

Safer Roads, Stronger Communities

Empowering Tribes to Tackle
Roadway Departure Hazards



Groundbreaking by Design.



Overview & Objectives

Why focus on roadway departure (RwD) in tribal areas?



What we'll discuss today:

Understanding
RwD risks

Empowering
Tribal
leadership

Data-driven
hazard
identification

Low-cost, high-
impact
solutions



Implementation & partnerships

ROADWAY DEPARTURE CRASHES 1-2-3



1. VEHICLE
LEAVES
ITS
TRAVELED
WAY



2. CROSSES
EDGE OF
TRAVEL LANE
OR
CENTERLINE



3. STRIKES
ANOTHER
VEHICLE, FIXED
OBJECT, OR
ROLLS OVER

The Story of Tribal Roads



Every mile tells a story



Unique challenges:
geography,
funding,
sovereignty



The impact of RwD
crashes on Tribal
communities

ROADWAY DEPARTURES

DEFINITION: When a vehicle leaves the traveled way (edge line, centerline, or both)

COMMON CRASH TYPES:



RUN-OFF-ROAD



HEAD-ON



FIXED OBJECT



ROLLOVER

WHY IT MATTERS: Over half of US traffic fatalities are RwD-related

RwD in Tribal Communities – The Data



RwD accounts for
a disproportionate
share of tribal road
fatalities

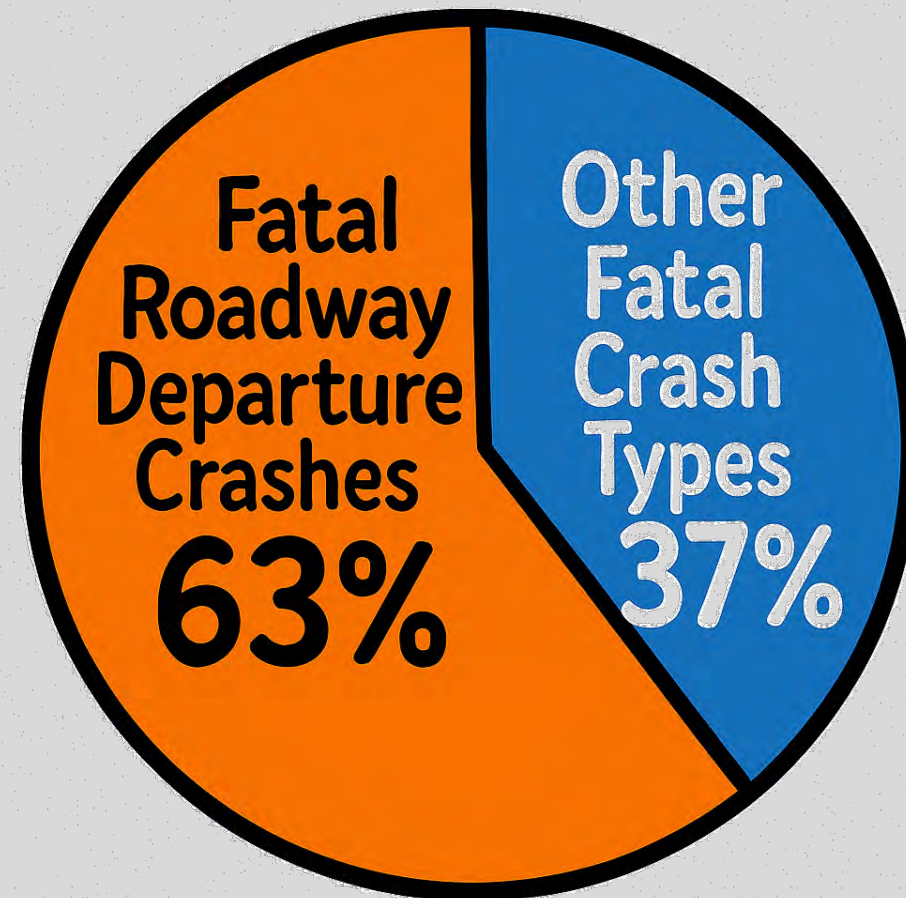
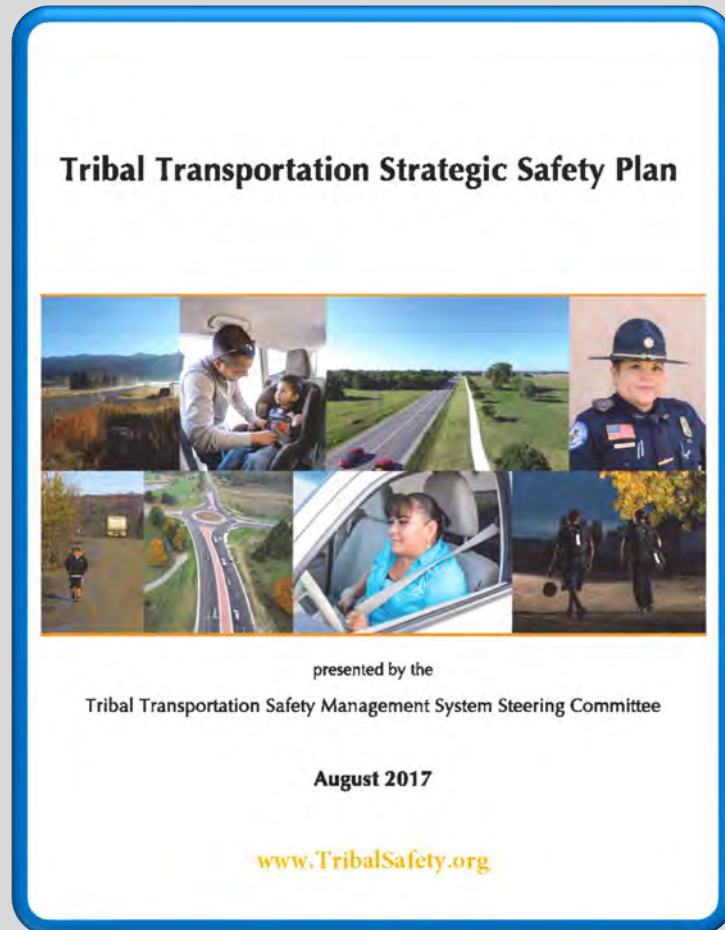


Contributing
Factors:
Rural roads, curves,
speed, limited lighting
roadside hazards

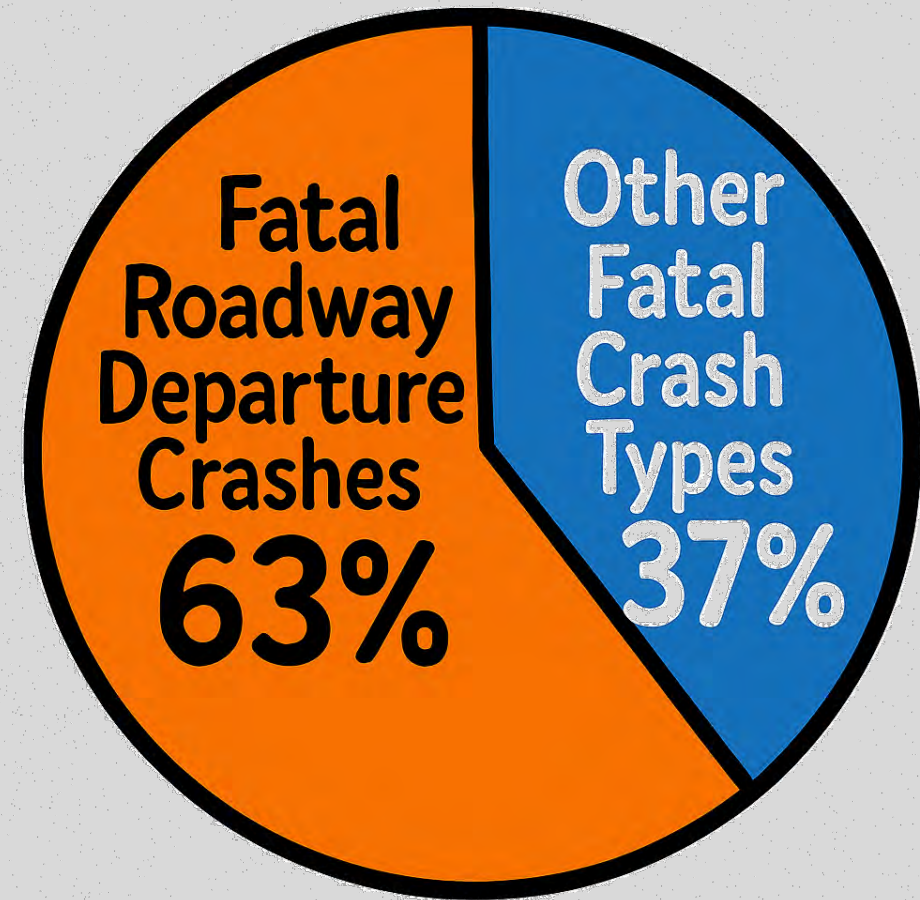
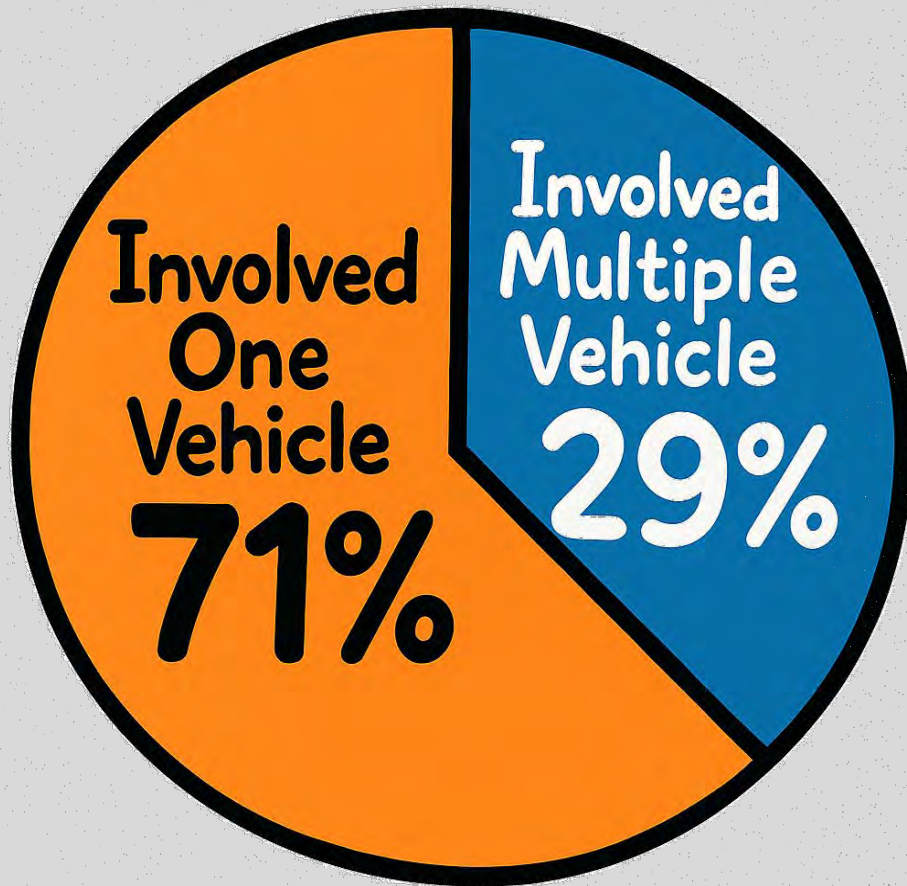


Data Limitations:
Underreporting,
lack of
geocoding

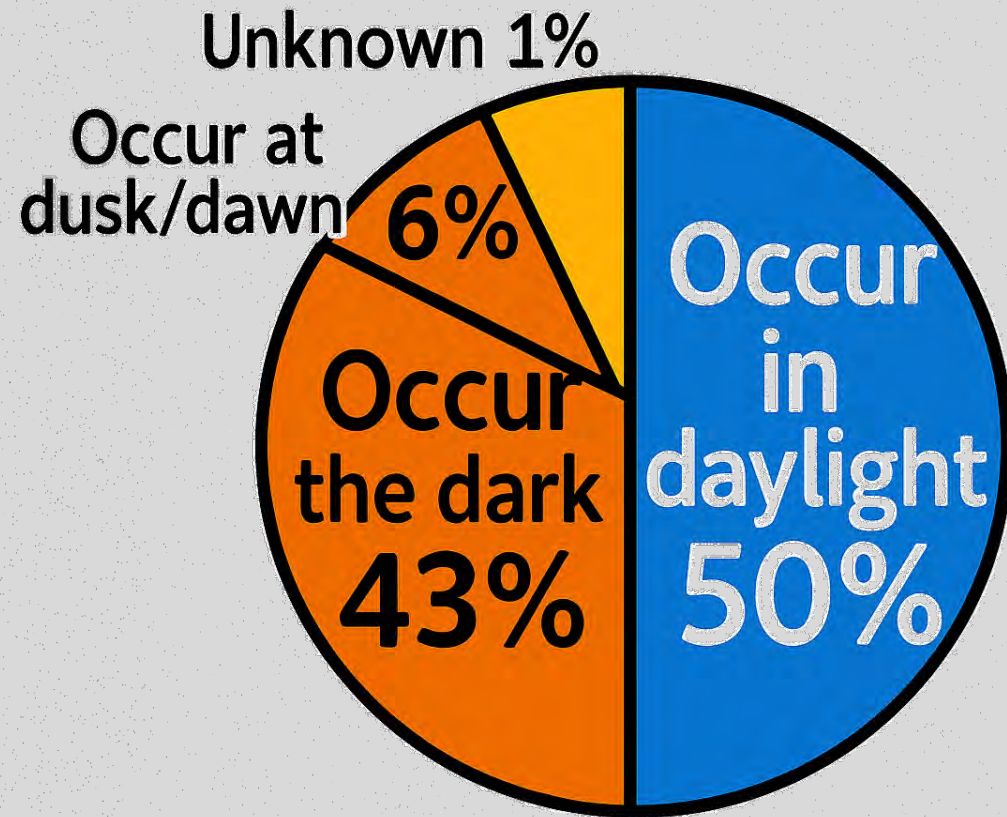
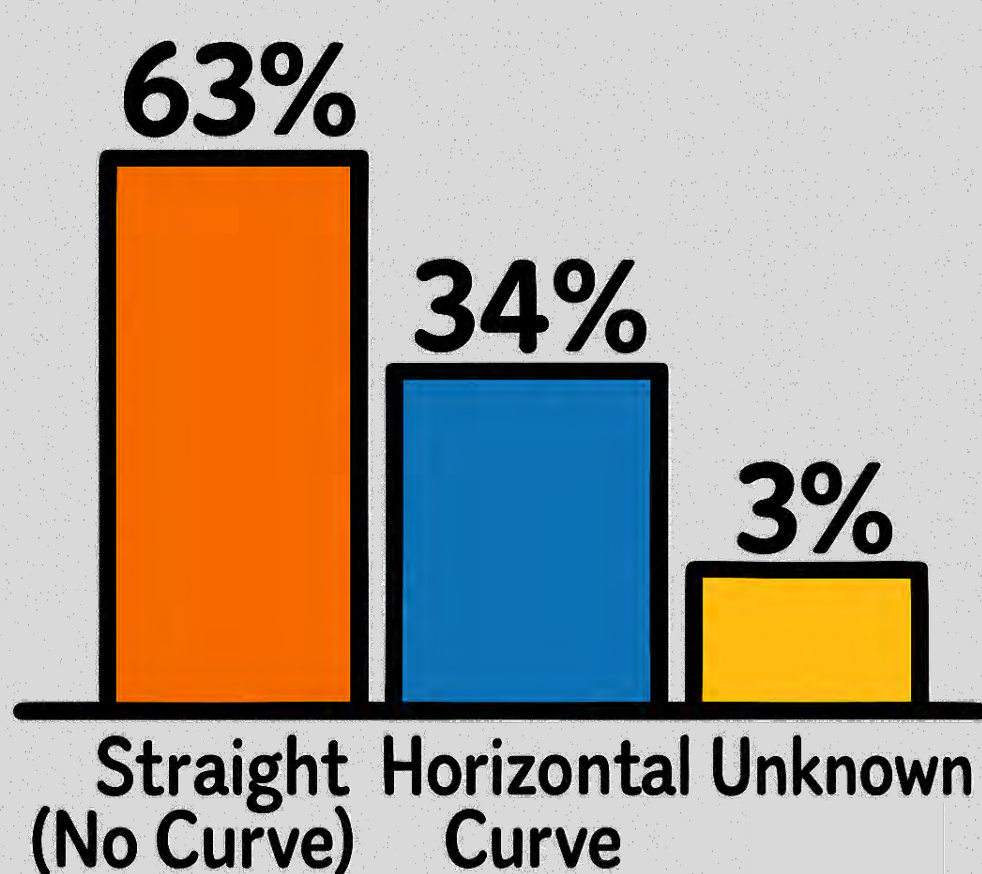
RwD in Tribal Communities – The Data



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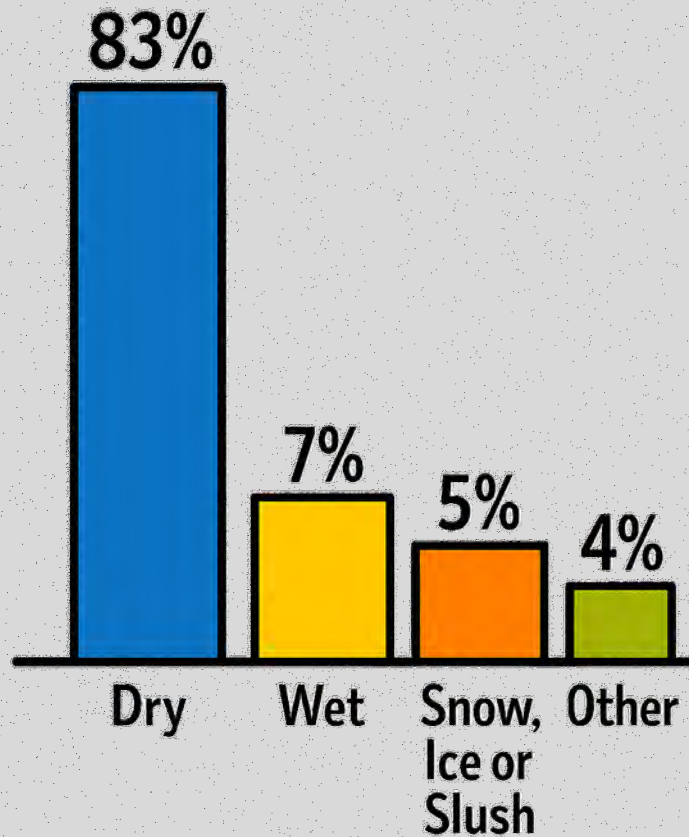


RwD in Tribal Communities – The Data

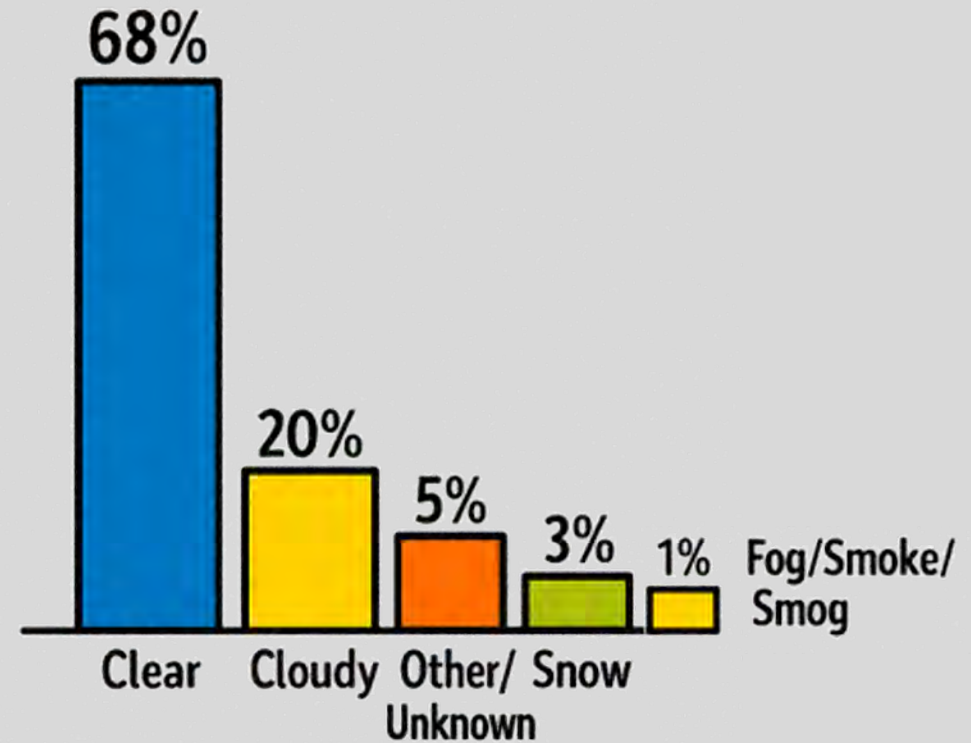


RwD in Tribal Communities – The Data

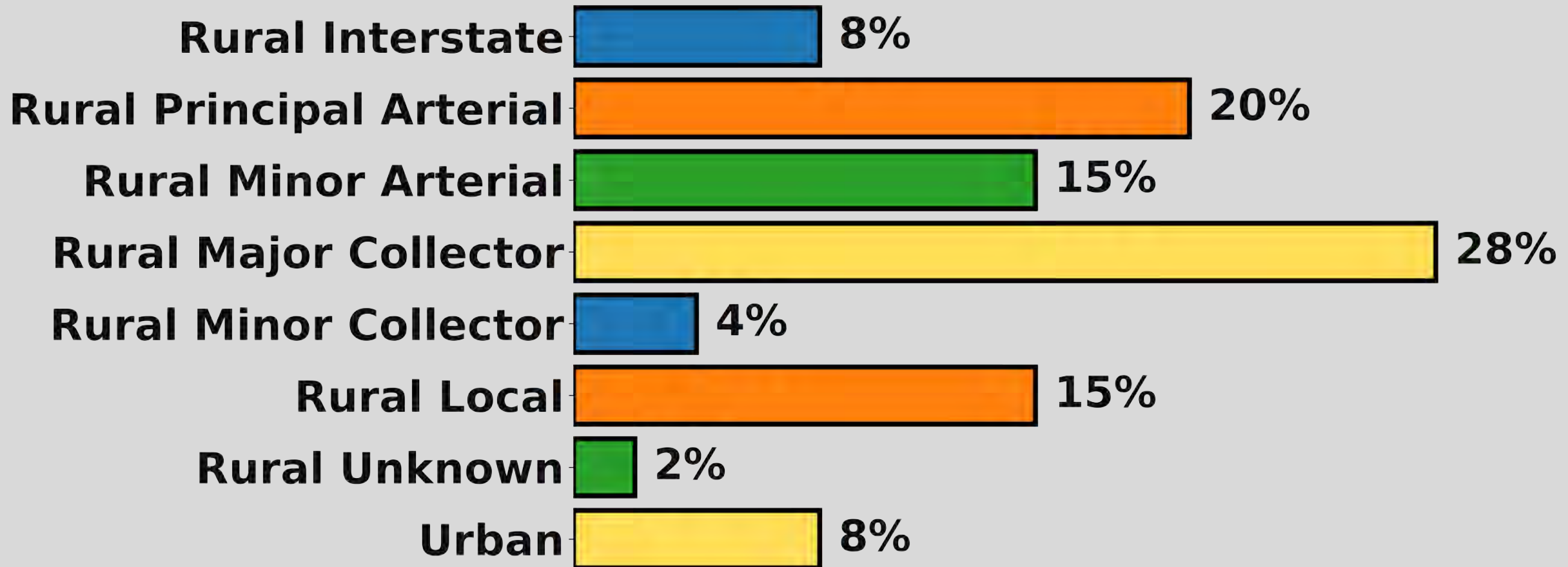
By Surface Condition



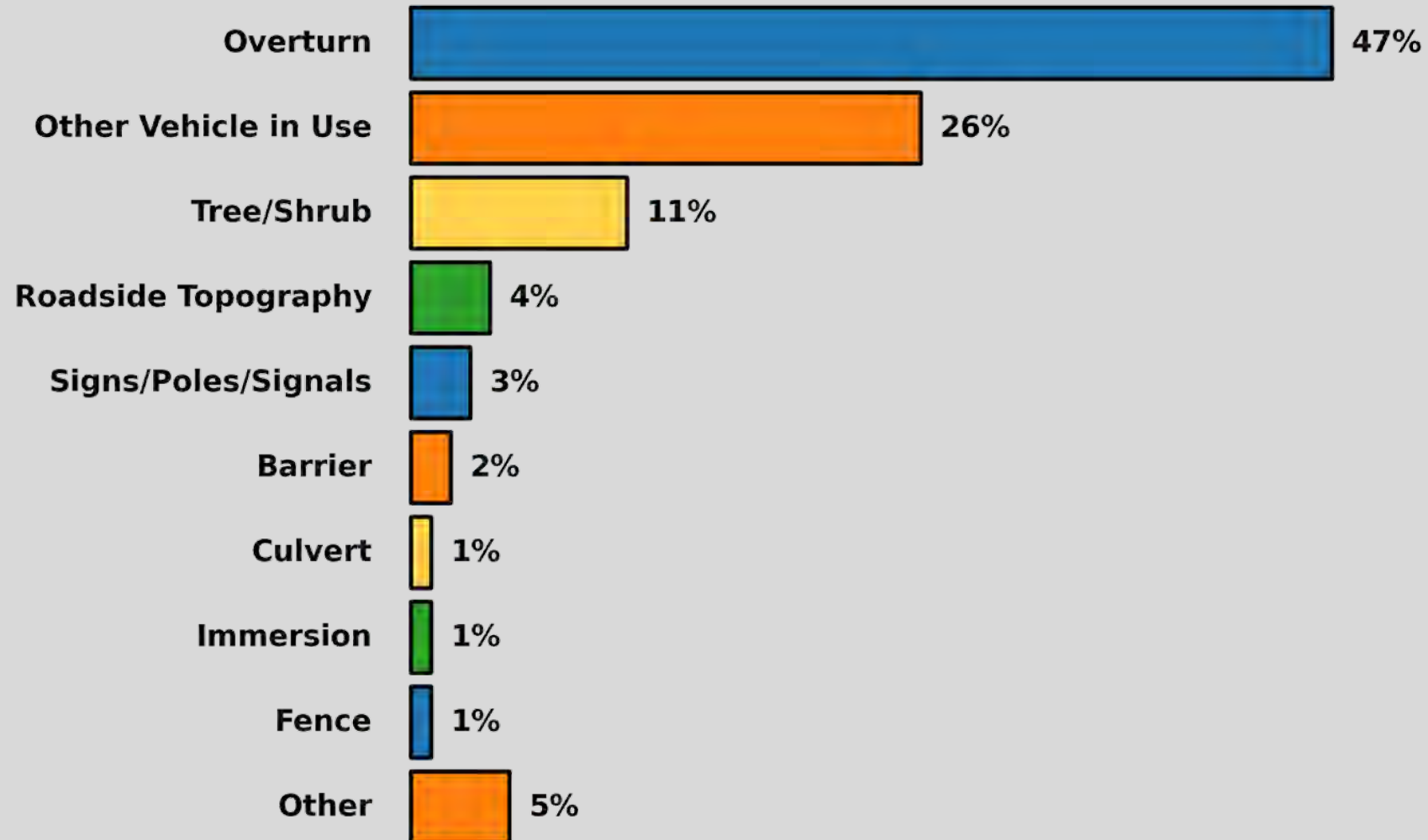
By Weather Condition



RwD in Tribal Communities – The Data



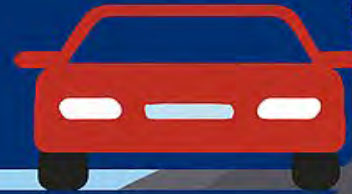
RwD in Tribal Communities – The Data



Tackling Roadway Departures

1st

Stay-on-Road
Safety Strategy



2nd

Roadway Departure
Reduction Plan

3rd

Minimizing Roadway
Departure Risks and Impacts





Building a Safety Culture

- Community-driven safety: blending traditional knowledge and modern science
- Engaging tribal leadership, elders, and youth
- Culturally sensitive outreach

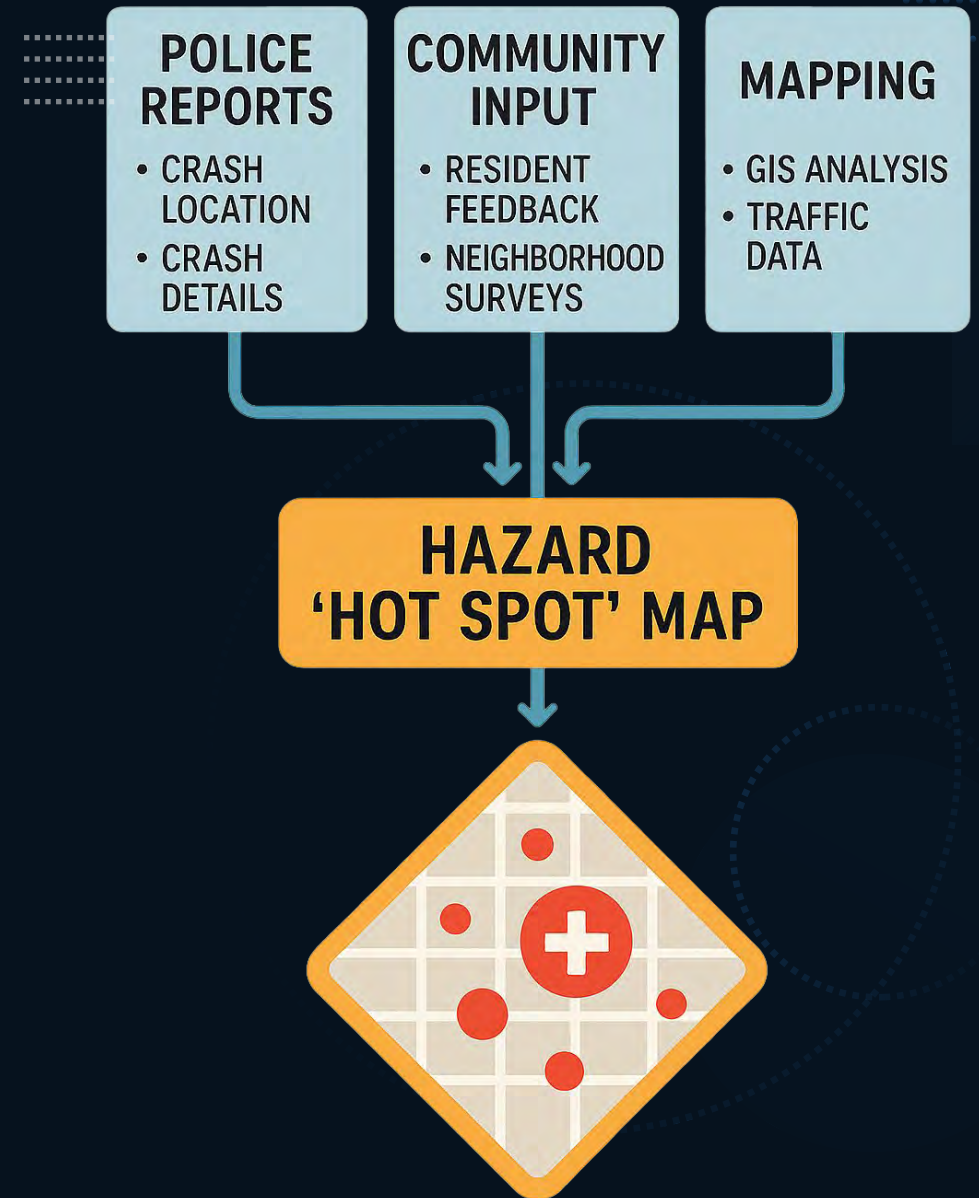


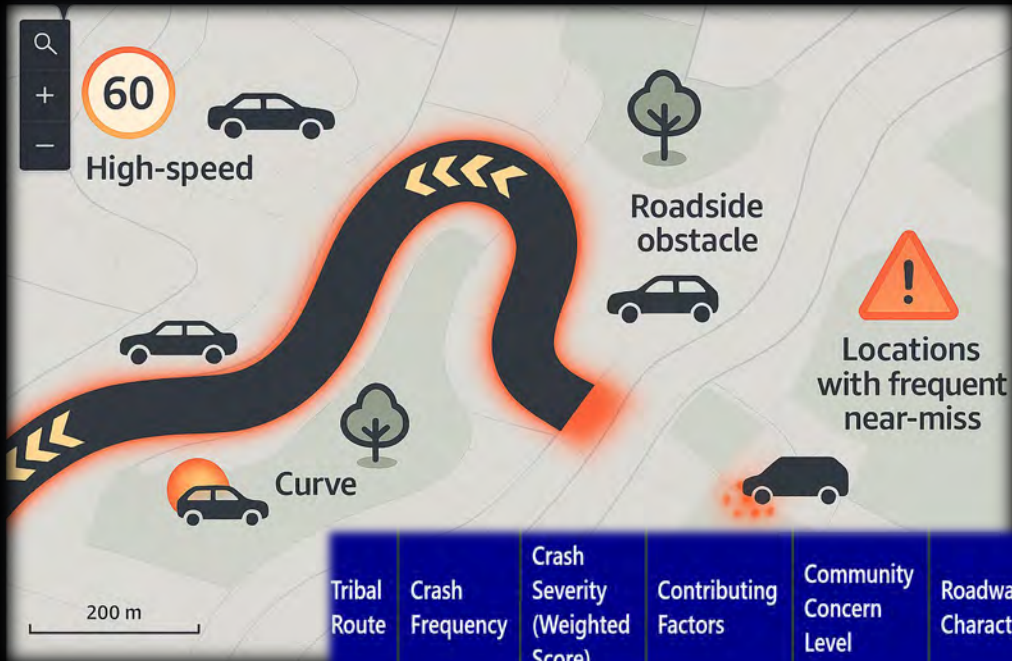
Empowering Tribal Leadership

- What's the role of Tribal governments in road safety?
- Building partnerships: BIA, FHWA, State DOTs

Data-Driven Hazard Identification

- Crash data collection: overcoming challenges
- Network screening: systemic vs. site-specific
- Community mapping and participatory assessments





Tribal Route	Crash Frequency	Crash Severity (Weighted Score)	Contributing Factors	Community Concern Level	Roadway Characteristics	Priority Score	Priority Level
TR-101	High (12 crashes)	4.5	Speeding, Curve, Poor Lighting	High (Community meetings, surveys)	2-lane, no shoulder, rural	9.2	High
TR-205	Medium (6 crashes)	3	Wet pavement, signage issues	Medium (Some complaints)	2-lane, paved, forested	6.5	Medium
TR-309	Low (2 crashes)	1.5	Driver distraction, animal crossings	Low (No formal input)	Gravel, narrow, remote	3.2	Low
TR-412	High (10 crashes)	4	Speeding, alcohol, night-time	High (Tribal council resolution)	Paved, curves, near village	8.8	High
TR-518	Medium (5 crashes)	2.5	Poor signage, fog-prone area	Medium (Survey feedback)	2-lane, hilly terrain	5.9	Medium

Prioritizing Locations for Action

- Using risk factors: curves, speed, roadside objects
- Combining data and community input
- Prioritization Matrix and/or heat maps help justify funding requests

Low-Cost High-Impact Countermeasures

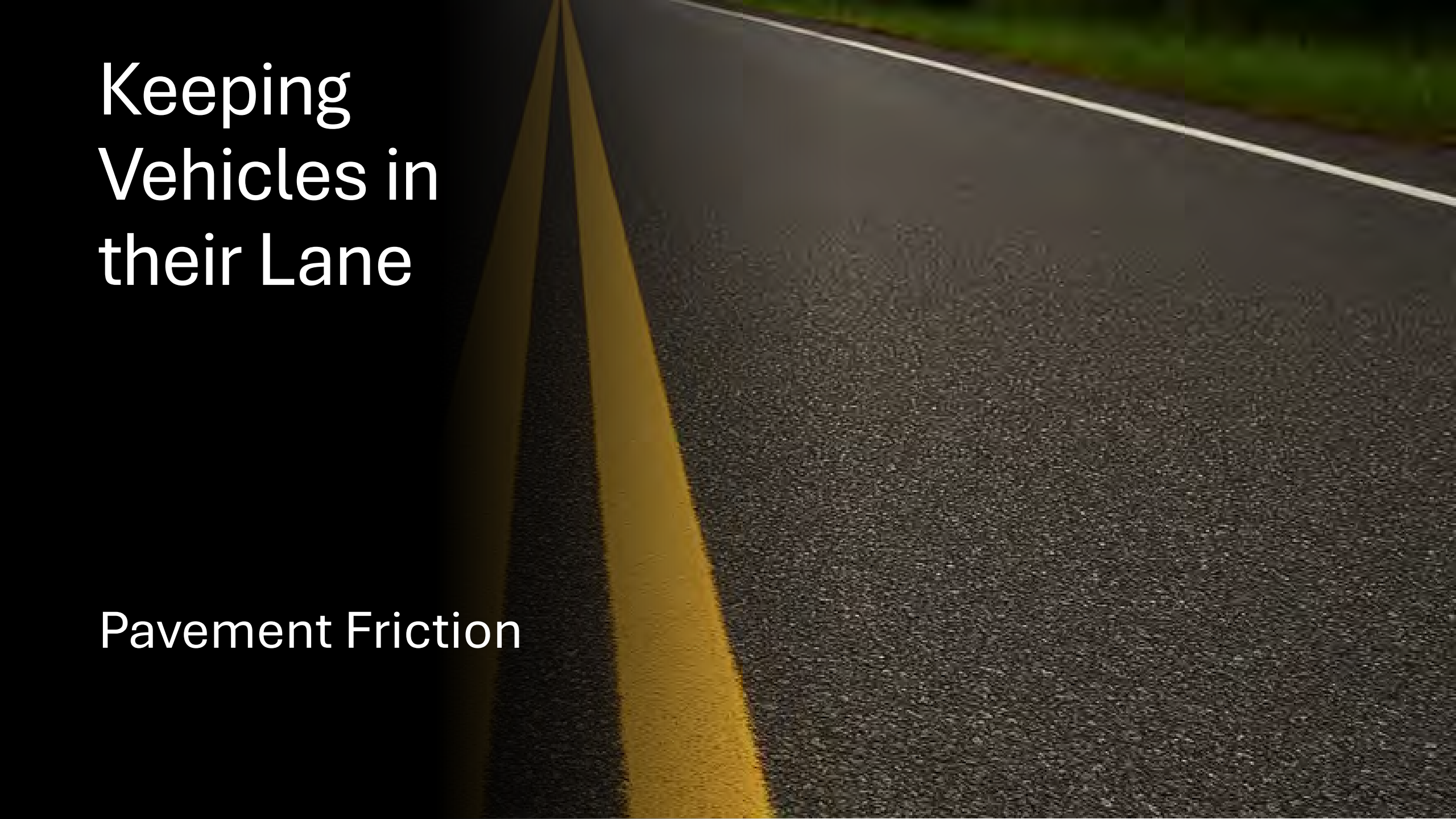
- Keeping Vehicles in their Lane
- Providing a Safer Recovery Area
- Reducing Crash Severity



Keeping Vehicles in their Lane

Rumble Strips





Keeping
Vehicles in
their Lane

Pavement Friction

Example from
Chippewa Cree
Tribe, Montana

Pavement Friction





Keeping
Vehicles in
their Lane

Wider Edge Lines

Keeping Vehicles in their Lane

Horizontal Curve Delineation



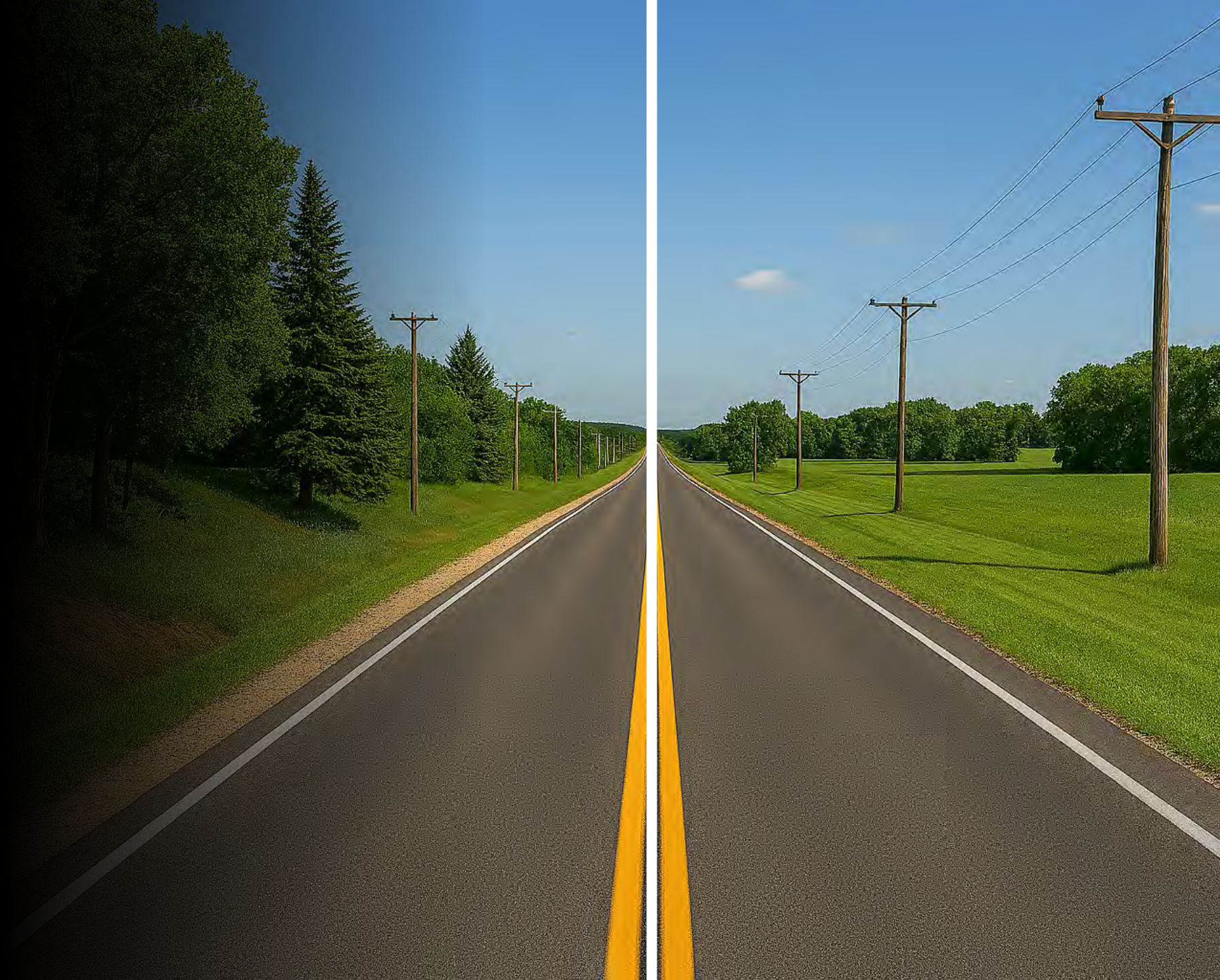
Keeping Vehicles in their Lane

Lighting
Improvements



Providing a Safer Recovery Area

Clear Zones



Providing a Safer Recovery Area

Centerline Buffer
Area



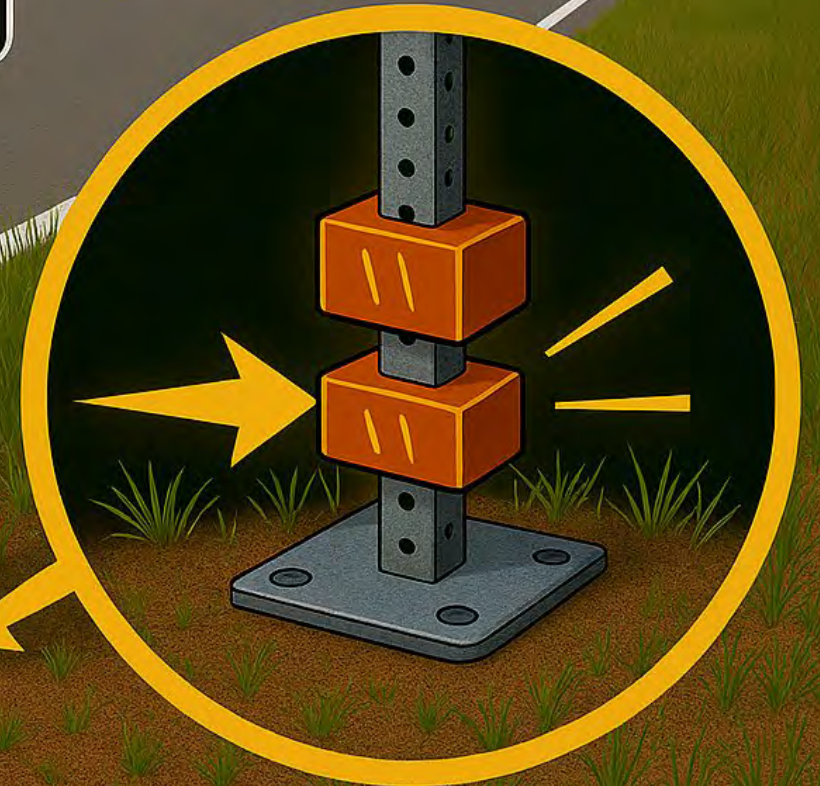
Providing a Safer Recovery Area

Culvert End
Treatments



Providing a Safer Recovery Area

Breakaway
Features for Signs
& Light Poles



Providing a Safer Recovery Area

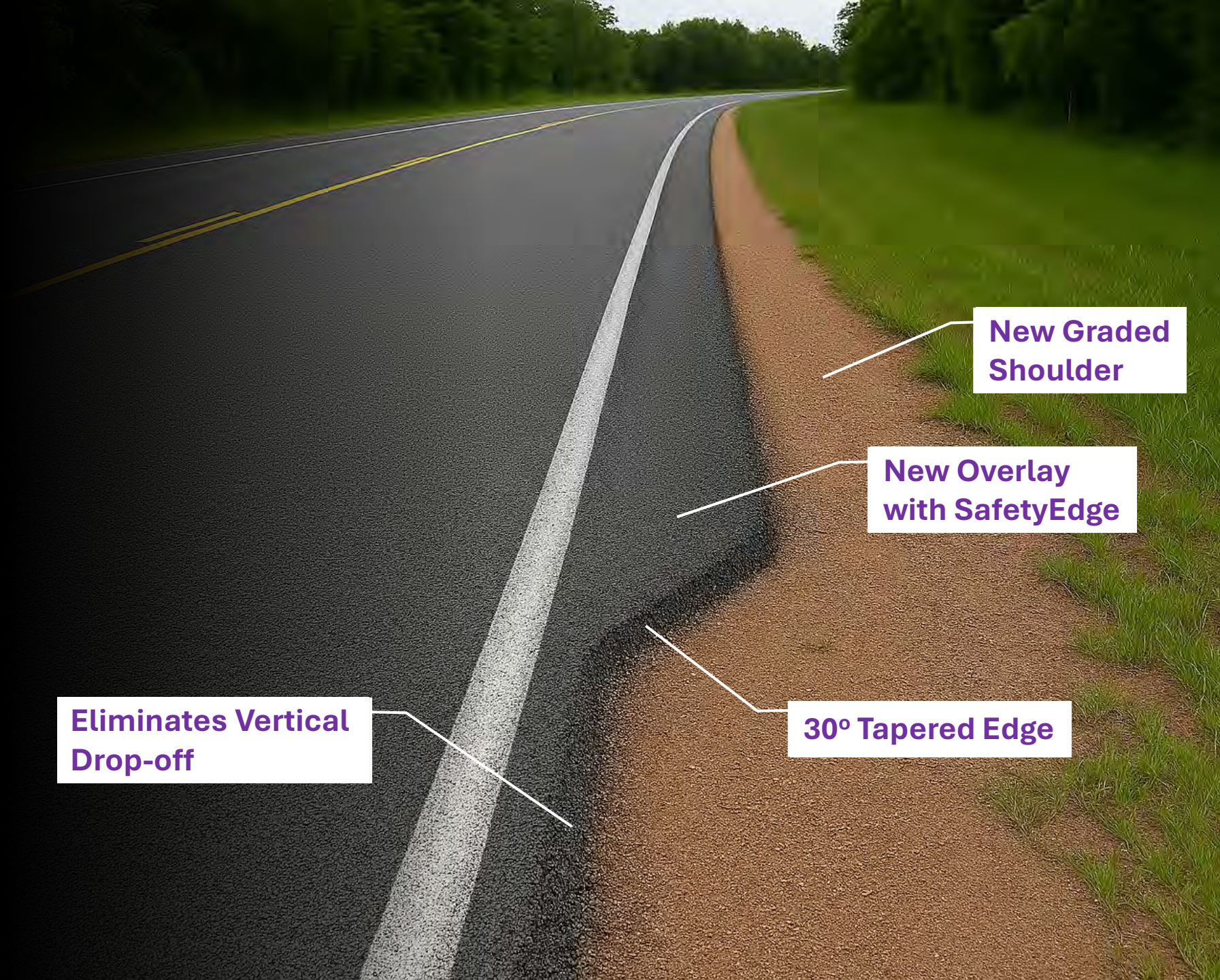
SafetyEdge

Eliminates Vertical
Drop-off

30° Tapered Edge

New Overlay
with SafetyEdge

New Graded
Shoulder



Reducing Crash Severity

Guardrails



Reducing Crash Severity

Guardrail End Treatments



Reducing Crash Severity



Crash Cushions



Reducing Crash Severity

Cable Barriers



Reducing Crash Severity

Median Barriers





Visual Traps



*Photos taken from FHWA
“Low-Cost Treatments for
Horizontal Curve Safety
2016”*



Superelevation Issues



Edge Drop-off

An illustration of a police officer in a dark blue uniform with a star on his cap, standing next to a young man with dark curly hair wearing an orange t-shirt and a backpack. The young man is holding a yellow triangular warning sign with a black exclamation mark. The background is a solid light gray.

Education & Enforcement

Community awareness campaigns

Tribal law enforcement partnerships

Youth engagement

TRIBES FOR ROAD SAFETY



- **“Coffee with a Cop”**
- **School visits and youth programs**
- **Safety checkpoints with a community twist**
- **Participation in tribal festivals & health fairs**
- **Ride-alongs & open houses**

PRIZES AND INCENTIVES FOR SAFE DRIVING HABITS



CULTURALLY
RELEVANT
MESSAGING THAT
RESONATES WITH
SRPMIC TRADITIONS
AND VALUES

FREE FOOD AND COMMUNITY EVENTS



INTERACTIVE WORKSHOPS,
CONTESTS, AND
CHALLENGES TAILORED
TO DIFFERENT AGE GROUPS



ACTIVE INVOLVEMENT
OF LAW ENFORCEMENT
OFFICERS



IMPLEMENTATION ROADMAP



**Develop Rwd
Implementation
Plan**



**Set Goals and
Performance
Measures**



Assess Funding



**Prepare Phasing
(Systemic vs. Spot
Improvements)**



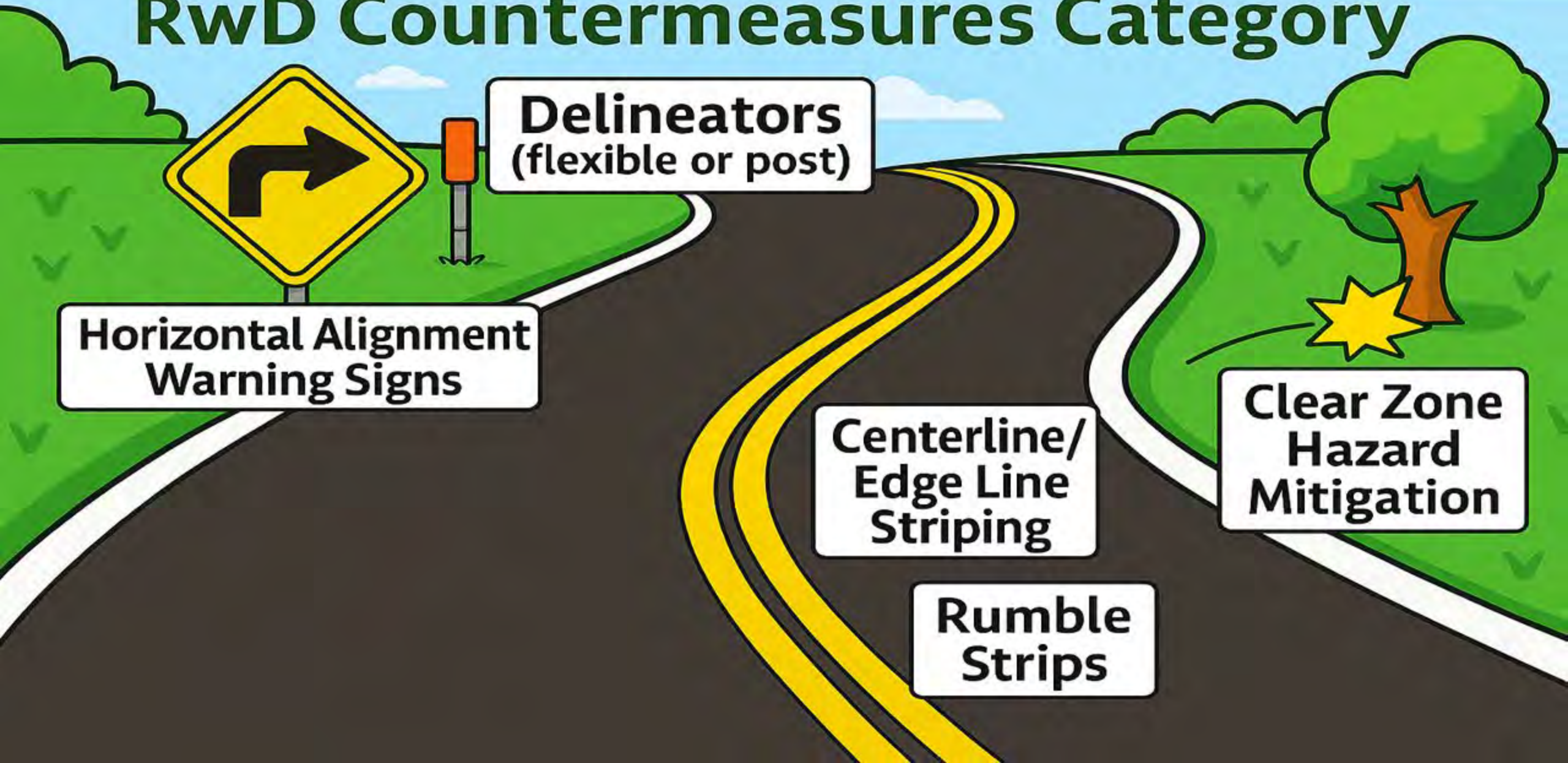
TTPSF Systemic Roadway Departure Countermeasures Category

Strategically address Roadway Departure which is involved in 2 out of every 3 fatal crashes in Tribal areas

25%
funding goal
(about
\$5-million/year)

- Reduced application burden
- Only specific countermeasures eligible

Eligible Improvements in the Rwd Countermeasures Category



Delineators
(flexible or post)

**Horizontal Alignment
Warning Signs**

**Centerline/
Edge Line
Striping**

**Rumble
Strips**

**Clear Zone
Hazard
Mitigation**

Systemic RwD Countermeasure Request Form

Systemic Roadway Departure Countermeasure Request Form

Click to Add Photo (optional)

Location Information

Route Name

NTTFI Route NTTFI Section

Segment Length Alignment ☐ Curve(s) ☐ Tangent(s)

Surface Type

Risk Data

Traffic Volume Speed Limit

Lane Width Paved Shoulder Width

What additional data indicates a high risk for roadway departure crashes here?

Countermeasures

	Existing	Requested	Requested Funding
a. Horizontal alignment warning signs (see MUTCD Section 2C.06)	☐	☐	
b. Delineators (flexible or post mounted) as described in Chapter 3F of the MUTCD	☐	☐	
c. Center line and edge line markings (Maintenance is not eligible. TTPSF can fund striping where it does not exist or upgrades in line width or material type.)	☐	☐	
d. Rumble strip or rumble stripes (Please attach a design detail drawing, if available)	☐	☐	
e. Mitigation of roadside hazards to establish or widen clear zone (specify improvement in project narrative)	☐	☐	

Notes (Optional)

Add Another Location



2026 Application Cycle is October 1, 2025 – January 15, 2026

Overcoming Challenges



Data gaps and resource constraints



Environmental, cultural, and land use concerns



Building partnerships: State DOTs, FHWA, BIA, local agencies

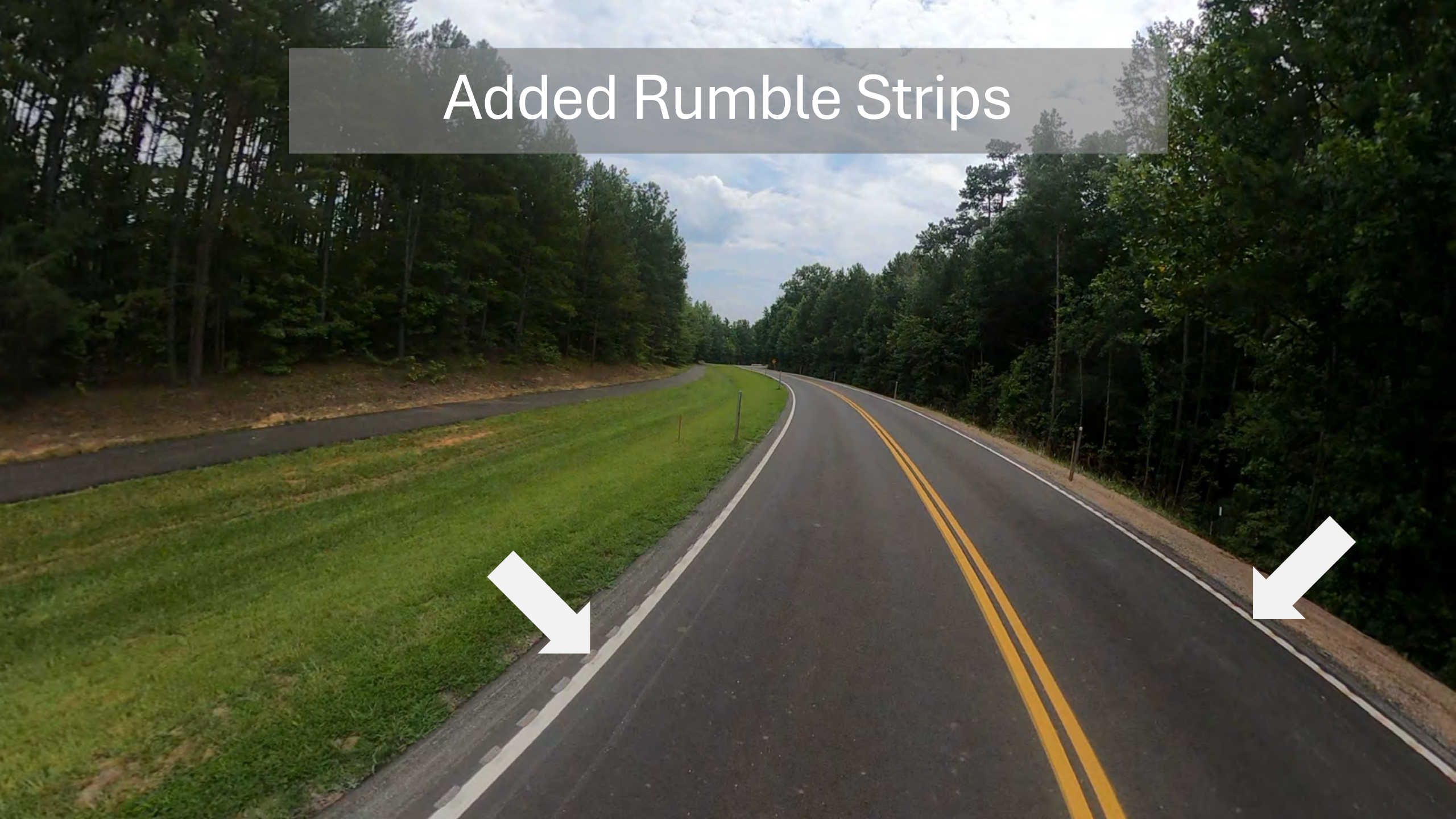
DATA GAP

FUNDING

Case Study: Avenue of the Nations

A wide, straight asphalt road with double yellow lines and a white shoulder line, receding into the distance under a cloudy sky. Trees and grassy areas flank the road.

Added Rumble Strips



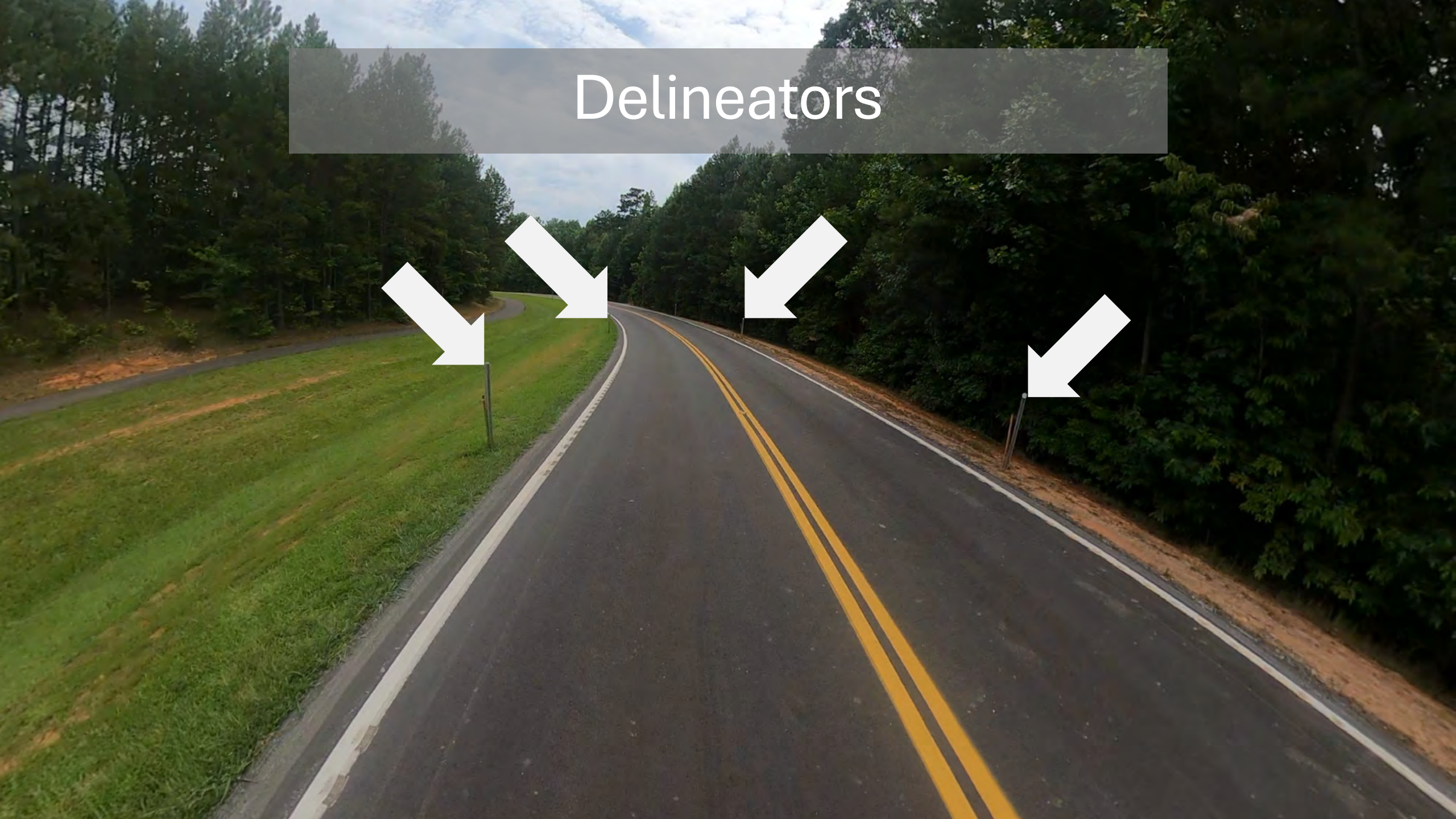
Improved Pavement Striping



Pavement Markers



Delineators



Advanced Warning Signs



Clear Zone Improvements





Reflective Strips on Signposts



Guardrails and End Treatments



RESOURCES



TribalSafety.org



**FHWA Roadway
Departure Safety**



**FHWA Proven
Safety Countermeasures**

QUESTIONS OR COMMENTS?



Thank you for your time!

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