDGES

Purpose and Scope: To examine bridge decks being constructed in Arkansas and determine the possible reasons for premature deck cracking. The project will look at existing Department procedures and compare them with the current state of practice. The three major areas under consideration are the concrete material, the bridge design, and current construction practices. The construction practices that are being considered are pouring sequence, bridge deck construction time interval, pour lengths, type of forms used, and construction loads incurred during the project. The bridge design portion will analyze the general bridge characteristics to relate potential bridge deck cracking to a bridge design type

Accomplishments for FY22: Bridge instrumentation and fieldwork have been completed. The final and implementation reports have been written and are currently under review.

Proposed Activities for FY23: Anticipated project reporting completion.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$75,000	Unknown	\$70,000

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00W457 – TRC2001 – DETERMINING COSTS ATTRIBUTABLE TO OVERWEIGHT AXLE LOADS

Purpose and Scope: To quantify the impacts of overweight axle loads on pavements in Arkansas for vehicles weighing more than the total gross vehicle legal load limit for their particular axle group combination. Pavement analysis will be conducted on a variety of highway functional classifications to assist in estimating costs attributed to overweight axle loads. A report discussing findings, including alternative cost recovery scenarios, will be developed.

Accomplishments for FY22: The study began on September 18, 2019. Available data, including warning tickets, were gathered and analyzed to determine hot spots on state highways. A survey was administered to other states, and the responses were reviewed. Additionally, DOT practices of border states were reviewed. Highway segments with existing falling weight deflectometer (FWD) pavement tests were identified, and additional testing was requested. Pavement analysis was begun on key highway segments.

Proposed Activities for FY23: Pavement analysis for key highway segments will continue, and a cost analysis will be completed. The analysis is intended to quantify the cost of keeping state highways, particularly for functional classifications of minor arterial and below, in a state of good repair. A final report will be prepared.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$30,000	Unknown	\$50,000

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00Y457 – TRC2002 – INVESTIGATIVE CALCIUM SULFOALUMINATE (CSA) CEMENT AND SACRIFICIAL ANODES

Purpose and Scope: To evaluate the effectiveness of CSA concrete for patching bridge decks. The project is also set to evaluate the effectiveness of sacrificial anodes in mitigating steel corrosion in bridge deck patching. The first part of the project involves finding a bridge in need of multiple patches, patching some using standard procedures, and patching the rest with CSA concrete and sacrificial anodes. The relative resilience of these patches will then be monitored over several years to determine the effectiveness of using CSA with sacrificial anodes on bridge decks. The second part of the project consists of conducting erosion potential testing on some bridges to better understand the complexities of bridge corrosion in Arkansas.

Accomplishments for FY22: The scope of the project is under review by the subcommittee, and subcontract work is under consideration.

Proposed Activities for FY23: Research into corrosion potential of bridges and the effectiveness of the sacrificial anodes and CSA concrete will continue, as well as looking into other potential bridge maintenance processes that may be beneficial to the department.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$60,000	Unknown	\$75,000

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00Z457 – TRC2003 – DATA DRIVEN METHODS TO ASSESS TRANSPORTATION SYSTEM RESILIENCE IN ARKANSAS

Purpose and Scope: To provide the Department with a foundational resiliency assessment of the State-maintained roadway network with considerations for passenger and freight traffic. Such an assessment will identify critical links and corridors using repeatable, data-driven methods and can be used to support project prioritization and selection.

Accomplishments for FY22: The project consisted of four major tasks to be completed during the project duration. These include a Comprehensive Review of Practice, Methodology Development and Application, Methodology Testing through Case Study, and Recommendations and Implementation. Everything through Task 3 has largely been completed. Work is still being done to apply the ranked resiliency metrics to the case studies, but it should be wrapping up soon. The project was granted a No Cost Extension with an End Date of 6/30/2022. Work and submission of the Final Report should conclude by that time.

Proposed Activities for FY23: Review of Implementation Plan and Final Report to take place at the time of project end date.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$100,000	Unknown	\$120,000

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00N467 – TRC2101 – UPDATE OF THE ARDOT WORKFORCE FORECASTING SYSTEM

Purpose and Scope: To re-estimate and expand the capabilities of the workforce prediction model and software. The project will develop new equations for the Construction Division's Workforce Forecasting System and find or write new software with the possibility of integrating artificial intelligence (AI) in a future interface.

Accomplishments for FY22: The contract was signed, and data acquisition began. A majority of the data acquisition and analysis has been completed. Job title mapping is mostly completed. This will be used for database creation which will support model estimation. The development of a new model has just begun.

Proposed Activities for FY23: Data acquisition and analysis efforts will continue to increase the robustness of the models as both annual forecasting and long-range prediction models are developed. Regression and Artificial Neural Network (ANN) models will be checked against historical data for accuracy. Short-term and long-range software will be developed using a project-level Full Time Equivalent (FTE) calculator, division-level workforce forecasting tool, and long-range workforce forecasting tool. CURSOR is the preliminary name for this software. A user guide with videos will be developed, evaluated, and tested. Finally, the implementation and final reports will be written and submitted for feedback.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$110,000	Unknown	\$175,000

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00S458 – TRC2102 – EFFECT OF AGGREGATE-BINDER COMPATIBILITY ON PERFORMANCE OF ASPHALT MIXTURES IN ARKANSAS

Purpose and Scope: To develop a draft specification including the implementable test protocols that ensure the use of durable and compatible aggregate-binder systems in the mix design phase for enhanced asphalt mixture performance in the field. This study requires comprehensive laboratory and field investigations that consider multiple factors involved, including various aggregate and binder types used in Arkansas. Also, this study will incorporate the effects of sandstone contents, anti-stripping agents, air voids, recycled asphalt pavement (RAP), etc., while evaluating the aggregate-binder compatibility. The successful implementation of research findings obtained from this study will lead to potential cost savings for the Department due to increased longevity, constructability, and reduced premature failures for asphalt mixtures placed in the field.

Accomplishments for FY22: Portions of the following tasks were accomplished in FY22, including conducting a literature review, selecting and collecting test samples (asphalt binders, additives, aggregates, and mixtures); processing test materials, evaluating the properties of asphalt binders, evaluating the properties of aggregates, investigating the performance properties of asphalt mixtures, gathering field performance data, analyzing test data, and producing deliverables.

Proposed Activities for FY23: The proposed activities for FY23 contain the continuation of the following tasks, including conducting a literature review, selecting and collecting test samples, processing test materials, evaluating the properties of asphalt binders, evaluating the properties of aggregates, investigating the performance properties of asphalt mixtures, gathering field performance data, analyzing test data, and producing deliverables.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$125,000	Unknown	\$200,000

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00J467 – TRC2103 – DEVELOPING GUIDELINES FOR EVALUATING WEATHERING STEEL BRIDGES

Purpose and Scope: To develop guidelines for bridge inspectors to evaluate the patina at unpainted weathering steel (UWS) bridges and recommend measures to restore sections that are experiencing corrosion if remediation is needed. UWS forms a surface patina to protect a structural member from corrosion. However, the patina sometimes does not develop, and the material is not maintenance free. UWS may require restoration through cleaning or painting. The research will review how other transportation agencies address problems with UWS and will review and track bridges using UWS in Arkansas. The final report will recommend design guidelines for using UWS based on environmental factors and will recommend remediation measures to address existing deficiencies.

Accomplishments for FY22: Unmanned Aerial Vehicle (UAV) equipment was purchased in FY21, and training for the use of that equipment was completed in FY22. The bridge inventory was reviewed, and bridges were identified for inspection. The research team attended UWS bridge inspections with bridge inspectors. A survey to learn about other state DOT practices regarding the inspection and maintenance of UWS bridges was initiated, and draft findings were prepared. Fieldwork to review and track the worst UWS bridges began.

Proposed Activities for FY23: The research will continue through FY23 with completion of fieldwork, development of a protocol for the proper use of weathering steel in future bridge designs, and recommendations for changes to the Department’s procedures regarding the inspection, maintenance, and use of weathering steel in bridges. Report preparation and staff training are expected to be completed.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$125,000	Unknown	\$150,000

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00M467 – TRC2104 – MAINTENANCE GUIDELINES FOR MSE WALLS

Purpose and Scope: To determine Best Management Practices (BMP) for Mechanically-Stabilized Earth (MSE) walls and to develop a maintenance inspector's guidebook which provides guidance to address potential signs of distress. The guidebook will aid inspectors in assigning a grade to each wall according to the ARDOT Maintenance Manual and detail the appropriate corresponding repairs. The guidebook will also provide guidance on the process and frequency of routine inspections, the level of effort required to repair or reconstruct any defects identified, and guidance regarding emergencies and significant weather events.

Accomplishments for FY22: A literature review was conducted, and information on MSE wall inspection and maintenance was gathered. An initial inventory of MSE walls was compiled, and a field trip to review MSE walls was completed. A survey of practices in other states is nearly complete.

Proposed Activities for FY23: The team will continue the process of cataloging Arkansas MSE walls, finding and inspecting candidate sites for research, and developing best management practices. The final report and implementation plan will be prepared.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$125,000	Unknown	\$175,000

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00D457 – TRC2105 – INNOVATIVE COUNTERMEASURES TO DETER WRONG-WAY DRIVING

Purpose and Scope: To assess new countermeasures being deployed by other state highway agencies and determine which may be cost-effective for Arkansas. This research is being conducted in response to an increase in serious and fatal crashes due to wrong-way drivers entering freeways at exit ramps. These trends continue even after a statewide traffic safety project (Job 012260) improved signing at exit ramps. Wrong-way crashes in Arkansas mirror trends throughout the United States that include over half of these crashes occurring at night and most wrong-way drivers being under the influence of alcohol or drugs.

Accomplishments for FY22: The research began in FY21 and continued in FY22 with Subcommittee meetings and a literature review. Equipment designed to detect and deter wrong-way driving incidents were researched, and cost information was collected. Manufacturers and service providers of Intelligent Transportation System (ITS) devices were contacted for more information. Devices were compared for their ability to cost-effectively detect and push information regarding wrong-way drivers. Traffic devices that deter wrong-way vehicle entry at exit ramps may be purchased in FY 22 for testing.

Proposed Activities for FY23: Additional traffic devices may be purchased, installed, and monitored in FY23, and their effectiveness analyzed. Countermeasures most appropriate for ARDOT will be identified. A report documenting these efforts and any recommendations will be completed.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$125,000	Unknown	\$250,000

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00L467 – TRC2106 – UAS LiDAR FOR DEVELOPING SMALL PROJECT ELEVATION MODELS

Purpose and Scope: To assess the accuracy and benefits of using Unmanned Aerial System (UAS) LiDAR to collect high-quality survey data for small area projects such as bridge replacements. The research team will coordinate with the Surveys Division to identify four bridge projects to serve as test sites. These sites will be chosen to represent bridge project conditions where the Surveys Division expects to utilize the UAS LiDAR post project. LiDAR data will be collected, processed, and then compared to terrain models developed utilizing conventional and UAS photogrammetric surveying methods to assess the accuracy of each. Through this research, the team will develop standard practices and procedures (best methods) for data acquisition.

Accomplishments for FY22: All site locations save for one have been flown, and LiDAR data for those sites has been collected at this time. Principal Investigators are currently processing data and comparing results to conventional survey methods.

Proposed Activities for FY23: Development of standard practices and procedures for data acquisition, as well as the development of deliverables, implementation plan and Final Reporting to take place at this time.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$125,000	Unknown	\$150,000

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00K467 – TRC2107 – NON-NUCLEAR MOISTURE CONTENT AND DENSITY DETERMINATION

Purpose and Scope: To determine if there are any alternative technologies to determine density and moisture content of aggregate material. If any non-nuclear technologies can determine density or moisture that are comparable to the nuclear density gauge, changing to non-nuclear would be a better alternative for the Department. This project will be broken down into two phases: density determination and moisture determination. The goal of this project is to find a method of determining both density and moisture content using one or two new methods.

Accomplishments for FY22: A literature review documenting various methods for moisture content and density determination was performed. Multiple potential alternatives to moisture and density testing have been tested in laboratory settings to determine their effectiveness in comparison to traditional density testing.

Proposed Activities for FY23: Finalize laboratory testing and begin field-testing the best possible alternative to nuclear density testing. Following testing, a new procedure manual and testing module will be developed for alternate density and moisture determination.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$125,000	Unknown	\$217,000

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00A467 – TRC2201 – UPDATE TO ARDOT SUPERPAVE GYRATORY COMPACTION SPEC

Purpose and Scope: To increase the durability of asphalt pavements. Specifically, this study will determine the effect of reducing the number of design gyrations (Ndes) on the volumetric and performance properties of asphalt mixtures. Also, this research will estimate the impact of increasing the durability of asphalt mixtures on mixture design, construction, and subsequent performance and life-cycle of asphalt pavements that will lead to a robust Arkansas-based life cycle cost analysis to fully capture all of the local variables.

Accomplishments for FY22: The accomplishments for FY22 should include the following tasks: conducting a literature review, collection of samples, preliminary evaluation of changing Ndes.

Proposed Activities for FY23: The proposed activities for FY23 contain the continuation of the following tasks: conducting a literature review, collection of samples, preliminary evaluation of changing Ndes, validation of preliminary results, propose changes to ARDOT specifications, life cycle cost analysis, final deliverables.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$150,000	Unknown	\$150,000

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00B467 – TRC2202 – UPDATING ARDOT LIQUEFACTION EVALUATION AND MITIGATION PROCEDURES

Purpose and Scope: To update the SPT based liquefaction spreadsheet ARDOT uses to incorporate current guidance and procedures for bridge pile design.

Accomplishments for FY22: The contract was approved on 3/28/2022. Accomplishments for FY22 should include work to update the SPT liquefaction triggering spreadsheet with the most up-to-date triggering procedures.

Proposed Activities for FY23: Tasks 1 through 4 are planned for FY23. These include continued work to update the SPT spreadsheet, investigate software and/or develop spreadsheets for CPT and Vs based liquefaction triggering evaluations, incorporate empirical estimates of liquefaction surface manifestation such as LPI into the ARDOT methodology, and include guidance on skin friction and end bearing of piles in liquefiable soils.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$150,000	Unknown	\$150,000

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00P467 – TRC2203 – LOW SHRINKAGE CONCRETE MIXTURES FOR ARKANSAS

Purpose and Scope: To develop a low-shrinkage concrete specification tailored to materials sourced in Arkansas in order to address the issue of shrinkage cracking in bridge deck concrete.

Accomplishments for FY22: The contract was approved on 3/28/2022. Accomplishments for FY22 should include a Literature Review, evaluation of recent bridge decks, and materials acquisition.

Proposed Activities for FY23: Literature Review will continue into this year, as will the evaluation of recent bridge decks. Task 3: Development of Low-Shrinkage Concrete Mixtures will be well underway after this period. Task 3 includes materials acquisition, mixture design and testing of normal weight aggregates, and low-shrinkage specification development.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$150,000	Unknown	\$150,000

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00Q467 – TRC2204 – MATERIALS AND TESTING SPECIFICATIONS FOR DRILLED SHAFT CONCRETE

Purpose and Scope: To update ARDOT's Self-Consolidating Concrete (SCC) mix design, with specific consideration toward Drilled Shaft construction. This project will also determine the best testing methods for QA/QC of SCC concrete

Accomplishments for FY22: The project was approved on 3/28/2022. Accomplishments for FY22 should include a literature review of the use of Self-Consolidating Concrete for Drilled Shafts.

Proposed Activities for FY23: The literature review will continue. Mix designs will be developed using the best practices from the literature as well as comparing them to the existing self-consolidating concrete mix design currently in use by ARDOT.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$150,000	Unknown	\$150,000

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PART III

**ARKANSAS LOCAL TECHNICAL ASSISTANCE PROGRAM
(LTAP)**

PART III
ARKANSAS LOCAL TECHNICAL ASSISTANCE PROGRAM
FY23 FUNDING SUMMARY

FUNDING DESCRIPTION	FUNDING TOTALS
LTAP Funding	150,000
SPR Match	160,000
State Match	40,000
TOTAL LTAP BUDGET	\$350,000

The Arkansas Local Technical Assistance Program (LTAP) funds are programmed based on a federal fiscal year and presented from October 2021 through September 2022. SPR Part II funds are transferred to LTAP as matching funds.

LTAP operates through the Research Section of the SIR Division. The program is a cooperative effort of the Department, UAF, and FHWA.

Purpose: The purpose of LTAP is to share the benefits of established and new transportation-related technology with local agencies. The methods include training seminars, newsletters, webinars, DVDs, site visits, reports, publications, and information services. Training seminars ranging from basic equipment maintenance to administration skills are provided through this program. Seminars and workshops are presented to the local agencies at no cost to the receiving agency. When available, presentations are conducted at Planning and Development District (PDD) offices, local government facilities, or local university facilities. Technology transfers are accomplished by personnel of all agencies involved in the LTAP Program. The subject matter ranges from worker safety, highway safety, and workforce development to issues of infrastructure management. The experiences and innovations of established operations, as well as the implementation of the latest research findings, are shared.

LTAP is guided by an Advisory Committee consisting of representatives from the following organizations: Arkansas Municipal League, Association of Arkansas Counties, County Judges Association of Arkansas, American Public Works Association, FHWA, University of Arkansas, and the Department.

A major function of LTAP is to facilitate training seminars for local agencies. The program focuses on four major areas: Safety (worker/workplace/highway), Infrastructure Management, Workforce Development, and Organizational Excellence. These seminars are primarily conducted at local sites to reach a larger number of the local workforce agencies. The various seminars and vendors are listed below:

Asphalt Pavement Maintenance -Center for Training Transportation Professionals – CTTTP
Asphalt Paving Basics – CTTTP
Basic Pavement Management – CTTTP
Bridge Replacement Alternatives – Clear Creek Engineering
Chain Saw Safety – University of Arkansas at Monticello (UAM)
Competent Person – eRisk Solutions, Inc.
Concrete Basics – CTTTP
Confined Space Entry – eRisk Solutions, Inc.
CPR and First Aid Certification – UAM
Culvert Sizing and Installation – Clear Creek Engineering
Defensive Driving - Thompson Defensive Driving
Drug and Alcohol Recognition for Supervisors – Xpert Inc.
Effective Communication – ARDOT

Erosion Mitigation for Unpaved Roads – CTTTP
Flagger/Work Zone Certification – ATSSA
Flagger/Work Zone Awareness – ARDOT
Forklift Certification – UAM
Gravel Road Maintenance – UAM
Guide for Traffic Signs, Markings, and Signals – CTTTP
Heavy Equipment: Backhoe Loader, Bulldozer, Dump Truck, Motor Grader & Trackhoe – UAM
Safety Countermeasures for Local Roadways – CTTTP
Shop Safety and General Equipment Safety – UAM
Stormwater Management – CTTTP
Supervisory Development: General – ARDOT
Traffic Signal Maintenance (Basic and Advanced) – Half Associates & Hot Springs
Work Zone Traffic Control Supervisor (TCS) – ATSSA
Work Zone Traffic Control Technician Training (TCT) – ATSSA

Site visits for “problem solving” will continue to be part of the program. Required Local Technical Assistance Program (LTAP) tasks will be accomplished.

Proposed Activities for FY23: The Department’s activities will include overall program administration and management, training schedule coordination, and seminar presentation oversight. The contracted presenter seminars are a part of an agreement with ARDOT and LTAP.

UAF activities will include the development of selected courses, as requested and approved by ARDOT with guidance from the LTAP Advisory Committee. An agreement between UAF and ARDOT has been finalized that allows the CTTTP to administer LTAP activities involving the two entities.

Efforts will continue to involve Historically Black Colleges and Universities like Philander Smith College and the University of Arkansas at Pine Bluff in mutually beneficial projects.

Contracted presenters have proven to be our most efficient and effective delivery method and are expected to accomplish the requested training in FY23. Flexibility remains to expand the needs of the program as necessary.

Details are included in the formal LTAP submittal.

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PART IV

PUBLIC TRANSPORTATION PROGRAMS

PART IV
FHWA/FTA CONSOLIDATED PLANNING WORK PROGRAM

WORK DESCRIPTION	FEDERAL	STATE/LOCAL MATCH	TOTAL COST
SECTION 5303 - FHWA/FTA CONSOLIDATED METROPOLITAN PLANNING PROGRAM			
Metroplan (CARTS)	1,239,772	309,943	1,549,715
Frontier Metropolitan Planning Organization (FMPO)	302,033	75,508	377,541
Northeast Arkansas Regional Transportation Planning Commission (NARTPC)	163,961	40,990	204,951
Northwest Arkansas Regional Planning Commission (NARTS)	736,384	184,096	920,480
Southeast Arkansas Regional Planning Commission (PBATS)	132,320	33,080	165,400
Tri-Lakes Metropolitan Planning Organization (HSATS)	138,073	34,518	172,591
Texarkana Metropolitan Planning Organization (TUTS)	63,283	15,821	79,104
West Memphis Metropolitan Planning Organization (WMATS)	100,678	25,169	125,847
SUBTOTAL	2,876,503	719,126	3,595,629
SECTION 5304 - FTA STATEWIDE PLANNING PROGRAM			
Core Program	67,520	16,880	84,400
Drug-Alcohol Planning	40,710	10,178	50,888
Seniors/Disabled/Low Income Service Planning	40,710	10,178	50,888
Staff Training and Development	11,158	2,790	13,948
SUBTOTAL	160,099	40,025	200,124
TOTAL PROJECT COSTS	\$3,036,602	\$759,151	\$3,795,753

Both programs have a 20 percent local or state match requirement.

PART IV
SECTION 5303 - METROPOLITAN PLANNING FUNDS
FFY22 FEDERAL FUNDS BREAKDOWN

MPO Area	2010 Population	Distribution Factor	FHWA PL \$	FTA PL \$	TOTAL
CARTS	496,665	0.431	976,880	262,892	1,239,772
FMPO	120,714	0.105	237,987	64,046	302,033
NARTPC	65,419	0.057	129,193	34,768	163,961
NARTS	295,083	0.256	580,235	156,149	736,384
PBATS	53,495	0.046	104,262	28,058	132,320
HSATS	55,121	0.048	108,795	29,278	138,073
TUTS	26,072	0.022	49,864	13,419	63,283
WMATS	40,270	0.035	79,329	21,349	100,678
TOTAL	1,152,839		\$2,266,543	\$609,958	\$2,876,503

PART IV OTHER FEDERAL TRANSIT ADMINISTRATION PROGRAMS

	FEDERAL	LOCAL/STATE	TOTAL	SHARE
SECTION 5310 - FTA ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES PROGRAM				
State Administration	486,520	0	486,520	100%
Core Program (Capital Outlay)	3,339,654	834,914	4,174,568	80%
SUBTOTAL	3,826,174	834,914	4,661,088	
SECTION 5311 – FTA RURAL AREAS FORMULA PROGRAM				
Core Program	14,795,191	10,171,852	24,967,043	Varies*
Rural Transportation Assistance Program (RTAP)	346,125	0	346,125	100%
Intercity Bus Program	2,626,706	656,677	3,283,383	Varies*
Staff Training and Development	89,475	7,429	96,904	Varies*
SUBTOTAL	17,857,497	10,835,958	28,693,455	
SECTION 5329 - STATE SAFETY OVERSIGHT PROGRAM				
Core Program	469,434	117,359	586,793	80%
SECTION 5339 - FTA BUS AND BUS FACILITY PROGRAM				
Core Program	4,000,000	1,000,000	5,000,000	80%
TOTAL FEDERAL PROJECT COSTS	\$26,153,106	\$12,788,230	\$38,941,336	
STATE GRANT PROGRAMS*				
Translease Program		1,600,000	1,600,000	100%
State Transit Trust Fund		5,000,000	5,000,000	100%
TOTAL STATE PROJECT COSTS		\$6,600,000	\$6,600,000	

This includes breakdowns that vary depending on the activity funded. Public Transportation (ARDOT) Administration is entirely federally funded, Capital and Project Administration are 80/20, and Operating is a 50/50 match.

*Inclusion is for informational purposes only.

FTA 5304 – STATEWIDE PLANNING PROGRAM*

Purpose and Scope: To provide general program administration responsibilities which are associated with Federal Transit Administration (FTA) grants.

Accomplishments for FY22: The Department conducted all FTA and state awards management activities (i.e., accounting, coordination, program development, etc.) and completed these awards. Public Transportation Programs Staff provided technical assistance for the Transportation Improvement Programs (TIPs), Unified Planning Work Programs (UPWPs), and continued the metropolitan transportation planning process. Staff continued implementation of the Transit Asset Management Plan. Staff assisted subrecipients in compiling, updating, and reviewing Title VI Plans. Continued to maintain memberships with transit-related associations and programs.

Proposed Activities for FY23: The Department will conduct all FTA and state awards management activities as may be necessary to complete these awards. The Department will initiate safety target training for both the MPOs and 5307 agencies and address agency safety plan training. Continue oversight of the TIPs, UPWPs, and continue the metropolitan transportation planning process. Review and comment on Arkansas' MPOs, UPWPs and transit-related studies as they are drafted. Staff will continue to monitor and review transit reauthorization legislation. Staff will continue implementation of the Transit Asset Management Plan. Staff will continue to assist subrecipients in compiling, updating, and reviewing Title VI Plans. Continue to maintain memberships with transit-related associations and programs.

FY22 Program	FY23 Program
\$133,500	\$160,000

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*Reflects federal funding only.

FTA 5310 – ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES*

Purpose and Scope: Title 49 U.S.C. 5310 authorizes the formula assistance program for the Enhanced Mobility of Seniors and Individuals with Disabilities Program (5310 Program). Guided by FTA Circular 9070.1G, the 5310 Program is administered by the Department to enhance transportation services to seniors and individuals with disabilities. To fill gaps in service and increase ridership by appropriating funds annually for the procurement of rolling stock (vehicles) and related equipment to be utilized in the delivery of eligible services (places of employment, healthcare, education, shopping facilities, recreation, etc.) by private non-profit organizations and/or governmental authorities. The Department currently serves approximately 177 private non-profit organizations and/or governmental entities through the Section 5310 program.

Accomplishments for FY22: The Department awarded 60 vehicles, reviewed applications, performed risk analysis, and developed a Program of Projects (POP) for the award application process through FTA. Performed quarterly reporting and inspected over 500 vehicles.

Proposed Activities for FY23: The Department will solicit annual applications and perform the project selection process and agency risk analysis. The Arkansas Statewide Transit Tracking and Reporting (AR-STTARS) online portal will be implemented by mid-2022. All applications, information, and quarterly reporting will utilize this application. Develop and implement the Health and Human Services Coordination Plan.

FY22 Program	FY23 Program
\$3,200,000	\$3,900,000

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*Inclusion in the work program is for informational purposes only and reflects federal funding only.

FTA 5311 – RURAL AREAS FORMULA PROGRAM*

Purpose and Scope: Authorized under Title 49 U.S.C. Section 5311 and Fixing America's Surface Transportation Act (FAST) Section 3007 and guided by FTA Circular 9040.1G, this program provides capital, planning, and operating assistance to transit agencies to support public transportation in rural areas with populations less than 50,000. The reimbursable program offers a year-round application process. There are currently nine rural transit systems operating within the state of Arkansas.

In addition to the award program for the rural transit agencies, under the Section 5311 program, the Rural Transit Assistance Program (49 U.S.C. 5311(b)(3)) provides funding to assist in the implementation of training and technical assistance projects and other support services for rural areas. The Arkansas Transit Association (ATA) utilizes the RTAP award funds to provide statewide training and related State RTAP activities. There is no federal requirement for local match.

To support the connection between rural areas and the larger regional or national system of intercity bus service, approximately 15 percent of the State's 5311 apportionment is allocated for the intercity bus program. South Central Arkansas Transit (SCAT), Greyhound Lines, and Jefferson Lines are intercity bus carriers currently operating within the State.

Required by Title 49 U.S.C. 625, Transit asset management (TAM) is the strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycles, for the purpose of providing safe, cost-effective, and reliable public transportation. Continuing discussions on established performance targets and measures to ensure State of Good Repair (SGR) is achieved or maintained. Develop performance measures based on condition assessments utilizing FTA's Transit Economic Requirement Model (TERM) scale. Reporting is required for rolling stock (vehicles), equipment, and facilities. Required annual reporting of performance targets and measures through the National Transit Database (NTD).

Accomplishments for FY22: Applications for all nine rural transit agencies were reviewed, and risk analysis was performed. An on-call planning contract was executed to implement the Arkansas Statewide Transit Tracking and Reporting System (AR-STTARS) online reporting tool. Annual Drug and Alcohol Audits and Title VI reviews were performed.

Proposed Activities for FY23: Continuation of annual application process. Continued cross training of staff. Implementation of AR-STTARS reporting system. Perform annual drug and alcohol audits. Work with transit agencies on expansion of service area and coordination of transit activities. Perform on-site Title VI/EEO reviews with Department EEO staff. Continue to provide sufficient funding for intercity operating expenses. Continue to maintain memberships with transit-related associations and programs.

ATA implemented an online training portal and will be conducting classes and workshops on a variety of transit-related topics. Topics of instruction will include supervisor drug and alcohol training, first aid, wheelchair securement and passenger assistance, Child Passenger Safety Technician Certification Workshops, and drug and alcohol awareness.

	FY23 Program
Core 5311 Program	\$14,795,191
RTAP	\$346,125
Intercity Bus Program	\$2,626,706
Training and Development	\$89,475
TOTAL	\$17,857,497

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*Inclusion in the work program is for informational purposes only and reflects federal funding only.

FTA 5329 – STATE SAFETY OVERSIGHT PROGRAM*

Purpose and Scope: To oversee safety at rail transit systems and to carry out State Safety Oversight (SSO) programs under 49 U.S.C. 5329(e), as amended by MAP-21 and continued under the FAST Act and IIJA. In 2013, the Governor designated the Department as the State Safety Oversight Agency (SSOA). The SSOA will establish minimum standards for the safety of all rail fixed guideway public transportation systems.

Accomplishments for FY22: Staff attended safety-training courses as required by FTA. Prepared safety plans; regulations; and conducted safety investigations, audits, reviews, etc. Monitored the METRO Streetcar Project to ensure all regulations were met. Secured on-call planning services for an additional three years.

Proposed Activities for FY23: Continue utilizing consultant services to meet the FTA certification requirements, perform incident analysis, and professional engineering review for rail plans. Implement the State Safety Plan and report annually to FTA.

FY22 Program	FY23 Program
\$282,000	\$469,000

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*Inclusion in the work program is for informational purposes only and reflects federal funding only.

FTA 5339 – BUS AND BUS FACILITY PROGRAM*

Purpose and Scope: To provide capital funding to replace, rehabilitate, and purchase buses and related equipment and to also construct bus-related facilities. Funding is available to all Section 5307 and 5311 agencies based on a Congressional formula. Urban and small urban agencies apply directly to FTA, and rural agencies apply with the Department. Applications are solicited on an annual basis.

Accomplishments for FY22: Ordered 84 vehicles, assisted with equipment purchases, and ensured adequate and fair funding levels were maintained. Required small urban transit agencies to conduct annual solicitation of award applications directly with FTA. Continued to provide oversight for rural transit agencies.

Proposed Activities for FY23: Develop, review, and select applicants for annual program of projects (POP) and submit to FTA.

FY22 Program	FY23 Program
\$3,500,000	\$4,000,000

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*Inclusion in the work program is for informational purposes only and reflects federal funding only.

TRANSEASE PROGRAM*

Purpose and Scope: To provide state funding for public and non-profit agencies to lease vehicles at 100% for up to four years with no interest. Eligible agencies are those that would normally be eligible for assistance under another federal transit program, but have additional needs beyond existing federal funding levels. Applications are typically available anytime throughout the year.

Accomplishments for FY22: 12 vehicles were ordered through the program. Processed \$800,000 in payments utilizing the revolving loan fund.

Proposed Activities for FY23: Continue support of the application process and fund management. Redevelop and implement the program selection criteria to better reflect the needs of transit providers and to address transit needs post-COVID.

FY22 Program	FY23 Program
\$1,600,000	\$1,600,000

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*Inclusion in the work program is for informational purposes only.

STATE PUBLIC TRANSIT TRUST FUND*

Purpose and Scope: To provide oversight and manage the Arkansas Public Transit Trust Fund (ACA §19-5-1126). The fund is generated by the short-term rental car tax (ACA §26-63-302) and is used for acquiring federal matching funds for the purchase of public transportation vehicles, public transit equipment or facilities, and operating FTA assistance programs.

Accomplishments for FY22: 26 vehicles were ordered to supplement Section 5310 program activities. Distributed approximately \$3.2 million to both Section 5307 and 5311 agencies.

Proposed Activities for FY23: Re-evaluate set-aside amounts for the Section 5310 program. Evaluate the current funding scenarios by utilizing the gap analysis portion of the transit coordination plan and potential growth expansions.

FY22 Program	FY23 Program
\$5,000,000	\$5,000,000

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*Inclusion in the work program is for informational purposes only.

PART V

HIGHWAY SAFETY IMPROVEMENT PROGRAM

PART V
HIGHWAY SAFETY IMPROVEMENT PROGRAM

JOB NO.	DESCRIPTION	FHWA	STATE/LOCAL MATCH	TOTAL
012208	Traffic Safety Planning Activities	1,080,000	120,000	1,200,000
012273	Railroad Safety Program	180,000	20,000	200,000
012281	Pavement Friction Data Collection	378,000	42,000	420,000
012389	Strategic Highway Safety Plan Update	26,831	2,981	29,812
TOTAL		\$1,664,831	\$184,981	\$1,849,812

012208 – TRAFFIC SAFETY PLANNING ACTIVITIES

Purpose and Scope: To continue to review crash data and identify high crash rate locations; to continue implementing the State's Strategic Highway Safety Plan (SHSP), and ensure that appropriate safety measures are applied in order to reduce the State's fatality and suspected serious injury rate. To implement the Highway Safety Improvement Program (HSIP).

To review all traffic crash reports for correct location and verify the location listed on the crash report for correct highway-section-log mile location. When locations are incorrect, the crash locators will determine the correct highway, section, and log mile of the crash and update the data.

Accomplishments for FY22: The Traffic Safety Section is the developmental lead of the State's SHSP. The goal of the SHSP is to identify traffic safety emphasis areas and recommend prioritization strategies to reduce fatalities and suspected serious injuries. The HSIP Process Guidelines for the Traffic Safety Section were updated and approved to reflect current guidance from FHWA as well as incorporate information gathered through attending peer exchanges, workshops, and conferences.

Crash analyses for various studies in FY22 were completed. Studies of several high crash rate locations were completed and forwarded to the Maintenance Division for their review. Several safety studies were completed, including statewide centerline rumble stripes (CLRS) on 2-lane rural highways, including an educational campaign and statewide shoulder mumble strips/stripes. A Cable Median Barrier (CMB) Policy was completed a few years ago, which included a comprehensive statewide median crossover crash analysis on all divided median highways; safety projects were developed and prioritized based on this policy. Work was continued on several statewide safety studies involving guardrails on the National Highway System, horizontal curves, un-signalized intersections, and wet pavement crashes.

Several crash analyses were completed by various requests. In accordance with Minute Order 2009-035, the 2020 Annual Study of Wrong-Way Crashes on Interstates and Other Freeways was initiated. Also, a Wrong-Way Crash research project was initiated to identify possible innovative improvements that could be implemented at interchanges on the interstates and freeways. An annual report on HSIP was prepared and submitted to FHWA. Few online traffic safety training workshops were conducted.

Traffic Safety also continued work on several corridor improvement studies. One corridor study included scoping projects for sites identified in the US Highway 412 Corridor Study. Other corridors such as Highways 107, 49, 70, and 72 were also analyzed. A low-cost approach toward addressing crashes was utilized in these studies where applicable. Upon completion of SIR's evaluation of mumble strips/stripes, the proposed update to the Department's rumble strips policy that has been drafted will be submitted for approval. Another draft of the Department's rumble strips policy has been submitted to allow CLRS in passing zones and low-speed zones in rural areas.

Request for proposals of On-call Consultants for traffic safety studies and engineering services and Roadway Safety Management System were shortlisted. Coordinated Continuous Pavement Friction Measurement Equipment's demonstration and participated in its pooled fund study TPF-5(463). Continued providing support on the problem statement of TRC2105 – Innovative Countermeasures to Deter Wrong-Way Driving and submitted another problem statement to alleviate pedestrian and bicyclist crashes.

The Traffic Safety Section began building the crash database at the Department due to problems that occurred at Arkansas State Police (ASP) with production. This involved doing data entry and providing crash

locations on approximately 35,000 crash reports. An in-house data entry tool and a separate in-house crash location tool were developed to accomplish these tasks.

The 2020 and 2021 crash data was completed and released for use by the Department and other stakeholders. The Crash Summary Tool and the Live Crash Summary tools were updated to incorporate the 2020 and 2021 crash data. These tools were also enhanced to be more functional and accurate. ACAT was enhanced to provide more functionality and to include the 2020 and 2021 crash data. In coordination with the ASP, Traffic Safety continued receiving a weekly backup of the live eCrash Database. Automatic processes were continued to clean and process this data to produce a nearly live SQL crash database at the Department.

Traffic Safety coordinated with ASP and the state's MPOs as well as other stakeholders to set performance targets for the five performance measures required by FHWA. These five performance measures included the number of fatalities, fatality rate, number of serious injuries, serious injury rate, and number of non-motorist fatalities and serious injuries combined.

Proposed Activities for FY23: Crash reports entered via eCrash will continue to be reviewed and checked for correct highway, section, and log mile locations. Traffic Safety will continue to enter and provide locations for all paper crash reports. Crash reports entered via eCrash where MapClick was not used by the officer will also continue to be located by Traffic Safety. A phased process to implement eCrash will continue with local law enforcement agencies. A grant utilizing HSIP funds is being implemented to aid local law enforcement agencies in obtaining equipment needed to begin utilizing eCrash. Staff will continue to identify high crash rate locations and conduct crash analyses to recommend safety projects. Staff will also continue to coordinate with and provide assistance to other sections and divisions for safety studies and related efforts. High crash rate locations on the rural road system will be identified, and studies will be conducted on these high-risk rural roads for possible safety improvements. Several statewide studies currently in development will be finalized and programmed as jobs. The Department's crash database will continue to be built and maintained by Traffic Safety personnel. The ACAT will continue to be updated and enhanced, and more features will be added as new requests for information are received.

The methodology in the Highway Safety Manual will continue to be utilized in the identification and scoping of safety projects. The development of a Roadway Safety Management System will be procured. This will require a job to be set up due to the expected funding amount needed for such an effort. An annual HSIP report will be prepared and submitted to FHWA. The HSIP Evaluation Tool and Database will continue to be enhanced. The SHSP Implementation Tracking Tool will be updated as necessary through coordination with the SHSP Steering Committee and other stakeholders. SHSP will be updated by August 2022 by utilizing an on-call consultant. Performance measures and targets will be established through coordination with the MPOs and ASP as is required by federal law. Traffic Safety will continue working with the System Information and Research Division and others to expand the safety data asset collection abilities. This will be aided by the Additional MIRE Data Collection Contract. Shortlisted On-call consultant's services will be rendered to work on subprograms of un-signalized intersections and horizontal curves considering the vulnerable road users as required by BIL. Participate by contributing \$20,000 annually to each pooled fund study of TPF-5(463): Pavement Surface Properties Consortium, and TPF-5(317): Evaluation of Low Cost Safety Improvements Pooled Fund Study. Participation in TPF-5(463) allows collection of more skid data with analysis at a discounted rate using the Continued Pavement Friction Measurement Equipment and will be helpful to the subprogram of curves. Due to our expected failure to meet or make significant progress towards our Safety Performance Targets for 2021, we are expecting to be required to submit an HSIP Implementation Plan to FHWA by the end of June 2023. An on-call consultant will be utilized to help develop this HSIP Implementation Plan.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$1,000,000	Unknown	\$1,200,000

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012273 – RAILROAD SAFETY PROGRAM

Purpose and Scope: To maintain and update highway/railway crossing data files for all public crossings in the State; to rank crossings by hazard rating for use as a guide to evaluate the need for possible signal and surface improvements; to review and submit proposed grade crossing improvements to FHWA for approval; to respond to requests from the public and private sectors concerning railroad crossing issues, including potential improvements, blocked crossings, and rough surfaces; and to carry out other preliminary engineering activities related to the Department's Section 130 program.

Accomplishments for FY22: 28 projects in the development or construction phases were monitored. 27 projects were completed with final inspection documentation submitted. Diagnostic team meetings were held (or scheduled) at 15 crossings. Staff managed the consultant-led Highway-Railway Grade Crossing State Action Plan.

Proposed Activities for FY23: At-grade crossings will continue to be monitored, diagnostic team meetings will be scheduled to identify potential improvements, and projects will be selected and programmed. Other aspects of the Section 130 program, including annual reporting and coordination with the railroads will continue. Staff will begin implementing the Highway-Railway Grade Crossing State Action Plan.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$200,000	Unknown	\$200,000

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012281 – PAVEMENT FRICTION DATA COLLECTION

Purpose and Scope: To collect pavement friction data in order to minimize friction-related crashes by ensuring that new pavement surfaces are designed, constructed, and maintained to provide adequate and durable friction properties. The scope of this work is to collect friction data for the safety jobs scoped by the Highway Safety Improvement Program (HSIP).

Accomplishments for FY22: The normal rotation of friction data was interrupted by the COVID-19 pandemic. The Pavement Friction Tester collected data on the APHN system routes that were not collected in FY21. The normal network-level SKID collection program was suspended due to the lack of availability of SKID tires and the need to preserve the existing inventory for the most urgent needs. The data collected was processed and loaded into a statewide database and mapped for statewide wet pavement analysis for the Traffic Safety Section and the other planning activities related to safety jobs.

Additionally, FHWA organized a continuous pavement friction measurements (CPFM) demonstration for state agencies to better understand the efficiency of data collection, resolution, and quality related to safety performance. The Department participated in this demonstration and compared the results to our current methodologies of data collection. The comparison revealed that CPFM equipment reduces limitations that most state agencies face with current data collection methods and tools.

Proposed Activities for FY23: Pavement friction data collection efforts will be reset and restarted with collection focused on the non-Interstate NHS (partial APHN Level 1), APHN Level 2 (Other Arterials), and Level 3 (Critical Service Routes). APHN Level 4 (Other High Traffic Routes) may be collected if time allows. The data collected will be processed and loaded into a statewide database and mapped for the Traffic Safety Section and the other planning activities related to safety jobs.

Furthermore, the Department will be participating in a pooled fund study *Pavement Surface Properties Consortium: Phase III (TPF-5(463)) - Managing the Pavement Properties for Improved Safety*. The focus of the pooled fund study will be to support the implementation of asset management approaches and tools that help improve the safety on all road networks by reducing the number of crashes related to friction deficiency.

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$120,000	Unknown	\$420,000

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012389 – STRATEGIC HIGHWAY SAFETY PLAN UPDATE*

Purpose and Scope: To develop a Strategic Highway Safety Plan (SHSP) once every five years to set the direction of our future safety efforts (23 CFR § 924.9). The SHSP will entail a review and validation of current safety efforts that have been implemented by agencies across the state and the effectiveness of those safety efforts. It also highlights the Department's key safety needs and guides our investment decisions toward strategies and countermeasures with the most potential to save lives and prevent injuries based on the latest crash data.

Accomplishments for FY22: The Department utilized a consultant, Cambridge Systematics, to begin the process of updating the SHSP.

Proposed Activities for FY23: The required SHSP update will be completed and adopted by the Highway Commission.,

FY22 Programmed Amount	FY22 Estimated Expenditure	FY23 Estimated Cost
\$291,600	\$261,788	\$29,812

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*Funding was obligated in a previous fiscal year.

STATE FISCAL YEAR 2023

STATE PLANNING AND RESEARCH WORK PROGRAM