



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Nevada Division**

May 23, 2024

705 N. Plaza Street, Suite 220  
Carson City, NV 89701  
775-687-1204

In Reply Refer To:  
HPL-NV

**ELECTRONIC CORRESPONDENCE ONLY**

Kevin Verre  
Division Chief, Planning and Multimodal Program Development  
Nevada Department of Transportation  
1263 South Stewart Street  
Carson City, NV 89712

**RE: FY 2024 State Planning & Research Work Program Amendment 1 Approval**

Dear Mr. Verre:

The FFY 2024 State Planning and Research (SPR) Work Program Amendment 1 was approved April 25, 2024. The FFY 2024 Amended SPR submitted by Nevada Department of Transportation (NDOT) is authorized to proceed. This approval is for the scope of work identified in the FFY 2024 SPR Work Program Amendment and any authorization or reimbursement is contingent upon availability of Federal funds.

The approved FFY 2024 SPR Work Program funds are limited to those identified in the Program which is approximately \$6,684,463 for Part I and \$1,957,867 for Part II and shall not exceed available carryover plus FFY 2024 allocations. SPR funds shall be administered in accordance with the provisions of 2 CFR 1201 and 23 CFR Part 420.

If you have any questions regarding this action, please contact me at 775.687.5332 or by e-mail at [Tylor.Finley@dot.gov](mailto:Tylor.Finley@dot.gov).

Sincerely,

**TYLOR J  
FINLEY**

Digitally signed by TYLOR  
J FINLEY  
Date: 2024.05.23  
09:44:16 -07'00'

Tylor Finley  
Financial Manager  
Federal Highway Administration

TO:

[KVerre@dot.nv.gov](mailto:KVerre@dot.nv.gov)

Kevin Verre, NDOT

CC: (via email):

Mathew Bradley, NDOT

Kenneth Chambers, NDOT

Sondra Rosenberg, NDOT

Melissa Chandler, NDOT

Khoa Nguyen, FHWA

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Alexander Smith, FTA Region 9

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JOE LOMBARDO  
Governor

STATE OF NEVADA  
DEPARTMENT OF TRANSPORTATION  
PLANNING | MULTIMODAL PROGRAM DEVELOPMENT  
CORRIDOR PLANNING & SPECIAL STUDIES  
Headquarters, 1263 S. Stewart St., Carson City, NV 89712

TRACY LARKIN THOMASON, P.E.  
Director

*April 19, 2024*

Khoa Nguyen, Division Administrator  
Federal Highway Administration  
705 North Plaza Street, Suite 220  
Carson City, NV 89701-4015

Attention: Tylor Finley, Acting Project Delivery Team Leader

**RE: Request for FHWA Approval of Amendment 1 to Parts I and II of the FFY 2024 SPR Annual Work Program**

Dear Mr. Nguyen,

The Nevada Department of Transportation is requesting FHWA approval of Amendment I to Parts I and II of the FFY 2024 SPR Annual Work Program. The FFY 2024 SPR Annual Work Program was approved by the FHWA Nevada Division in the attached letter dated September 18, 2023.

The purpose of the requested amendment is to revise funding distributions and add scope changes within the program areas for the FFY 2024 SPR AWP. The proposed amendment maintains the approved overall purpose and work program of the FFY 2024 SPR AWP for the State of Nevada Department of Transportation and meets the requirements of 2 CFR 1201 and 23 CFR Part 420.

This amendment will maintain the SPR Part I total budget. The net budget change for Part I is \$0. This amendment will increase the SPR Part II total budget. The net budget change for Part II is +251,307.



STATE OF NEVADA  
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**Part I Program Area Budgetary Changes**  
(Net Change: Zero)

- The Planning Administration Budget was DECREASED by \$42,900.
- The Sustainable & Emerging Transportation Budget was INCREASED by \$82,000.
- The Roadway Systems Budget is UNCHANGED
- The Traffic Information Budget is UNCHANGED.
- The Performance Analysis Budget was INCREASED by \$20,600.
- The Active Transportation & Special Studies Budget was INCREASED by \$17,000.
- The Rural Programs Budget INCREASED by \$113,480.
- The Program Development Budget was DECREASED by \$164,580.
- The Location Services Budget was DECREASED by \$26,600

**Part I Program Area Language Changes**

**Cover & Introduction Pages**

Page 6 Matthew Bradley removed as contact for the NDOT SPR Program

**Scope Changes**

Page 56 Fernley Corridor Study added to task 2429, Corridor Planning

**Part I: Planning Program Budget Summary**

- Page 9 & 10 **Planning Administration**
  - Increase Task 2401 Budget from \$3,900 to \$7,000
  - Decrease Task 2403 Budget from \$242,900 to \$207,000
  - Decrease Task 2404 Budget from \$10,600 to \$500
- Sustainable & Emerging Transportation**
  - Increase Task 2405 Budget from \$24,400 to \$261,600
  - Decrease Task 2406 Budget from \$334,800 to \$241,800
  - Increase Task 2407 Budget from \$94,600 to \$26,000
  - Increase Task 2408 Budget from \$33,600 to \$40,000
- Roadway Systems**
  - Increase Task 2411 Budget from \$232,000 to \$237,000
  - Decrease Task 2412 Budget from \$118,600 to \$117,600



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TRACY LARKIN THOMASON, P.E.  
*Director*

Decrease Task 2413 Budget from \$48,600 to \$44,800  
Decrease Task 2414 Budget from \$304,400 to \$302,400

**Performance Analysis**

Increase Task 2425 Budget from \$11,400 to \$32,000

**Active Transportation & Special Studies**

Increase Task 2428 Budget from \$171,700 to \$176,700  
Increase Task 2429 Budget from \$655,400 to \$667,400

**Rural Programs**

Increase Task 2430 Budget from \$63,000 to \$216,480  
Decrease Task 2431 Budget from \$226,700 to \$186,700

**Program Development**

Decrease Task 2433 Budget from \$169,300 to \$161,300  
Decrease Task 2434 Budget from \$393,600 to \$364,020  
Decrease Task 2435 Budget from \$79,400 to \$61,400  
Decrease Task 2437 Budget from \$740,600 to \$636,600  
Decrease Task 2439 Budget from \$5,600 to \$600

**Location Services**

Decrease Task 2440 Budget from \$224,000 to \$204,000  
Decrease Task 2441 Budget from \$5,600 to \$0



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Director

**Part II Program Area Language Changes & Scope Updates**

- Task 24-03 update project number and the final contribution amount
- Task 24-14 update project number
- Tasks 24-14a through 24-14f
  - six new Transportation Pooled Fund projects added.
- Tasks 24-23 through 24-25
  - three new research projects added.

**Increase Part II Total Federal Funds from \$1,706,560 to 1,957,867**

If you have any questions about this request, please contact Matt Bradley at (775) 888-7466 or [mjbradley@dot.nv.gov](mailto:mjbradley@dot.nv.gov).

Thank you for your kind attention to this matter.

Sincerely,

DocuSigned by:  
  
B6C0143BCAFD460...

**Kevin Verre**  
Division Chief  
Planning | Multimodal Program Development  
Nevada Department of Transportation  
[kverre@dot.nv.gov](mailto:kverre@dot.nv.gov)

cc: *Alex Smith, FTA Region 9*  
*Melissa Chandler, NDOT Planning*  
*Sondra Rosenberg, NDOT Planning*

encl: *2023 SPR AWP (AMD 1)*  
*2023 SPR Annual Work Program FHWA Approval Letter 09.09.2022*



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) Part I Draft  
Amendment 1



Tracy Larkin-Thomason, P.E., Director  
1263 South Stewart Street, Carson City, Nevada 89712

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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 Justice<sup>40</sup> 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.

Questions and inquiries about the NDOT SPR program may be addressed to:

**Melissa Chandler**

**Corridor Planning & Special Studies Program Lead**

**Planning | Multimodal Program Development**

Nevada Department of Transportation

o 775.888.7170 | f 775.888.7668

e [mchandler@dot.nv.gov](mailto:mchandler@dot.nv.gov) | w [dot.nv.gov](http://dot.nv.gov)

**Kevin Verre**

**MPD Division Chief**

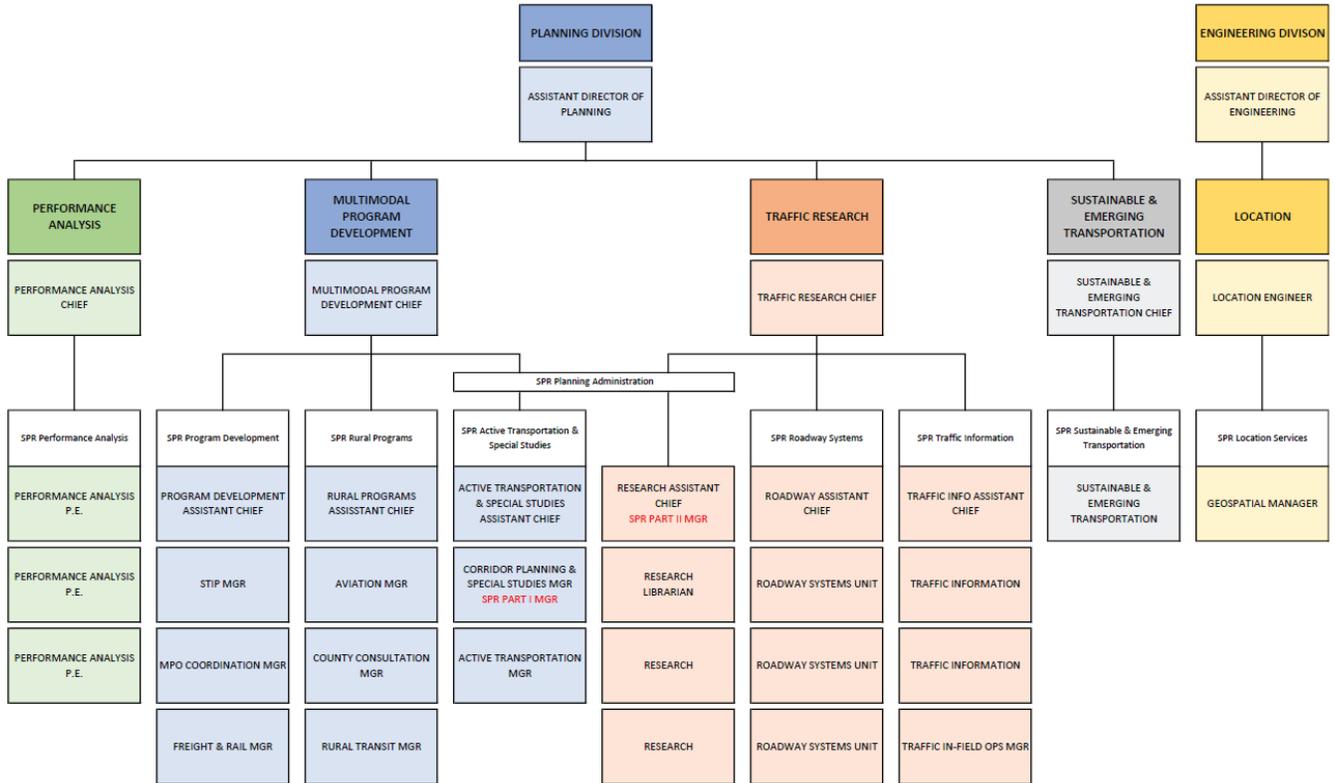
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# Planning Division Organization Chart



## 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
<b>Total Projected FFY 2024 Apportionment (FHWA &amp; Match)</b>	<b>\$8,355,579</b>

#### **FFY 2022 Carryover**

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

#### **Total Estimated Available FFY 2024 SPR Funding**

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

## FFY 2024 SPR Part I Budget and Pooled Funds Summary

Task	Activity	Title	Total Budget
<b>PLANNING ADMINISTRATION</b>			
2401	1976	Internal Auditing - Federal	\$7,000
2402	3601	Planning Program Management	\$112,000
2403	3603	Research Library	\$207,000
2404	3614	Planning and Environmental Linkages	\$500
<b>Total Planning Administration Budget</b>			<b>\$326,500</b>

<b>SUSTAINABLE &amp; EMERGING TRANSPORTATION</b>			
2405	3609	Alternative Fuel Corridors	\$261,600
2406	3611	Climate Planning	\$241,800
2407	3616	Emerging Technology and Innovation	\$26,000
2408	3860	Alternative Funding (VMT)	\$40,000
<b>Total Sustainable &amp; Emerging Transportation Budget</b>			<b>\$569,400</b>

<b>ROADWAY SYSTEMS</b>			
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
<b>Total Roadway Systems Budget</b>			<b>\$1,056,800</b>

<b>TRAFFIC INFORMATION</b>			
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
<b>Total Traffic Information Budget</b>			<b>\$2,820,200</b>

<b>PERFORMANCE ANALYSIS</b>			
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	\$32,000
2426	3659	Innovative Planning	\$33,800
2427	3863	Nevada Construction Cost Study	\$30,200
<b>Total Performance Analysis Budget</b>			<b>\$960,750</b>

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

<b>ACTIVE TRANSPORTATION</b>			
2428	3679	Active Transportation Planning	\$176,700
2429	3970	Corridor Planning Program	\$667,400
<b>Total Active Transportation Budget</b>			<b>\$844,100</b>

<b>RURAL PROGRAMS</b>			
2430	3602	Tribal Consultation	\$216,400
2431	3955	County Consultation	\$186,700
2432	3961	Public Transportation Planning	\$0
<b>Total Rural Programs Budget</b>			<b>\$403,180</b>

<b>PROGRAM DEVELOPMENT</b>			
2433	3613	Multistate Coordination & Planning	\$161,300
2434	3690	Freight & Rail Transportation Planning	\$364,020
2435	3957	Nevada MPO/RTC Coordination	\$61,400
2436	3979	eSTIP Consultant Support	\$381,200
2437	3980	Statewide Long-Range Planning	\$638,600
2438	3984	STIP / Work Program	\$218,400
2439	3997	Scenic Byway Program	\$600
<b>Total Program Development Budget</b>			<b>\$1,823,520</b>

<b>LOCATION SERVICES</b>			
2440	3617	SPR Mapping	\$204,000
2441	3728	Imagery	\$0
<b>Total Location Services Budget</b>			<b>\$204,000</b>

<b>Total FFY 2024 SPR Part I Budget</b>	<b>\$9,008,450</b>
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<b>POOLED FUNDS</b>			
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
<b>Total Part I Pooled Funds Budget</b>			<b>\$35,000</b>

<b>Total FFY 2024 SPR Part I Pooled Funds</b>	<b>\$35,000</b>
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## Part I: Program Sections

## Planning Administration

### **1976 Internal Auditing – Federal**

<b><u>TASK</u></b>	2401
<b><u>ACTIVITY</u></b>	1976
<b><u>OPERATIONAL SECTION</u></b>	Planning Administration
<b><u>PROGRAM MANAGER</u></b>	SPR Part I Manager, Multimodal Program Development

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	7,000
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>5,600</b>
State (20%)	\$	<b>1,400</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>7,000</b>

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

<b><u>TASK</u></b>	2402
<b><u>ACTIVITY</u></b>	3601
<b><u>OPERATIONAL SECTION</u></b>	Planning Administration
<b><u>PROGRAM MANAGER</u></b>	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%)	\$	<b>89,600</b>
State (20%)	\$	<b>22,400</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>112,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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 March Spring Meeting to discuss draft budgets and new unfunded needs for FFY 2024 SPR AWP
- Conduct April Spring Meeting to discuss draft budgets and draft activity tasks for FFY 2024 SPR AWP
- Conduct May Spring Meeting to discuss final budgets and final task edits for FFY 2024 SPR AWP
- Review and acceptance of final budget and task pages 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**

<b><u>TASK</u></b>	2403
<b><u>ACTIVITY</u></b>	3603
<b><u>OPERATIONAL SECTION</u></b>	Planning Administration
<b><u>PROGRAM MANAGER</u></b>	SPR Part II Manager, Traffic Research

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	105,000
Travel	\$	-
Operating	\$	102,000
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>165,600</b>
State (20%)	\$	<b>41,400</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>207,000</b>

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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	500
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>400</b>
State (20%)	\$	<b>100</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>500</b>

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

<b><u>TASK</u></b>	2405
<b><u>ACTIVITY</u></b>	3609
<b><u>OPERATIONAL SECTION</u></b>	Sustainable & Emerging Transportation
<b><u>PROGRAM MANAGER</u></b>	Division Chief, Sustainable & Emerging Transportation

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	80,000
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	179,600
Equipment	\$	-
Federal (80%)	\$	<b>209,280</b>
State (20%)	\$	<b>52,320</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>261,600</b>

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT, Governor’s Office of Energy, Joint Office, MPOs
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	NDOT

#### **PURPOSE AND SCOPE**

Alternative fuel vehicles will be promoted in Nevada through the alternative fuel vehicles program, aligning resources and expertise. As part of the program, electric vehicle chargers, zero-emission fueling infrastructure, and zero-emission transit and school bus research will be researched, planned, and deployed. The program will involve the adoption of alternative fuel vehicles, the reduction of emissions, and the creation of jobs for disadvantaged communities. Currently, the state is working on the required NEVI plan and following the standards provided by the Joint Office. We are conducting research and planning to establish an interconnected network to facilitate data collection, access, and reliability of electric vehicles.

#### **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**

<b><u>TASK</u></b>	2406
<b><u>ACTIVITY</u></b>	3611
<b><u>OPERATIONAL SECTION</u></b>	Sustainable & Emerging Transportation
<b><u>PROGRAM MANAGER</u></b>	Division Chief, Sustainable & Emerging Transportation

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	60,200
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	179,600
Equipment	\$	-
Federal (80%)	\$	<b>193,440</b>
State (20%)	\$	<b>48,360</b>
Total Requested Amount	\$	<b>241,800</b>

<b><u>PARTICIPATING AGENCIES</u></b>	USDOT, FHWA, FTA, NDOT, NDEP, DOA, DCNR, EPA
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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**

<b><u>TASK</u></b>	2407
<b><u>ACTIVITY</u></b>	3616
<b><u>OPERATIONAL SECTION</u></b>	Sustainable & Emerging Transportation
<b><u>PROGRAM MANAGER</u></b>	Division Chief, Sustainable & Emerging Transportation

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	25,000
Travel	\$	1,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>20,800</b>
State (20%)	\$	<b>5,200</b>
Total Requested Amount	\$	<b>26,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT, DMV, GOED, Counties and Incorporated Cities
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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)**

<b><u>TASK</u></b>	2408
<b><u>ACTIVITY</u></b>	3860
<b><u>OPERATIONAL SECTION</u></b>	Sustainable & Emerging Transportation
<b><u>PROGRAM MANAGER</u></b>	Division Chief, Sustainable & Emerging Transportation

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	40,000
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>32,000</b>
State (20%)	\$	<b>8,000</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>40,000</b>

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

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT, RUC America, MBUFA, DMV
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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

<b><u>TASK</u></b>	2409
<b><u>ACTIVITY</u></b>	3607
<b><u>OPERATIONAL SECTION</u></b>	Roadway Systems
<b><u>PROGRAM MANAGER</u></b>	Roadway Assistant Chief

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b>TASK</b>	2410
<b>ACTIVITY</b>	3608
<b>OPERATIONAL SECTION</b>	Roadway Systems
<b>PROGRAM MANAGER</b>	Roadway Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2411
<b><u>ACTIVITY</u></b>	3610
<b><u>OPERATIONAL SECTION</u></b>	Roadway Systems
<b><u>PROGRAM MANAGER</u></b>	Roadway Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	224,000
Travel	\$	13,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>189,600</b>
State (20%)	\$	<b>47,400</b>
Total Requested Amount	\$	<b>237,000</b>

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

<b><u>TASK</u></b>	2412
<b><u>ACTIVITY</u></b>	3612
<b><u>OPERATIONAL SECTION</u></b>	Roadway Systems
<b><u>PROGRAM MANAGER</u></b>	Roadway Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	117,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>94,080</b>
State (20%)	\$	<b>23,520</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>117,600</b>

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

<b><u>TASK</u></b>	2413
<b><u>ACTIVITY</u></b>	3653
<b><u>OPERATIONAL SECTION</u></b>	Roadway Systems
<b><u>PROGRAM MANAGER</u></b>	Roadway Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	44,800
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>35,840</b>
State (20%)	\$	<b>8,960</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>44,800</b>

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

<b><u>TASK</u></b>	2414
<b><u>ACTIVITY</u></b>	3660
<b><u>OPERATIONAL SECTION</u></b>	Roadway Systems
<b><u>PROGRAM MANAGER</u></b>	Roadway Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	302,400
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>241,920</b>
State (20%)	\$	<b>60,480</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>302,400</b>

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

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

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2416
<b><u>ACTIVITY</u></b>	3624
<b><u>OPERATIONAL SECTION</u></b>	Traffic Information
<b><u>PROGRAM MANAGER</u></b>	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%)	\$	<b>1,101,440</b>
State (20%)	\$	<b>275,360</b>
Total Requested Amount	\$	<b>1,376,800</b>

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

<b><u>TASK</u></b>	2417
<b><u>ACTIVITY</u></b>	3626
<b><u>OPERATIONAL SECTION</u></b>	Traffic Information
<b><u>PROGRAM MANAGER</u></b>	Traffic Info Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2418
<b><u>ACTIVITY</u></b>	3627
<b><u>OPERATIONAL SECTION</u></b>	Traffic Information
<b><u>PROGRAM MANAGER</u></b>	Traffic Info Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2419
<b><u>ACTIVITY</u></b>	3632
<b><u>OPERATIONAL SECTION</u></b>	Traffic Information
<b><u>PROGRAM MANAGER</u></b>	Traffic Info Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2420
<b><u>ACTIVITY</u></b>	3982
<b><u>OPERATIONAL SECTION</u></b>	Traffic Information
<b><u>PROGRAM MANAGER</u></b>	Traffic Info Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2421
<b><u>ACTIVITY</u></b>	3644
<b><u>OPERATIONAL SECTION</u></b>	Performance Analysis
<b><u>PROGRAM MANAGER</u></b>	Performance Analysis P.E.

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2422
<b><u>ACTIVITY</u></b>	3650
<b><u>OPERATIONAL SECTION</u></b>	Performance Analysis
<b><u>PROGRAM MANAGER</u></b>	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%)	\$	<b>549,160</b>
State (20%)	\$	<b>137,290</b>
Total Requested Amount	\$	<b>686,450</b>

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

<b><u>TASK</u></b>	2423
<b><u>ACTIVITY</u></b>	3651
<b><u>OPERATIONAL SECTION</u></b>	Performance Analysis
<b><u>PROGRAM MANAGER</u></b>	Performance Analysis P.E.

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2424
<b><u>ACTIVITY</u></b>	3655
<b><u>OPERATIONAL SECTION</u></b>	Performance Analysis
<b><u>PROGRAM MANAGER</u></b>	Performance Analysis P.E.

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	2425
<b><u>ACTIVITY</u></b>	3656
<b><u>OPERATIONAL SECTION</u></b>	Performance Analysis
<b><u>PROGRAM MANAGER</u></b>	Performance Analysis P.E.

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	32,000
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>25,600</b>
State (20%)	\$	<b>6,400</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>32,000</b>

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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

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

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	76,700
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	100,000
Equipment	\$	-
Federal (80%)	\$	<b>141,360</b>
State (20%)	\$	<b>35,340</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>176,700</b>

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

<b><u>TASK</u></b>	2429
<b><u>ACTIVITY</u></b>	3970
<b><u>OPERATIONAL SECTION</u></b>	Active Transportation & Special Studies
<b><u>PROGRAM MANAGER</u></b>	Corridor Planning & Special Studies Manager

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	68,000
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	597,400
Equipment	\$	-
Federal (80%)	\$	<b>533,920</b>
State (20%)	\$	<b>133,480</b>
Total Requested Amount	\$	<b>667,400</b>

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT, MPOs, Counties, & Incorporated Cities
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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
  - (begin) Fernley Corridor Study in partnership with the City of Fernley
- 
- 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

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

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	58,000
Travel	\$	5,000
Operating	\$	-
Capital Outlay (Consultant)	\$	153,480
Equipment	\$	-
Federal (80%)	\$	<b>173,184</b>
State (20%)	\$	<b>43,296</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>216,480</b>

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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	78,100
Travel	\$	2,000
Operating	\$	-
Capital Outlay (Consultant)	\$	106,600
Equipment	\$	-
Federal (80%)	\$	<b>149,360</b>
State (20%)	\$	<b>37,340</b>
Total Requested Amount	\$	<b>186,700</b>

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT, Counties, & Incorporated Cities
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>-</b>

**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**

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

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	8,800
Travel	\$	2,500
Operating	\$	-
Capital Outlay (Consultant)	\$	150,000
Equipment	\$	-
Federal (80%)	\$	<b>129,040</b>
State (20%)	\$	<b>32,260</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>161,300</b>

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

<b><u>TASK</u></b>	2434
<b><u>ACTIVITY</u></b>	3690
<b><u>OPERATIONAL SECTION</u></b>	Program Development
<b><u>PROGRAM MANAGER</u></b>	Freight & Rail Manager

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	60,020
Travel	\$	4,000
Operating	\$	-
Capital Outlay (Consultant)	\$	300,000
Equipment	\$	-
Federal (80%)	\$	<b>291,216</b>
State (20%)	\$	<b>72,804</b>
Total Requested Amount	\$	<b>364,020</b>

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

<b><u>TASK</u></b>	2435
<b><u>ACTIVITY</u></b>	3957
<b><u>OPERATIONAL SECTION</u></b>	Program Development
<b><u>PROGRAM MANAGER</u></b>	MPO Coordination Manager

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	60,400
Travel	\$	1,000
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>49,120</b>
State (20%)	\$	<b>12,280</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>61,400</b>

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

<b><u>TASK</u></b>	2436
<b><u>ACTIVITY</u></b>	3979
<b><u>OPERATIONAL SECTION</u></b>	Program Development
<b><u>PROGRAM MANAGER</u></b>	STIP Manager

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, FTA, EPA, NDOT, MPOs
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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**

<b><u>TASK</u></b>	2437
<b><u>ACTIVITY</u></b>	3980
<b><u>OPERATIONAL SECTION</u></b>	Program Development
<b><u>PROGRAM MANAGER</u></b>	Program Development Assistant Chief

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	1,600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	635,000
Equipment	\$	-
Federal (80%)	\$	<b>509,280</b>
State (20%)	\$	<b>127,320</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>636,600</b>

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

<b><u>TASK</u></b>	2438
<b><u>ACTIVITY</u></b>	3984
<b><u>OPERATIONAL SECTION</u></b>	Program Development
<b><u>PROGRAM MANAGER</u></b>	STIP Manager

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT, Counties, Cities, & State/Federal Agencies
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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**

<b><u>TASK</u></b>	2439
<b><u>ACTIVITY</u></b>	3997
<b><u>OPERATIONAL SECTION</u></b>	Program Development
<b><u>PROGRAM MANAGER</u></b>	Freight & Rail Manager

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	600
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>480</b>
State (20%)	\$	<b>120</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>600</b>

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

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

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Personnel Services (Staffing)	\$	204,000
Travel	\$	-
Operating	\$	-
Capital Outlay (Consultant)	\$	-
Equipment	\$	-
Federal (80%)	\$	<b>163,200</b>
State (20%)	\$	<b>40,800</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>204,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA, NDOT
<b><u>FINANCIAL RESPONSIBILITY</u></b>	FHWA, NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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 Nevada Department of Transportation representative and act as a liaison for various mapping-related activities

## **3728 Imagery**

<b><u>TASK</u></b>	2441
<b><u>ACTIVITY</u></b>	3728
<b><u>OPERATIONAL SECTION</u></b>	Location Services
<b><u>PROGRAM MANAGER</u></b>	Geospatial Manager

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

**End of Part I Draft**

## 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(424) National Cooperative Highway Research Program (NCHRP), estimated	\$ 517,307		\$ 517,307
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	TPF-5(524) Stormwater Management to Address Highway Runoff Toxicity Due to 6PPD-Quinone from Tire Rubber	\$ 30,000		\$ 30,000
24-14a	TPF-5(527) International Conference on Ecology and Transportation 2025 (ICOET)	\$ 10,000		\$ 10,000
24-14b	TPF-5(526) Western Transportation Research Consortium	\$ 15,000		\$ 15,000
24-14c	Solicitation 1606 Ahead of the Curve - Migration from NCHRP to AASHTO Technical Training Solutions (TTS)	\$ 20,000		\$ 20,000
24-14d	TPF-5(465) Consortium for Asphalt Pavement Research and Implementation (CAPRI)	\$ 20,000		\$ 20,000
24-14e	Solicitation 1605 Improving the Quality of Highway Profile Measurement	\$ 30,000		\$ 30,000
24-14f	TPF-5(501) Roadside Safety Pooled Fund - Phase 3	\$ 65,000		\$ 65,000
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
24-23	Agreement TBD The Optimal Shoulder for Reducing Speed Related and Lane Departure Crashes	\$ 24,000	\$ 6,000	\$ 30,000
24-24	Agreement TBD Development of Alternative Desert Tortoise Crossing Criteria and Designs	\$ 40,000	\$ 10,000	\$ 50,000
24-25	Agreement TBD Use of Fiber-Reinforced Polymer (FRP) Bars in Seismic Design of Building Structures	\$ 20,000	\$ 5,000	\$ 25,000
Part II Total		\$ 1,957,867	\$ 224,140	\$ 2,182,007

## Part II: Program Sections

### Research, Development, and Technology Transfer

#### **Research Development and Implementation**

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

#### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

#### PURPOSE AND SCOPE

The purpose is to develop research projects and facilitate the implementation of research findings including technology transfer. Through the activities below, 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.

## Product Evaluation Program

<b><u>TASK</u></b>	24-02
<b><u>ACTIVITY</u></b>	3869
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	Ken Chambers

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>TASK</u></b>	24-03
<b><u>ACTIVITY</u></b>	N/A
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	Ken Chambers
	<b>National Pooled Fund Study: TPF-5(424)</b>

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (100%)	\$	<b>517,307</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>517,307</b>

\$

<b><u>PARTICIPATING AGENCIES</u></b>	AASHTO, FHWA, NDOT, All other State DOTs
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Transportation Research Board

#### PURPOSE AND SCOPE

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

#### PREVIOUS RELATED WORK

On-going program.

#### 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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

<b><u>PARTICIPATING AGENCIES</u></b>	AASHTO, FHWA, NDOT, All other State DOTs
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Transportation Research Board

#### PURPOSE AND SCOPE

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

#### PREVIOUS RELATED WORK

On-going program.

#### 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%)	\$ -
<b>Total Requested Amount</b>	<b>\$ 25,000</b>

**PARTICIPATING AGENCIES** FHWA (lead agency), 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 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 (FFY20-24)

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	Iowa DOT (lead agency), 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, SC, SD, TN, TX, UT, WA, WI, WV, and WY
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	Minnesota DOT (lead agency), 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
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	Montana DOT (lead agency), State DOTs: CA, CT, GA, IA, ID, IL, IN, KS, KY, LA, MI, MN, MS, TX, UT, VT, and WA
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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%)	\$	<b>6,000</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>6,000</b>

**PARTICIPATING AGENCIES** Iowa DOT (lead agency), 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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	FHWA (lead agency), State DOTs: AR, FL, IA, ID, KS, KY, MA, MI, MO, MS, OH, PA, TX, UT, and WA
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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 1<sup>st</sup> 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

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

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (100%)	\$	<b>55,000</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>55,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	Virginia DOT (lead agency), State DOTs: MI, MO, MT, and NM
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	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: TPF-5(524)**

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (100%)	\$	<b>30,000</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>30,000</b>

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

### 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

## International Conference on Ecology and Transportation 2025 (ICOET)

<b><u>TASK</u></b>	24-14a
<b><u>ACTIVITY</u></b>	N/A
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	Nova Simpson
	<b>National Pooled Fund Study: TPF-5(527)</b>

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (100%)	\$	<b>10,000</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>10,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	Washington State DOT (lead agency), State DOTs: GA, ID, PA, TX, WV
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Washington State DOT

### PURPOSE AND SCOPE

The International Conference of Ecology and Transportation is the best conference for interaction of transportation, the biological sciences, and law. Environmental staff at NDOT attend this conference every two years when it is hosted in the United States but forgo the years it is hosted internationally. This conference is an opportunity to showcase the efforts NDOT has put into biological compliance and wildlife mitigation.

### PREVIOUS RELATED WORK

Environmental staff at NDOT has attended this conference in the past, biennially. In order to complete the requirements necessitated by Assembly Bill 112, a new account for wildlife crossings, staff must understand current scientific findings and techniques, which are constantly changing. Biennial attendance at this conference allows for the acquisition of this knowledge.

### PROPOSED ACTIVITIES

- Experts around the world will assemble to exchange knowledge and best practices on the interrelationship of ecology and transportation.
- Ideas will be shared through presentations, panel discussions, breaks, lunches, receptions, and field trips.
- Shared knowledge will be expanded, and attendees will learn about the cutting edge of science on the topic of ecology and transportation.

### EXPECTED PRODUCTS

- NDOT representation on the Pooled Fund Technical Advisory Committee
- NDOT involvement in the development of the conference and associated activities
- Networking, communication, teamwork, planning, and professional skills building
- Five free conference registrations, and savings on out-of-state travel funds

## Western Transportation Research Consortium

<b><u>TASK</u></b>	24-14b
<b><u>ACTIVITY</u></b>	N/A
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	Lucy Koury
	<b>National Pooled Fund Study: TPF-5(526)</b>

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (100%)	\$	<b>15,000</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>15,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	Utah DOT (lead agency), State DOTs: AK, CA, CO, ID, MT, ND, NE, NM, OK, TX, WA, WY
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Utah DOT

### PURPOSE AND SCOPE

Participating in this Transportation Pooled Fund project will allow NDOT Research to benefit from being an active member of the regional research community, as well as have direct input on research priorities and key topics of interest. Additionally, this will allow NDOT to keep on the edge of processes, provide input on use of resources, and learn ways to continually grow and improve our program is a benefit that would positively impact NDOT. Of particular and immediately applicable interest, is the planned discussion on peer exchange support. Other topics of interest include freight issues, transportation innovation, and transportation equity, which have become more and more important in recent years.

### PREVIOUS RELATED WORK

None identified.

### PROPOSED ACTIVITIES

- Collaboration on common problems will allow participants to more effectively use its resources
- Provide an additional way to leverage research and technology transfer funding of state DOTs
- Provide a means to define, support, and share technology of mutual interest
- Provide a method for Peer Exchange support

### EXPECTED PRODUCTS

- A longer-range plan of collaboration (strategic plan)

## Ahead of the Curve—Migration from NCHRP to AASHTO Technical Training Solutions (TTS)

<b><u>TASK</u></b>	24-14c
<b><u>ACTIVITY</u></b>	N/A
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	Lucy Koury
<b>National Pooled Fund Study: Solicitation 1606</b>	

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	Louisiana DOT (lead agency), State DOTs: AK, GA, ID, KS, MO, NJ, NY, PA, SC, TX, UT, VA
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Louisiana DOT

### PURPOSE AND SCOPE

Provide for the delivery of classes developed under the “Ahead of the Curve (AOTC) Mastering the Management of Transportation Research and Innovation” program. Transfer AOTC information from NCHRP to AASHTO. Update existing four core courses to reflect recent changes in CFR governing State DOT research programs. Update the elective courses to reflect the most recent changes in best practices for implementation, project management, etc., learned from 2012 to 2024. Migrate the updated courses into AASHTO Technical Training Solutions (TTS) format. Make all courses 508 compliant.

### PREVIOUS RELATED WORK

The NCHRP project “Ahead of the Curve (AOTC) Mastering the Management of Transportation Research and Innovation” was initiated in 2012, and its mission was “to develop and deliver a TRB program that enhances the knowledge, skills, and abilities of managers of transportation research programs and those responsible for innovation in a coordinated manner and on a continuing basis.” Over the course of the next four to five years, the introductory course and four core courses were delivered in a face-to-face format and four elective courses were delivered in a virtual format. However, NCHRP is no longer able to provide the classes and training that were developed.

### PROPOSED ACTIVITIES

- Transfer ownership of AOTC course materials from NCHRP to AASHTO
- Hire a contractor to update core course material
- Update elective course material as necessary to current practices
- Make core and elective courses compatible / acceptable for the AASHTO TTS platform
- Make all courses Section 508 compliant and accessible

### EXPECTED PRODUCTS

- Offer courses under AASHTO that were previously developed under NCHRP

## Consortium for Asphalt Pavement Research and Implementation (CAPRI)

<b><u>TASK</u></b>	24-14d
<b><u>ACTIVITY</u></b>	N/A
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	Charlie Pan
	<b>National Pooled Fund Study: TPF-5(465)</b>

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

<b><u>PARTICIPATING AGENCIES</u></b>	Alabama DOT (lead agency), FHWA, PR, VIDPW, State DOTs: CO, FL, GA, HI, ID, IN, KY, ME, MI, MO, MS, NC, ND, NE, NM, NY, OH, OK, PA, SC, TN, TX, VA, WA, WI
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Alabama DOT

### PURPOSE AND SCOPE

Identify and address national priority research and implementation needs for asphalt pavements that state DOTs face today and in the future, in order to continue fostering the development of new technologies and practices for designing, constructing, and preserving asphalt pavements that meet a higher level of sustainability, safety and user satisfaction for the public. Adopted innovative technologies and practices are often developed from the collaborative research efforts supported by the state DOTs, Federal Highway Administration, and industry.

### PREVIOUS RELATED WORK

None identified.

### PROPOSED ACTIVITIES

- Semi-annual CAPRI meetings
- Identify issues with current asphalt-related standards and share potential solutions
- Identify short-term and long-term research needs
- Develop research need statements and identify the appropriate source(s) of funding for each project
- Select and prioritize small-scale, exploratory, kick-off studies that can be funded directly by CAPRI
- Assist in the deployment of research findings by selecting and prioritizing activities

### EXPECTED PRODUCTS

- National Asphalt Research Roadmap (NARR) publication
- Published progress reports that document the results of the entire project

## Improving the Quality of Highway Profile Measurement

<b><u>TASK</u></b>	24-14e
<b><u>ACTIVITY</u></b>	N/A
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	Steven Hale
	<b>National Pooled Fund Study: Solicitation 1605</b>

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (100%)	\$	<b>30,000</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>30,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	Illinois DOT (lead agency), FHWA, State DOTs: GA, IN, KY, MS, ND, NY, OH, PA, TX
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Illinois DOT

### PURPOSE AND SCOPE

Continue and extend the work of TPF-5(063) and TPF-5(354), where the objective was to provide agencies with information and first-hand experience to address issues and concerns related to profiler operation, equipment, and procedures.

### PREVIOUS RELATED WORK

Work began on this project as TPF-5(063) and TPF-5(354).

### PROPOSED ACTIVITIES

- Deliver sample procurement specifications and maintenance guidelines
- Implement criteria for profile verification that include emerging technologies
- Develop and deliver profiler operation and profile analysis training
- Implement methods for maximizing the use of pavement profiles for network, project, and forensic analysis
- Provide technical support for the Road Profile Users' Group and conduct annual face-to-face meetings in conjunction with the group
- Implementation of AASHTO Provisional Standards for Inertial Profilometers
- Demonstration or improvement of pavement profiler certification procedures for construction acceptance and highway network monitoring and reporting
- Analysis of profiles for network localized roughness analysis, project level roughness progression over time to improve construction practices, and forensic investigations

### EXPECTED PRODUCTS

- Development and delivery of training
- Development and implementation of data collection, reduction techniques, and use of alternative roughness indices for low-speed and urban roadways

## Roadside Safety Pooled Fund—Phase 3

<b><u>TASK</u></b>	24-14f
<b><u>ACTIVITY</u></b>	N/A
<b><u>OPERATIONAL SECTION</u></b>	Research
<b><u>PROGRAM MANAGER</u></b>	David Fox
	<b>National Pooled Fund Study: TPF-5(501)</b>

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (100%)	\$	<b>65,000</b>
State (0%)	\$	-
<b>Total Requested Amount</b>	<b>\$</b>	<b>65,000</b>

<b><u>PARTICIPATING AGENCIES</u></b>	Washington State DOT (lead agency), Ontario MOT, State DOTs: AK, AL, CA, CO, CT, DE, FL, IA, ID, IL, LA, MA, MD, MI, MN, MO, NM, OH, OR, PA, TN, TX, UT, WI, WV
<b><u>FINANCIAL RESPONSIBILITY</u></b>	NDOT
<b><u>FUNCTIONAL RESPONSIBILITY</u></b>	Washington State DOT

#### PURPOSE AND SCOPE

Assist transportation agencies in achieving their Roadway Departure related all state Strategic Highway Safety Plans goals through development, evaluation and deployment of life-saving roadside safety devices and countermeasures in accordance with AASHTO and Federal Highway Administration (FHWA) adopted standards such as the Manual for Assessing Safety Hardware.

#### PREVIOUS RELATED WORK

Work began on this project as TPF-5(114) and TPF-5(343).

#### PROPOSED ACTIVITIES

- Representatives of participating states will meet as a technical committee to determine common research needs and prioritize projects annually
- Design, analyze, test, and evaluate crashworthy roadside safety devices
- Develop guidelines for the use, selection, and placement of crashworthy roadside safety devices

#### EXPECTED PRODUCTS

- Research associated with the projects selected by the technical committee will be performed by Texas Transportation Institute

## 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%)	\$	<b>32,000</b>
State (20%)	\$	<b>8,000</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>40,000</b>

*Total Activity Cost for Agreement: \$40,000*

**PARTICIPATING AGENCIES** NDOT and 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

## 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%)	\$	<b>20,000</b>
State (20%)	\$	<b>5,000</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>25,000</b>

*Total Activity Cost for Agreement: \$150,000*

**PARTICIPATING AGENCIES** NDOT  
**FINANCIAL RESPONSIBILITY** NDOT Research  
**FUNCTIONAL RESPONSIBILITY** NDOT Materials Division & NDOT Traffic Safety Engineering Division

### 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.

## 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%)	\$	<b>60,000</b>
State (20%)	\$	<b>15,000</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>75,000</b>

*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.

## 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
<b>Total Requested Amount</b>	<b>\$</b>	<b>42,000</b>

*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.

## 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%)	\$	<b>27,200</b>
State (20%)	\$	<b>6,800</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>34,000</b>

*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.

## 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%)	\$	<b>16,800</b>
State (20%)	\$	<b>4,200</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>21,000</b>

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

**PARTICIPATING AGENCIES** NDOT  
**FINANCIAL RESPONSIBILITY** NDOT Research  
**FUNCTIONAL RESPONSIBILITY** NDOT Design/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.

## 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%)	\$	<b>160,000</b>
State (20%)	\$	<b>40,000</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>200,000</b>

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

**PARTICIPATING AGENCIES** City of Reno, RTC Washoe County, RTC 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.

## 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
<b>Total Requested Amount</b>	<b>\$ 115,000</b>

*Total Activity Cost for 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.

## The Optimal Shoulder for Reducing Speed Related and Lane Departure Crashes

**TASK** 24-23  
**ACTIVITY** 3862  
**OPERATIONAL SECTION** Research  
**PROGRAM MANAGER** Lucy Koury

Agreement TBD  
 Start Date: June 2024  
 End Date: June 2027

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (80%)	\$	<b>24,000</b>
State (20%)	\$	<b>6,000</b>
<b>Total Requested Amount</b>	<b>\$</b>	<b>30,000</b>

*Total Activity Cost for Agreement: \$375,279*

**PARTICIPATING AGENCIES** NDOT  
**FINANCIAL RESPONSIBILITY** NDOT Research  
**FUNCTIONAL RESPONSIBILITY** NDOT Traffic Safety Engineering and NDOT Roadway Design

### PURPOSE AND SCOPE

The purpose of this research project is to conduct a comprehensive study on the causes of speed-related and lane departure crashes and identify optimal countermeasures for strategic intervention. In particular, the project will focus on the following three important issues: contributing factors to the recent increase in crash occurrences in Nevada, crash countermeasures pertaining to road shoulders encompass a diverse array of options, and optimal road shoulder designs that effectively mitigate crash risks and minimize economic costs and environmental impacts.

### PREVIOUS RELATED WORK

A literature review demonstrates that although research has been done on this subject, several gaps have been identified, three of which this research project will address. First, an in-depth research effort is needed to discover safety risks associated with speeding and lane departure especially for US-95 in Nye County. Second, there has not been comprehensive exploration of crash countermeasures in the Nevada context. Lastly, there are no established methods to assess the economic and environmental impacts of diverse roadside configurations considering Nevada-specific conditions and requirements.

### PROPOSED ACTIVITIES

- Literature review
- Field Data Collection and traffic safety evaluation
- Simulation-Based Vehicle Dynamic and Driver Response Analyses for Countermeasures
- Economic and Environmental Assessments and policy recommendations
- Final Report and Future Research Roadmap

### EXPECTED PRODUCTS

Interim reports. Economic and environmental assessment methodologies. Final report and research roadmaps.

## Development of Alternative Desert Tortoise Crossing Criteria and Designs

**TASK** 24-24  
**ACTIVITY** 3862  
**OPERATIONAL SECTION** Research  
**PROGRAM MANAGER** Lucy Koury

Agreement TBD  
 Start Date: June 2024  
 End Date: November 2025

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

Federal (80%)	\$	40,000
State (20%)	\$	10,000
<b>Total Requested Amount</b>	<b>\$</b>	<b>50,000</b>

*Total Activity Cost for Agreement: \$400,000 (estimated)*

**PARTICIPATING AGENCIES** NDOT  
**FINANCIAL RESPONSIBILITY** NDOT Research  
**FUNCTIONAL RESPONSIBILITY** NDOT Environmental Services and NDOT Roadway Design/  
 Hydraulics

### PURPOSE AND SCOPE

The purpose of this research project is to provide support to NDOT to find alternative crossing designs that can withstand multiple hydraulic events without requiring extensive maintenance, while also providing effective crossing opportunities for desert tortoises. The alternative designs developed through this research would potentially reduce construction and maintenance costs, save tax-payer money, reduce habitat fragmentation, and increase population viability for the desert tortoise.

### PREVIOUS RELATED WORK

The final report of a prior NDOT research project conceptually proposed alternative erosion control designs consisting of turf reinforcement mats (TRMs). TRMs were deemed unsuitable and were not advanced for implementation. Additionally, Clark County Desert Conservation Program completed their Culvert Inspection for the Purposes of the Desert Tortoise Passage Project in 2021. This project rated the conditions and suitability of existing culverts to safely allow tortoise passage.

### PROPOSED ACTIVITIES

- Identify four culvert crossings along Nevada State Route 160 to evaluate and retrofit into desert tortoise culvert crossings with low maintenance requirements
- Obtain topographical surveys to develop creative designs, including engineered plans
- Produce final report documents that provide details of the design efforts performed
- Provide implementation-ready construction plans, specifications, and estimates

### EXPECTED PRODUCTS

- Interim reports, synthesis documents, and final report
- Any programming codes, databases, and other tools to be developed
- Models to be developed using proprietary or other programs

## Use of Fiber-Reinforced Polymer (FRP) Bars in Seismic Design of Building Structures

**TASK** 24-25  
**ACTIVITY** 3862  
**OPERATIONAL SECTION** Research  
**PROGRAM MANAGER** Lucy Koury

Agreement TBD  
 Start Date: June 2024  
 End Date: December 2027

### **FUNDING FOR FFY2024 – ANNUAL REQUEST**

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

Total Activity Cost for Agreement: \$450,900

**PARTICIPATING AGENCIES** NDOT  
**FINANCIAL RESPONSIBILITY** NDOT Research  
**FUNCTIONAL RESPONSIBILITY** NDOT Architecture, NDOT Structures, NDOT Maintenance and Asset Management, and NDOT Materials

### PURPOSE AND SCOPE

The purpose of this research project is to address the existing knowledge gaps regarding seismic behavior, failure modes, and design guidelines of fiber reinforced polymer reinforced-concrete structures. The focus will be on wall-type structures, but the research will provide essential knowledge for other types of structural systems, enabling the broader applications that could serve NDOT's other structural needs.

### PREVIOUS RELATED WORK

Both experimental and numerical studies have been performed in this field, but few have focused on seismic applications. Therefore, systematic research is required to address existing knowledge gaps at different scales, from component to structural scales, to enable future seismic applications of fiber reinforced polymer reinforced-concrete structures.

### PROPOSED ACTIVITIES

- Comprehensive Literature Review
- Component- and Member-Level Testing
- Multi-Fidelity Numerical and Parametric Studies
- Shake-Table Testing
- Seismic Analysis and Design Guidelines

### EXPECTED PRODUCTS

- Interim progress reports
- Final report