

New methods for identifying roadway safety priorities in American Indian reservations

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ABE80 Mission Statement and Scope

- **The Native American Transportation Issues Committee** (ABE80) is concerned with research and practice pertaining to transportation issues on or near tribal lands and communities or affecting tribal historical or cultural properties wherever located.
- Tribal transportation issues include all modes of moving people and goods from one place to another, all relevant agencies including tribal, state, federal, regional and local providers, and all relationships and interactive processes of various governmental units - tribal, federal, state and local - with regard to the development, planning and administration, coordination, and implementation of transportation laws, policies, plans, programs and projects

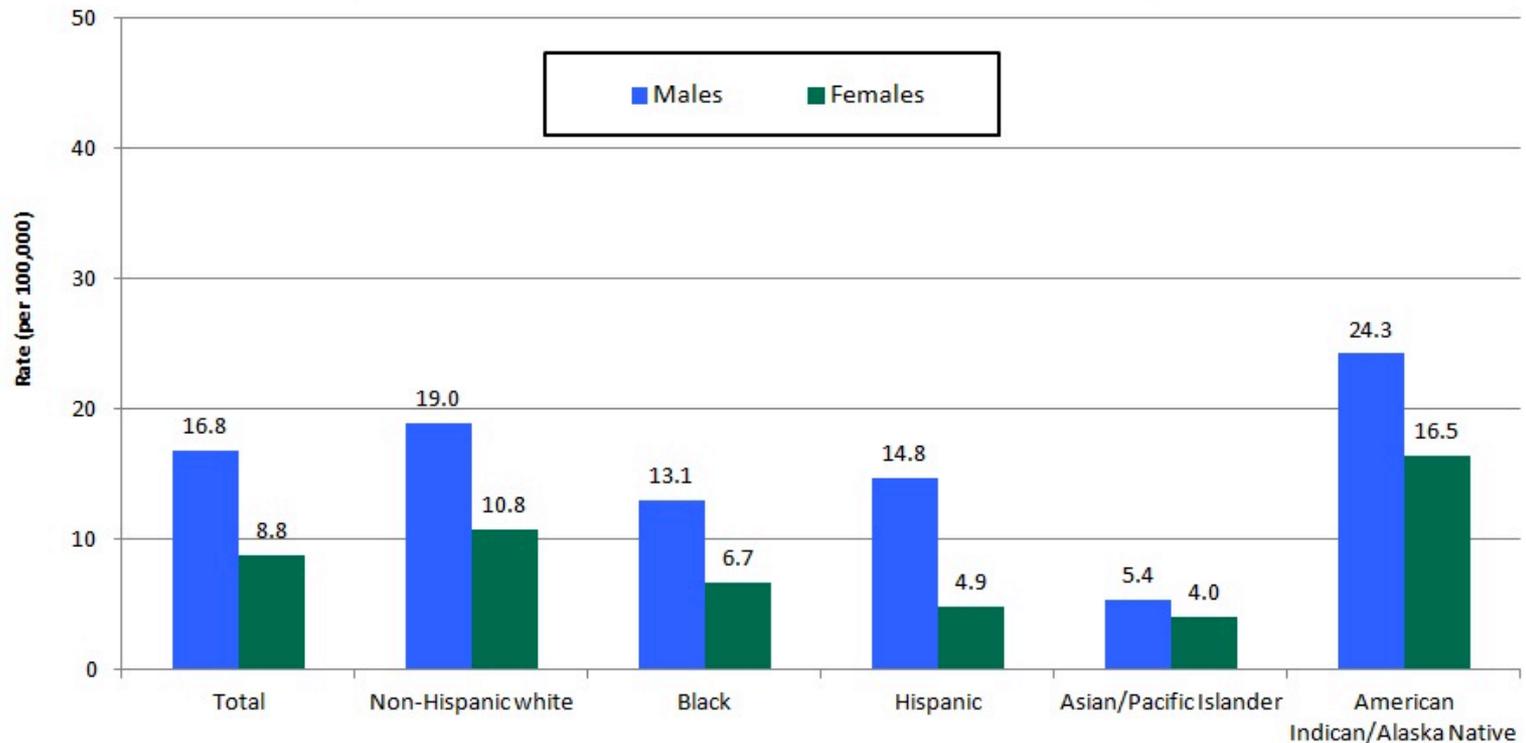
Tribes & transportation safety: A high-stakes issue

- There are unusually high rates of MVC fatalities and injuries among American Indians, nationally:
 - Rate increased by 52%, compared a nationwide decrease of 2% (Poindexter 2004, 1975-2002 data).
 - MVC fatality rate is higher than for any other American population group (Pollack et al. 2012).
 - MVC are leading cause of unintentional injury for American Indians aged 1-44 (Raynault et al. 2010).
- Tribal, USDOT, and many state and local governments increasingly recognize that improving tribal transportation safety is a priority.

Particularly high stakes for teens

Figure 3

**Motor Vehicle Traffic Deaths per 100,000 Teens,
Ages 15-19, by Gender, Race, and Hispanic Origin, 2011**



Source: Child Trends' analysis of data from Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS). National Center for Injury Prevention and Control. Available from: <http://www.cdc.gov/ncipc/wisqars/>.

Explanations from prior research

- ***Individual behaviors:*** impaired driving, low rates of safety restraint use, speeding
- ***Road conditions:*** signage, lighting, signals, roadway design, surface repair, ice and vegetation management
- ***Historic and structural disparities:*** unmet health needs, poverty, distance to travel to jobs and services, limited or delayed access to emergency medical care
- ***Institutional resources and policies:*** enforcement, conflicts or gaps in road ownership and responsibility, possibly dry reservation policies

Distinguishing reservations

- Focuses our attention on roadways and jurisdictions.
- About 22% of American Indian and Alaska Natives live in reservations, trust lands, or tribal statistical areas (Census Bureau 2012-CN.06)
- Rural areas generally have higher crash and fatality rates than urban areas.

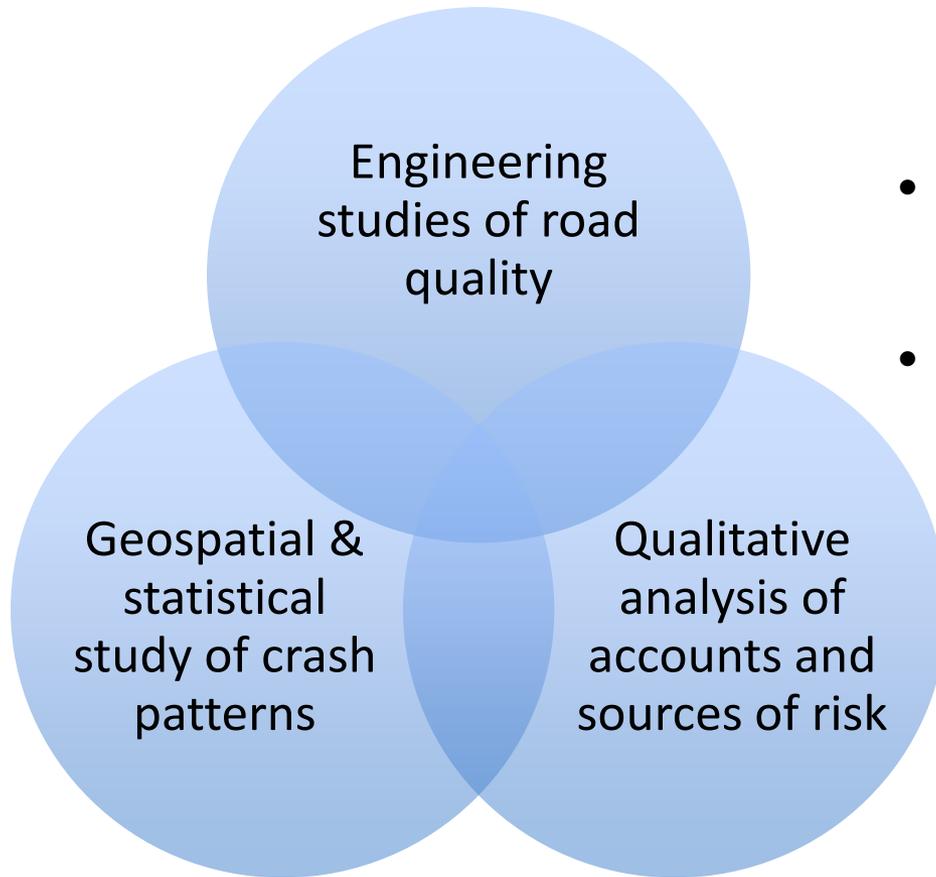
Number and percent of motor vehicle crash deaths by land use and state, 2013							
State	Urban		Rural		Unknown		Total
	Number	%	Number	%	Number	%	Number
Minnesota	131	34	256	66	0	0	387
U.S. total	14,987	46	17,696	54	36	<1	32,719

•<http://www.iihs.org/iihs/topics/t/general-statistics/fatalityfacts/state-by-state-overview>

FAST 21

- Latest major federal transportation legislation (FAST21) prioritizes reservation roadway safety. It requires:
 - *Data quality study* within 1 year, in recognition that data are not being shared, not sufficient in quantity or quality or type, or are not sufficiently relevant to identify and address issues.
 - *Causes and options study*, within 2 years, to “identify and evaluate options for improving safety on public roads on Indian reservations.”

Multiple methods for data quality & analysis



- Another perspective on the the “5Es” of roadway safety (Engineering, Enforcement, Environment, Education, and Everyone)
- ABE80 sessions to build and share knowledge on these topics. E.g.,
 - *SafeTREC California Tribal Road Safety Data Project*
 - *Methodology to Assess and Compare the State Highway System with the Local Roadway System on the Wind River Indian Reservation*
 - *Proactive Five-Step Process Model for Effective Tribal Crash Reporting*

Researchers

Kathy Quick



Public and nonprofit management, planning, and an array of complex policy areas

Involving diverse ways of knowing in problem definition and problem-solving

Building resilience through engagement and collaboration

Oriented to practice *and* theory

Guillermo Narváez

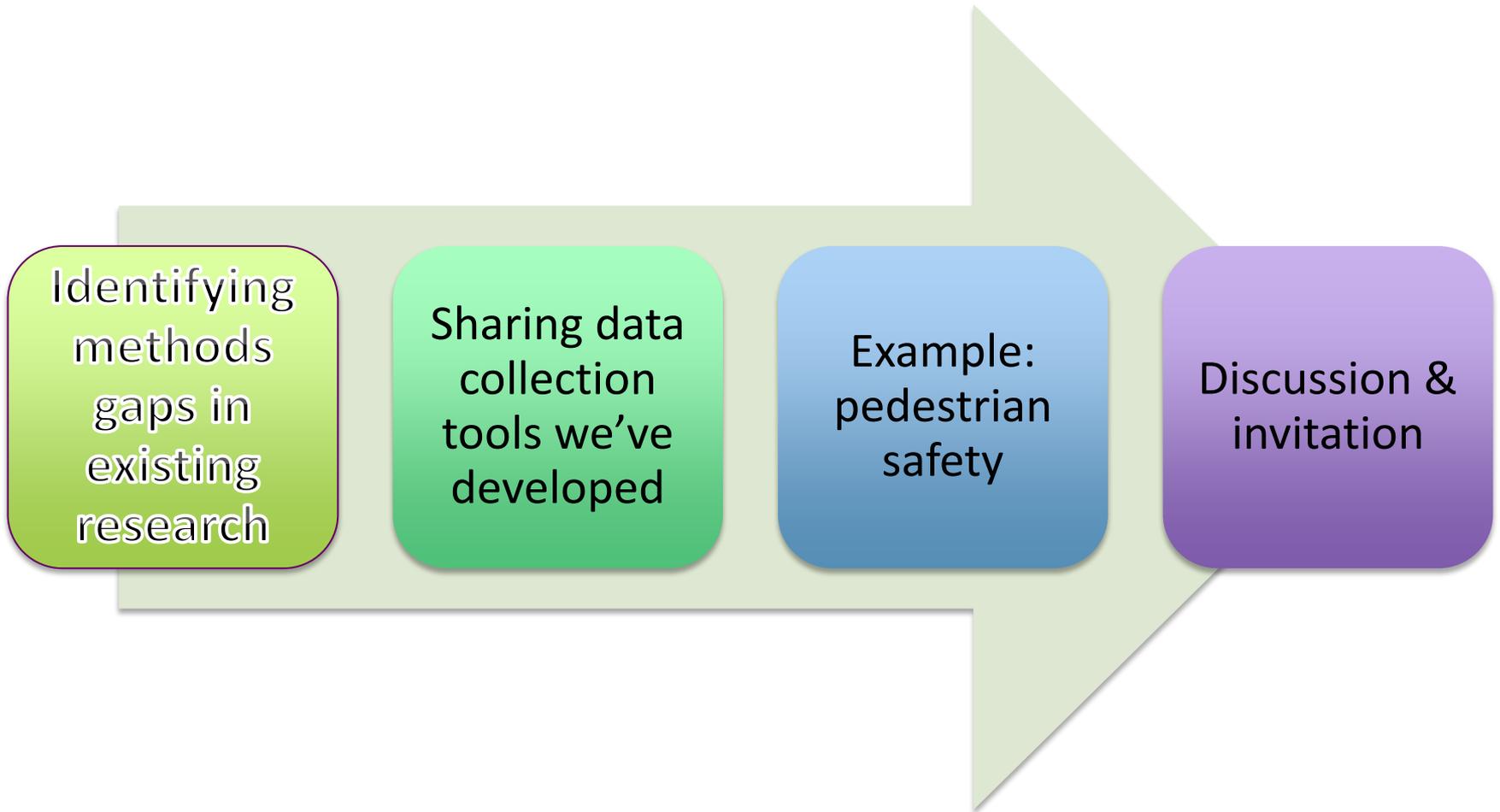


Anthropology of public policy

Transportation policy-making and finance

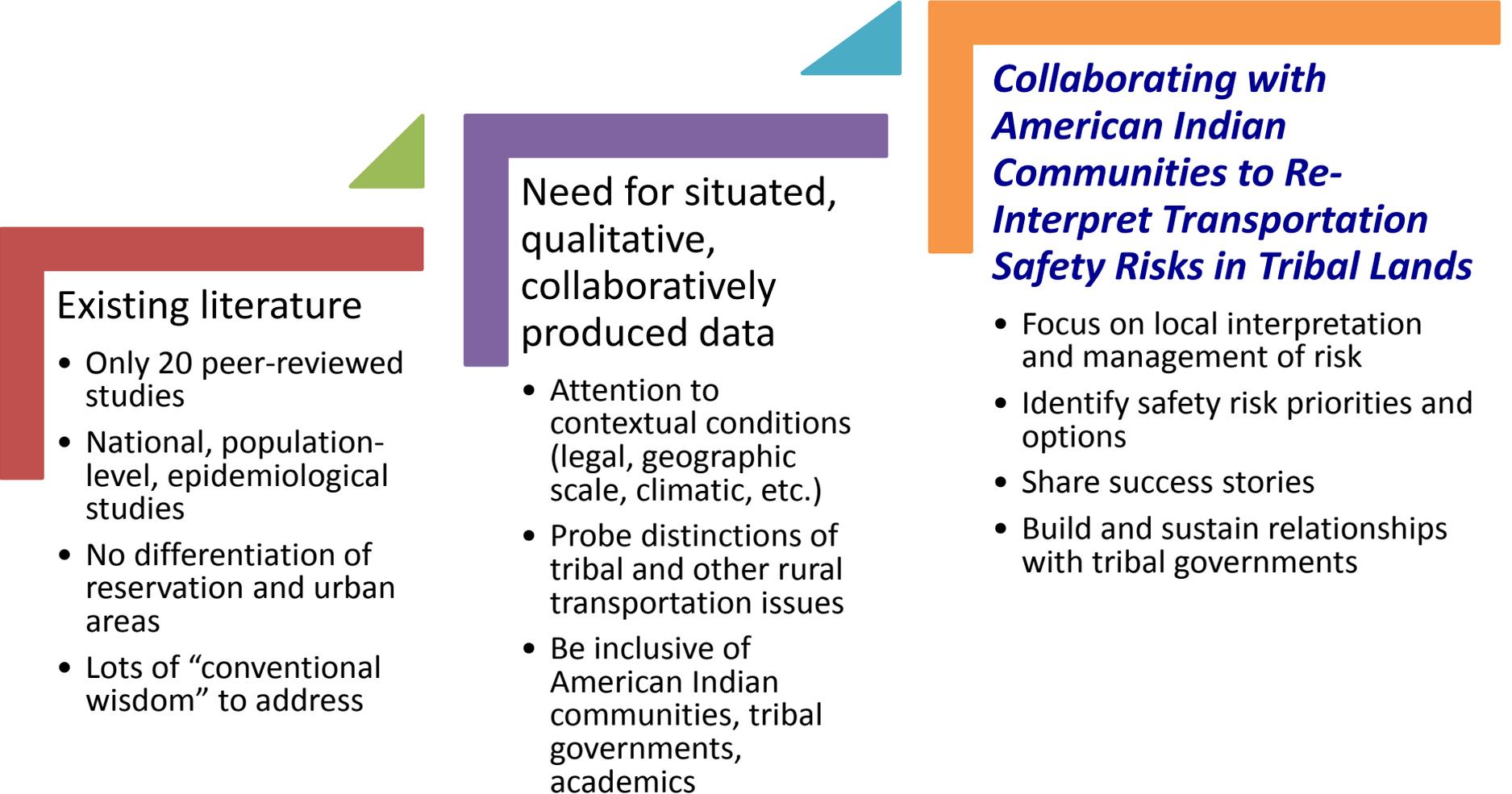
Tribal sovereignty, politics, and government-to-government relationships

Our goals today



Common explanations in prior research

- ***Individual behaviors***: impaired driving, low rates of safety restraint use, speeding
- ***Road conditions***: signage, lighting, signals, roadway design, surface repair, ice and vegetation management
- ***Historic and structural disparities***: unmet health needs, poverty, distance to travel to jobs and services, limited or delayed access to emergency medical care.
- ***Institutional resources and policies***: enforcement, conflicts or gaps in road ownership and responsibility, possibly dry reservation policies



Existing literature

- Only 20 peer-reviewed studies
- National, population-level, epidemiological studies
- No differentiation of reservation and urban areas
- Lots of “conventional wisdom” to address

Need for situated, qualitative, collaboratively produced data

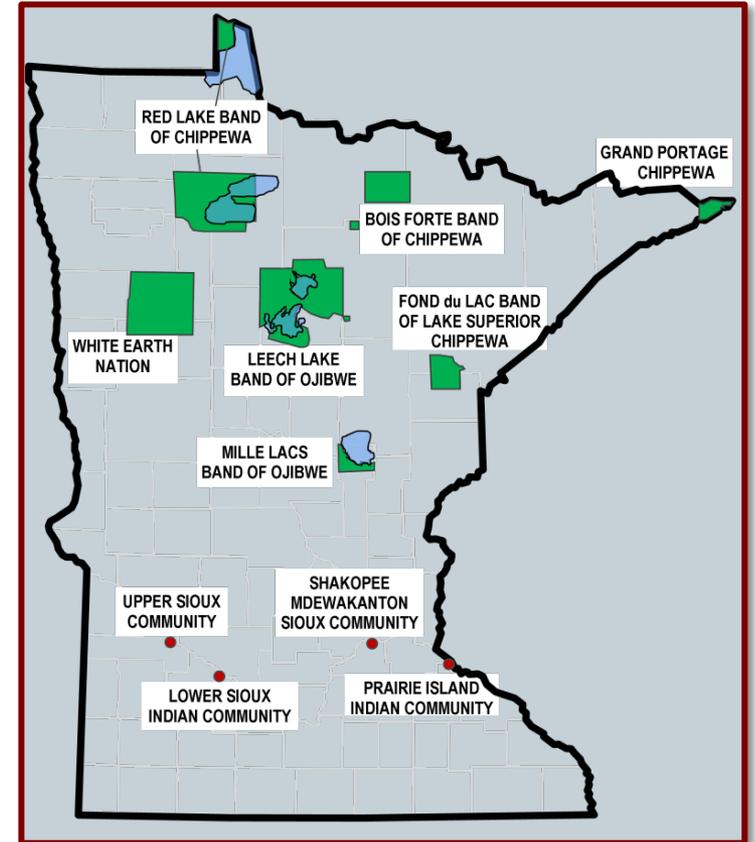
- Attention to contextual conditions (legal, geographic scale, climatic, etc.)
- Probe distinctions of tribal and other rural transportation issues
- Be inclusive of American Indian communities, tribal governments, academics

Collaborating with American Indian Communities to Re-Interpret Transportation Safety Risks in Tribal Lands

- Focus on local interpretation and management of risk
- Identify safety risk priorities and options
- Share success stories
- Build and sustain relationships with tribal governments

Research project methods

- Coordination with Advocacy Council on Tribal Transportation (ACTT)
- Review of crash data
- Interviews with key stakeholders
 - 7 tribal governments
 - Interest groups; state, federal, county governments
 - Other researchers
- Partnerships with 4 tribal governments to gather local expertise on sources and management or risks
 - Reviewing existing data
 - Interviews w/key “5E” leaders (tribal government & other)
 - Focus groups and “virtual tours” with expert drivers
 - Gathering input from interested public at community fairs



Research questions

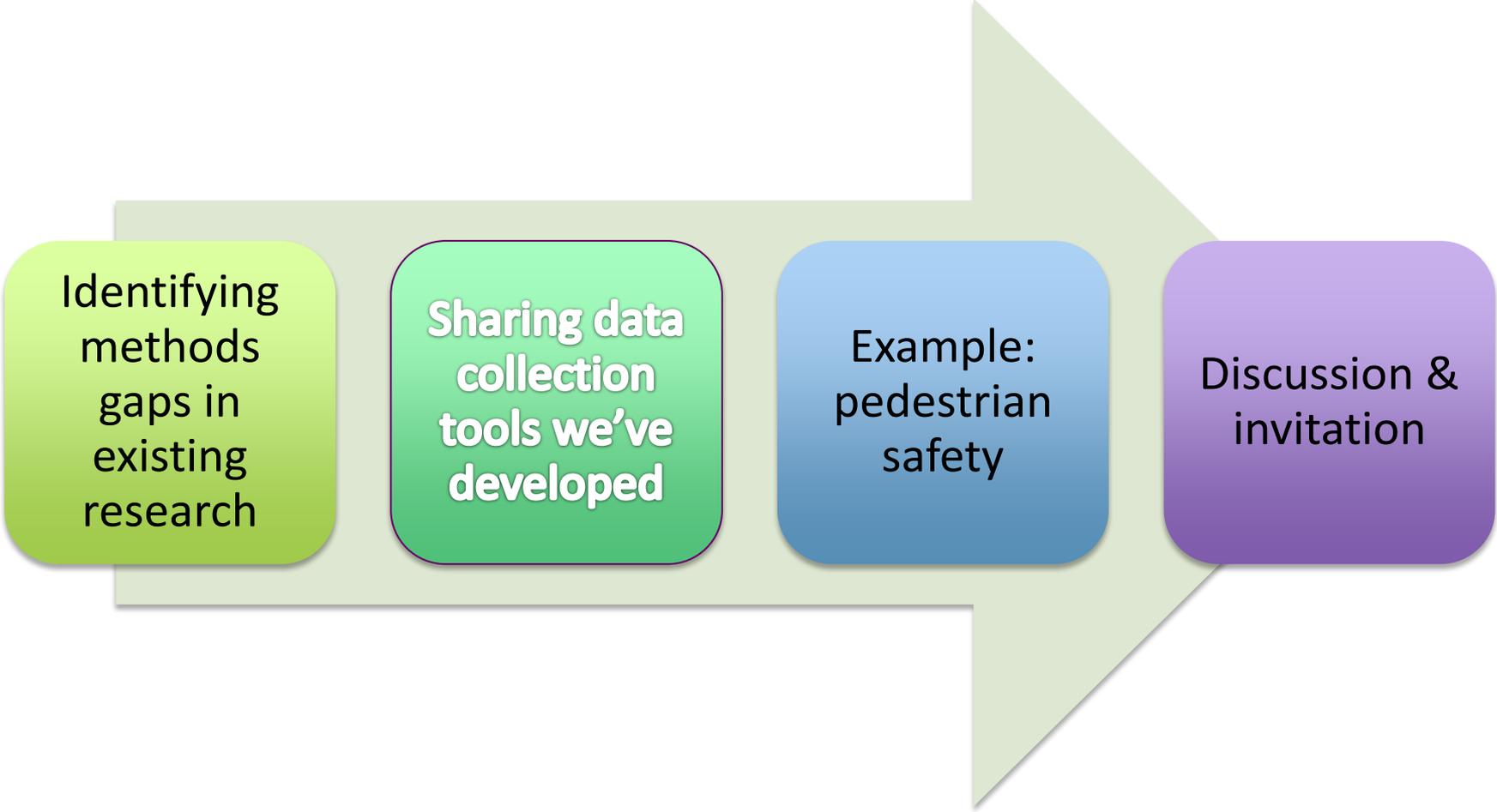
What can be done to improve roadway safety in reservations?

How do stakeholders in the context interpret and manage roadway safety risks in reservations?

How do tribal governance, sovereignty, and inter-governmental relationships impact roadway safety in reservations?

What methodological innovations can we contribute as our “technology transfer” to reservation roadway safety managers and other researchers?

Our goals today



Identifying
methods
gaps in
existing
research

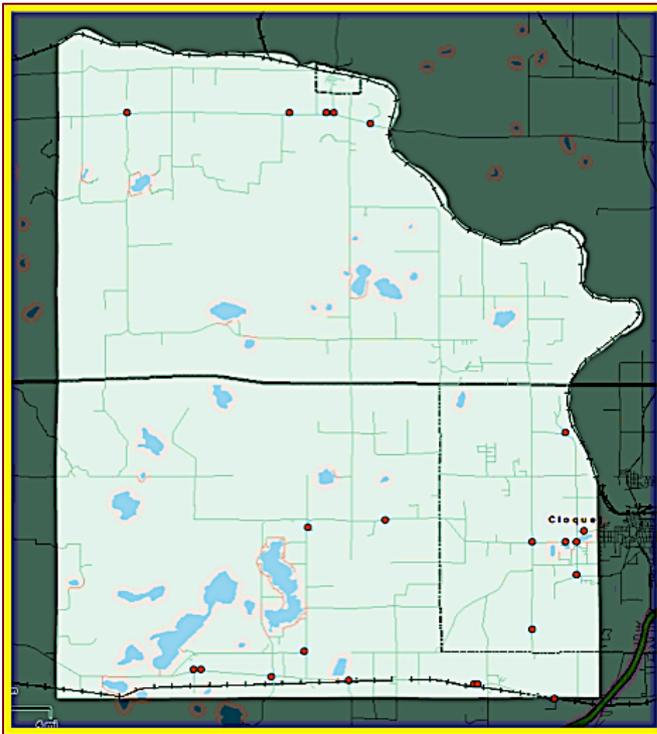
Sharing data
collection
tools we've
developed

Example:
pedestrian
safety

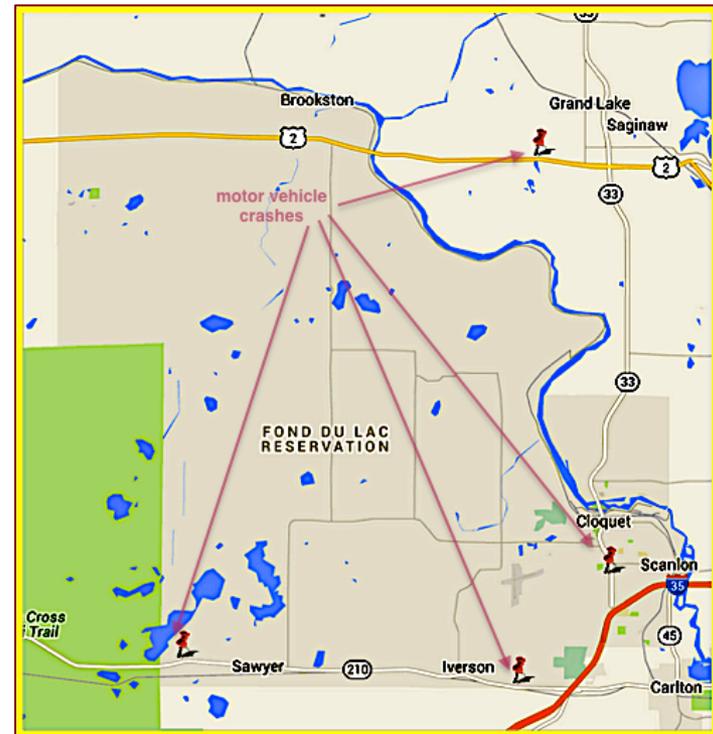
Discussion &
invitation

What we see from conventional data

Standard practice is to use data submitted by enforcement agencies to state and federal agencies. These are valuable data on what has happened and been reported.



MnCMAT (MNDOT & MNDPS)
2011: 23 crashes



FARS (USDOT & NHTSA)
2011: 3 crashes

Key stakeholders to contact

	<i>Fond du Lac</i>	<i>Red Lake</i>	<i>Leech Lake</i>	<i>Mille Lacs</i>
1. Road & Safety Experts – tribal government & associated entities				
Road Construction and Maintenance	X	X	X	X
Planning department	X	X	X	X
Law enforcement (chief, highway safety officer)	X	X	X	X
Car Seat & other Injury Prevention	X	X	X	
Emergency responders and/or ER room team	X		X	
Tribal government executive director	X	X		
Other: Tribal Council member, drivers' ed, courts				
2. Expert drivers				
Transit service, school bus drivers, casino shuttle drivers	X	X	X	
Propane delivery	X			
Road / snow crews	X	X		
3. Related Jurisdictions				
County, city, and township public works dept	X	X	X	
MNDOT regional staff	X			
County sheriff, city police, state highway patrol	X	X	X	
Regional TZD & other related entities	X	X	X	
US Forest Service	NA	X	X	NA
4. Centers of Activity				
Casino, schools, other community centers	X	X	X	
5. Interested reservation residents / enrollees				
	Yes, 30	Yes, 76	tbd	Yes, 85

Interview template – road & safety experts

1. How are you and your agency involved in reservation roadway safety?
2. How would you describe roadway safety in the reservation?
[Follow up: How much of a concern is roadway safety in the reservation? How does this compare with other areas?]
3. What are the major risks or hazards for roadway safety in the reservation?
4. What are you most interested in doing to improve safety?
[Note: continuing or new activities]
5. What do you wish other people or organizations would do (or do more) to improve roadway safety in the reservation?
6. Please summarize your 1 or 2 key points from this conversation.
7. Are there other people we should contact?

Interview template – Expert drivers & general public

Question	Note / prompt
<p>1. What are your ideas or concerns about being safe on the roads in the reservation?</p>	<p>If they need help to get started, ask this all as a set, to get them started, and then let them choose the priorities. Are there places where you often see pedestrians or bicyclists? Deer on the road? Dangerous curves? Icy spots? Speeding?</p>
<p>1. What do you think about the conditions of the roads that you frequent in the reservation?</p>	<p>Important note: The map is just a conversation starter! It is also easy way to record information about hotspots. However, do not worry about turning all of the input into a spatially specific idea. For example, if they say “We need Kids at Play signs in all of the residential areas, because kids play in the street a lot,” or “I don’t see enough police out to enforce speeding,” that is useful, general input.</p>
<p>2. What would you tell someone who is not from here, or a young person who is biking to school or just learning to drive, about being safe on the roads?</p>	
<p>3. Are there places or times that you avoid traveling on the roads, or if you have to go you really don’t like to, or you take a lot of extra care? Where and when? Why?</p>	



Gathering community input at Leech Lake Band pow wow, September 2015

New kinds of data

- General opinions on the roads in the communities
- Who is and is not driving, and where
- Where people avoid driving because of risk
- Problems getting around (bike, ped, snow, etc.)
- Accidents and near misses they, friends, and family have had
- Seatbelt & restraint usage

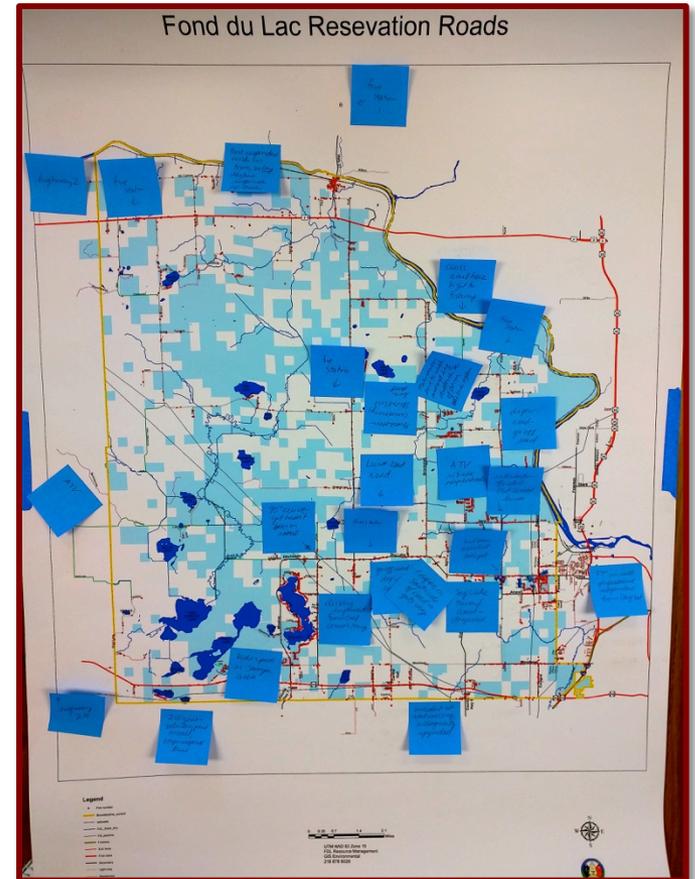


Gathering community input at health fairs with Mille Lacs Band, October 2015 (above) and Red Lake Nation, July 2015 (below)



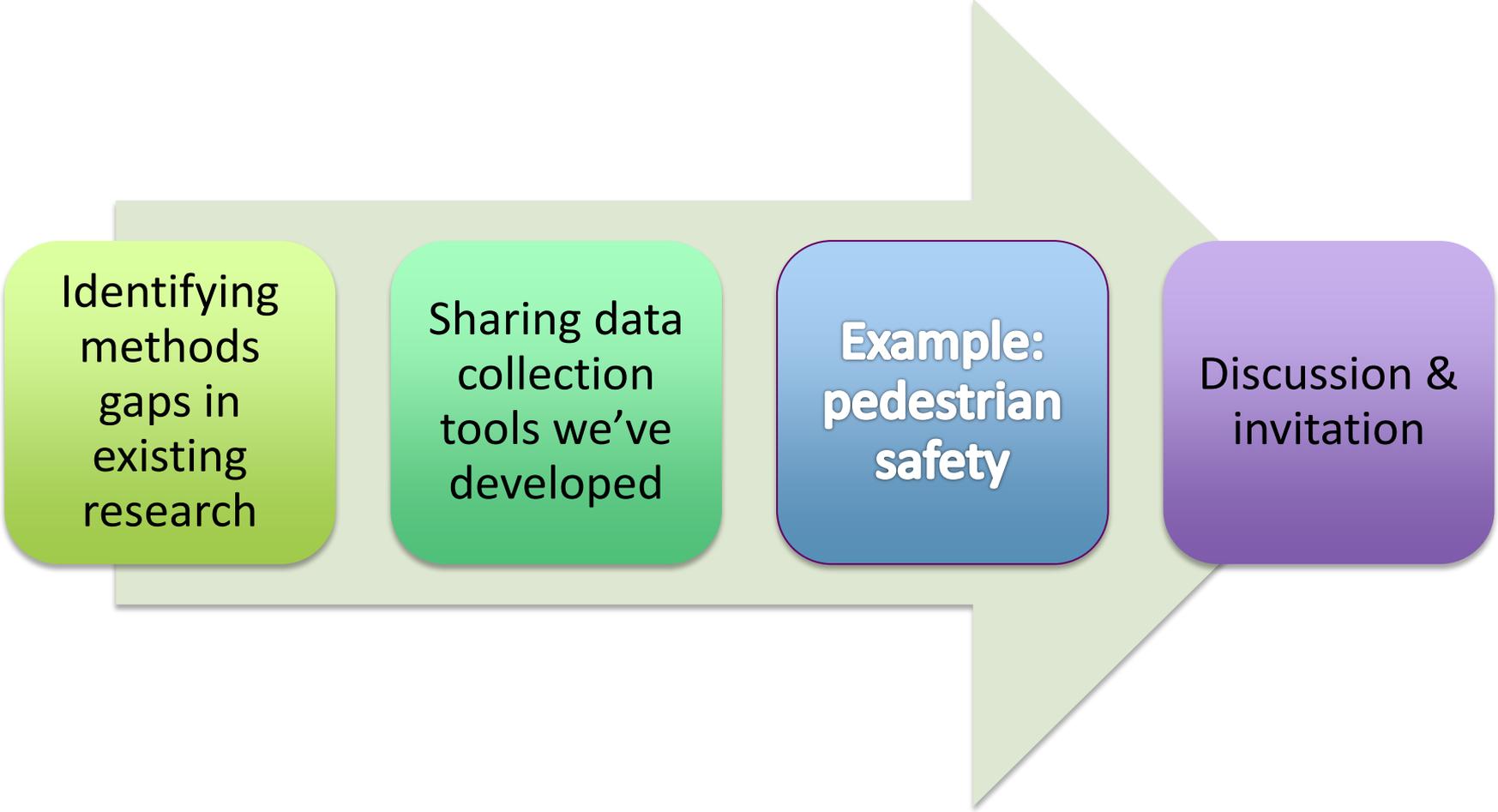
New kinds of data (cont'd)

- Time of day patterns
- Icy spots, other snow & ice issues
- Ease / problems with getting police, snow plows, etc. to respond to concerns
- Poor visibility areas
- Animals: deer trails, dogs
- Driving behavior or culture – local and non-local
- Enforcement issues



Map mark-up from focus group with expert drivers, Fond du Lac Band, July 2015

Our goals today



Identifying
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gaps in
existing
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Sharing data
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**Example:
pedestrian
safety**

Discussion &
invitation

Preliminary results

- Still analyzing summer / fall data collection
- 15 months of laying the groundwork
- 94 key informant interviews, 202 general community member interviews
- 77 researcher days of fieldwork in Minnesota reservations
- *Thousands* of miles on the road
- Multiple policy dialogues at national, state, and local levels



What's special about reservations?

Generally, it is **not** clear that roadway safety issues on reservations are very distinctively different from other rural safety problems, except:

- Heightened concerns about **pedestrian safety**
- Special complications of navigating jurisdictional coordination boundaries



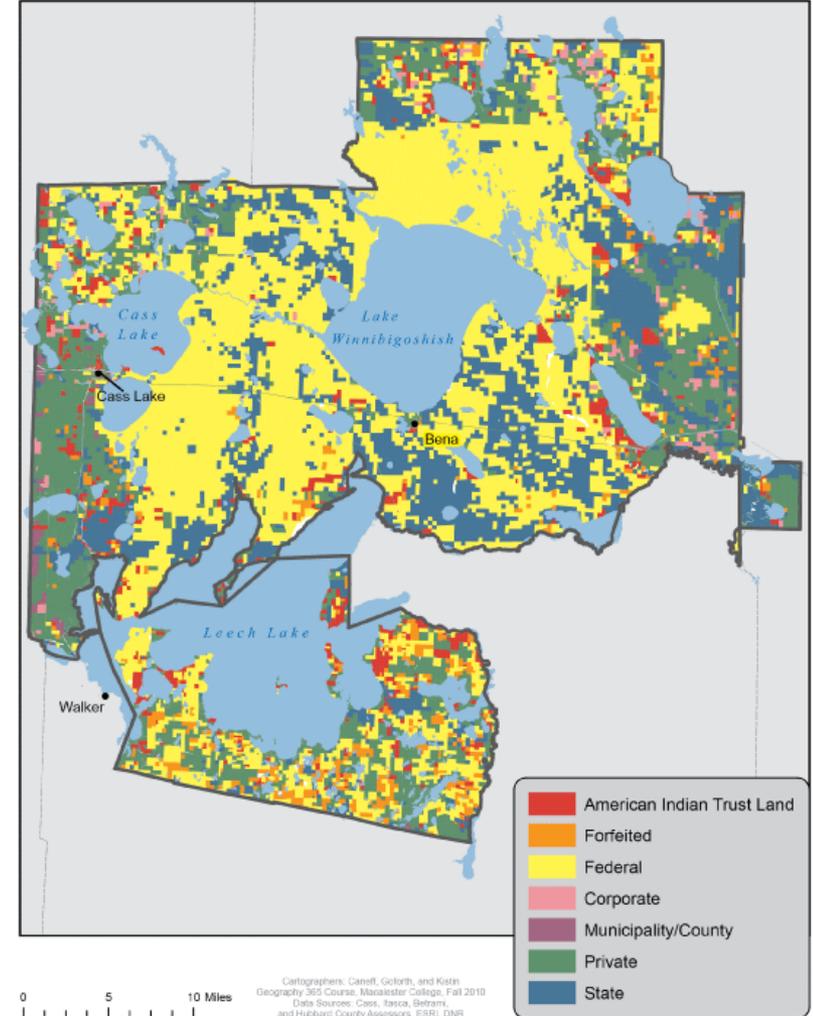
Fragmented nature of reservations

Fragmented land ownership and wide separations between villages, schools, and services.

Example: 4% of the land in Leech Lake Band's reservation is under tribal ownership

Everyday, embedded, and highly consequential insider / outsider dynamics of tribal enrollees & others on the reservation.

Land Tenure - Leech Lake Reservation



Driver behavior

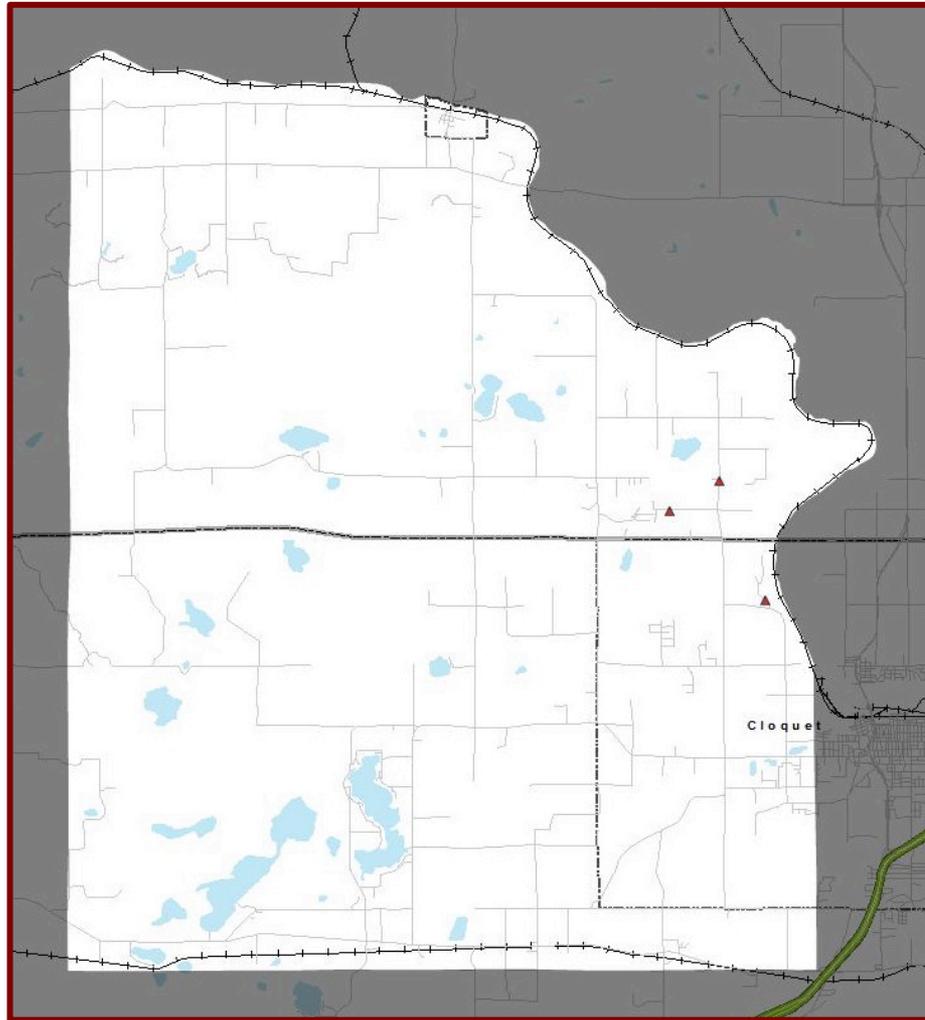
- Contrary to *some* popular belief, key stakeholders do not mention residents' DUI as one of their top challenges.
- What they do mention are drivers'
- Lack of awareness of pedestrians, combined with poor visibility, trails / shoulders / sidewalks to protect them
- Congestion, confusion, and speeding from non-locals, especially during peak tourism periods



Ex. Data on pedestrian safety in Fond du Lac Band of Lake Superior Chippewa

- Residents brought this up repeatedly as their area of highest concern.
- Tribal government leaders – in planning, police, public works, youth services, the elder council, and executive leadership – name pedestrian safety as a very high priority. They are concerned about safety and actively encouraging walking for health and recreation.
- Expert drivers (from transit, school bus, and propane delivery units) all name this as a very high area of concern and a distinctive need of the reservation.
- ***Disconnect*** with key leaders from jurisdictions with overlapping roadway engineering, law enforcement, or maintenance responsibilities, who did not see this as a key concern or something distinctive for the reservation communities.

Data from crash databases



Three collisions involving pedestrians 2006-2014 (Source: MNCMAT, Crash Mapping Analysis Tool of MNDOT and MNDPS Department of Driver and Vehicular Safety).

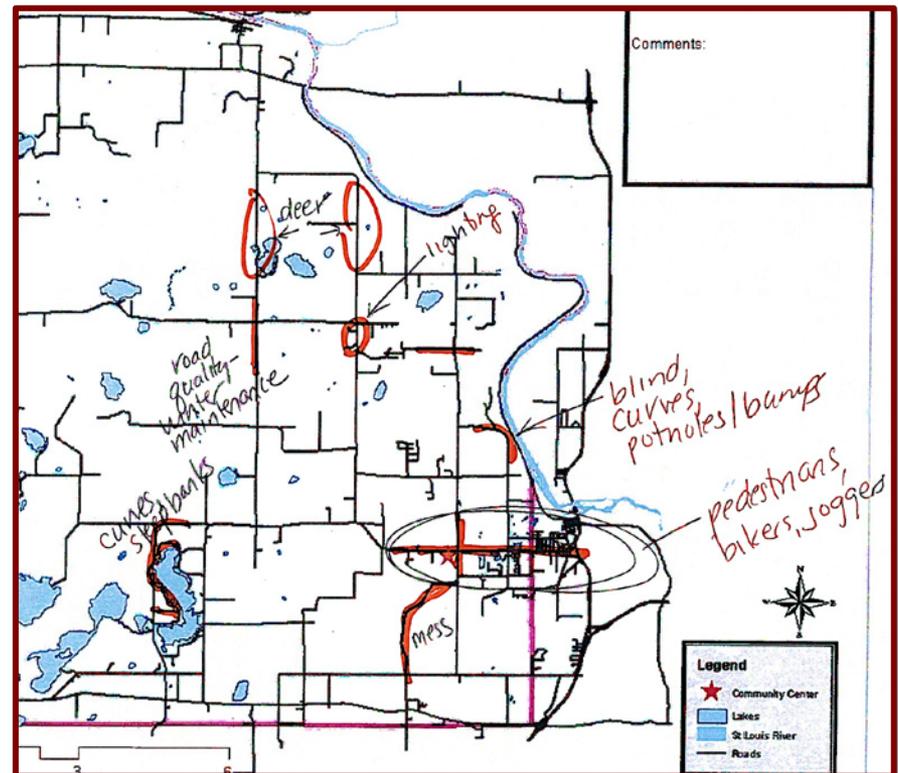
Data from tribal enrollees' input



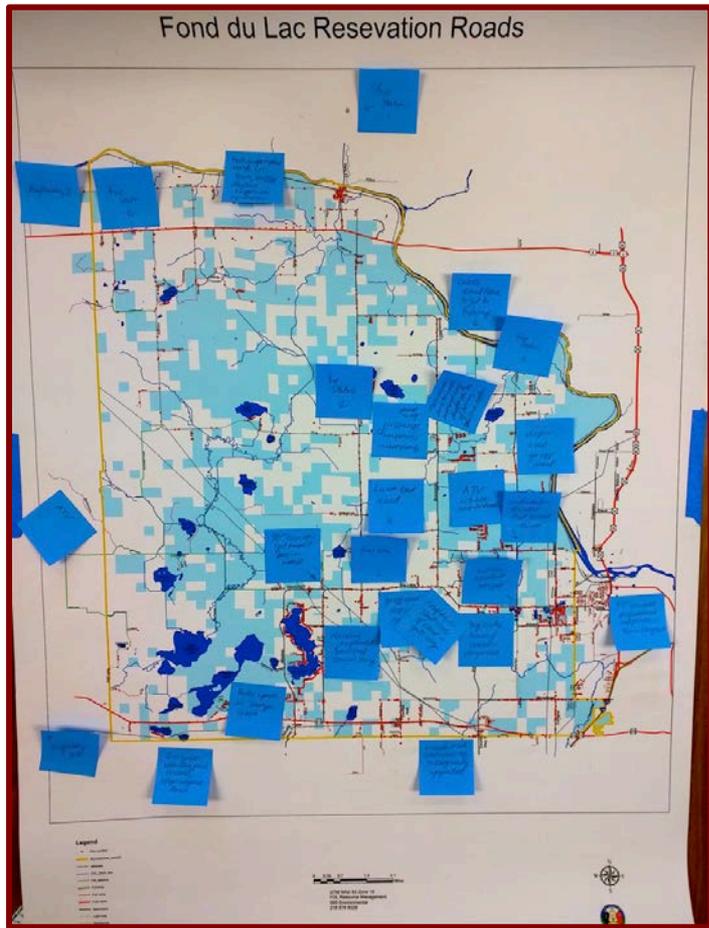
Above: Resident using map to point out areas of concern -- including 3 ped safety issues – June 2015.

Right: Researchers' immediate fieldnote summary of persistent points from the 21 people interviewed at Fond du Lac enrollee days, June 2015.

"Well, as soon as I get on the rez I know I need to start looking out for pedestrians. That's really the only difference between off and on the rez when it comes to being safe on the roads."
– Fond du Lac enrollee who lives off the reservation



Data from virtual & actual drives



Left: Map mark-up from focus group with expert drivers, Fond du Lac Band, July 2015.

Right: Photo of residents participating in Take Back the Rez affinity and advocacy event, October 2012, on Big Lake Road.

Other preliminary results (all sites)

Impaired driving

- These data demonstrate the value of open-ended questions and innovations in data collection methods.
- **Contrary** to some conventional wisdom, key stakeholders do not mention reservation residents' DUI as one of their top challenges.
- Is this a “nervous area” of government (Gooden 2014) people won't discuss, is the conventional wisdom wrong, and/or do we need deeper research?
- Extreme concern – across the board – about texting while driving and other distractions.

Signage

- Useful to outsiders to alert them to pedestrians and help them find their way.
- Sometimes “the only way to know” you're entering a reservation

Safety restraints

- Mixed results: May be worse (or not) on reservations, and in some areas seems to be improving. Good opportunity for research on positive cases.

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Thank you!

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