Making Transportation Planning Applicable in Tribal Communities Research Study:

Final Report

U.S. Department of Transportation
Federal Highway Administration

REPORT DOCUMENTATION PAGE

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of
Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE October 2023 (Revised December 2023)	3. REPORT TYPE AND DATES COVERED Final Report (June 2020 – October 2023)

4. TITLE AND SUBTITLE Making Transportation Planning Applicable in Tribal Communities Research Study: Final Report	5. FUNDING NUMBERS HW1VB520
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9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Federal Highway Administration Office of Tribal Transportation 1200 New Jersey Avenue, SE Washington, DC 20590	10. SPONSORING/MONITORING AGENCY REPORT NUMBER FHWA-FLH-24-002

11. SUPPLEMENTARY NOTES
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12a. DISTRIBUTION/AVAILABILITY STATEMENT	12b. DISTRIBUTION CODE

13. ABSTRACT (Maximum 200 words)
This report presents a high-level overview of the process and results of the FHWA Making Transportation Planning Applicable in Tribal Communities research study. The report includes five memoranda detailing the process and results of information gathering on Tribal transportation planning processes. These memoranda include detailed information on existing literature, methodology for selecting Tribes and organizations to discuss planning processes, analysis of findings from those discussions, and recommendations for tools and resources.
The research was led by a Project Management Team (consisting of representatives from FHWA and the Volpe Center) and with input from a Research Panel (consisting of representatives from Tribes, Tribal organizations, FHWA, the Bureau of Indian Affairs, the Federal Transit Administration, and State Departments of Transportation).

14. SUBJECT TERMS Tribes, Tribal transportation, Tribal transportation planning, transportation planning	15. NUMBER OF PAGES 123
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited

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List of Acronyms

Bureau of Indian Affairs	BIA
Department of Transportation	DOT
Emergency Relief for Federally Owned Roads	ERFO
Federal Highway Administration	FHWA
Federal Lands Highway	FLH
Federal Transit Administration	FTA
Geographic Information Systems	GIS
Long Range Transportation Plan	LRTP
Office of Tribal Transportation	OTT
Paperwork Reduction Act	PRA
Transportation Research Board	TRB
Tribal Technical Assistance Program	TTAP
Tribal Transportation Improvement Program	TTIP
Tribal Transportation Program	TTP

Introduction

The Federal Highway Administration's (FHWA) Office of Tribal Transportation (OTT) planning staff have observed two challenges in Tribal transportation planning: (1) that existing planning analysis tools do not always align with Tribal community context and needs and (2) it is not always clear what benefits planning provides to transportation project selection and delivery in Tribal communities. FHWA began the *Making Transportation Planning Applicable in Tribal Communities* research study in June 2020 with the goal of aligning available planning analysis tools to Tribal community interests based on a range of contextual factors and measuring the benefits of planning analysis in the project selection and delivery processes.

Recognizing the diversity of population size, geography, and transportation goals across Tribal communities, this study analyzes the transportation project development lifecycle (i.e., planning through design, construction, and maintenance) to understand which planning analysis tools best serve Tribal communities' interests and to what effect. The specific study goals are to:

1. Align planning tools to the specific Tribal planning interests
2. Ensure long-range transportation plans (LRTPs) are implementable by Tribal staff
3. Link planning phase to project design, construction, and maintenance

This report presents the process and results of this study, which is composed of six memoranda detailing the information gathered on Tribal transportation planning processes. These memoranda include detailed information on existing literature, methodology for selecting Tribes and organizations to discuss planning processes, analysis of findings from those discussions, and recommendations for tools and resources. The memoranda included in the report Appendix are:

- Appendix A. Memorandum 1: Background and Literature Review
- Appendix B. Memorandum 2: Methodology
- Appendix C. Memorandum 3A: Recommended Tribes and Organizations for Data Collection
- Appendix D. Memorandum 3B: Tribes and Organizations Engaged in Data Collection
- Appendix E. Memorandum 4: Key Themes from Data Collection
- Appendix F. Memorandum 5: Analysis of Tools and Findings

This research was led by a project team with input from a research panel. The project team consisted of the U.S. DOT partners including Federal Lands Highway (FLH), OTT, FHWA Resource Center, and the Volpe Center. FHWA would like to thank the research panel that guided the study throughout. The research panel was composed of Tribal staff representatives and partners that engage with Tribal planning staff in different capacities and contexts, as shown in the list below:

- Makah Tribe
- Red Plains Professionals
- Seminole Tribe
- Chickasaw Nation
- Ohkay Owingeh
- Karuk Tribe

- Bad River Tribe
- Native Village of Eagle
- BIA Eastern
- BIA Alaska
- BIA Great Plains
- FHWA Louisiana Division

- FHWA New York Division
- FTA Office of Planning
- Minnesota DOT
- Arizona DOT

Background Research

The project team reviewed literature and resources on the Tribal transportation planning process and closely related topics to understand how Tribes engage with the typical transportation project lifecycle. This included a scan of Federal laws, regulations, and executive orders that pertain to Tribal transportation planning as well as other Federal documents (e.g., guides, case studies), research documents, and State and Tribal planning documentation. A web search engine was the primary tool used for finding sources. The study's research panel and project team also provided reports and example documents (e.g., LRTPs) relating to Tribal transportation planning practices.

There are several laws, regulations, and executive orders pertaining to Tribal transportation planning that provide guidance on how Tribes conduct and engage in transportation planning activities. In particular, the Tribal Transportation Program (TTP) Rule (25 CFR 170) identifies requirements and procedures as part of long-range Tribal transportation planning, including provisions regarding the development and implementation of short- and long-range transportation plans, TTP budgets, public involvement, and other planning functions to meet program goals and objectives.[1] FHWA and BIA provide transportation planning technical assistance to Tribal Governments to implement transportation planning procedures for Tribal transportation facilities. The FHWA TTP Delivery Guide (updated March 2023) provides guidance and technical program information for Tribes entering into or coordinating existing TTP Agreements with FHWA, as well as other Tribes that administer TTP funds. In accordance with 25 CFR §§ 170.413 and 170.435-441, Tribes are required to conduct public involvement activities during the development of the LRTP and Tribal Transportation Improvement Program (TTIP) before the Tribe's leadership authority reviews the documents for approval. While the LRTP focuses on long-term goals and planning projections, the TTIP addresses short-term improvements and outputs. Although separate, the two documents must inform and be consistent with one another. In general, these regulations require Tribes to announce public meeting opportunities, facilitate a public meeting, document the public hearing results, and gather documentations that provide records of public involvement.

The background research on laws and regulations informed the legal framework in which Tribes conduct transportation planning, and the literature review provided context for the planning topics to discuss with Tribal transportation planning stakeholders. The literature review also identified research gaps that the existing literature and resources either do not address or acknowledge requires further research.

The project team identified 35 research questions for further analysis (see **Appendix A. Memorandum 1: Background and Literature Review**) related to Tribal transportation planning, LRTPs, TTIP, legal framework, data collection and use, financial planning, tools and resources, and planning connections. The project team used these research questions to inform the methodology for how Tribes and organizations were selected and the types of discussion questions for each group, which are described in the subsequent section of this report.

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[1] Title 25, CFR, Part 170-Tribal Transportation Program, https://www.govinfo.gov/app/details/CFR-2022-title25-vol1/CFR-2022-title25-vol1-part170

Methodology

In preparation for discussions with Tribes and Tribal organizations, the project team facilitated discussions with a diverse set of stakeholders that work with Tribes in their planning processes. The project team, with input from the research panel, identified a selection of stakeholders to consider collecting data and information from. This included Tribes and non-Tribal stakeholders including agencies that partner with Tribes on transportation, Federal agencies that are involved with or support Tribal transportation, and other entities (e.g., Transportation Research Board [TRB] Committee on Native American Transportation Issues, academic and consultant communities).

Table 1 displays the 17 non-Tribal stakeholder groups that participated in the preliminary discussions. The purpose of these discussions was to: (1) gather background information on Tribal transportation planning approaches to inform the discussion questions, and (2) identify potential Tribes and organizations that engage with other Tribes for the data collection phase. These discussions explored the processes that stakeholders have observed Tribes using to conduct their transportation planning, including the tools and resources used to implement planning processes, as well as planning partnerships. Stakeholders also provided recommendations on how the project team can effectively engage Tribes in the data collection phase and learn about their transportation planning activities and projects, which included an emphasis on relationship building and storytelling.

Table 1: Non-Tribal Stakeholders Engaged Through Preliminary Discussions

Agency/Organization	Office/Program/Role
FHWA	Federal Lands Highway (FLH) Planning Team Leads
	FLH Transportation Planning Team Lead
	Federal-Aid Tribal Contacts
	Office of Tribal Transportation (OTT) Director
	OTT Team Leaders
	OTT Tribal Coordinators
	Office of Planning staff involved in Tribal Planning/ Capacity Building
	Tribal Technical Assistance Program
	Resource Center
BIA	Transportation Division
	Regional Road Engineers
FTA	Transportation Program
FWS	Native American Liaison Office
USFS	Office of Tribal Relations
Florida DOT	Tribal Liaison
Arizona DOT	Tribal Liaison
Oklahoma DOT	Tribal Liaison
Washington State DOT	Tribal Liaison
Wisconsin DOT	Tribal Liaison
CalTrans	Tribal Liaison
Center for Tribal Transportation	Executive Director
National Indian Justice Center	Executive Director
TRB	Committee on Native American Transportation Issues (AME30)

While designing the process for discussions, the project team ensured compliance with the Paperwork Reduction Act (PRA). The PRA governs how the Federal government collects information from the public and limits the number of discussions that the project team can facilitate with Tribes. Through the preliminary stakeholder discussions and feedback gathered from the research study's research panel and project team, the project team identified a pool of 38 Tribal discussions and eight Tribal organizations for data collection. More information about the project team's approaches to data collection and analysis is included in **Appendix B. Memorandum 2: Methodology**.

The project team developed selection criteria in coordination with the research panel and project team to identify and select Tribes for discussions. The project team vetted the pool of potential Tribes and organizations using the specific criteria shown in Table 2 to select a diverse range of Tribes for discussions.

Table 2: Criteria Used to Identify and Select Tribes for Discussions

Criteria
• The State(s) where the Tribe is currently located to yield geographic distribution of Tribes (Source: Tribes' websites, Google Maps)
• The number of residents on the Tribe's lands to inform the overall size of the Tribe (Source: Tribes' websites)
• The Tribe's landholdings size in square miles to capture a range of communities with small, medium, and large-sized landholdings (Source: Tribes' websites)
• The total number of road miles owned and managed by the Tribe (Source: FHWA TTP Tribal Shares for FY 2021 data)
• Whether a Tribe's lands are served directly or indirectly by a State route to inform the types of transportation projects and decisions made (Source: Google Maps)
• Whether the Tribe has an agreement with FHWA or BIA (Source: BIA website, FHWA Tribes List)
• Which of the 12 BIA Regions in which the Tribe is located, regardless of its oversight agency, to yield geographic distribution of Tribes (Source: BIA website)
• Which of the three Federal Lands Highway (FLH) Divisions that the Tribe is located in, regardless of its oversight agency, to yield geographic distribution of Tribes (Source: FHWA website)
• Which of the eight climate regions in which the Tribe is located to inform the diversity of transportation decisions and improvements made by climate zone (Source: Climate zone designations used by the U.S. Department of Energy (DOE) Building America Program and International Energy Conservation Code)
• Whether a Tribe is located in an urbanized or rural area, based on metropolitan planning organizations' (MPO) boundaries, to ensure a range of coordination experiences (Source: FHWA Office of Planning TMA and MPO Boundaries map)
• Description of the overall structure of the Tribe's government (e.g., Tribal Council) to capture a range of decisionmaking mechanisms and stakeholders involved in transportation planning (Source: Tribes' websites)
• Whether the Tribe generally works with consultants or conducts planning in-house for transportation projects to inform the Tribe's planning capacity (Source: Tribes' websites; project team)

Criteria
• Description of the overall extent to which Tribes in urbanized areas participate in their associated MPO's planning process to inform how the Tribe's involvement impacts its transportation projects and decisions affecting Tribal lands (Source: MPOs' websites)
• The State DOT Tribal Liaison(s) in the States where each Tribe is located, if applicable (Source: State DOT websites, project team)
• Whether the Tribe was Federally recognized within the last 10 years, or recognized as having a government-to-government relationship with the U.S., to inform its planning capacity and engagement with eligible funding opportunities and services from the Federal government (Source: Federal Register; project team)
• Whether the Tribe's LRTP was updated in the last five years to determine recently updated versus dated LRTPs (Source: Tribes' websites; TTP Road Inventory Field Data System (RIFDS))
• Whether a Tribe has received funding through the Emergency Relief for Federally Owned Roads (ERFO) Program to repair roads and bridges impacted by natural disasters and catastrophic events (Source: FHWA National ERFO Coordinator)
• Whether the Tribe is part of a larger body of separate and distinct Tribes with a shared governance structure and lands (Source: Tribes' websites; National Conference of State Legislatures; project team)
• Other Tribes that are located in the same general area (not shared boundaries) as there may be coordination with adjacent Tribes on transportation projects. (Source: BIA's U.S. Domestic Sovereign Nations: Land Areas of Federally-Recognized Tribes map)
• The amount of funds Tribes spend each year on planning activities to inform the Tribe's involvement on transportation planning projects (Source: Tribal Transportation Program Online Reporting Tool)
• The amount of Tribal Transportation Program formula funds allocated to the Tribe to inform the overall TTP funding available for transportation projects (Source: FHWA TTP Tribal Shares for FY 2021 data)
• The amount of planning funds allocated through the Tribal Transportation Program formula funds to inform its transportation planning capacity (Source: FHWA TTP Tribal Shares for FY 2021 data)

Following this analysis, the project team organized the selected 18 Tribes into two groups of nine. The groupings represent a balanced distribution of the criteria, such as geography and population size, considered in identifying Tribes for discussions. Each grouping had a distinct set of discussion questions, based on research from the background phase of this study, that addressed topics such as Tribal/transportation context, Tribal transportation priorities, LRTP and TTIP development, planning processes and tools, funding for transportation, partnerships and engagement, and resources. **Appendix C. Memorandum 3A: Recommended Tribes and Organizations for Data Collection** includes a table listing the discussion questions that the project team used for each group.

Tribes and Organizations Engaged in Data Collection

As described in **Appendix D. Memorandum 3B: Tribes and Organizations Engaged in Data Collection**, five of the Tribes that the research panel selected initially declined or were unable to participate in the data collection for this study. The project team identified Tribes in the same BIA Regions with somewhat similar characteristics according to the study criteria to replace them.

The 18 Tribes and four Tribal organizations, listed in Table 3, selected for discussions represent a diversity of contexts across geography, size of Tribal membership and landholdings, scale of transportation infrastructure, funds available and resources for transportation planning, among other criteria. Figure 1 displays a map showing the geographic distribution of the recommended Tribes and their landholdings, and Tribal organizations. An online version of the map is available at https://arcg.is/05qyCq.

Table 3: List of Tribes and Tribal Organizations that Participated in Discussions

Tribes	State(s)
The Native Village of Barrow Inupiat Traditional Government	AK
Chickaloon Native Village*	AK
Osage Nation*	OK
Coushatta Tribe of Louisiana	LA
Seneca Nation	NY
Rosebud Sioux Tribe	SD
Three Affiliated Tribes of the Fort Berthold Reservation (The Mandan, Hidatsa, and Arikara Nation)	ND
Menominee Indian Tribe	WI
Nottawaseppi Huron Band of the Potawatomi	MI
Navajo Nation	AZ, UT, NM
Confederated Tribes and Bands of the Yakama Nation	WA
Makah Tribe	WA
Robinson Rancheria*	CA
Blackfeet Nation	MT
Prairie Band Potawatomi Nation*	KS
Pueblo of Zuni*	NM
Pueblo of Isleta	NM
Salt River Pima-Maricopa Indian Community	AZ
Tribal Organizations	**State**
Kawerak, Inc	AK
North Coast Tribal Transportation Commission	CA
SANDAG Interagency Technical Working Group on Tribal Transportation Issues	CA
Wisconsin DOT Inter-Tribal Task Force	WI

*These Tribes replaced Tribes that had originally been identified to participate in data collection but were unable to participate. **Appendix D. Memorandum 3B: Tribes and Organizations Engaged in Data Collection** includes a comparison of the identified Tribes that declined or were unable to participate and the Tribes that replaced them.
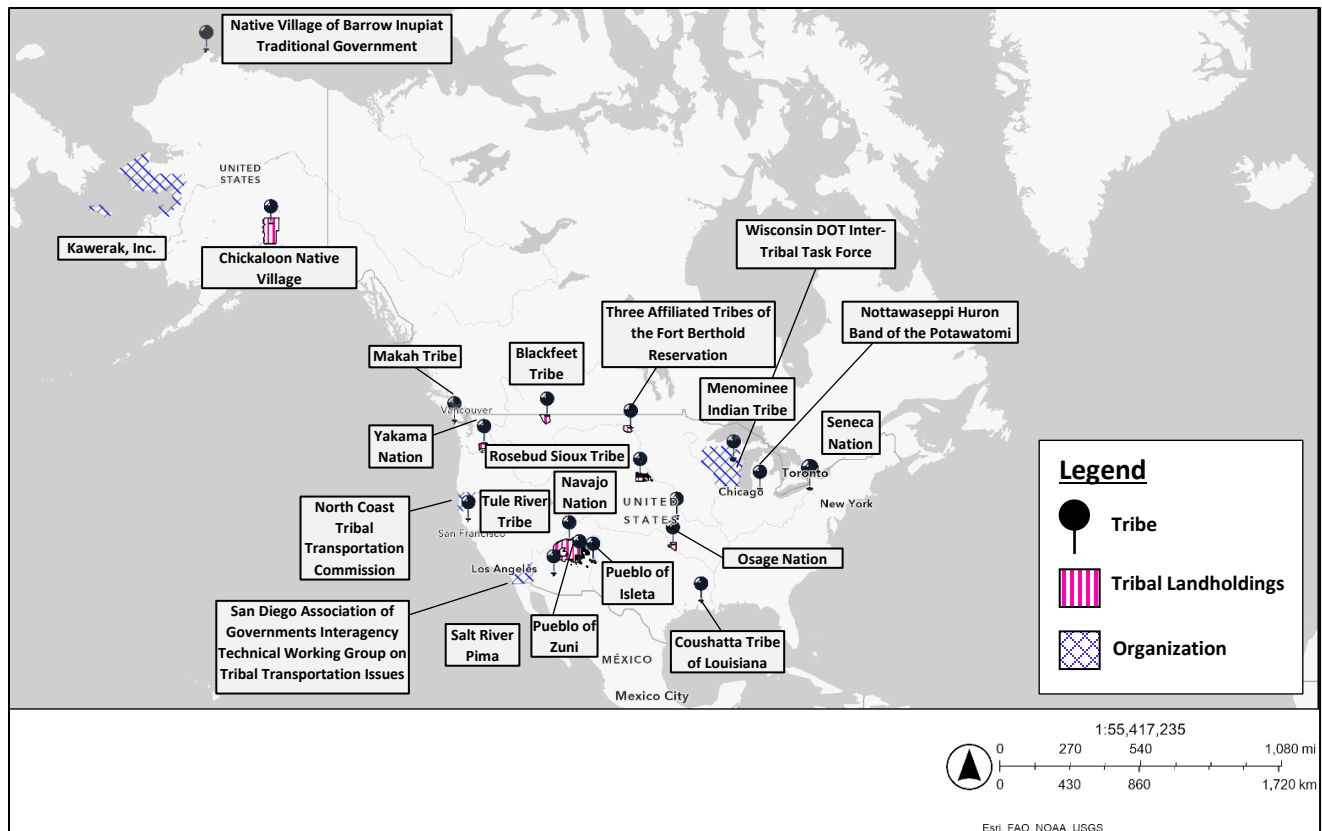
Figure 1: Map of Tribes and Tribal Organizations Engaged in Data Collection. (Sources: Esri; United States Geological Survey; Food and Agriculture Organization; National Oceanic and Atmospheric Administration; U.S. Census Bureau)

Key Themes from Data Collection

Several key themes emerged from the 18 discussions with Tribes, as well as the four discussions with organizations and external government partners that work with Tribes. The following section describes the general characteristics and transportation networks of the Tribes that participated in the study, and how the participating Tribes approach transportation planning activities across different contexts. Note that this section will generalize how many Tribes share experiences with using a tool or planning process. In doing so, the following section uses the terms "some Tribes" which represents more than one Tribe, but less than half of the Tribes that participated in the study. More information about the Tribes' experiences with transportation planning tools and resources is included in **Appendix E. Memorandum 4: Key Themes from Data Collection**.

Tribal/Transportation Context

- **Geography**: Many of the Tribes that participated in the study are rural, and some Tribes that are in suburban areas with denser residential development. Some of these Tribes are located near metropolitan areas and within MPO planning regions. Tribal lands contain roads owned by Tribes as well as roads owned and maintained by States, counties, and municipalities. Tribes with noncontiguous territories work with State and adjacent municipal partners to coordinate transportation systems that connect the patchwork of territories.
- **Transportation Network:** Rural transportation networks often lead to challenges with long travel times to access services. Many of the Tribes that participated in the study have standard

trip generators like grocery stores, government facilities, schools, and community centers that both Tribal and non-Tribal members' use. Some Tribal lands also include sacred areas and ancestral cultural sites that serve as trip generators for pilgrimage and tourism.

- **Transportation Modes**: Most Tribes reported that personal vehicles are the primary mode of transportation for Tribal members. Some Tribes have their own transit systems that serve both Tribal members and non-Tribal members. Other transportation modes include nonmotorized trails, as well as air and water transportation facilities (e.g., airports, docks and boating facilities on lakes and waterways). For some rural Tribes, particularly in Alaska, all-terrain vehicles and snowmobiles are commonly used as personal vehicles.
- **Climate Change Impacts and Emergency Management**: Some Tribes are in areas that can experience extreme weather events that could pose a risk to their residents. Tribes in these areas have specialized plans to coordinate emergency response vehicles and identify routes for residents to use when they need to evacuate. Some of the Tribes are located at sea level or in low flood plains that put them at risk to flooding. Changing weather patterns place new strains on transportation facilities that place a greater burden on maintenance costs.

Tribal/Transportation Priorities

- Priority areas commonly addressed through transportation projects include **safety** (e.g., highway, bridge, active transportation), **maintaining existing infrastructure** (e.g., bridges, culverts, and roadways), **network connectivity** (e.g., wayfinding, roads and sidewalks to new subdivisions), **access to opportunities** (e.g., jobs, schools, essential services), **congestion** (e.g., community events causing traffic), **climate change** (e.g. lands flooded and roads washed by heavy rainfall), **economic development** (e.g., gas station revenue), and **public health** (e.g., improving health through transportation projects).
- A **Tribe's culture, changes in leadership, political structure, and surrounding local governments** can influence its planning activities or priorities, which may lead to a reactive or proactive planning process.
- Non-Tribal stakeholders discussed how some Tribes begin the transportation planning process with a **focus on overall quality of life** or by addressing broader community challenges, which allows transportation topics to naturally emerge through these discussions.

Transportation Planning Approaches

- The **internal capacity of Tribal transportation staff** to plan and implement transportation projects varied significantly among study participants, which may **depend on the number of staff devoted to planning** and the **levels of expertise** of that staff.
- Some Tribes noted their Tribal transportation staff have a **wide range of knowledge, skills, and abilities** that help them perform transportation planning duties without needing to hire contractors for additional support.
- Non-Tribal stakeholders noted that **Alaskan Tribes and small Tribes in the lower 48 States often have less capacity** to plan in-house and commonly work with consultants for planning efforts.
- Tribal governments aim to **hire from within their community** to provide employment opportunities to their members.

- Stakeholders reported frequent **staff and/or Tribal leadership turnover** as common challenges; several participating Tribes had **experienced and long-serving staff** (e.g., 10+ years) within their transportation departments.

Use of Contractors
- Consultants working with Tribes commonly perform tasks to support the **planning and delivery of transportation projects** including data collection and analysis, development of transportation planning documents, **identifying and applying for funding opportunities**, and **implementing roadway projects**.
- Tribes may **hire consultants to help maintain continuity** while dealing with staff turnover and **fill gaps** in limited expertise with existing staff.

TTIP Development
- The TTIP decisionmaking can be influenced by the of **Tribal leadership priorities** (e.g., Tribal Chief, Tribal Council).
- Approaches to TTIP development include **coordinating with Tribal leadership for input** and direction, analyzing data, facilitating **internal discussions with Tribal boards and committees**, and conducting **site assessments**.
- **Coordination with BIA or FHWA** for TTIP development support is common, which may result in different processes (e.g., budgeting versus planning projects).
- Public involvement approaches used for TTIP development include **targeted outreach** to community stakeholders, meetings with Tribal leadership and community members, and **attending meetings organized by local stakeholders**.

LRTP Development
- Tribes use LRTPs to define a methodical approach to developing and maintaining their transportation systems by **identifying and prioritizing critical projects.**
- Approaches to LRTP development include using internal and external transportation planning documents and **coordinating with Tribal leadership** to identify and prioritize transportation goals.
- Public involvement approaches used for LRTP development include **surveys, online and in-person public meetings, meetings, stakeholder engagement meetings** to identify key issues or to gather input on potential projects, and **informational booths** at community events.

Planning Processes and Tools
- Tribes conduct a variety of transportation studies (e.g., **master plans, road safety audits, transportation safety plans, and bicycle and pedestrian plans**) to identify and prioritize projects.
- Some Tribes use their overarching master plans (also referred to as strategic plans) to guide the development of their LRTP.
- Tribes **measure the effectiveness of their planning processes** and planning development in different ways, including by the number of completed transportation projects and determining whether projects met the Tribe's strategic goals and advanced project priorities.

Transportation Planning Resources Used

- Resources commonly used to support transportation planning and implementation include a **variety of data collection methods** (e.g., Tribal-led data collection, coordination with the State or third-party), geographic information systems **(GIS) analysis and mapping**, and utilizing Federal and State resources and **templates**.
- **Challenges with obtaining necessary data** and information are common, which sometimes limits the Tribe's ability to conduct effective transportation planning or apply for funding opportunities.
- Tribes often develop **public engagement tools** (e.g., surveys, social media, and visualizations) to share and collect information from the broader community.

Funding for Transportation

- Tribes acquire and use different funding sources for transportation planning and project delivery, including **TTP funding, Federal grants, and other non-transportation sources** such as self-governance funding through the BIA, TTP funds, gas taxes, casino revenue, State grants, and local college contributions.
- **The TTP funding set aside for planning** is often used to support a Tribe's LRTP development and updates to a Tribe's inventory data.
- Some Tribes discussed **difficulty with applying for funding opportunities** due to a lack of sufficient quantitative data to justify a project's need, lack of shovel-ready projects, limited funding to spend on preparing grant applications, and the perception that an application process is nationally too competitive.
- Tribes have **general funding** that they may choose to allocate to transportation planning, project development, or project implementation. The amount of general funding as well as the revenue sources vary by Tribe.

Partnerships and Engagement

- Tribes discussed **Tribal sovereignty as a key principle that informs Tribal transportation planning**. Non-Tribal stakeholders highlighted Tribal self-governance and self-determination as key elements of successful planning and implementation outcomes.
- Tribes commonly coordinate and engage with **Federal, State, regional, and local agencies** as part of Tribal transportation planning activities and to provide input on their partners' plans and processes.
- Participation in **intertribal boards and committees** provides opportunities for Tribes to coordinate with each other; sharing ideas, resources, or best practices on common Tribal transportation priorities.
- **Coordination with other Tribal departments** (e.g., police, conservation/natural resources, emergency management services, health, historic preservation, and utility departments) is common to share ideas and resources and to gather input on transportation projects.

Analysis of Tools and Findings

The project team identified Tribal transportation planning tools and resources across different categories and developed 31 recommendations to improve or expand upon Tribal transportation planning tools and resources. The project team primarily used data and information gathered through the literature review (documented in **Appendix A. Memorandum 1: Background and Literature Review** and discussions with Tribes and non-Tribal stakeholders (documented in **Appendix E. Memorandum 4: Key Themes from Data Collection**) to identify and analyze the Tribal transportation planning tools. Additional details related to the benefits and gaps of the tools under each category are included in **Appendix F. Memorandum 5: Analysis of Tools and Findings**.[2]

Table 4: Available Tribal Transportation Planning Tools and Recommendations for Improvement

Category	Available Tools	Recommendations
Process Resources	• TTP Delivery Guide • Tribes' Past Planning Documents	1. Market the TTP Delivery Guide to Tribes that have program agreements with FHWA (and potentially with Tribes that have program agreements with BIA) as well as provide an overview of the OTT website to improve awareness and use of the Guide and resources. 2. Promote examples of Tribes that have developed new transportation planning documents that were not strictly updates to prior transportation planning documents and highlight the benefits of that comprehensive approach.
Training	• Tribal Transportation Planning Modules • FHWA Tribal Technical Assistance Program (TTAP) Center Training Modules • Tribal Organization Training Opportunities	3. Review and update the Tribal Transportation Planning Modules to reflect the current TTP process and to incorporate new planning practices. 4. Market the availability of TTAP trainings related to transportation planning to Tribes.
Peer Learning	• Tribal Transportation Planning Modules • FHWA TTAP Center Training Modules	5. Develop new case studies that highlight Tribes' effective transportation planning practices. 6. Host events that feature Tribes presenting on their effective transportation planning practices (these could be through virtual webinars or in-person peer exchanges).

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[2] The available tools listed in Table 4 focus mostly on tools specifically targeted to Tribes in the planning process. Other helpful tools for Tribes and other entities that conduct transportation planning can be found on the FHWA/ FTA Transportation Planning Capacity Building, FHWA Office of Planning, and FTA Office of Planning websites.

Category	Available Tools	Recommendations
	• Tribal Organization Training Opportunities	7. Continue to support existing and new regional, statewide, and national Tribal transportation planning conference and summits.
Partnerships	• State, Regional, and Local Government Coordination • Inter-Tribal Organizations and Task Forces	8. Develop case studies demonstrating government-to-government relationships and effective coordination between Tribes and State DOTs, MPOs, and local governments for transportation planning and project delivery. 9. Develop a resource for State, regional, and local agencies that promotes noteworthy practices for involving Tribes in statewide, metropolitan, and local transportation planning and decisionmaking. 10. Host webinars in coordination with inter-Tribal organizations and task forces to promote the noteworthy practices and successful outcomes that can be achieved through these organizations.
Data and Data Analysis Tools	• Crash Data • Transportation Network Utilization Data • GIS	11. Coordinate with the FHWA TTAP to provide direct technical assistance and trainings on data collection and analysis. 12. Develop a toolkit on noteworthy practices in collecting and analyzing transportation safety and network utilization data for transportation decisionmaking. 13. Host webinars and provide online resources (e.g., downloadable data layers, instructional videos) on using GIS for transportation planning. 14. Develop a resource on the use of alternative data analysis and visualization methods for Tribes that do not have access to GIS tools.
Financial Tools	• Grant Toolkits • Cost Estimation Tools	15. Promote existing transportation grant toolkits among Tribes. 16. Develop a grant toolkit that addresses the specific funding needs and opportunities of Tribes. This toolkit could build on the Transportation Funding Opportunities for Tribal Nations document by including a grant funding matrix, an overview of how to finance resources, a description on how to navigate grant program applications and eligibility, a description of evaluation criteria, and a description of other grant program considerations. 17. Include basic cost estimate tools and manuals on how to use them in Tribal Transportation Planning modules.
Plan Development Tools	• Grant Toolkits • Cost Estimation Tools	18. Ensure that Tribal transportation planners are aware of TTIP resources, such as the TTIP template, user guide, and demonstration video. Note that an eTTIP is

Category	Available Tools	Recommendations
		currently in exploratory stage and is expected to be available for Tribes for future use. 19. Develop a Tribal transportation planning toolkit similar to the approach that RSAs take for collaborative, on-the-ground transportation planning to inform Tribal LRTP development. 20. Develop several iterations of an LRTP template that reflect the different Tribal characteristics and contexts for Tribes to adapt and implement to meet their priorities. 21. Develop a library of Tribal LRTPs that Tribes voluntarily share to serve as examples for Tribes developing LRTPs. 22. Develop a guidebook that describes common supplemental transportation planning documents, how Tribes can use them, and the benefits they may provide.
Public Engagement Tools	• Surveys • Deliberative Public Engagement • Information Booths • Public Meetings	23. Develop a public engagement toolkit including survey templates, public meeting frameworks, deliberative public engagement techniques, information booths, and information about other public engagement activities for different transportation topics or planning needs (e.g., safety, long-range planning, multimodal transportation). 24. Develop a public involvement policy and/or procedures template. 25. Develop a template for public engagement activities to support LRTP development. 26. Develop case studies on effective Tribal public engagement techniques and their outcomes. 27. Update the Reservation Road Planner: Tribal Board Game to include a web-based version with instructional videos, as well as webinar sessions on the update.
Communication Tools	• Story Boards • Email • Social Media	28. Develop case studies on Tribes effectively using story boards to articulate Tribal transportation priorities. 29. Develop a deliberative facilitation guidebook and training that teaches Tribes how to design and use story boards. 30. Provide examples of Tribal transportation newsletters that convey Tribal transportation planning information. 31. Develop a communications guidebook that includes best practices for communications practices including publishing newsletters, email list management, how to structure content, ensuring emails are tested before sent, etc.

Research Limitations

The project team identified the following limitations to this research study, which provide important context for the research findings and offer opportunities for future research:

- **Virtual Data Collection.** The original data collection plan for this research study included in-person discussions with Tribes about their transportation planning processes. This would have provided opportunities for more in-depth discussions about Tribes' transportation planning processes and priorities. The Covid-19 pandemic occurred before and during the data collection phase, which did not allow for travel or in-person meetings.
- **Sample Size.** Due to time and funding constraints, the project team held discussions with 18 federally recognized Tribes instead of conducting a broader survey or discussion series. While 18 Tribes' perspectives do not fully represent the perspectives of all 574 federally recognized Tribes, the project team made efforts to consider as many perspectives as possible.
- **Analysis of Processes, not Products:** The project team focused its data collection on discussions with Tribes on their transportation planning processes. This included discussions about planning products (e.g., LRTPs, TTIPs). However, the research study did not include a detailed review of specific Tribes' planning products.
- **Tribal Involvement in State and Metropolitan Transportation Planning.** This research focused on the transportation planning processes that Tribes conduct. It did not consider Tribes' involvement in transportation planning processes led by State departments of transportation or metropolitan planning organizations, which often relate to Tribal transportation planning.

Conclusion

The results of this study provide a better understanding of the common challenges and opportunities that Tribes experience in their transportation planning processes. The project team used these common challenges and gaps to identify gaps in support to Tribes for transportation planning. The appendices in this report provide detailed information about the literature review, research methodology, the identified challenges and opportunities, and the recommendations that aim to address these gaps.

The aim of this study is to align available planning analysis tools to Tribal planning processes. OTT will work to prioritize and implement recommendations laid out in this report to help achieve the goals set out in the study. OTT will also coordinate with external partners that work closely with Tribes to implement these recommendations. Finally, the project team will share the results of this study, along with recommendations, through conferences and virtual presentations that host Tribes and partnering organizations who support Tribes.

Appendix A. Memorandum 1: Background and Literature Review

This memorandum summarizes a review of the literature about the Tribal transportation planning process and related topics to support the Federal Highway Administration's (FHWA) *Making Transportation Planning Applicable in Tribal Communities* research project. To conduct the literature review, the U.S. DOT Volpe Center (Volpe Center) conducted a scan of Federal laws, regulations, and executive orders that pertain to Tribal transportation planning, other Federal documents (e.g., guides, case studies), research documents, and State and Tribal planning documentation.

In addition to summarizing the existing literature related to Tribal transportation planning, this memorandum also identifies research gaps that the existing literature does not address. These gaps will inform the content in *Memorandum 2: Study Methodology*, so that this research project can address the gaps through discussions with stakeholders and other means.

This memorandum will be updated throughout the course of the *Making Transportation Planning Applicable in Tribal Communities* research project as the project team identifies additional relevant literature. The final literature review will be included as part of the research project's final report.

Laws and Regulations Overview

There are several laws, regulations, and executive orders that pertain to Tribal transportation planning as well as requirements for State Departments of Transportation (DOT), metropolitan planning organizations (MPO), and other entities to consult with Tribes in their planning processes. This section summarizes the relevant laws, regulations, and executive orders.

25 CFR 170 – Tribal Transportation Program

Section 170 of Title 25 in the Code of Federal Regulations (CFR) includes the regulations for the Tribal Transportation Program (TTP), formerly known as the Indian Reservation Roads (IRR) program.[3] Effective December 7, 2016, the TTP Final Rule updates the TTP regulations to comply with statutory updates made in the Moving Ahead for Progress in the 21st Century Act (MAP-21). The rule reflects statutory changes in the delivery options for the program, clarifies the requirements for proposed roads and access roads to be added to, or remain in, the inventory, revises certain sections that were provided for informational purposes, and makes technical corrections.

The Tribal Transportation Program Transportation Planning Overview section of this memorandum summarizes the planning elements of the TTP, as described in the Tribal Transportation Program Delivery Guide. The FHWA TTP website[4] notes that since SAFETEA-LU, Indian Tribal governments have a choice of Federal partners (BIA or FHWA based on Tribal capacity) in the administration of the TTP. As a result, under 23 U.S.C. § 202(a)(2), the Secretary of Transportation is authorized to enter into a Tribal Transportation Program Agreement (TTPA) with an Indian Tribal government to carry out a transportation program and projects. This allows Tribes the option of working directly with the FHWA in the administration of their Tribal Transportation Program. Furthermore, there are six program delivery options:[5]

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[3] Title 25, CFR, Part 170-Tribal Transportation Program, https://www.govinfo.gov/app/details/CFR-2012-title25-vol1/CFR-2012-title25-vol1-part170

[4] https://highways.dot.gov/federal-lands/programs-tribal/agreement

[5] https://apps.azdot.gov/files/training/az-tribal-training/ADOT_TribalTrainingHandbook.pdf

1. Direct Service (BIA),

2. 638 contracting (BIA),

3. BIA Program Agreements (BIA),

4. FHWA Program Agreement (BIA),

5. DOI Self-Governance (DOI BIA),

6. USDOT Self-Governance (USDOT) (newly established and effective 10/1/2020).

Tribal Consultation Laws and Regulations

The FHWA Tribal Transportation Planning Module titled *Tribal Consultation*[6] explains that Tribal consultation involves a federally mandated process for timely and meaningful engagement and discussion with Tribes related to actions proposed by government agencies that may affect Tribal lands and property. This element of the planning process relies on early notification by Federal, State, and local governments to Tribal governments pertaining to proposed actions, projects, or initiatives that may negatively impact Tribal lands and property. Due to the complicated history between Tribes and the U.S. Government, it is important that Federal, State, and local governments follow the orderly process of Tribal consultation to foster relationships, build trust, and initiate discussion before any action is taken. As part of this engagement, government agencies must also consider Tribal interests and ensure there are no procedural obstacles to working directly with Tribal governments. Tribal consultation ensures that Tribes are active stakeholders in planning processes, engaging as sovereign nations in government-to-government decision making to shape project priorities and goals.

The *Tribal Consultation* module also explains that consultation with Tribes is guided by three principles: communication, coordination, and cooperation. The success of the government-to-government relationships depends on how the three principles are addressed and executed in the project timeline. Communication involves information exchange and data and knowledge sharing such as through presentations, documents, and visual tools. Coordination involves the organization and planning of tasks, activities, and events to meet shared goals such as through workshops and Tribal consortium networks. Cooperation involves an agreement between the involved agencies to collaborate in planning, programming, and project delivery.

The next two subsections briefly describe the laws, regulations, and executive orders that require Tribal consultation, both generally in Government-to-Government relationships, and in the transportation planning process.

Tribal Planning Laws and Regulations

Title 23 of the United States Code (USC) includes provisions related to coordination and impacts to highways during Federal-aid projects and other public transportation facilities. Title 23 Section 201 requires uniform policies and coordination efforts between Federal and Tribal transportation facilities in partnership with Federal land management agencies (FLMAs), States, local governments, and MPOs.[7]

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[6] FHWA, Transportation Decision making Information Tools for Tribal Governments, Planning Modules:
https://www.fhwa.dot.gov/planning/processes/Tribal/planning_modules/
[7] Title 23, USC-Highways, §201 Federal lands and Tribal transportation programs
https://uscode.house.gov/view.xhtml?req=(title:23%20section:201%20edition:prelim)

25 CFR 170, the TTP Rule, identifies requirements and procedures as part of long-range Tribal transportation planning, including provisions that requires Tribes to develop short- and long-range transportation plans (LRTPs), develop TTP budgets, facilitate public involvement, and perform other planning functions to meet program goals and objectives.[8] The TTP requirement also provides transportation planning technical assistance to Tribal Governments to implement transportation planning procedures for Tribal transportation facilities.

Executive Orders

Executive orders related to consultation with Tribes include:

- The 1994 *Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments* outlines guiding principles that Federal agencies are required to follow in their interactions with Tribal governments in order to ensure that the rights of sovereign Tribal governments are fully respected.[9]
- The Executive Order 13007 of May 24, 1996, *Indian Sacred Sites* protects Tribal lands and religious practices by requiring FLMAs to prioritize "access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites."[10]
- The Executive Order 13175 of November 6, 2000, *Consultation and Coordination with Indian Tribal Governments* addresses the development of Federal policies and guidance that have Tribal implications, and requirements to engage with Tribes in the development process.[11]
- Similarly, the 2009 *Presidential Memorandum on Tribal Consultation* charges the heads of executive departments and agencies with meaningfully engaging with Tribes during the development of Federal policies that have impacts on Tribal communities.[12]
- The U.S. Department of Transportation (U.S. DOT) Order 5301.1, *Department of Transportation Programs, Policies, and Procedures Affecting American Indians, Alaska Natives, and Tribes* addresses the DOT's relationship with Tribes, establishing the consultation process for projects that may affect Tribes as well as goals when delivering policies, programs, and activities that affect Tribal communities.[13]

Tribal Transportation Program Transportation Planning Overview

The Federal Lands Highway (FLH) Office of Tribal Transportation developed a *TTP Delivery Guide*[14] that provides guidance and technical program information for Tribes entering into or coordinating existing

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[8] Title 25, CFR, Part 170-Tribal Transportation Program, https://www.govinfo.gov/app/details/CFR-2012-title25-vol1/CFR-2012-title25-vol1-part170

[9] Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments, 1994, https://www.justice.gov/archive/otj/Presidential_Statements/presdoc1.htm

[10] Executive Order 13007, May 24, 1996, https://www.nps.gov/history/local-law/eo13007.htm

[11] Executive Order 13175, November 6, 2000, https://www.transportation.gov/regulations/executive-order-13175

[12] Presidential Memorandum on Tribal Consultation, 2009 https://obamawhitehouse.archives.gov/the-press-office/memorandum-Tribal-consultation-signed-president

[13] U.S. Department of Transportation Order 5301.1, https://www.transportation.gov/individuals/foia/dot-order-53011-american-indiansalaska-nativesTribes

[14] Federal Lands Highway, Office of Tribal Transportation, Tribal Transportation Program Delivery Guide, https://highways.dot.gov/federal-lands/programs-tribal/guide/tribal-transportation-program-delivery-guide

TTP Agreements with FHWA. This section summarizes the key topics that relate to Tribal transportation planning.

Allowable Uses of Funds

The *TTP Delivery Guide* provides information on allowable uses of TTP funds, which include planning, design, construction, and maintenance activities. The Guide lists eligible activities under each of these categories. The Guide also describes the spending limits that Tribes must adhere to for each category of spending. For example, Tribes can spend up to 100 percent of their TTP funds on planning activities if planning is identified as a priority on the FHWA-approved Tribal Transportation Improvement Program (TTIP). Tribes may propose to FHWA or the Bureau of Indian Affairs (BIA) a new use of TTP funds that is not listed in 25 CFR 170 (referring to a process outlined in 25 CFR 170.113).

TTP Agreement

The *TTP Delivery Guide* explains that, since the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Tribes have been able to choose to work through the BIA or with FHWA in the administration of their TTP. Tribes that work with FHWA enter into a TTP Agreement (TTPA) with the Secretary of Transportation that transfers functions and duties of the Secretary of the Interior to the Tribe, including transportation planning, construction and construction management, and program administration, among others. The TTPA also provides TTP funds to the Tribe as a single annual lump sum payment. TTPAs remain in effect until a new Federal transportation authorization is approved, the TTPA is amended in writing, or the TTPA is terminated by the Tribe or FHWA.

The *TTP Delivery Guide* lays out a Tribal on-boarding process for TTPAs, which is the process for a Tribe to request and potentially gain approval for a TTPA with FHWA. The Guide also lays out the steps for obligation and payment of TTP (and other) funds to Tribes with an approved TTPA through Referenced Funding Agreements (RFAs).

Planning Process

There are many Federal documents that provide information to Tribes about the Tribal transportation planning process. Information about these resources and others are summarized in this section under the following headings:

- Planning Overview
- Roles and Responsibilities
- Tribal Long-Range Transportation Plan
- Pre-Project Planning
- Tribal Transportation Improvement Program
- National Tribal Transportation Facility Inventory Update
- Tools and Support Systems
- Public Involvement

Planning Overview

Planning is a tool that helps agencies identify key priorities and goals to meet intended performance targets as well as achieve long-term visions for the future of the transportation system. The goal of transportation planning is to better understand the relationships and linkages between transportation, land use, cultural preservation, economic development, and the environment. Not only does the

transportation network support the mobility of people and goods, but the availability and condition of transportation infrastructure and services also shapes community growth patterns, economic activity, and overall quality of life.

FHWA developed a series of planning modules outlining the transportation planning process with technical tools and resources for Tribal communities.[15] The series includes eight planning modules: *Introduction to Planning*, *Developing a Long-Range Transportation Plan*, *Data Collection and Use*, *Public Involvement*, *Tribal Consultation* (described in more detail in the previous section), *Partnering and Leveraging*, *Developing the Tribal Transportation Improvement Program*, *Funding Resources*, *Financial Planning*, *Project Prioritization*, *Safety*, and *Asset Management*. The FHWA Tribal Transportation Planning Module titled *Introduction to Planning* describes the overall transportation planning process, summarizing elements and key products that support effective decision making.

Figure 1 below includes continuous feedback from the public and the community linkages to ensure a flexible framework that accommodates different priorities. Although the graphic is helpful in generally describing the transportation planning process, this research aims to better understand the Tribal context and how Tribal processes compare to the framework outlined in the *TTP Delivery Guide*.

The *Introduction to Planning* module also discusses elements where Federal regulations require State DOTs and MPOs to involve and consult with Tribes in State and metropolitan transportation planning, including on LRTPs and Transportation Improvement Programs (TIPs). Federal, State, and regional planning agencies must consult with Tribes in their transportation planning processes. Tribes must also consult with relevant State agencies on regionally significant projects. If the project scope does not meet that criteria, then they are not mandated to consult with external agencies on their entire planning process.

The *Introduction to Planning* module lists five common barriers to Tribal participation:

- Varied interpretation of Federal regulations guiding Tribal programs;
- Differences in Tribal staffing capacities and skillsets;
- Limited training opportunities for Tribal governments;
- Limited Tribal transportation planning documents; and
- Competing responsibilities or priorities beyond transportation issues.

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[15] FHWA, Transportation Decision making Information Tools for Tribal Governments, Planning Modules: https://www.fhwa.dot.gov/planning/processes/Tribal/planning_modules/

To help address these barriers, FHWA and the BIA are required to provide transportation planning technical assistance to Tribes as defined in 25 CFR Part 170.401(e). The suggested approaches to mitigate each barrier contain a limited discussion of actions or strategies to meaningfully engage Tribal communities. The *Introduction to Planning* module highlights Federal resources from FHWA, FLH, and BIA such as through peer exchanges, the FHWA Tribal Capacity Building Program, and the BIA Tribal Technical Assistance Program (TAP).

Overall, the literature indicates some discrepancies in how the FHWA Tribal Transportation Planning Modules describe the Tribal transportation planning process compared to how the *TTP Delivery Guide* describes the TTP's planning requirements. But through this research and upcoming data collection efforts, the FHWA Project Team aims to determine whether these common barriers still apply, whether there are new barriers, and how Tribes have responded to or addressed planning challenges.

Figure 2: Basic Steps in Transportation Planning Process. (Source: FHWA Introduction to Planning Tribal Transportation Module)

Roles and Responsibilities

The *TTP Delivery Guide* outlines the roles and responsibilities of Tribes and FHWA in the TTP planning process (this applies to Tribes working directly with FHWA on the TTP):

Tribes:

- Develop the Tribe's LRTP;
- Facilitate public involvement;
- Perform traffic studies;
- Conduct special transportation studies as needed;
- Prepare and enter updates in the National Tribal Transportation Facility Inventory (NTTFI) maintained by BIA;
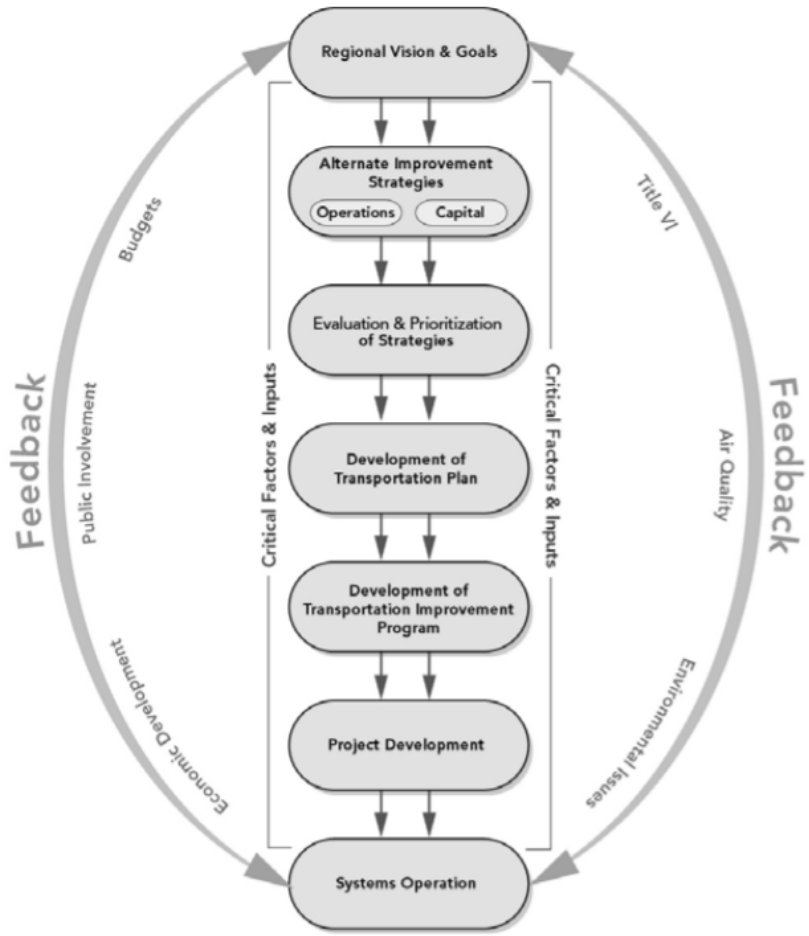- Mapping;
- Perform pre-project planning;

- Participate in transportation planning and other transportation related meetings;
- Develop Program budgets including transportation planning cost estimates;
- Perform transportation planning for operational and maintenance facilities;
- Research rights-of-way documents for project planning;
- Develop the Tribe's Tribal Transportation Improvement Program (TTIP); and
- Coordinate with States, their political subdivisions.

FHWA:

- Reviews TTIPs developed by the Tribe;
- Approves TTIPs developed by the Tribe;
- Makes the TTIPs available to the States so they can append them to their Statewide Transportation Improvement Program (STIP);
- Reviews LRTPs developed by the Tribe;
- Provides technical assistance to Tribal governments;
- Coordinates with Tribal, State, regional, and local governments, as requested by the Tribe; and
- Coordinates with other Federal agencies, as requested by the Tribe.

The *TTP Delivery Guide* only applies to Tribes that have partnered directly with FHWA to administer the TTP. The Guide does not address the process for Tribes who partner with the BIA to administer the TTP. This research should explore the procedures that the BIA and their partner Tribes undertake to administer the TTP.

Tribal Long-Range Transportation Plan

The *TTP Delivery Guide* explains the 25 CFR 170 requirement that each Tribe develops an LRTP, which is a long-range (20+ year) strategy and capital improvement program that guides the investment of funds in multimodal transportation facilities. LRTPs are a critical decision making tool that prioritizes transportation investments, capturing current and future growth patterns related to land use, economic development, environment, traffic demand, and public health and safety. Tribes review and update their LRTPs every five years and are able to amend them as needed.

The *TTP Delivery Guide* lays out the following process for developing or updating a Tribe's LRTP:

1. Establish the vision, goals, and/or objectives;
2. Take stock of existing and future conditions;
3. Identify transportation needs;
4. Develop short-, mid-, and long-term priorities;
5. Develop an implementation plan; and
6. Finish up the LRTP.

The *TTP Delivery Guide* refers Tribes to FHWA Office of Planning and TTAP resources for more information on developing LRTPs. These resources may be out-of-date and not directly aligned to the *TTP Delivery Guide*.

The FHWA Tribal Transportation Planning Module titled *Developing a Long Range Transportation Plan* provides a general framework on how to develop an LRTP, which includes a discussion of elements as required by Federal statute and regulations. The module discusses fundamental concepts and outlines a step-by-step process that can be customized to a Tribe's planning priorities or community context.

Similar to the *TTP Delivery Guide*, the FHWA Planning Module notes the importance of implementing and monitoring the progress of the LRTP.

The *Developing a Long Range Transportation Plan* module discusses the purpose of and planning considerations for each step of the LRTP development process. The module includes the Federal, State, and local resources that are available to support Tribes such as technical data and mapping. The module also provides a table that summarizes the general format of a Tribal LRTP. The steps feature practices by Tribal agencies to provide examples of Tribal approaches, although it contains a limited discussion from the Tribal perspective, particularly related to common planning challenges, goals, and best practices. The conclusion highlights flexibility in the process through minimal budgets and simplified processes, however it is unclear what that simplified process entails as these elements are not further discussed within the Tribal context.

The FHWA Tribal Transportation Planning Module titled *Data Collection and Use* explains that LRTPs, TTIPs, safety audits, and the TTP TIP all rely heavily on consistent data sources. The module focuses on data collection and analysis for the purpose of learning more about the conditions of transportation systems in Tribal communities and data collection strategies. Some applications for Tribes include:

- Identifying Tribal holdings, locations with high crash rates, and culturally or historically significant sites;
- Describing Tribal system inventories and demographic trends; and
- Developing a list for transportation inventories, a list that prioritizes projects/investments, and a visual representation of transportation projects such as maps, drawings, or models.

The *Data Collection and Use* module includes a table listing the types of data Tribal planners can use to develop an LRTP. After collecting the data, it is analyzed to identify and prioritize areas of improvement. Data creates a baseline understanding of transportation system conditions that can be used as a reference for project development. Collecting information on the success of a project, using measurements like visitor trends or crash reporting, can help justify future projects or additional project funds. This research will further explore Tribes' use of data in transportation, as well as challenges and opportunities in data collection and use.

Pre-Project Planning

The *TTP Delivery Guide* explains that pre-project planning is necessary before projects can be placed on the Tribe's TIP. Pre-project planning evaluates the viability of actual project delivery by exploring associated risks and defining a specific approach to delivering the project. Through pre-project planning Tribes will get a more realistic scope, schedule, and budget for the project before deciding whether or not to pursue the project. Through pre-project planning, Tribes:

- Consider project alternatives;
- Develop a preliminary cost estimate;
- Determine if the project warrants a public hearing;
- Determine the regional significance of the project; and
- Identify the need for preliminary environmental and archaeological reviews.

The *TTP Delivery Guide* provides a two-page pre-project planning worksheet (Exhibit 5.4 in the *TTP Delivery Guide*) to support Tribes in conducting pre-project planning. The *TTP Delivery Guide* does not

provide examples that illustrate the level of detail that Tribes must go into when conducting pre-project planning.

Tribal Transportation Improvement Program

The *TTP Delivery Guide* explains that a Tribe develops a TTIP, which is a list of transportation projects and activities eligible for TTP funding covering a period of four years. FHWA approves all TTIP funding, to include funds from BIA, and authorizes Tribes to spend TTP funds on the activities included in the TTIP.

The *TTP Delivery Guide* provides information on the following TTIP guidelines and procedures:

- The TTIP must be financially/fiscally constrained
- The TTIP must be consistent with the LRTP and the Inventory
- The TTIP must document the available or anticipated funding sources necessary to implement the planned projects and activities
- The Tribe should coordinate with the State DOT and other relevant entities when developing the TTIP
- The TTIP must comply with the relevant provisions in 25 CFR 170
- The public must be provided the opportunity to review and comment on the TTIP. A public hearing must be held if a project:
  - Is a new route or facility;
  - Would significantly change the layout or function of connecting or related roads;
  - Would cause a substantial adverse effect on adjacent property; or
  - Is controversial or expected to be controversial in nature
- Tribes should include administration, planning, preliminary engineering, construction, construction engineering, transit, and maintenance as categories in the TTIP

The *TTP Delivery Guide* also provides a process and timeline for the development and review of the TTIP. The *TTP Delivery Guide* provides a FHWA TTIP Template (Exhibit 5.1 in the *TTP Delivery Guide*) to guide Tribes in developing the TTIP. The Guide also refers Tribes to the TTP Planning page, which provides resources and guidance on Tribal planning.[16]

The FHWA Tribal Transportation Planning Module titled *Developing the Tribal Transportation Improvement Program* describes the TTIP development process including coordination with LRTP development. While the LRTP focuses on long-term goals and planning projections, the TTIP addresses short-term improvements and outputs. Although separate, the two documents must inform and be consistent with one another. Tribes can develop the TTIP based on the LRTP or using the data from a Tribal priority list. By building on these efforts, Tribes can develop a short-term program or plan that lists transportation improvements projects to be implemented in three to five years, including the identified funding sources of each project.

This module includes a strong focus on the different types of Federal transportation funding sources available to Tribes and related TTIP funding relationships. Unlike the other planning modules, this module does not contain a case study example of a Tribal TIP development process. The module provides information about key Federal stakeholders and related funds with some procedural recommendations. The module contains a limited discussion of common challenges that Tribes

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[16] https://highways.dot.gov/federal-lands/programs-tribal/planning

experience in each step of TTIP development, including key actions or best practices to address issues. Although it discusses the relationship and coordination between the development of the LRTP and TTIP, it does not provide recommendations on how to best implement and maintain both programs once developed.

National Tribal Transportation Facility Inventory Update

As defined in 25 CFR § 170.442, the National Tribal Transportation Facility Inventory (NTTFI) is a database of Tribal transportation facilities including public highways, roads, bridges, trails, transit systems, or other approved facilities that are located on or provide access to Tribal lands.[17] The *TTP Delivery Guide* explains that the NTTFI is a comprehensive database of all transportation facilities eligible for TTP funding by Tribe, reservation, BIA agency and region, Congressional district, State, and county. Developed through the LRTP process, Tribes can use the NTTFI to assist in transportation and project planning, justify expenditures, identify transportation goals and strategies, maintain existing TTP transportation facilities, and develop management systems.

The *TTP Delivery Guide* notes that BIA Regional offices maintain, certify, and review the data for their Region's portion of the NTTFI database. However, it is important for Tribes to periodically update their inventory information to determine eligibility of facilities for TTP funding of improvements. Tribes should submit their inventory updates through the BIA Regional Office.

On April 29, 2020, the BIA and Department of Interior (DOI) finalized an update to a provision in the TTP regulations related to proposed roads that are in the NTTFI.[18] The final rule eliminates the requirement for Tribes to collect and submit specific data to maintain proposed roads in the NTTFI. However, the requirement to collect and submit data regarding the addition of new proposed roads to the NTTFI remains.

Tools and Support Systems

As defined under 25 CFR Part 170.401(m) and 25 CFR Part 170.401(n), FHWA and/or BIA provide mapping and develop and maintain management systems to support Tribal transportation planning. FHWA and/or the BIA may also assist Tribes in updating the NTTFI data at the request of the Tribe under 25 CFR Part 170.444(b)(1).

As part of maintaining the NTTFI, Tribes may also coordinate data efforts with their asset management programs. The FHWA Tribal Transportation Planning Module titled *Asset Management* describes asset management as a data-driven process that analyzes both financial and technical issues, capturing the condition and performance of pavement, bridges, and other assets to ensure they meet performance targets. Asset data typically includes cataloguing:

- An asset's geographic location;
- An asset's age and condition;
- The organizational unit in tribunal government that manages the asset;
- Information about the use of the asset performance characteristics, construction history, maintenance activities, and cost; and

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[17] Title 25 CFR - National Tribal Transportation Facility Inventory, https://www.govinfo.gov/app/details/CFR-2017-title25-vol1/CFR-2017-title25-vol1-part170-subpartD-subjectgroup-id2869

[18] Bureau of Indian Affairs, Tribal Transportation Program; Inventory of Proposed Roads, https://www.federalregister.gov/documents/2020/03/30/2020-06061/Tribal-transportation-program-inventory-of-proposed-roads

- An electronic database of relevant documents.

The FHWA Tribal Transportation Planning Module titled *Data Collection and Use* notes that Tribes can perform geospatial analyses using Geographic Information System (GIS) mapping. GIS systems provide robust data analysis and visualization or mapping capabilities that may be beneficial to Tribes through the display of land parcels, environmentally sensitive areas, and other priority locations for improvements. However, not all Tribes have access to data tools or the capacity to provide staff training and education. Future research should consider alternative data analysis methods and resources for Tribes.

Public Involvement

Public involvement is a critical element of the comprehensive planning process that provides opportunities for stakeholders to share concerns and identify potential solutions or strategies. It allows planners and decision makers to better understand the community's values, build trust, and exchange ideas. As discussed in various FHWA Tribal Transportation Planning Modules, public involvement is an important first step in comprehensive planning because it shapes the outputs of the plan and opens up partnership opportunities.

The FHWA module titled *Public Involvement* reviews the public engagement process and its potential in capturing the Tribal community's values and goals, sharing information, and consensus building on planning issues. The module also provides brief case studies of Tribes engaging their partners through a variety of processes and offers recommendations on how to identify partners. Stakeholder discussions can begin internally with the Tribal council and the Tribal membership or with neighboring Tribes and public transit providers. The module suggests using Tribal events planned for other purposes as opportunities to engage the public. The module also discusses the importance of public hearings and how to utilize public notices. Other techniques such as mailing lists, public information materials, focus groups, and presentations are practical tools to gather community input.

Government-to-Government Relationships and Coordination

Optimal performance of the multimodal transportation system relies on coordination between government agencies on the construction, operation, and maintenance of the transportation network. The FHWA Office of Planning *Tribal Transportation Best Practices Guidebook* discusses notable practices and program achievements in Tribal transportation across the country through research and case studies.[19] The research findings capture key concepts from the National Cooperative Highway Research Program (NCHRP) Synthesis 366: *Tribal Transportation Program*, which describes the composition, capacity, and operations of 30 Tribal transportation organizations.[20] The FHWA Guidebook includes highlights from 13 Tribal transportation programs, including 12 from the NCHRP Synthesis 366 and one from the 2006 FHWA publication *Tribal Seat Belt Initiative - Final Report*.[21] FHWA assessed Tribal achievements based on successful implementation in "traditional" transportation program areas such as finance, inter-governmental relations, technical application, safety, and public transportation. These

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[19] FHWA Office of Planning, Tribal Transportation Best Practices Guidebook, 2009
https://www.fhwa.dot.gov/planning/processes/Tribal/case_studies/bestpractices_guidebk.cfm
[20] Transportation Research Board, National Cooperative Highway Research Program Synthesis 366: Tribal Transportation Programs, http://www.trb.org/Main/Blurbs/158883.aspx
[21] Unable to locate a web link for the 2006 FHWA publication Tribal Seat Belt Initiative - Final Report.

achievements capture success stories and real experiences of Tribal transportation practitioners, presenting effective program management methods that practitioners have successfully applied.

The FHWA Guidebook indicates effective program management methods must be "fully or methodically applied" to Tribal transportation programs to meet planning goals. Through a series of case studies, it provides learning tools across six building blocks or common best practice areas: (1) leadership, (2) problem identification, (3) resource allocation, (4) creative problem solving, (5) collaboration and partnership, and (6) communications. The Tribes highlighted in the selected case studies administered programs or projects that reflect achievements in each of the building blocks.

The FHWA Office of Planning also published a set of standalone case studies through coordination with the Federal Transit Administration and a Tribal Technical Working Group.[22] Similarly, these standalone case studies depict successes and achievements in Tribal transportation planning. The following sections highlight several of the case studies from both FHWA resources, providing examples of how Tribes coordinate with different stakeholders to address planning goals.

Overall, the case studies demonstrate the successful outcomes in transparent, meaningful engagement with Tribes in transportation planning. Tribal consultation at the Federal, State, MPO, and local levels may range in coordination activities but generally operate with a shared goal of collaborating with Tribal governments in the planning process. Prioritizing community engagement and involving the public early in the process ensures that the plan is inclusive of the community's priorities, delivering programs and solutions that are specific to local issues. Future data collection and stakeholder discussions will identify more recent examples of government-to-government relationships and coordination, and seek to better understand whether the six common best practice areas are still applicable in current Tribal transportation planning contexts.

Consultation in the Statewide Transportation Planning Process

Although guided by the same Federal regulations and laws, Tribal consultation within the statewide transportation planning process varies across States. For example, a FHWA case study noted that New Mexico represents the second highest proportion of Tribal communities in the country, which includes 22 federally recognized Tribes in the State. Tribal consultation has been a component of the State's LRTP processes for over 20 years. The FHWA Office of Planning case study explains that the New Mexico DOT (NMDOT) manages a Tribal Transportation Program and Tribal Liaison Program to improve partnerships with Tribal governments in the State, and provides mechanisms that promote Tribal involvement and increase visibility of Tribal goals.[23] NMDOT's Tribal Transportation Program encourages Tribes to identify Tribal roadways to include in the State's inventories and funding processes. The Tribal Liaison Program supports a full-time position at NMDOT that is responsible for maintaining relationships with all 22 Tribes in the State. These efforts have led to successful improvement projects in the State including Exit 102 along I-140. The Tribal Liaison at the time advocated for reconstruction of the interchange and prioritized administrative tasks with the Tribal community to move the project forward. These efforts demonstrate the value of building and enhancing relationships with Tribes to meet larger project and program goals.

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[22] FHWA Office of Planning, Tribal Transportation Case Studies https://www.fhwa.dot.gov/planning/processes/tribal/case_studies/

[23] FHWA Office of Planning, New Mexico Tribal Consultation Process Case Study, 2017 https://www.fhwa.dot.gov/planning/processes/Tribal/case_studies/new_mexico.cfm

Another FHWA case study indicated that in South Dakota, coordination efforts between the South Dakota DOT and the nine federally recognized Tribes in the State have significantly evolved over the past 30 years.[24] South Dakota DOT previously lacked Tribal involvement on project selection and prioritization for its STIP because the former structure of its Tribal consultation process did not provide adequate opportunity for the Tribes to express priorities and concerns. Recognizing this gap, South Dakota DOT increased emphasis on Tribal relationships within State programs in 2005, which provided the foundation for more focused efforts on Tribal projects and deeper community engagement through in-person meetings. This change in structure led to stronger working partnerships with an increasing attendance of SDDOT staff attending meetings of Tribal transportation staff that were hosted by the Bureau of Indian Affairs (BIA) and FHWA. Similarly, FHWA staff began attending BIA meetings with individual South Dakota Tribes and made in-person visits to introduce themselves to the State's resident Tribes..

A third FHWA case study indicated that the Wisconsin DOT (WisDOT) has several processes to incorporate Tribal insight and consultation such as meetings, the use of liaisons, a Tribal Historic Preservation Project, and the WisDOT Tribal Task Force.[25] These processes are meant to promote clear and effective communication. Tribes meet with WisDOT leadership at an annual consulting meeting to discuss transportation priorities and the Secretary's office develops a matrix of transportation improvements based on Tribal priorities. For communicating throughout the year, WisDOT has two full-time statewide Tribal liaisons located at its headquarters and five other regional liaisons. These methods have strengthened WisDOT's Tribal relationship and there is increased Tribal satisfaction with transportation policies and transportation projects.

Consultation in the Metropolitan Transportation Planning Process

As described in a FHWA Office of Planning case study, the North Central Regional Transit District (NCRTD) is a partnership between Tribes and local governments aimed at improving regional planning and coordination on transit services in New Mexico.[26] The partnership includes representation from all five of the Indian Pueblos in the region. The case study highlighted the Tribes' ability to lobby the State DOT to not infringe on their right-of-way and leverage their finances to obtain State DOT funds and expertise to build transportation infrastructure that provided benefits to the Tribe and broader community. The NCRTD held public meetings at each member's jurisdiction to explain the benefits of the project and obtained written commitments signed by participating governments.

In Washington State, the Nisqually Tribe and the Confederated Tribes of the Chehalis Reservation participate as members of the Thurston Regional Planning Council (TRPC).[27] The FHWA Office of Planning case study reports that a willingness of each of the Tribes and TRPC to work together has been the primary reason for success in improving relationships among these organizations. A tribe contracts with TRPC both directly including through State grants and other sources to conduct specific projects.

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[24] FHWA Office of Planning, South Dakota Tribal Consultation Process Case Study, 2017
https://www.fhwa.dot.gov/planning/processes/Tribal/case_studies/south_dakota.cfm

[25] FHWA Office of Planning, Wisconsin Tribal Consultation Process Case Study, 2017,
https://www.fhwa.dot.gov/planning/processes/Tribal/case_studies/wisconsin.cfm

[26] FHWA Office of Planning, North Central New Mexico: Development of a Regional Transit District Case Study,
https://www.fhwa.dot.gov/planning/processes/Tribal/case_studies/newmexico.cfm

[27] FHWA, Thurston County, Washington: Partnership between Tribes and an MPO Case Study,
https://www.fhwa.dot.gov/planning/processes/Tribal/case_studies/thurston.cfm

The council contracts work for its members and provides technical assistance. TRPC collects demographic data on behalf of members for the purpose of informing development, and ensures that all TRPC mapping products display the reservations. TRPC produces a Population and Employment Forecast, which is updated every three years and is used extensively for planning purposes. Finally, TRPC pool funds that are then allocated to smaller Tribes so that they do not have to compete with larger Tribes.

TRPC members and staff also participate in Tribal events, which builds positive working relationships and deeper engagement.[28] Tribal involvement in regional transportation planning process has contributed to the development and construction of several transportation projects focused on Tribal priorities, including safety improvements along State Route 510. The Nisqually Tribe identified the need for safety improvements by partnering with TRPC and State DOT representatives to conduct a one-year safety study of Route 510. Due to the project team's ability to quickly move from conceptual planning to a plan of action, the legislature appropriated Federal funding to cover all project costs. This framework demonstrates the value of formalizing Tribal involvement planning processes, which has advanced Tribal transportation priorities into construction improvements within the region.

Consultation in the Local Transportation Planning Process

The FHWA Office of Planning case studies highlight the use of contract agreements to support Tribal consultation in local transportation planning projects. The City and Borough of Wrangell (CBW) in Alaska and the Wrangell Cooperative Association (WCA), a Tribe in the CBW, use a memorandum of understanding (MOU) to collaborate on transportation infrastructure projects.[29] The project construction is done on CBW owned roadways and financed by the Tribe. The MOU, which is renewed annually, establishes a general framework for cooperation between the CBW and the Tribe, including project development and project resource information-sharing for transportation as a mutual Tribe and local government interest. The WCA funded a project through the MOU using a combination of Indian Reservation Roads and American Recovery and Reinvestment funds. Some of the benefits from this relationship are improved roadways for the WCA that connect Tribal members to their communities and workplaces as well as newly constructed transportation corridors for the city without incurring capital costs.

The Southern Ute Indian Tribe Tribal Council, the town of Ignacio, La Plata County, and the Colorado DOT partnered to address safety and Tribal and non-Tribal development along Colorado State Highway 172.[30] The community experienced an increase in local traffic due to significant redevelopment in the study area including construction of a new casino, museum, and cultural center and other economic development opportunities in the area. The agencies entered into a collaborative agreement to develop the Ignacio Area Corridor Access Plan (IACAP) which includes strategies to support mobility for freight vehicles and pedestrian safety along Highway 172. The partner agencies developed a memorandum of agreement (MOA) since all have jurisdictional authority within the study area. Based on the MOA, the

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[28] FHWA, Washington Tribal Consultation Process Case Study, https://www.fhwa.dot.gov/planning/processes/Tribal/case_studies/washington.cfm

[29] FHWA Wrangell, Alaska: Tribe and Local Government Collaborate to Improve Transportation Corridors in Wrangell, Alaska Case Study, https://www.fhwa.dot.gov/planning/processes/tribal/case_studies/wrangell.cfm

[30] FHWA, Southern Ute: Tribe, Town, County, and State Collaborate on Ignacio Area Corridor Access Plan, https://www.fhwa.dot.gov/planning/processes/tribal/case_studies/southern_ute.cfm

participating agencies agreed to each bear equal responsibility and share costs for the development of the IACAP.

Consultation in the FLH/FLMA Transportation Planning Process

FLMAs, such as the U.S. Forest Service, Bureau of Land Management (BLM), U.S. Fish and Wildlife Service, and National Park Service (NPS), administer a large proportion of land that is Tribal ancestral land and contemporary Tribal lands. It is important to distinguish between ancestral and tribal lands because what Tribes are involved in the consultation process depends on their connection to that land. Even when the ancestral lands of a respective Tribe are now within the jurisdiction of another entity (whether that be another Tribe, a State, an FLMA, etc.) a strong ancestral, cultural, and spiritual ties to those ancestral lands remain. Therefore, it is important to notify a Tribe or Tribes whose ancestral lands may be affected by an action and afforded an opportunity to engage in consultation. Furthermore, due to the complicated history between Tribes and the United States government, policy implementation and project development on both contemporary Tribal lands and Tribal ancestral lands must be approached in coordination with the affected Tribes. The management of public lands is further analyzed in the book *The Environmental Politics and Policy of Western Federal Lands*, which includes a chapter that discusses the implications of Tribal Sovereignty on land management activities, including common challenges that Tribes face in these processes.[31] This chapter provides examples of projects that established formal co-management roles for Tribal Governments, such as the partnership between BLM and Cochiti Pueblo regarding the management of Kasha Katuwe Tent Rocks National Monument in New Mexico. The chapter explains that there is no standard process for co-management of Federal public lands as often this coordination may derive from unique treaty rights of reservation lands, or they may be the result of traditional negotiation and collaboration techniques.

Tribal Priorities

In Tribal transportation planning, Tribal priorities largely reflect the values and principles that are central to supporting Tribal quality of life. Although planning goals and priorities vary from Tribe to Tribe, topics such as safety, cultural heritage, public health, and economic development describe the overall social constructs that impact Tribal mobility and livelihood.

Overall, the research indicates a range of approaches to addressing Tribal planning priorities, highlighting proactive problem identification, partnerships, and creative problem solving techniques. Through this study, the project team aims to learn about Tribal transportation safety priorities in current contexts and how Tribes communicate the importance of incorporating cultural heritage, respect, and trust to planning partners and stakeholders. This may also include research into how State DOTs, MPOs, and other agencies consider and approach Tribal safety, public health, economic development, and cultural heritage priorities, including whether there are any gaps and opportunities for improvement. The case studies also demonstrate that Tribes have a greater prevalence of certain health conditions that require strategic coordination. This study aims to explore how transportation planning can help mitigate health concerns in Tribal communities and provide mobility options that promote the quality of life.

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[31] Erika Wolters and Brent Steel, The Environmental Politics and Policy of Western Federal Lands, Chapter 14: Implications of Tribal Sovereignty, Federal Trust Responsibility, and Congressional Plenary Authority for Native American Lands Management, Oregon State University Press, 2020: https://open.oregonstate.education/enviromentalpolitics/chapter/chapter-14/

Safety

Safety is paramount in transportation planning. The FHWA Tribal Transportation Planning Module titled *Developing a Transportation Safety Plan* discusses the planning process of safety studies and the importance of integrating safety goals into planning efforts.

These plans provide a proactive approach in identifying safety issues while also:

- Establishing a baseline understanding of their transportation system;
- Fostering multidisciplinary cooperation and encouraging the development of partnerships with Tribal members, stakeholders, and government agencies;
- Helping to create safer roadways and other transportation utilities; and
- Updating safety plans to justify a Tribal funding request by documenting specific safety improvements, especially when competing for limited funding.

The *Developing a Transportation Safety Plan* module is discussed more in detail on its relevance to Tribal planning further below. Additional resources on safety considerations in Tribal transportation planning were also reviewed. Their focus ranged from pedestrian and roadway safety to policing and human trafficking.

Bicycle and Pedestrian Safety

For many Tribal communities, infrastructure that promotes safe walkable routes and facilities that allow for nonmotorized travel is crucial in supporting active transportation safety. In the July 2020 FHWA *Fostering Multimodal Connectivity Newsletter*, the Tribal transportation process is highlighted to show the benefits of improving pedestrian safety priorities.[32] The spotlight discusses the collaborative efforts between the Navajo Nation, Cameron Chapter, and the Arizona DOT (ADOT) in delivering safe pedestrian infrastructure along a high-speed corridor. Despite the area being rural, much of the community travels by foot and some with livestock. Early engagement with Tribal leadership opened up right-of-way access that was critical in project implementation. Most importantly, with this partnership all parties involved made it a point to maintain and respect Tribal culture. This was accomplished by hiring a Navajo consultant team who had an understanding of Navajo culture ensuring that ADOT respected important procedures and ceremonies of the Navajo people, such as the blessing of the project before and after construction.

Active transportation planning can also increase access to schools and support the mobility of children in Tribal communities. Safe Routes to School programs[33] promote walking and bicycling to school through infrastructure improvements, enforcement, tools, safety education, and incentives to use alternative transportation. A program fact sheet describes the nuances Tribes face when implementing a Safe Routes to School program.[34] Planning walking and bicycling routes to schools can be more complex for Tribal communities for a variety of reasons, such as location of school in proximity to Tribal communities, school governance structure and Tribal sovereignty, land road jurisdictional conflicts, and the funding of a Safe Routes program using different funding sources. Information on each of the considerations can be found in the Safe Routes document. Challenges to implementing a Safe Route

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[32] FHWA, Fostering Multimodal Connectivity Newsletter, July 2020, Engaging Tribal Partnerships to Improve Pedestrian Safety Priorities in Arizona, https://www.fhwa.dot.gov/livability/newsletter/july_2020/index.cfm#story2

[33] Although the Federal Safe Routes to School program has expired, this program exists in other forms at the State and municipal level. For more information visit the Safe Routes Partnership, https://www.saferoutespartnership.org/

[34] National Partnership for Safe Routes to School, Walking and Bicycling in Indian Country: Safe Routes to School in Tribal Communities, 2016 https://www.saferoutespartnership.org/resources/fact-sheet/Tribal-brief

program that may be more prevalent for Tribal communities are also discussed in short detail. They are: rural conditions, loose animals and wildlife near transportation infrastructure, limited capacity of staff to advocate for improvements, as well as limited capacity to seek funding, administer grants, or run programs. Examples of Tribal communities overcoming these challenges to put in place Safe Route programs are described in case studies provided in the latter portion of the document.

The FHWA Office of Planning case study series highlights a partnership between the Lummi Nation, Whatcom County, the Washington State DOT, the BIA, and FHWA to provide a safe facility for bicyclists and pedestrians through the development of a two-mile trail along Haxton Way.[35] Prior to the construction of Haxton Way, the community experienced a high rate of roadway conflicts between motorists, bicyclists, and pedestrians due to a lack of available sidewalks and bicycle lanes. The Lummi Nation designed a facility based on community input that included adequate spacing and lighting to address safety concerns, and to ensure use of the trail in the evening. Not only did the project improve nonmotorized access, it also enhanced connectivity through the major corridor and increased physical activity among community members.

Roadway Safety

Road Safety Audits (RSA) allow Tribes to evaluate road safety issues, identify opportunities for improvement, collect safety data, and inform project prioritization. The *FHWA Road Safety Audit Toolkit for Federal Land Management Agencies and Tribal Governments* provides general information on the RSA process and is aimed at both FLMAs and Tribal governments. One section that addresses the Tribal transportation process specifically is on Funding Mechanisms. The Toolkit recommends that Tribal agencies coordinate with their MPO/Council of Governments/Regional Planning Commission partners to learn more about available funding mechanisms. The Tribal Highway Safety Improvement Implementation Guide is referenced and it advises that the implementation plan for a Tribal Highway Safety Improvement Project (THSIP) or highway safety project will depend greatly on which funding sources the Tribe pursues, since each source has different program eligibility requirements. Two websites are provided that list funding opportunities.[36] Furthermore, some of the most important safety-funding sources are presented in a table.

Other notable sections relevant to the Tribal transportation process are on cultural and institutional history and the TTIP. It is important to have cultural heritage representatives engaged early on in the RSA process to ensure Tribal tradition is maintained and respected. The RSA document briefly addresses the TTIP and how an RSA contributes to the overall planning process. This process is elaborated further in a link referring to the *Developing the Tribal Transportation Improvement Program*; however, it is a broken link leading to an error page.

As described in the FHWA *Tribal Transportation Best Practices Guidebook*, the Inter-Tribal Council of Arizona deployed creative problem solving to address roadway safety issues. The Council developed seat belt safety campaigns with culturally sensitive messaging targeted at the local Tribal community to mitigate the high incidence of traffic-related serious injuries and fatalities. The Council also addressed

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[35] FHWA, Lummi Nation: Haxton Way Pedestrian Pathway Project Case Study, https://www.fhwa.dot.gov/planning/processes/tribal/case_studies/lummi.cfm
[36] Tribal Highway Safety Improvement Implementation Guide, Tribal Transportation Funding Resources

resource gaps by leveraging community ties and forming an advisory committee comprised of regional and local partners with a shared vision of increased traffic safety on Tribal lands.

Policing and Human Trafficking

The Transportation Research Board (TRB) released a set of resources[37] discussing the role of transportation in stopping human trafficking of Native American/American Indian women in the U.S. The resources suggest that specific social structures make mobility difficult for Native American/American Indian women and girls, such as the lack of pedestrian access and a lack of pedestrian (or non-motorized) facilities within the Tribal communities, resulting in alarming rates of missing and murdered Native American/American Indian women each year. Researchers hosted a webinar discussing the social determinants and risk factors of missing and murdered Native American/American Indian women, including the current Federal Indian laws and Tribal guidelines that may affect human trafficking, and the unique mobility patterns of Tribal communities from rural Tribal areas to urban centers.[38] The resources also outline reading materials and tools to better protect Native American/American Indian women, provide considerations for transit agencies and airport operations, and address the issue in rural transportation.

Cultural Heritage

Tribal communities are concerned with protecting, preserving, and maintaining their cultural heritage. As discussed in previous sections, acknowledgement and incorporation of Tribal cultural heritage throughout the transportation planning process is critical. For example, the *aforementioned Fostering Multimodal Connectivity Newsletter* article indicates that when ADOT worked with the Navajo Nation on the Little Colorado Bridge replacement project, the project team updated a design for a nearby roundabout during the construction phase after it determined that the Navajo interpretation and meaning of the original designs were culturally inappropriate. Through direct input from the Tribe, ADOT updated the designs to incorporate a turtle design, representing new beginnings.[39]

The TRB NCHRP web-only document 281 titled *Integrating Tribal Expertise into Processes to Identify, Evaluate, and Record Cultural Resources* describes how Tribal cultural perspectives can be integrated into other parts of the Tribal transportation process.[40] The main focus is on how Tribal expertise and insight can inform the requirements and intent of the Section 106 process of the National Historic Preservation Act. Challenges and solutions to facilitating the integration of Tribal expertise into the Section 106 process were addressed and listed. Main challenges faced were:

- Tribal responsiveness due to capacity issues and limited financial and personnel resources;
- Lack of trust between Tribes and agencies; and
- Resolving conflicting perspectives on data and information acquisition, cultural sensitivity, cultural perspectives, and confidentiality issues.

The document identifies possible solutions resulting from the research, some of which include:

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[37] Transportation Helps Fight Back Against Human Trafficking: https://www.nationalacademies.org/trb/blog/human-trafficking

[38] TRB Standing Committee on Native American Transportation Issues, Human Trafficking and Mobility of Missing and Murdered Indigenous Women, Webinar hosted on July 29, 2020: https://www.nationalacademies.org/event/07-29-2020/trb-webinar-human-trafficking-and-mobility-of-missing-and-murdered-indigenous-women

[39] FHWA, Fostering Multimodal Connectivity Newsletter, July 2020, Engaging Tribal Partnerships to Improve Pedestrian Safety Priorities in Arizona, https://www.fhwa.dot.gov/livability/newsletter/july_2020/index.cfm#story2

[40] TRB National Cooperative Highway Research Program, Web-Only Document 281: Integrating Tribal Expertise into Processes to Identify, Evaluate, and Record Cultural Resources: http://www.trb.org/main/blurbs/180505.aspx

- Enhance the capacity of Tribes to contribute their expertise to project development by compensating Tribes for their participation in the same way an agency would pay a consultant;
- Dedicate agency staff, such as Tribal liaisons, who are involved in different phases of the entire project delivery process (not just the Section 106 process), from early transportation planning (long-range planning, corridor planning, 10-year plans, and project programming) to project completion;
- Collaborate on the development of memoranda of understanding or protocols detailing the use of Tribal expertise in both early planning and project development;
- Develop protocols that can be used in laying out a process for communication between Tribes and agencies and addressing information and data acquisition, cultural sensitivity, cultural perspective, and confidentiality issues;
- Create opportunities for face-to-face interactions and discussions during all aspects of project delivery, from early planning to resolution of adverse effects; and
- Provide continuous feedback to Tribes on how their expertise is used in early planning and project development decision making.

Public Health

As mentioned earlier, Tribal communities have a long history of lower health status as compared with other Americans, facing a significant number of chronic diseases and poor health conditions as a result of social structures and systemic issues.[41] The Centers for Disease Control and Prevention's (CDC) *Tribal Health* web page notes that Tribal communities have higher rates of chronic diseases than other ethnic groups in the U.S., including increasing rates of heart disease, diabetes, cancer, and obesity.[42] Robust transportation systems are critical in accessing public health infrastructure as well as creating opportunities for physical activity and connecting communities to sources of nutritious food. Some Tribal communities face challenges in accessing goods and services whether that is due to limited, rural infrastructure or other obstacles.

The FHWA Office of Planning case study on the Cherokee Nation describes a local partnership with Collinsville, Oklahoma, to support public health and promote physical activity through active transportation improvements. Through its Healthy Nation program, the Cherokee Nation supports healthy lifestyles with physical activity encouragement, nutrition, health screenings, and commercial tobacco prevention strategies. The Cherokee Nation expanded its Healthy Nation program to include a focus on safe walking and bicycling as an approach to increased physical activity, partnering with Collinsville to develop a complete streets policy and coordinate safe routes to school programming. In another example from the National Congress of American Indians Policy and Research Center, the Colorado River Indian Tribes created and implemented a Tribal Motor Vehicle Injury Prevention Program that featured strategies to enforce seat belt use and decrease alcohol-impaired driving, particularly in teen drivers. Through the project, the Tribes partnered with the Indian Health Services and a local health board to track progress and monitor results. [43]

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[41] Indian Health Service, Disparities, https://www.ihs.gov/newsroom/factsheets/disparities/

[42] Centers for Disease Control and Prevention, Tribal Health, https://www.cdc.gov/tribal/data-resources/information/chronic-diseases.html

[43] National Congress of American Indians Policy and Research Center, Tribal Transportation Insights: Preventing Unintentional Injury and Death, 2014, https://www.ihs.gov/sites/injuryprevention/themes/responsive2017/display_objects/documents/motor-safety/Tribal-Transportation-Insights-Preventing-Unintentional-Injury-and-Death-2014.pdf

Economic Development

The healthy economic condition of a Tribal community is greatly influenced by the transportation systems that connect businesses and services to people. The existing literature is limited on the economic impacts of transportation, as well as the opportunities for transportation in Tribal communities to enhance economic development. However, a few case studies demonstrated the importance of having robust transportation systems that reflect Tribal goals. For instance, early public deliberation with the Navajo Cameron Chapter in Arizona indicated that tourist industry workers and ranchers with livestock needed to cross a dangerous highway that was lacking safe pedestrian infrastructure. The successful collaboration between ADOT and the Cameron Chapter lead to the construction of a roundabout. The final design included an undercrossing so that ranchers could safely move their livestock under the road. Tourist industry workers were also able to use the undercrossing to travel from a vehicle park to the shops where they work.[44]

Documentation of Tribes' Planning Processes

This section summaries a review of literature developed by non-Federal sources, including Tribal governments and State DOTs. There are few non-Federal resources summarized in this section, presumably because the documents are not publicly available online.

The Arizona DOT released a research report titled *The Role of Tribes in Arizona Transportation Decision Making (2012-2015)* that analyzed the role of Tribal governments in transportation decision making in the State as well as Tribal transportation planning practices in California, Minnesota, Montana, New Mexico, South Dakota, and Washington. [45] The research highlights how States participate in selecting and funding multimodal transportation projects. The findings indicate fostering quality communication and building partnerships between Tribes and regional partners as key recommendations. The following section provides documentation of various Tribal planning processes across the country, including the approaches Tribes follow to achieve planning priorities.

Planning Processes

As described in the FHWA *Tribal Transportation Best Practices Guidebook*, effective planning and program management relies on six building blocks or common best practice areas:

1. Leadership relies on visioning and direction from a program director, working group, or a combination of both. Effective leaders provide advisory support and address programmatic challenges by identifying appropriate resources or actions.
2. Problem identification involves focus on a clearly defined problem to determine the best solutions.
3. Resource allocation involves administrative decision making to achieve Tribal transportation program goals and objectives, often through allocating staffing, funding, and technical resources.
4. Creative problem solving may be necessary when traditional planning approaches are ineffective or unsuccessful at addressing program goals.

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[44] FHWA, Fostering Multimodal Connectivity Newsletter, July 2020, Engaging Tribal Partnerships to Improve Pedestrian Safety Priorities in Arizona, https://www.fhwa.dot.gov/livability/newsletter/july_2020/index.cfm#story2

[45] Arizona DOT, The Role of Tribes in Arizona Transportation Decision Making (2012-2015) https://apps.azdot.gov/ADOTLibrary/publications/project_reports/pdf/SPR718.pdf

5. Collaboration and partnership relies on coordination with partners, stakeholders, and external agencies for assistance and support. Not only does building community relationships enhance existing programs, it also opens opportunities for data sharing, information exchange, funding support, and long-term coordination.

6. Effective communications is important in relaying program updates and information to various audiences, including Tribal organizations, external partner agencies, and the broader community.

Tools and Support Systems

The FHWA modules included in this literature review highlights numerous Federal tools, support systems, and programs that are available to Tribes, however a limited body of literature exists on the technical planning tools, support systems, and programs that Tribes actually use in their planning processes. The FHWA *Tribal Transportation Best Practices Guidebook* describes a case study on the Mashantucket Pequot Tribe, which improved their asset management program with new data integration tools to support program management, reporting, and information sharing. The Tribe also coordinated staff training in-house to build awareness and an understanding of the new data tools and to ensure proper use of the new software. Future data collection efforts and stakeholder discussions will determine the effectiveness of the Federal resources and identify support systems that Tribes find the most useful.

Who is Involved, and How

The FHWA Tribal Transportation Planning Module titled *Partnering and Leveraging* is a resource for identifying the general stakeholders within the Tribal transportation planning process. This module describes the process of developing partnerships and how to leverage those partnerships to maximize transportation opportunities. Suggested Tribal partners listed include State DOTs, MPOs, County/City DOTs, Transit agencies, and Tribal agencies.

The module states that there are four steps in building partnerships: cultivate partner relationships, define a specific need, structure the partnership, and manage the process. Cultivating partnerships is a continuous process that involves networking whether there are immediate opportunities or not. This module helps illustrate the strengths of potential partners in comparison to others, which could help prioritize a Tribe's time in collaborating with a partner that is the best fit. Managing the process emphasizes the need to continually monitor and build partnerships. It is especially important to evaluate the performance of a partnerships and understand the lessons learned so that the value of partnerships can be maximized. Most importantly, the benefits and successes of a partnership should be celebrated. Doing so can build trust and justify future partnerships.

The module also discusses how the Upper Sioux Community took the initiative to leverage their partnership with the State DOT, which resulted in advancing a road improvement project by three years and with better materials. The case study describes the roles and responsibilities of each party, which in turn demonstrates how Tribal governments can envision roles forming in their own partnerships. In another example, the Passamaquoddy Tribe completed projects ahead of schedule through partnerships with the State DOT. On one project the Passamaquoddy Tribe had funds to conduct environmental assessments and a preliminary design, but could not commit unless there were funds for the actual construction. The State DOT was able to commit those funds and make use of the Tribal funds.

The *Partnering and Leveraging* module provides information on who Tribes should involve in planning, and several case studies provide examples of partnerships. However, there is insufficient existing literature that provides information about who a broader set of Tribes involve in their Tribal transportation planning processes, including at which points in the process they are involved and the nature of their involvement.

Tribal Transportation Planning Decision makers

The existing literature is limited in describing Tribes' decision making processes, who makes the decisions, and on what information and analysis the decisions are based. However, there are a few examples. One of the FHWA Office of Planning case studies noted that the Reservation Transportation Authority (RTA) is a Tribal government established consortium of 24 Tribes in California, which came together to pool resources and more effectively coordinate on transportation issues.[46] The FHWA case study discussed the legal concerns over State partnerships with Tribes and ensuring that sovereignty of a Tribe was not infringed. It should be noted that the RTA case study is an older example and may not reflect current practices of the parties involved. Many tribes are more familiar with the requirements of Section 106 of the National Historic Preservation Act than the transportation planning process making coordination at the state level difficult.

Project sponsors would often contact Tribes after a project already has been planned. The case study suggests that earlier involvement of tribes in working with Caltrans, MPOs, and other entities in the transportation planning process would help Tribes play a more meaningful role in shaping planning decisions and in developing projects. The RTA learned that by working together in a regional consortium, Tribes have a greater voice to articulate their transportation goals and strategies.

Inputs

This section summarizes the information, data, processes, and tools that Tribes are currently using in their transportation planning processes. This section includes the following subsections:

- Types of Data Used
- Prioritized Project Lists
- Tribal Long-Range Transportation Plan
- Safety Plans
- Implementation Plans
- Financial Planning

Types of Data Used

The existing literature does not contain examples from the last five years of the types of data that Tribes are using in the planning process, or the challenges that Tribes face in data collection. However, the FHWA Tribal Transportation Planning Module titled *Data Collection and Use* discusses where Tribes could find data. The first recommendation is to identify data already within the Tribal community. Examples of possible transportation-related data sources include existing plans, studies, reports, and surveys, communication with the Tribal community such as transportation relevant public correspondence they may have recorded, casino operators, Indian Health Service, Tribal government agencies, State and local police departments, day care centers, head start programs, and many other

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[46] FHWA Office of Planning, San Diego, California: A Tribal Consortium Enhances Tribal/State Coordination Efforts Case Study, https://www.fhwa.dot.gov/planni`ng/processes/tribal/case_studies/sandiego.cfm

local sources. The module provides a detailed list. Data management and maintenance is discussed at length in the latter portion of the module. It is important to understand that data is only as good as its quality. Quality assurance, ensuring that the data collection process provides consistent data results, and quality control, or the evaluation method that determines if data is reasonable and consistent, are described at length. The module concludes on how data could be visualized. The module primarily focused on GIS systems and how they can be beneficial to Tribes such as showing the location of land parcels and environmentally sensitive areas.

As mentioned in the Public Involvement section of this memorandum, Tribes can collect data and information through Tribal events planned for other purposes as opportunities to introduce projects and engage the public. Tribes may also wish to visit local events in neighboring areas to engage with partners and build relationships. There are limited case study examples of Tribes that utilized anecdotal information and non-traditional planning techniques in place of data. In the FHWA *Tribal Transportation Planning Best Practices Guidebook*, the creative problem-solving example provided is the seat belt safety campaign from the Inter-Tribal Council of Arizona.

Prioritized Project Lists

The existing literature provides information about how FHWA recommends that Tribes prioritize projects, but provides few recent examples of the processes that Tribes are using for prioritization. The FHWA Tribal Transportation Planning Module titled *Project Prioritization* notes that project prioritization is the method for listing transportation projects critical to the success of the Tribal transportation program in order of importance for implementation purposes. This process strengthens a Tribe's ability to strategically plan and address Tribal transportation goals and strategies. Importantly, Federal law (23 USC and 25 CRF Part 170) requires projects to be prioritized.

There are five steps listed on how to prioritize projects: identify projects, seek public input, develop criteria and evaluation measures, report findings and seek consensus, and put it all together. This module describes each step while providing examples of documents and processes, such as developing quantitative values for each project. One example template, with definitions of criteria, is the Project Data book, which contains information (collected by a Tribe's own research) for each project. The final product of this process is a list of projects contained in the Project Summary Sheet. Projects are listed as a snap shot of all the projects from the data book. Typically, the list of projects is submitted to a Tribal governing body for endorsement by Tribal Resolution. The list and resolution is then sent to funding agencies for inclusion in their TIPs. These agencies may be the BIA, FHWA, State DOT, MPO, or other partnering agencies.

The *Project Prioritization* module provides a project prioritization toolbox that lists several techniques and strategies for prioritizing projects. The module summarizes the prioritization process described in the first few pages of the module, along with a few definitions, but it could act as a quick reference for Tribal transportation staff.

The module includes a case study discussing the Quinault Indian Nation's project prioritization process. The process took four years and started in response to their Transportation Plan and Comprehensive Land Use Plan. The project prioritization list demonstrates clear tangible results of a complicated process. The priority list allowed the Tribe to pursue funding made available through the American Recovery and Reinvestment Act. Lastly, one of the Tribe's objectives was to achieve a balanced, multimodal approach. Tribal leaders showcased in the article described how their experience helped

them see the landscape of their transportation projects, which led them to reconfiguring their priorities to reflect that balanced approach.

Tribal Long-Range Transportation Plan

Generally the Tribal LRTP process requires a qualitative analysis of future goals and long term visioning. The FHWA *Tribal Transportation Best Practices Guidebook* provides guiding questions that are targeted at Tribes, helping practitioners to reflect and apply the information and lessons to their own programs. The Guidebook suggests that Tribal practitioners routinely and periodically revisit the questions particularly when Tribes address improvements or updates to existing transportation programs. The Guidebook also includes a customizable checklist for applying best practices to specific program issues and strategies. The checklist provides a framework to help Tribal practitioners to identify program challenges, assess existing conditions, and determine new management approaches and techniques to Tribal transportation programs. The Guidebook also includes a listing of technical resources and publications for further reading from FHWA, TRB, and other agencies related to asset management, historic preservation, partnerships, real estate, safety, and transportation planning.

The Sault Ste. Marie Tribe of Chippewa Indians Transportation Department Staff developed a 2018-2038 LRTP, which aligned with the Tribe's Strategic Master Plan and all Tribal codes and ordinances.[47] The plan indicates that projects are prioritized based on guidance found in the Michigan Transportation Asset Management Council Management Guide, which includes standards and processes to rate current road conditions and systems as a prioritization task.

During the public involvement process for the Navajo Nation 2016 LRTP, the project team learned that the majority of respondents in the community survey did not know what an LRTP was, although they did know about the Community Land Use Plan (CLUP).[48] CLUPs are comprehensive land use planning documents developed by local government subdivisions, or Chapters, in the Navajo Nation. Since the CLUP typically had limited information on transportation, the Navajo Nation used the opportunity to update the CLUP structure and coordinate its use and structure with LRTPs through shared visioning and goals.

Safety Plans

The existing literature provides information about how FHWA recommends that Tribes conduct safety planning, but provides few recent examples of the processes that Tribes are using for safety planning. The FHWA Tribal Transportation Planning Module titled *Developing a Transportation Safety Plan* provides a general overview of the transportation safety planning process with Tribal Governments as the target audience. A Tribe can use a transportation safety plan to coordinate its efforts between Tribal and other government leadership to better share data and information, determine emphasis areas for safety, identify strategies to improve safety, prioritize and fund priority safety projects, and evaluate safety outcomes. The module provides a hypothetical example of a Tribe's efforts to create a transportation safety plan as an example to illustrate what a Tribe might encounter when developing their own similar plan.

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[47] Sault Ste. Marie Tribe of Chippewa Indians LRTP 2018-2038
https://www.saulttribe.com/images/downloads/about%20us/Transportation%20Department/Long%20Range%20Transportation%20and%20Capital%20Improvement%20Plan.pdf
[48] Navajo Nation LRTP 2016 http://fortbertholdplan.org/wp-content/uploads/2016/06/LRTP-website-draft.pdf

There are several steps listed in the module on how to develop a transportation safety plan:

- Establish a safety leadership framework;
- Collect and analyze safety data;
- Determine an emphasis area;
- Research and identify potential strategies;
- Prioritize and incorporate strategies;
- Draft the plan; and
- Evaluate and update the plan.

The module goes into detail discussing each step and their sub-steps. The sections are standard in detail for a transportation plan, but are accompanied by short case study descriptions on how the Wind Tribe tackled those points in their planning process. The data section provides relevant information for Tribes by listing several ways to use data to include identifying problems, evaluating strategies, and assessing outcomes. Tribes can gather data from a number of existing sources that are listed out in the module, such as National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). If existing data is insufficient for a Tribe's specific project, then the safety plan could include strategies to gather data in the future.

The final section of the module includes potentially beneficial materials in the appendix for Tribes to use. The module's appendix includes a table of sample emphasis areas with their corresponding measures and potential strategies, a sample agenda for a working group meeting, and a list of web based resources on data collection and strategy identification.

Implementation Plans

The existing literature provides few recent examples of how Tribes develop implementation plans. Implementation plans ensure projects are delivered and meet program goals. The Sault Ste. Marie Tribe of Chippewa Indians' LRTP includes a discussion on the planning process for Tribal nonmotorized transportation (NMT) such as off-street paths, trails, and sidewalks, which involved extensive stakeholder consultation and coordination with implementation planning. The NMT Plan provides a roadmap of NMT-related goals and objectives that are used to guide investment decisions.

Financial Planning

The financial planning of a transportation plan can often be complex. The funding of a project may require multiple funding sources as well as several partnerships with external agencies. The FHWA Transportation Planning Module titled *Financial Planning* for Tribal governments discusses Tribal transportation funding sources, financing concepts, and methods for estimating revenues.

The module outlines four steps in financial planning: identify funding streams, estimate future revenue, match funding to projects, and writing the financial plan. These steps are then described in detail as well as a step-by-step guide to financial planning. The majority of the information within the Financial Planning module is fairly standard. But there are a few sections specifically relevant to Tribal transportation planning.

The *Financial Planning* module provides links to various online resources to help Tribes estimate infrastructure cost estimates to be used in a financial plan. However, it is mentioned that not all projects

will cost the same because of various factors such as the variable costs in land, costs for the right of way, and environmental remediation.

Finding funding is often the most difficult aspect of the transportation planning process. The FHWA *Financial Planning* module and the *Financial Resources* module discuss fundamental funding stream activities including grants and bonds. However, the information in the *Funding Resources* module is largely outdated.

Tribal Transportation Program funding can support roadway and infrastructure improvements adjacent to roads such as bike lanes. In contrast, the Tribal Transit Program provides support for public transit on public lands such as trains or busses. Tribes must apply and compete for this type of funding. Tribes can pursue other Federal funding by either applying for grants or partnering with other agencies or governments. Other funding sources are discussed in the FHWA *Financial Planning* module such as issuing local bonds and collecting tolls. Gas taxes as a means for raising revenue for transportation projects are briefly discussed. Taxes imposed and revenue collected from those taxes by a Tribe is entirely under the authority of that Tribe.

As discussed earlier, the *Developing a Transportation Safety Plan* module briefly discusses funding of transportation safety plans. These plans are important with regard to financial planning because they may increase a Tribe's ability to secure grant funding to implement its safety strategies. They can also be useful for leveraging private funds from local businesses interested in investing in transportation safety. The safety module briefly describes possible funding sources: Highway Safety Improvement Program, Tribal Transportation Program Safety Fund (grant funding for projects that improve transportation safety on Tribal lands, including funds to support Tribal transportation safety planning), and Indian Highway Safety Program (funds from the BIA can address data improvement, behavioral activities, and law enforcement in coordination with Tribal Governments). Funding can be limited but there may be assistance to develop safety plans with the help of Tribal Technical Assistance Program Centers, universities, or other governmental partners.

The *Financial Planning* module includes an example from the White Earth Nation in Minnesota that demonstrates how the Tribe linked financial planning to its transportation priorities. The Tribe's public works director started with identifying projects listed within the Tribal transportation plan that was developed with the help of their Tribal Transportation Advisory Committee. The committee includes representation from Minnesota DOT and county engineers and helps identify projects for one another's TIP. By communicating closely with other governments, the White Earth Nation was able to share costs and project schedules so that opportunities for matching funding from non-Tribal sources can be maximized.

Transportation Planning Connections

The planning connections resources documented in this section suggest the value of applying a broader lens to the transportation planning process and consider the overall goals of the Tribal community. Tribal planning takes shape in a variety of formats due to varied resources and unique assets and challenges. The literature and case studies summarized in this section describe opportunities for partnerships, creative problem solving, and leveraging existing resources to meet goals. Future tasks in this research may identify additional planning connections that Tribes consider in transportation

planning, including any unforeseen program goals that may open opportunities for collaboration between other government agencies.

This section includes the following subsections:

- Planning and Project Delivery
- Planning and Land Use
- Planning and Economic Development Plans
- Planning and Environmental, Right of Way, and Utility Considerations
- Planning and Resiliency

Transportation Planning and Project Delivery

The existing literature provides few examples of how Tribes link the planning process to project delivery. However, the 'Define a Specific Need' section of FHWA's Tribal Transportation Planning Module titled *Partnering and Leveraging* mentions the need to consider the legal ramification of a sovereign Tribe engaging with external partners. In the initial phase of a partnership it is crucial that legal counsel should review whether or not a partnership would impact the sovereignty of the Tribe. This module recommends that Tribal legal counsel participates in many of the steps during the project planning and implementation process. Legal consultation leads into formal structure of a partnership. MOAs or MOUs can be used to organize partnerships, set responsibilities, create expectations, and hold parties accountable to their roles. There is an example of a MOA between Indian Township Passamaquoddy and the Maine DOT in the Appendix.

Transportation Planning and Land Use

Effective planning and overall community development involves engagement coordination between transportation and land use. The existing literature provides few examples of how Tribes link the transportation planning process to land use planning. However, as discussed earlier, comprehensive Master Plans generally include a section or discussion on transportation conditions and priorities. For example, the Spokane Tribe of Indians' *2013 Community Master Plan* discusses safety concerns particularly for pedestrians due to a lack of separation on roadways between vehicles, bicycles, and pedestrians.[49] These conditions make walking extremely dangerous. The plan suggested improvements such as sidewalks, pedestrian and bicycle paths, and street lighting.

Transportation Planning and Economic Development Plans

Transportation planning is a critical element of economic development planning. Limited public transportation often impedes Tribal communities from accessing employment, commerce, and schools. Although many of the case studies reviewed for this literature review can illustrate the success of a Tribal community securing economic benefits through transportation planning, there were few examples of explicit connections between transportation planning and economic development planning. As one example, the Confederated Tribes of the Umatilla Indian Reservation in Oregon established a public transit system through the use of Federal Tribal Transit funds, Small City and Rural Program funds, Tribal Transportation Program funds, contributions from the Tribe's administration budget, and State grants for county transit authorities. The system was comprised of a bus fleet that serviced ten towns and cities in five counties within two states. The With this service, Tribal communities connected three

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[49] Spokane Tribe of Indians 2013 Master Plan, http://fortbertholdplan.org/wp-content/uploads/2016/08/Final-SCMP.pdf

airports, multiple rail lines, eight hospitals, several regional retail centers, four universities, and three community colleges.[50]

Transportation Planning and Environmental, Right of Way, and Utility Considerations

Right of way conflicts can be a common occurrence when mapping out transportation projects. Preserving and maintaining the sovereign rights of a Tribal community creates trust and clarifies roles and responsibilities within jurisdictional boundaries. The existing literature does not provide tangible examples of how the Tribal transportation process is linked to environmental review, right of way, and utilities. However, the example of the North Central Regional Transit District (NCRTD) mentioned earlier in this document demonstrates how right of way can be managed appropriately. In this case, three Tribes within a rural region of New Mexico determined that the widening of the road would be unacceptable because it would require additional right of way from the Pueblos. They banded together to lobby NMDOT for a study to be conducted on alternative transportation demand management (TDM) measures. FHWA conducted a major investment study of the corridor and for the first time included all the Tribal pueblos. Their efforts successfully lead to alternative methods to alleviate traffic congestion while also preserving their own right of way rights. Communicating with partner governments to determine jurisdictional boundaries ensure that little conflict occurs when planning transportation projects.

Transportation Planning and Resiliency

Risk management is a critical tool in the transportation asset management process because it allows Tribes to assess potential threats and mitigation strategies to extreme events, external hazards, and uncertainties. Severe weather events in recent years have also emphasized the importance of integrating resiliency goals into transportation asset management planning. Tribes may wish to conduct risk analyses to examine the likelihood and impacts of different risks to their transportation assets and facilities. Consideration of resiliency in the planning process sets a standard for preparedness and readiness. The FHWA Tribal Transportation Planning module titled *Asset Management* explains that a lack of planning may result in asset failure such as poor condition, unexpected loading, poor work practices, and other risks. However, the existing literature does not provide ample details about how the Tribal transportation planning process and project delivery are linked.

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[50] Board of Governors of the Federal Reserve System. 2012. Growing Economies in Indian Country: Taking Stock of Progress and Partnerships.

Summary of Literature Gaps and Research Questions

The following is a summary of the literature gaps and research questions pertaining to the Transportation Planning in Tribal Communities research project.

Tribal Transportation Planning
• Do Tribal communities use the methods and practices described in Federal documents and modules to assist them in their transportation planning processes?
• How are the six common best practice areas identified in the 2009 FHWA Tribal Transportation Best Practices Guidebook (leadership, problem identification, resource allocation, creative problem solving, collaboration and partnerships, and effective communications) applicable in current Tribal transportation planning contexts? Are there any recent examples of government-to-government coordination or relationships that demonstrate how these best practices are put into practice?
• Who do Tribes involve in their transportation planning processes? At what point in the process are these individuals involved and what is their involvement?
• Who are the decision makers within a Tribe's transportation planning processes? What information is used to help inform those decisions?
• What considerations impact a Tribe's transportation planning decision making (e.g., economic development, safety, access to jobs, maintaining infrastructure)?
• How do changes in Tribal leadership influence transportation planning priorities and decision making?
• How do Tribes' internal staffing capacity affect the transportation planning process?

Long-Range Transportation Plans
• What are the common processes that Tribes use to develop long-range transportation plans (LRTPs), including partnerships with other agencies and tools that facilitate the planning process?
• How do Tribes incorporate their LRTP priorities into other comprehensive planning documents, such as master plans, land use plans, safety plans, and statewide or regional plans? How do Tribes incorporate recommendations from other planning documents into their LRTPs?
• What are the post-LRTP decision points (e.g., project selection, programming) that an LRTP should inform?

Tribal Transportation Improvement Program
• What methods or tools do Tribes use to prioritize projects?
• What challenges do Tribes experience with the Tribal Transportation Improvement Program (TTIP) process? What are the solutions or tools to address those challenges throughout the development of the TTIP?
• How do the Tribes utilize their TTIPs?

Legal Framework
• How do Tribal governments or planners navigate the legal and regulatory requirements for Tribal transportation planning?
• How do Tribes consider Tribal sovereignty when making transportation planning and funding decisions?

Data Collection and Use
• What types and sources of data do Tribes use to support their transportation planning processes?

• What challenges do Tribes face in collecting and using data in the transportation planning process? How do Tribes address those challenges or gaps in information?
• What informal strategies do Tribal planners use when data is limited or not available?
• What alternative data and analysis methods assist Tribes when formal methods are not available?
Financial Planning
• How do Tribes conduct financial planning including budgeting, cost estimating, and allocating resources?
• What sources of funding do Tribes use for conducting planning activities?
• What grant funding sources do Tribes seek to fund projects?
• What resources do Tribes need to better manage received funds?
Tools and Resources
• What tools and support systems do Tribes currently use to support the transportation planning process? How are they useful/helpful?
• What tools or resources would be helpful in the Tribal transportation planning process?
Transportation Planning Connections
• How do Tribes link the Tribal transportation planning process to project delivery (including preliminary engineering, environmental review, right-of-way, utilities, and construction) and infrastructure maintenance and operations?

Appendix B. Memorandum 2: Methodology

This memorandum summarizes the proposed methodology for collecting and analyzing data and information in support of the Federal Highway Administration's (FHWA) *Transportation Planning in Tribal Communities* study. The study's goals are to:

1. Align planning tools to specific Tribal planning needs;
2. Ensure long-range transportation plans are implementable by Tribal staff; and
3. Link planning phase to project design, construction, and maintenance.

This memorandum describes:

- The research questions to be addressed;
- The information and data needed;
- The stakeholder entities and individuals from whom to gather the information and data;
- The proposed methods to collect the information and data;
- Anticipated research results;
- Assumptions that will inform the methodology; and
- The general timeframe for the Data Collection and Analysis task (Task C).

The Volpe Center used information documented in *Memorandum 1: Background and Literature Review* to inform this methodology.

Research Questions

The literature review for this study (see Appendix A. Memorandum 1: Background and Literature Review) identified research questions for the Volpe Center to explore in the subsequent phases of this study. These include:

Tribal Transportation Planning

- What value does transportation planning provide to Tribes?
- What do Tribes need to conduct effective, meaningful, and impactful transportation planning?
- Do Tribal communities use the methods and practices described in Federal documents and modules to assist them in their transportation planning processes?
- How are the six common best practice areas identified in the 2009 FHWA Tribal Transportation Best Practices Guidebook (leadership, problem identification, resource allocation, creative problem solving, collaboration and partnerships, and effective communications) applicable in current Tribal transportation planning contexts? Are there any recent examples of government-to-government coordination or relationships that demonstrate how these best practices are put into practice?
- Who do Tribes involve in their transportation planning processes? At what point in the process are these individuals involved and what is their involvement?
- Who are the decision makers within a Tribe's transportation planning processes? What information is used to help inform those decisions?
- What considerations impact a Tribe's transportation planning decision making (e.g., economic development, safety, access to jobs, maintaining infrastructure)?
- How do changes in Tribal leadership influence transportation planning priorities and decision making?
- How do Tribes' internal staffing capacity affect the transportation planning process?

Data Collection and Use

- What types and sources of data do Tribes use to support their transportation planning processes?
- What challenges do Tribes face in collecting and using data in the transportation planning process? How do Tribes address those challenges or gaps in information?
- What informal strategies do Tribal planners use when data is limited or not available?
- What alternative data and analysis methods assist Tribes when formal methods are not available?

Long-Range Transportation Plans

- What are the common processes that Tribes use to develop long-range transportation plans (LRTPs), including partnerships with other agencies and tools that facilitate the planning process?
- How do Tribes incorporate their LRTP priorities into other planning documents, such as comprehensive plans, master plans, land use plans, safety plans, and statewide or regional plans? How do Tribes incorporate recommendations from other planning documents into their LRTPs?
- What are the post-LRTP decision points (e.g., project selection, programming) that an LRTP should inform?

Tribal Transportation Improvement Program

- What methods or tools do Tribes use to prioritize projects?
- What challenges do Tribes experience with the Tribal Transportation Improvement Program (TTIP) process? What are the solutions or tools to address those challenges throughout the development of the TTIP?
- How do the Tribes utilize their TTIPs?

Legal Frameworks

- How do Tribal governments or planners navigate the legal and regulatory requirements for Tribal transportation planning?
- How do Tribes consider Tribal sovereignty when making transportation planning and funding decisions?

Financial Planning

- How do Tribes conduct financial planning including budgeting, cost estimating, and allocating resources?
- What sources of funding do Tribes use for conducting planning activities?
- What grant funding sources do Tribes seek to fund projects?
- What resources do Tribes need to better manage received funds?

Tools and Resources

- What tools and support systems do Tribes currently use to support the transportation planning process? How are they useful/helpful?
- What tools or resources would be helpful in the Tribal transportation planning process?

Planning Connections

- How do Tribes link the Tribal transportation planning process to project delivery (including preliminary engineering, environmental review, right-of-way, utilities, and construction) and infrastructure maintenance and operations?

Information and Data Needs

The Volpe Center will gather data and information related to the research questions, including but not limited to the following:

- Tools that support Tribal transportation planning, including Geographic Information Systems (GIS);
- Inputs that Tribes use to conduct Tribal transportation planning, such as safety data, land ownership data, roadway inventory conditions and classifications, and related plans (e.g., economic development, resilience);
- The processes that Tribes undertake to conduct Tribal transportation planning, including information exchange between technical planning staff and Tribal leadership;
- Current coordination efforts with partners in the Tribal transportation planning process;
- Resource (e.g., staff, funding, tools) capacity for planning
- The use of consultants to conduct or contribute to the Tribal transportation planning process;
- Tribal Transportation Program (TTP) Transportation Improvement Program (TIP) data and information;
- Bureau of Indian Affairs (BIA) Tribal transportation planning requirements, processes, and procedures;
- Broader Tribal community context (e.g., geography, population, public health, economy, road inventory, cultural enhancements, design specifications);
- Examples of how State DOTs and MPOs incorporate Tribal projects into Statewide Transportation Improvement Programs (STIPs) and TIPs;
- Funding and financing resources for Tribal transportation planning and projects, including TTP funds and the Federal Lands Access Program (FLAP); and
- Decision-making practices related to project implementation (decisions in the LRTP and those that are informed by the LRTP).

Stakeholder Entities and Individuals

The Volpe Center has identified the types of stakeholder entities to whom to reach out to gather the data and information necessary for this research. The entities include Tribes, agencies that partner with Tribes on transportation, Federal agencies that are involved with or support Tribal transportation, and other entities, including the academic and consultant communities. Table 1 below lists the entities, the possible contacts at each entity, and the high-level topics to address with each.

Table 1: Data and Information Collection Entities, Contacts, and Topics

Entities	Possible Contacts	Existing Tools	Existing Resources	Planning Process	Project Delivery	Long-Term Vision	Challenges/Barriers	Coordination/Collaboration	Spatial Comparison	Road Inventory	Monitoring and Evaluation
Tribes	Tribal Transportation Planning Staff	X	X	X	X	X	X	X	X	X	X
	Tribal Leadership, Elders, and Youth	X	X			X	X	X	X	X	
	Tribal Non-Transportation Staff					X	X	X		X	X
	Tribal Transportation Program Coordinating Committee	X	X				X	X			
Planning Partners	State Department of Transportation (DOT) Liaisons	X	X				X	X			
	State DOT Planners	X	X	X	X		X	X			
	Metropolitan Planning Organization (MPO) Planners	X	X	X	X		X	X			
	County/Local Government Transportation Staff	X	X	X	X		X	X		X	X
Federal Partners	FHWA Office of Tribal Transportation Tribal Coordinators	X	X	X	X	X	X	X	X	X	X
	FHWA Federal-Aid Planners	X	X	X	X	X	X	X	X	X	X
	FTA Planners	X	X	X	X	X	X	X	X	X	X
	BIA Regional Road Engineers	X	X		X		X	X		X	X
	BIA Regional Planners	X	X	X	X		X	X			
	Federal Land Management Agency Transportation Planning Staff	X	X	X	X		X	X		X	X
Other	Transportation Research Board (TRB) Native American Transportation Issues Committee	X	X								
	Academic Community	X	X								X
	Consultant Community	X	X								X

The Volpe Center, with input from the study's project team and research panel, will identify individuals from Tribes, planning partners, Federal partners, the TRB Native American Transportation Issues Committee, and the academic and consultant communities to include in the study's data collection activities. The Volpe Center will aim to collect data and information from a diverse set of sources to ensure that the information and data collected and analyzed represents the experiences of a wide variety of Tribes. The Volpe Center may also contact regional tribal organizations to validate perspectives and fill in gaps, as needed.

Proposed Collection Methods

The Volpe Center will conduct the following activities to collect the data and needed to achieve the study's goals:

1. Align planning tools to specific Tribal planning needs;
2. Ensure long-range transportation plans are implementable by Tribal staff; and
3. Link planning phase to project design, construction, and maintenance.

This research includes six data and information collection methods:

- Discussions;
- Workshops;
- Site Visits;
- Process Mapping;
- Conferences; and
- Webinars.

Each proposed data collection method is described further below.

Discussions

The Volpe Center will hold discussions with stakeholders from a single entity or organization to address the study's research questions and achieve the study's goals, particularly around Tribal planning needs and understanding Tribes' planning processes. Discussions will focus on a single entity or organization's experiences, and will provide a private format to share information with the researchers. Discussions may lead to the review of documents, additional and more in-depth discussions, or process mapping activities. The discussions will be with one or more stakeholders at a time. The discussions will be held over the phone or via Microsoft (MS) Teams. Each discussion will last no more than one hour.

Workshops

The Volpe Center will hold workshops with small groups of stakeholders from more than one entity or organization to discuss broader processes, issues, or challenges associated with Tribal planning. Workshops will drill down into specific topics to gather information from the stakeholders. The workshops will be held via MS Teams and will last 1-1.5 hours. The Volpe Center may also participate in existing workshops coordinated by Tribes that are external to the project but relevant to Tribal transportation planning, such as workshops to discuss safety plans. Participation in such workshops may provide key anecdotal data from Tribes and community members that may not be captured in data reports.

Site Visits

The Volpe Center will conduct site visits to several Tribes to conduct deep dives into a Tribe's planning process (as such, some process mapping activities will be conducted as site visits). The Tribes selected for site visits will be determined by the information gathered in the discussions. Tribes that will be selected for site visits will have planning processes and tools that warrant a deeper exploration and may be featured in case studies. The number of site visits will be limited by available time and funding for travel as well as constraining circumstances brought on by the COVID-19 pandemic.

Process Mapping

The Volpe Center will conduct process mapping activities to get a detailed understanding of how Tribes conduct their transportation planning processes. The Tribes to be included in process mapping activities

will be identified through discussions, workshops, and suggestions from the project team and the research panel. Tribes selected for process mapping will have transportation planning processes that have elements that may be effectively applied to other Tribes and may inform the recommendations in the research's final report. Process mapping activities may take place as site visits or discussions.

Conferences

The Volpe Center will attend virtual or in-person conferences that are relevant to Tribal transportation planning. At the conferences, the Volpe Center will attend relevant sessions to gather information on Tribal transportation planning, and/or present on the study and solicit feedback. One possible conference to attend is the annual National Transportation in Indian Country Conference. In addition, the Volpe Center and/or project team members may attend the TRB Native American Transportation Issues Committee meeting in January to present and/or solicit input on the project.

Webinars

The Volpe Center will hold webinars to inform stakeholders about the study and its findings. The webinars will be held via MS Teams. The webinars will occur early in the study process, mid-way through the study process, and after the final report is complete.

Anticipated Research Results

The results of these research activities are listed below according to the goals of the study which they address:

1. Align planning tools to the specific Tribal planning need
   a. Information about the processes that Tribes use to conduct transportation planning including what is working well and what is not working well
   b. An understanding of how Tribal transportation planning differs among Tribes with different characteristics (e.g., population, geographic size, location)
   c. Information about Tribes' use of planning tools to inform Tribal transportation decision making
   d. The availability of other tools that Tribes can implement or adapt to improve Tribal transportation planning
   e. Clear identification of what are the post-LRTP decision points (e.g., project selection, programming) are and how they inform LRTPs.
2. Ensure long-range transportation plans are implementable by Tribal staff
   a. How FHWA and BIA can support Tribes in implementing effective Tribal transportation planning processes, tools, and resources
   b. Challenges that Tribes have faced in conducting meaningful planning processes, and how they overcome them
   c. Information about how Tribal governance influences transportation planning
   d. An understanding of how the Tribal transportation department/designated individual or group is factored in the Tribe's leadership structure (e.g., membership on leadership/executive committees or standing spot on Tribal Council updates)
   e. Successes and challenges in partnering or coordinating with other agencies in Tribal transportation planning
   f. Information about the quantifiable benefits of planning on transportation decision making

3. Link planning phase to project design, construction, and maintenance
   a. Information about how Tribal transportation planning influences or impacts project development, implementation, and maintenance
   b. The monitoring and evaluation methods that Tribes use to measure Tribal transportation planning success
   c. Information about how Tribal transportation planning informs land use, economic development, public health, cultural heritage, resiliency, and other planning connections

Assumptions

The Volpe Center makes the following assumptions related to the study methodology.

Limitations on Number of Discussions

The Paperwork Reduction Act (PRA) is a law that governs how the Federal government collects information from the public. This research is subject to the PRA, and the Volpe Center is considering seeking PRA approval for a limited survey of Tribal governments. However, the number of stakeholders who participate in discussions or workshops will be limited.

Travel Restrictions

Due to restrictions on travel related to the Covid-19 pandemic, there will be limited opportunities for the Volpe Center to conduct site visits or attend in-person meetings. If travel is to occur, it will be held when travel restrictions allow for it and when it is safe for both the Volpe Center and the other participants to travel or be traveled to. Virtual meetings will be held instead if necessary.

Recent Changes to Planning Processes

Tribes may have recently modified or delayed their planning processes or their use of tools and resources due to impacts from recent events, including the Covid-19 pandemic and wildfires. The Volpe Center will seek to understand how the planning processes and use of tools/resources have changed based on these impacts, and what additional tools/resources might help Tribes in times of transition.

Federally Documented Transportation Planning Process as a Starting Point

FHWA developed a flow chart graphic to illustrate the transportation planning process (see Figure 1). This process generally applies to State Departments of Transportation and Metropolitan Planning Organizations. The Volpe Center will use this process as a starting point in discussions with Tribal leaders and staff to discuss their transportation planning processes, though it is expected that they may differ from this process.
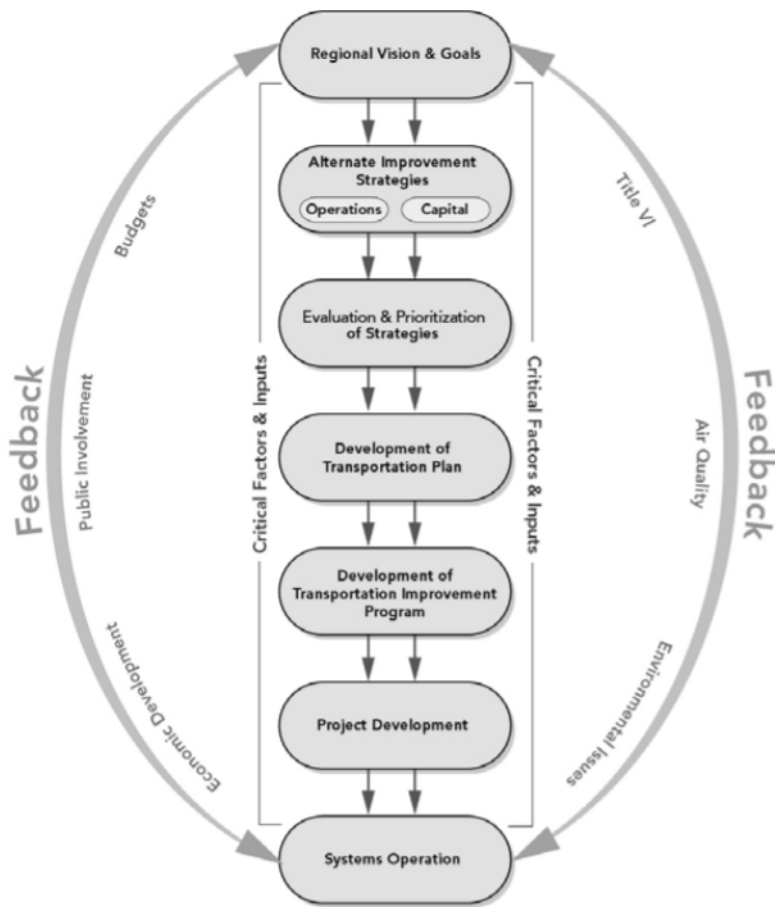
Figure 3: Basic Steps in Transportation Planning Process. (Source: FHWA Introduction to Planning Tribal Transportation Module)

Timeframe

The research study's Data Collection and Analysis task includes three subtasks. The subtasks are listed below with their respective proposed timeframes and the collection methods to be conducted within each subtask.

- Data Collection: February 2021 to June 2022
  - Discussions
  - Workshops
  - Process Mapping
  - Conferences
- Analysis of Planning Tools: April 2022 to August 2022
  - Discussions
  - Workshops
  - Site Visits
  - Process Mapping
  - Conferences

- Findings: July 2022 to November 2022
  - Discussions
  - Workshops
  - Conferences
  - Peer Exchanges
  - Webinars

The project team anticipates engaging the Research Panel every 5-6 months throughout the data collection and analysis and the tasks to follow. It is anticipated that the Research Panel will meet during the following months:

- June 2021
- November 2021
- February 2022
- June/July 2022
- November/December 2022

Next Steps

Following the completion of the Data Collection and Analysis task, the Volpe Center will implement the remaining study tasks:

- Report Development, where the Volpe Center will summarize the research activities and findings into a final report; and
- Implementation, where the Volpe Center will disseminate the study's findings and tools to Tribal, Federal, and other partners.

The Volpe Center will develop plans for these activities after the Data Collection and Analysis task is complete, at the direction of project team and the Research Panel.

Appendix C. Memorandum 3A: Recommended Tribes and Organizations for Data Collection

This memorandum summarizes the identified Tribes and Tribal organizations with which to meet for the Federal Highway Administration's (FHWA) *Transportation Planning in Tribal Communities* study. The study's goals are to:

1. Align planning tools to specific Tribal planning needs;
2. Ensure long-range transportation plans are implementable by Tribal staff; and
3. Link planning phase to project design, construction, and maintenance.

This memorandum describes:

- The methodology for identifying and evaluating Tribes and Tribal organizations for consideration;
- The identified 18 Tribes for discussions;
- The identified four Tribal organizations for discussions; and
- Next steps for conducting discussions with Tribes and Tribal organizations.

Methodology

The project team considered a pool of 38 Tribal discussions based on feedback from the research study's Research Panel and discussions conducted with Federal stakeholders and the internal project team. During the Research Panel meeting on November 1, 2021, Research Panel members identified criteria for the project team to use in identifying Tribes and Tribal organizations for discussions. Table 1 provides a listing of the criteria considered in identifying Tribes for discussions, including a description of what the Research Panel aimed to address through each criterion and the data source.

Table 15: Overview of Criterion Considered in Identifying Tribes for Data Collection

Criterion	Purpose and Source
State	The State(s) where the Tribe is currently located to yield geographic distribution of Tribes (Source: Tribes' websites, Google Maps)
Number of Residents	The number of residents on the Tribe's lands to inform the overall size of the Tribe (Source: Tribes' websites)
Landholdings Size	The Tribe's landholdings size in square miles to capture a range of communities with small, medium, and large-sized landholdings (Source: Tribes' websites)
Total Road Mileage	The total number of road miles owned and managed by the Tribe (Source: FHWA TTP Tribal Shares for FY 2021 data)
State Route Access	Whether a Tribe's lands are served directly or indirectly by a State route to inform the types of transportation projects and decisions made (Source: Google Maps)
Oversight Agency	Whether the Tribe has an agreement with FHWA or BIA (Source: BIA website, FHWA Tribes List)
BIA Region	Which of the 12 BIA Regions in which the Tribe is located, regardless of its oversight agency, to yield geographic distribution of Tribes (Source: BIA website)
FLH Division	Which of the three Federal Lands Highway (FLH) Divisions that the Tribe is located in, regardless of its oversight agency, to yield geographic distribution of Tribes (Source: FHWA website)

Criterion	Purpose and Source
Climate Zone	Which of the eight climate regions in which the Tribe is located to inform the diversity of transportation decisions and improvements made by climate zone (Source: Climate zone designations used by the U.S. Department of Energy (DOE) Building America Program and International Energy Conservation Code)
Urban or Rural	Whether a Tribe is located in an urbanized or rural area, based on metropolitan planning organizations' (MPO) boundaries, to ensure a range of coordination experiences (Source: FHWA Office of Planning TMA and MPO Boundaries map)
Governance Structure	Description of the overall structure of the Tribe's government (e.g., Tribal Council) to capture a range of decisionmaking mechanisms and stakeholders involved in transportation planning (Source: Tribes' websites)
Consultants or In-House Planning	Whether the Tribe generally works with consultants or conducts planning in-house for transportation projects to inform the Tribe's planning capacity (Source: Tribes' websites; project team)
Participation in Metropolitan Planning Process	Description of the overall extent to which Tribes in urbanized areas participate in their associated MPO's planning process to inform how the Tribe's involvement impacts its transportation projects and decisions affecting Tribal lands (Source: MPOs' websites)
State DOT Tribal Liaisons	The State DOT Tribal Liaison(s) in the States where each Tribe is located, if applicable (Source: State DOT websites, project team)
Newly Federally Recognized Tribes	Whether the Tribe was Federally recognized within the last 10 years, or recognized as having a government-to-government relationship with the U.S., to inform its planning capacity and engagement with eligible funding opportunities and services from the Federal government (Source: Federal Register; project team)
LRTP Updated in Last 5 Years	Whether the Tribe's long-range transportation plan (LRTP) was updated in the last five years to determine recently updated versus dated LRTPs (Source: Tribes' websites; TTP Road Inventory Field Data System (RIFDS))
ERFO Funding	Whether a Tribe has received funding through the Emergency Relief for Federally Owned Roads (ERFO) Program to repair roads and bridges impacted by natural disasters and catastrophic events (Source: FHWA National ERFO Coordinator)
Confederated Tribes	Whether the Tribe is part of a larger body of separate and distinct Tribes with a shared governance structure and lands (Source: Tribes' websites; National Conference of State Legislatures; project team)
Nearby Tribes	Other Tribes that are located in the same general area (not shared boundaries) as there may be coordination with adjacent Tribes on transportation projects. (Source: BIA's U.S. Domestic Sovereign Nations: Land Areas of Federally-Recognized Tribes map)
Planning Funding Spent (FY19 and FY20)	The amount of funds Tribes spend each year on planning activities to inform the Tribe's involvement on transportation planning projects (Source: Tribal Transportation Program Online Reporting Tool)
Total FY21 Tribal Shares after 11.1% OB-LIM	The amount of Tribal Transportation Program formula funds allocated to the Tribe to inform the overall TTP funding available for transportation projects (Source: FHWA TTP Tribal Shares for FY 2021 data)
Total FY21 Tribal Planning Funding after 11.1% OB-LIM	The amount of planning funds allocated through the Tribal Transportation Program formula funds to inform its transportation planning capacity (Source: FHWA TTP Tribal Shares for FY 2021 data)

Tribes Identified for Discussions

The project team identified 18 Tribes from the pool of 41 Tribes to engage in discussions during the Data Collection and Analysis task of the *Transportation Planning in Tribal Communities* study. The 18 identified Tribes represent a diversity of contexts across geography, size of Tribal membership and landholdings, scale of transportation infrastructure, funds available and resourced for transportation planning, among other criteria. Figure 1 displays a map showing the geographic distribution of the recommended Tribes and their landholdings, and Tribal organizations. An interactive version of the map is available at https://arcg.is/1qvnHj.
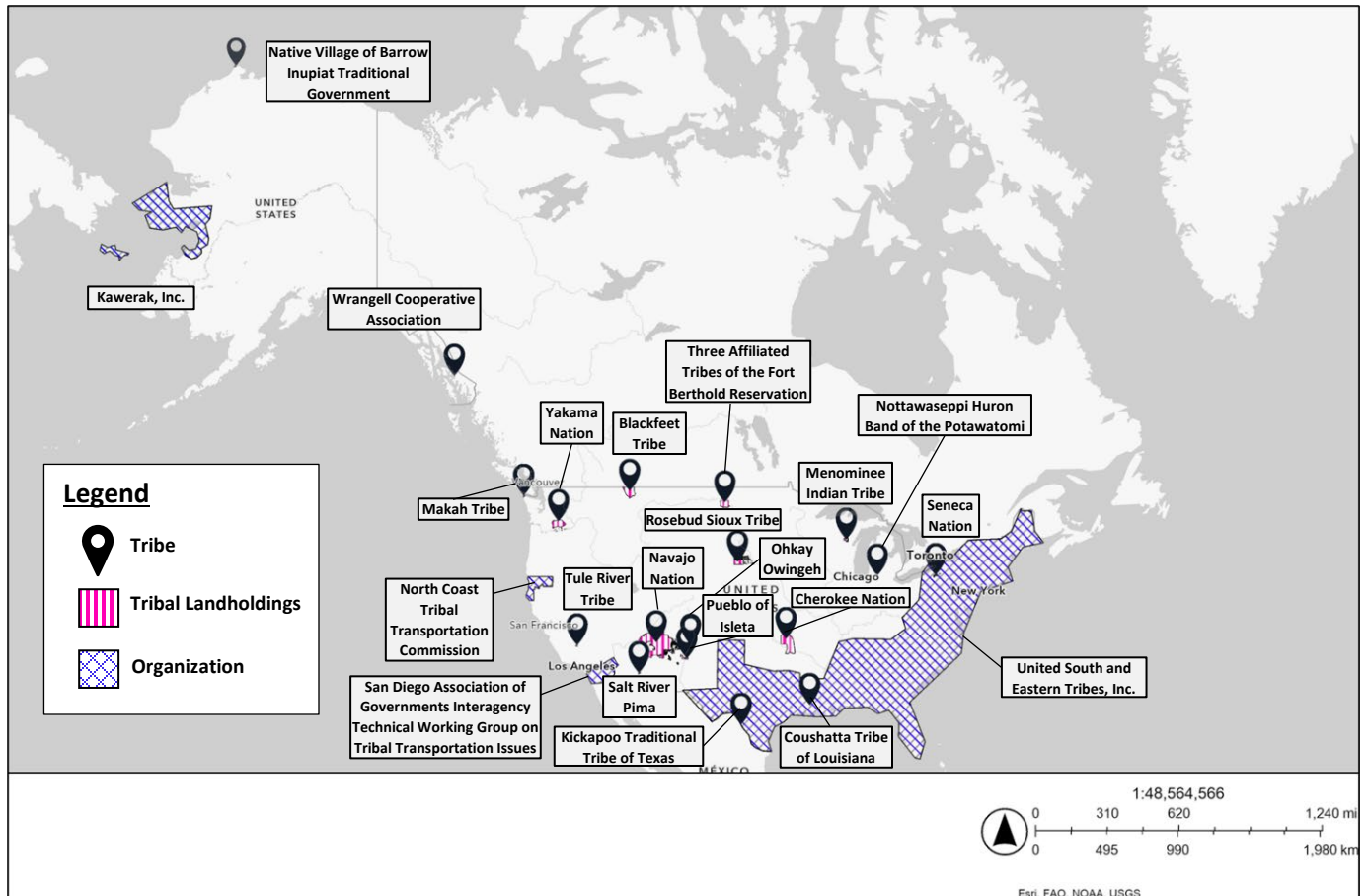

Figure 4. Map of Tribes and Tribal Organizations Recommended for Data Collection. (Sources: Esri; United States Geological Survey; Food and Agriculture Organization; National Oceanic and Atmospheric Administration; U.S. Census Bureau)

Table 2 lists the 18 Tribes that the project team identified for engagement in the Data Collection and Analysis task of this research. It lists the Tribes' names, State(s), number of residents, total road mileage, BIA region, total FY21 Tribal shares (after the 11.1% OB-LIM), and the person/entity that recommended the Tribe for consideration. The table is sorted alphabetically by BIA Region.

Table 2:6 Tribes Recommended for Engagement

Tribe	State(s)	Number of Residents	Total Road Mileage	Oversight Agency	BIA Region	Total FY21 Tribal shares after 11.1% OB-LIM	Source
The Native Village of Barrow Inupiat Traditional Government	Alaska	3,315	17.5	BIA	Alaska Region	$403,961	BIA
Wrangell Cooperative Association	Alaska	Unknown	5.9	FHWA	Alaska Region	$537,263	OTT Tribal Coordinators
Cherokee Nation	Oklahoma	141,000	394.9	FHWA	Eastern Oklahoma Region	$13,699,732	OTT Tribal Coordinators
Coushatta Tribe of Louisiana	Louisiana	88	20	BIA	Eastern Region	$270,277	FHWA Division Office (Research Panel member)
Seneca Nation	New York	2,412	135.7	FHWA	Eastern Region	$985,188	Eastern FLH
Rosebud Sioux Tribe	South Dakota	11,354	313	FHWA	Great Plains Region	$2,238,837	OTT Tribal Coordinators
Three Affiliated Tribes of the Fort Berthold Reservation (The Mandan, Hidatsa, and Arikara Nation)	North Dakota	6,341	1,041.7	BIA	Great Plains Region	$1,416,209	FHWA Resource Center and Ron Hall
Menominee Indian Tribe	Wisconsin	1,337	336.8	BIA	Midwest Region	$1,253,589	State DOT Tribal Liaison
Nottawaseppi Huron Band of the Potawatomi	Michigan	1,500	21.4	BIA	Midwest Region	$265,754	Project team
Navajo Nation	Arizona, Utah, New Mexico	173,000	11,288.8	FHWA	Navajo Region	$51,467,389	OTT Tribal Coordinators
Confederated Tribes and	Washington State	31,799	148.7	BIA	Northwest Region	$2,648,523	U.S. Fish and Wildlife and

Tribe	State(s)	Number of Residents	Total Road Mileage	Oversight Agency	BIA Region	Total FY21 Tribal shares after 11.1% OB-LIM	Source
Bands of the Yakama Nation							Center for Tribal Transportation
Makah Tribe	Washington State	1,414	65.9	BIA	Northwest Region	$388,746	Tricia DePoe, Tribe staff and Research Panel member
Tule River Indian Tribe	California	970	13.4	BIA	Pacific Region	$417,588	National Indian Justice Center
Blackfeet Nation	Montana	10,405	653.2	BIA	Rocky Mountain Region	$3,182,709	Center for Tribal Transportation
Kickapoo Traditional Tribe of Texas	Texas	918	81.9	BIA	Southern Plains Region	$284,437	Project team
Ohkay Owingeh	New Mexico	6,748	63.5	FHWA	Southwest Region	$542,067	OTT Tribal Coordinators and Center for Tribal Transportation
Pueblo of Isleta	New Mexico	3,400	258.5	FHWA	Southwest Region	$1,416,641	OTT Tribal Coordinators
Salt River Pima-Maricopa Indian Community	Arizona	7,386	83.75	BIA	Western Region	$1,391,391.13	OTT Tribal Coordinators

Table 3 lists the criteria considered in identifying Tribes for discussions and describes the results of the project team's research scan and how the recommended Tribes cover the elements of each criterion.

Table 73: Overview of Research Scan Results Across Criteria for Recommended Tribes

Criterion	Outcome Based on Recommended Tribes
State	The recommended Tribes are in 15 States, including two Tribes in Alaska and 16 Tribes in the Lower 48.
Number of Residents	Number of residents in the recommended Tribes range from 88 residents to 173,000 residents.
Landholdings Size	The recommended Tribes' landholdings sizes range from 0.9 square miles to 27,413 square miles.
Total Road Mileage	The recommended Tribes' total road mileages range from 0 miles to 11,288.8 miles.
State Route Access	Of the recommended Tribes, 12 have access to a State route and six do not.

Criterion	Outcome Based on Recommended Tribes
Oversight Agency	Of the recommended Tribes, 11 Tribes coordinate with BIA and seven Tribes coordinate with FHWA on Tribal Transportation Program funding.
BIA Region	The recommended Tribes cover all 12 BIA regions.
FLH Division	The recommended Tribes cover all three FLH Divisions.
Climate Zone	The recommended Tribes cover all eight climate zones, as defined by the U.S. Department of Energy.
Urban or Rural	The recommended Tribes include 13 Tribes with lands in exclusively rural areas and five that have portions of their lands in urban areas
Governance Structure	The recommended Tribes represent a diverse set of government structures, including Tribal councils, Constitutional tripartite (i.e., judiciary, legislature, executive), and parliamentarian.
Consultants or In-House Planning	Of the recommended Tribes, eight Tribes use consultants or a combination of in-house planning with technical assistance from a consultant, MPO, and/or State DOT. Three of the Tribes have transportation departments and capacity to conduct planning in-house. The approaches that the other Tribes use will be determined through discussions with Tribes.
Participation in Metropolitan Planning Process	Of the recommended Tribes, five Tribes are in urbanized areas either within or adjacent to MPO planning boundaries. Tribal participation in MPO planning processes range from membership on boards/committees to providing input on regional plans and/or projects and collaboration on transportation projects.
State DOT Tribal Liaisons	Of the recommended Tribes, 10 are in States that have a State DOT Tribal Liaison.
Newly Federally Recognized Tribes	The recommended Tribes do not include any that were federally recognized in the last 10 years.
LRTP Updated in Last 5 Years	Of the recommended Tribes, 11 Tribes have updated their LRTPs in the last five years, and seven Tribes have LRTPs that were last updated over five years ago.
ERFO Funding	One of the recommended Tribes has received ERFO funding. Additionally, one of the recommended Tribes received a $5.8 million BUILD grant in 2020.
Confederated Tribes	Two of the recommended Tribes are Confederated Tribes.
Nearby Tribes	Most of the recommended Tribes are located nearby other Tribes, except for a Tribe located in a remote area of Texas along on the U.S.-Mexico border. The identified Tribes are not geographically nearby to one another.
Planning Funding Spent (FY19 and FY20)	The recommended Tribes represent a range of transportation planning funds spent in FY19 and FY20. One Tribe spent $0 in transportation planning funds across FY19 and FY20 (representing the lowest), and the most transportation planning funds spent across both FY19 and FY20 is $3,041,877.
Total FY21 Tribal Shares after 11.1% OB-LIM	Tribal Transportation Program formula funds allocated to the recommended Tribes in FY21 range from $265,754 to $51,467,389.
Total FY21 Tribal Planning Funding after 11.1% OB-LIM	Tribal Transportation Program formula funds allocated to the recommended Tribes for planning activities in FY21 range from $6,039 to $1,169,713.

The project team considered the following Tribes but did not include them in the list of 18 Tribes for discussions:

- The Sun'aq Tribe of Kodiak, Alaska
- Native Village of Kotzebue, Alaska
- White Mountain Apache Tribe, Arizona
- Robinson Rancheria of Pomo Indians of California, California
- Cher-Ae Heights Indian Community of the Trinidad Rancheria, California
- Seminole Tribe of Florida, Florida
- Miccosukee Tribe of Indians, Florida
- Prairie Band Potawatomi Nation, Kansas
- Minnesota Chippewa Tribe (The Bois Forte, Fond du Lac, Grand Portage, Leech Lake, Mille Lacs, and White Earth Reservation), Minnesota
- Pueblo of Jemez, New Mexico
- Pueblo of Zuni, New Mexico
- Standing Rock Sioux Tribe, North and South Dakota
- Eastern Band of Cherokee Indians, North Carolina
- Osage Nation, Oklahoma
- Sisseton-Wahpeton Oyate Tribe, South Dakota
- Cheyenne River Sioux Tribe, South Dakota
- Ysleta Del Sur Pueblo of Texas, Texas
- Lummi Nation, Washington State
- Oneida Nation, Wisconsin
- Forest County Potawatomi, Wisconsin
- Red Cliff Band of Lake Superior Chippewa, Wisconsin
- Eastern Shoshone Tribe (Arapahoe & Shoshone Tribes-Wind River Reservation), Wyoming
- Gila River Indian Community, Arizona

Tribal Organizations Identified for Discussions

Table 4 lists the four Tribal organizations that the Research Panel, project team, and the Volpe Center identified for engagement in the data collection and analysis task of this research. It lists the organizations' names, State(s), BIA region(s), brief description, and the person/entity that recommended the Tribe for consideration.

Table 48: Tribal Organizations Recommended for Engagement

Organization	State(s)	BIA Region(s)	Description	# of Tribes/ Stakeholders Represented	Source
Kawerak, Inc.	Alaska	Alaska	Kawerak contracts with the state and federal government to provide services to residents of the Bering Strait Region, 75 percent of whom are Alaska Native Inupiat, Yup'ik, and St. Lawrence Island Yupik peoples. Kawerak's organizational goal is to assist Alaska Native people and their governing bodies to take control of their future. With programs ranging from education to transportation, and natural resource management to economic development, Kawerak seeks to improve the Region's social, economic, educational, cultural, and political conditions.	20 member Tribal nations	Project team
North Coast Tribal Transportation Commission	California	Pacific	The North Coast Tribal Transportation Commission (NCTTC) is comprised of 11 rural Northern California Tribes, primarily located in Humboldt County but with administrative boundaries in the neighboring Counties of Del Norte and Siskiyou. Each Tribe is uniquely different from each other as well as from any other Tribes in California or the Pacific Northwest. NCTTC is very involved with multiple levels of transportation planning in California.	11 member Tribal nations	Research Panel
SANDAG Interagency Technical Working Group on Tribal Transportation Issues	California	Pacific	The purpose of the Interagency Technical Working Group on Tribal Transportation Issues is to serve as a forum for regional tribal governments to discuss and coordinate transportation issues of mutual concern with the various public planning agencies in the region, including SANDAG, Caltrans, the County of San Diego, and the transit operators.	15 member Tribal nations	OTT Tribal Coordinators
United South and Eastern Tribes Inc.	East Coast and Gulf Coast States, Tennessee, West Virginia	Eastern, Southern Plains	Non-profit, inter-Tribal organization serving 33 Federally recognized Tribal Nations from the Northeastern Woodlands to the Everglades and across the Gulf of Mexico.	33 member Tribal Nations	OTT Tribal Coordinators

The project team identified these four organizations to provide additional perspective to the 18 Tribes identified for discussions:

- Kawerak, Inc. represents 20 Tribes in the Bering Strait Region, Alaska; Kawerak Board consists of the Council Presidents or appointed delegates of the 20 federally recognized tribes, two Elder representatives, and the chair of the Norton Sound Health Corporation Board.
- The North Coast Tribal Transportation Commission represents 11 rural Tribal entities primarily located in Humboldt County but with administrative boundaries in the neighboring Counties of Del Norte and Siskiyou, California.
- The SANDAG Interagency Technical Working Group on Tribal Transportation Issues represents a unique structure for engaging Tribes in transportation planning in a Southern California urban context.
- United South and Eastern Tribes Inc. will provide additional perspective for Tribes in the broad eastern and southeastern region.

The project team considered the following Tribal organizations but did not include them in the list of four organizations for discussions:

- Rocky Mountain Tribal Leaders Council, represents 9 Tribes in Idaho, Montana, Wyoming
- Wisconsin DOT Inter-Tribal Task Force, represents 11 Tribes in Wisconsin
- Red Plains Professionals Inc., Oklahoma

Proposed Approach for Discussions

As described in **Appendix B. Memorandum 2: Methodology**, the Paperwork Reduction Act (PRA) governs how the Federal government collects information from the public and limits the number of discussions that the project team can facilitate with Tribes. The project team will organize Tribes into two groups of nine, as shown in Table 5. The groupings represent a balanced distribution of the criteria considered in identifying Tribes for discussions. For example, each group contains Tribes that are in different BIA regions and States, including a combination of communities with small, medium, and large-sized landholdings and other criteria to ensure geographically balanced distribution.

Table 5: Recommended Groupings for Discussions with Tribes

Group 1	Group 2
Native Village of Barrow Inupiat Traditional Government	Wrangell Cooperative Association
Cherokee Nation	Seneca Nation
Coushatta Tribe of Louisiana	Three Affiliated Tribes of the Fort Berthold Reservation (The Mandan, Hidatsa, and Arikara Nation)
Rosebud Sioux Tribe	Nottawaseppi Huron Band of the Potawatomi
Menominee Indian Tribe	Navajo Nation
Confederated Tribes and Bands of the Yakama Nation	Makah Tribe
Blackfeet Nation	Tule River Indian Tribe
Ohkay Owingeh	Kickapoo Traditional Tribe of Texas
Salt River Pima-Maricopa Indian Community	Pueblo of Isleta

Discussion Questions

The groups outlined in Table 5 will have a distinct set of discussion questions that address topics such as Tribal/transportation context, Tribal transportation priorities, LRTP and Tribal Transportation Improvement Plan development, planning processes and tools, funding for transportation, partnerships and engagement, and resources. Table 6 shows the questions by group and topic.

Table 9. Group 1 and Group 2 Discussion Questions

Group 1	Group 2
Tribal/Transportation Context	
1. Can you please describe your Tribe's transportation network? a. What are the key transportation facilities?	1. How do Tribal members get to where they need to go (e.g., work, school, shopping, recreation)? 2. How do non-Tribal members use the Tribe's transportation network?
Tribal Transportation Priorities	

2. Can you walk us through a recent successful transportation project that the Tribe planned and implemented?
    a. How did the Tribe identify the project as a need?
    b. Why did the Tribe prioritize this project over other projects or needs?
    c. What made the project a success?
	3. What are your Tribe's key transportation needs? These might be safety improvements, maintenance projects, or projects that add capacity.
	    a. What data sources did you use to identify transportation safety issues?

LRTP and TTIP Development	
3. How does your Tribe determine its transportation goals/objectives/priorities? 4. Please describe the process that your Tribe uses to develop your long-range transportation plan (LRTP).	4. How valuable do you find the processes to develop the LRTP and TTIP to be? 5. How does the Tribe use the data and information that comes out of the development of the LRTP (either for transportation or other purposes)?

Group 1	Group 2
5. How does your Tribe identify transportation projects and prioritize them in the TTIP?	

Planning Processes and Tools	

6. What is the Tribe's capacity (in terms of staff time, skills, tools, and resources) for transportation planning?
  a. How does that capacity meet the Tribe's need?
7. Do you hire contractors to fill capacity gaps in transportation planning?
  b. If so, what tasks do the contractors perform? How closely does the Tribe work with the consultants as they are performing the tasks? Are these contracts working well for the Tribe's transportation planning needs?
	6. What transportation planning activities does the Tribe conduct besides the development of the LRTP and TTIP (e.g., road safety audits, corridor studies, bicycle/pedestrian plans)?
	  a. How do they connect to the LRTP and TTIP?
	7. After a transportation project is identified through the LRTP or the TTIP, how does the Tribe determine whether the project should proceed to design and construction?
	  a. What is the process, and what do you consider?
	8. Do you evaluate the effectiveness of your planning process?
	  a. Have you evaluated how a project has affected safety?

Funding for Transportation	

8. How does your Tribe fund transportation planning activities?
  a. Do you pursue funding sources besides TTP and Tribal sources?
    i. If so, what sources?
    ii. If not, is there any particular reason?
    iii. Has a plan been used to justify funding for infrastructure or non-infrastructure projects?
9. How does the TTP delivery method that your Tribe uses (i.e., how you work with BIA or FHWA to deliver the TTP) affect transportation improvements in your community?
  a. Do you feel that your Tribe's voice is being heard?
	9. How does the Tribe determine available funding to deliver the program of projects in the TTIP?
	10. What entities do you work with for financial planning (e.g., identifying funding sources, developing cost estimates) for transportation projects?

Group 1	Group 2
Partnerships and Engagement	

10. **How do you engage with internal Tribal stakeholders and community members in the transportation planning process?**
    a. **Do you present your planning documents to stakeholders and community members when engaging with them?**
    b. **Has any of your transportation plans led to conversations with partners outside of the Tribe regarding safety? Examples?**
	11. **With what external entities (i.e., outside of the Tribe) do you partner in transportation planning?**
	    a. **What type of input or assistance do they provide?**

Resources	
11. **What additional resources would help you improve your Tribe's approaches to transportation planning?**	12. **What resources have you used that have helped the Tribe conduct transportation planning activities?** a. **How have they been helpful?**
Next Steps	
12. **Who else should we be talking to in your Tribal context for this research?**	13. **Who else should we be talking to in your Tribal context for this research?**

Next Steps

The project team will contact the 18 identified Tribes and three identified organizations to invite them to engage in discussions about transportation planning, as outlined in [Memo 2: Methodology](#). The discussions will be held virtually. If a particular discussion yields information that the project team thinks should be explored further, the project team may schedule an additional discussion with additional contacts at that Tribe to further explore the topic.

If a Tribe declines the invitation to engage in a discussion, or if a Tribe or organization does not respond to the invitation, the project team will identify another Tribe or organization to engage in discussion in its place. The project team will strive to ensure that the criteria described earlier in this document are still met. For example, if a Tribe in an urban area declines the invitation for a discussion, the project team will aim to identify an alternative Tribe that is also in a similar urban region of the country. The project team will first consider Tribes and organizations that were initially considered for discussions but not prioritized. If that list does not yield a Tribe or organization that contributes to meeting the criteria, the project team will conduct additional research to identify Tribes and organizations to ensure that the Tribes and organizations engaged for discussions address all the criteria. The project team's goal is to conduct discussions with a total of 18 Tribes and four organizations.

The project team will conduct outreach to the identified Tribes and organizations beginning in February 2022 and will aim to complete the discussions by the end of June 2022. The project team will adapt the

research questions identified in Memorandum 2: Methodology for use in the discussions with each Tribe and organization, modifying them based on the unique characteristics of each Tribe and organization. The findings from the Data Collection task will be summarized in Memorandum 3B: Data Collection, which will be available for Research Panel review in late summer 2022.

Appendix D. Memorandum 3B: Tribes and Organizations Engaged in Data Collection

This memorandum summarizes the Tribes and Tribal organizations that participated in the Data Collection and Analysis phase of the Federal Highway Administration's (FHWA) *Transportation Planning in Tribal Communities* study. The study's goals are to:

1. Align planning tools to specific Tribal planning needs;
2. Ensure long-range transportation plans are implementable by Tribal staff; and
3. Link planning phase to project design, construction, and maintenance.

This memorandum describes:

- The 18 Tribes that participated in discussions (including explanations of changes from those listed in Memo 3A);
- The four Tribal organizations that participated in discussions (including explanations of changes from those listed in Memo 3A); and
- Next steps for analyzing the data collected during the discussions.

Tribes Identified for Discussions

The project team held discussions with 18 Tribes during the Data Collection and Analysis task of the *Transportation Planning in Tribal Communities* study. The 18 Tribes represent a diversity of contexts (e.g., geography, size of Tribal membership and landholdings, scale of transportation infrastructure, funds available and resourced for transportation planning. Figure 1 displays a map showing the geographic distribution of the participating Tribes and their landholdings, and Tribal organizations. An online version of the map is available at https://arcg.is/05qyCq.
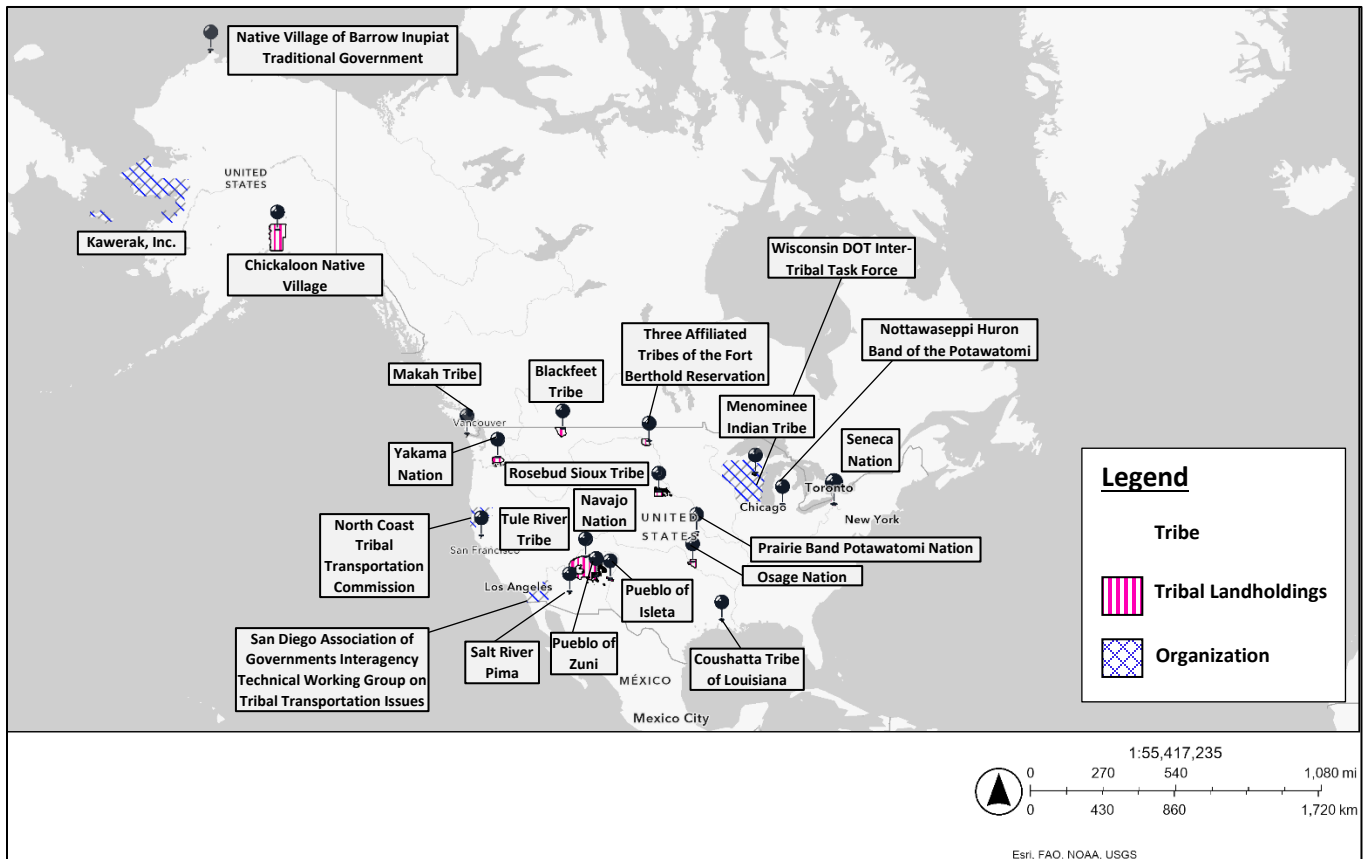
Figure 5. Map of Tribes and Tribal Organizations that Participated in Data Collection. (Sources: Esri; United States Geological Survey; Food and Agriculture Organization; National Oceanic and Atmospheric Administration; U.S. Census Bureau)

Table 1 lists the 18 Tribes with which the project team held discussions in the Data Collection and Analysis task of this research. It lists the Tribes' names, State(s), number of residents, total road mileage, BIA Region, total FY21 Tribal shares (after the 11.1% obligation limitation [OB-LIM]), and the person/entity that recommended the Tribe for consideration. The table is sorted alphabetically by BIA Region.

Tribe	State(s)	Number of Residents	Total Road Mileage	Oversight Agency	BIA Region	Total FY21 Tribal shares after 11.1% OB-LIM	Source
The Native Village of Barrow Inupiat Traditional Government	AK	3,315	17.5	BIA	Alaska	$403,961	BIA
Chickaloon Native Village*	AK	254	334.6	FHWA	Alaska	$754,563	Project team
Osage Nation*	OK	6,027	223.6	FHWA	Eastern Oklahoma	$4,746,838	Project team
Coushatta Tribe of Louisiana	LA	88	20	BIA	Eastern	$270,277	FHWA Division Office (Research Panel member)
Seneca Nation	NY	2,412	135.7	FHWA	Eastern	$985,188	Eastern FLH
Rosebud Sioux Tribe	SD	11,354	313	FHWA	Great Plains	$2,238,837	OTT Tribal Coordinators
Three Affiliated Tribes of the Fort Berthold Reservation (The Mandan, Hidatsa, and Arikara Nation)	ND	6,341	1,041.7	BIA	Great Plains	$1,416,209	FHWA Resource Center and Ron Hall
Menominee Indian Tribe	WI	1,337	336.8	BIA	Midwest	$1,253,589	State DOT Tribal Liaison
Nottawaseppi Huron Band of the Potawatomi	MI	1,500	21.4	BIA	Midwest	$265,754	Project team
Navajo Nation	AZ, UT, NM	173,000	11,288.8	FHWA	Navajo	$51,467,389	OTT Tribal Coordinators
Confederated Tribes and Bands of the Yakama Nation	WA	31,799	148.7	BIA	Northwest	$2,648,523	U.S. Fish and Wildlife and Ctr. for Tribal Transportation
Makah Tribe	WA	1,414	65.9	BIA	Northwest	$388,746	Tricia DePoe, Tribe staff and Research Panel member
Robinson Rancheria*	CA	477	1.8	BIA	Pacific	$144,780	Project team
Blackfeet Nation	MT	10,405	653.2	BIA	Rocky Mountain	$3,182,709	Ctr. for Tribal Transportation
Prairie Band Potawatomi Nation*	KS	747	192.9	BIA	Southern Plains	$551,060	Project team
Pueblo of Zuni*	NM	7,891	434.8	FHWA	Southwest	$2,238,838	Project team
Pueblo of Isleta	NM	3,400	258.5	FHWA	Southwest	$1,416,641	OTT Tribal Coordinators
Salt River Pima-Maricopa Indian Community	AZ	7,386	83.75	BIA	Western	$1,391,391.13	OTT Tribal Coordinators

*These Tribes replaced Tribes that had originally been identified to participate in data collection but were unable to participate.

Table 2 explains how the Tribes that participated in data collection address each of the criteria identified in the study methodology (see *Memorandum 2: Methodology*).

Table 112: Overview of Research Scan Results Across Criteria for Recommended Tribes

Criterion	Outcome Based on Tribes that Participated in Data Collection
State	The Tribes are in 15 States, including two Tribes in Alaska and 16 Tribes in the Lower 48.
Residents	Number of residents in the recommended Tribes range from 88 residents to 173,000 residents.
Landholdings Size	The Tribes' landholdings sizes range from 1.8 square miles to 27,413 square miles.
Road Mileage	The Tribes' total road mileages range from 1.8 miles to 11,288.8 miles.
State Routes	14 Tribes have access to a State route and four do not.
Oversight Agency	11 Tribes coordinate with BIA and seven Tribes coordinate with FHWA on TTP funding.
BIA Region	The Tribes cover all 12 BIA regions.
FLH Division	The Tribes cover all three FLH Divisions.
Climate Zone	The Tribes cover all eight climate zones, as defined by the U.S. Department of Energy.
Urban or Rural	The Tribes include 14 Tribes with lands in exclusively rural areas and four that have portions of their lands in urban areas.
Governance Structure	The Tribes represent a diverse set of government structures, including Tribal councils, Constitutional tripartite (i.e., judiciary, legislature, executive), and parliamentarian.
Consultants or In-House Planning	Nine Tribes use consultants or a combination of in-house planning with technical assistance from a consultant. The other nine Tribes primarily conduct transportation planning in-house, some of which use consultants for engineering and environmental work for projects.
Participation in Metropolitan Planning Process	Four Tribes are in urbanized areas either within or adjacent to MPO planning boundaries. Tribal participation in MPO planning processes range from membership on boards/committees to providing input on regional plans and/or projects and collaboration on transportation projects.
State DOT Tribal Liaisons	12 Tribes are in States that have a State DOT Tribal Liaison.
Newly Federally Recognized Tribes	The Tribes do not include any that were federally recognized in the last 10 years.
LRTP Updated in Last 5 Years	11 Tribes have updated their LRTPs in the last five years, and seven Tribes have LRTPs that were last updated over five years ago.
ERFO Funding	One of the Tribes has received ERFO funding. Additionally, one of the Tribes received a $5.8 million BUILD grant in 2020.
Confederated Tribes	Two of the Tribes are Confederated Tribes.
Nearby Tribes	Most of the Tribes are located near other Tribes, but the Tribes that participated in data collection are not geographically nearby to one another.
Planning Funding Spent (FY19 and FY20)	The Tribes represent a range of transportation planning funds spent in FY19 and FY20. They range from one Tribe spent $0 in transportation planning funds to another spending $3,041,877.
Total FY21 Tribal Shares after 11.1% OB-LIM	Tribal Transportation Program formula funds allocated to the recommended Tribes in FY21 range from $144,780 to $51,467,389.
Total FY21 Tribal Planning Funding after 11.1% OB-LIM	Tribal Transportation Program formula funds allocated to the recommended Tribes for planning activities in FY21 range from $3,290 to $1,169,713.

Five of the Tribes that were identified in *Memorandum 3A: Recommended Tribes and Organizations for Data Collection* declined or were unable to participate in the data collection for this study. The project team attempted to identify Tribes in the same BIA Regions with somewhat similar characteristics according to the study criteria. Table 3 shows a comparison of the identified Tribes that declined or were unable to participate and the Tribes that replaced them. The Tribes that were identified but declined or were unable to participate in data collection are in shaded rows with italic font, and the Tribes that replaced them are in the unshaded, unitalicized rows below each.

Table 12: Comparison of Identified Tribes that Declined or were Unable to Participate and Tribes that Replaced Them

Tribe	State	Number of Residents	Total Road Mileage	Oversight Agency	BIA Region	Total FY21 Tribal shares after 11.1% OB-LIM	Source
Wrangell Cooperative Association	*AK*	*Unknown*	*5.9*	*FHWA*	*Alaska*	*$537,263*	*OTT Tribal Coordinators*
Chickaloon Native Village	AK	254	334.6	FHWA	Alaska	$754,563	Project team
Cherokee Nation	*OK*	*141,000*	*394.9*	*FHWA*	*Eastern Oklahoma*	*$13,699,732*	*OTT Tribal Coordinators*
Osage Nation	OK	6,027	223.6	FHWA	Eastern Oklahoma	$4,746,838	Project team
Tule River Indian Tribe	*CA*	*970*	*13.4*	*BIA*	*Pacific*	*$417,588*	*National Indian Justice Center*
Robinson Rancheria	CA	477	1.8	BIA	Pacific	$144,780	Project team
Kickapoo Traditional Tribe of Texas	*TX*	*918*	*81.9*	*BIA*	*Southern Plains*	*$284,437*	*Project team*
Prairie Band Potawatomi Nation	KS	747	192.9	BIA	Southern Plains	$551,060	Project team
Ohkay Owingeh	*NM*	*6,748*	*63.5*	*FHWA*	*Southwest*	*$542,067*	*OTT Tribal Coordinators and Ctr. for Tribal Transportation*
Pueblo of Zuni	NM	7,891	434.8	FHWA	Southwest	$2,238,838	Project team

Tribal Organizations Identified for Discussions

Table 4 lists the four Tribal organizations with which the project team held discussions in the Data Collection and Analysis task of this research. It lists the organizations' names, State, BIA Region, description, number of Tribes/stakeholders represented, and the person/entity that recommended the Tribe for consideration.

Table 13. Tribal Organizations Engaged in Data Collection

Organization	State	BIA Region	Description	# of Tribes/ Stakeholders Represented	Source
Kawerak, Inc.	AK	Alaska	Kawerak contracts with the State and Federal government to provide services to residents of the Bering Strait Region, 75 percent of whom are Alaska Native Inupiat, Yup'ik, and St. Lawrence Island Yupik peoples. Kawerak assists Alaska Native people and their governing bodies to take control of their future. Programs include education, transportation, natural resource management, and economic development, Kawerak seeks to improve the Region's social, economic, educational, cultural, and political conditions.	20 member Tribal Nations	Project team
North Coast Tribal Transportation Commission	CA	Pacific	The North Coast Tribal Transportation Commission (NCTTC) is comprised of 11 rural Northern California Tribes, primarily located in Humboldt County but with administrative boundaries in neighboring counties. Each Tribe is uniquely different from each other and from other Tribes in the Pacific Northwest. NCTTC is very involved with multiple levels of transportation planning in California.	11 member Tribal Nations	Research Panel
SANDAG Interagency Technical Working Group on Tribal Transportation Issues	CA	Pacific	The Interagency Technical Working Group on Tribal Transportation Issues serves as a forum for regional Tribal governments to discuss and coordinate transportation issues of mutual concern with the various public planning agencies in the region, including SANDAG, Caltrans, the County of San Diego, and the transit operators.	15 member Tribal Nations	OTT Tribal Coordinators
Wisconsin DOT Inter-Tribal Task Force	WI	Midwest	The Wisconsin DOT Inter-Tribal Task Force (ITTF) consists of representatives designated by Tribal leaders and WisDOT. The ITTF is a forum for partners to address long-standing transportation issues faced by Tribal communities.	Represents 11 Tribal Nations	OTT Tribal Coordinators

One of the Tribal organizations that was identified in *Memorandum 3A: Recommended Tribes and Organizations for Data Collection* (United South and Eastern Tribes Inc.) declined to participate in the data collection for this study. The project team attempted to identify an alternative Tribal organization in the same region with somewhat similar characteristics according to the study criteria. Table 5 shows that Tribal organization, plus another Tribal organization that declined to participate, and the Tribal organization that replaced it. The Tribal organizations that declined to participate in data collection are in the shaded rows with italic font, and the Tribal organization that replaced them is in the unshaded, unitalicized row at the bottom of the table.

Table 14: Tribal Organizations that Declined to Participate and the Tribal Organization that Replaced It

Organization	State(s)	BIA Region(s)	Description	# of Tribes/ Stakeholders Represented	Source
United South and Eastern Tribes Inc.	*East/Gulf Coast States, Tennessee, West Virginia*	*Eastern, Southern Plains*	*Non-profit, inter-Tribal organization serving 33 Federally recognized Tribal Nations from the Northeastern Woodlands to the Everglades and across the Gulf of Mexico.*	*33 member Tribal Nations*	*OTT Tribal Coordinators*
Alliance of Colonial Era Tribes	*Massachusetts Rhode Island New Jersey Delaware Virginia West Virginia North Carolina Alabama Louisiana Texas*	*Eastern, Southern Plains*	*A regional league of continuing colonial era historic American Indian Tribal nations of the eastern and southern seaboard of the continental U.S., which have a common history including either colonial treaties, colonial era reservations or designated "Indian towns," enrollment in federal Indian schools or closely associated Indian mission boarding schools, or listing as tribal communities in federal records or reports prior to 1960.*	*13 member Tribal Nations*	*Project team*
Wisconsin DOT Inter-Tribal Task Force	Wisconsin	Midwest	The Wisconsin DOT Inter-Tribal Task Force (ITTF) consists of representatives designated by Tribal leaders and WisDOT. The ITTF is a forum for partners to address long-standing transportation issues faced by Tribal communities.	Represents 11 Tribal Nations	OTT Tribal Coordinators

Next Steps

Following the completion of the data collection phase, the project team will analyze the data and summarize the analysis in *Memorandum 4: Analysis of Planning Tools*. Then, the project team will prepare findings based on the analysis and will document the findings in *Memorandum 5: Findings*. The project team will then prepare a final report that provides an overview of the entire research project that will include recommendations that advance the study goals:

1. Align planning tools to specific Tribal planning needs;
2. Ensure long-range transportation plans are implementable by Tribal staff; and
3. Link planning phase to project design, construction, and maintenance.

Appendix E. Memorandum 4: Key Themes from Data Collection

This memorandum summarizes key points from discussions with Tribes, Tribal organizations, and Federal partners working with Tribes that participated in the Data Collection and Analysis phase of the Federal Highway Administration's (FHWA) *Transportation Planning in Tribal Communities* study. The study's goals are to:

1. Align planning tools to specific Tribal planning needs;
2. Ensure long-range transportation plan (LRTP)s are implementable by Tribal staff; and
3. Link planning phase to project design, construction, and maintenance.

This memorandum summarizes key points that emerged from all discussions during the data collection phase as well as provide analysis that fall under several different themes:

- Tribal/Transportation Context
- Tribal/Transportation Priorities
- Transportation Planning Approaches
- Use of Contractors
- TTIP Development
- LRTP Development
- Planning Processes and Tools
- Transportation Planning Resources Used
- Funding for Transportation
- Partnerships and Engagement
- Resources Needed

Tribal/Transportation Context

This study includes Tribes from a wide range of backgrounds representing different regions, climates, and governance structures. Memo 3B describes in detail basic characteristics of the Tribes that participated in this study (e.g., population size, oversight agency). During discussions with the Tribes, the study team asked Tribes to further elaborate on characteristics of their Tribal lands and transportation infrastructure.

The study included Tribes with both large and small Tribal member populations. Some of the Tribes acknowledged that their rural populations were mainly low-income households that depended on vehicle travel to commute to work. Tribal transportation staff described the challenges related to financing projects due to low tax revenues in rural areas where unemployment is high and tax bases are small.

Tribes' transportation networks serve their own Tribal members and non-Tribal members who either travel through Tribal lands or visit popular destinations, such as casinos or recreation areas.

The size of reservations and/or Tribal lands ranged significantly from hundreds of square miles to hundreds of thousands of square miles. Some Tribes had their Tribal lands "checkerboarded" in a patch work that weave in and out of neighboring non-Tribal communities (Figure 1). According to some of the Tribes that participated in this study, rural Tribal lands are associated with long driving distances. In some cases, Tribal members commute to other cities up to 30 miles away. Tribes in Alaska have greater

distances to cover when traveling to destinations such as regional hospitals. For some Tribes in Alaska, their members need to use air travel to reach critical destinations.

Although many of the Tribes that participated in the study are rural, there are some that are in suburban areas with denser residential development. Some of these Tribes are located near metropolitan areas and are included in metropolitan planning organization (MPO) planning regions.

Many of the Tribes that participated in the study have standard trip generators like grocery stores, government facilities, schools, and community centers that both Tribal and non-Tribal members' use. Some Tribal lands also include sacred areas and ancestral cultural sites that serve as trip generators for pilgrimage and tourism. Tribes' transportation planning processes are designed to respect and avoid disturbing these sites.

Transportation Network Description

Tribes that participated in the study use a variety of different transportation modes and facilities to get around. Some Tribes have their own transit systems that serve both Tribal members and non-Tribal members. Most Tribes reported that personal vehicles are the primary mode of transportation for Tribal members. For some rural Tribes, particularly in Alaska, all-terrain vehicles and snowmobiles are commonly used as personal vehicles.

Figure 6: Example Illustration of Checkerboarding Effect of Tribal, Allotted, and Fee Lands (Source: Indian Land Tenure Foundation)

Rural transportation networks can have long travel times to access services. According to one Alaskan Tribe, it can take up to four hours for Tribal members to travel for necessities. They said transportation facilities are a big cost for the Tribe to build and maintain. Tribal members using the transportation system also pay a high cost depending on how far popular destinations are from one another and whether the road quality damages personal vehicles.

Tribes with noncontiguous territories work with State and adjacent municipal partners to coordinate transportation systems that connect the patchwork of territories. One Tribe has territories that are separated by 50 miles with surrounding county government's capital seat presiding in between the two. Figure 2 shows a map demonstrating how spread out these Territories are. Because of this distance the Tribe's territories coordinates with the county on transit and transportation planning so that Tribal members can get to and from each Tribal territory.

Tribes shared that their roads needed maintenance and they faced significant deferred maintenance backlogs. In one example, a Tribe that participated in the study reported that the cost of repaving roads that are in disrepair could cost $3-4 million dollars per mile, a very large expense for the Tribe. For rural Tribes, many of their roads tend to be gravel and require constant upkeep depending on their usage and climate.
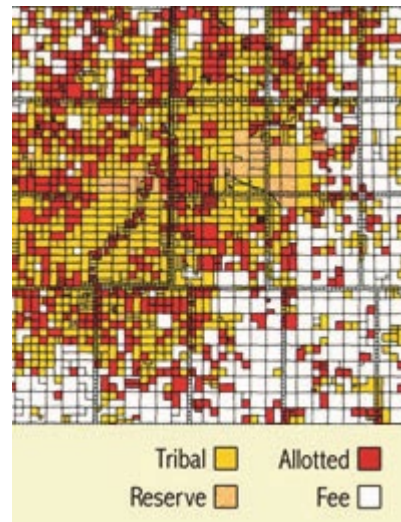
Coordination with Other Road Owners

Tribal lands contain roads owned by Tribes as well as roads owned and maintained by States, counties, and municipalities. Some roads owned by other jurisdictions bisect Tribal lands and function as the main corridor for through and local traffic. Depending on jurisdictional agreements, these roads can be maintained either by the owning jurisdictional partner or the Tribe.
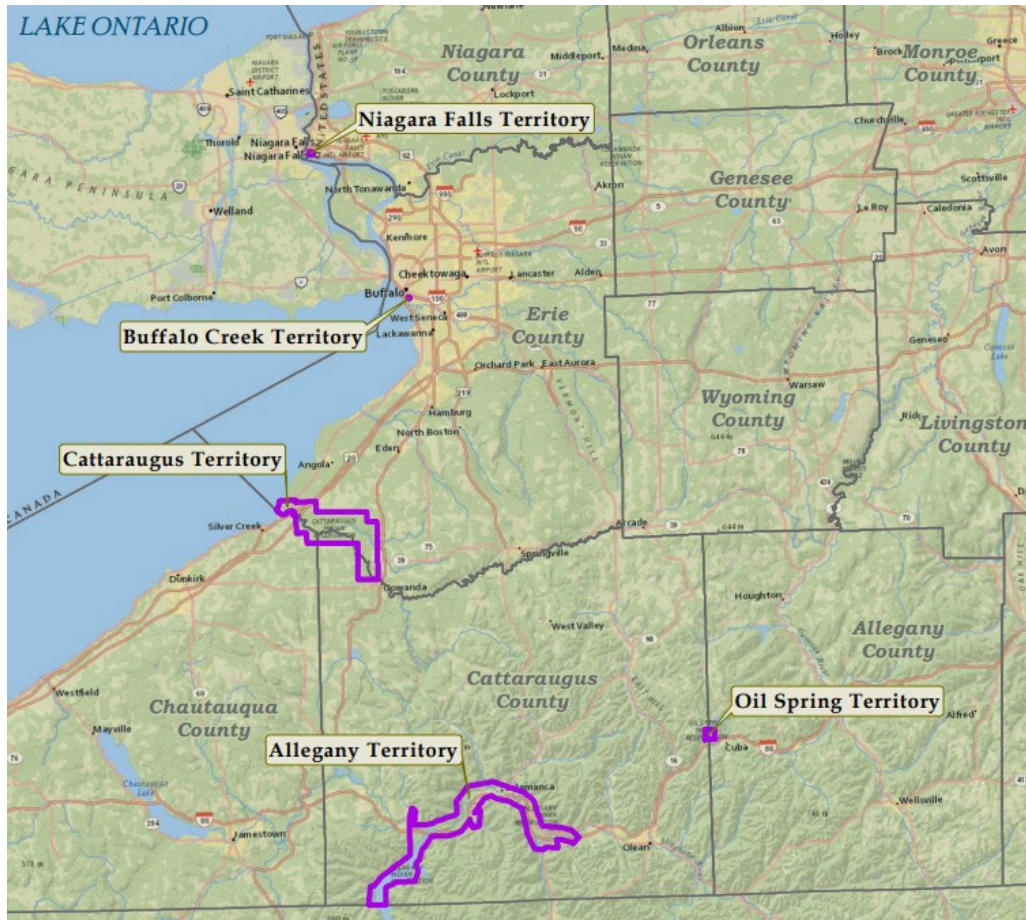

Figure 7: Map of Seneca Nation Territories (Image from Seneca Nation Geographic Information Services)

Transportation Modes

Local and/or Tribal-operated Transit

Several Tribes operated their own transit systems for Tribal and non-Tribal members to use. Some of these transit systems operate all day, while others only operate during peak times to trip generators like a downtown or an office park. Transit systems are important for Tribes with noncontiguous territories that have residents that need to commute from one territory to the other. One such Tribe provides a fixed-route transit service with mile-route deviation and flag service to connect their territories through county lands. Most of the riders are people who cannot drive or own a vehicle. The Tribe is satisfied with the service's ridership and is now working to implement a local circulator within one of their territories.

One Tribe shared the challenges they faced in operating an on-demand transit service. The shuttle operated for several years but was discontinued due to low ridership and staffing challenges. However, Tribal members have access to on-demand ride coordination with local non-Tribal transit services.

Nonmotorized (bicycle and pedestrian trails)

Multimodal pathways are an important element of many Tribal transportation networks. Some Tribes discussed how their Tribal members use nonmotorized trails to move between residential areas and shopping centers. These trail networks can span several miles across a given reservation. Many of the Tribes in the study expressed interest in expanding their trail networks, upgrading walking trails to accommodate bicycling, and adding lighting and other safety measures. However, since many of the Tribes are rural and their population centers are spread out, nonmotorized transportation is not always a viable mode for transportation.

Personal Vehicles

Most Tribes that participated in this study commented that most of their members rely on personal cars to get around. A few Tribes reported that the Tribal members share rides with one another. Some Tribes reported that many members drive long distances to neighboring communities for work.

Other

Several Tribes own and operate other transportation facilities, such as air and water transportation with respective docks and boating facilities on lakes and waterways. Tribes describe the economic significance that fishing and water recreation activities provide and how airports support accessibility to essential travel. Their Tribal lands cover hundreds of miles of land across difficult terrain making road infrastructure unreliable.

Climate Change Impacts on Transportation Investments

Some of the Tribes that participated in this study expressed concerns regarding climate change and its impact to their transportation infrastructure. Some of the Tribes are located at sea level or in low flood plains that put them at risk to flooding. Changing weather patterns place new strains on transportation facilities that place a greater burden on maintenance costs. Tribes are now seeking out information on how to incorporate resilience principles into their planning processes.

Evacuation Routes

Some Tribes are in areas that can experience extreme weather events that could pose a risk to their residents. Tribes in these areas have specialized plans to coordinate emergency response vehicles and identify routes for residents to use when they need to evacuate. One Tribe that is located on the coast described their need for a safe evacuation route. The Tribe is coordinating with the State Department of Transportation (DOT) partners to identify alternative routes for community members to follow to reach higher ground if a storm surge floods homes and the main roadway network.

Tribal Transportation Priorities

A Tribe's culture, changes in leadership, political structure, and surrounding local governments can influence its planning activities or priorities, shaping whether the planning process is reactive or proactive. Transportation planning in Tribal communities is generally driven by broader community challenges and/or events that highlight critical safety and access issues, such as high road fatalities and frequent flooding. Non-Tribal stakeholders discussed how some Tribes begin the transportation planning process with a focus on overall quality of life or by addressing broader community challenges, which allows transportation topics to naturally emerge through these discussions. This section summarizes priorities that Tribes commonly address in transportation planning activities, including safety,

infrastructure, network connectivity, access, congestion, climate change, economic development, and public health.

Safety

Most Tribes that participated in the study identified safety as one of the top priorities for the Tribe. Several Tribes noted how State highways pass through the Tribe's reservations, which creates safety issues for residents due to high speed. Tribes discussed different methods to address safety, which may include identifying and implementing highway, bridge, active transportation improvement projects; providing safe options for youth and older adults to get around; and developing safety plans or conducting Road Safety Audits (RSAs) to assess and address critical safety gaps.

Several Tribes discussed various safety planning approaches including:

- **Coordination of projects to improve safety for vulnerable populations.** Some Tribes focused planning efforts on improving safety, comfort, and mobility for vulnerable populations like children and older adults. One Tribe discussed how all the Tribe's students attend school off the reservation. The reservation has a walking trail that spans much of the Tribal land and crosses another road. The Tribe is installing lighting and signals at that crossing to help with safe pedestrian crossings, since crossing can be dangerous even in a car.
- **Coordination of bridge safety projects.** One Tribe identified a need to replace a bridge and the project was inactive for four years. Prior to construction, the road was failing, and the bridge provided access to community destinations; the conditions were deteriorating, and school buses and snowplows could not drive across the bridge. The Tribe prioritized the project in the LRTP and Tribal Transportation Improvement Program (TTIP), which included dedicated left turn lanes, streetlights, signage, railings, and other safety upgrades.
- **Data collection and analysis to identify safety needs.** Some of the Tribes that participated in this study develop safety plans and conduct RSAs to identify safety gaps, prioritize safety projects, and apply for safety-related funding opportunities to implement safety improvements. Non-Tribal stakeholders highlighted how RSAs are becoming a more common planning approach used by Tribes that have led to successful planning outcomes. RSAs may be used a starting point in the planning process that can help identify or reinforce safety gaps and priorities in the community. RSAs are a valuable tool that can help establish partnerships and leverage funding opportunities by providing evidence to support prioritization in funding evaluations.
- **Developing transportation safety plans.** One Tribe is currently conducting a strategic planning process that is evaluating safe and alternative transportation options for the territory. The grant writer secured safety funds to develop a Transportation Safety Plan (TSP) and conduct an RSA. The TSP identifies safety projects included evaluating the safety impacts of roads that require safety upgrades (e.g., narrow roadways), collecting crash data and traffic counts, coordination with various stakeholders to gather additional data (e.g., police, parish, State), and identified safety goals. The TSP and RSA findings inform LRTP development. The Tribe also uses these processes and their findings to support future funding opportunities and grant applications.
- **Addressing safety through active transportation planning.** One Tribe is planning a bike path to address bicycle and pedestrian safety issues in the community.
- **Addressing safety based on public input.** One Tribe's planning process prioritizes roundabout projects as a safety countermeasure based on community input.

Some Tribes discussed implementing different safety projects, including:

- **Implementing active transportation improvements.** One Tribe identified a need for additional sidewalks and bike lanes on both sides of a roadway located near a dangerous intersection and on hilly terrain, which has led to crashes. There is a high school, grocery store, and businesses in the area. The project was initially identified as a resurfacing project, and the Tribe sought opportunities to improve pedestrian safety, mobility, and connectivity through additional improvements. The Tribe received a Highway Safety Improvement Program (HSIP) grant to design and build a new intersection in coordination with the State DOT. The project included new sidewalks on both sides, bike lanes, safety upgrades (e.g., crosswalks, pedestrian signalization), road and drainage improvements, new culverts, and the removal and burial of power lines. The completed project led to additional improvements, including additional crosswalk facility by the high school and additional signage to improve safety and reduce speeding.
- **Improving road network and traffic signalization.** One Tribe noted that the farming community uses roads in and around the community. Their farm equipment is often involved in crashes, particularly rear-end crashes. The Tribe implemented a project that added a two-way left turn lane, which has helped reduced crashes. In another location where drivers often drove through red lights, the Tribe installed a flashing light 150 yards before an intersection that informed drivers to be prepared to stop. The Tribe indicated that this intervention appears to have reduced accidents, but its effectiveness has not been officially studied.
- **Rehabilitating roadways and bridges to address structural deficiencies.** One Tribe coordinated with Bureau of Indian Affairs (BIA) to prioritize a bridge reconstruction project to address a BIA bridge failure and prevent dangerous emergency situations. The project included rehabilitation of a concrete road with shared pathways on both sides, as well as additional turning and center lanes.

Maintaining Existing Infrastructure

Tribes highlighted a focus on improving and maintaining existing transportation facilities, in addition to building additional roadway capacity. One Tribe distributed a survey when developing its LRTP, and Tribal members identified fixing potholes and improving existing roads and bridges as priorities. Tribes indicated that many of the bridges, culverts, and roadways on their lands are deteriorating or approaching failure due to aging infrastructure, deferred maintenance, and severe weather events. These facilities require significant repairs and maintenance to ensure road safety.

One Tribe noted that a State route in the Tribe's inventory needs repair. The Tribe is looking into alternate routes since existing logging roads on the reservation are not safe for the public to use as an alternative. The Tribe worked with the State DOT to develop preliminary cost estimates and scoping for an alternative route in case the State route goes out completely.

One Tribe recently built a dam at a reservoir and is trying to build up the water system to facilitate new developments (i.e., build transportation infrastructure and water system for new housing projects).

Another Tribe prioritized a drainage improvement project on a roadway that needs major safety upgrades and widening. The Tribe noted that there is significant active transportation activity, commuter traffic, and high potential for wildlife-vehicle conflicts on the road. The Tribe is planning to

conduct an RSA for this road section and coordinate with the State for design of a future roadway improvement.

Several Tribes noted challenges with finding funding to address significant maintenance needs. One Tribe noted that roadway condition and lack of improvements to non-Tribal roadways within three miles of the Tribal lands is a big concern. The county road system is in poor condition, and there is not enough funding for improvements. The Tribe is working with the county to identify priority needs. One county bridge requires replacement and is located near an area used for wild rice harvesting and restoration. The bridge is located upstream and has low clearance, which will need to be raised to improve access to the wild rice. The Tribe uses TTP funding to improve those roads and shares costs with the county. The Tribe identified a need to maintain Tribal roads in the next 5-10 years. The Tribe also identified needs for culvert and bridge improvements.

Network Connectivity

A few Tribes that participated in the study discussed their efforts to better connect roads to other parts of the region and improve wayfinding within the community. One Tribe is installing wayfinding signs and interpretive signs that will promote the traditional names of sites. The Tribe is adding a permanent checkpoint in the community with a visitor center as well as a kiosk and plans to widen the roadway to accommodate these facilities. Another Tribe mentioned how they commonly implement road projects to connect new subdivisions, housing developments, and pedestrian facilities. The Tribe aims to plan for network connectivity but acknowledges that adding sidewalks to every road is not always appropriate.

Access to Opportunities

Several Tribes that participated in the study explained that they prioritize transportation projects that improve access to jobs, schools, and essential services for community members. Two Tribes discussed their separate efforts to improve trail connections in the community. One Tribe conducted a survey when developing its LRTP, which identified a need for trails to increase connectivity. Another Tribe considering building out a trail network to improve pedestrian safety, mobility, and community connectivity.

Other Tribes discussed roadway projects that improve access to opportunities. One Tribe a roadway project that provided land access to 80 Tribal members through construction of a Tribal road on the edge of town. Another Tribe prioritized a roadway improvement project that provides a safe alternative route that improves access to a local mill and shortens travel distances for logging trucks. Some Tribes noted how their residents work or go to school in neighboring communities, and how many of Tribal members live off the Tribe's land but come to it for services. These Tribes highlighted how improving access and getting people to where they need to be is a top priority.

Congestion

One Tribe noted that congestion is a key challenge in their downtown area. The Tribe noted that sport fishing competitions are open to the public and contribute to congestion as the events result in approximate 150,000-200,000 visitors annually. This requires the Tribe to build an additional boat launch to accommodate the additional visitor capacity. No other Tribes raised traffic congestion as a significant challenge or priority.

Climate Change

One Tribe noted that climate resilience and stormwater management are top priorities since the Tribe often experiences major rain events. For example, a 6-inch rainfall can flood lands and wash out roads for two days. The Tribe added that building evacuation routes and raising roads to connect with highways are priority projects. The Tribe's hazard mitigation plan includes transportation considerations. One Tribe added that climate change and severe weather events are further impacting this issue because the Tribe is experiencing more snow and ice than in the past. This involves more snow plowing which may rip up the roads and later require more maintenance. The Tribe spends a lot of time maintaining roads and parking areas. Other Tribes discussed climate change but did not indicate that it was a primary factor for project prioritization.

Economic Development

One Tribe indicated that economic development is one of their focus areas for prioritizing transportation investments. There is a gas station on the reservation that is open to the public and generates tax revenue for the Tribe. The Tribe aims to increase access to the gas station on the reservation to support local economy. Other Tribes discussed economic development, particularly in terms of access to casinos and other businesses but did not indicate that it was a primary factor for project prioritization.

Public Health

Two of the Tribes that participated in the study discussed their efforts to improve the health and wellness of community members through transportation improvements. One Tribe has a trail network with pedestrian bridges that provides safe places for people to walk. The trail system provides access to a greenhouse that is part of the Tribe's harvest land and food sovereignty program. The area serves as a food hub and Tribal members regularly visit it to grow and harvest food sources. The Tribe identified a need to increase active transportation to improve health, mobility, and food access since many Tribal members have high rates of diabetes and other health problems. The Tribe noted that health is identified as a priority area in the Tribe's long-range strategic plan and that the Tribal leadership often prioritizes improvements that lead to positive health outcomes. The Tribe plans to continue building out the trail network and the next project phase will connect the trail system to a future health complex and other destinations. Another Tribe noted how there are a significant amount of dirt roads in the community which can result in dusty conditions and lead to air quality issues. The Tribe prioritizes paving dirt roads to support safe school bus travel, dust abatement, bicycle and pedestrian mobility, and overall livability.

Transportation Planning Approaches

In-House Capacity

The internal capacity of Tribal transportation staff to plan and implement transportation projects varied significantly among study participants. This capacity was contingent on the number of staff devoted to planning and the levels of expertise of that staff. Non-Tribal entities explained that the population size of the Tribe can affect the size of transportation and planning departments. Some larger Tribes have a dedicated transportation department and/or staff planner while some smaller Tribes do not.
Tribes that participated in the study reported having as few as one or two staff members to develop transportation planning and as many as 13 staff members participating in planning. Despite having their own transportation department, one Tribe only has three transportation planners to handle planning for a reservation that is approximately the size of the State of West Virginia. For construction and maintenance, they only have 30 operators on staff. Stakeholders added that Alaskan Tribes and small

Tribes in the lower 48 States have less capacity to plan in-house and commonly work with consultants for planning efforts. In some instances, Tribal staff only have capacity for critical activities. One Tribe shared that it currently has adequate staff capacity for planning and design but has little no capacity for construction.

Some Tribes felt that their staff capacity was sufficient to handle their planning duties. One Tribe shared that they are at full capacity and aim to balance finding more staff to take on existing work without creating new projects. Another Tribe, with a staff of 13, has enough capacity to take on additional responsibilities related to transportation planning such as design and maintenance.

Knowledge, Skills, and Abilities for Planning

Tribal transportation staff have a wide range of knowledge, skills, and abilities that help them perform transportation planning duties. These skills and expertise can sometimes be enough to perform the tasks needed for transportation planning without hiring contractors for additional support. One Tribe has a highly technical staff that can address design and management in-house. The Tribe has taken on a multi-faceted approach to transportation projects. They have a lead engineer and a data manager that assists with collecting data and analyzing it with geographic information system (GIS) mapping applications. Another Tribe has a staff member that identifies planning funds to support safety projects and other funding opportunities as part of their role.

One Tribe also has a well-rounded team approach to transportation activities. The Tribe's Roads Section Manager anchors the team with over 14 years of experience. The manager is involved in the full cycle project of development to include including planning, design, implementation, and maintenance. The manager is assisted by three engineers (which focus on design and construction) and a road maintenance crew. The staff also help to conduct small studies (e.g., stop sign analysis, sidewalk construction). The Tribe sometimes hires consultants for data collection efforts. Often, Tribal governments aim to hire from within their community to provide employment opportunities to their members. Non-Tribal stakeholders reported that many new Tribal transportation planning staff lack professional planning expertise or background in transportation and/or planning. Stakeholders added that limited professional experience and/or limited resources to support workforce development training can lead to knowledge management challenges.

Staff Availability for Planning

The capacity to conduct transportation planning varies by Tribe, which can depend on number of available staff and whether that staff focus solely on transportation duties. Tribal staff that participated in this study shared that they often must share their time and expertise with other departments outside of transportation. These competing priorities often limit their ability to conduct transportation planning. For instance, despite a Tribe having one director, three project managers, and a labor crew consisting of two staff members, the still had difficulty with staff capacity and completing all their tasks and projects due to assisting other departments with non-transportation related projects.

Another Tribe shared that they currently have two transportation planning staff (a manager and an assistant) with competing priorities and duties outside of transportation planning. The manager serves multiple roles within the Tribe as acting director of public works, the airport manager, and transit manager. The team is looking to hire a transportation planner and another administrative assistant to help share responsibilities. Likewise, another Tribe's transportation director has competing priorities and looks for staff and consultant to support projects. This limited the Tribe in what it could accomplish unless it hired consultants to fill the skills gaps. The Tribe has tried to resolve this capacity issue by

including the Tribe's environmental staff with the transportation team. However, those individuals still share responsibilities with other departments requiring environmental expertise.

Staff Turnover

The experience of staff Tribal staff members that participated in this study varied significantly as well. Non-tribal stakeholders working with Tribes reported frequent staff and/or Tribal leadership turnover that limited the experience Tribal staff may have for transportation planning. A Tribe in rural Alaska shared that staff turnover is frequent due in part to staff pursuing higher pay in other jurisdictions. The high turnover can make it difficult to retain important institutional knowledge. To counter this, Tribes shared that they hire consultants to maintain continuity while dealing with turnover. In one instance, a consultant shared that they had worked with three different transportation directors during his time with a particular Tribe.

However, several Tribes that participated in the study had experienced and long-serving staff within their transportation departments. One Tribe's transportation director has held his position for 13 years, and another Tribe's Road Section Manager has worked at the Tribe for over 14 years. In some instances, Tribal staff have considerable transportation planning experience from previous planning positions with other entities in addition to experiences in their current roles. One Tribe explained that one of their former longtime planners of 14 years had also previously worked at the BIA. They brought their understanding of how they BIA functions with them when joining the Tribe. Another Tribe also shared the value in recruiting former Federal employees to their staff. That Tribe had one planner 10 years of Federal transportation experience. Their contribution to transportation planning included historical and institutional information that helped to fill in data gaps with planning for specific infrastructure types.

Difficulty in Hiring

Recruiting staff has been a challenge for Tribes. One Tribe conducted targeted outreach, but prospective candidates do not want to relocate for the opportunity. This challenge has been exacerbated during the pandemic. Another Tribe has also faced difficulty in hiring. The Tribe shared that economic conditions are changing people's expectations of wages and salaries. The Tribe said that it is difficult to raise wages to attract new staff, limiting their pool of prospective employees for planning. Many Tribes are in rural locations with small populations, and the employment pools they can access are limited in size and expertise. To compensate for this, many Tribes rely on consultant to perform transportation planning activities.

Use of Contractors

Most Tribes that participated in the study noted that they contract with consultants to support the planning and delivery of transportation projects, specifically to:

- Collect and analyze data and information necessary for transportation planning;
- Develop transportation planning documents (e.g., LRTPs, safety plans);
- Identify and apply for funding opportunities; and
- Implement roadway projects (e.g., roadway/bridge design, engineering, construction).

Tribes and non-Tribal stakeholders that participated in the study noted that Tribes of varying characteristics typically contract work to consultants to address transportation planning and implementation challenges related to limited staffing capacity and experience in specific elements of transportation planning.

- Some Tribes added that it can be easier to hire consultants than full-time employees since they are contracted to work on specific activities for which the Tribe does not have capacity, or the Tribe may use consultants that have historical knowledge of the Tribe's transportation program.
- A few Tribes maintain an on-call list of consultants they typically coordinate with.
- One Tribe has worked with the same consultant for 12-15 years; the consultant previously worked with a regional Tribal Technical Assistance Program (TTAP) center and supports another federally recognized Tribe in the same region.
- One Tribe noted that their consultant has more capacity and expertise on topics that the Tribe does not have expertise on, such as modeling, data collection and analysis, design, engineering, and construction. For example, a consultant might analyze pavement conditions to determine which roadways need improvements and coordinate with the Tribe to identify transportation priorities based on the assessment.

Non-Tribal stakeholders that participated in the study noted that Tribes may work with consultants to access and analyze the information for LRTP updates, such as data required for the Road Inventory Field Data System (RIFDS). The database includes public transportation related facilities that a Tribes defines as important to their local use and further defines the use of the funding made available through the TTP Tribal Share calculations.

Non-Tribal stakeholders that participated in the study shared that Tribes with varying capacities often contract out the development of LRTPs. When this is done, Tribal planning staff will typically develop and publish a Request for Proposals (RFP). Tribal leadership will approve or deny responses to the RFP. Tribes that participated in the study that use contractors indicated using external consultants from the public, private, and non-profit sectors. Some Tribes work with State, regional, and local agencies to develop their LRTPs. One Tribe contracted a regional planning commission to help develop their LRTP. The regional planning commission provided expertise in transportation planning and other key areas of municipal governance.

Non-Tribal stakeholders that participated in the study discussed how the use of consultants for transportation projects can be an effective way of filling staffing gaps. However, they noted that it can lead to further challenges if there is lack of Tribal direction in consultant activities. Non-Tribal stakeholders observed that some consultants use a standard approach or document templates that are not customized to each Tribe's context. This approach creates similar planning products across different Tribes, which can miss opportunities to incorporate unique Tribe attributes and characteristics. Regarding transportation project implementation, some Tribes that participated in the study indicated that a Tribal transportation staff member typically manages or monitors the contractors' design and construction activities to ensure the work is on track.

TTIP Development

Tribes discussed methods in developing the TTIP. Non-Tribal stakeholders noted that approaches to developing a TTIP can vary, possibly reflecting vague Federal requirements or confusion related to differences in BIA and FHWA Office of Tribal Transportation (OTT) TTIP requirements. Non-Tribal stakeholders observed that some Tribes use the TTIP as a budgeting tool as well as a planning tool. Tribes doing this typically start with project costs and fill in other components later in the process. BIA assists Tribes with their budgetary process using this approach. FHWA OTT helps Tribes plan projects,

identify funding sources, and build Tribes' planning capacity by providing TTIP templates, education, and other resources.

Methodologies For Identifying and Prioritizing Projects

TTIP decision-making within the Tribes that participated in the study is often influenced by the priorities of Tribal leadership (e.g., Tribal Chief, Tribal Council). Tribes that participated in the study discussed different methodologies for identifying and prioritizing TTIP projects, which include direction from Tribal leadership, data analyses, internal discussions with Tribal boards and committees, and site assessments.

- **Coordination with Tribal leadership.** Tribes discussed developing transportation plans to generate a list of priority projects and prepare them for Tribal leadership consideration. Most Tribes that participated in the study present the draft TTIP to Tribal leadership to discuss projects that have been completed, identify new needs, and prioritize all needs. Tribes noted that transportation priorities may shift when changes in leadership occur since the Tribal leadership makes final decisions regarding investments.
- **Coordination with internal Tribal departments.** Some Tribes that participated in the study coordinate internally with staff to identify and prioritize projects. One Tribe noted that the draft TTIP is sent to the Tribe's Community Development Committee and the Tribal Legislature for review and approval. The Tribal Legislature creates a resolution stating what was approved. Another Tribe noted that the Tribe's transportation director has prioritizes projects. Once the TTIP is drafted, the director reviews the draft TTIP with the Tribal Chief, who provides input.
- **Coordination with the broader community.** One Tribe discussed how transportation projects are identified first through a public meeting process, then prioritized by Transportation Committee members, and then finalized by the Tribal Council. Transportation staff may provide input to committee and Tribal Council members to ensure identified projects are feasible or align with overall priorities. Another Tribe discussed how community support can sometimes inform Tribal leadership on TTIP project prioritization.
- **Identify needs through data and analysis.** One Tribe noted that the TTIP and LRTP allows them to address priorities that have been informed by data and logic, rather than addressing issues as they arise.
- **Identify needs through field assessments.** One Tribe noted that Tribal staff and leadership drive around the reservation to observe facilities need updating and identify problem areas.
- **Identify needs based on funding availability.** Other project selection methods may depend on how much funding is available since some projects may take multiple years because funding is not available or limited.

Public Involvement

- **Targeted outreach to community stakeholders.** One Tribe conducts targeted outreach and directly invites specific stakeholders in the community (e.g., senior center users, school principal) to planning meetings to share input. Tribal Staff also use newsletters to convey information to members broadly.
- **Meetings with Tribal leadership and community members.** One Tribe conducts quarterly meetings with Tribal members and weekly Tribal Council meetings. During the membership meetings, the public helps to inform the team on issues and needs. Membership meetings are on Saturdays to enable as many members as possible to attend. The Tribal staff offer members a

stipend for gas to travel to the meetings to increase participation. Another Tribe hosts regular quarterly membership meetings where they receive public input on different topics, including transportation. During these meetings, each administrative department sets up a table to engage with members through discussion or sometimes questionnaires.

- **Participation in meetings with local stakeholders.** One Tribe attends County commissioner meetings to identify transportation priorities and gather input on potential projects.

Value of the TTIP Process

Tribes discussed how the TTIP process helps to define the Tribe's transportation needs. Tribes noted that the TTIP process provides a mechanism to coordinate with Tribal leadership on priorities and involve the community in the planning process. One Tribe noted that the TTIP is a valuable process to communicate investments to community. The Tribe presents the TTIP at Tribal Council Business Meetings and walks leadership through priorities, funding levels, and how the planning staff plan to get to that level. One Tribe noted that they find the TTIP process to be useful for budgeting.

LRTP Development

Tribes that participated in the study discussed using a variety of approaches to develop and utilize their LRTPs. Some Tribes have the in-house capacity and expertise to develop or update their own LRTPs, while other Tribes rely on contractors or external partners, as discussed earlier. There are also some Tribes that do not have LRTPs altogether or that have not updated their LRTPs in several years. Tribes are using LRTPs to:

- Better understand their own transportation systems;
- Identify and prioritize projects and programs based on a cohesive set of goals; and
- Communicate project justifications to the public, external partners, and internal agencies.
- Ensure inclusivity and meet federal requirements.

Methodologies for Identifying and Prioritizing Projects

Tribes use LRTPs to define a methodical approach to developing and maintaining their transportation systems by identifying and prioritizing critical projects. The most common ways Tribes that participated in the study did this were:

Using internal and external transportation planning documents to inform LRTP development.

- Planning documents (e.g., road safety audits, safety plans, long-term strategic plans) help to identify and prioritize projects.
- Strategic plans help Tribes incorporate Tribal priorities and goals that may be related to transportation, such as health or recreation, but nevertheless play an important role in transportation planning.

Tribal leadership help to identify and prioritize transportation goals within the LRTP using their experience and insight on the community.

- Tribal leadership and entities that inform leadership (e.g., committees) play a critical role in guiding and approving LRTPs.
- For many Tribes, Tribal leadership input during LRTP development is incredibly helpful because their insight can be an extension of their constituents' needs.

- Leadership of Tribes that participated in this study reviewed documents, listened to presentations from transportation staff, and sometimes toured prospective project sites.

Public involvement provided input to guide the vision of Tribal LRTPs and prioritize transportation goals.

- Tribes gather public input in a variety of ways, including surveys, online and in-person meetings, and informational booths at community events.
- Both Tribal members and non-Tribal stakeholders are engaged during the development of LRTPs.

Public Involvement

Tribes that participated in the study used several public involvement approaches to inform the development of their LRTP. These approaches include surveys, public meetings, and stakeholder engagement meetings to identify key issues or to gather input on potential projects.

- Face-to-face engagement between Tribal transportation planning staff and community members is an important method for gathering public comments for many Tribes that participated in the study. Some Tribal staff post bulletins and ads in the local newspaper get the word out on when public meetings to discuss LRTP development would occur.
- The locations of public meetings would be in places the community already frequented, such as community centers or Tribal casinos. In one example, Tribal transportation staff visit a community member's home who would host their neighbors to learn about the LRTP development process. To encourage attendance, some Tribes provide food, raffles, and door prizes at these gatherings.
- During in-person public meetings, Tribal staff explain the LRTP development process and sometimes use maps and graphics to display transportation data and information. One Tribe shared that planning staff presented attending community members with a list of potential transportation investments and asked participants allocate limited funding to address their priority needs. The exercise helped transportation planners better understand the priorities of the community to incorporate into their LRTP.

The pandemic prevented Tribes from hosting in-person public meetings. To overcome this, some Tribal planning staff held virtual meetings, many of which were successful in gathering community input. Additionally, many Tribes that participated in the study noted that their Tribal Councils now broadcast their meetings online. Virtual public engagement can be limited in Tribal contexts as Tribes that participated in the study noted that some community members do not have internet or prefer to engage in person.

Some Tribal transportation planners expressed that there is a constant need to disseminate information on the planning process. One Tribe uses newsletters to convey information to members via mail and email.

Value of the LRTP Process

Tribes that participated in the study noted that having an approved LRTP, and the process of developing an LRTP, was beneficial to their staff, the public, and Tribal leadership.

Many Tribes use their LRTPs as a roadmap to follow in achieving their transportation goals.

- One Tribe acknowledged that, before the Tribe had an LRTP, they were mostly reactive in addressing transportation needs. Now with their LRTP acting as a road map, the Tribe is more successful in proactively accomplishing longstanding transportation goals.
- LRTPs provide institutional knowledge that can help staff understand priorities and goals that may have been established before they started working in transportation.

Tribes that participated in the study use their LRTPs to increase awareness of transportation needs and priorities among their internal departments, external partners, and the public.

- Some Tribes that have Tribal lands or population areas that are spread out note that having a LRTP helps Tribal transportation staff see how these lands and populated areas connect with one another.

Tribes that participated in the study also noted that the LRTP also provides sound logic and data to help Tribal staff advocate for specific projects and policies.

- In one example, a Tribal transportation planner needed a special approval from a separate department to build a road facility in a residential area. The safety data included in the LRTP demonstrated that the project would fit with the Tribes strategic goals. The planner received permission to continue with the project's development thanks to the LRTP clearly demonstrating that it was a priority.

Tribes also use the public involvement process of developing the LRTP as a "public mandate."

- A public mandate allows staff to feel confident in that their planning decisions represented the community's needs and wishes. This mandate helps to strengthen business cases when Tribal staff needed to coordinate with external partners or apply for funding.

However, not all Tribes found the LRTP to be beneficial. One Tribe expressed that they experienced a low return on the LRTP considering how much effort the Tribe put into creating and maintaining it. This Tribe shared that they did not have a need to plan for additional roadways or need to create access to new trip generators. The Tribal planner explained that the Tribe receives little funding for creating and maintaining their LRTP, which meant the costs outweigh the benefits. Another Tribe found their LRTP to be too complicated to be used as a tool for articulating priorities to the public.

Nevertheless, most Tribes that participated in the study noted that the LRTP helped them prioritize projects and articulate important information about their transportation systems to the public and key partners. It helps articulate how they prioritize projects that the public cares about.

Planning Processes and Tools

Tribes that participated in the study conducted a variety of transportation studies to inform the transportation planning process and to complement their LRTPs. These plans include variations of master plans, road safety audits, transportation safety plans, and bicycle and pedestrian plans. These plans and studies provide data that the Tribes can use to identify and prioritize projects.

Master Plans

Master plans, also referred to as strategic plans, are planning documents that provide an overall vision for Tribal government departments and staff to reference when drafting and implementing their own

specific planning documents. These overarching plans typically capture shorter time horizons (e.g., five-year business cycles) and bring in perspectives and initiatives covering every aspect of government activity, including transportation among many other topics. Some of the Tribal transportation departments that participated in the study use their Tribes' master plans to guide the development of their LRTP as well as to prioritize projects.

One Tribe has added strategic planning to the forefront of all the Tribe's transportation planning activities. This approach also brings several other Tribal departments to the table to discuss transportation needs in relation to their own needs. This allows the transportation department to consider input on service, culture, and the environment from key partners, as well as the public, that could be incorporated into transportation planning.

Master plans can also help incorporate the Tribe's overarching principles into transportation planning. One Tribe organizes the transportation strategic goals by the Tribe's focus areas, which are considered for any critical planning document in the Tribe. The transportation department must consider strategic practices like governance, communication, flow of administration, and financial monitoring when developing their LRTP.

Road Safety Audit

RSAs are safety performance examinations of an existing or future road or intersection by an independent, multidisciplinary team. The analysis helps Tribes identify the issues or investigate further any issues already identified in an LRTP or safety plan. RSAs can provide leadership with opportunities to observe transportation safety issues first-hand. Many of the Tribes that participated in the study had conducted or were in the process of conducting an RSA.

One Tribe has conducted several RSAs, which were initiated after Tribal transportation staff surveyed road facilities and engaged with the community. To initiate an RSA, this Tribe first identified high-traffic areas by analyzing average daily traffic (ADT) on Tribal roads which helped to prioritize areas where crashes may be more likely due to higher volumes. Then, the Tribe analyzed the infrastructure and the geography of areas with high ADT. One area had deep ditches along the roadway shoulder with no guardrails to prevent vehicles from landing in the ditch. This initial analysis contextualizes a safety risk, which the Tribal transportation staff can use justify conducting an RSA.

Tribes also used RSAs to justify funding requests and strengthen grant applications with detailed information about safety risks. For instance, one Tribe had a high-traffic intersection adjacent to a housing development with no pedestrian crossing. The Tribe conducted an RSA to identify specific safety improvements to the intersection. Once completed, the Tribe provided the RSA results to the State DOT to justify a request for funding. The results painted a picture of the intersection's safety issues, informing the State DOT's decision to approve funding to design improvements.

Transportation Safety Plan

A TSP is a comprehensive, systemwide, multimodal, proactive process that integrates safety into surface transportation decision-making. Safety plans can be data-driven with data collected by transportation staff (or their consultants) or gathered from incident reports created by local police. Some of the Tribes that participated in the study have conducted and implemented safety plans. Some of these safety plans were developed at the direction of the Tribal government and others were developed due to public demand.

Tribes that participated in the study reported that the information provided by a safety can help to guide a Tribe's transportation decisions. In one case, a Tribe used data and information from its safety plan to prioritize the development of a second boat launch with access to their downtown to alleviate congestion. Another Tribe used its safety plan to identify safety concerns (e.g., sidewalk network gaps), high-risk areas (e.g., school zones) and high-crash locations and around their lands.

Some of the Tribes incorporate their safety plans into their LRTP. In one case, the data from the Tribe's safety plan informed the designation of 10 emphasis areas for safety improvements in the LRTP. The Tribe then identified projects in the LRTP to address these emphasis areas based the data in the safety plan.

In some instances, Tribes that participated in the study hired consultants to collect safety data and draft the report. Tribes using consultants explained that they needed them because of staffing limitations, gaps in in-house expertise, or a combination of both. Consultants also assisted Tribes with coordinating with external partners like State DOTs or MPOs on collecting and analyzing data.

Bicycle and Pedestrian Plan

A few of the Tribal participants had developed bicycle and pedestrian plans to better understand how Tribes get around and could get around without vehicles, and to identify improvements to bicycle and pedestrian networks. For one Tribe, the bicycle and pedestrian plan helped to identify opportunities for sidewalks and pedestrian crossings in high-traffic areas. Another Tribe dedicates an entire section of its LRTP to bicycle and pedestrian infrastructure. By including bicycle and pedestrian projects in the LRTP, the Tribe can better integrate those facilities with other transportation infrastructure that may get more emphasis such as roads or intersections.

Measuring the Effectiveness of Planning

The study team asked Tribes that participated in the study how they measured the effectiveness of their planning processes and planning development. Many of the Tribes responded that they measured success by how many transportation projects they completed. One Tribe explained that the successful implementation of a project was contingent on an effective planning process. When the Tribe communicates the success of a project, it often cites how important the planning staff's contribution was. Another Tribe measured their success by determining whether projects met the Tribe's strategic goals. This Tribe emphasized the importance of communication between the transportation department and the Tribal Council to ensure their projects were aligned with strategic goals.

Other Tribes measured success by how effectively they used the funding they received for planning and implementation, and how that funding matched with their specific project priorities. One Tribe explained that if their necessary projects were moving forward with the given funding, then the process was working. Another Tribe explained that obtaining grant funding demonstrated that their data collection and analyses were a success.

Transportation Planning Resources Used

Tribes that participated in the study discussed the resources that they commonly use to support transportation planning and implementation, including data collection methods, GIS analysis and

mapping, participation in Tribal organizations, Federal and State resources and templates, and community engagement methods.

Data Collection

Tribes use a variety of data and information to inform transportation planning, decision-making, and implementation. However, many Tribes that participated in the study also indicated challenges to obtaining necessary data and information, which sometimes limits their ability to conduct effective transportation planning or apply for funding opportunities.

Non-Tribal stakeholders that participated in the study discussed how data collection poses a challenge for many Tribes. Non-Tribal stakeholders noted that Tribes may find it challenging to collect and analyze RIFDS data, which can be limited or inaccurate in some areas; RIFDS also requires Tribes to go through protocols to access the data. Although there is variety of external resources, including GIS training from non-profits and data collection consultant services, many Tribes rely on anecdotal information about their transportation systems to inform planning decisions. Non-Tribal stakeholders noted constraints impeding Tribal efforts to obtain data, which include limited opportunities to share information between agencies, limited Tribal staff capacity to collect and analyze data, and language barriers preventing the translation of information.

Tribe-Led Data Collection

Several Tribes that participated in the study discussed their approaches in coordinating internally with other staff departments or boards and committees to collect data for transportation planning. Some Tribes noted that their law enforcement or highway patrol typically collect safety data on roadway crashes. Additionally, other Tribes noted:

- Local departments do not have access to traffic and safety data that is collected by law enforcement; however, staff are looking to create an internal tracking system that is integrated with the police database. In the past, the Tribe had to visit the police departments and review hard copy documents of crash reports to help identify traffic issues.
- They work with local police in collecting the crash data, which helps to complement the Tribe's transportation department's crash data collection efforts.
- They use a combination of crash data from a local emergency services database in addition to anecdotal knowledge to identify areas of safety concern.
- Tribal law enforcement collects crash data, although the information is not always complete. Some crashes go unreported, and sometimes officers or drivers do not fully fill out reports. As a result, crash report data is not always consistent.
- Local police maintain crash data; however, the data systems have not been updated since 2015.
- They receive data on traffic volumes from the county.
- Crash data collection continues to be a challenge for transportation planning due to the number of non-licensed or uninsured drivers in the community. The Tribe noted that most crash incidents are not reported for several reasons. Impaired driving has been a big issue for the community and incidents caused by it may not be recorded due to drivers fleeing the scene. The State highway patrol responds to crashes on the State highway system and adds them to the Statewide incident system. If crashes are reported on the State highway within the reservation, it is the highway patrol's responsibility to process the information.

To help address data challenges or gaps in information, many Tribes rely on anecdotal information about or knowledge of their roadway networks from Tribal members, including condition, traffic volume, speeds, and safety. Non-Tribal stakeholders noted that observational and anecdotal data is not compatible with data requirements for Federal funding opportunities. Non-Tribal stakeholders acknowledged that lack of data or evidence to support anecdotal information can pose challenges for Tribes when preparing data-driven grant applications. This can also create challenges for States and Tribes to promote transportation needs to practitioners and decisionmakers that rely on quantitative evidence to inform decision-making. Language barriers can present obstacles to translating information about the community, especially for Tribal elders that only speak the native language and have historical knowledge of the lands. It can be difficult to convey and translate transportation concepts if there are no equivalent terms in the native language.

State Data Resources

Tribes may also work with State DOTs to obtain data as part of planning. States may either have the data readily available or can work to generate the data for Tribes (e.g., traffic counts, speeds). A few of the Tribes noted coordination with States to gather traffic and safety data to inform transportation planning. Some Tribes discussed receiving ADT and crash data from State DOTs to identify priority locations and justify short- and long-term funding needs.

Third-Party Data

Some Tribes that participated in the study hire consultants and/or university partners to collect the data and information necessary for transportation planning. Two Tribes discussed using third-party tools built by universities in their transportation planning efforts. For example, one Tribe is working with the University of Washington as part of a U.S. DOT Safety Data Initiative grant to compile data for crash "hot spots" and create a data portal to assist with crash analysis. Another Tribe noted that they typically need to request for safety data from the State but can also access the data through the Transportation Injury Mapping System (TIMS), which is managed by University of California. The Tribe added that the TIMS contains the same data as the State's system, but with a two-year lag.

GIS Analysis

Non-Tribal stakeholders that participated in the study noted that several Tribes use GIS to some extent in their transportation planning processes. Often, Tribal staff GIS specialists work on projects for several different Tribal departments, such as historic preservation, public works, and community development, in addition to transportation. Using GIS for transportation planning is not always a priority and specialists are not necessarily trained specifically on transportation planning. One Tribe received a grant to develop a GIS mapping system for all departments in coordination with a university as part of a grant project.

FHWA and BIA Technical Assistance

Tribes that participated in the study discussed ongoing coordination with FHWA and BIA staff to discuss transportation needs, review draft transportation planning documents, identify funding opportunities, and share relevant resources. Non-Tribal stakeholders highlighted several Federal resources that are available to support Tribes in transportation planning and implementation, such as the Reservation Road Planner Game, FHWA OTT document templates, step-by-step instructions in the FHWA TTP Program Delivery Guide, FHWA Tribal Transportation Planning Modules, and National Highway Institute training courses.

Tribes that participated in the study did not discuss use of LRTP or TTIP planning templates provided by FHWA or BIA as part of their planning processes. As described earlier, most Tribes develop their LRTPs and TTIPs by updating the prior version themselves, or through direct assistance from Federal staff and/or consultants. Several Tribes noted that BIA roads office staff often provide technical assistance to ensure LRTPs and strip maps are accurate. Some of the challenges that non-Tribal stakeholders observed Tribes facing include the inflexibility of TTIP templates and limited information about how to use the templates. Stakeholders added that FHWA TTIP templates are available but they are not tailored to individual Tribes or specific needs.

Tribes that participated in the study indicated needing more direction or defined requirements of what information should be included in LRTPs and TTIPs. Some Tribes noted that, currently, there are no defined requirements and limited direction from FHWA that impacts their ability to better plan and implement TTIPs. The two agency approaches differ with FHWA OTT creating an environment for Tribes to be self-sufficient while BIA may be more direct with assistance and requirements.

Community Engagement Processes

Some Tribes discussed developing public engagement tools, such as surveys, social media, and visualizations, to share and collect information from community members.

- One Tribe noted challenges with in-person participation at public meetings since COVID-19. To address this gap, the Tribe developed a survey and used an off-the-shelf electronic product to collect information as part of its LRTP development. The Tribe also uses social media outreach and other innovative outreach (e.g., quick reference (QR) codes on maps) to disseminate project information.
- One Tribe discussed how they use ArcGIS story maps and data to help convey the context of their transportation network to the community.
- One Tribe noted that there are multiple villages within the Tribe and staff make every effort to engage with all residents during the transportation planning process.

Funding for Transportation

This study explored how Tribes acquired and used funding for transportation planning and project delivery. Tribes shared their experiences in applying for grants, using TTP funding, and leveraging other sources of funding.

TTP Funding

Some of the Tribes that participated in the study shared their experiences using TTP funding to pay for transportation planning, project development, and project implementation. Some Tribes have applied for TTP Bridge Program funding to fund the planning, design, and construction of bridge improvements.

Federal Grants

Almost every Tribe that participated in the study received one or more Federal transportation grants or was working towards applying for one. The types of Federal grants mentioned covered a wide range of planning and development activities.

- Many of the Tribes have pursued or are pursuing Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants, or Better Utilizing Investments to Leverage Development (BUILD) or Transportation Investment Generating Economic Recovery (TIGER)

depending on the year, for projects like evacuation route planning or roadway reconstruction. These projects typically are already on the Tribe's transportation priority list.

- Some Tribes also acknowledged that they received Coronavirus Aid, Relief, and Economic Security (CARES) Act funding. One of the Tribes used their CARES Act funding to fund transit operations during the pandemic when ridership significantly dropped due to health and safety concerns. Other significant grants that Tribes pursued include the Rural Surface Transportation (RURAL) grants for roadway and bridge improvements as well as the U.S. DOT Safety Data Initiative grants.
- Several Tribes leverage opportunities with external partners to gain access to additional funding to transportation related activities. By partnering with other entities Tribes gain access to funding to finance grant matches. After partnering with a neighboring community, one Tribe was awarded bridge grant funds and streetscape grant funds.

Leveraging Non-Transportation Funding Sources

Some Tribes that participated in the study met non-Federal match requirements of grants by leveraging funds from other sources. These sources include self-governance funding through the BIA, TTP funds, gas taxes, casino revenue, State grants, and local college contributions. Some of these sources are dedicated to transportation planning and capital improvements. For one Tribe, a portion of their regional tax revenue was dedicated to transportation planning.

Lack of Quantitative Data Required for Applications

Some Tribes had difficulty in applying for specific grants for a variety of reasons, including a lack of sufficient quantitative data to justify a project's need.

- This limits Tribes' abilities to apply for and receive grants. One Tribe reported applying for a Federal grant to help pay for roadway widening projects, but failed to secure the funds because the safety information was based on qualitative anecdotal evidence.
- Some Tribes that participated in the study noted that the eligibility requirements of some grant programs make it difficult for rural Tribes to apply. One Tribe explained that a grant application required a benefit cost analysis of the project, and given the low volumes served by the project, it would not meet minimum requirements for funding.

Lack Shovel-Ready Projects

Tribes noted that some grant programs, like the RAISE grant program, can seem out of reach to Tribes that do not have projects that fit the notice of funding eligibility requirements.

- Some grants require projects to support regionally significant routes, which many Tribes do not have.
- Many grants require "shovel ready" projects that are far enough along in their planning and development phases that they can be implemented quickly. Tribal participants reported that this requirement could be difficult to meet due to their limited resources, staff, and funding.
- Several smaller and rural Tribes noted that they had difficulty in securing funding to match the grants they were eligible for. This made them less likely to apply for grants in the future.

Perception That Likelihood of Receiving Grant is Low

Some Tribes that participated in the study noted that they were reluctant to apply to certain grants because the process was perceived to be too competitive on the national level. They expressed that it would be a waste of their limited time and resources to apply since they perceived the likelihood of

receiving grant funds to be very low. This was true for small rural Tribes that knew they would be competing for Federal funds against larger metropolitan areas. A few of the Tribes that applied for and did not win RAISE grants felt as if Tribes were at a disadvantage for receiving grant funding.

TTP Funding Formula

Most of the Tribes that participated in the study noted that they use all the TTP funds set aside for planning for their Tribes. This planning set aside supports development of LRTPs and updates to a Tribe's inventory data. The planning set aside is important for several of the Tribes that participated in the study because their transportation departments do not receive any funding from their Tribe's general fund for planning activities.

Two Tribes shared concerns about how the formula for allocating TTP funding among federally recognized Tribes. The formula considers a Tribe's transportation inventory, which can include Tribal routes, local routes, county routes, and State routes. However, the Tribes noted that the formula does not consider State routes and new roadways that are added to the inventory. Because of this, the Tribes have noticed that other Tribes do not always update their inventory. One of the Tribes concerned with the formula has an additional 5.5 miles of gravel routes that are on the inventory but are not considered in the formula for funding. The Tribe wants new roads that are added to the inventory to be considered in the formula so that they receive funding to cover planning and maintenance of those facilities.

State, Regional, and Local Funding

In addition to pursuing Federal funding opportunities, Tribes that participated in the study also apply for State, regional, and local funding opportunities (most commonly grants).
- Most Tribes pursued State and local funding to fund projects or match Federal grant requirements.
- However, in Montana, Tribes may benefit from a service fee imposed on contractors working on State road projects, which the State administers. The service fee is administered by the State and Tribes are required to show how funds are spent. Once the Tribe receives the funding, the funds are non-discretionary and can be used for projects that cannot be funded with TTP funds. Service fee funds are a vital revenue source for Montana Tribes' transportation programs. For the Montana Tribe that participated in the study, their staff aims to use the funds from the service fee to increase access for underserved populations (e.g., older adults).
- Innovative tax revenues can also directly fund Tribal transportation planning. A rural Tribe receives local municipality tax revenue from the oil industry. This funding can help Tribes fund roadway maintenance on roads that are damaged by large equipment of oil and gas companies may use to access oil and gas wells.
- Some of the Tribes that participated in the study are within an MPO planning area. MPOs can fund priority projects that meet Tribal needs.

Tribal Funding

Tribes have general funding that they may choose to allocate to transportation planning, project development, or project implementation. However, the amount of general funding as well as the revenue sources vary by Tribe.
- General funding can fluctuate depending on economic circumstances. Some of revenues for the general fund came from casino revenue, fuel excise taxes, sales taxes, tobacco taxes, and room occupancy excise taxes.

- Many of the Tribes that participated in the study have casinos on their lands and used a portion of the casino revenues to fund projects in their LRTP. For one Tribe, their transportation planning department received minimal general funding because their casino shut down during the pandemic. Since the reopening of the casino, the Tribe has not resumed previous funding levels towards transportation.
- In contrast, other Tribal transportation departments receive larger portions of their general fund. One Tribe's newly developed road maintenance department received 25 percent of their Tribe's general revenue.
- At least one Tribe has staff dedicated to pursuing grant funding for all Tribal activities. Their grant writer helps transportation staff identify and apply for funding opportunities.

Other Funding Challenges

Funding challenge cited by Tribes that participated in the study included the difficulty to navigate BIA's Control Schedule/Transportation Improvement Program System (CSTIPS). Tribes expressed difficulty in reallocating funds of older transportation projects to newer ones.

In general, Tribes stressed that the small amounts of funding they receive does not address all their needs. They are having difficulty in advancing new projects with the little funding they have as well not being able to address deferred maintenance.

Partnerships and Engagement

All Tribes that participated in the study discussed coordinating and engaging with Federal, State, regional, and local agencies, as well as internal Tribal departments and other subject matter experts as part of their transportation planning activities. The Tribes described the support they receive through these partnerships, how they participate in other agencies' planning processes, and the opportunities provided through these relationships.

Tribal Sovereignty Impacts

Tribes that participated in the study discussed Tribal sovereignty as a key principle that informs Tribal transportation planning.

- Some of the Tribes that participated in this study were concerned that their sovereignty may be infringed upon under certain agreements with other governments.
- One Tribe's constitution explicitly states that sovereignty must not be given up, which limits the scope and types of agreements that the Tribe can enter with other jurisdictions involving right-of-way.
- One Tribe noted that they primarily conduct transportation planning in-house and aim to plan in-house where possible due to their sovereignty. The Tribe noted that they have enough staff capacity to address transportation needs, including a range of in-house expertise on different transportation topics and staff can fill in for each other as needed.

Non-Tribal stakeholders that participated in the study also recognized Tribal self-governance and self-determination as key elements of successful planning and implementation outcomes. One of the stakeholder's work emphasizes the Federal trust responsibility,[51] which refers to the Federal

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[51] U.S. Department of Health & Human Services, Administration for Native Americans, American Indians and Alaska Natives, https://www.acf.hhs.gov/ana/fact-sheet/american-indians-and-alaska-natives-trust-responsibility

government's legal obligation to "respect Tribal sovereignty, support Tribal self-government and economic prosperity… and ensure the survival and welfare of Indian Tribes and people." Stakeholders added that Tribes are more likely to engage in planning and implementation with other agencies if there are established relationships built on trust and respect. Stakeholders observed that effective planning and implementation approaches include processes that respect Tribal history, culture, and native Tribal languages such as through discussion forums in which Tribes lead the discussions, providing space for storytelling and active listening.

Coordination with States

Non-Tribal stakeholders noted that Tribes may work directly with State DOTs through statewide technical assistance programs. Tribes may also contract with State DOTs to implement transportation projects or coordinate with State DOTs to hire consultants for project support. State DOTs may collaborate with Tribes as a partner during the planning process, but generally do not influence Tribes' project prioritization processes. Tribes may enter into agreements (e.g., Memorandum of Understanding, Memorandum of Agreement) with State or Federal agencies to outline protocols for partnerships and collaborative planning efforts. These formalized documents support project and program continuity, which help with knowledge management for new or future Tribal staff.

Tribes that participated in the study discussed how they regularly coordinate and maintain open communication with States on Tribal transportation needs and projects. Activities that Tribes commonly mentioned collaborating with States on include supporting the development of the Statewide Transportation Improvement Program (STIP) and receiving information from State DOTs on funding opportunities. One Tribe noted that their staff participation in statewide processes has helped the State prioritize project that benefit the Tribe. Examples of coordination with Tribes include:

- **Identify Tribes' transportation needs on State highways.** Tribes with State highways that traverse their lands noted that any proposed improvements on a State highway requires significant coordination with the State. One Tribe mentioned they are working with the State to add advanced warning signs and safety measures on a State highway.
- **Assistance with developing grant applications.** A regional Tribal organization noted that a transportation agency in its State often meets with Tribes to review elements of a grant application at a high level. However, the organization noted that this support is generalized and does not address Tribes' specific project needs or project applications.
- **Regular coordination meetings with State partners.** One Tribe noted that they work with the State DOT to discuss the Tribe's transportation needs and Tribal sovereignty.

Participation in Tribal Organizations and Committees

Tribes and Tribal organizations that participated in the study discussed how Tribal participation in Tribal organizations and committees informs Tribal transportation planning processes. Tribal participation in intertribal boards and committees provide opportunities for Tribes to coordinate with each other, sharing ideas, resources, or best practices on common Tribal transportation priorities.

- **Coordination with Tribal organizations facilitated by State partners.** One Tribe discussed how they regularly collaborate with the State DOT's intertribal task force, which works with 11 Tribes in the State. The State DOT hosts quarterly task force meetings, which includes participation from Tribal staff, State DOT Tribal coordinators in each of the State DOT regions, and Federal

stakeholders. These meetings provide peer exchange and information sharing opportunities for participating Tribes. Tribes can provide project updates; discuss needs or priorities; and learn about tools, resources, and funding opportunities. For example, the Tribe added that its staff are working on dual language sign program and their involvement in the task force has helped the Tribe learn from other Tribes in the State that have completed similar programs.

- **Coordination with Tribal organizations facilitated by National and other partners.** One Tribe noted their transportation staff member serves as a regional representative for an intertribal transportation organization as well as on the joint transportation commission for the National Congress of American Indians.
- **Participation in national conference events.** Several Tribes highlighted the value of conference events that provide opportunities to engage with other Tribes, such as the National Transportation in Indian Country Conference (NTICC).

Coordination with Regional Organizations

Several Tribes discussed engagement with MPOs and/or regional planning agencies (RPAs) on transportation projects where Tribal lands and regional planning areas overlap. Tribes that participated in the study shared examples of Tribal engagement with MPOs and RPAs, including participation on regional boards/committees, shared input on Tribal and regional transportation plans, coordination on funding opportunities, and ongoing communication related to active and future projects.

Coordination with Local Agencies

Several Tribes that participated in the study discussed coordinating with community partners, including surrounding municipalities. Examples of collaborative efforts between Tribes and local agencies include:

- Coordination on roadway designs being led by municipalities to improve access to Tribal lands and overall community.
- **Maintaining working relationships with partners in the broader community.** such as municipal departments (e.g., public works), schools, and chambers of commerce to address shared transportation concerns.

Tribes also discussed engagement with counties, particularly if Tribal projects intersect with county road jurisdictions. Examples of coordination with counties include:

- **Coordination on traffic and safety data.** One Tribe noted they receive data from the county on traffic counts and roadway conditions.
- **Assistance with roadway design and construction activities and project contracts.** One Tribe noted the county has supported on-site construction administration in the past. Another Tribe noted that the county funded the design of a bridge replacement, and the Tribe led the construction of the project.
- **Assistance with maintenance of county roads.** It is common for State and local roads to run through Tribal lands. Depending on capacities or geography it can be more efficient for a Tribe to maintain these roads on behalf of an external partner. One Tribe noted they have a Memorandum of Agreement with the county for road maintenance. The Tribe repairs and maintains, to include plowing, the road while the county provides funding.

Internal Coordination with Other Tribal Departments

Tribes that participated in the study discussed frequent internal coordination with other Tribal departments to share ideas and resources and to gather input on transportation projects. Tribes discussed coordination with Tribal police, conservation/natural resources, emergency management services, health, historic preservation, and utility departments on transportation issues. Examples of internal Tribal coordination between transportation staff and other departments include:

- Meeting with planning or community development staff to identify needs or priorities.
- Coordination with boards or committees that oversee projects on ceremonial lands.
- Coordination with Tribal police to collect safety data or to identify safety project needs. For example, one Tribe noted their law enforcement may notify transportation staff about signage or facilities that need safety repairs.
- Convening internal interdisciplinary teams consisting of staff with different expertise areas and backgrounds (e.g., wildlife, water resources, safety) to address intersecting priorities and needs.
- Shared input on planning documents or initiatives with transportation elements. For example, one Tribe noted that its transportation department is engaging with its environmental department, which is developing climate change plan with transportation considerations.

Resources Needed

Tribes that participated in the study noted challenges that they face with transportation planning, the constraints they face, and the resources they need to conduct more effective transportation planning.

Staff Availability

Several of the Tribes, particularly those in rural areas, struggled to recruit and maintain staff both for planning and implementing projects. To compensate for this, Tribes hire consulting firms to fill those gaps. Tribes reported that consultants do basic tasks for them that they believe their staff should be able to handle. However, they do not have enough capacity to handle these tasks because their core staff are engaged in other activities.

Staff Knowledge, Skills, and Abilities

Tribes that participated in the study acknowledged that providing existing staff with the knowledge, skills, and abilities to conduct effective transportation planning is an ongoing need. Several Tribes requested general transportation planning trainings or webinars on funding opportunities, road maintenance considerations, and how to develop transportation planning documents (e.g., LRTP, safety plan). Tribes also showed interest in how to conduct meaningful public engagement outside the standard approaches. This included training on how to implement surveys as well as methods to encourage attendance at public meetings.

Federal Planning Process Requirements

Some of the Tribes that participated in the study shared recommendations to improve Federal planning requirements and the TTP process. They expressed desires for more flexible LRTP requirements that allowed for shorter plans that were easier, faster, and less expensive to develop. This could help smaller Tribes with fewer resources develop a working LRTP that could be accepted faster for funding.

Some Tribes also sought a simplification of Federal transportation planning processes to make it easier to understand the requirements. Two of the processes mentioned were how to reallocate funds and

how the TTP funding formula is calculated. Tribes also requested that FHWA and BIA continue their engagement with the Tribes beyond project-specific coordination.

Tribal Representation on Board/Committees

Tribes expressed a desire to have representation on transportation boards and committees at all levels of government (e.g., State, regional, local). They believed that having a seat at the table would help them advance their Tribes' transportation planning goals and to have their priorities integrated into regional plans.

Opportunities to Learn from Other Tribes

Some of the Tribes that participated in the study expressed an interest in peer-to-peer information exchanges with other Tribes. This included conference events and similar events where Tribes could learn from other Tribes, agencies, and stakeholders. Tribes noted that they prefer face-to-face interactions and appreciate creating meaningful relationships with external partners at these events.

Written Resources and Technical Assistance

Many Tribes that participated in the study shared that a major challenge said they faced was navigating Federal grant application processes. As discussed in previous sections, Tribes sometimes struggle with obtaining the data and information required for Federal grant applications. Tribes requested technical assistance and examples that may help them develop successful Federal grant applications, particularly to address the challenges they face in applying.

Additionally, some Tribes requested examples of other Tribe's LRTPs, templates to aid in the development of planning documents, and clear instructions on how to update LRTPs (e.g., use of strip maps, how to develop Tribal priorities).

FHWA and BIA Staff Awareness of Tribal Contexts and Sovereignty

A few Tribes that participated in the study expressed the importance of education regarding Tribal sovereignty, relevant treaties, the Indian Reorganization Act, and Tribal cultural history for Tribal Transportation Stakeholders. One Alaskan Tribe recommended that FHWA employees receive training on Tribal consultation that included information on the Alaska Native Settlement Act and Corporations. They believed doing so would improve relations with Federal staff and their direct engagements with Tribes.

Appendix F. Memorandum 5: Analysis of Tools and Findings

This memorandum presents analyses of Tribal transportation planning tools and resources, identifies findings including benefits and gaps, and makes recommendations to improve or expand upon Tribal transportation planning tools and resources. These analyses, findings, and recommendations are based upon the research activities conducted the Federal Highway Administration's (FHWA) *Transportation Planning in Tribal Communities* study. The study's goals are to:

1. Align planning tools to specific Tribal planning needs;
2. Ensure long-range transportation plan (LRTP)s are implementable by Tribal staff; and
3. Link planning phase to project design, construction, and maintenance.

The research team primarily used data and information gathered through a literature review (documented in Memorandum 1: Background and Literature Review) and discussions with Tribes and non-Tribal stakeholders (documented in Memorandum 4: Key Themes from Data Collection) to identify and analyze the Tribal transportation planning tools.

The following presents analyses of Tribal transportation planning tools and resources, identifies findings including benefits and gaps, and makes recommendations to improve or expand upon Tribal transportation planning tools and resources in the following categories:

- Process Resources
- Training
- Peer Learning
- Partnerships
- Data and Data Analysis Tools
- Financial Tools
- Plan Development Tools
- Public Engagement Tools
- Communication Tools

Throughout this memorandum, the experiences of Tribes with transportation planning tools and resources are highlighted. This memorandum will generalize how many Tribes share experience with using a tool or planning process. In doing so, this section uses the terms "some Tribes" which represents more than one Tribe, but few than half of participating Tribes.[52]

Process Resources

This research identified several resources that guide how Tribes approach transportation planning:

- The Literature Review identified the FHWA Tribal Transportation Program (TTP) Delivery Guide as a resource for conducting Tribal transportation planning in accordance with 25 CFR 170.

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[52] The available tools listed in this memorandum focus mostly on tools specifically targeted to Tribes in the planning process. Other helpful tools for Tribes and other entities that conduct transportation planning can be found on the FHWA/FTA Transportation Planning Capacity Building, FHWA Office of Planning, and FTA Office of Planning websites.

- Discussions with Tribes identified that Tribes use their own past planning documents (e.g., LRTP) as guides for developing new planning documents.

FHWA TTP Delivery Guide

The TTP Delivery Guide, developed by the FHWA Office of Tribal Transportation, provides guidance and technical program information for Tribes entering or coordinating existing TTP Agreements with FHWA. FHWA updates the Guide periodically, as needed. The Guide includes information on:

- Allowable uses of funds for the TTP,
- TTP agreement options,
- The TTP planning process,
- TTP roles and responsibilities,
- Tribal LRTPs,
- Pre-project planning,
- TTIPs,
- National Tribal Transportation Facility Inventory (NTTFI) updates,
- Tools and support systems, and
- Public involvement.

The TTP Delivery Guide is a comprehensive resource for Tribes that have program agreements with FHWA to deliver the TTP and can also serve as a useful tool for Tribes working with the Bureau of Indian Affairs (BIA), as well. The discussions with non-Tribal stakeholders and Tribes did not explicitly ask about Tribes' use of the TTP Delivery Guide. However, no Tribes mentioned it as a resource that they use to inform their transportation planning processes.

Tribes' Past Planning Documents

During discussions with Tribes, some Tribes explained that when they are developing new planning documents (e.g., LRTP), they refer to their prior planning documents and use them as templates. This practice provides continuity among the plans, but limits opportunities to expand upon prior planning practices.

Findings

Table 1 lists the process resources described in this section, along with the benefits, gaps, and constraints observed for each.

Table 115: Process Resources Findings

Tool	Benefits	Gaps and Constraints
TTP Delivery Guide	• Comprehensive resource to assist Tribes in conducting transportation planning in accordance with 25 CFR 170 • Available online • Updated periodically • Used by BIA Region staff to support Tribes that deliver their program through BIA	• Tribes may not be aware of this resource • This guide contains a lot of dense information, which may be overwhelming for first time users

Tool	Benefits	Gaps and Constraints
Tribes' Past Planning Documents	• Past planning documents contain information that can be carried forward into new planning documents allowing Tribes to develop plans from a starting point • Past planning documents record past accomplishments and goals. Tribes can use this information to gauge their effectiveness as well as understand what areas still need improvements	• Using past planning documents as templates limits opportunities to expand upon past planning practices, which may be outdated • Older goals and objectives in past documents may no longer align or support the current vision or priorities of the Tribe

Recommendations

Based on this analysis, the research team offers the following recommendations for process resources:

1. Market the TTP Delivery Guide to Tribes that have program agreements with FHWA (and potentially with Tribes that have program agreements with BIA) as well as provide an overview of the OTT website to improve awareness and use of the Guide and resources.
2. Promote examples of Tribes that have developed new transportation planning documents that were not strictly updates to prior transportation planning documents, and highlight the benefits of that comprehensive approach.

Training

This research identified several sources of training available to Tribal planning staff:

- The Literature Review identified the FHWA Tribal Transportation Planning Modules as a resource to assist Tribes with transportation planning.
- Live and on-demand training opportunities offered by the FHWA Tribal Technical Assistance Program (TTAP) Centers.
- Live training opportunities offered by OTT and by organizations that support Tribes' transportation planning processes.

FHWA Tribal Transportation Planning Modules

The Tribal Transportation Planning Modules, developed by the FHWA Office of Planning, consist of 12 documents that provide information about the Tribal transportation planning process. The modules provide overviews of planning topics, walk through the steps in each process, provide examples, and include resources such as checklists and worksheets. The 12 module topics are:

- Asset Management
- Data Collection and Use
- Developing a Long-Range Transportation Plan
- Developing the Transportation Improvement Program
- Financial Planning
- Funding Resources
- Introduction to Planning
- Partnering and Leveraging

- Project Prioritization
- Public Involvement
- Safety
- Tribal Consultation

While the Tribal Transportation Planning Modules address a variety of planning topics, the modules have not been updated since they were released (between 2009 and 2015). The TTP has changed since the modules were released, as have planning techniques more broadly. The discussions with non-Tribal stakeholders and Tribes did not explicitly ask about Tribes' use of the modules. However, no Tribes mentioned the module series as a resource that they use to inform their transportation planning processes.

FHWA TTAP Center Training Opportunities

The vision of the Tribal Technical Assistance Program (TTAP) is, through mutual respect and understanding, to enhance the quality of life in Tribal communities by building capacity for Tribes to administer and manage their transportation programs and systems. The TTAP Center mission is to serve as a go-to local resource for Tribal transportation training, technical assistance, and technology transfer needs and opportunities to effectively carry out the TTAP Vision. The TTAP is a discretionary program that is 100% federally funded.

FHWA is in the process of shifting from a centralized technical assistance model – headquartered in a single, centralized location under a two-year pilot program – back to a regional technical assistance model responds to the input of Tribes. There are currently seven established TTAP Regions.

While the TTAP Centers are being stood up, the TTAP offers information about online training courses for local agencies and Tribes. The TTAP Centers plan to deliver live trainings in the future. Technical advisory committees, which include Tribal representatives from local Tribes by region, are helping to inform these training opportunities.

Tribal Organization Training Opportunities

Several organizations, such as the Center for Tribal Transportation (CTT), the National Indian Justice Center (NIJC), provide training and technical assistance to Tribes that request it. These organizations filled a gap in training and technical assistance when the FHWA TTAP Centers closed.

- CTT is a non-profit corporation with that provides training, education, technical assistance, and program mentoring resources for Tribes on the topics of transportation and infrastructure. CTT services may be contracted for local delivery, or individually scheduled for on-site assistance.
- NIJC is an Indian owned and operated non-profit corporation independent national resource for Native communities and Tribal governments. The goals of NIJC are to design and deliver legal education, research, and technical assistance programs to improve the quality of life for Native communities and the administration of justice in Indian country. FHWA selected the NIJC to administer the Western TTAP Center.

Several Tribes that participated in the study indicated that they benefitted from training and/or technical assistance from these or other Tribal organizations in support of their transportation planning processes.

Findings

Table 2 lists the process resources described in this section, along with the benefits, gaps, and constraints observed for each.

Table 216: Training Findings

Tool	Benefits	Gaps and Constraints
Tribal Transportation Planning Modules	• Provides step-by-step process information, resources, and examples for a variety of Tribal transportation planning topics • Available online	• The modules have not been updated in 8-14 years, do not accurately reflect the current TTP process, and are not intuitive to navigate
FHWA TTAP Center Training Opportunities	• Provides trainings through seven regionally based TTAP Centers located across the country • Provides live trainings and links to on-demand trainings • There are no direct costs for Tribes to participate in trainings	• Tribes may have diminished trust in the TTAP when it transitioned from a regionally based to a centrally based program • TTAP Centers are in the process of being established and initiated and not all services are currently available to Tribes • The training opportunities on Tribal transportation planning are unclear at this time
Tribal Organization Training Opportunities	• Provide training and technical assistance opportunities to Tribes across the country • Some training opportunities are free to Tribal staff	• There are sometimes registration costs or travel costs associated with Tribes to receiving training and technical assistance

Recommendations

Based on this analysis, the research team offers the following recommendations for process resources:

3. Review and update the Tribal Transportation Planning Modules to reflect the current TTP process and to incorporate new planning practices.
4. Market the availability of TTAP trainings related to transportation planning to Tribes.

Peer Learning

This research identified several opportunities for peer learning available to Tribal planning staff:

- Case studies on Tribal transportation planning developed by FHWA.
- Participation in regional and national Tribal transportation conferences.

Case Studies

FHWA developed a series of case studies between 2009 and 2013 that feature Tribes' experiences with collaboration, consultation, and partnership in transportation planning, as well as case studies of State, metropolitan planning organization, and Tribal coordination in transportation planning. Tribes that participated in the study expressed interest in learning about other Tribes' transportation planning processes. The discussions with Tribes did not explicitly ask about Tribes' awareness of these particular

Tribal transportation case studies. However, no Tribes mentioned them as resources that they have used to learn about other Tribes' transportation planning processes.

Regional and National Tribal Transportation Planning Conferences

Many Tribes that participated in the study shared that they participate in Tribal transportation planning conferences and summits at the regional and national levels in part to learn how other Tribes conduct transportation planning. The conference most often mentioned was the NTICC. The NTICC is an annual conference that provides Tribes with access to relevant training and opportunities for Tribal transportation staff to engage with their Tribal transportation peers regarding Tribal transportation. Some Tribes mentioned the NTICC and a desire to attend but were unable to attend due to funding constraints. Regional or statewide conferences or summits are often organized by inter-Tribal organizations or task forces, which are described in the next section.

Findings

Table 3 displays the peer learning types described in this section, along with the benefits, gaps, and constraints observed for each.

Table 317: Peer Learning Findings

Tool	Benefits	Gaps and Constraints
Case Studies	• Provides information about how specific Tribes addressed particular Tribal transportation planning, coordination, or partnership challenges • Available online	• The case studies were developed 10 or more years ago and the practices may be outdated • The limited number of case studies do not address all Tribal contexts or aspects of Tribal transportation planning • Tribes may not be aware that the case studies are available
Regional and National Tribal Transportation Planning Conferences	• Provides opportunities for Tribal transportation planning staff to engage with and learn from one another at a national level • Regional or statewide conferences are generally less expensive to attend and offer peer learning opportunities among Tribes in a specific geographic area	• Not all Tribes have the available funding for staff to attend • Not all regions or States hold regional or statewide Tribal transportation planning conferences or summits

Recommendations

Based on this analysis, the research team offers the following recommendations for process resources:

5. Develop new case studies that highlight Tribes' effective transportation planning practices.
6. Host a webinar series that features Tribes presenting on their effective transportation planning practices.
7. Continue to support existing and new regional, statewide, and national Tribal transportation planning conference and summits.

Partnerships

Building and sustaining government-to-government relationships helps advance the construction, operation, and maintenance of multimodal transportation networks in Tribal communities. Tribes that participated in the study shared how they coordinate with Federal, State, regional, county, and local agencies, as well as inter-Tribal organizations to inform their transportation planning processes. Tribes discussed how engagement with these entities provides opportunities to gather input on the Tribes' transportation projects, and to comment on transportation projects led by other entities that impact Tribal communities.

State, Regional, and Local Government Coordination

Tribes coordinate with State departments of transportation (DOTs), metropolitan planning organizations (MPOs), other regional entities, and county and local governments on transportation projects where Tribal lands and other government jurisdictions areas overlap. Tribes that participated in the study noted that coordination may be frequent if Tribal transportation projects intersect with roads in other jurisdictions. In some cases, Tribes are represented on State and regional boards or committees and have official roles for providing input into those agencies' investment and policy decisions.

Inter-Tribal Organizations and Task Forces

Some Tribes that participated in the study are members of Inter-Tribal organizations and task forces. They noted that these organizations and task forces are useful forums to exchange ideas, resources, and advice on various transportation topics, including planning priorities such as safety, network connectivity, access, and public health. These organizations are generally facilitated by State agencies or coalitions of Tribes in a particular region. Some Tribes that participated in the study noted how their involvement in inter-Tribal organizations and task forces provide opportunities to connect with and learn from other Tribes on transportation planning topics.

Findings

Table 4 lists the partnership types described in this section, along with the benefits, gaps, and constraints observed for each.

Table 418: Partnerships Findings

Tool	Benefits	Gaps and Constraints
State, Regional, and Local Government Coordination	• Enables intergovernmental collaboration on mutually beneficial transportation planning efforts (e.g., data collection and analysis, planning documents, and sharing project priorities) • Builds awareness of non-Tribal initiatives that impact transportation systems in Tribal communities • Membership on State or regional boards and committees gives Tribes a voice in statewide or regional transportation decision making	• Tribes are not always represented on transportation boards and committees at all levels of government (e.g., State, regional, local) • State, regional, and local engagement with Tribes may only include basic information sharing and meeting notices • Tribes in rural areas may have less access to or familiarity with resources available to other Tribes with regional partners

Tool	Benefits	Gaps and Constraints
Inter-Tribal Organizations and Task Forces	• Encourages information exchange among peers, planning practitioners, and subject-matter experts • Increases awareness of and collaboration on funding opportunities for transportation	• Not all Tribes that participated in the study noted access to or involvement in inter-Tribal organizations and task forces

Recommendations

Based on this analysis, the research team offers the following recommendations for partnerships:

8. Develop case studies demonstrating government-to-government relationships and effective coordination between Tribes and State DOTs, MPOs, and local governments for transportation planning and project delivery.
9. Develop a resource for State, regional, and local agencies that promotes noteworthy practices for involving Tribes in statewide, metropolitan, and local transportation planning and decision making.
10. Host webinars in coordination with inter-Tribal organizations and task forces to promote the noteworthy practices and successful outcomes that can be achieved through these organizations.

Data and Data Analysis Tools

Tribes collect and analyze a variety of quantitative and qualitative data to support transportation planning, decision making, and implementation. These data are collected internally or acquired through State agencies, MPOs, and other partners (e.g., universities). Tribes analyze data to identify, prioritize, and/or validate transportation issues in the community. Tribes also use data to develop applications for funding opportunities. However, many Tribes that participated in the study cited data gaps as a challenge that impacts transportation investment decision making and applications for grant funding.

Crash Data

Tribes collect and analyze crash data to identify high-crash locations and prioritize them for safety improvements. Several Tribes that participated in the study shared that they coordinate internally with Tribal police departments or county or municipal police departments to gather crash data, particularly those that are fatal or result in injuries. Tribes may also work with consultants to collect crash data through standalone transportation planning activities. However, not all Tribes have access to comprehensive crash data or have staff with the skills or time to analyze the data.

Transportation Network Utilization Data

Tribes often collaborate with State DOTs and municipalities to gather traffic and safety data to support transportation planning (e.g., traffic counts, speeds) on roads. In particular, when working with State DOTs, the data may be readily available through State roadway databases, or Tribes can coordinate with State agencies to generate the data for Tribes. Some Tribes that participated in the study discussed receiving average daily traffic (ADT) and crash data from State DOTs to identify priority locations and justify short- and long-term funding needs. Tribes may also collect data on traffic volumes, travel speeds, sidewalk network gaps, and other attributes for the roads and facilities that they maintain themselves. Similar to crash data, however, not all Tribes have access to basic transportation network utilization data to inform their planning processes.

Geographic Information Systems (GIS)

Tribes conduct geospatial analyses using GIS mapping to varying extents in their transportation planning processes. GIS supports data analysis and visualizations that can inform transportation planning activities by displaying roadway jurisdictions, land parcels, environmentally sensitive areas, and other conditions to inform transportation decisions. Some Tribes that participated in the study noted how Tribal staff with GIS skills typically work on projects for several different Tribal departments, such as historic preservation, public works, and community development, in addition to transportation. Not all Tribes that participated in the study have the resources or skills to use GIS in their transportation planning processes. Furthermore, the high cost of IT infrastructure and the staff capacity needs for maintaining data can be significant barriers to Tribes using GIS in transportation planning.

Findings

Table 5 lists the data and data analysis tools described in this section, along with the benefits, gaps, and constraints observed for each.

Table 519: Data and Data Analysis Tools Findings

Tool	Benefits	Gaps and Constraints
Crash Data	• Identifies areas of a Tribe's transportation network where safety improvements could be focused • Tribal transportation planners can coordinate with other Tribal departments that collect and analyze crash data, streamlining data analysis • Crash data can be collected as part of safety planning activities, such as Roadway Safety Audits (RSAs) and Transportation Safety Plans (TSPs) • Tribal elders may have historical knowledge of roadway networks, information that can supplement quantitative data	• Tribal staff may not have access to accurate crash data • Safety data can be incomplete and inconsistent, as many crashes on Tribal lands go unreported • Existing databases from internal departments can be outdated or not maintained regularly • Anecdotal information that could be used to fill in data gaps may be incomplete or unusable for transportation planning • Lack of data or evidence to support anecdotal information may not be usable for data-driven grant applications
Transportation Network Utilization Data	• State agencies may already have traffic and safety data readily available • State agencies can generate transportation data for Tribes as part of existing State programs or processes	• Tribes may not have access to basic transportation network utilization data to inform their transportation planning processes • Existing data may be processed in formats that do not align with Tribal transportation planning processes, requiring additional support, training, or instructions
GIS	• Supports data analysis, visualization, and mapping capabilities to determine or reinforce transportation improvement needs	• Not all Tribes have access to GIS data tools or the capacity to provide staff training and education

Tool	Benefits	Gaps and Constraints
	• GIS training may be available through non-profits and consultants • Some Tribes have centralized GIS staff that support multiple departments, including transportation planning	• Tribal staff with GIS expertise may not have a background or experience in transportation planning

Recommendations

Based on this analysis, the research team offers the following recommendations for data and data analysis tools:

11. Coordinate with the FHWA Tribal Technical Assistance Program (TTAP) to provide direct technical assistance and trainings on data collection and analysis.
12. Develop a toolkit on noteworthy practices in collecting and analyzing transportation safety and network utilization data for transportation decision making.
13. Host webinars and provide online resources (e.g., downloadable data layers, instructional videos) on using GIS for transportation planning.
14. Develop a resource on the use of alternative data analysis and visualization methods for Tribes that do not have access to GIS tools.

Financial Tools

Tribes use financial tools, such as grant toolkits and cost estimation tools, to identify available funding for transportation and the costs of transportation projects.

Grant Toolkits

Grants are crucial funding sources for Tribes in funding transportation infrastructure to supplement TTP and Tribal funding for transportation planning and projects. Nearly all Tribes that participated in the study have applied for and/or have received a grant for transportation planning and/or project implementation. Toolkits for Federal transportation grants illustrate key applicant activities in the grant process. They describe where to find and how to use discretionary grant programs and provide resources for applicants to maximize the potential for award success. Although the study team did not directly ask Tribes whether they had used grant toolkits before, their comments on the struggles of navigating grants indicate a need to provide technical assistance in this area.

One example of a grant toolkit is the Rural Opportunities to Use Transportation for Economic Success (R.O.U.T.E.S.) Applicant Toolkit for Competitive Funding Programs at USDOT. Similarly, the FHWA Transportation Funding Opportunities for Tribal Nations document provides information on funding opportunities for Tribes.

One Federal agency explained that Tribes are less likely to apply for large discretionary grants (e.g., Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program, formerly known as BUILD and TIGER) because they are highly competitive, and they require a significant amount of effort.

One regional Tribal organization that participated in the study noted that a transportation agency in its State often met with regional Tribes to review elements of a grant application at a high level. However, the organization noted that this support is generalized and does not address Tribes' specific project needs or project applications.

Cost estimation tools help Tribes determine transportation project costs, which is important for the development of the Tribal Transportation Improvement Program (TTIP) and other transportation planning processes. Grant funding may also require cost estimates at varying levels of detail depending on the type of funding. Cost estimation tools range from a simple Microsoft Excel spreadsheet to advanced programs. However, no matter how technical the tool may be, it is only as effective or accurate as its input data. According to industry analysts, highway construction costs are increasing well above historical averages and making estimating and managing budgets extremely challenging.

Some of the Tribes that participated in the study conducted their own cost estimates for transportation projects, while others used consultants to estimate project costs. The biggest impediment to using cost estimation tools was data on accurate transportation projects to use the tools effectively. Some discretionary grants require applicants to estimate line-item prices, requiring significant amounts of data that Tribes may not have access to.

Findings

Table 6 lists the financial tools described in this section, along with the benefits, gaps, and constraints observed for each.

Table 620: Financial Tools Findings

Tool	Benefits	Gaps and Constraints
Grant Toolkits	• Grant toolkits are typically standardized allowing for Tribes and external partners to easily use them • Grant toolkits with a complete overview of the process assist Tribal staff through a process that may be unfamiliar to them • Available online	• Tribes may not be aware of existing grant toolkits that can assist Tribes through the process • Most grant toolkits are general in nature and may not address the specific needs of Tribes • Grant processes are onerous for many Tribes and a well-written grant toolkit may do little to assist Tribes with limited data and staff availability to apply for grants
Cost Estimation Tools	• Cost estimation tools with good data inputs help Tribes prioritize transportation projects • Cost estimation tools provide accurate cost estimates that can be used for grant applications	• A significant amount of data is needed to effectively use certain cost estimation tools, making them difficult to use for Tribes with limited data • Some cost estimation tools require specific expertise to use them

Recommendations

Based on this analysis, the research team offers the following recommendations for financial tools:

15. Promote existing transportation grant toolkits among Tribes.
16. Develop a grant toolkit that addresses the specific funding needs and opportunities of Tribes. This toolkit could build on the Transportation Funding Opportunities for Tribal Nations document by including a grant funding matrix, an overview of how to finance resources, a

description on how to navigate grant program applications and eligibility, a description of evaluation criteria, and a description of other grant program considerations.
17. Include basic cost estimation tools and manuals on how to use them in Tribal Transportation Planning modules.

Plan Development Tools

Tribes that participated in the study reported using a variety of transportation planning tools in their planning processes. These include the FHWA TTIP template, LRTP templates, and supplemental plans (e.g., RSAs, safety plans, bicycle and pedestrian plans). Some Tribes opted to not use such tools and limited their transportation planning processes to meet minimum requirements due to limited staff availability and funding.

FHWA TTIP Template

The Tribal Transportation Improvement Program is a list of fiscally constrained transportation projects and activities eligible for TTP funding covering a period of four years. All Tribal governments receiving TTP funds are required to update the TTIP every four years, but Tribes are encouraged to update it annually to better align with changing priorities. FHWA provides a Microsoft Access TTIP template on their website along with a user guide and demonstration video.

Tribes that participated in the study were not asked about the use of the TTIP template and its related resources (e.g., user guide, demonstration video), but they did not explicitly discuss it. This may be because Tribe consider the TTIP template to be their TTIP itself. Most Tribes noted that they develop a new TTIP every year by reviewing and updating the prior year's TTIP. Some non-Tribal stakeholders that participated in the study shared that Tribes found the TTIP template to have limited flexibility to reflect the Tribe's planned transportation investments. Stakeholders added that FHWA TTIP templates are available, but they are not tailored to individual Tribes or specific needs. No examples were provided on how a Tribe would customize the template. There is an opportunity to research this gap further to better refine templates for Tribes.

LRTP Templates

Tribes are required to develop, approve, and maintain LRTPs to receive TTP funding. The LRTP is a long-range (20+ year) strategy and capital improvement program developed to guide the effective investment of TTP funds in multimodal transportation facilities. Most Tribes that participated in the study either had an LRTP or were developing one. Beyond creating the LRTP to be eligible to receive TTP funding, some Tribes that participated in the study shared that the LRTP is a valuable tool to identify and prioritize projects and to communicate the Tribe's transportation vision and objectives to the public and their partners. Tribes develop their LRTPs with in-house staff, with contractor support, or with FHWA or BIA assistance. Tribes are also required to have their oversight agency conduct a mid-point review.

FHWA and BIA do not provide an LRTP template to Tribes. However, the FHWA TTP Delivery Guide walks users through the LRTP development process step-by-step. Discussions with Federal stakeholders identified that some Tribes hire contractors that offer LRTP templates that may streamline the planning process but that may limit the ability for Tribes' LRTPs to reflect the Tribe's transportation priorities and network.

Some Tribes that participated in the study reported developing supplemental transportation plans to focus in on specific facilities, safety opportunities, and objectives. Road safety audits (RSAs) are common tools among Tribes that participated in the study and are used to identify safety gaps, prioritize safety projects, and apply for safety-related funding opportunities to implement safety improvements. Tribes that participated in the study acknowledged that RSAs are becoming a more common planning approach. RSAs are valuable tools that can help establish partnerships and leverage funding opportunities by providing evidence to support prioritization in funding evaluations. Other safety planning documents have been reported as useful tools for informing the development of more comprehensive documents, like the LRTP, and to support future funding opportunities and grant applications.

A few of the Tribes that participated in the study had some form of a bicycle and pedestrian plan. These plans helped Tribes better understand how their transportation users get around without motor-vehicles and to identify improvements to bicycle and pedestrian networks. For some of these Tribes, these plans were standalone products, while others incorporated them as large, dedicated sections within their LRTP. For one Tribe, the bicycle and pedestrian plan helped to identify opportunities for sidewalks and pedestrian crossings in high-traffic areas.

Findings

Table 7 lists the plan development tools described in this section, along with the benefits, gaps, and constraints observed for each.

Table 721: Plan Development Tools Findings

Tool	Benefits	Gaps and Constraints
TTIP Template	• Provides a standard mechanism for Tribes that partner with FHWA for the TTP to develop their TTIPs • A user guide and demonstration video are helpful resources for Tribes developing their TTIPs	• Tribes may be unaware of the user guide, demonstration video, and other TTIP resources • The TTIP template is considered inflexible by some Tribes that want to submit information in their own format • Currently, the TTIP template is only used by Tribes that partner with FHWA for the TTP
LRTP Templates	• Consultant-developed templates simplify the process of developing transportation planning documents	• There are no FHWA- or BIA-developed templates for Tribal LRTP development • Using consultant templates may not allow Tribes flexibility in the development of transportation planning documents • Many Tribes that participated in the study expressed interest in a template for developing an LRTP

Tool	Benefits	Gaps and Constraints
Supplemental Plans	• Supplemental plans help Tribes identify transportation issues and priorities or investigate further any issues already identified in an LRTP • Collaborative supplemental plans, such as RSAs, can help establish partnerships for implementing transportation projects and expose leadership that participate in their development to current conditions • Data and narratives in supplemental plans can be used to justify funding requests, strengthen grant applications, and help leverage funding opportunities by providing evidence to support prioritization in funding evaluations	• Mode-specific planning documents, such as bicycle and pedestrian plans, were not common among Tribes that participated in the study • Not all Tribes have the staff availability and funding to develop supplemental plans

Recommendations

Based on this analysis, the research team offers the following recommendations for plan development tools:

18. Ensure that Tribal transportation planners are aware of TTIP resources, such as the TTIP template, user guide, and demonstration video. Note that an eTTIP is currently in exploratory stage and will be available for Tribes for future use.
19. Develop a Tribal transportation planning toolkit similar to the approach that RSAs take for collaborative, on-the-ground transportation planning to inform Tribal LRTP development.
20. Develop several iterations of an LRTP template that reflect the different Tribal characteristics and contexts for Tribes to adapt and implement to meet their priorities.
21. Develop a library of Tribal LRTPs that Tribes voluntarily share to serve as examples for Tribes developing LRTPs.
22. Develop a guidebook that describes common supplemental transportation planning documents, how Tribes can use them, and the benefits they may provide.

Public Engagement Tools

Tribes that participated in the study described using a variety of tools to engage members of the public in their transportation planning efforts. Tribes discussed how surveys and interactive public engagement activities help staff better understand what is important to community members, including priority areas for improvement and transportation or mobility needs.

Surveys

Community surveys are commonly used by Tribes to capture the public's perspective on transportation needs and opportunities. Several Tribes that participated in the study discussed coordinating surveys on transportation needs as part of their LRTP updates. Surveys are conducted both electronically and via hard copy.

Deliberative Public Engagement

Some Tribes discussed using deliberative engagement techniques to collect input on transportation needs. One Tribe discussed organizing interactive activities to identify and prioritize transportation projects as part of their LRTP development. The Tribe developed an online map and invited the public to identify and comment on areas with transportation issues. The Tribe also asked community members to allocate a representative amount of limited funding to potential projects to gauge community priorities.

Some of the non-Tribal stakeholders that participated in the study discussed the use of the Reservation Road Planner: Tribal Board Game in describing transportation planning elements and supporting deliberative public engagement. Although none of the Tribes that participated in the study discussed using the board game in their current activities, non-Tribal stakeholders noted that many Tribes are familiar with the resource. Tribes may coordinate with their BIA or FHWA contacts to request a copy.

Information Booths

Some Tribes that participated in the study mentioned how they set up information booths to convey information about and receive feedback on transportation initiatives at broader community events. These booths provide opportunities for community members to learn about transportation projects and share feedback directly with Tribal staff at events not specifically tied to transportation where attendance is high.

Public Meetings

Tribes that participated in the study discussed hosting public meetings on transportation initiatives to collect input, as well as attending public meetings organized by other boards, committees, or entities to present and gather feedback on transportation efforts. Some Tribes mentioned providing food, raffles, door prizes, and other incentives at public meetings for transportation projects to encourage participation.

Virtual public meetings have become more common since the global COVID-19 pandemic. A few of the Tribal participants indicated that they had tried virtual meetings with a few continuing to broadcast Tribal council meetings online. However, most of the Tribes saw limited participation in these virtual meetings. A few of the barriers to participation cited included limited broadband for both Tribal agencies and Tribal residents as well as limited technology proficiency in older rural populations.

Findings

Table 8 lists the public engagement tools described in this section, along with the benefits, gaps, and constraints observed for each.

Table 822: Public Engagement Tools Findings

Tool	Benefits	Gaps and Constraints
Surveys	• Surveys help Tribes collect key information from community members about transportation priorities • Tribes can develop and distribute surveys as part of other transportation planning efforts, such as the LRTP	• Rural populations may have limited access to broadband internet and may experience challenges filling out online surveys • Getting enough participants to take a survey for meaningful analysis may be challenging

Tool	Benefits	Gaps and Constraints
Deliberative Public Engagement	• Deliberative engagement methods allow for more robust feedback on transportation needs, since participants consider key information from various perspectives • The Reservation Road Planner: Tribal Board Game explains the transportation planning process in an easy-to-understand and engaging format	• Garnering attendance and meaningful involvement for deliberative public engagement can be a challenge • The Reservation Road Planner: Tribal Board Game is outdated, and a limited number of hard-copy versions are available
Information Booths	• Improves community's awareness of transportation planning activities and investments • Booths are located at events with large captive audiences, eliminating the need to attract participants • Provides informal opportunities for community members to engage with Tribal staff and share ideas or concerns about transportation issues • Encourages community participation at future transportation-focused events	• Community engagement and input may be at a high level • Community input may only be provided at broader community events and not always continue through transportation initiatives and/or events
Public Meetings	• Provides formal opportunities for stakeholders and the public to engage with Tribal staff and share ideas or concerns about transportation issues • [FHWA provides web resources on virtual public involvement](). The resources include a toolkit that walks users through how to set up and run virtual meetings.	• Attendance and participation can be limited for multiple reasons (e.g., schedule conflicts, language barriers) • Broadband and technology for hosting or joining virtual meetings may not be available in certain locations.

Recommendations

Based on this analysis, the research team offers the following recommendations for public engagement tools:

23. Develop a public engagement toolkit including survey templates, public meeting frameworks, deliberative public engagement techniques, information booths, and information about other public engagement activities for different transportation topics or planning needs (e.g., safety, long-range planning, multimodal transportation).
24. Develop a public involvement policy and/or procedures template.
25. Develop a template for public engagement activities to support LRTP development.
26. Develop case studies on effective Tribal public engagement techniques and their outcomes.
27. Update the Reservation Road Planner: Tribal Board Game to include a web-based version with instructional videos, as well as webinar sessions on the update.

Communication Tools

Communications tools are essential to collecting and disseminating information that can inform transportation planning processes and educate the community. Tribes that participated in the study used a variety of communications tools such as traditional media like newspapers and newsletters through the mail. Public meetings were typically posted at least 24 hours prior to their date on bulletin boards in community centers or Tribal websites. The following communications tool story boards, email, and social media were mentioned by several Tribes.

Story Boards

Story boards are used as a deliberative public engagement tool that help convey project ideas with simple text and images. Story boards are interactive and create two-way engagement between planners and the public. They are often presented during community meetings to convey information and gather input but may also be used virtually, depending on the platform. Story boards can be created using office supplies, such as an easel and large paper pad, or with computer programming. Engaging Tribal communities through storytelling can generate robust conversations, as well as providing examples of other Tribes' approaches to identify whether they align with what the Tribe has experienced.

Some Tribes that participated in the study used story boards to describe their vision and goals for planning documents like the LRTP. One Tribe used ArcGIS story maps to convey the context of their transportation network to the community. Story boards can demonstrate how Tribal history, culture, and native language are incorporated into the planning process.

Email

Tribes use email to correspond directly with Tribal members, non-Tribal members, and external partners. Several Tribes that participated in the study indicated that there is a constant need to disseminate information on the planning process. Some Tribes also use electronic newsletters to convey information on a larger scale. Newsletters are periodic informational emails that provide updates and news on transportation programs and projects.

Social Media

Social media platforms (e.g., Facebook, Twitter) are often used by Tribes to communicate with and convey information to stakeholders. Social media accounts are typically free depending on the platform and associated service being used. Not all Tribes used social media to communicate and disseminate information. In some instances, Tribes used Facebook as their main landing page or website.

For some Tribes, social media has proved to be very useful during the COVID-19 pandemic. One Tribe described challenges with in-person participation at public meetings since the pandemic. To address this gap, the Tribe used social media outreach and other innovative outreach to share information on the development of the LRTP and transportation projects.

Findings

Table 9 lists the communication tools described in this section, along with the benefits, gaps, and constraints observed for each.

Table 923: Communication Tools Findings

Tool	Benefits	Gaps and Constraints
Story Boards	• Convey and illustrate information using text and visuals either electronically or on posters • Centered around open community dialogue, which strengthens trust and community consensus • Record community preferences and thoughts on transportation goals	• Story boards take time and effort to prepare prior to engagement exercises, which may limit use among some Tribes • Staff presenting story boards and collecting input may need training in deliberative facilitation to get the most value out of the tool • Public engagement and attendance are needed to make the most out of story boards, and some Tribes struggle with attendance
Email	• Communicates directly to the public and other stakeholders by either direct or bulk messaging in real time • Electronic newsletters can provide a lot of information at once using a standard format • Receive public input on projects, plans, and programming	• Rural populations may have limited access to broadband internet, limiting email's reach • Writing newsletters can be time-consuming depending on the frequency and amount of information conveyed
Social Media	• Provides direct access to the public • The variety of social media platforms provides Tribe with flexibility in presenting information • Helps Tribes overcome physical barriers to connecting with constituents • Receive public input on projects, plans, and programming	• Rural populations may have limited access to broadband internet, limiting social media's reach • Social media does not reach all constituents

Recommendations

Based on this analysis, the research team offers the following recommendations for communication tools:

28. Develop case studies on Tribes effectively using story boards to articulate Tribal transportation priorities.
29. Develop a guidebook and training that teaches Tribes how to conduct deliberative facilitation.
30. Provide examples of Tribal transportation newsletters that convey Tribal transportation planning information.
31. Develop a communications guidebook that includes best practices for communications practices including publishing newsletters, email list management, how to structure content, ensuring emails are tested before sent, etc.