



Joe Lombardo, Governor of Nevada

State Planning & Research Annual Work Program

Nevada Department of Transportation | Planning Division | Federal Fiscal Year 2024

SPR-PL-0001(058) (TBD)



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Introduction

This State Planning and Research (SPR) Program for Federal Fiscal Year (FFY) 2024 has been prepared to outline the planning and research activities for the Nevada Department of Transportation (NDOT). The SPR program aims to define the continuing, comprehensive, and coordinated transportation planning efforts that NDOT will facilitate within the upcoming federal fiscal year, October 1, 2023 – September 30, 2024. The SPR Annual Work Program (AWP) is required by federal regulation.

The work detailed in this SPR AWP informs decisions through expertise and innovation in planning, policy, data, analysis, and research services to support a sustainable and integrated statewide multimodal transportation system. It supports performance-based decisions based on sound data and planning processes and ensures Nevada’s residents and visitors have a safe and connected multimodal transportation system.

The SPR program proposal is divided into two sections. The first, *Part I - Planning*, outlines the planning activities which NDOT undertakes. The second, *Part II - Research*, outlines the important research studies the NDOT will oversee.

Overview of the State Planning & Research (SPR) Program

The State Planning and Research (SPR) Program is a congressionally authorized and appropriated program that funds statewide transportation planning and research activities. The funds are used to establish a cooperative, continuous, and comprehensive (‘3Cs’) planning framework for making transportation investment decisions and to carry out transportation research activities throughout each State. These federal funds assist states in meeting their planning objectives in correlation with Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) regulations and guidance.

The SPR Program reflects the partnership between the federal and state governments for the statewide transportation planning process as the primary mechanism for collaborative transportation decision-making throughout the State. Federal transportation programs require coordinating statewide planning with metropolitan planning, statewide trade/ economic development planning activities, and related multi-state planning efforts.

The Planning Division within the NDOT is made up of several program areas that all play essential roles in the Department’s planning objectives and have the goal of meeting federally mandated planning, research, and data collection requirements. The SPR program tasks are implemented by appropriate planning program areas based on the responsibility of work and organization. While each proposed planning initiative may fall within the responsibility of a specific program area, there is synergistic collaboration throughout the planning division, ensuring that essential transportation planning goals are met.

The provisions of 23 U.S.C. 135, 23 U.S.C. 150, and 49 U.S.C. 5304, as amended, require each State to carry out a continuing, cooperative, and comprehensive performance-based statewide multimodal transportation planning process, including the development of a long-range statewide transportation plan and State Transportation Improvement Program (STIP).

Planning Emphasis Areas

In the letter dated December 30, 2021, the FHWA provided clarity regarding existing requirements for Planning Emphasis Areas (PEAs) for use in the development of Metropolitan and Statewide Planning & Research Work Programs. This section will summarize the incorporation of the PEAs into the 2024 SPR AWP for the Nevada Department of Transportation.

Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future

To “*help achieve the national greenhouse gas reduction goals of 50-52% below 2005 levels by 2030, and net-zero emissions by 2050, and increase resilience to extreme weather events and other disasters resulting from the increasing effects of climate change*”, the Department includes considerations in their planning processes for tackling the climate crisis and considerations to accelerate the transition toward electric and other alternative fueled vehicles, to plan for a sustainable infrastructure

system, and considerations to prepare for, and adapt to, the impacts of climate change.

Equity and Justice⁴⁰ in Transportation Planning

In order to “*advance racial equity and support for underserved and disadvantaged communities,*” the Department includes considerations in its planning processes to ensure equity and racial justice. In addition, the Department includes considerations to ensure public involvement in the planning process and that plans and strategies reflect various perspectives, concerns, and priorities from impacted areas to advance racial equity and support for underserved and disadvantaged communities.

Complete Streets

In order to “*plan, develop, and operate streets and networks that prioritize safety, comfort, and access to destinations for people who use the street network,*” the Department includes considerations not only for passenger vehicles but also for pedestrians, bicyclists, transit users, micro-mobility users, freight, passenger vehicles, and future automated transportation needs in cooperation with the Sustainable & Emerging Transportation program and Complete Streets.

Public Involvement

In order to “*ensure early, effective, and continuous public involvement,*” the Department includes considerations in its planning processes in conjunction with our Public Information Office and Communications Division to promote and encourage meaningful public involvement by integrating in-person, virtual, multi-lingual, and accessible options for the public.

Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD) Coordination

In order to “*coordinate with representatives from DOD in the transportation planning and project programming process,*” the Department includes considerations in their planning processes for DOD coordination and works with MPOs, RTCs, and local agencies to coordinate with the DOD for infrastructure and connectivity needs for STRAHNET routes and public roads that connect to DOD facilities.

Federal Land Management Agency (FLMA) Coordination

In order to “*coordinate with FLMAs in the transportation planning and project programming process,*” the Department includes considerations in their planning processes for FLMA Coordination with MPOs, RTCs, and local agencies to coordinate with FLMAs for infrastructure and connectivity needs related to access routes and public roads that connect to federal lands.

Planning and Environmental Linkages (PEL)

In order to ensure “*a collaborative and integrated approach to transportation decision-making that considers environmental, community, and economic goals early in the transportation planning process,*” the Department includes considerations in their planning processes for PEL. The Department considers environmental, community, and economic needs early in the planning process and uses the information, analysis, and products developed during planning to inform the environmental review process to inform and improve project delivery timeframes.

Data in Transportation Planning

In order to “*address the emerging topics areas of data sharing, needs, and analytics,*” the Department includes considerations in their planning processes for data sharing principles. The Department is continuing refinement of its data retention methods and ability to share data assets across multiple programs and agencies.

Acknowledgments

The State of Nevada Department of Transportation receives federal funding for the State Planning and Research (SPR) program through congressional authorizations and appropriations to the United States Department of Transportation (USDOT). Statewide and Metropolitan Planning funding is administered by the USDOT Federal Highway Administration (FHWA) through the FHWA–Nevada Division Office in Carson City and the Federal Transit Administration (FTA) through the FTA Region 9 Office in San Francisco, CA.

The State of Nevada Department of Transportation (NDOT) administers the SPR program through its Planning Division, Office of Multimodal Planning and Program Development.

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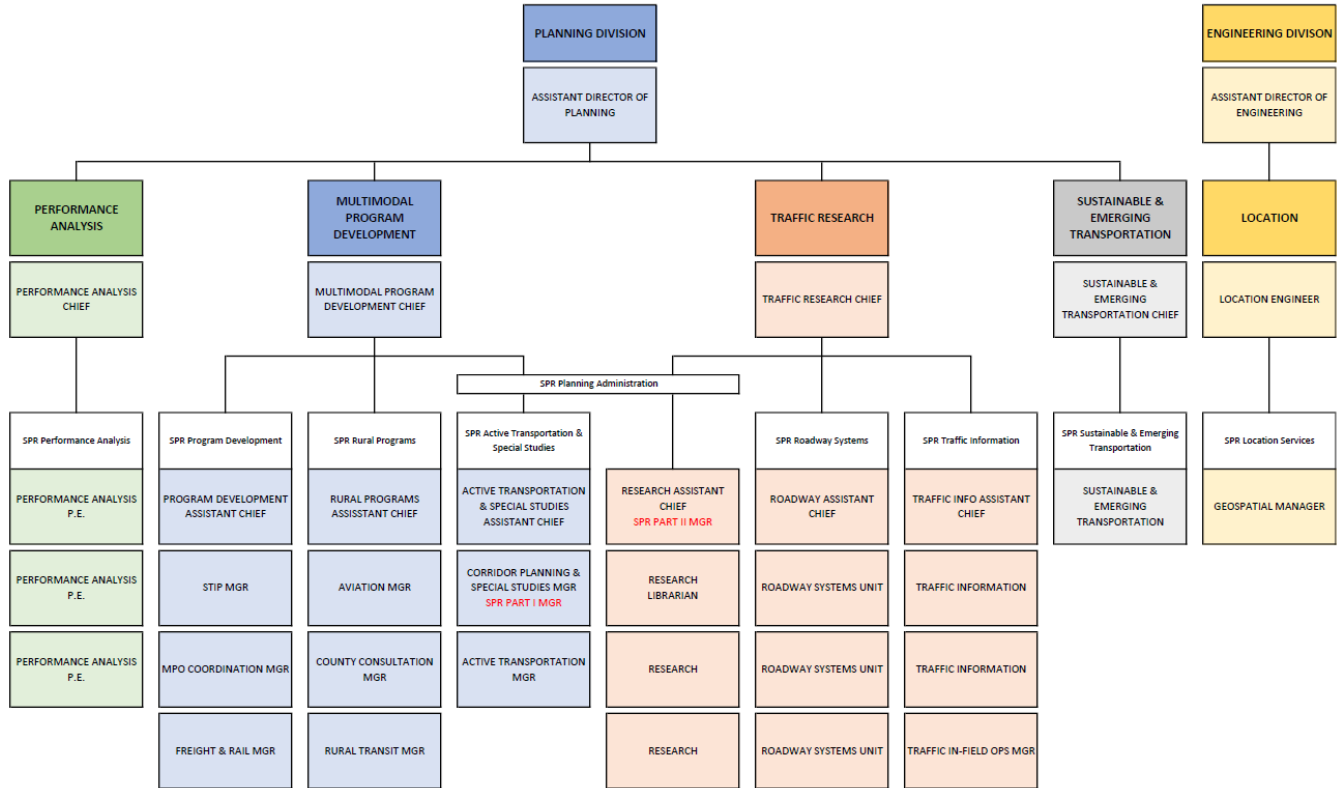
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Planning Division Organization Chart



Part I: Program Budget Summary

Estimated Available FFY 2024 SPR Funding

Report: FMISW10A 06/08/23

FFY 2024 Apportionment

FFY 2024 Projected Apportionment (2023 federal allocation increased by 2%)	\$6,684,463
FFY 2024 State Match	\$1,671,116
Total Projected FFY 2024 Apportionment (FHWA & Match)	\$8,355,579

FFY 2022 Carryover

Statewide Planning I/J/A	\$1,981,315
Safe Access Transp Opt- SPR I/J/A	\$456,485
Total Federal Carryover	\$2,437,800
Total State Match	\$609,450
Total Projected FFY 2022 Carryover	\$3,047,250

Total Estimated Available FFY 2024 SPR Funding

	Federal 80%	\$9,122,263
	State 20%	\$2,280,566
		\$11,402,829

FFY 2024 SPR Part I Budget and Pooled Funds Summary

Task	Activity	Title	Total Budget
PLANNING ADMINISTRATION			
2401	1976	Internal Auditing - Federal	\$3,900
2402	3601	Planning Program Management	\$112,000
2403	3603	Research Library	\$242,900
2404	3614	Planning and Environmental Linkages	\$10,600
Total Planning Administration Budget			\$369,400

SUSTAINABLE & EMERGING TRANSPORTATION			
2405	3609	Alternative Fuel Corridors	\$24,400
2406	3611	Climate Planning	\$334,800
2407	3616	Emerging Technology and Innovation	\$94,600
2408	3860	Alternative Funding (VMT)	\$33,600
Total Sustainable & Emerging Transportation Budget			\$487,400

ROADWAY SYSTEMS			
2409	3607	Roadway Inventory	\$288,000
2410	3608	Road Relinquishments -- Transfers	\$67,000
2411	3610	Roadway Video and Lidar Imaging	\$232,000
2412	3612	Mileposting	\$118,600
2413	3653	Functional Classification & Boundary	\$46,800
2414	3660	Highway Performance Monitoring System	\$304,400
Total Roadway Systems Budget			\$1,056,800

TRAFFIC INFORMATION			
2415	3623	Continuous Traffic Counts	\$212,600
2416	3624	Short-Term Traffic Counts	\$1,376,800
2417	3626	Vehicle Classification	\$201,600
2418	3627	Special Traffic Studies	\$125,300
2419	3632	Vehicle Weight	\$302,300
2420	3982	Travel Demand Forecasting	\$601,600
Total Traffic Information Budget			\$2,820,200

PERFORMANCE ANALYSIS			
2421	3644	Fuel Tax Revenue Management	\$36,800
2422	3650	Performance Management	\$686,450
2423	3651	Mandated Reports	\$103,900
2424	3655	Benefit-Cost Studies	\$37,600
2425	3656	State Highway Preservation and Reporting	\$11,400
2426	3659	Innovative Planning	\$33,800
2427	3863	Nevada Construction Cost Study	\$30,200
Total Performance Analysis Budget			\$940,150

FFY 2024 SPR Part I Budget and Pooled Funds Summary (continued)

ACTIVE TRANSPORTATION			
2428	3679	Active Transportation Planning	\$171,700
2429	3970	Corridor Planning Program	\$655,400
Total Active Transportation Budget			\$827,100

RURAL PROGRAMS			
2430	3602	Tribal Consultation	\$63,000
2431	3955	County Consultation	\$226,700
2432	3961	Public Transportation Planning	\$0
Total Rural Programs Budget			\$289,700

PROGRAM DEVELOPMENT			
2433	3613	Multistate Coordination & Planning	\$169,300
2434	3690	Freight & Rail Transportation Planning	\$393,600
2435	3957	Nevada MPO/RTC Coordination	\$79,400
2436	3979	eSTIP Consultant Support	\$381,200
2437	3980	Statewide Long-Range Planning	\$740,600
2438	3984	STIP / Work Program	\$218,400
2439	3997	Scenic Byway Program	\$5,600
Total Program Development Budget			\$1,988,100

LOCATION SERVICES			
2440	3617	SPR Mapping	\$224,000
2441	3728	Imagery	\$5,600
Total Location Services Budget			\$229,600

Total FFY 2024 SPR Part I Budget			\$9,008,450
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PART I POOLED FUNDS			
2408	3860	SPR Part I Pooled Funds TPF-5(288) RUC West (on hold)	\$25,000
2408	3860	SPR Part I Pooled Funds TPF-5(286) MBUFA (on hold)	\$5,000
2437	3980	SPR Part I Pooled Funds TPF-5(456)	\$5,000
Total Part I Pooled Funds Budget			\$35,000

Total FFY 2024 SPR Part I Pooled Funds			\$35,000
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Part I: Program Sections

Planning Administration

1976 Internal Auditing – Federal

TASK 2401
ACTIVITY 1976
OPERATIONAL SECTION Planning Administration
PROGRAM MANAGER SPR Part I Manager, Multimodal Program Development

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	3,900
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	3,120
State (20%)	\$	780
Total Requested Amount	\$	3,900

PARTICIPATING AGENCIES FHWA, NDOT
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

Provide internal auditing services for SPR program-funded agreements on an as-needed basis.

PLANNING EMPHASIS AREAS

- None

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Internal auditing activities for SPR program-funded agreements on an as-needed basis.

3601 Planning Program Management

TASK	2402
ACTIVITY	3601
OPERATIONAL SECTION	Planning Administration
PROGRAM MANAGER	SPR Part I Manager, Multimodal Program Development

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	112,000
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	89,600
State (20%)	\$	22,400
Total Requested Amount	\$	112,000

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

Provide technical and policy review of the Statewide Planning and Research Program (SPR). The Transportation Planning Advisory Committee (TPAC) will advise, solicit input, and interact with NDOT’s Planning management team and staff on issues that affect transportation planning in Nevada.

PLANNING EMPHASIS AREAS

- None

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Ensure program compliance with federal, state, and local regulations - program development, oversight, refinement, amendment, reconciliation, and reporting, including FHWA Planning Emphasis Areas
- Collaborate with, and provide technical assistance to, the Planning Division
- Administration of Planning On-Call Program funded, in part, by SPR
- Begin preparations of, and readvertise Planning On-Call Program Master Service Agreement
- Compilation, review, and submission of Quarterly/Final reports
- TPAC and Standing Committee meetings
- Provide Stewardship Performance Measures for Performance Analysis
- Conduct Spring Meetings to discuss tasks and budgets for FFY 2024 SPR AWP
- Review and approval of draft FFY 2024 SPR AWP by NDOT Executive Leadership Team (may include FHWA)
- Submission of Final SPR AWP to FHWA for review and approval
- Schedule and program funds for Approved SPR AWP
- Publish FHWA-Approved FFY 2024 SPR AWP

3603 Research Library

TASK	2403
ACTIVITY	3603
OPERATIONAL SECTION	Planning Administration
PROGRAM MANAGER	SPR Part II Manager, Traffic Research

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	110,900
Travel	\$	-
Operating	\$	132,000
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	194,320
State (20%)	\$	48,580
Total Requested Amount	\$	242,900

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

To provide access to the highest quality information possible regarding all facets of the transportation industry to all members of the Nevada Department of Transportation (NDOT), the Federal Highway Administration (FHWA), the Local Technical Assistance Program (LTAP), state and local governments, Nevada academic institutions, and the public. Information will be provided in research reports, monographs, periodicals, and reference materials. The Research Librarian is responsible for library operations, including:

- Maintaining a collection of library resources in print and electronic format
- Compiling usage records
- Assisting users seeking information on specific subjects
- Ensuring all incoming material is properly cataloged
- Monitoring and evaluating available materials for possible acquisition to ensure state-of-the-art research information is available for use.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Managed ASTM Compass database subscription
- New reference materials were added to the collection
- Managed AASHTO electronic publications, including making publications available to NNDOT staff
- Additional electronic publications added to the NDOT website
- NDOT research reports are cataloged and made available in several places
- NDOT participation in the third iteration of the Library Pooled Fund project
- Assisted NDOT staff doing library research

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Continue developing and updating library collection
- Circulation of print materials
- Providing access to other library collections through interlibrary loan
- Cataloging and processing of new materials in accordance with Library of Congress standards
- Maintaining library's web-based catalog
- Updating library holdings in the international OCLC WorldCat database
- Promoting library services through the library website, intranet site, and email updates
- Continued stewardship of electronic databases, AASHTO publications, and other electronic resources
- Representing NDOT in the national library community
- Travel and training to support activities identified in this task are funded outside of SPR Part I

3614 Planning & Environmental Linkages

<u>TASK</u>	2404
<u>ACTIVITY</u>	3614
<u>OPERATIONAL SECTION</u>	Planning Administration
<u>PROGRAM MANAGER</u>	Active Transportation & Special Studies Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	4,600
Travel	\$	1,000
Operating	\$	-
Capital Outlay (Consultant)	\$	5,000
Equipment	\$	-
Federal (80%)	\$	8,480
State (20%)	\$	2,120
Total Requested Amount	\$	10,600

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

Update guidelines and checklists to consider environmental, community, and economic needs early in the planning process. Use the information, analysis, and products developed during planning to inform the environmental review process to inform and improve project delivery timeframes. Updated guidelines will be tailored towards applicable NDOT and partner agency/stakeholder needs.

PLANNING EMPHASIS AREAS

- Planning and Environmental Linkages (PEL)
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Development of Project Initiation Form (2014)
- Planning and Environment Linkages document and checklist (2013)
- Project Development and Scoping Guidelines (2008)

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Task order development and onboarding of consultant to augment Department staff in updating/improvement of the PEL process, guidelines, and process checklist
- Utilize developed PEL document on relevant planning studies
- Training
- Provide information on the PEL document/checklist to MPOs and other partners for their use
- Coordinate with One Nevada implementation process
- Provide sufficient support to each MPO to deliver statewide planning consistency to help better inform RTPs/long-range plan.

Sustainable & Emerging Transportation

3609 Alternative Fuel Corridors

TASK 2405
ACTIVITY 3609
OPERATIONAL SECTION Sustainable & Emerging Transportation
PROGRAM MANAGER Division Chief, Sustainable & Emerging Transportation

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	22,400
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	19,520
State (20%)	\$	4,880
Total Requested Amount	\$	24,400

PARTICIPATING AGENCIES FHWA, NDOT, Governor’s Office of Energy, Joint Office, MPOs
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

Alternative fuel vehicles will be promoted in Nevada through the alternative fuel vehicles program, aligning resources and expertise. Electric vehicle chargers, zero-emission fueling infrastructure, and zero-emission transit and school buses research will be researched and adopted. Development of the NEVI plan following the standards provided by the Joint Office. Research and planning to establish an interconnected network to facilitate data collection, access.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Develop strategies for statewide electric vehicle charging infrastructure, public outreach, and education
- Building capacity for alternative fuel vehicles in partnership with key stakeholders and other states.
- Develop a five-year strategy and statewide plan for obtaining FHWA approval to access NEVI funds.
- Work with state utility providers to determine grid acceptance and needs.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Identification and field review of sites where alternative fuels could be used
- Coordinate with the Joint Office and inform of the progress of NEVI program
- Plan and produce outreach materials with internal and external members
- Bi-monthly meetings with key stakeholders for progress reporting and plan adjustments
- Continued development of the NEVI plan for the next four years to meet standards set by the Joint Office

3611 Climate Planning

TASK	2406
ACTIVITY	3611
OPERATIONAL SECTION	Sustainable & Emerging Transportation
PROGRAM MANAGER	Division Chief, Sustainable & Emerging Transportation

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	72,800
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	260,000
Equipment	\$	-
Federal (80%)	\$	267,840
State (20%)	\$	66,960
Total Requested Amount	\$	334,800

PARTICIPATING AGENCIES	USDOT, FHWA, FTA, NDOT, NDEP, DOA, DCNR, EPA
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

For transportation to be greenhouse gas (GHG) emission-free, various strategies will probably be needed, including reducing vehicle miles traveled, focusing on zero-emission vehicles, and improving public transportation and perception. As GHG levels are reduced, air quality will improve, and climate change will be slowed. To achieve long-term sustainability of social, economic, and environmental systems, we must make long-term strategic decisions. The research and planning process will focus on identifying Nevada's short, medium, and long-term priorities to meet the state's goals. Analyze the most effective and cost-effective ways to reduce fossil fuel consumption. Statewide reductions in greenhouse gas emissions will be achieved by educating and engaging stakeholders. There will be a focus on identifying and expanding the sources of renewable fuels in the region.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Identified projects for inclusion within the STIP or TIPs to be consistent with the long-range statewide transportation plan and the MPO transportation plans
- Identified strategies included in Nevada state plans and national plans
- Identified possible best practices for performance measures
- Identified the stakeholders and working group members and began the meeting process for plan development.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Ensure consideration of long-term sustainable goals is better incorporated into public policy and decisions regarding transportation.
- Advance research on changing how we travel and transport goods using lower-carbon fuels

- Develop a statewide education program for steps of Eco-Driving
- Identify the various modes of transportation and contribution to climate change
- Build a state transportation emission reduction plan (TERP)
- Identify and use technologies and strategies that can be used to reduce GHG emissions in planning
- Use technologies and strategies, develop monitoring data needs, and report building to submit changes in carbon reduction numbers.
- Collaboration with state and local agencies to collectively build solutions and consensus. Build a solid foundation with an in common vision and setting expectations for the transportation emissions reduction program.
- Develop a list of strategies, priorities, and actions.
- Facilitate workshops to confirm the overall purpose of the programs and finalize the role of each group member.
- Solicit input on strategies which include polity, program and projects that have the potential to reduce carbon emissions in Nevada
- Identify roles and agencies for strategy implementation.
- Examine funding sources for strategies, programs and projects identified in the TERP.
- Review and evaluate best practices across the nation for carbon and greenhouse gas reduction strategies in the transportation sector.
- Establish baseline trends in the transportation sectors, modes, and vehicle classes. Examine vehicle technology, fuel mix and patterns based of federal and state policy.
- Define and establish program performance measures.

3616 Emerging Technology & Innovation

TASK	2407
ACTIVITY	3616
OPERATIONAL SECTION	Sustainable & Emerging Transportation
PROGRAM MANAGER	Division Chief, Sustainable & Emerging Transportation

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	89,600
Travel	\$	5,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	75,680
State (20%)	\$	18,920
Total Requested Amount	\$	94,600

PARTICIPATING AGENCIES	FHWA, NDOT, DMV, GOED, Counties and Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

The information about conventional transportation technologies is quite abundant. Some technologies are operational, while others are under development, and some are still in the conceptual stage. The innovation team intends to serve as an information resource for NDOT planning. The development of transportation systems statewide to provide more efficient and effective service delivery, including the use of technology and enhancement of technology capability.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Collaboration with the Traffic Operations team by understanding, implementing, and utilizing the new technologies and aligning them with existing activities.
- Researched smart mobility strategies and their relevance and functionality statewide. Worked with partner agencies to develop tools and concepts that will improve the efficiency and safety of travel in Nevada.
- Identify best practices and coordinate statewide changes, prioritizing safety.
- To minimize barriers to innovation in transportation while maximizing travel convenience and mobility between neighboring states.
- Supported strategic goals and engage internal and external stakeholders

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Advocate for bringing smart growth practices to all Nevadan communities.
- Create an innovation roadmap. We will promote the deployment of innovative products within our infrastructure in a timely manner. We will prioritize solutions for reform.
- Incorporate new technologies into transportation policies and practices that advance environmental sustainability

and foster equitable economic development.

- Communication with partners and stakeholders remains a priority, even beyond the agency. Monitor autonomous ride-hailing services being tested in Las Vegas.
- Continual research into the implementation of innovative technologies in the U.S. and internationally through webinars, meetings, and the TRB.
- Create a collaborative atmosphere and culture within the organization for intelligent transportation planning. Encourage the breaking down of administrative silos between agencies.
- Developing and deploying new and innovative ideas, practices, and approaches.
- Integrated mobility innovation effective practices, partnerships and technologies to enhance transportation effectiveness, and efficiency to promote safety and improve the traveling experiences.
- Study the policy designs and efforts for laws, regulations, policies and directives nationally and internationally.
- Coordination with other agencies and the private sector to ensure Nevada is ready for the change in transportation, both from a technical standpoint and its impact on travel behavior. Coordination with divisions across the Department, including Maintenance, Traffic Operations, Planning, Performance Analysis, and Traffic Safety, to ensure adequate preparedness for this transformational change
- Research infrastructure, technology transfer and partnerships.
- Provide advice to the NDOT Director's office and the State Transportation Board on emerging topics, technologies, and travel behaviors.
- Developing programs, coordinating changes, and evaluating transformational technologies that will transform travel behavior in order to prepare all Divisions for new roles in autonomous and connected vehicles.
- Evaluation of emerging transportation advancements.

3860 Alternative Funding (VMT)

TASK	2408
ACTIVITY	3860
OPERATIONAL SECTION	Sustainable & Emerging Transportation
PROGRAM MANAGER	Division Chief, Sustainable & Emerging Transportation

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	33,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	26,880
State (20%)	\$	6,720
Total Requested Amount	\$	33,600

SPR Part I Pooled Funds TPF-5(288) RUC West (<i>on hold</i>)	\$	25,000
SPR Part I Pooled Funds TPF-5(289) MBUFA (<i>on hold</i>)	\$	5,000

PARTICIPATING AGENCIES	FHWA, NDOT, RUC America, MBUFA, DMV
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

Nevada, in collaboration with the Road Usage Charge (RUC) America, is establishing a broad national coalition to assess, evaluate, and identify a sustainable alternative funding mechanism for transportation with the potential to replace the existing fuel tax system. The study will include testing from simple odometer-based or annual registration-based VMT Fee system to High Tech system that will minimize privacy concerns and give users a choice to select from a variety of payment mechanisms the method that best meets the user's individual needs and preferences.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Phases 1 and 2 of the study were initiated in 2009/2010 in cooperation with the two RTCs, UNR, and UNLV. There were 20-30 volunteer vehicles were used as prototypes to prepare for the larger west coast coalition study.
- Phase 2A worked on: MOBI (Mass Opinion Business Intelligence), Asset Optimization, Financial Sustainability, Regulatory issues, Transition strategies, Low-cost/Low-tech VMT fee system feasibility, equity issues, and in-vehicle technology

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Collaborate with individuals and groups interested in road use charge and mileage-based user fees to create a constructive learning environment and policy space
- As part of the RUC America Consortium, participate in a proposed Regional Pilot Program for road usage fees.

- Research road use charges and mileage-based user fees to see if they are feasible
- Assess how pilot projects can inform the use of mileage fee systems by developing criteria and applying them
- Evaluate the current sources of sustainable funding mechanisms for the future transportation needs.
- Find out what information the national commissions and international efforts have on hand.
- Attend collaborative meetings and participate in public outreach as necessary.
- Collaborate with other states within the RUC America Consortium, the Mileage-Based User Fee Alliance, and the US Department of Transportation. As part of the DOT's efforts to identify alternative funding mechanisms, many states across the country are exploring different mechanisms.
- Research and build awareness from pilots from around the country and evaluate different mechanisms to identify alternative funding to meet the needs of the transportation system.
- Enhance awareness of mileage-based user fee programs both in the United States and internationally
- Engage community and political leaders around common transportation funding priorities

Roadway Systems

3607 Roadway Inventory

TASK 2409
ACTIVITY 3607
OPERATIONAL SECTION Roadway Systems
PROGRAM MANAGER Roadway Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	280,000
Travel	\$	8,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	230,400
State (20%)	\$	57,600
Total Requested Amount	\$	288,000

PARTICIPATING AGENCIES FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

Inventories are maintained to provide a variety of roadway statistics. These inventories support management systems, including the addition and deletion of State routes, pavement management, asset management system, and the Highway Performance Monitoring System (HPMS) (23CFR, Part 420.105(b)). The inventories are used to support the statewide Geographic Information Systems (GIS) road centerline geometries, public road mile certification (23CFR, Part 460), and the development of Annual Vehicle Miles of Travel. In addition, this task is used for the submission of federal-aid highway system actions per 23CFR, Part 40, including interstate route designations, National Highway System (NHS) designations, National Truck Network designations, Indian reservation roads designations, and American Association of State Highway and Transportation Officials US route numbering actions. The Roadway Inventory activity also supports state highway system designation per NRS 408.285.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Approximately 1,045 GIS road inventory updates were completed.
- The 2023 annual publication of “The State Maintained Highways of Nevada” was completed, and over 490 copies were distributed.
- 60 public and/or interagency road research requests were completed.
- Road inventory changes have been submitted to the Federal Systems section and documented in the HPMS attribute tables.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Review, maintain and manage the State maintained road inventory to include processing As-Builts, retracements, new construction alignments, Right-Of-Way transactions, and Quality Control edits.
- Maintain road inventory data in the State Maintained Highways of Nevada hard copy and online database.
- Administer and manage the State System route designations, including AASHTO approvals, assigning new route designations, recording route information, and Route Master edits.
- Research, document, and submit road history data to the NDOT Records Management office in accordance with the Public Records Act (NRS 239), and provide road history data to interagency personnel and outside entities as requested.
- Road inventory audits include frequent travel, discussions, and meetings with City and County entities related to the public road mileage.
- Annual publication of *“The State Maintained Highways of Nevada”* and accurately documented road inventory data.
- Prepare and submit AASHTO applications, document route designation changes in the Route Master, and electronic and hard copy files.
- Respond to road history research requests in a timely manner and as outlined in the NDOT Public Records guidelines.
- Schedule travel and road audit meetings and accurately document the road inventory data. Maintain the public road mile records.
- Locate, identify and list Indian/Tribal roads from start to finish measures that are state-owned within Nevada. Consultant to be paid from On-Call consultant agreement. Expected products from this are an updater and final report listing all Nevada state-owned roads approved for the IRR program (Indian Reservation Roads) for verification of public road miles reported by the FHWA.

3608 Road Relinquishments & Transfers

TASK	2410
ACTIVITY	3608
OPERATIONAL SECTION	Roadway Systems
PROGRAM MANAGER	Roadway Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	65,000
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	53,600
State (20%)	\$	13,400
Total Requested Amount	\$	67,000

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, Counties, & Incorporated Cities
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

The State of Nevada has an active and aggressive Road Relinquishment/Transfer program. Transfers occur between the State and Local Governments which include Incorporated Cities and Counties. Nevada State Regulation NRS408.527 mandates the process for opening discussions, reviewing roads, and completing the road relinquishment process between agencies. Currently, these roads are accounted for in the annual Road Certification Mileage required under C.F.R. Title 23, Parts 460.1-460.3 and U.S.C. 23, Chapter 4, Section 402(c). Additionally, when these roads are transferred, they are reviewed for possible changes to the Federal Road Classification designation required under 23 CFR, Part 470.105 and further go through a process of removal from the State’s Asset Management plan under MAP 21.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Completing the transfer of C215, Warm Springs to Stephanie, from the County to the State.
- Began discussions with Humboldt County to take Grass Valley Road (SR-294) from Hanson Street to the county line. This includes the entirety of SR-294.
- County portions of SR574, Cheyenne, US50 to Decatur (Clark County Portions Only). Note: City portions already turned over to City of Las Vegas.
- SR159, E Charleston, Bus Turnouts
- SR671, Holcomb Ranch, Lakeside, Huffaker in Reno/Washoe County. Offer made to Washoe County. Monitoring for response.
- SR-582, Boulder Highway, Wagon Wheel to Tulip Falls, executed by City of Henderson, needs governor for final approval/signature. (This is the large transfer of Boulder Highway to City of Henderson)
- FRCL65, Dawson Ave. Henderson (frontage road along IR11). Northly portion within Henderson City Limits. Was approved by the Transportation Board in August and is in final recording.

- FRCL65, Dawson Ave, Henderson (Frontage road along IR11). Southernly portion from old City of Henderson Limits to Rail Road Pass interchange. Going through Surplus Property process and was approved. Agreement going to Board of Directors per FHWA to memorialize NDOT's understanding with City of Henderson regarding FRCL65.
- FRWA49, Damonte Ranch Parkway, S. Virginia to Double R, City of Reno (Road turned over to City of Reno on Aug. 1, 2022. Resolution of Relinquishment to Transportation Board soon. (EXCLUDES the portion within IR580 Right of way)
- SR574, Cheyenne Ave, US95 to Decatur, already under control of City of Las Vegas. Final Resolution of Relinquishment went to the Transportation Board in September. Awaiting for Recorded Resolution of Relinquishment.
- SR582, Boulder Highway, Tulip Falls to Wagon Wheel. Agreement Signed. Turned over to City of Henderson for operation and Control August 15, 2022.
- FRCL28, Haynes Dr. (Frontage Road-Next to Boulder Highway). Transferred with the Boulder Highway transfer to Henderson.
- Interstate 215, State took over operation and maintenance on Sept. 1, 2022, from Warm Springs to Pecos. (Had previously taken over Pecos to IR515). Part of an earlier agreement between Clark County and NDOT.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Initiate discussions and negotiate with local governments to transfer roads between agencies.
- Make the appropriate administrative changes to the state road inventory.
- Reconcile the relinquished mileage with the certified public road miles.
- Road Inventory audits include frequent travel, discussions/meetings with local governments, and field verifications related to road transfers.
- Some State roads will be acquired, and some will be transferred.

Changes in the road inventory will be reflected in the Mile Post index, Route Master, ESRI line work, and annual publications.

3610 Roadway Video & Lidar Imaging

TASK	2411
ACTIVITY	3610
OPERATIONAL SECTION	Roadway Systems
PROGRAM MANAGER	Roadway Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	224,000
Travel	\$	8,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	185,600
State (20%)	\$	46,400
Total Requested Amount	\$	232,000

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

Video and Lidar imagery (VLI) provides the department and other agencies with current and historic roadway imaging data for 1) State maintained roadways and 2) Local roads that receive Federal Aid (defined as roads functionally classified from FC 1 to FC 5 plus Urban Minor Collectors). Collected imagery data also provides a resource for geospatial asset data collection and accurate measurements of roadway features from the desktop.

Imagery data allows departmental personnel to view and analyze roadway conditions, characteristics, assets, and other objects. Using powerful viewer and analyzing software applications - the need for travel, interruption of service to the traveling public, and staff exposure to the safety hazards of conducting these activities in the field – are significantly reduced. This data is relied upon for approximately 50% of the HPMS (23 CFR, Part 420.105(b)) data requirements and 25% for Asset Management now required by MAP 21.

Funding for this fiscal year will be used to collect and process data from NDOT's VLI Data Collection vehicle. The data will then be post-processed, reviewed (QA/QC), and uploaded into NDOT's existing Mandli 'Roadview Explorer' and 'Workstation' applications. Collection for FY 2023 will focus on completing state-maintained roads and may include some important local route updates previously collected, as well as specific requests from other divisions. (Collection is planned on a rotational basis for state routes and other routes on a Tri-annual basis).

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Road video images have been collected in Carson City, Clark, Churchill, Douglas, Esmeralda, Humboldt, Lander, Lyon, Mineral, Nye, Storey, Washoe, and White Pine Counties.
- Data was updated and entered for the HPMS and Asset Management programs.

- Over 550 routes were video logged, and the data was uploaded to Roadview Explorer.
- The review of program procedures and the 3-year rotation schedule for functionally classified roads is ongoing.
- Data was collected, reviewed, and updated on all Federal-Aid functionally classified roads and will be used for HPMS requirements, Roadview Explorer, and maps.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Collect video images on all State maintained and functionally classified roads throughout Nevada.
- Provide VLI training and support to NDOT staff as needed.
- Maintain Mandli Workstation license records and ensure program compliance.
- Create a forward-facing software interface for the public to utilize our road imagery and lidar data.
- Continue extraction of road assets from collected data and imagery and continue to create a maintainable methodology for NDOT divisions to own and maintain respective extracted data, current and moving forward.

3612 Mileposting

TASK	2412
ACTIVITY	3612
OPERATIONAL SECTION	Roadway Systems
PROGRAM MANAGER	Roadway Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	117,600
Travel	\$	1,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	94,880
State (20%)	\$	23,720
Total Requested Amount	\$	118,600

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

The Milepost Program provides office and field reference by providing a linear reference system for roadway-related data management on state-maintained highways. Mileposting is currently utilized for data collection and histories in the Pavement Management System, Maintenance Management System, right-of-way descriptions, encroachment permitting, construction contract Title Sheets, and crash data location, to name a few. Mileposts are also utilized by emergency response and law enforcement. This activity supports HPMS data collection requirements per 23CFR, Part 420.105(b), and assists with compliance with MUTCD guidelines and NRS 408.285.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Over 500 edits were made to the Milepost Index and Route Master.
- 45 Milepost Panel location requests for new projects were completed.
- 20 Enhanced milepost panels were requested for Interstate, US, and State routes.
- 50 Electronic Title Sheet and Location Sketch reviews were completed.
- 20 As-Built reviews were completed.
- ARCADIS has been working on the new Milepost Index and Route Master platforms.
- A reconciliation of the mileage in the State Maintained Highways of Nevada publication and the Milepost Index was completed.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Review, maintain and manage the Milepost Index, ensure that the panel locations are accurate, engineer stations are current, and descriptions are accurate.
- Review, process, and document milepost panel requests, milepost panel replacements, and Title Sheet/Location

Sketch reviews. Notify emergency response personnel when major changes have occurred to the milepost panel locations.

- GPS and mark milepost panel locations as requested by NDOT maintenance supervisors and district Engineers.
- Research, document, and submit milepost history data to the NDOT Records Management office in accordance with the Public Records Act (NRS 239), and provide milepost history data to interagency personnel and outside entities when requested.
- Milepost Index accuracy to include current milepost locations, engineer stations, and route descriptions. Annual archival of the Milepost Index, publication on the NDOT SharePoint and Internet site.
- Timely review and approval of milepost panel replacements and milepost panel location requests. Notify emergency response personnel when major changes have occurred to the Milepost program.
- Complete research requests promptly and accurately document all records.
- Provide responses to milepost panel history requests in a timely manner and accurate documentation of the results.

3653 Functional Classification & Boundary

TASK	2413
ACTIVITY	3653
OPERATIONAL SECTION	Roadway Systems
PROGRAM MANAGER	Roadway Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	44,800
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	37,440
State (20%)	\$	9,360
Total Requested Amount	\$	46,800

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

All roadways statewide are cooperatively categorized, with local transportation officials and the FHWA, according to the trade-off between mobility and access per 23 CFR, Part 470.105. Functional classification of highway systems provides a basis for determining federal-aid eligibility and apportionment of Federal Highway funds. This activity also cooperatively establishes urbanized boundaries statewide, building on boundaries established by census data.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Functional Classification map reviews are ongoing and updated as needed.
- Reviewed 2020 Census data. TIGER shapefiles were downloaded, and urban areas were evaluated. No new Urban Boundary updates were necessary from the census data.
- A new Functional Classification review sheet was created to help evaluate roads easier. This was tested on SR227 in Elko County as a district request and it was determined that the current functional classification is acceptable.
- Road functional classification is being handled using remote meetings and the eventual creation of an application to allow local entities to download, verify and submit changes to their functional classification.
- Meeting took place between RTC South and NDOT to talk about Clark County functional classification changes and RTC South has started the functional classification evaluation

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Review existing functional classification maps for corrections and ensure the maps comply with the 10-year review requirement.
- Maintain and update spatial urban boundary data for the annual HPMS submittal.

- Perform ongoing functional classification reviews and accurately document the functional classification data.
- Schedule local government meetings related to urban boundaries and functional classification changes.
- Work on the development of an application to allow outside agencies to view current functional classification.

3660 Highway Performance Monitoring System

TASK	2414
ACTIVITY	3660
OPERATIONAL SECTION	Roadway Systems
PROGRAM MANAGER	Roadway Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	302,400
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	243,520
State (20%)	\$	60,880
Total Requested Amount	\$	304,400

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

To provide the FHWA, NDOT, and the transportation community with essential data on highway condition, performance, usage, geometrics, etc., for all public roads statewide. This satisfies the reporting requirements set forth by 23 CFR, Part 42.105(b), within the guidelines and requirements defined by the Office of Highway Policy Information (OHPI).

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- The 2023 (2022 data) HPMS data submittal was completed on time to the FHWA.
- Multiple LRS edits were completed, and all event tables were updated on the changed routes. In addition, Roadway Systems has been involved in the upgrade process to ArcPro. This has required troubleshooting, testing and meetings to determine the process and help assist IT GIS with the implement.
- Assistance has been provided to multiple NDOT divisions including IT GIS, Asset Management, Project Design, Project Scheduling and many more. In addition, Roadway Systems has assisted multiple data partners including RTC North, RTC South, CAMPO and many local and national data analysis companies.
- Work continues with local government agencies to develop a workflow collection plan for local road data.
- The annual Certified Public Road Miles report was compiled and submitted with the annual HPMS submittal. In addition, new designation letters have been created and signed by the Governor.
- Completed the annual vehicle miles of travel report, delivered printed books and published online.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Annual HPMS data submittal and HPMS sample adequacy compliance.
- Update and maintain NDOT's LRS and linear event tables needed for HPMS submittal and continued roads and highways integration and functionality.

- Assist data partners in GIS-related issues and provide GIS data when requested.
- Prepare and submit the annual public road miles certification to FHWA.
- Prepare the annual vehicle miles of travel report.

Traffic Information

3623 Continuous Traffic Counts

<u>TASK</u>	2415
<u>ACTIVITY</u>	3623
<u>OPERATIONAL SECTION</u>	Traffic Information
<u>PROGRAM MANAGER</u>	Traffic Info Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	210,600
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	170,080
State (20%)	\$	42,520
Total Requested Amount	\$	212,600

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, Counties, & Incorporated Cities
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

The purpose of the Continuous Traffic Counts Program is the development of seasonal factors used to expand short-term counts to Annual Average Daily Traffic (AADT). Continuous traffic count data provides monthly, daily, and hourly factors, as well as design hour volumes, directional splits, and seasonal trends. Continuous count traffic statistics are used for populating the Federal Highway Performance Monitoring System (HPMS), Federal Highway's Travel Monitoring Analysis System (TMAS), and the State of Nevada's Pavement Management System (PMS) databases. Additionally, continuous count data are utilized in environmental studies, roadway design, urban and rural planning, and the development of the Vehicle Miles of Travel (VMT) Report. The continuous traffic counting program collects data statewide for rural and urban areas. The number and location of continuous count sites are based on the Federal Highway Administration's Traffic Monitoring Guide (TMG). At the end of each calendar year, the continuous count data is compiled with the short-term count data to develop NDOT's Annual Traffic Report (ATR). The ATR has a summary page of statistical information regarding the traffic at each continuous count site. Maps are also provided in the ATR, and each short-term count site's factored AADT is also included.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Use Jackalope software to
 - calculate Annual Average Daily Traffic (AADT) statistics

- calculate and update seasonal factors for the year
 - calculate hourly, daily, and monthly factors
 - calculate design hour (K) and directional (D) factors
- Update the Federal HPMS AADTs and K & D factors with information from activities above.
- Submit traffic data monthly to Federal TMS from continuous counters.
- Update the State of Nevada's PMS with AADTs from continuous counters.
- Update the State of Nevada's Traffic Information Access (TRINA) website with traffic statistics or continuous counter information.
- Update the State of Nevada's Railroad Crossing Database System with AADTs for continuous counters.
- Supply current continuous counters' AADTs for use in the Nevada Traffic Accident Statistics Software.
- Supply current AADT items such as seasonal factors and traffic counts from any point in time throughout the year to the Metropolitan Organizations for updates to their Regional Travel Demand Models.
- Update the State of Nevada's Bridge Structure Database System with AADTs from continuous counters in such locations as continuous counters exist.
- Supply continuous counters AADTs for the development of the VMT Report.
- Purchase supplies to repair or replace continuous counters as needed and as state budget allows.
- Data collection procedures are updated annually in the Nevada Department of Transportation's Traffic Monitoring System for Highways(TMS/H).
- Develop Nevada's Annual Traffic Report ATR Pages.
- Update FHWA's Traffic Volume Trends (TVT) Report.
- Replace and refurbish various continuous count sites

3624 Short-Term Traffic Counts

TASK	2416
ACTIVITY	3624
OPERATIONAL SECTION	Traffic Information
PROGRAM MANAGER	Traffic Info Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	856,800
Travel	\$	15,000
Operating	\$	100,000
Capital Outlay (Consultant)	\$	405,000
Equipment	\$	-
Federal (80%)	\$	1,101,440
State (20%)	\$	275,360
Total Requested Amount	\$	1,376,800

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

Short-term count data provides Annual Average Daily Traffic (AADT) statistics used for populating the Federal Highway Performance Monitoring System (HPMS) and the State of Nevada’s Pavement Management System (PMS) databases. Additionally, short-term count data are utilized in environmental studies, roadway design, urban and rural planning, and the development of the Vehicle Miles of Travel (VMT) Report. The short-term count program provides traffic volume statistics for all of Nevada’s roadway systems. Short-term traffic counts are collected for all rural and urban areas.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Update the Federal HPMS AADTs for all short-term count sites.
- Update the State of Nevada’s PMS AADTs for short-term count sites.
- Purchase an undisclosed number of short-term traffic counters as the state budget allows.
- Update Nevada’s Traffic Information Access (TRINA) website with traffic statistics for short-term count sites.
- Supply a special session of data for model calibration along a particular screen line AADTs to the Metropolitan Organization’s Regional Travel Demand Models.
- Update the State of Nevada’s Bridge Structure Database System with the Short-Term Count program where Short-Term counters exist.
- Update the State of Nevada’s Railroad Crossing Database System with AADTs from short-term count sites.
- Supply current AADTs from short-term count sites for use in the Nevada Traffic Accident Statistics Software.
- Supply AADTs from short-term count sites for the development of the VMT Report

- Renew annual traffic data analysis software (Jackalope) license required for data processing.
- Data collection procedures for short-term sites are updated annually in the Nevada Department of Transportation's Traffic Monitoring System for Highways (TMS/H)
- Nevada's Annual Traffic Report includes short-term count sites.
- Update Nevada's TRINA application to include statewide short-term traffic counts.
- Provide for a loop contract to repair non-functional short-term loop sites and add loops in new locations. Loop sites that fall into disrepair are either estimated (meaning that we do not have a traffic count for design, safety, or federal reporting), or they are collected with hose counters. Hose counts cost more material and expose NDOT personnel to significantly more time in the roadway to obtain the traffic count. Additionally, at many of these locations, it is not feasible to obtain a hose count.
 - These new loops sites will provide design data to support projects throughout the Department and local agencies statewide.
 - These new loops sites will provide greater data coverage for HPMS, MIRE, pavement analysis, and annual reporting.

3626 Vehicle Classification

TASK	2417
ACTIVITY	3626
OPERATIONAL SECTION	Traffic Information
PROGRAM MANAGER	Traffic Info Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	199,600
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	161,280
State (20%)	\$	40,320
Total Requested Amount	\$	201,600

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, Counties, & Local Public Agencies
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

The purpose of vehicle classification is to provide estimates of the composition of traffic by vehicle types. The classification counts provide design designation data in terms of Average Daily Traffic (ADT) Truck (T)% and Design Hour Volume (DHV) T%. The truck classification provides the percent of distribution by the various truck types to be matched with average weight by type to determine pavement base and surface requirements. Classification counts are also used in environmental assessments, pavement management programs, urban and rural transportation planning, Highway Performance Monitoring System (HPMS), Federal Highway's Travel Monitoring Analysis System (TMAS), and freight movement studies. This is a statewide program with counts in both rural and urban areas. The frequency and extent of coverage are based on the Federal Highway Administration's Traffic Monitoring Guide (TMG).

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Calculate Annual Average Daily Truck (T%) Traffic statistics for use in HPMS and other annual reporting.
- Calculate Truck seasonal factors for use in HPMS and other annual reporting.
- Calculate DHV T% factors for use in HPMS and other annual reporting.
- Update the Federal HPMS truck traffic AADTs and K & D factors.
- Submit truck traffic data monthly to Federal TMAS.
- Update the State of Nevada's PMS truck traffic statistics.
- Supply current truck statistics to the Metropolitan Organization's Regional Travel Demand Models.
- Update the State of Nevada's Bridge Structure Database System with truck AADTs.

- Update the State of Nevada’s Railroad Crossing Database System with truck AADTs.
- Supply current truck AADTs for use in the Nevada Traffic Accident Statistics Software
- Supply truck AADTs for the development of the VMT Report.
- Data collection procedures are updated annually in the Nevada Department of Transportation’s Traffic Monitoring System for Highways (TMS/H).
- Produce the Vehicle Classification portion of Nevada’s Annual Traffic Report.
- Update Federal Highway Administrations Traffic Volume Trends (TVT) Report with vehicle classification information.

3627 Special Traffic Studies

TASK 2418
ACTIVITY 3627
OPERATIONAL SECTION Traffic Information
PROGRAM MANAGER Traffic Info Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	118,300
Travel	\$	7,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	100,240
State (20%)	\$	25,060
Total Requested Amount	\$	125,300

PARTICIPATING AGENCIES FHWA, NDOT, Statewide CPIMTU, & Local Public Agencies
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

Provide special traffic information as needed to highway planners, engineers, top management, and other requesters. This data is used in developing speed studies, signal warrant studies, pedestrian studies, and various others.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Signal warrant studies, passing sight distance studies, speed studies, curve speed studies, turning movement studies, delay studies, and pedestrian studies, as requested.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Conduct signal warrant studies.
- Conduct passing sight distance studies.
- Conduct speed studies.
- Conduct turning movement studies.
- Conduct delay studies.
- Conduct pedestrian studies.

Data collection procedures are updated annually in the NDOT's Traffic Monitoring System for Highways (TMS/H).

3632 Vehicle Weight

TASK	2419
ACTIVITY	3632
OPERATIONAL SECTION	Traffic Information
PROGRAM MANAGER	Traffic Info Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	301,800
Travel	\$	500
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	241,840
State (20%)	\$	60,460
Total Requested Amount	\$	302,300

PARTICIPATING AGENCIES	FHWA, NDOT
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

The purpose of the vehicle weight program is to provide truck weight and characteristics such as axle/gross vehicle weights, axle spacing, and vehicle dimensions for the statewide roadway network. Truck weights and related data are collected using Weigh-In Motion (WIM) systems. The data is used at the state and national levels in consideration of transportation policy, allocation of highway costs and revenue, size and weight regulations, the establishment of geometric design criteria, and a variety of special administrative, planning, design, and research studies. This is a statewide program with WIM systems in rural and urban areas. Frequency and extent of coverage are based on the Federal Highway Administration's Traffic Monitoring Guide (TMG).

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Quarterly Truck, Size, and Weight Quarterly Enforcement meetings established.
- Worked with NDOT's Multimodal Program Development Division on the Nevada State Freight Plan.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Quarterly Truck Size and Weight meetings with NDOT, FHWA, NHP, and DMV.
- Completion of the required annual certification.
- Submit weight data quarterly to FHWA.
- Install WIM and truck weight and inspection infrastructure required for State Enforcement Plan (SEP) implementation.
- Provide monthly overweight reports to the Nevada Highway Patrol.
- Provide truck weight summaries to various counties, cities, and consultants.
- Data collection procedures are updated annually in the Nevada Department of Transportation's Traffic Monitoring

- System for Highways (TMS/H).
- Daily & monthly ESAL Reports.

3982 Travel Demand Forecasting

TASK	2420
ACTIVITY	3982
OPERATIONAL SECTION	Traffic Information
PROGRAM MANAGER	Traffic Info Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	201,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	400,000
Equipment	\$	-
Federal (80%)	\$	481,280
State (20%)	\$	120,320
Total Requested Amount	\$	601,600

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Local Public Agencies
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

The purpose of this task is to conduct travel demand forecasting activities relevant to planning, transportation elements, and master plan development. This includes a review of consultant traffic modeling. The increased volume of recent projects (larger phased projects in particular) requires more time and more rounds of review per project. This activity also fulfills the oversight responsibilities outlined in the Stewardship Agreement between the Federal Highway Administration (FHWA) and NDOT for the Code of Federal Regulations Title 23.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Develop travel demand forecasts and other traffic statistics for evaluating projects in accordance with FHWA and NDOT policy.
- Review travel demand methodologies and forecasts prepared by consultants and other entities in accordance with FHWA and NDOT policy.
- Work with Washoe County RTC and the City of Fernley to include the expanding Fernley area and their potential for industrial and other types of growth in the regional traffic model.
- Continue holding biannual meetings for the Nevada Forecasting Group to review travel demand forecasting issues in a collaborative manner with participating agencies statewide.
- Renew annual Trans CAD licenses for five NDOT employees.
- Upgrade the State of Nevada travel demand model to the latest version of TransCAD (TransCAD 8). This update is necessary to increase the accessibility and accuracy of the model. This project is projected to take five years and

will include the following elements:

- Update the model to the latest version of TransCAD to increase the efficiency of model operation.
- Update population and employment files that now form part of the basis for project prioritization throughout the Department.
- Model update to include verifying and updating model network attributes to ensure they reflect current field conditions.
- Provide consultant-led training related to the use of the TransCAD model. Technical training will enable staff to operate the newer software. Additional training intended for a wider audience will educate managers and decision-makers. If advanced functionality is identified as important to managers and decision-makers through this training, this task will investigate the potential for an on-call contract to perform complex model operations beyond the scope of normal Traffic Information staff capacity.
- Provide information, support, and participate in travel demand forecast activities conducted by the four MPOs.
- Support and participate in the Census Transportation Planning Products (CTPP) Technical Service Product.

Performance Analysis

3644 Fuel Tax Revenue Management

TASK 2421
ACTIVITY 3644
OPERATIONAL SECTION Performance Analysis
PROGRAM MANAGER Performance Analysis P.E.

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	34,300
Travel	\$	2,500
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	29,440
State (20%)	\$	7,360
Total Requested Amount	\$	36,800

PARTICIPATING AGENCIES FHWA, NDOT
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

- Study the implementation of the recommendations coming out of the first phase of the study of fuel and related data integration.
- Study will show how the current achieved fuel data can be efficiently accessed and integrated with the use of simple query functionality to add value to the data and other related data sets in analysis
- Develop and implement a robust, sophisticated fuel tax revenue management and reporting system to help improve divisional efficiencies, reduce reporting errors, and streamline report delivery for on- time to receive federal reimbursement seamlessly
- Make compilation and the development of the FHWA 551 report easier and streamlined

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- First phase of the Fuel and related data project completed
- Developed a Scope of Work for the second phase of the project
- Identified and chronicled all the related data sets that could be integrated
- Prepared and submitted FHWA 551 reports

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Submit monthly fuel tax revenue statistics to the FHWA for reimbursement of expenses to the State Highway Fund.
- Review the recommendations from phase 1 of the fuel and related data project

- Develop RFA for phase 2 of the fuel and related data project
- Develop a roadmap for integrating fuel and other related data sets in value-added analyses
- Review deliverables from the Consultant on phase 2 of the fuel data project
- Continue the development of the roadmap of the fuel and related data integration, and engage with the EDAP program in discussions on architectural platforms to best utilize
- Develop trend analyses on County archived fuel data sets
- Study the feasibility of developing a data and reporting visualization platform
- Study a concept of a roadmap for the development of a fuel data management system that will be simple to implement with future room for expansion with the capability to handle revenue projections
- Hold meetings with the IT division and other stakeholders to discuss seamless fuel consumption and revenue collection data pipeline process from the DMV and other data supplying agencies
- Review final deliverables from the Consultant on the fuel and related data project
- Study new fuel data initiatives that will improve on the existing system
- Review all the work done during the previous three quarters related to this SPR activity, and make necessary adjustments
- Develop charts and graphs accompanied by statistical analyses depicting the trends in fuel consumption by Counties

3650 Performance Management

TASK	2422
ACTIVITY	3650
OPERATIONAL SECTION	Performance Analysis
PROGRAM MANAGER	Performance Analysis P.E.

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	106,600
Travel	\$	10,000
Operating	\$	-
Capital Outlay (Consultant)	\$	569,850
Equipment	\$	-
Federal (80%)	\$	549,160
State (20%)	\$	137,290
Total Requested Amount	\$	686,450

PARTICIPATING AGENCIES	FHWA, NDOT
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

Implement a next-generation system to comply effectively with the MAP-21/FAST ACT by tracking all related NPRM's and comments related to performance measures and targets development and reporting. Comply with the Governor's Performance Requirements along with coordinating and tracking Stewardship & Oversight Agreement performance measures. Develop a sophisticated system for monitoring, evaluating, and reporting our performance measures partly through initiation and innovation with FHWA Technical Service Programs as well as develop an electronic reporting platform. Collaborate with MPOs and other stakeholders as a Performance Management working group to develop a unified statewide approach to addressing performance measures and target setting for internal planning purposes and business process and outcome improvement.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- PEG Performance Management Group monthly collaboration meetings
- Produced the Mid-Period Performance Management Report for FHWA
- Produced the 2021 Annual Performance Management Report on NDOT's progress on performance management
- Developed Scope of Work and Request for Approach for a project to evaluate the maturity level of NDOT's performance management program
- Develop the NDOT/FHWA Stewardship indicators report

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Receive and review deliverables from the Consultant on the performance management project
- Start requesting and assembling data for the NDOT's 2022 Annual Performance Management Report
- Set up/coordinate the Bi-monthly performance management working group meetings with MPOs

- Attend Committee on Performance-based Planning meetings/webinars organized by FHWA and AASHTO
- Work with AASHTO and the CATT LAB to finalize the selection of TSP options and schedule payment
- Produce the NDOT/FHWA Stewardship indicators report
- Start developing NDOT baseline for the second performance period
- Start developing the end of the first full performance period progress report for FHWA
- Renew contract with INRIX to gain access to PM3 data, develop PM3 baseline and produce reports
- Start the compilation of the mid second period performance progress report
- Start requesting and assembling data for the NDOT's 2023 Annual Performance Management Report
- Review and comment on NPRM on GHG performance measure and AASHTO's response
- Renew contract with INRIX to gain access to PM3 data, develop PM3 baseline and produce reports
- Start the development of new initiatives for performance management
- Schedule and attend the NDOT annual Performance Champions meetings with the Director
- Request data and start compiling the Annual Performance Management Report
- Assess the maturity level of the NDOT Performance Management program

3651 Mandated Reports

TASK	2423
ACTIVITY	3651
OPERATIONAL SECTION	Performance Analysis
PROGRAM MANAGER	Performance Analysis P.E.

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	101,400
Travel	\$	2,500
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	83,120
State (20%)	\$	20,780
Total Requested Amount	\$	103,900

PARTICIPATING AGENCIES	FHWA, NDOT
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

Develop and disseminate information concerning the state's ability to fund long-range transportation programs. Provide transparency on the State's and Local Transportations agencies capital outlay and maintenance activities on revenues and expenditures.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Production of FHWA reports:
 - FHWA 534 (annual)
 - FHWA 536 (biannual)
 - FHWA 551M (monthly)
 - Motor fuel data report

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Request data from the Department of Motor Vehicles and local agencies, and develop and submit monthly fuel tax reports
- Extract cost information from the NDOT and the Department of Motor Vehicles accounting systems for use in legislative and management reports
- Request data from all NDOT divisions and begin preparing reports, including the Department's Facts & Figures Report
- Start requesting and collecting revenue and expenditure data from local transportation agencies
- Coordinate with the NDOT Accounting division, Maintenance & Asset Management division, IT division, and Financial Management division to provide data and other support services used to prepare and report the State

Highway Capital outlay & Maintenance Expenditure report to FHWA.

- Schedule fuel and other FHWA 500 series Reports meetings with respective NDOT divisions and other agencies to ensure data accuracy and timely submissions
- Request and collect revenue and expenditure data from local transportation agencies
- Continue coordination with the NDOT Accounting division, Maintenance & Asset Management division, IT division, and Financial Management division to provide data and other support services used to prepare and report the State Highway Capital outlay & Maintenance Expenditure report to FHWA.
- Work with NDOT Accounting division to submit documents in preparation of the Maintenance and Expenditure by State government report to make ascertain conformity with the FHWA 534 report.
- Submit draft reports to NDOT Multimedia division and to FHWA
- Continue the extraction of cost information from NDOT and the Department of Motor Vehicles accounting systems to use in preparing management reports
- Submit final draft reports to NDOT and FHWA

3655 Benefit-Cost Studies

TASK 2424
ACTIVITY 3655
OPERATIONAL SECTION Performance Analysis
PROGRAM MANAGER Performance Analysis P.E.

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	37,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	30,080
State (20%)	\$	7,520
Total Requested Amount	\$	37,600

PARTICIPATING AGENCIES FHWA, NDOT
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

- Manage BCA projects and review BCA reports
- Assist other divisions and agencies for BC Analysis
- Assist BC analysis for grant programs

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Reviewed the Benefit-Cost Analysis Guidance for Discretionary Grant Programs and Cal-BC updates
- Researched and updated the Discussion of the Calculations of Costs and Benefits for the Performance Management Annual Report
- Cooperated with Project Management Division and updated the Benefit-Cost Analysis of Capacity Projects for the Performance Management Annual Report
- Attended the monthly update meetings and assisted BC analysis for the I-15 South Phase 2 project and I-15 Central Corridor Project
- Continued coordination and review of planning documents to make sure that all qualified projects met the BCA requirements by FHWA

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Review BC analysis guidelines and BCA related tools and software
- Research and update the Discussion of the Calculations of Costs and Benefits for the Performance Management Annual Report
- Cooperate with Project Management Division and update the Benefit-Cost Analysis of Capacity Projects for the Performance Management Annual Report

- Assist BC analysis for projects and grant programs, as needed
- Continue coordination and review of planning documents to make sure that all qualified projects meet the BCA requirements by FHWA

3656 State Highway Preservation & Reporting

TASK	2425
ACTIVITY	3656
OPERATIONAL SECTION	Performance Analysis
PROGRAM MANAGER	Performance Analysis P.E.

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	11,400
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	9,120
State (20%)	\$	2,280
Total Requested Amount	\$	11,400

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

According to Nevada Revised Statute 408.203(3), the director of the Nevada Department of Transportation shall report to the Legislature by February 1 of odd-numbered years the progress being made in the Department's 10-year plan for the resurfacing of state highways. The report must include an accounting of revenues and expenditures in the preceding two fiscal years, a list of the projects completed, including mileage and cost, and an estimate of the adequacy of projected revenues for the timely completion of the plan.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Start to work on the 2025 State Highway Preservation Report with Structure Division, Pavement Division, and Multimedia Division
- Provide draft 2025 State Highway Preservation report for the Board's approval
- Submit the 2025 State Highway Preservation report to LCB
- Publish the 2025 State Highway Preservation report on NDOT website
- Respond to questions and requests about the 2025 State Highway Preservation Report

3659 Innovative Planning

<u>TASK</u>	2426
<u>ACTIVITY</u>	3659
<u>OPERATIONAL SECTION</u>	Performance Analysis
<u>PROGRAM MANAGER</u>	Performance Analysis P.E.

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	33,800
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	27,040
State (20%)	\$	6,760
Total Requested Amount	\$	33,800

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

Collaborate with Multimodal Program Development (MPD) and other local planning agencies to inform and ensure a performance-driven, outcome-based planning and programming process is applied in the order that investment priorities contained in planning programming documents, including the STIP are linked to achieve performance targets. Utilization of a systematic approach in project selection and prioritization is utilized to the extent possible. Solicit Consultant services to help evaluate how NDOT could better leverage all the performance plans (TAMP, Freight, TSMO, etc.), performance management efforts into documented continuous performance outcomes

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Review of the One Nevada plan and other planning documents
- Study of NCHRP 804 for guidance on how to develop/implement a performance-based planning program
- Review other state DOTs performance management programs and how it synergizes with their program development section and project selection

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Review NCHRP report 804
- Review literature on implementing performance-based projects and other state DOT plans on selecting and implementing projects that improve performance
- Review and stay up to date with the One Nevada plan
- Review and stay updated with the STIP
- Collaborate with MPD and assist in implementing performance-based projects
- Research the latest tools that help in project selection and achieving performance targets goals

3863 Nevada Cost Construction Study

<u>TASK</u>	2427
<u>ACTIVITY</u>	3863
<u>OPERATIONAL SECTION</u>	Performance Analysis
<u>PROGRAM MANAGER</u>	Performance Analysis P.E.

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	30,200
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	24,160
State (20%)	\$	6,040
Total Requested Amount	\$	30,200

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

- Investigate the most cost-effective method to develop a Nevada State-specific Construction Cost Index by evaluating existing tools and the proposed NDOT estimating software (Master Works) to determine the possibility of including an integration portal with the capability to produce NDOT specific construction cost index
- The index, when developed, will be used in gaging transportation revenues against construction costs, as well as inform the department’s decision-makers the net effect of fuel tax indexing revenue and future transportation needs
- The scope will include tracking and “smoothing” out data of archived award prices of major construction items from NDOT road construction projects. Yearly maintenance (updates) will be performed to keep the Index current.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Extensive research on the National and other States’ Construction Cost Indexes
- Identified current data sources and chronicled the major data sets that will be critical in the development of the Department’s construction cost index
- Held meetings with the NDOT’s Scoping section managing the development of the MasterWorks Application
- Had preliminary discussions with the Materials division, which is central in the data items that will feed into the system

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Deliver working concept of Nevada-specific construction cost index

Active Transportation & Special Studies

3679 Active Transportation Planning

<u>TASK</u>	2428
<u>ACTIVITY</u>	3679
<u>OPERATIONAL SECTION</u>	Active Transportation & Special Studies
<u>PROGRAM MANAGER</u>	Active Transportation Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	1,700
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	170,000
Equipment	\$	-
Federal (80%)	\$	137,360
State (20%)	\$	34,340
Total Requested Amount	\$	171,700

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, Counties, & Incorporated Cities
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

To plan and initiate programs improving the mobility of bicyclists, pedestrians, scooters, or other micro-mobility devices. To promote bicycling and walking in Nevada using improved infrastructure and educational activities for people of all ages and abilities. Encourage the development of accessible and connected non-motorized infrastructure to build a functional multimodal system. To plan and initiate programs that promote the mobility of pedestrians and bicyclists, pedestrian and bicycle activities, and safety. Encourage the development of pedestrian facilities as part of the multimodal system by aiding with the framework to determine when elements of Complete Streets should be included within NDOT projects that meet our Complete Streets Policy.

PLANNING EMPHASIS AREAS

- Equity and Justice40 in Transportation Planning
- Complete Streets
- Public Involvement

PREVIOUS RELATED WORK

- Ongoing project planning, scoping, design review, and recommendations for Complete Streets policy.
- Ongoing promotion and education of bicycling and walking in Nevada using improved infrastructure and educational activities for people of all ages and abilities.
- In 2022, NDOT began revision of the TAP process. This project will continue into 2024.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Continue planning, scoping, design review, and recommendations for Complete Streets policy.
- Continued development of the TAP program. Analysis, reviews, and revisions for final acceptance.

- Review and revise NDOT Rules and Procedures Manual as needed to match FHWA program guidance and rules and regulations

3970 Corridor Planning

TASK	2429
ACTIVITY	3970
OPERATIONAL SECTION	Active Transportation & Special Studies
PROGRAM MANAGER	Corridor Planning & Special Studies Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	56,000
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	597,400
Equipment	\$	-
Federal (80%)	\$	524,320
State (20%)	\$	131,080
Total Requested Amount	\$	655,400

PARTICIPATING AGENCIES	FHWA, NDOT, MPOs, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

To provide funding for transportation analysis of corridors within Nevada’s multimodal transportation network. With the update of the Nevada Statewide Transportation Plan (One Nevada) underway, several major corridors for potential improvements are being studied and assessed at a high level for potential improvements. As a complement to the “One Nevada” Statewide planning process, there is a need for smaller scale and more refined corridor planning and study to identify potential areas of need for improvements, both for existing and new corridors within the state.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Equity and Justice40 in Transportation Planning
- Complete Streets
- Public Involvement
- Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD) Coordination
- Federal Land Management Agency (FLMA) Coordination
- Planning and Environmental Linkages (PEL)
- Data in Transportation Planning

PREVIOUS RELATED WORK

- One Nevada Transportation Plan and Prioritization Implementation
- I-15 and US 93 Critical Corridor Plans
- Boulder Highway Corridor Study, in coordination with RTC SNV
- SR-160/159 Corridor Study
- Mt. Rose Highway Corridor Study
- US-50 East Shore Corridor Management Plan
- US-395 Southern Sierra Corridor Study

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- The following studies are scheduled to begin or continue during FFY 2023:
 - (continue) US 50 East Shore Corridor Management Plan, in coordination with TRPA
 - (continue) US 50 East William Street Feasibility Study from I-580/US50 interchange to Moundhouse, NV, in partnership with CAMPO
 - (continue) US395 Southern Sierra Corridor Study Update
 - (begin) Mt. Charleston (State Routes 156/157/158) Corridor Study
- Describe and define the goal and scope for each planning study or corridor plan.
- Gather information on the history of previous planning efforts for each corridor.
- Manage, track, coordinate, and recommend review and approval of corridor planning studies.
- Provide technical assistance to districts, local communities, and federal agencies on the preparation of scope, schedule, and budget for corridor improvements.
- Develop, update, and utilize tools and methods to identify mobility needs, analyze safety data, and assess the costs and benefits of multimodal transportation improvement strategies within a corridor.
- Continue coordination with MPOs, RTCs, and local jurisdictions to identify transportation corridor improvement needs.

Rural Programs

3602 Tribal Consultation

<u>TASK</u>	2430
<u>ACTIVITY</u>	3602
<u>OPERATIONAL SECTION</u>	Rural Programs
<u>PROGRAM MANAGER</u>	Rural Programs Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	58,000
Travel	\$	5,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	50,400
State (20%)	\$	12,600
Total Requested Amount	\$	63,000

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, Nevada Indian Commission, Tribal Governments, & Inter-Tribal Council
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

The Tribal Liaison coordinates with Nevada's 27 sovereign tribal nations during the planning process for projects and issues that may be of interest to, or impact, Tribal Nations. The Tribal Liaison participates in long-range transportation planning or meets with Tribal representatives as needed/requested throughout the year to discuss transportation needs, concerns, and challenges that intersect or align with our state facilities. Additional scope of work includes assisting NDOT staff with:

1. Meeting state laws, mandates, and requirements outlined in our guidelines and policies;
2. Provide guidance with TERO, sales tax, and resolving issues;
3. Coordination of annual reporting; and
4. Provide outreach and education to Tribes on Transportation planning, funding opportunities, and needs.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Equity and Justice40 in Transportation Planning
- Complete Streets
- Public Involvement
- Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD) Coordination
- Federal Land Management Agency (FLMA) Coordination
- Planning and Environmental Linkages (PEL)
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Met with Tribes as needed for transportation needs.
- Developed Organizational Tribal Best Practices and Policy
- Developed reporting form to meet NRS 233A annual reporting requirements
- Met with FHWA and BIA regarding Tribal funding opportunities and programs
- Assisted NDOT staff with planning efforts and Tribal TERO needs related to transportation projects.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Implement Tribal Training
- Schedule Tribal Tours & Workshops; Conduct ad hoc meetings, as necessary.
- Meet with FHWA and BIA regarding Tribal funding opportunities and programs
- Assist NDOT staff with planning efforts and Tribal TERO needs related to transportation projects

3955 County Consultation

<u>TASK</u>	2431
<u>ACTIVITY</u>	3955
<u>OPERATIONAL SECTION</u>	Rural Programs
<u>PROGRAM MANAGER</u>	County Consultation Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	78,100
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	146,600
Equipment	\$	-
Federal (80%)	\$	181,360
State (20%)	\$	45,340
Total Requested Amount	\$	226,700

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, Counties, & Incorporated Cities
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

County consultations are a necessary requirement to strengthen NDOT’s statewide transportation planning and project delivery process by collaborating effectively with the 14 rural counties and local governments throughout rural Nevada. County consultations help foster stronger relationships between NDOT and our rural partners; in addition, they provide a platform for outreach and education with the general public and allow the opportunity for NDOT to share timelines and realistic expectations between local governments and the state. The NDOT Rural County Liaison serves as a point of contact for the state’s rural partners, listening to concerns and ensuring rural concerns are forwarded to the appropriate divisions/staff at NDOT, finally following through on the concerns and communicating resolutions back to rural partners.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Equity and Justice40 in Transportation Planning
- Complete Streets
- Public Involvement
- Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD) Coordination
- Federal Land Management Agency (FLMA) Coordination
- Planning and Environmental Linkages (PEL)
- Data in Transportation Planning

PREVIOUS RELATED WORK

- The NDOT team conducted in-person rural county workshops throughout FFY 2023. NDOT team members presented each of the rural programs at NDOT counties, sharing available resources and tools to counties (such as transit funding, Safe Routes to School funding, etc.).
- NDOT staff compiled the top priorities for each county based on feedback. Staff identified short, mid, and long-

range priorities and tracked accordingly.

- Ongoing Rural County Engagement and Revitalization (RCER) project; includes Existing NDOT Process Review, Peer Agency Review, Outreach Strategy and Communications Plan, and Development of interactive GIS Tool

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Continue scope of work for Rural County Engagement and Revitalization
- Formalize dashboard for webpage
- Set up meeting with a selection of rural partners to test the dashboard, provide feedback to consultant
- Set up meeting with districts to ask for feedback regarding county needs/input into dashboard
- Implement new web page for rural county consultation program
- Establish revised timeline for workshops on county tours based on direction from ELT/Monthly Planning Managers Meeting
- Continue meeting with rural partners, addressing needs and concerns
- Continue with ONTP Process Integration
- Establish a plan for rural consultation within Clark and Washoe Counties in collaboration with the respective MPOs.
- Conduct rural workshops in Clark and Washoe counties. Enter needs into One Nevada and work with MPOs for both counties to address concerns that will not be entered into One Nevada.
- Establish a plan for district consultation with the three NDOT districts.
- Conduct district consultations and enter district needs/priorities into One Nevada.

3961 Public Transportation Planning

TASK 2432
ACTIVITY 3961
OPERATIONAL SECTION Rural Programs
PROGRAM MANAGER Rural Transit Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	-
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	-
State (20%)	\$	-
Total Requested Amount	\$	-

PARTICIPATING AGENCIES FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

Planning and research activities affecting the statewide rural transit program. Conducting research and feasibility studies related to public transportation.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Equity and Justice40 in Transportation Planning
- Complete Streets
- Public Involvement

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- No proposed activities or expected products in FFY 2024.

Program Development

3613 Multistate Coordination & Planning

<u>TASK</u>	2433
<u>ACTIVITY</u>	3613
<u>OPERATIONAL SECTION</u>	Program Development
<u>PROGRAM MANAGER</u>	Freight & Rail Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	16,800
Travel	\$	2,500
Operating	\$	-
Capital Outlay (Consultant)	\$	150,000
Equipment	\$	-
Federal (80%)	\$	135,440
State (20%)	\$	33,860
Total Requested Amount	\$	169,300

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, CalTrans, UDOT, ADOT, WYDOT, NDOT (NE)
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

Coordinate with neighboring states for planning and program development to plan beyond the boundaries for the state to facilitate consistency and efficiency among all modes between neighboring states. NDOT has a renewed focus on improving multistate efforts for continued cooperation and collaboration of transformative initiatives relative to interstates 15 and 80. NDOT is a member of two multistate partnerships: [I-15 Mobility Alliance](#) comprised of state departments of transportation and local jurisdictions within the states of California, Nevada, Arizona, and Utah, with a focus on reducing or eliminating congestion, improving interregional travel and reliability, and cultivating the safe movement of people and goods. [I-80 Corridor Winter Coalition](#) comprised of the western state departments of transportation from California, Nevada, Utah, Wyoming, and Nebraska, designed to provide better and more comprehensive I-80 corridor conditions information to both transportation agencies and to travelers. NDOT has numerous ongoing efforts associated with these multistate partnerships. Consultant firms will provide professional services to NDOT for the I-15 and I-80 Multi-State Coordination Program. This Master Services Agreement identifies the required Scope of Services that will be provided to deliver projects along these two corridors:

- I-80 Multi-State Corridor Operations and Management (MCOM) Grant
- I-80 Multi-State Coordination
- I-15 Multistate Mobility Alliance

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Equity and Justice40 in Transportation Planning
- Public Involvement
- Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD) Coordination
- Federal Land Management Agency (FLMA) Coordination

- Planning and Environmental Linkages (PEL)
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Ongoing coordination with ADOT, UDOT and Caltrans regarding planning practices and coordination opportunities on studies, projects or initiatives along I-15.
- I-15 Corridor System Master Plan, 2012
- I-15 Multistate Decision Support System Development
- Ongoing coordination with Caltrans, UDOT, WYDOT, and Nebraska DOT for studies, projects or initiatives along I-80.
- I-80 Corridor System Plan, 2014

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Regular meetings with the Neighboring States interested in coalition activities
- Coordination regarding corridor studies, regional plans, planned improvements, data sharing, and operational coordination
- Continue to collaborate with other states to adapt or create innovative planning practices
- Manage I-15 Alliance and MCOM Project
- Continue to provide information related to multistate efforts
- Continued work towards an agreement with I-80 Winter Coalition partners
- Ongoing work towards an agreement with Caltrans for further planning coordination on I-15

3690 Freight & Rail Transportation Planning

TASK	2434
ACTIVITY	3690
OPERATIONAL SECTION	Program Development
PROGRAM MANAGER	Freight & Rail Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	89,600
Travel	\$	4,000
Operating	\$	-
Capital Outlay (Consultant)	\$	300,000
Equipment	\$	-
Federal (80%)	\$	314,880
State (20%)	\$	78,720
Total Requested Amount	\$	393,600

<u>PARTICIPATING AGENCIES</u>	FHWA, FTA, FRA, NDOT, NSP, MPOs, Counties, & Incorporated Cities
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

A consulting firm has been hired to craft the Nevada Freight Plan Update. This update will replace the existing 2017 Freight Plan. The plan will contain an update to the Freight Investment Plan and supply chain analysis and will be current with Federal Transportation Law contained in 49 USC 70202. Utilizing truck GPS data, this plan will help NDOT to make more informed freight improvement decisions. The Nevada Freight Advisory Committee (FAC) will continue to provide input into the freight planning process.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Public Involvement
- Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD) Coordination
- Federal Land Management Agency (FLMA) Coordination
- Planning and Environmental Linkages (PEL)
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Ongoing coordination with ADOT, UDOT and Caltrans regarding planning practices and coordination opportunities on studies, projects or initiatives along I-15.
- I-15 Corridor System Master Plan, 2012
- I-15 Multistate Decision Support System Development
- Ongoing coordination with Caltrans, UDOT, WYDOT, and Nebraska DOT for studies, projects or initiatives along I-80.
- I-80 Corridor System Plan, 2014

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Freight Advisory Committee Meetings
- Truck GPS Data Analysis
- Performance reporting and needs assessment
- Risk-based management
- Sustainable freight transportation
- Identify significant freight supply chains and trends, needs, and issues with respect to Nevada
- Stakeholder outreach and coordination
- Freight strategies and investment plan coordination, update, and tracking
- Review and acceptance of final updated Freight Plan
- Publish the final Freight Plan
- Freight Process Manual Update
- Coordinate rail charter with the Governor's Office of Economic Development (GOED)

3957 Nevada MPO & RTC Coordination

TASK	2435
ACTIVITY	3957
OPERATIONAL SECTION	Program Development
PROGRAM MANAGER	MPO Coordination Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	78,400
Travel	\$	1,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	63,520
State (20%)	\$	15,880
Total Requested Amount	\$	79,400

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, & Incorporated Cities
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

A Metropolitan Planning Organization (MPO) is a federally mandated organization of representatives from local government and transportation agencies in urbanized areas with a population of 50,000 or more. MPOs provide a forum for local decision-making on transportation issues, and the planning process promotes consistency between transportation improvements and state and local planned growth and economic development patterns. MPOs cover an urbanized area only and receive federal funding supporting their planning efforts. Federal rules require NDOT to provide fiduciary oversight and stewardship for the MPOs. As the steward of federal metropolitan planning funding in Nevada, NDOT is responsible for overseeing and coordinating the work done by MPOs and RTCs. In partnership with the MPOs and RTCs, NDOT ensures. Federal law requirements (49 USC 5303, 23 USC 134, 23 CFR 420, 23 CFR 450, and 2 CFR 200) for continuing, cooperative and comprehensive planning efforts within the State of Nevada are followed. This section also identifies how NDOT will coordinate transportation planning activities with non-metropolitan planning partners.

PLANNING EMPHASIS AREAS

- Tackling the Climate Crisis – Transition to a Clean Energy, Resilient Future
- Equity and Justice40 in Transportation Planning
- Complete Streets
- Public Involvement
- Strategic Highway Network (STRAHNET)/U.S. Department of Defense (DOD) Coordination
- Federal Land Management Agency (FLMA) Coordination
- Planning and Environmental Linkages (PEL)
- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Guide the work of each MPO/RTC and foster working relationships among all levels of government to ensure compliance with 23 CFR 450.
- Coordinating efforts between NDOT, MPOs, RTCs, and public transportation providers
- General oversight of and administrative support to MPOs (e.g., self-certification processes, boundary adjustments, agreement preparation, management, etc.)
- On-Call Project: MPO RTP Coordination – through consultant support, develop a process/coordination document to assist NDOT with its role in the development of Metropolitan Planning Organization’s Regional Transportation Plans and NDOT’s role in assisting in the development of other Transportation Master Plans.
 - Identify internal stakeholders/external stakeholders for participation in the development of the RTP process, establishing roles and responsibilities
 - Provide a process to engage and participate in the development of identified needs located on NDOT facilities
 - Demonstrate a process to evaluate identified needs as they relate to the One Nevada goals
 - Provide an internal process to review identified needs and approval steps
 - Provide a process that enables NDOT to report on RTP progress related to identified needs on NDOT facilities
- Review of quarterly reports and invoices
- Provide FHWA with quarterly MPO reports
- Agreement closeout for previous FFY
- Carryover memo to MPOs
- Provide Stewardship Performance Measures to Performance Analysis
- Schedule and conduct kick-off meetings with MPOs
- Review draft UPWPs
- Draft the annual MPO UPWP agreements
- Schedule funds for the yearly UPWP agreements
- Provide FHWA with the MPO board-approved UPWPs for approval along with an NDOT letter of recommendation
- Executed the yearly UPWP agreements
- Program Funds
- Provide MPOs with the Notice to Proceed (NTP)
- Cooperative agreement with RTCSNV to assist in the development of the Las Vegas Area MPO Travel Demand Model
 - Task 1 – Data Collection
 - Task 2 – Update CAMPO/RTVS NV TDM Base Year Scenario
 - Task 3 – Validate Updated CAMPO/RTCSNV TDM Base Year Scenario
 - Task 4 – Update CAMPO/RTCSNV TDM Future Year Scenarios
 - Deliverable – Prepare Model Update and Validation Memorandum
- MPO Agenda Memos
 - These memos will provide the NDOT Executive Leadership Team (ELT) with a summation of NDOT-specific topics the MPO is considering.
- Staff will review the potential impact and recommendations from current NDOT planning studies occurring within the MPO boundary. This information will be included in the memo and will help to provide additional context for the ELT.

3979 Statewide Transportation Improvement Program

TASK 2436
ACTIVITY 3979
OPERATIONAL SECTION Program Development
PROGRAM MANAGER STIP Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	-
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	381,200
Equipment	\$	-
Federal (80%)	\$	304,960
State (20%)	\$	76,240
Total Requested Amount	\$	381,200

PARTICIPATING AGENCIES FHWA, FTA, EPA, NDOT, MPOs
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

The Statewide Transportation Improvement Program (STIP) is a fiscally constrained planning and programming document that encompasses Transportation Improvement Programs (TIPs) from each Metropolitan Planning Organization (MPO) across the State of Nevada. The eSTIP is an online, multi-level secure access software-as-a-service platform that allows each entity to input project data to be reviewed and approved by State and Federal agencies according to the Federally approved STIP process and in compliance with all CFRs. This scope of work accounts for the annual subscription and maintenance of the system, including the eSTIP, PLANA, and RTP interfaces, hosted by EcoInteractive. This is an ongoing contract for the subscription and maintenance of the eSTIP software-as-a-service platform hosted by EcoInteractive. The system features public and secure interfaces allowing all agencies to maintain and own the project-level data while also ensuring public transparency.

PLANNING EMPHASIS AREAS

- None

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Review and payment of quarterly invoices
- Provide FHWA with quarterly reports
- Schedule and conduct kick-off coordination and planning meetings for integration of enhanced eSTIP Project Tracker v2.0 platform
- Schedule and conduct training for enhanced eSTIP Project Tracker v2.0

3980 One Nevada Transportation Plan

TASK	2437
ACTIVITY	3980
OPERATIONAL SECTION	Program Development
PROGRAM MANAGER	Program Development Assistant Chief

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	5,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	735,000
Equipment	\$	-
Federal (80%)	\$	592,480
State (20%)	\$	148,120
Total Requested Amount	\$	740,600

SPR Part I Pooled Funds TPF-5(456)	\$	5,000
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<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT, MPOs, Local, State, & Federal Agencies
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

The One Nevada Transportation Plan (ONTP) provides a foundation for the formalized process through which the NDOT develops needs, concepts, and projects through performance-based and data-driven processes to coordinate project development. Continued development and implementation of the ONTP permits the NDOT to further refine the project prioritization process and create transparency for project selection and development.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Task Order 1: Project Management Process, 09/2019 – 03/2020 *Completed*
- Task Order 2: Long-Range Process Development, 12/2019 – 12/2020 *Completed*
- Task Order 3: Mid-Range Process Development, 07/2020 – 12/2021 *Completed*
- Task Order 4: Short-Range Process Development and Prioritization, 07/2021 – 12/2022 *Completed*
- Task Order 5: Prioritization, Outreach, Development, & Project List Support, 09/2022 – 12/2025 *In-Progress*

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Continue Task Order 5 activities throughout SPR 2024.
- Begin preparations of, and readvertise ONTP Master Service Agreement.

3984 Transportation Investment Program

TASK	2438
ACTIVITY	3984
OPERATIONAL SECTION	Program Development
PROGRAM MANAGER	STIP Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	218,400
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	174,720
State (20%)	\$	43,680
Total Requested Amount	\$	218,400

PARTICIPATING AGENCIES	FHWA, NDOT, Counties, Cities, & State/Federal Agencies
FINANCIAL RESPONSIBILITY	FHWA, NDOT
FUNCTIONAL RESPONSIBILITY	NDOT

PURPOSE AND SCOPE

This task is for the overall management of the department's NDOT STIP and Work Program. The STIP is a fiscally constrained planning and programming document created in cooperation with the four Metropolitan Planning Organizations (MPO) across the state and is inclusive of their Transportation Improvement Programs (TIP). NDOT Planning Staff will work with the MPOs to develop and review the RTPs/RTIPs to ensure federal compliance before incorporation into the STIP. The NDOT WP highlights elements from the STIP regarding projects administered and funded by the federal funds allocated to NDOT and the prioritization of projects utilizing the State Gas Tax. This objective complies with CFR 450.214 and NRS 408.233. These programs require regular meetings, staff time for consultation with the various MPOs and agencies across the state, and NDOT, internal staff.

PLANNING EMPHASIS AREAS

- None

PREVIOUS RELATED WORK

- FY2016-FY2034 TSP

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Provide FHWA with a quarterly report
- Process major amendment in non-STIP adoption year
 - or Adopt a new fiscally constrained STIP & Work Program
- Process major amendment to clean up STIP & Work Program
- Process administrative modification to clean up STIP & Work Program
- Review of eSTIP live site to ensure accuracy with adopted STIP & Work Program
- Process quarterly amendments
- Process administrative modifications, as needed

- Coordination with One Nevada team to ensure alignment of project lists to be prioritized and harmonized with STIP & Work Program
- Coordination with internal NDOT divisions and MPO partners to verify and reconcile TIP, RTP & other project lists
- Maintain and manage all incoming and outgoing project changes, additions, deletions, corrections, amendments & modifications within the eSTIP Project Tracker platform
- Maintain and update fiscally constrained project lists for each MPO TIP
- Maintain and update a fiscally constrained project list, including MPO TIPs and Non-MPO projects, for the creation of a 4-year STIP
- Coordinate, review, and approve MPO TIPs in accordance with CFR
- Attend Project Status, Project Development, Project Countdown, and other coordination meetings necessary to maintain the most current, up-to-date project-level information and data
- Attend all coordination meetings for One Nevada project prioritization to ensure the accuracy of project-level information and data within the STIP and Work Program
- Coordinate, review, and comment on the development of MPOs Regional Transportation Plans (RTPs)
- Review funding apportionments from the Federal Management Information Systems (FMIS) to assist in maintaining the fiscal constraint
- Submit project data to MPOs for TIP and RTP calls for projects.
- Review the latest federal guidelines and transportation acts to update internal process fulfills federal requirements
- Continued coordination with MPOs to develop and integrate RTPs, specifically into the public-facing portion of the eSTIP

3997 Scenic Byway Program

TASK	2439
ACTIVITY	3997
OPERATIONAL SECTION	Program Development
PROGRAM MANAGER	Freight & Rail Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	5,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	4,480
State (20%)	\$	1,120
Total Requested Amount	\$	5,600

<u>PARTICIPATING AGENCIES</u>	FHWA, BLM, USFS, NDOT, Nevada Division of Outdoor Recreation, & Nevada Commission on Tourism
<u>FINANCIAL RESPONSIBILITY</u>	NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

The Nevada Scenic Byways program will promote and enhance tourism and the understanding and appreciation of the state's heritage. This will be in concert with the preservation, protection, and enhancement of the state's archaeological, cultural, historical, natural, recreational, and scenic qualities. NDOT will identify potential members of the Scenic Byways Committee and begin the dialogue on the re-establishment of the program. Members of the committee will develop a Nevada Scenic Byways Guide that will showcase existing scenic byways in Nevada. NDOT will oversee the state scenic byways programs to create a committee and process to evaluate candidate projects.

PLANNING EMPHASIS AREAS

- None

PREVIOUS RELATED WORK

- Nevada Scenic Byways Program (NVSBP) prior to exhaustion of funding in 2012.
- NDOT submitted an unsuccessful grant application to the 2022 National Scenic Byways Program for Grants and Technical Assistance.

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- NSBP training
- NDOT will submit a grant application to the 2023 National Scenic Byways Program for Grants and Technical Assistance.
 - If awarded, NDOT will solicit a consultant team through the NDOT RFP process to assist the Department in the re-establishment and revitalization of the NVSBP.
 - Personnel administration costs of the NVSBP will be SPR funded.
 - Capital outlay costs of the NVSBP will be grant funded.

Location Services

3617 SPR Mapping

<u>TASK</u>	2440
<u>ACTIVITY</u>	3617
<u>OPERATIONAL SECTION</u>	Location Services
<u>PROGRAM MANAGER</u>	Geospatial Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	224,000
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	179,200
State (20%)	\$	44,800
Total Requested Amount	\$	224,000

<u>PARTICIPATING AGENCIES</u>	FHWA, NDOT
<u>FINANCIAL RESPONSIBILITY</u>	FHWA, NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

To create and distribute transportation maps and related cartographic/GIS information to meet NDOT planning requirements for Visualization, (CFR 450.210 (a)(v)), Functional Classification Mapping, (CFR 470.105 (2)), Corridor Studies, (CFR 450.318). Mapping and GIS Data additionally support Travel and Tourism to the public per (23 U.S.C 135 (d)(1)(J)).

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Produce and update transportation maps utilizing standard digital photogrammetric, cartographic, and GIS techniques. Products include the Official Highway Map, Functional Classification Mapping, GIS Base Map and data, enlarged area/city maps, 30-minute planimetric Map Atlas series, Corridor Mapping support, State Maintained Highways of Nevada book, Traffic Count Station book, County Tour/STIP mapping and custom transportation maps and GIS data/mapping to support Tourism and Visualization products.
- Acquire, research, and generate cartographic/GIS data and related information
- Develop, maintain, and publish GIS databases, cartographic files, and archives
- Publish and distribute Transportation Planning Maps and act as a clearinghouse for geospatial digital data and hard copy map-related information
- Serve as the NDOT representative and act as a liaison for various mapping-related activities

3728 Imagery

TASK 2441
ACTIVITY 3728
OPERATIONAL SECTION Location Services
PROGRAM MANAGER Geospatial Manager

FUNDING FOR FFY2024 – ANNUAL REQUEST

Personnel Services (Staffing)	\$	5,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	4,480
State (20%)	\$	1,120
Total Requested Amount	\$	5,600

PARTICIPATING AGENCIES FHWA, NDOT
FINANCIAL RESPONSIBILITY FHWA, NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

To acquire, adjust, synthesize, and distribute digital and hard copy images to provide “Visualization Products” for public consumption (CFR 450.210 (a)(v)). Aerial survey and imagery production will be utilized in the development of individual corridor planning efforts on an as-needed basis (CFR 450.318). The most significant portion of this project will be to support the aviation workgroup within the Planning Division. Products developed will enhance situational awareness and safety at our public airport facilities for aviation use. Additionally, The NDOT Aviation program’s use of photography will also be utilized in future aviation system plans, economic impact, and land-use plans.

PLANNING EMPHASIS AREAS

- Data in Transportation Planning

PREVIOUS RELATED WORK

- Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES AND EXPECTED PRODUCTS

- Conduct aerial photography missions for transportation planning purposes including: flights of all Nevada public airport facilities, flights to support mapping and GIS efforts for the department and the acquisition of aerial imagery for corridor planning efforts.
- Produce digital aerial photos, photo mosaics, enlargements, mountings, displays, 3D Surfaces and videos to meet department planning needs for visualization.
- Provide resource grade map data for planning purposes.

Part II: Program Budget Summary

FFY 2024 SPR Part II Budget Summary

Task	Title	Federal Funds (\$)	State Match (\$)	Total Budget
24-01	Research Development and Implementation	\$246,960	\$61,740	\$308,700
24-02	Product Evaluation Program	\$124,000	\$31,000	\$155,000
24-03	TPF-5(xxx) National Cooperative Highway Research Program (NCHRP), estimated	\$510,000		\$510,000
24-04	TPF-5(xxx) Transportation Research Board (TRB) Core Program Services for RD&T	\$120,000		\$120,000
24-05	TPF-5(487) Transportation Management Center (TMC) Pooled Fund Study Phase II	\$25,000		\$25,000
24-06	TPF-5(437) Technology Transfer Concrete Consortium (FFY20-24)	\$12,000		\$12,000
24-07	TPF-5(479) Clear Roads Winter Highway Operations Phase III	\$25,000		\$25,000
24-08	TPF-5(444) Traffic Safety Culture - Phase 2	\$20,000		\$20,000
24-09	TPF-5(492) 2023 through 2025 Biennial Asset Management Conference and Training on Implementation Strategies	\$6,000		\$6,000
24-10	TPF-5(451) Road Usage Charge (RUC) America	\$25,000		\$25,000
24-11	TPF-5(491) Super-Elastic Copper-Based and Iron-Based Shape Memory Alloys and Engineered Cementitious Composites for Extreme Events Resiliency	\$50,000		\$50,000
24-12	TPF-5(516) Highway Safety Manual 2nd Edition (HSM2) Implementation	\$16,000		\$16,000
24-13	TPF-5(518) Implementation of Structural Data from Traffic Speed Deflection Devices	\$55,000		\$55,000
24-14	Solicitation #1600 Stormwater Management to Address Highway Runoff Toxicity Due to 6PPD-Quinone from Tire Rubber	\$30,000		\$30,000
24-15	Research Peer Exchange	\$32,000	\$8,000	\$40,000
24-16	Agreement 302-19-803 Developing Lower Modulus Polymer Resin Binder Systems Specifications for High Friction Surface Treatment (HFST) on Asphalt Pavements in Nevada	\$20,000	\$5,000	\$25,000
24-17	Agreement 399-20-803 Comparison and Evaluation of Roadside Animal Sensing and Driver Warning Systems	\$60,000	\$15,000	\$75,000
24-18	Agreement 142-21-803 Feasibility of Implementing Pedestrian Hybrid Beacon (PHB) Signals for Improving Safety and Mobility in Nevada	\$33,600	\$8,400	\$42,000
24-19	Agreement 147-21-803 Investigating Implementation Potentials of Turbo Roundabouts in Nevada	\$27,200	\$6,800	\$34,000
24-20	Agreement 296-22-803 Developing Quality-Controlled Datasets and Methods to Assess the Impact of Rain on Snow Events on Nevada Highways	\$16,800	\$4,200	\$21,000
24-21	Agreement 500-22-803 Freeway and Arterial Performance Analysis with High-Resolution Vehicle Trajectory Data	\$160,000	\$40,000	\$200,000
24-22	Agreement 564-22-803 Feasibility Study of Unmanned Aerial Vehicle Imagery for Mapping Roadside Milkweeds and Nectaring Plants for the Monarch Butterfly	\$92,000	\$23,000	\$115,000
Part II Total		\$1,706,560	\$203,140	\$1,909,700

Part II: Program Sections

Research, Development, and Technology Transfer

3859 Research Development and Implementation

<u>TASK</u>	24-01
<u>ACTIVITY</u>	3859
<u>OPERATIONAL SECTION</u>	Research
<u>PROGRAM MANAGER</u>	Ken Chambers

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	246,960
State (20%)	\$	61,740
Total Requested Amount	\$	308,700

<u>PARTICIPATING AGENCIES</u>	NDOT
<u>FINANCIAL RESPONSIBILITY</u>	NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	NDOT

PURPOSE AND SCOPE

The purpose is to develop research projects and facilitate the implementation of research findings including technology transfer. The activities include, but are not limited to, identifying Department research needs, soliciting research problem statements, developing and reviewing research proposals, monitoring research project progress, conducting tests and demonstration projects, and disseminating research reports. Through these activities, research projects are initiated, and research results and new technologies are identified to solve problems and issues, or address Department needs for process improvement and deployment of technology and innovation to achieve its strategic goals.

PROPOSED ACTIVITIES

Conduct solicitations of research problem statements from internal divisions; write and edit research problem statements and proposals; issue requests for proposals and review them along with the affected divisions; prioritize the proposals with the Department's research advisory committee and approve research projects with the research management committee; develop project agreements and coordinate their executions; establish, coordinate, and chair research project panel meetings to review project progress and discuss potential problems; write, edit, and disseminate research reports; publish research results to provide information on research activities and recent technologies; coordinate or conduct workshops, pilot projects, and training on recent technologies/innovations; facilitate project budget formulations, budget revisions, agreement amendments, and payments for research work performed; participate in Transportation Research Board (TRB) and AASHTO research-related activities, including meetings, workshops, and webinars; travel and training to support the activities identified in this task.

EXPECTED PRODUCTS

Administration of NDOT's Research Program, which consists of projects and tasks identified throughout this document.

3869 Product Evaluation Program

TASK 24-02
ACTIVITY 3869
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	124,000
State (20%)	\$	31,000
Total Requested Amount	\$	155,000

PARTICIPATING AGENCIES FHWA, NDOT
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

Coordinate the meetings of the Product Evaluation Committee (PEC); facilitate the review of specifications and acceptance criteria, facilitate field testing, update the Qualified Product List (QPL), participate as a representative for NDOT in AASHTO's Product Evaluation and Audit Solutions and Safety Hardware Management technical service programs.

PROPOSED ACTIVITIES

Assist vendors to facilitate their application submissions; coordinate the quarterly meetings of the PEC; facilitate field tests and coordinate reporting of the tests and update the QPL as needed (usually quarterly). Maintain databases which support the QPL categories' specifications and acceptance criteria. Activities include participating and contributing to AASHTO's related technical service programs such as: Product Evaluation and Audit Solutions and Safety Hardware Management and other subscriptions applicable to product evaluation and product evaluators including, but not limited to ASTM specifications and AASHTO standards. Participate in travel and training, meetings, conferences, both in-person and virtually, with various local, state, and federal transportation stakeholders and service providers to address current and potential issues/topics regarding the Product Evaluation program. Travel and attend training for these activities as appropriate.

EXPECTED PRODUCTS

- Facilitate review of products based on current specifications
- Maintain an accurate QPL
- Coordinate regular meetings of the Product Evaluation Committee.

National Cooperative Highway Research Program (NCHRP)

TASK 24-03
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers
National Pooled Fund Study: TPF-5(TBD)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	510,000
State (0%)	\$	-
Total Requested Amount	\$	510,000

\$510,000 estimated, will be determined based on actual federal apportionment

PARTICIPATING AGENCIES AASHTO, FHWA, NDOT, All other State DOTs
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY TRB

PURPOSE AND SCOPE

Nevada’s fiscal year 2024 contribution to the National Cooperative Highway Research Program (NCHRP).

PREVIOUS RELATED WORK

Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES

Contributing to this program allows NDOT to participate in Problem Statement Evaluations, sit on technical panels, and be involved with and connected to research activities on a national level.

EXPECTED PRODUCTS

A myriad of national research projects, publications, reports, and technology from every transportation-related arena.

Transportation Research Board (TRB) Core Program Services for RD&T

TASK 24-04
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers
National Pooled Fund Study: TPF-5(TBD)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	120,000
State (0%)	\$	-
Total Requested Amount	\$	120,000

\$120,000 estimated, will be determined based on actual federal apportionment

PARTICIPATING AGENCIES AASHTO, FHWA, NDOT, All other State DOTs
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY TRB

PURPOSE AND SCOPE

Annual subscription to the Transportation Research Board of the National Academy of Science - National Research Council.

PREVIOUS RELATED WORK

Annual, continuous, and ongoing activity

PROPOSED ACTIVITIES

Participation in technical activities committees to share NDOT's current practices and learn other states' best practices; Access to all information concerning past, current, and proposed research related to transportation from all possible sources.

EXPECTED PRODUCTS

Availability of useful findings of research and other information by all feasible means including several TRB publication series, the output of the transportation information services, and through personal contacts during scheduled field visits by the TRB professional staff.

Transportation Management Center (TMC) Pooled Fund Study Phase II

TASK 24-05
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Rod Schilling
National Pooled Fund Study: TPF-5(487)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	25,000
State (0%)	\$	-
Total Requested Amount	\$	25,000

PARTICIPATING AGENCIES FHWA (lead agency), NDOT, State DOTs: AL, AZ, CA, FL, GA, IA, IL, KS, MI, MN, MO, NJ, NY, OH, PA, TN, TX, UT, VA, WA, and WI
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY FHWA

PURPOSE AND SCOPE

Developing and enhancing business management of TMCs; developing and delivering roadway and travel condition information.

PREVIOUS RELATED WORK

TPF-5(319) Transportation Management Center (TMC) Pooled Fund Study Phase I

PROPOSED ACTIVITIES

- Developing, training, hiring, and contracting for TMC staff and services
- Sharing of knowledge and information on 511, Freeway Service Patrol, Traffic Incident Management, and effective use of ITS devices such as DMS signs, cameras, RWIS stations, etc.

EXPECTED PRODUCTS

Exposure to best practices for developing traffic management centers and managing their evolution, as well as efforts to improve day-to-day operations of TMCs, 511, Freeway Service Patrol, Traffic Incident Management, and effective use of ITS devices such as DMS signs, cameras, and RWIS stations.

Technology Transfer Concrete Consortium (FY20-24)

TASK 24-06
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Charlie Pan
National Pooled Fund Study: TPF-5(437)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	12,000
State (0%)	\$	-
Total Requested Amount	\$	12,000

PARTICIPATING AGENCIES Iowa DOT (lead agency), NDOT, State DOTs: AL, AR, CA, CO, FL, GA, IA, ID, IL, IN, KS, KY, MA, MI, MN, MO, MT, NC, ND, NE, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, WA, WI, WV, and WY

FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY Iowa DOT

PURPOSE AND SCOPE

The purpose is to identify, support, facilitate, and fund concrete research and technology transfer initiatives.

PREVIOUS RELATED WORK

Cooperative project that began in 2008. Previous project was TPF-5(313)

PROPOSED ACTIVITIES

- Provide a forum for technology exchange between participants
- Develop and fund technology transfer materials
- Provide technical leadership for concrete related national initiatives
- Act as a technology exchange forum for the participating entities
- Maintain the TTCC pooled fund listserv

EXPECTED PRODUCTS

- Publish Moving Advancements into Practice (MAP) Briefs on a quarterly basis
- Provide research ideas to funding agencies
- Contribute to a technology transfer newsletter on concrete pavement research activities

Clear Roads Winter Highway Operations Phase III

TASK 24-07
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Anita Bush
National Pooled Fund Study: TPF-5(479)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	25,000
State (0%)	\$	-
Total Requested Amount	\$	25,000

PARTICIPATING AGENCIES Minnesota DOT (Lead Agency), NDOT, State DOTs: AK, AZ, CA, CO, CT, DE, IA, ID, IL, IN, KS, KY, MA, MD, MDOT SHA, ME, MI, MO, MT, ND, NE, NH, NJ, NY, OH, OK, OR, PA, RI, SD, TX, UT, VA, VT, WI, WV, and WY

FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY FHWA

PURPOSE AND SCOPE

Clear Roads is a national research consortium focused on rigorous testing of winter maintenance materials, equipment and methods for use by highway maintenance crews.

PREVIOUS RELATED WORK

Phase II was accomplished under TPF-5(353)

PROPOSED ACTIVITIES

- Conduct structured field testing and evaluation
- Conduct research that explores the use of innovative materials, equipment, and processes
- Conduct cost-benefit analyses, and quick turnaround, low-cost synthesis projects
- Establish industry standards and develop performance measures
- Support technology transfer, exchange of information, and ideas
- Conduct national surveys
- Promote public education and outreach related to winter maintenance and driving safety

EXPECTED PRODUCTS

Representatives from the participating departments of transportation meet twice a year to discuss and prioritize projects, share effective practices, and review research results.

Traffic Safety Culture – Phase 2

TASK 24-08
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Lacey Tisler
National Pooled Fund Study: TPF-5(444)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	20,000
State (0%)	\$	-
Total Requested Amount	\$	20,000

PARTICIPATING AGENCIES Montana DOT (lead agency), NDOT, State DOTs: CA, CT, GA, IA, ID, IL, IN, KS, KY, LA, MI, MN, MS, TX, UT, VT, and WA
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY FHWA

PURPOSE AND SCOPE

Stem a possible increase in crashes due to the use of marijuana. This program will support integrated and multiyear research to guide the transformation of local, state, and national traffic safety culture. This project also considers potential strategies for intervention.

PREVIOUS RELATED WORK

Phase I was accomplished under TPF-5(309)

PROPOSED ACTIVITIES

- Conduct research to identify solutions to specific culture-based traffic safety problems, taking advantage of the implementation opportunities to improve traffic safety
- Develop resources to enhance understanding and application of traffic safety culture strategies
- Provide technology transfer of best practices in traffic safety culture strategies

EXPECTED PRODUCTS

Provide new ideas and mitigation strategies to reduce crashes and injuries.

2023 through 2025 Biennial Asset Management Conference and Training on Implementation Strategies

TASK 24-09
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Anita Bush
National Pooled Fund Study: TPF-5(492)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	6,000
State (0%)	\$	-
Total Requested Amount	\$	6,000

PARTICIPATING AGENCIES Iowa DOT (lead agency), NDOT, State DOTs: AK, CA, CO, CT, IL, IN, LA, MDOT SHA, MI, ND, NE, OH, PA, TX, UT, WA, and WI
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

Federal mandates regarding asset management are new, and the Maintenance and Asset Management Division desires to ensure that the Nevada Department of Transportation is in full compliance with the federal regulations.

PREVIOUS RELATED WORK

The study began in 2016 as TPF-5(335).

PROPOSED ACTIVITIES

- Provide communication and information sharing among the member states
- Provide an opportunity and forum for discussion of research needs
- Provide a technology and knowledge exchange forum

EXPECTED PRODUCTS

- Coordinate a workshop Technical Advisory Committee meeting for member states
- Coordinate an annual survey of state DOT asset management practices
- Coordinate Biennial Asset Management Conferences
- Post wrap-up “Implementation Strategies” webinar for partner states

Road Usage Charge (RUC) America

<u>TASK</u>	24-10
<u>ACTIVITY</u>	N/A
<u>OPERATIONAL SECTION</u>	Research
<u>PROGRAM MANAGER</u>	Mark Wooster
	National Pooled Fund Study: TPF-5(451)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	25,000
State (0%)	\$	-
Total Requested Amount	\$	25,000

<u>PARTICIPATING AGENCIES</u>	Oregon DOT (lead agency), NDOT, State DOTs: AK, AZ, CA, CO, HI, ID, KS, LA, MN, MT, NC, ND, NE, NM, OK, PA, SD, TX, UT, WA, and WY
<u>FINANCIAL RESPONSIBILITY</u>	NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	FHWA

PURPOSE AND SCOPE

Through the leadership of the Consortium, member states and provinces will have the research, technical expertise, operational understanding, and member support to be poised to initiate an effective interoperable Road Usage Charge (RUC) system investigation, demonstration, or implementation, if and when desired.

PREVIOUS RELATED WORK

Oregon, the lead state, has been actively developing and testing pilot efforts for alternatives for gasoline taxes for many years.

PROPOSED ACTIVITIES

- Explore the technical and operational feasibility of a multi-jurisdictional RUC system
- Investigate public and key decision maker criteria
- Develop standards, protocols, and preliminary operational concepts
- Develop a model for regional cooperation and interoperability

EXPECTED PRODUCTS

- Legal and Institutional arrangements for implementing an RUC
- Public policy analysis and development, and public information/communications
- Technical research and system development
- Business models for program operations

Super-Elastic Copper-Based and Iron-Based Shape Memory Alloys and Engineered Cementitious Composites for Extreme Events Resiliency

TASK 24-11
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Jessen Mortensen
National Pooled Fund Study: TPF-5(491)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	50,000
State (0%)	\$	-
Total Requested Amount	\$	50,000

PARTICIPATING AGENCIES Washington DOT (lead agency), FHWA, NDOT, State DOTs: AK and CA
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY FHWA

PURPOSE AND SCOPE

Displacement capacity and energy dissipation in conventional RC columns comes at the cost of severe damage during extreme events. This study will evaluate and test innovative columns, provide cost comparisons, and provide designs and specifications for new structures.

PREVIOUS RELATED WORK

None identified.

PROPOSED ACTIVITIES

- Conduct in depth testing and analyses of testing results
- Quantify the cost impact
- Develop design specifications and illustrative examples

EXPECTED PRODUCTS

- Cost comparison among columns having different engineered materials
- Develop self-centering column design specifications

Highway Safety Manual 2nd Edition (HSM2) Implementation

<u>TASK</u>	24-12
<u>ACTIVITY</u>	N/A
<u>OPERATIONAL SECTION</u>	Research
<u>PROGRAM MANAGER</u>	Lacey Tisler
	National Pooled Fund Study: TPF-5(516)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (100%)	\$	16,000
State (0%)	\$	-
Total Requested Amount	\$	16,000

<u>PARTICIPATING AGENCIES</u>	FHWA (lead agency), NDOT, State DOTs: AR, FL, IA, ID, KS, KY, MA, MI, MO, MS, OH, PA, TX, UT, and WA
<u>FINANCIAL RESPONSIBILITY</u>	NDOT
<u>FUNCTIONAL RESPONSIBILITY</u>	FHWA

PURPOSE AND SCOPE

The AASHTO Committee on Safety established a goal in its Strategic Plan to institutionalize the HSM and its associated analytical tools to help transportation agencies make data-driven decisions, advance the science of safety, and to ultimately reduce fatalities and serious injuries.

PREVIOUS RELATED WORK

TPF-5(255) Highway Safety Manual 1st Edition

PROPOSED ACTIVITIES

This study will conduct research and develop products to enable States to accelerate their implementation of HSM2. A Technical Working Group consisting of one representative from each participating agency will help identify and prioritize the specific tasks and products.

EXPECTED PRODUCTS

Accelerate implementation of HSM2 and related analytical tools to assess current and future safety performance of existing roadways and alternative designs, and help practitioners make more informed decisions, better target investments, and reduce fatalities and serious injuries on the nation's roadways.

Implementation of Structural Data from Traffic Speed Deflection Devices

TASK 24-13
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER Peter Schmalzer
National Pooled Fund Study: TPF-5(518)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	55,000
State (20%)	\$	-
Total Requested Amount	\$	55,000

PARTICIPATING AGENCIES Virginia DOT (lead agency), NDOT, State DOTs: MI, MO, MT, and NM
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY FHWA

PURPOSE AND SCOPE

This collaborative research program will provide an accessible and efficient way for highway agencies and other organizations to evaluate tools and products, conduct research, and coordinate testing, training, and deployment activities to enhance the life-cycle performance of their pavement assets. Consortium participants will have access to extensive sources of data, information, and knowledge and decide on the focus of the study and the specific research projects carried out by the consortium.

PREVIOUS RELATED WORK

TPF-5(385)

PROPOSED ACTIVITIES

- Develop case studies
- Develop analysis procedures
- Investigate the effect of structural condition on the rate of pavement deterioration
- Provide targeted technical assistance to participating agencies

EXPECTED PRODUCTS

Continuation of an existing research consortium that focuses on providing participating agencies guidance on how to specify and implement TSDD data within their respective pavement management systems and processes.

Stormwater Management to Address Highway Runoff Toxicity Due to 6PPD-Quinone from Tire Rubber

TASK 24-14
ACTIVITY N/A
OPERATIONAL SECTION Research
PROGRAM MANAGER James Murphy
National Pooled Fund Study: Solicitation #1600

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	30,000
State (20%)	\$	-
Total Requested Amount	\$	30,000

PARTICIPATING AGENCIES Oregon DOT (lead agency), NDOT, State DOTs: PA and WA
FINANCIAL RESPONSIBILITY NDOT
FUNCTIONAL RESPONSIBILITY NDOT

PURPOSE AND SCOPE

The current method for extending tire longevity includes the addition of the chemical additive 6PPD, which oxidizes to form the toxic 6PPD-quinone (6PPD-q). This research will help enable cost-effective solutions for DOTs to address the issue of 6PPD-q as well as inform appropriate regulatory requirements.

PREVIOUS RELATED WORK

None.

PROPOSED ACTIVITIES

- Perform field collection of highway runoff with associated in situ and laboratory analyses
- Develop a methodology to target optimal locations to deploy BMPs
- Evaluate the effectiveness of stormwater management methods for reducing 6PPD-q

EXPECTED PRODUCTS

- Drainage and highway characteristics report relating to the fate and transport of 6PPD-q
- Guidance and tools to identify priority locations for adding BMPs
- Design criteria for cost-effective BMPs which treat 6PPD-q
- Assessment of pavements containing recycled-tire-rubber materials to contribute 6PPD-q to receiving waters and mitigation measures needed to reduce or eliminate its effects

3862 Research Peer Exchange

TASK 24-15
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement TBD
Start Date TBD
End Date TBD

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	32,000
State (20%)	\$	8,000
Total Requested Amount	\$	40,000

Total Activity Cost for Agreement: \$40,000

PARTICIPATING AGENCIES NDOT, Other State DOTs: TBD
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Research

PURPOSE AND SCOPE

NDOT's Research section will hold a Research Peer Exchange with other state Departments of Transportation to discuss programmatic best practices with the goal to improve our state's Research Program and build a stronger more connected research network.

PREVIOUS RELATED WORK

NDOT Research last hosted a peer exchange in 2015.

PROPOSED ACTIVITIES

- Hire a consultant to facilitate the peer exchange
- Meet with peer states to discuss research processes, program successes, and lessons learned

EXPECTED PRODUCTS

- Report summarizing the Research Peer Exchange topics and conclusions
- List of participants with contact information

3862 Developing Lower Modulus Polymer Resin Binder Systems Specifications for High Friction Surface Treatment (HFST) on Asphalt Pavements in Nevada

TASK 24-16
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement 302-19-803
 Start Date: November 2019
 End Date: December 2023

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	20,000
State (20%)	\$	5,000
Total Requested Amount	\$	25,000

Total Activity Cost for Agreement 227-21-803: \$101,478

PARTICIPATING AGENCIES NDOT
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Materials, NDOT Traffic Safety Engineering

PURPOSE AND SCOPE

Thermal incompatibility between High friction surface treatments (HFST) and asphalt pavement is a primary contributor to early age failure of such treatments. HFST are thin applications of high quality, polish-resistant aggregates bonded to a pavement surface with a polymer resin of some type. The research needs will be addressed by identifying suitable polymer binders for use in HFSTs on asphalt surfaces under typical Nevada environmental conditions.

PREVIOUS RELATED WORK

Although some research has been done to bring light to various contributors, nothing has been developed regrading test methods that connect how to properly off-set the thermal variances that contribute to early failures.

PROPOSED ACTIVITIES

- Task 1: Detailed Literature Search
- Task 2: Laboratory Testing of Polymer Resins
- Task 3: Laboratory Testing of HFSTs with Candidate Resins
- Task 4: Final Report

EXPECTED PRODUCTS

A detailed literature review on possible resins. Specifications for appropriate materials for use in HFSTs in Nevada. Detailed implementation plan. A final report identifying the study results.

3862 Comparison and Evaluation of Roadside Animal Sensing and Driver Warning Systems

TASK 24-17
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement 399-20-803
Start Date: November 2020
End Date: December 2025 (*pending extension*)

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	60,000
State (20%)	\$	15,000
Total Requested Amount	\$	75,000

Total Activity Cost for Agreement: \$299,600

PARTICIPATING AGENCIES NDOT
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Environmental Services & NDOT District II

PURPOSE AND SCOPE

While safety crossings and fencing have proven very effective in saving thousands of animals, they are considered a static countermeasure which is not feasible in some locations. This project aims to develop an animal detection platform that relies on combined detection technologies, computing for on-site fast processing and detection, and an advanced driver warning system to enable proactive measures to avoid vehicle-animal crashes.

PREVIOUS RELATED WORK

The state-of-the-practice in the US shows various field studies on animal warning systems. Additionally, NDOT has completed two related projects.

PROPOSED ACTIVITIES

- Implementation of roadside animal-sensing-warning system and controlled test
- Deployment and maintenance of the ITS Trailer
- Proof-of-concept of connecting sensing platforms to driver warning
- Development of roadside sensing deployment guidance and NDOT implementation plan

EXPECTED PRODUCTS

Design and demonstration of roadside platform and a protocol for testing. Raw data collected by multiple sensors at each study site, and evaluation of accuracy of data. Case study reports. Roadside Animal Detection System Deployment Guidance. Final report.

3862 Feasibility of Implementing Pedestrian Hybrid Beacon (PHB) Signals for Improving Safety and Mobility in Nevada

TASK 24-18
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement 142-21-803
 Start Date: April 2021
 End Date: January 2024

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	33,600
State (20%)	\$	8,400
Total Requested Amount	\$	42,000

Total Activity Cost for Agreement: \$225,823

PARTICIPATING AGENCIES NDOT
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Traffic Operations & NDOT Traffic Safety Engineering

PURPOSE AND SCOPE

Investigate the feasibility and effectiveness in deploying and operating PHB signals for improving traffic safety and efficiency in Nevada’s urban transportation systems. In particular, this research will study the strengths and weaknesses of the PHB signals compared to other treatments that are widely used in Nevada and seek to identify potential improvements by adopting the PHB signals upon existing facilities.

PREVIOUS RELATED WORK

The latest MUTCD included PHB signals as a special installation, and now PHB signals have been widely adopted nationwide. Nevertheless, research has been insufficient regarding the implementations and operations of PHB signals.

PROPOSED ACTIVITIES

- Analyze Nevada Pedestrian-Involved Crashes
- Microsimulation Models
- Final Models, Selection Tool, and Timing Criteria
- Stakeholder Webinar

EXPECTED PRODUCTS

A final report containing guidelines for the installation of and recommendations for PHB signal operations and timing.

3862 Investigating Implementation Potentials of Turbo Roundabouts in Nevada

TASK 24-19
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement 147-21-803
Start Date: August 2021
End Date: March 2024

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	27,200
State (20%)	\$	6,800
Total Requested Amount	\$	34,000

Total Activity Cost for Agreement: \$254,102

PARTICIPATING AGENCIES NDOT
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Traffic Operations & NDOT Traffic Safety Engineering

PURPOSE AND SCOPE

Turbo roundabouts are a new type of roundabout that provides a spiraling flow of traffic with mountable raised lane dividers that control the traffic path and speed, requiring drivers to choose their direction before entering the roundabout. This research will investigate the implementation potentials of turbo roundabouts in Nevada, with the results available for use by transportation agencies in Nevada to implement and operate turbo roundabouts in the future.

PREVIOUS RELATED WORK

No previous work in Nevada. Research related to the implementation of turbo roundabouts in the U.S. is scarce.

PROPOSED ACTIVITIES

- Review Pertinent Existing Literature and Best Practices
- Perform Micro-simulation Assessment
- Perform Human Factors (or Driver Experience) Assessment
- Develop a Selection Procedure for Turbo Roundabouts as an Intersection Control Option
- Develop Educational Resources and Conduct Effectiveness Analysis
- Develop an Implementation Plan, Recommendations, and Final Report

EXPECTED PRODUCTS

A procedure and evaluation tool to assist Nevada with further evaluation of turbo roundabout installation.

3862 Developing Quality-Controlled Datasets and Methods to Assess the Impact of Rain on Snow Events on Nevada Highways

TASK 24-20
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement 296-22-803
 Start Date: July 2022
 End Date: October 2023

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	16,800
State (20%)	\$	4,200
Total Requested Amount	\$	21,000

Total Activity Cost for this Agreement: \$99,952

PARTICIPATING AGENCIES NDOT
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Design, NDOT Hydraulics, & NDOT Districts

PURPOSE AND SCOPE

Major winter floods and extreme runoff often result from mid-winter rain-on-snow (ROS) events, causing significant damage. While there is some information about the factors that create flooding, understanding of the role of snowpack on flood-producing runoff is lacking. By identifying roadways at-risk for ROS effects and developing a method for using NDOT RWIS and weather data to assess flood risk, NDOT can better prepare for/respond to extreme events.

PREVIOUS RELATED WORK

Despite growing research on the hydrological impact of ROS events in the Sierra Nevada, research is lacking on impacts to other parts of the state.

PROPOSED ACTIVITIES

- Develop/improve automated data download methods and semi-automated quality control
- Develop return interval estimates of water flow due to ROS snowmelt runoff
- Conduct a risk analysis of current NDOT waterway design standards
- Create a website that provides real-time maps that couple 7-day meteorological forecasts

EXPECTED PRODUCTS

Open-source R program for automated data download. Rigorously QA/QC set of historical weather data. Extreme ROS scenario data set. Recommendations for changes to design requirements in relevant infrastructure.

3862 Freeway and Arterial Performance Analysis with High-Resolution Vehicle Trajectory Data

TASK 24-21
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement 500-22-803
Start Date: February 2023
End Date: July 2025

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	160,000
State (20%)	\$	40,000
Total Requested Amount	\$	200,000

Total Activity Cost for this Agreement: \$471,340

PARTICIPATING AGENCIES City of Reno, RTC of Washoe County, RTC of Southern Nevada
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Traffic Operations

PURPOSE AND SCOPE

High-resolution vehicle trajectory data, as an emerging source, provides detailed measures that reflect freeway and arterial performance in terms of operational and safety characteristics. Research goals include: Leverage high-resolution trajectory data to develop traffic operational and safety PMs tailored to Nevada’s needs; Develop implementation guidelines to enhance freeway and arterial analyses; and Develop a software tool to extract/visualize trajectory data.

PREVIOUS RELATED WORK

In recent years, data quality has significantly improved as high-resolution trajectory data has become more widely available. Although trajectory data attracts significant interests, the related research efforts and applications are still very limited.

PROPOSED ACTIVITIES

- Development of performance measures
- Software tool development
- Compile findings and develop final report

EXPECTED PRODUCTS

Comprehensive literature review report. PM interim report. Software tool capable of trajectory extraction and visualization, manageable and scalable data analytics, and integration with existing tools and data sources. Case study report. Final report.

3862 Feasibility Study of Unmanned Aerial Vehicle Imagery for Mapping Roadside Milkweeds and Nectaring Plants for the Monarch Butterfly

TASK 24-22
ACTIVITY 3862
OPERATIONAL SECTION Research
PROGRAM MANAGER Ken Chambers

Agreement 564-22-803
 Start Date: November 2022
 End Date: August 2025

FUNDING FOR FFY2024 – ANNUAL REQUEST

Federal (80%)	\$	92,000
State (20%)	\$	23,000
Total Requested Amount	\$	115,000

Total Activity Cost for this Agreement: \$290,449

PARTICIPATING AGENCIES NDOT
FINANCIAL RESPONSIBILITY NDOT Research
FUNCTIONAL RESPONSIBILITY NDOT Environmental Services & NDOT Locations

PURPOSE AND SCOPE

It is anticipated the monarch butterfly will be listed under the Endangered Species Act in December 2023. In an effort to document suitable habitat and identify potential protection areas, NDOT performs physical surveys to count milkweeds and other flowering plants during appropriate growing seasons. This project intends to determine the feasibility and effectiveness of using drones for these surveys and investigate other potential time-saving technologies.

PREVIOUS RELATED WORK

Although drones have been used in various survey techniques, it is unknown if they are used for identification and counting flowering plants, especially as they relate to monarch butterflies.

PROPOSED ACTIVITIES

- Full experiment with 3 levels of flight, 3 levels of side overlap, and 3 growing times
- Develop vegetation maps to quantify vegetation cover
- Conduct ground surveys for monarch caterpillars
- Compile findings and develop final report

EXPECTED PRODUCTS

Drone flight R code. Methodology report. Vegetation maps to quantify vegetation and cover types. AI tool and code for autonomous vegetation identification. Final report.

End of Nevada Department of Transportation 2024 State Planning & Research Annual Work Program