

STATE FISCAL YEAR

2024

STATE PLANNING AND RESEARCH (SPR) WORK PROGRAM AND COST ESTIMATE



ARKANSAS DEPARTMENT OF TRANSPORTATION

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

FHWA PROJECTS

Y550 Apportionments

Y560 Apportionments

Y570 Apportionments

ARKANSAS DEPARTMENT OF TRANSPORTATION

**State Planning and Research (SPR)
Work Program and Cost Estimate
State Fiscal Year 2024**

for

**Federal Apportionments
Y550, Y560, and Y570**

**Part I
Planning**

**Part II
Research**

**Part III
Planning Non-SPR**

**Part IV
Research Non-SPR**

**Part V
FHWA/FTA Consolidated Planning Work Program**

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

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Table of Contents	
Introduction	vii
FUNDING SUMMARY TABLE	ix
Part I Planning	1
Planning Summary of Participation Table	3
000401: GIS and Mapping	5
000402: Performance Management	6
000403: Reference Material and Publication Documentation	7
000404: Travel, Training, and Seminars - Planning	8
000405: Legislative Review	9
000406: Finance	10
000408: Statewide Planning	11
000409: Travel Demand Modeling	12
000410: Highway System Planning	13
000411: Freight Planning	14
000412: Railroad Crossing Coordination	15
000413: Cities Over 50,000 Population	16
000414: Air Quality Activities	17
000415: Local Planning Technical Assistance	18
000418: Miscellaneous Planning Support	19
000419: GIS Data Management	20
000420: Multimodal Planning and Coordination	21
000469: Travel, Training, and Seminars - Research	22
000473: Data Acquisition/Technology Integration	23
000474: Traffic Data Analysis	24
000475: Automated Traffic Data Collection	25
000476: Contract Collection of Turning Movement Counts	26
000477: Contract Collection of Traffic Volume Counts	27
000478: Contract Collection of Vehicle Classification Counts	28
000479: Traffic Data Collection	29
000480: Asset Management System	30
000481: Asset Management System Analysis	31
000482: Data Quality Management Plan (DQMP)	32
000483: Pavement Structural Testing	33
000484: Pavement Friction Data Collection Equipment	34
000485: Nondestructive Subsurface Investigation	35
000486: Automatic Road Analyzer (ARAN)	36

000487: Pavement Management System	37
000488: Pavement Engineering Data Processing	38
000489: Pavement Engineering Data Analysis	39
000490: Transportation Asset Management Plan	40
000491: Multimedia-Based Highway Information System	41
000494: Highway Performance Monitoring System (HPMS)	42
000495: Highway Inventory and Analysis	43
000496: System Information – Program Coordination	44
000497: Profilograph Studies	45
012360: ADA Data & Imagery Collection	46
012446: Carbon Reduction Strategy Development*	47
012456: Complete Streets Plan Development*	48
012277: Central Arkansas Managed Lane Feasibility Study*	49
012353: Arkansas Railroad State Action Plan*	50
012370: Transportation Systems Management and Operations (TMSO) Plan*	51
012401: Arkansas State Freight and Rail Plans Update*	52
040851: Highway 64 Study*	53
101112: Jonesboro South and West Connector Study*	54
101113: Interstate 555 Corridor Study*	55
Unknown: General Planning Studies	56
Part II Research	57
Research Summary of Participation Table	59
Project Program	61
00A456: Project Development	63
00B456: TRC Project Development	64
00C456: Program Support Services	65
00D456: Departmental Support Services	66
00E456: Library Services	67
00F456: Implementation of Research	68
00G456: Project Monitoring	69
00H456: Bridge Research	70
00J456: Materials Research	71
00K456: Pavement Research	72
00L456: Subsurface Drainage Research	73
00M456: Traffic Safety Research	74
00N456: Product Evaluation	75
00P456: Department Innovation	76

00R456: Performance Measures.....	77
00S456: Unspecified Research.....	78
00W456: Peer Exchange Team Activities	79
TRC Projects	81
Projects in the Final Stage not Requiring Funding	83
00N467: Research Project TRC2101	84
00S458: Research Project TRC2102	85
00J467: Research Project TRC2103	86
00M467: Research Project TRC2104.....	87
00D457: Research Project TRC2105	88
00L467: Research Project TRC2106.....	89
00K467: Research Project TRC2107	90
00A467: Research Project TRC2201	91
00B467: Research Project TRC2202	92
00P467: Research Project TRC2203	93
00Q467: Research Project TRC2204.....	94
00C467: Research Project TRC2301	95
00E467: Research Project TRC2302	96
00V467: Research Project TRC2303	97
Arkansas Local Technical Assistance Program	99
020050: Arkansas Local Technical Assistance Program	101
Part III Planning Non-SPR	103
Planning Non-SPR Funding Table.....	105
000400: Administration: Transportation Planning and Policy	107
000468: Administration: System Information and Research	108
Part IV Research Non-SPR	109
Research Non-SPR Funding Table	111
00A556: Administration: Research.....	113
00A557: Support Services.....	114
00X556: Engineering and Research Services (EARS).....	115
Part V FHWA/FTA Consolidated Planning Work Program	117
Section 5303 - FHWA/FTA Consolidated Metropolitan Planning Program.....	119
Section 5304 - FTA Statewide Planning Program	119

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 the proposed planning and research activities of the Arkansas Department of Transportation (Department) for State Fiscal Year 2023 (July 1, 2023 through June 30, 2024). 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.

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 ongoing operation, instrumental to the formulation of short- and long-term policies, plans, and procedures to achieve the goals and objectives under each work function.

The final accomplishments and expenditures will be reported in the Annual Performance and Expenditures Reports submitted each October.

Funding Summary Table
Arkansas Department of Transportation
State Planning and Research Work Program
State Fiscal Year 2024
Using Federal Fiscal Year 2023 Funds

Program	Federal	State Match	Other Match	100% State Match	Total
Part I Planning	\$14,909,817	\$3,602,000	\$0	\$0	\$18,511,817
FY23 Estimated SPR Funds (Y550)	14,408,000	3,602,000			18,010,000
FY23 Safe and Accessible Transportation Options (Y570)	501,817				501,817
TPF-5(390) Institute for Trade and Transportation Studies	39,800	Note: These projects are funded using 100 percent Y550 Funds.			
TPF-5(515) Evaluation of Low-Cost Safety Improvements	20,000				
TPF-5(456) Econworks	-				
Part II Research	\$5,389,873	\$1,049,876			\$6,439,749
FY23 Estimated SPR Funds (Y560)	4,367,505	1,091,876			5,459,381
Total Previous Programmed Funds	1,190,368				1,190,368
NCHRP Contribution	722,460	Note: These projects are funded using 100 percent Y560 Funds.			
TPF-5(511) TRB Core Program Services	143,908				
AASHTO TSP Technical Services Program	181,000				
TPF-5(399) Improve Pavement Surface Distress - Phase II	20,000				
TPF-5(437) Technology Transfer Concrete Consortium	8,000				
TPF-5(486) Steel Bridge Research, Inspection, Training and Edu Engr Ctr S-BRITE	100,000				
TPF-5(488) Southeast Transportation Consortium - Phase II	15,000				
Transfer to LTAP in Part II	(168,000)	(42,000)			(210,000)
Part III Planning Non - SPR In-house and Contract Activities				\$300,000	\$300,000
Part IV Research Non - SPR In-house and Contract Activities				\$285,000	\$285,000
FHWA/FTA Metropolitan Planning Program	\$2,941,810		\$735,454		\$3,677,264
FTA Statewide Planning Program	\$162,064	\$40,517			\$202,581
Grand Total	\$23,403,564	\$4,692,393	\$735,454	\$585,000	\$29,416,411

 6/6/2023

Jessie A. Jones, P.E.
Assistant Chief Engineer – Planning



Keli Wylie, P.E.
Assistant Chief Engineer – Program Delivery




Jared D. Wiley, P.E.
Chief Engineer – Preconstruction



Lorie H. Tudor, P.E.
Director

Part I Planning

**Part I Planning
Summary of Participation
Fiscal Year 2024**

Job No.	Work Function	Federal	State/Local Match	Total Estimated Cost
000401	GIS and Mapping	692,000	173,000	865,000
000402	Performance Management	520,000	130,000	650,000
000403	Reference Library and Publications	16,000	4,000	20,000
000404	Travel, Training and Seminars - Planning	24,000	6,000	30,000
000405	Legislative Review	16,000	4,000	20,000
000406	Finance	120,000	30,000	150,000
000408	Statewide Planning	160,000	40,000	200,000
000409	Travel Demand Modeling	120,000	30,000	150,000
000410	Highway System Planning	760,000	190,000	950,000
000411	Freight Planning	104,000	26,000	130,000
000412	Railroad Crossing Coordination	280,000	70,000	350,000
000413	Cities Over 50,000 Population	280,000	70,000	350,000
000414	Air Quality Activities	20,000	5,000	25,000
000415	Local Planning Technical Assistance	20,000	5,000	25,000
000418	Miscellaneous Planning Support	40,000	10,000	50,000
000419	GIS Data Management	280,000	70,000	350,000
000469	Travel, Training and Seminars - Research	16,000	4,000	20,000
000473	Data Acquisition/Technology Integration	280,000	70,000	350,000
000474	Traffic Data Analysis	1,132,000	283,000	1,415,000
000475	Automated Traffic Data Collection	600,000	150,000	750,000
000476	Contract Collection of Turning Movement Counts	216,000	54,000	270,000
000477	Contract Collection of Traffic Volume Counts	720,000	180,000	900,000
000478	Contract Collection of Vehicle Classification Counts	680,000	170,000	850,000
000479	Traffic Data Collection	460,000	115,000	575,000
000480	Asset Management System	360,000	90,000	450,000
000481	Asset Management System Analysis	168,000	42,000	210,000
000482	Data Quality Management Plan (DQMP)	80,000	20,000	100,000
000483	Pavement Structural Testing	240,000	60,000	300,000
000484	Pavement Friction Data Collection Equipment	80,000	20,000	100,000
000485	Nondestructive Subsurface Investigation	440,000	110,000	550,000
000486	Automatic Road Analyzer (ARAN)	280,000	70,000	350,000
000487	Pavement Management System (PMS)	240,000	60,000	300,000
000488	Pavement Engineering Data Processing	360,000	90,000	450,000
000489	Pavement Engineering Data Analysis	480,000	120,000	600,000
000490	Transportation Asset Management Plan	80,000	20,000	100,000
000491	Multimedial Highway Information System (MMHIS)	220,000	55,000	275,000
000494	Highway Performance Monitoring System (HPMS)	208,000	52,000	260,000
000495	Highway Condition Inventory and Analysis	216,000	54,000	270,000
000496	System Information - Program Coordination	60,000	15,000	75,000
000497	Profilograph Studies	60,000	15,000	75,000
012360	ADA Data & Imagery Collection	80,000	20,000	100,000
Unknown	General Planning Studies	3,200,000	800,000	4,000,000
TOTAL PART I PLANNING (Y550)		\$14,408,000	\$3,602,000	\$18,010,000

Safe & Accessible Transportation Options Set-Aside	FY22 Carryover	FY23 Apportionment	Total Budget
000420 Multimodal Planning and Coordination	173,426	328,391	501,817
TOTAL - PLANNING (Y570)	\$173,426	\$328,391	\$501,817

Part I SPR Funds Available	Federal	State/Local Match	Total
FHWA FFY23	12,665,619	3,602,000	16,267,619
Unobligated/Released Funds from Previous Years	2,933,666	733,417	3,667,083
Total Available	\$15,599,285	\$4,335,417	\$19,934,701
Estimated Balance Available for Programming	\$1,191,285	\$733,417	\$1,924,701



000401: GIS and Mapping

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 Department's web application gallery (<https://gis.ardot.gov/portal/home>) 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.

FY24 Planned Activities and Deliverables:

Update and commercially print up to 300,000 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.

80% SPR	20% State Match	Total FY24 Budget
\$692,000	\$173,000	\$865,000

CONTACT: Sharon Hawkins
Staff GIS and Mapping Administrator
sharon.hawkins@ardot.gov
501-569-2205

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.

FY24 Planned Activities and Deliverables: 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.

AASHTO TPM Technical Service Program

80% SPR	20% State Match	Total FY24 Budget
\$520,000	\$130,000	\$650,000

CONTACT: Jacqueline Hou, P.E.
Senior Transportation Planning Engineer
jacqueline.hou@ardot.gov
501-569-2985

000403: Reference Material and Publication Documentation

Purpose and Scope: To provide and maintain reference materials and documentation, 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.

FY24 Planned Activities and Deliverables: 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 will be prepared as necessary.

80% SPR	20% State Match	Total FY24 Budget
\$16,000	\$4,000	\$20,000

CONTACT: Jacqueline Hou, P.E.
Senior Transportation Planning Engineer
jacqueline.hou@ardot.gov
501-569-2985

000404: Travel, Training, and Seminars - Planning

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.

FY24 Planned Activities and Deliverables: 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 travel, and miscellaneous expenses will be tracked.

80% SPR	20% State Match	Total FY24 Budget
\$24,000	\$6,000	\$30,000

CONTACT: David Siskowski, P.E.
Assistant Division Engineer
david.siskowski@ardot.gov
501-569-2201

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, allocation of funding, and implementation of national and state transportation programs. Special reports are prepared as requested when the Arkansas State General Assembly is in session.

FY24 Planned Activities and Deliverables: State and federal legislative actions will continue to be monitored, particularly in the areas of planning, safety, and transit programs.

80% SPR	20% State Match	Total FY24 Budget
\$16,000	\$4,000	\$20,000

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

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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Megan Brooks
TP&P Fiscal Coordinator
megan.brooks@ardot.gov
501-569-4976

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.

FY24 Planned Activities and Deliverables: Work will continue related to the 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 2023 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

80% SPR	20% State Match	Total FY24 Budget
\$160,000	\$40,000	\$200,000

CONTACT: Travis Brooks, P.E.
Staff Transportation Planning Engineer
travis.brooks@ardot.gov
501-569-2429

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.

FY24 Planned Activities and Deliverables: The ARTDM will be used for the development of statewide plans, economic impact assessments, transportation system feasibility studies, and responses 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.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Ron Fields
Transportation Planner
ronald.fields@ardot.gov
501-569-2984

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.

FY24 Planned Activities and Deliverables: 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 numerous other studies will be initiated during the year 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.

80% SPR	20% State Match	Total FY24 Budget
\$760,000	\$190,000	\$950,000

CONTACT: Andrew Warren, P.E., PTOE
Staff Transportation Planning Engineer
andrew.warren@ardot.gov
501-569-2063

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.

FY24 Planned Activities and Deliverables: 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 for AASHTO Standing Committees and other special projects will be provided as needed. 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. The State Rail Plan Update will be drafted and presented to the Administration and Commission. (Consultant services for updating the State Rail Plan is programmed separately under Job 012401.)

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

80% SPR	20% State Match	Total FY24 Budget
\$104,000	\$26,000	\$130,000

CONTACT: Travis Brooks, P.E.
Staff Transportation Planning Engineer
travis.brooks@ardot.gov
501-569-2429

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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$280,000	\$70,000	\$350,000

CONTACT: Greg Nation
Section Head
greg.nation@ardot.gov
501-569-2604

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.

FY24 Planned Activities and Deliverables: 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 the 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 sharing information on performance measures and coordinate with the MPOs to establish 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 and MTP development and adoption.

80% SPR	20% State Match	Total FY24 Budget
\$280,000	\$70,000	\$350,000

CONTACT: Sunny Farmahan
Senior Transportation Planner
sunny.farmahan@ardot.gov
501-569-2100

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.

FY24 Planned Activities and Deliverables: 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 will continue on the development of a State Carbon Reduction Strategy. (Consultant services for Carbon Reduction Strategy development is programmed separately under Job 012246.)

80% SPR	20% State Match	Total FY24 Budget
\$20,000	\$5,000	\$25,000

CONTACT: Travis Brooks, P.E.
Staff Transportation Planning Engineer
travis.brooks@ardot.gov
501-569-2429

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

FY24 Planned Activities and Deliverables: Efforts will continue to enhance coordination with local planning agencies in the areas of transportation planning, access management, and traffic engineering.

80% SPR	20% State Match	Total FY24 Budget
\$20,000	\$5,000	\$25,000

CONTACT: Travis Brooks, P.E.
Staff Transportation Planning Engineer
travis.brooks@ardot.gov
501-569-2429

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.

FY24 Planned Activities and Deliverables: This job will continue to be utilized by other Divisions to support the Project Planning and Multimodal Planning Sections.

80% SPR	20% State Match	Total FY24 Budget
\$40,000	\$10,000	\$50,000

CONTACT: Andrew Warren, P.E., PTOE
Staff Transportation Planning Engineer
andrew.warren@ardot.gov
501-569-2063

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, ADA Ramp evaluation inventory, data dictionaries, and data catalogs.

FY24 Planned Activities and Deliverables:

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.

80% SPR	20% State Match	Total FY24 Budget
\$280,000	\$70,000	\$350,000

CONTACT: Sharon Hawkins
Staff GIS and Mapping Administrator
sharon.hawkins@ardot.gov
501-569-2205

000420: Multimodal Planning and Coordination

Purpose and Scope: To provide planning and coordination, policy development, project selection and development, education, data collection and analysis, and other related activities supporting the development of a multimodal highway system (including, but not limited to, complete streets planning, consistent with the requirement in Section 11206 of the IIJA to use 2.5% of SPR funding for such activities). Activities under this job will be funded by Program Code Y570.

FY24 Planned Activities and Deliverables: Complete Streets planning and policy development will continue. Staff will participate in local and regional planning efforts (such as walk/bike audits, special route designations, and review of safety and mobility plans). Efforts to coordinate multimodal accommodations in state highway construction projects will continue. Monitoring bicycle and pedestrian safety strategies from the Strategic Highway Safety Plan will continue. Data supporting multimodal planning and coordination efforts (including, but not limited to, the bicycle and pedestrian module from StreetLight) will be purchased.

FFY22 Carryforward (Y570)	FFY23 Apportionment (Y570)	100% SPR Y570
\$173,426	\$328,391	\$501,817

CONTACT: Kimberly Sanders
Bicycle and Pedestrian Coordinator
kim.sanders@ardot.gov
501-569-2020

000469: Travel, Training, and Seminars - Research

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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$16,000	\$4,000	\$20,000

CONTACT: Mark Headley, P.E.
Division Head
mark.headley@ardot.gov
501-569-2946

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.

FY24 Planned Activities and Deliverables: Build on the development of the Roadway Inventory and Traffic Databases. Research advanced analytical tools for faster processing and data visualization for 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.

80% SPR	20% State Match	Total FY24 Budget
\$280,000	\$70,000	\$350,000

CONTACT: Michael Henry, P.E.
Staff Traffic Information Systems Engineer
michael.henry@ardot.gov
501-569-2111

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.

FY24 Planned Activities and Deliverables: Traffic Information Systems will analyze approximately 2,880 48-hour classification counts throughout the State, including some weekend and holiday samples. Approximately 160 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.

80% SPR	20% State Match	Total FY24 Budget
\$1,132,000	\$283,000	\$1,415,000

CONTACT: Alan Nguyen
Advanced Traffic Engineer
alan.nguyen@ardot.gov
501-569-2976

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, nine 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.

FY24 Planned Activities and Deliverables: 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. Three new locations will be selected, and four 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.

80% SPR	20% State Match	Total FY24 Budget
\$600,000	\$150,000	\$750,000

CONTACT: Alan Nguyen
Advanced Traffic Engineer
alan.nguyen@ardot.gov
501-569-2976

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.

FY24 Planned Activities and Deliverables: The consultant will collect approximately 120 turning movement counts as requested from other divisions and sections.

80% SPR	20% State Match	Total FY24 Budget
\$216,000	\$54,000	\$270,000

CONTACT: Alan Nguyen
Advanced Traffic Engineer
alan.nguyen@ardot.gov
501-569-2976

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.

FY24 Planned Activities and Deliverables: Collect approximately 9,600 traffic volume counts.

80% SPR	20% State Match	Total FY24 Budget
\$720,000	\$180,000	\$900,000

CONTACT: Alan Nguyen
Advanced Traffic Engineer
alan.nguyen@ardot.gov
501-569-2976

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 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.

FY24 Planned Activities and Deliverables: Collect approximately 580 vehicle classification counts and 160 video classification counts.

80% SPR	20% State Match	Total FY24 Budget
\$680,000	\$170,000	\$850,000

CONTACT: Alan Nguyen
Advanced Traffic Engineer
alan.nguyen@ardot.gov
501-569-2976

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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$460,000	\$115,000	\$575,000

CONTACT: Alan Nguyen
Advanced Traffic Engineer
alan.nguyen@ardot.gov
501-569-2976

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 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 established the requirement that states 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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$360,000	\$90,000	\$450,000

CONTACT: Sarah Tamayo, P.E.
Staff Asset Management Engineer
sarah.tamayo@ardot.gov
501-569-2073

000481: Asset Management System Analysis

Purpose and Scope: To provide system-level pavement condition information and 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) and any by hand analysis of the system as a whole.

FY24 Planned Activities and Deliverables: System performance will be further modeled and loaded into the Pavement Management System (PMS) database. Analysis settings, methodologies, and scenarios will be further refined and corrected. Updated deterioration curves created by a contractor will be implemented in PMS software. Further progress will be made to run PMS software without major contractor assistance.

80% SPR	20% State Match	Total FY24 Budget
\$168,000	\$42,000	\$210,000

CONTACT: Robert Kacir
Senior Asset Management and Pavement Data Analyst
robert.kacir@ardot.gov
501-569-2234

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 creating and implementing data collection, processing, and reporting standards and protocols. These protocols are expected to 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.

FY24 Planned Activities and Deliverables: Continue to develop the necessary protocols, control sites, and in-house training for distress raters, equipment operators, data processors, and data analysts as required to implement the DQMP. Existing control sites will be reestablished by manually measuring and collecting data such as IRI, rutting, faulting, and various pavement distresses. Control and verification site data will continue to be collected and analyzed to ensure ARAN systems are accurate and precise on a weekly basis. Implement SQL scripts across large-scale production databases in order to identify any potential erroneous sensor data that may warrant investigating.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Keith Ross
Data Quality Management Analyst
keith.ross@ardot.gov
501-569-2602

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 ranging from pre-construction sites, weight-restricted roads, research projects, and pavement monitoring.

FY24 Planned Activities and Deliverables: 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. A statewide FWD analysis is currently underway to evaluate the removal of weight-restricted routes.

80% SPR	20% State Match	Total FY24 Budget
\$240,000	\$60,000	\$300,000

CONTACT: Seth Louviere, P.E.
Advanced Asset & Pavement Engineer
seth.louviere@ardot.gov
501-569-2004

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 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 pavement deterioration. The PFT lends itself to accident site investigation and the determination of International Friction Index (IFI) values when coupled with additional devices for measuring macrotexture. Currently, one PFT, one DFT, and one CTM are used to measure skid resistance.

FY24 Planned Activities and Deliverables: Statewide pavement friction data collection will resume, as well as requests for specific locations. 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 collected data will be processed, loaded into a statewide database, and mapped for internal use. A Continuous Pavement Friction Tester (CPFT) is currently being evaluated for possible purchase.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Seth Louviere, P.E.
Advanced Asset & Pavement Engineer
seth.louviere@ardot.gov
501-569-2004

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, the air-coupled antennas, and the ground-coupled antennas, are maintained and operated by the Asset Management Section. The air-coupled antennas probe pavement layers at highway speeds using antennas mounted in front of the vehicle. The information from these antennas is used to determine the thickness of pavement layers and 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. 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 Department-owned coring machines operated by Department personnel and charged to this project number. Both air-coupled and ground-coupled antennas provide continuous coverage of the subsurface structure. The ground-coupled radar 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 to implement nondestructive subsurface investigations properly.

FY24 Planned Activities and Deliverables: The GPR is currently down due to compatibility issues with its Distance Measuring Instrument (DMI). A 3D-Radar system has been evaluated and is planned to be purchased in FY24. Coring samples will continue to be taken as needed.

80% SPR	20% State Match	Total FY24 Budget
\$440,000	\$110,000	\$550,000

CONTACT: Seth Louviere, P.E.
Advanced Asset & Pavement Engineer
seth.louviere@ardot.gov
501-569-2004

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.

FY24 Planned Activities and Deliverables: The FY24 data collection effort is anticipated to include the Interstate, other APHN routes, and as much of the remaining system as possible. All ARAN software, equipment maintenance, and insurance premiums are charged to this project.

80% SPR	20% State Match	Total FY24 Budget
\$280,000	\$70,000	\$350,000

CONTACT: Christopher L. Davis
Senior Pavement Geospatial Specialist
christopher.davis@ardot.gov
501-569-4943

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, the establishment of preferable maintenance treatment strategies, and the identification of projects for consideration in developing statewide transportation plans and improvement programs.

FY24 Planned Activities and Deliverables: 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 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 the 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 federal 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.

80% SPR	20% State Match	Total FY24 Budget
\$240,000	\$60,000	\$300,000

CONTACT: James Fountain IV
Advanced Asset & Pavement Engineer
james.fountain@ardot.gov
501-569-4954

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.

FY24 Planned Activities and Deliverables: Data from ARAN, FWD, GPR, and PFT will continue to be uploaded to the Department's servers and processed. Quality-control measures, process flows, and tools will continue to be developed to ensure high-quality data elements. Development and implementation of data-driven quality control measures and processes will also continue. The database 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 and facilitate upgrades to tools such as the MMHIS.

80% SPR	20% State Match	Total FY24 Budget
\$360,000	\$90,000	\$450,000

CONTACT: Bobby Bradshaw
System Information Supervisor
bobby.bradshaw@ardot.gov
501-569-2249

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.

FY24 Planned Activities and Deliverables: The Pavement Engineering Data Analysis group within the Section 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, Fayetteville Shale 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.

80% SPR	20% State Match	Total FY24 Budget
\$480,000	\$120,000	\$600,000

CONTACT: Bryan Signorelli, P.E.
Senior Asset & Pavement Engineer
bryan.signorelli@ardot.gov
501-569-2435

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 compiling all required TAMP-related information, identifying additional assets to be included in future TAMP reports, and coordinating 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.

FY24 Planned Activities and Deliverables: Submit annual implementation documentation.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Bryan Signorelli, P.E.
Senior Asset and Pavement Engineer
bryan.signorelli@ardot.gov
501-569-2435

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 and 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 computer network. 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.

FY24 Planned Activities and Deliverables: Make enhancements to the new MMHIS application and continue to use the program to process the data from the ARAN.

80% SPR	20% State Match	Total FY24 Budget
\$220,000	\$55,000	\$275,000

CONTACT: Jack Koba
System Information Analyst
jack.koba@ardot.gov
501-569-2621

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 the 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 the functional system and rural, small urban and urbanized areas.

FY24 Planned Activities and Deliverables: 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 staff using traffic data during the procurement process for the Traffic Database Management Software.

80% SPR	20% State Match	Total FY24 Budget
\$208,000	\$52,000	\$260,000

CONTACT: Michael Henry, P.E.
Staff Traffic Information System Engineer
michael.henry@ardot.gov
501-569-2111

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 gathering and compiling 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.

FY24 Planned Activities and Deliverables: 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. Continue research and development of GPS-enabled tablets for field data collection and reporting. Additional enhancements will be made to current quality control and analysis.

80% SPR	20% State Match	Total FY24 Budget
\$216,000	\$54,000	\$270,000

CONTACT: Michael Henry, P.E.
Staff Traffic Information System Engineer
michael.henry@ardot.gov
501-569-2111

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 the Arkansas Primary Highway Network (APHN) analysis.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$60,000	\$15,000	\$75,000

CONTACT: Michael Henry, P.E.
Staff Traffic Information System Engineer
michael.henry@ardot.gov
501-569-2111

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 replacing the profilograph if needed. This project includes purchasing equipment, travel, and other necessary expenditures incurred in support of the Design and Construction Divisions, Districts, and the Research Program.

FY24 Planned Activities and Deliverables: Smoothness verification jobs for the state will be done, and all equipment currently owned for Profilograph Studies will continue to be utilized. More specifically, the Department's high-speed profilograph vehicle will be used to verify contractors' IRI and Profile Index data of construction projects requiring special provisions. The high-speed profilograph vehicle will also be utilized in determining ride quality for other types of projects and requests. For small-scale projects, the Department's walking profiler will be used to determine IRI values for control sites as required by the DQMP.

80% SPR	20% State Match	Total FY24 Budget
\$60,000	\$15,000	\$75,000

CONTACT: Keith Ross
Data Quality Management Analyst
keith.ross@ardot.gov
501-569-2602

012360: ADA Data & Imagery Collection

Purpose and Scope: To fulfill the Federal Highway requirement of performing a self-evaluation on all pedestrian facilities, including ramps, sidewalks, and traffic signal pedestrian buttons along the highway right-of-way to ensure Americans with Disability Act (ADA) compliance. This project includes the purchase of equipment, ADA intern salaries, and full-time employee salaries when training for field collection or delivering ADA equipment.

FY24 Planned Activities and Deliverables: Utilizing current and future interns to continue the self-evaluation process of the ADA facilities, specifically, concentrating on evaluating ADA facilities in southern and central areas of the state for FY24 to include ramps, sidewalks, and starting a collection on ADA pedestrian button and crosswalk compliance at traffic signal locations.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Michael Henry, P.E.
Staff Traffic Information System Engineer
michael.henry@ardot.gov
501-569-2111

012446: Carbon Reduction Strategy Development*

Purpose and Scope: To develop a carbon reduction strategy compliant with the IIJA requirements codified at 23 USC 175. Consultant services will be utilized to develop this plan.

FY24 Planned Activities and Deliverables: Conduct stakeholder engagement activities. Prepare draft and final Carbon Reduction Strategy. Submit the Carbon Reduction Strategy to the Highway Commission and the FHWA for approval. Close out.

80% SPR	20% State Match	Total FY24 Budget
\$171,021	\$42,755	\$213,776

CONTACT: Josilyn Mitchell
Advanced Transportation Planning Engineer
josilyn.mitchell@ardot.gov
501-569-2975

*Funding was obligated in a previous fiscal year.

012456: Complete Streets Plan Development*

Purpose and Scope: To develop Complete Streets standards, policies, and plans consistent with the requirements of Section 11206 of the IIJA. Consultant services will be utilized for this effort.

FY24 Planned Activities and Deliverables: Conduct stakeholder engagement activities. Prepare draft and final Complete Streets Policy. Submit Complete Street Policy to leadership for review. Work may begin on Complete Streets plan development.

80% SPR	20% State Match	Total FY24 Budget
\$148,524	\$0	\$148,524

CONTACT: Kimberly Sanders
Bicycle and Pedestrian Coordinator
kim.sanders@ardot.gov
501-569-2020

*Funding was obligated in a previous fiscal year.

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.

FY24 Planned Activities and Deliverables: Finalize analysis on potential corridors and 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.

80% SPR	20% State Match	Total FY24 Budget
\$0	\$0	\$0

CONTACT: Andrew Warren, P.E., PTOE
Staff Transportation Planning Engineer
andrew.warren@ardot.gov
501-569-2063

*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.

FY24 Planned Activities and Deliverables: Submit to FRA for review and comment. Present final documents to Commission for adoption. Project Closeout.

80% SPR	20% State Match	Total FY24 Budget
\$18,529	\$4,632	\$23,161

CONTACT: Josilyn Mitchell
Advanced Transportation Planning Engineer
josilyn.mitchell@ardot.gov
501-569-2975

*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.

FY24 Planned Activities and Deliverables: Development of the ARDOT TSMO Plan will continue, including strategic, programmatic, and tactical elements. Work may begin on an update to the State ITS Architecture.

80% SPR	20% State Match	Total FY24 Budget
\$271,648	\$67,912	\$339,560

CONTACT: Jacqueline Hou, P.E.
Senior Transportation Planning Engineer
jacqueline.hou@ardot.gov
501-569-2985

*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.

FY24 Planned Activities and Deliverables: Stakeholder engagement activities will continue, and technical reports will be delivered for the State Rail Plan. A draft Executive Summary for the State Rail Plan will be delivered. The updated State Rail Plan will be presented to the Administration for review and revisions and subsequently to the Commission for adoption.

80% SPR	20% State Match	Total FY24 Budget
\$145,531	\$36,383	\$181,914

CONTACT: Travis Brooks, P.E.
Staff Transportation Planning Engineer
travis.brooks@ardot.gov
501-569-2429

*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 of constructing a new river crossing north or south of the existing bridge.

FY24 Planned Activities and Deliverables: Continue the study effort. Develop alternatives and make final recommendations. Complete the Executive Summary and the full report.

80% SPR	20% State Match	Total FY24 Budget
\$30,184	\$7,545	\$37,729

CONTACT: Christopher Dillaha
Transportation Planner
christopher.dillaha@ardot.gov
501-569-2603

*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.

FY24 Planned Activities and Deliverables: Continue developing alternatives. Conduct public outreach as needed. Review of consultant deliverables.

80% SPR	20% State Match	Total FY24 Budget
\$52,190	\$13,048	\$65,238

CONTACT: Josilyn Mitchell
Advanced Transportation Planning Engineer
josilyn.mitchell@ardot.gov
501-569-2975

*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.

FY24 Planned Activities and Deliverables: Conduct a second public involvement meeting. Complete the Executive Summary and full report.

80% SPR	20% State Match	Total FY24 Budget
\$13,255	\$3,314	\$16,569

CONTACT: Aaron Pinedo, P.E.
Advanced Transportation Planning Engineer
aaron.pinedo@ardot.gov
501-569-2064

*Funding was obligated in a previous fiscal year.

Unknown: General Planning Studies

Purpose and Scope: To conduct transportation planning studies, needs assessments, 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.

FY24 Planned Activities and Deliverables: Use on-call consultant services to conduct planning studies as needed and directed. Task orders will be issued for studies. They will be tracked and reported under those job numbers.

80% SPR	20% State Match	Total FY24 Budget
\$3,00,000	\$800,000	\$4,000,000

CONTACT: David Siskowski, P.E.
Assistant Division Engineer
david.siskowski@ardot.gov
501-569-2201

Part II Research

Part II Research
Summary of Participation
Fiscal Year 2024

Project Name	Federal	State Match	100% State	Total Cost
Part II SPR Funds Available				
FHWA FFY22	5,557,873	-	-	5,557,873
Previously allocated funds*	less 1,190,368	-	-	1,190,368
Total Available for Programming	4,367,505	1,091,876	-	5,459,382
Programmed Amount	less 4,256,000	1,064,000	-	5,320,000
Contingency	111,505	27,876	-	139,382
State Program			285,000	285,000

Breakdown of Previously Allocated Funds*

NCHRP Contribution	722,460			722,460
TPF-5(511) TRB Core Program Services	143,908			143,908
AASHTO TSP Technical Services Program**	181,000			181,000
Transportation Pooled Fund Studies***	143,000			143,000
*All programs listed are 100% federally funded.	\$1,190,368	\$0	\$0	\$1,190,368

AASHTO TSP Technical Services Program**

AASHTO resource	22,000			22,000
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
Trans Curriculum Coordination Council (TC3)	20,000			20,000
Trans System Preservation Technical Service Program (TSP2)	20,000			20,000
Trans and Civil Engr Program (TRAC) & Roadways Into Developing Elementary Students Program (RIDES)	14,000			14,000
Trans Performance Management Program (TPM)	15,000			15,000
Design Publication Maintenance (DPM)	15,000			15,000
	\$181,000	\$0	\$0	\$181,000

Transportation Pooled Fund Studies***

TPF-5(399) Improve Pavement Surface Distress - Phase II (FY20-24)	20,000			20,000
TPF-5(437) Technology Transfer Concrete Consortium (FY20-FY24)	8,000			8,000
TPF-5(486) Steel Bridge Research, Inspection, Training and Edu Engr Ctr S-BRITE (FY22-24)	100,000			100,000
TPF-5(488) Southeast Transportation Consortium - Phase II (FY21-25)	15,000			15,000
	\$143,000	\$0	\$0	\$143,000

Ongoing Transportation Pooled Fund Studies requiring no additional funding

TPF-5(375) Pavement Preservation Techniques (MnROAD/NCAT Joint Study – Phase II)
TPF-5(467) Research Project Tracking System - Phase II

Part II Research

Project Program

Fiscal Year 2024

Project	Work Description	Federal	State	Total
In-House Research and Support Activities				
00A456	Project Development	80,000	20,000	100,000
00B456	TRC Project Development	320,000	80,000	400,000
00C456	Program Support Services	240,000	60,000	300,000
00D456	Departmental Support Services	80,000	20,000	100,000
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	240,000	60,000	300,000
00P456	Department Innovation	80,000	20,000	100,000
00R456	Performance Measures	4,000	1,000	5,000
00S456	Unspecified Research	80,000	20,000	100,000
00W456	Peer Exchange Team Activities	4,000	1,000	5,000
Subtotal		1,848,000	462,000	2,310,000
Continuing TRC Projects				
00N467	TRC2101 - Update of the ARDOT Workforce Forecasting System	120,000	30,000	150,000
00S458	TRC2102 - Effect of Aggregate-Binder Compatibility on Performance of Asphalt Mixes in Arkansas	60,000	15,000	75,000
00J467	TRC2103 - Developing Guidelines for Evaluating Weathering Steel Bridges	80,000	20,000	100,000
00M467	TRC2104 - Maintenance Guidelines for MSE Walls	100,000	25,000	125,000
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	80,000	20,000	100,000
00K467	TRC2107 - Non-nuclear Moisture Content and Density Determination	80,000	20,000	100,000
00A467	TRC2201 - Update Superpave Spec	320,000	80,000	400,000
00B467	TRC2202 - Updating Liquefaction Procedures	160,000	40,000	200,000
00P467	TRC2203 - Low Shrink Mix	160,000	40,000	200,000
00Q467	TRC2204 - Drilled Shaft Concrete	160,000	40,000	200,000
00C467	TRC2301 - Automated Work Zone System	120,000	30,000	150,000
00E467	TRC2302 - Dev Ped and Bicyclist Flow Volumes	120,000	30,000	150,000
00V467	TRC2303 - Daily Impacts of a Bridge Closure	120,000	30,000	150,000
Subtotal		1,880,000	470,000	2,350,000
New TRC Projects				
TBD	Research Project TRC2401	120,000	30,000	150,000
TBD	Research Project TRC2402	120,000	30,000	150,000
TBD	Research Project TRC2403	120,000	30,000	150,000
Subtotal		360,000	90,000	450,000
020050	Local Technical Assistance Program (LTAP)	168,000	42,000	210,000
Subtotal		168,000	42,000	210,000

Total Part II Funding

\$4,256,000

\$1,064,000

\$5,320,000

Total Part II Budget Less LTAP Transfer

\$4,088,000

\$1,022,000

\$5,110,000



SPR WORK PROGRAM



2024

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 the criteria for a Transportation Research Committee (TRC) project. This project includes developing, preparing, reviewing, and processing research ideas for the Research Program. It includes Departmental meetings to discuss possible research needs, determine actions needed to provide appropriate research of ideas and write work plans for research projects, studies, and proposals.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

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 developing, preparing, reviewing, and processing Problem Statements for the TRC Program. It includes library searches, online information retrieval, problem statement preparation, proposal requests, and writing contracts and work plans for research projects, studies, and proposals. This project also includes expenditures related to research presentation in the TRC program, including some expenses for the TRC conference.

FY24 Planned Activities and Deliverables: Three FY23 TRC Research projects are expected to begin work in FY24. Additional work will include developing new TRC Research projects and the annual TRC conference.

80% SPR	20% State Match	Total FY24 Budget
\$320,000	\$80,000	\$400,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

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 developing the work program, payment processing, federal and fiscal reporting, inventory management, and regular staff update meetings.

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

80% SPR	20% State Match	Total FY24 Budget
\$240,000	\$60,000	\$300,000

CONTACT: Bethany Stovall
Research Support Supervisor
bethany.stovall@ardot.gov
501-569-2279

00D456: Departmental Support Services

Purpose and Scope: To cover costs associated with work done for Divisions, Districts, and other agencies 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 that support other programs.

FY24 Planned Activities and Deliverables: Continue support when the Research Section is called upon for tasks that concern the Department or other agencies.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Bethany Stovall
Research Support Supervisor
bethany.stovall@ardot.gov
501-569-2279

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 the Public Information Office. OCLC (a full-service online cataloging tool) and EOS.Web (an integrated library system) subscriptions 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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Robin Russell
Research Financial Coordinator
robin.russell@ardot.gov
501-569-2268

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 implementing research findings. The documentation of activities related to monitoring the implementation of research results shall be included in this project.

FY24 Planned Activities and Deliverables: Any implementation of research findings will be tracked and documented.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Vacant
Research Innovation Coordinator
research@ardot.gov
501-569-4922

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 reviewing and preparing 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 with expired funding. It includes all activities in monitoring contract studies and in-house studies where funding for the Department effort is not included elsewhere.

FY24 Planned Activities and Deliverables: Work will include the continued monitoring of contract studies and in-house projects.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

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.

FY24 Planned Activities and Deliverables: Activities may include any bridge-related research as needed by the Department.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

00J456: Materials Research

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

FY24 Planned Activities and Deliverables: Activities may include any materials-related research as needed by the Department.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

00K456: Pavement Research

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

FY24 Planned Activities and Deliverables: Continue the activities on pavement-related research, performance monitoring, and evaluation as needed by the Department. Determinations will be made for the next steps in calibrating the new pavement design guide, the Next 25 test sections evaluation, and the low-volume route evaluation.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

00L456: Subsurface Drainage Research

Purpose and Scope: To cover the cost of research, maintenance, Departmental support services, 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.

FY24 Planned Activities and Deliverables: Activities to include evaluation of existing subsurface drainage as needed by the Department.

80% SPR	20% State Match	Total FY24 Budget
\$40,000	\$10,000	\$50,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

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.

FY24 Planned Activities and Deliverables: Various countermeasures to improve safety will continue to be researched. Research will be prioritized based on the potential for crash, fatality, and injury reductions, aligned with national mandates and the Department's performance goals. Installation and monitoring of traffic data collection devices continue.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Kim Romano, P.E.
Advanced Research Study Engineer
kim.romano@ardot.gov
501-569-2195

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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$240,000	\$60,000	\$300,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

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 the uses of Rice Hull Ash and determining potential applications for which UAS can be used by the Department. Further projects will be proposed by the 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.

FY24 Planned Activities and Deliverables: Continue in-house research already in progress. Conduct new research projects as Department needs arise.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

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 developing a project tracking system, reviewing procedures and policies in place to calculate Return on Investment (ROI), and other performance-related tasks.

FY24 Planned Activities and Deliverables: Activities will include participation in meetings and activities related to the Research Project Tracking System pooled fund study, TPF-5(467).

80% SPR	20% State Match	Total FY24 Budget
\$4,000	\$1,000	\$5,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

00S456: Unspecified Research

Purpose and Scope: To provide for expenditures incurred for research needed by the Department that does not fit other categories, including but not limited to areas such as Environmental, Surveys, and Human Resources.

FY24 Planned Activities and Deliverables: Activities may include any uncategorized research as needed by the Department.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

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 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.

FY24 Planned Activities and Deliverables: Potential Peer Exchange activities as required.

80% SPR	20% State Match	Total FY24 Budget
\$4,000	\$1,000	\$5,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

TRC Projects

Projects in the Final Stage not Requiring Funding

The projects listed are in the Final Report approval stage. No project-specific funding is required. The final steps for project close-out, report publication, and implementation will use funds from Program Support Services, Library Services, and Implementation of Research.

TRC1802

TRC1803

TRC1805

TRC1902

TRC1903

TRC1905

TRC2001

TRC2003

00N467: Research Project TRC2101

Title: 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.

FY24 Planned Activities and Deliverables: 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.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Mark Simecek, P.E.
Research Study Engineer
mark.simecek@ardot.gov
501-569-2479

Title: 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.

FY24 Planned Activities and Deliverables: Project close-out and implementation.

80% SPR	20% State Match	Total FY24 Budget
\$60,000	\$15,000	\$75,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

Title: 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.

FY24 Planned Activities and Deliverables: Project close-out and implementation, including staff training, are expected to be completed.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Kim Romano, P.E.
Advanced Research Study Engineer
kim.romano@ardot.gov
501-569-2195

Title: 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.

FY24 Planned Activities and Deliverables: 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 completed.

80% SPR	20% State Match	Total FY24 Budget
\$100,000	\$25,000	\$125,000

CONTACT: Kim Romano, P.E.
Advanced Research Study Engineer
kim.romano@ardot.gov
501-569-2195

00D457: Research Project TRC2105

Title: 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.

FY24 Planned Activities and Deliverables: Wrong Way Driver detection and alert systems will be purchased, installed, and monitored in FY24, and their effectiveness will be analyzed. A report documenting these efforts and any recommendations will be completed.

80% SPR	20% State Match	Total FY24 Budget
\$200,000	\$50,000	\$250,000

CONTACT: Kim Romano, P.E.
Advanced Research Study Engineer
kim.romano@ardot.gov
501-569-2195

Title: 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. The team will develop standard practices and procedures (best methods) for data acquisition through this research.

FY24 Planned Activities and Deliverables: Project close-out and implementation.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Mark Simecek, P.E.
Research Study Engineer
mark.simecek@ardot.gov
501-569-2479

00K467: Research Project TRC2107

Title: 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.

FY24 Planned Activities and Deliverables: Project close-out and implementation.

80% SPR	20% State Match	Total FY24 Budget
\$80,000	\$20,000	\$100,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

Title: Update to ARDOT Superpave Gyratory Compaction (SGC) Specification to Increase Pavement Durability

Purpose and Scope: To increase the durability (cracking and rutting performance) of asphalt pavements. Specifically, this study will determine the effects of “lower gyration” incorporating with “balanced mix design approach” on change in the volumetric and performance properties of asphalt mixtures. This research will also 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 the local variables.

FY24 Planned Activities and Deliverables: According to the work time schedule, the proposed activities and deliverables for FY24 contain the continuation of the following tasks: laboratory research – calibrating concepts, contractor participation – moving forward today, laboratory research – validating concepts, life cycle cost analysis, and interim deliverables. The Asphalt Pavement Analyzer (APA) equipment purchase and the AASHTOWare Pavement ME Design Software rental are anticipated in FY24.

80% SPR	20% State Match	Total FY24 Budget
\$320,000	\$80,000	\$400,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

00B467: Research Project TRC2202

Title: Updating ARDOT Liquefaction Evaluation and Mitigation Procedures

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

FY24 Planned Activities and Deliverables: Continuing the refinement of the spreadsheets with input from the Department's Bridge Division. The project team will work to understand the relationships between liquefied soil and skin friction of pile foundations. The project team will work to analyze and compare previously collected datasets.

80% SPR	20% State Match	Total FY24 Budget
\$160,000	\$40,000	\$200,000

CONTACT: Mark Simecek, P.E.
Research Study Engineer
mark.simecek@ardot.gov
501-569-2479

OOP467: Research Project TRC2203

Title: Low Shrinkage Concrete Mixtures for Arkansas

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

FY24 Planned Activities and Deliverables: The evaluation of recent bridge decks will continue as Resident Engineer offices submit new information. Development of Low-Shrinkage Concrete Mixtures, including materials acquisition, mixture design and testing of normal weight aggregates, and low-shrinkage specification development.

80% SPR	20% State Match	Total FY24 Budget
\$160,000	\$40,000	\$200,000

CONTACT: Mark Simecek, P.E.
Research Study Engineer
mark.simecek@ardot.gov
501-569-2479

00Q467: Research Project TRC2204

Title: Materials and Testing Specifications for Drilled Shaft Concrete

Purpose and Scope: To update the Department'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.

FY24 Planned Activities and Deliverables: Full-scale investigation of self-consolidating concrete mix designs currently in use by the Department. Draft specifications for required QA/QC testing of drilled shaft concrete will be developed. Tests to identify that the drilled shafts were installed correctly will be included.

80% SPR	20% State Match	Total FY24 Budget
\$160,000	\$40,000	\$200,000

CONTACT: Mark Simecek, P.E.
Research Study Engineer
mark.simecek@ardot.gov
501-569-2479

00C467: Research Project TRC2301

Title: Smart Work Zone (SWZ) System Design, Specifications, Estimates, and Implementation Guidelines

Purpose and Scope: The Department's Automated Work Zone Information System (AWIS) special provisions have required frequent revisions. The need for AWIS is sometimes determined late in project development, thus requiring last-minute revisions. New smart work zone (SWZ) technologies enhancing communications to drivers are becoming available. This research will look at current Department practices, examine nationwide emerging best practices and new technologies, and recommend special provision modifications, equipment selection criteria, and system estimates.

FY24 Planned Activities and Deliverables: Pending contract approval: SWZ literature review, best practices review, and Department procedures evaluation will be conducted. Traffic data will be collected at key locations in order to review work zone traffic impact estimates. The ability of vehicle probe data to replace or supplement field equipment will be evaluated.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Kim Romano, P.E.
Advanced Research Study Engineer
kim.romano@ardot.gov
501-569-2195

Title: Development of Pedestrian and Bicyclist Flow Volumes and Risk Factors

Purpose and Scope: To create a database on travel patterns of non-motorized transportation users. Estimating the volume of pedestrian and cycling road users is an important step toward developing a systemic safety management approach to reduce crashes. Both observational and emerging sources of non-motorized traffic volume data will be overlaid with the historical crash and roadway inventory data to determine crash risks for selected locations. Based on the crash risks of those selected locations, countermeasures can be implemented to address the increasing number of suspected serious injuries and fatalities among this vulnerable user group.

FY24 Planned Activities and Deliverables: Pending contract approval: The literature review is expected to be completed. Most of the data collection for the project will be completed, extending into the first quarter of FY25. The creation of the database will begin.

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Bethany Stovall
Research Support Supervisor
bethany.stovall@ardot.gov
501-569-2279

Title: Evaluation of Impacts Due to a Bridge Closure: A Case Study of the Mississippi River Bridges in Arkansas

Purpose and Scope: To quantify the multi-modal impacts due to a Mississippi River bridge closure. This study will consider different scenarios/combinations of bridge closures (i.e., full and partial bridge closures that take account of one/both directions, single/multiple lanes, and day/night closures), including all the Mississippi River Bridges in Arkansas (i.e., I-40, I-55, HWY 49 and HWY 82 bridges). A comprehensive multi-modal analysis will be performed that considers the number of vehicles, trucks, and marine vessels/barges disrupted due to the bridge closure (with all potential scenarios/combinations) and applies detailed cost conversions to monetize direct (delays) and indirect (safety, infrastructure, operations) impacts. Also, this study will develop an Excel-based tool to conduct “what-if” analyses for decision-making purposes, whether for operation, maintenance, or planning activities.

FY24 Planned Activities and Deliverables: Pending contract approval: The proposed activities and deliverables for FY24 contain the following tasks, including literature review, data collection, and multi-modal impacts estimation (scenario definition, estimation of impacts, and monetization of impacts).

80% SPR	20% State Match	Total FY24 Budget
\$120,000	\$30,000	\$150,000

CONTACT: Sanghyun Chun, Ph.D., P.E.
Senior Research Study Engineer
sanghyun.chun@ardot.gov
501-569-2933

Arkansas Local Technical Assistance Program

020050: Arkansas Local Technical Assistance Program

The Arkansas Local Technical Assistance Program (LTAP) funds are programmed based on a federal fiscal year and presented from October 2022 through September 2023. 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, the University of Arkansas – Fayetteville (UAF), and FHWA.

Purpose and Scope: 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 infrastructure management issues. The experiences and innovations of established operations and the implementation of the latest research findings are shared.

FY24 Planned Activities and Deliverables: The Department's activities will include overall program administration and management, training schedule coordination, and seminar presentation oversight. The contracted presenter seminars are part of an agreement with the Department and LTAP. UAF activities will include developing selected courses, as requested and approved by the Department, with guidance from the LTAP Advisory Committee.

Additional details are included in the formal LTAP submittal.

FY24 Funding Summary	
Funding Description	Funding Totals
LTAP Funding	210,000
SPR Match	168,000
State Match	42,000
Total LTAP Budget	\$420,000

CONTACT: Patrick E. Thomas
Arkansas LTAP Program Manager
patrick.thomas@ardot.gov
501-569-2380

Part III Planning Non-SPR

Part III - Planning
Non-SPR In-House & Contract Activities
FY2024

Job No.	Work Description	100% State Funds
	Transportation Planning and Policy	
000400	Administration - TPP	150,000
	System Information and Research	
000468	Administration - SIR	150,000
Total Non-SPR In-House Budget (100% State)		300,000

000400: Administration: Transportation Planning and Policy

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.

FY24 Planned Activities and Deliverables: 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 FY23 Final Performance and Expenditure Report will be developed and submitted to FHWA. The FY25 SPR Work Program and Cost Estimate will be developed and submitted to FHWA for approval and work authorization.

0% SPR	100% State Funded	Total FY24 Budget
	\$150,000	\$150,000

CONTACT: Brad McCaleb, P.E.
Division Engineer
501-569-2201

000468: Administration: System Information and Research

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.

FY24 Planned Activities and Deliverables: 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 upcoming SPR Work Program and Cost Estimate will be developed and submitted to FHWA for approval and work authorization.

0% SPR	100% State Funded	Total FY24 Budget
	\$150,000	\$150,000

CONTACT: Mark Headley, P.E.
Division Head
mark.headley@ardot.gov
501-569-2946

Part IV Research Non-SPR

Part IV Research
Non-SPR In-House & Contract Activities
FY2024

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

00A556: Administration: Research

Purpose and Scope: To set objectives, measure accomplishments, and provide administrative support for all work activities of the Section. This project also provides training and auxiliary functions necessary for Section 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.

FY24 Planned Activities and Deliverables: 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 upcoming SPR Work Program and Cost Estimate will be developed and submitted to FHWA for approval and work authorization.

0% SPR	100% State Funded	Total FY24 Budget
	\$225,000	\$225,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

00A557: Support Services

Purpose and Scope: To cover costs associated with work and other activities directly related to the Research Program but not to a specific federally-funded Research project.

FY24 Planned Activities and Deliverables: Activities include continued vehicle maintenance and other support services not eligible for federal funding.

0% SPR	100% State Funded	Total FY24 Budget
	\$20,000	\$20,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

00X556: Engineering and Research Services (EARS)

Purpose and Scope: To provide funding for short-term, limited-scope projects without a contract. Existing basic agreements with three universities allow for this process. Task Orders are completed for these projects.

FY24 Planned Activities and Deliverables: Activities may include any short-term research as needed by the Department.

0% SPR	100% State Funded	Total FY24 Budget
	\$40,000	\$40,000

CONTACT: Vacant
Staff Research Engineer
research@ardot.gov
501-569-4922

Part V FHWA/FTA Consolidated Planning Work Program

FHWA/FTA Consolidated Planning Work Program

Work Program	Federal	State/Local Match	Total Cost
Section 5303 - FHWA/FTA Consolidated Metropolitan Planning Program			
Metroplan (CARTS)	1,267,919	316,980	1,584,899
Frontier Metropolitan Planning Organization (FMPO)	308,890	77,223	386,113
Northeast Arkansas Regional Transportation Planning Commission (NARTPC)	167,683	41,921	209,604
Northwest Arkansas Regional Planning Commission (NARTS)	753,104	188,276	941,380
Southeast Arkansas Regional Planning Commission (PBATS)	135,323	33,831	169,154
Tri-Lakes Metropolitan Planning Organization (HSATS)	141,207	35,302	176,509
Texarkana Metropolitan Planning Organization (TUTS)	64,720	16,180	80,900
West Memphis Metropolitan Planning Organization (WMATS)	102,964	25,741	128,705
Subtotal	2,941,810	735,454	3,677,264
Section 5304 - FTA Statewide Planning Program			
Core Program	68,242	17,061	85,303
Drug-Alcohol Planning	41,261	10,315	51,576
Seniors/Disabled/Low Income Service Planning	41,262	10,316	51,578
Staff Training and Development	11,299	2,825	14,124
Subtotal	162,064	40,517	202,581
Total Project Cost	\$3,103,874	\$775,971	\$3,879,845

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



STATE FISCAL YEAR 2024
**STATE PLANNING AND
RESEARCH WORK PROGRAM**