2021 NTICC

TOPICS IN TRIBAL TRANSIT RESEARCH

FRIDAY
OCTOBER 1
2021

10:30 AM - 12:00 PM
PACIFIC TIME /
1:30 PM - 3:00 PM
EASTERN TIME

SESSION MODERATOR:
MODERATOR: WALT DIANGSON, NATIONAL RTAP

PRESENTERS: [NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE]

JEREMY MATTSON, PHD, ASSISTANT PROFESSOR
RANJIT GODAVARTHY, PHD, ASSISTANT PROFESSOR
JILL HOUGH, PHD, DIRECTOR
DILIP MISTRY, PHD, DATA SCIENTIST

MEETING DETAILS

Join the meeting on your mobile device, computer, or by phone.

Join Zoom Meeting
https://us06web.zoom.us/j/84120160795?pwd=eHBXSG9aY1hrSjI5U21EcGpGUUpBQT09

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MEETING HOUSEKEEPING ITEMS

- Today's webinar is schedule to last 1 hour and 30 minutes, including Q&A
- All participants will be muted to enable the speakers to present without interruption
- Questions can be submitted via the chat option at the bottom of your screen
- Private chat messages can be sent to the host(s), or chat messages can be sent to everyone
- The presentation slides and a recording of the presentation will be available at nticc.org by October 8

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Topics in Tribal Transit Research

National Transportation in Indian Country Conference
October 1, 2021

Presenters:
Jeremy Mattson
Ranjit Godavarthy
Jill Hough
Dilip Mistry

Small Urban and Rural Center on Mobility
Upper Great Plains Transportation Institute
North Dakota State University

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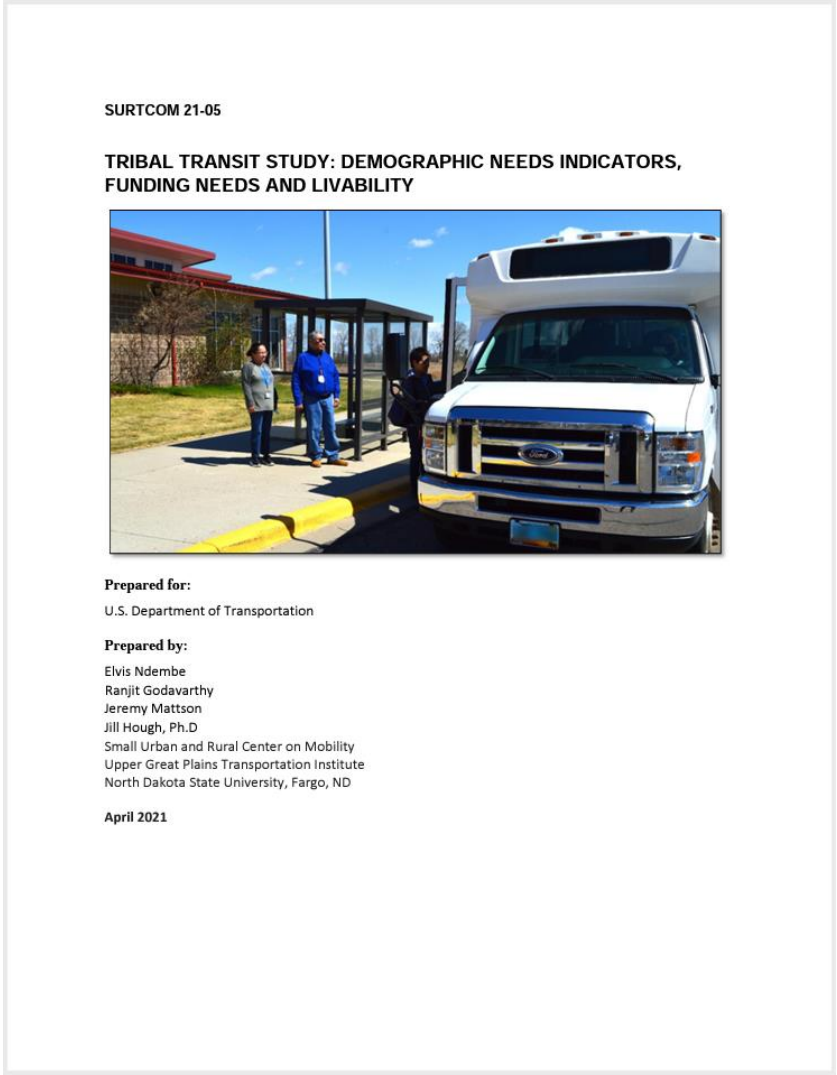
Tribal Transit Study: Demographic Needs Indicators, Funding Needs and Livability

- Population density
- Demographics
- Funding
- Operations statistics
- Livability case studies



SURTCOM 21-05

TRIBAL TRANSIT STUDY: DEMOGRAPHIC NEEDS INDICATORS, FUNDING NEEDS AND LIVABILITY

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Density of U.S. Counties Categorized by RUCC Code, Excluding Alaska

RUCC Code	Description	Number of counties	Population per square mile
1	Counties in metro areas of 1 million population or more	432	634.4
2	Counties in metro areas of 250,000 to 1 million population	376	207.1
3	Counties in metro areas of fewer than 250,000 population	355	87.5
4	Urban population of 20,000 or more, adjacent to a metro area	214	62.0
5	Urban population of 20,000 or more, not adjacent to a metro area	91	33.5
6	Urban population of 2,500 to 19,999, adjacent to a metro area	593	29.0
7	Urban population of 2,500 to 19,999, not adjacent to a metro area	425	14.5
8	Completely rural or less than 2,500 urban population, adjacent to a metro area	219	12.2
9	Completely rural or less than 2,500 urban population, not adjacent to a metro area	408	6.0

Source: American Community Survey 2013-2017 five-year estimates

Population Densities of Counties with High Concentrations of Native American Populations

Percentage of population Native American	Number of counties	Population density
> 15%	90	13.0
> 25%	52	11.0
> 35%	32	8.9
> 45%	24	6.2

Source: American Community Survey 2013-2017 five-year estimates

Demographic Needs Indicators

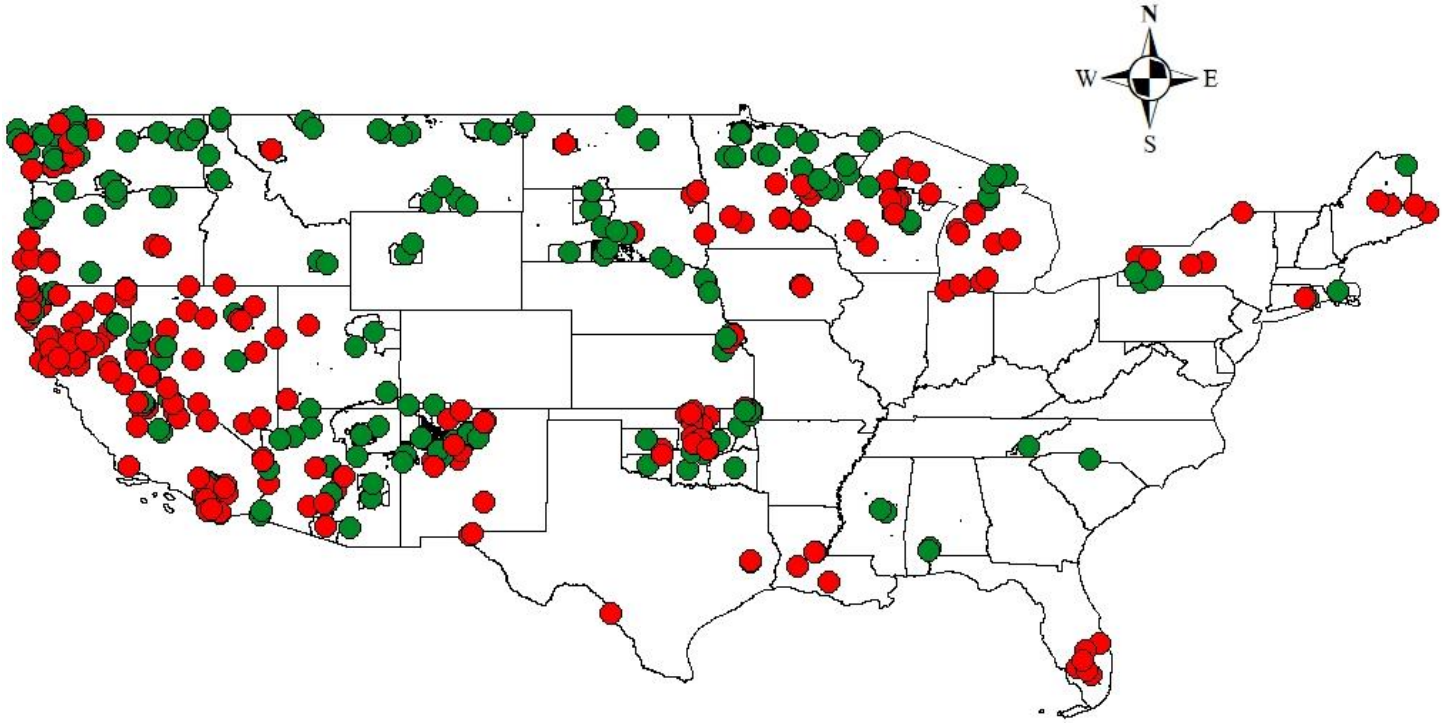
- Senior citizens
- School-age youth
- People with disabilities
- Low-income persons
- Households without automobiles

Demographic Data for Tribal Areas, Compared to U.S. and Rural Data

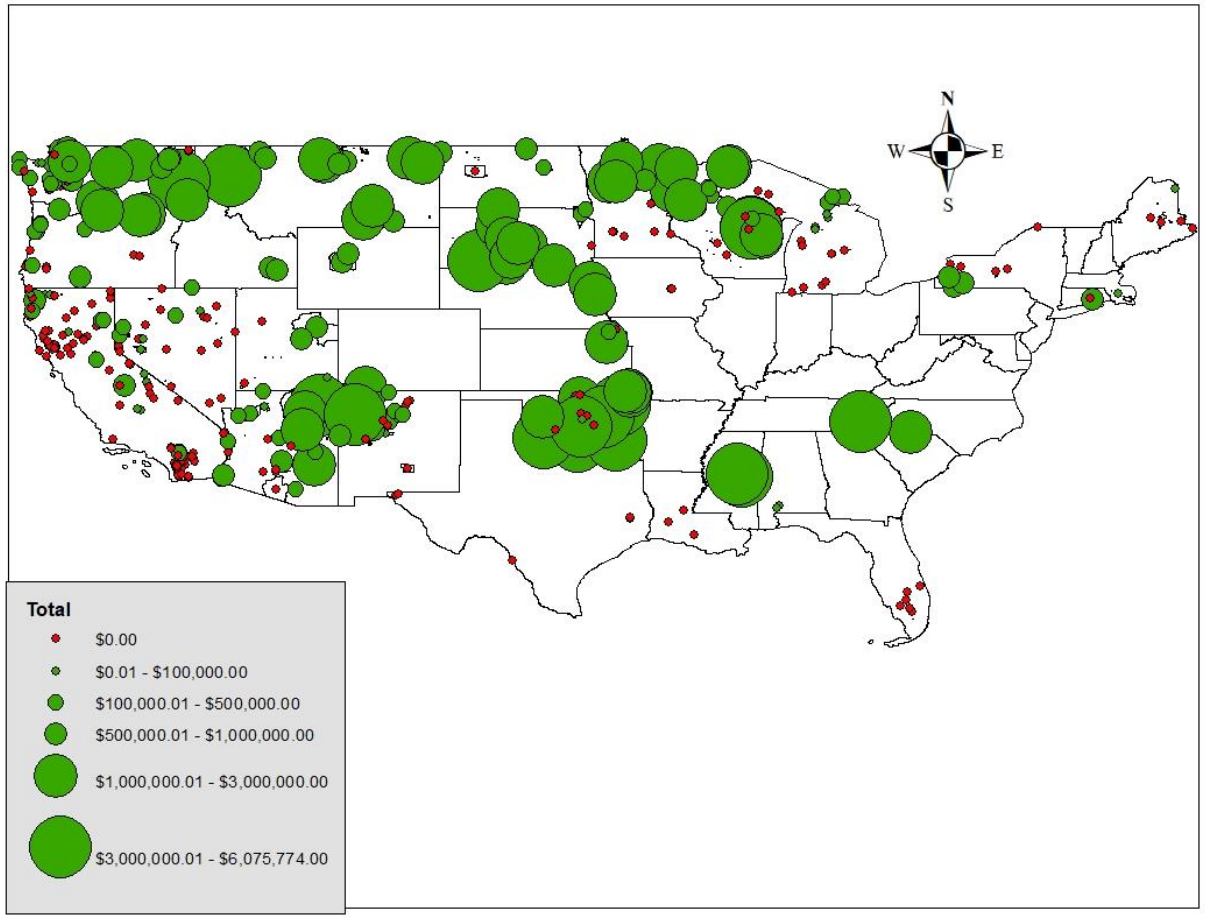
	United States	Rural Areas	American Indian Reservation and Trust Lands
	----------Percentage of total population----------		
Age 5-17	17	17	21
Age 65+	15	19	14
Population with a Disability	13	15	15
Below the Poverty Level	14	12	28
Households with No Vehicles	9	4	9

Source: American Community Survey 2013-2017 five-year estimates

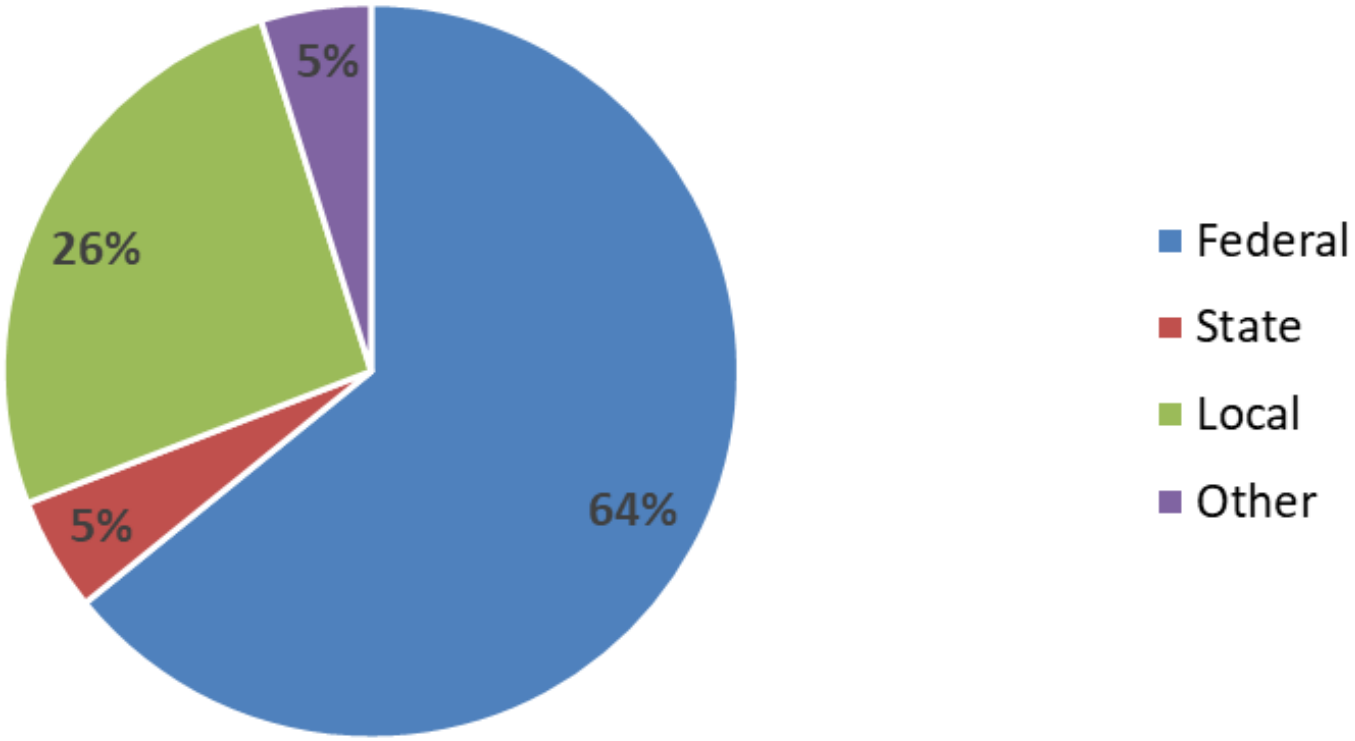
Tribal Areas With and Without Transit Systems



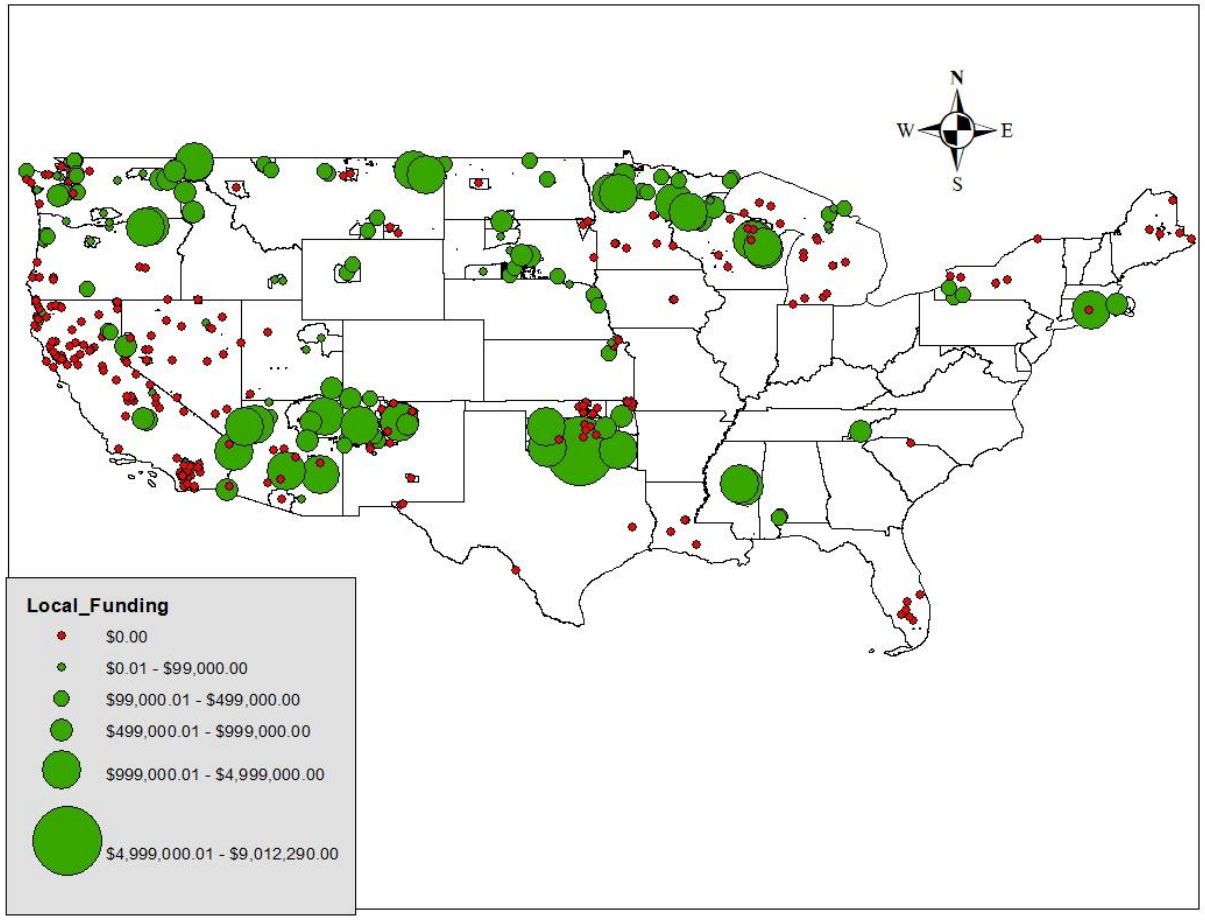
Tribal Reservation Total 5311(c) Funding, 2013-2017



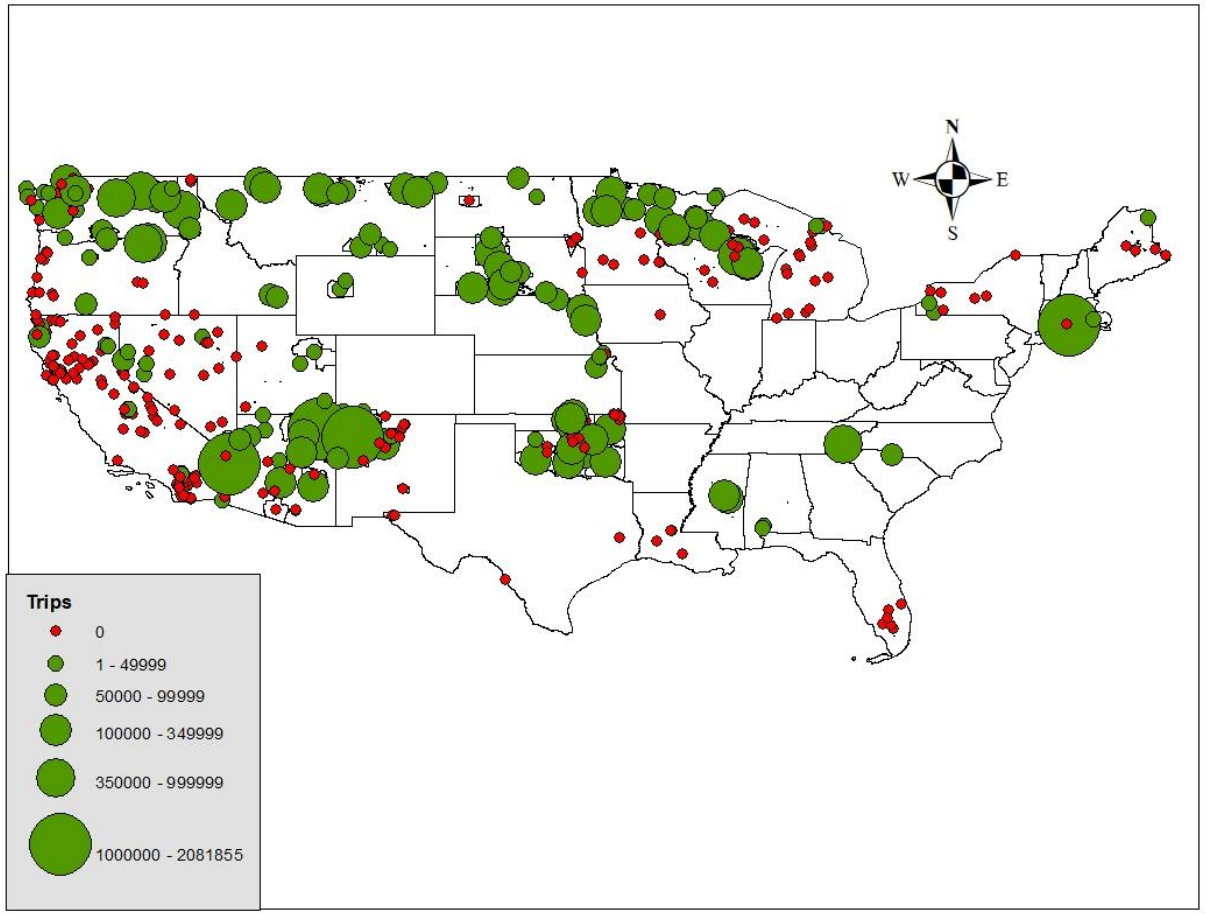
Tribal Transit Share by Funding Source, 2013-2017



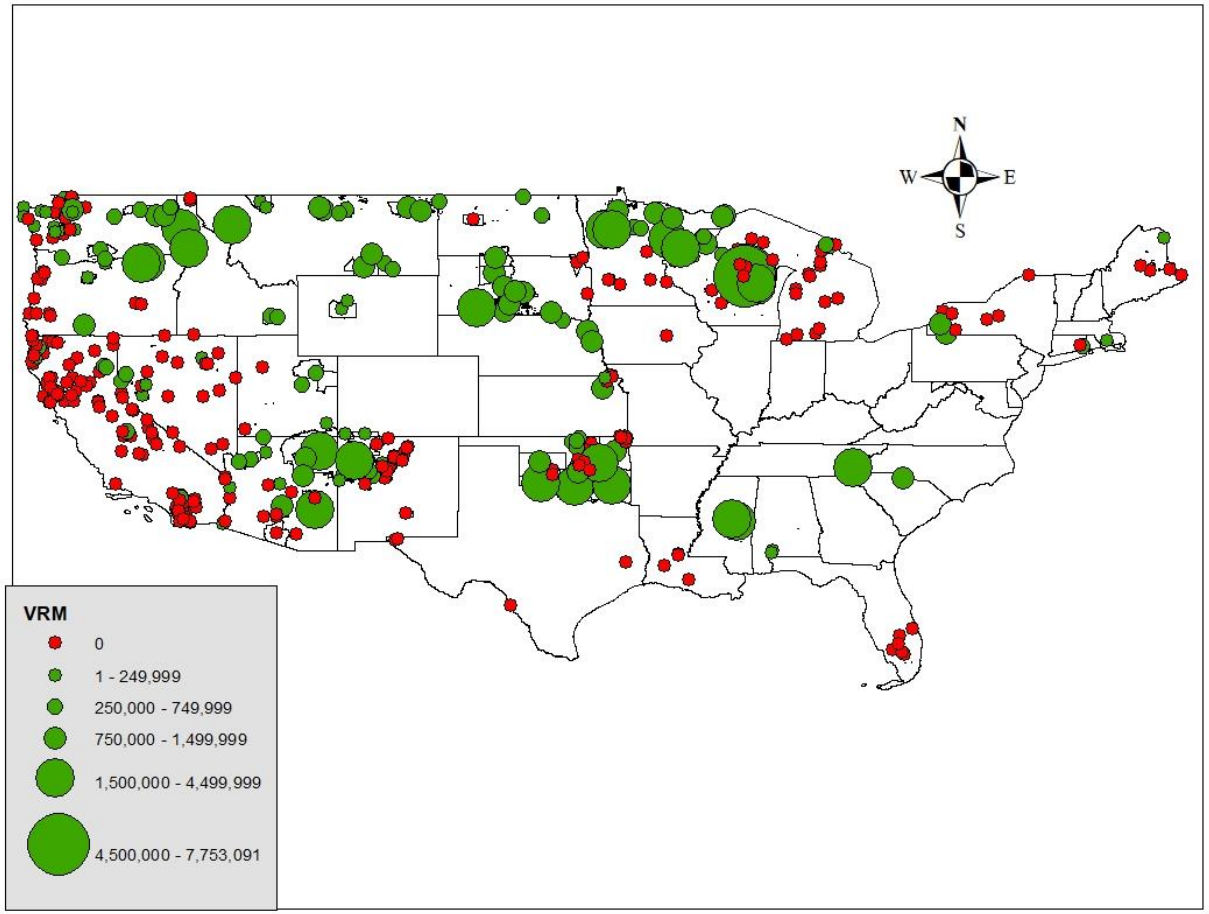
Tribal Transit Total Local Funding, 2013-2017



Total Tribal Transit Unlinked Passenger Trips, 2013-2017



Tribal Transit Total Vehicle Revenue Miles, 2013-2017



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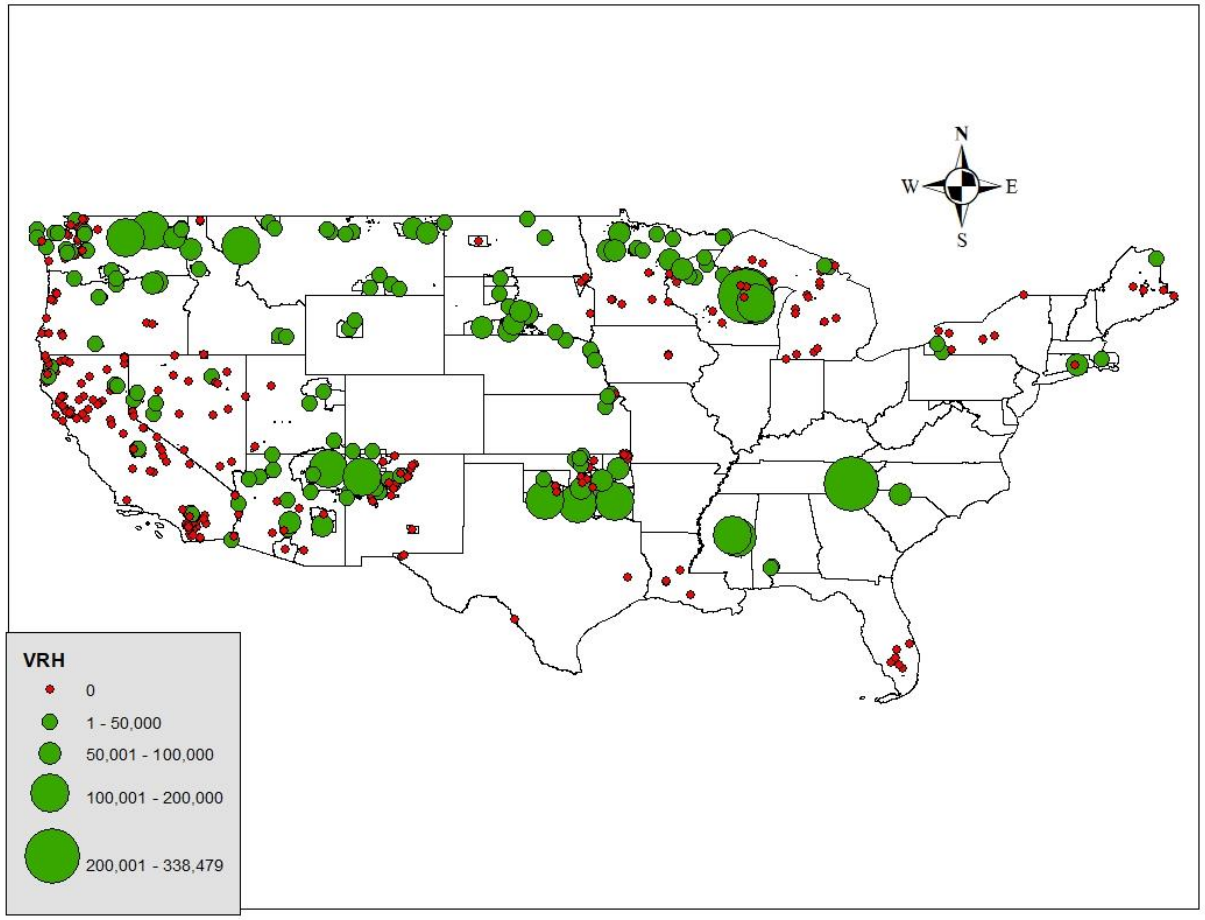
Total Tribal Transit Vehicle Revenue Hours, 2013-2017



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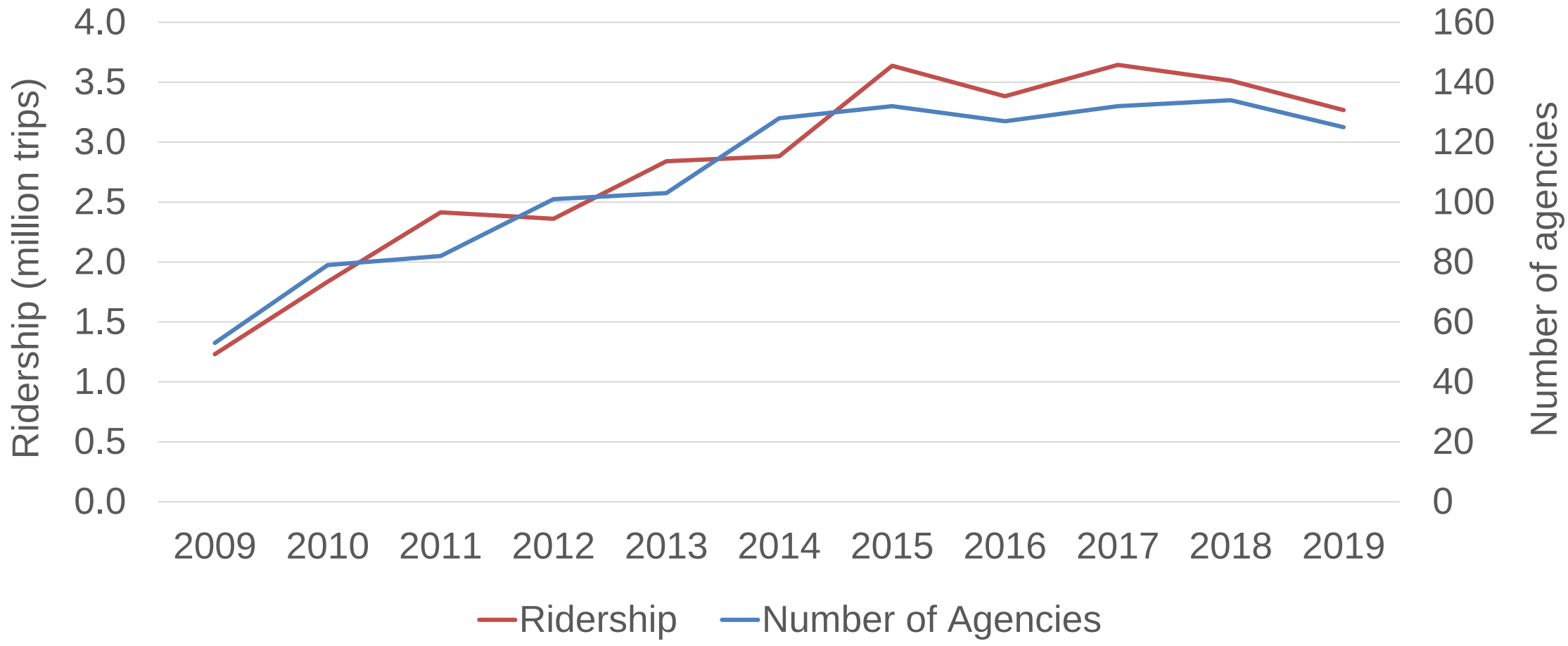
Median Estimates for Daily Household Travel Behavior for Native American and Rural Census Tracts

Census Tract Category	Person Miles	Person Trips	Vehicle Miles	Vehicle Trips
	----------median household estimate per day----------			
Native American	64.1	7.7	40.4	4.8
Rural	72.0	7.9	50.8	5.3

Trends in Tribal Transit Ridership and Number of Agencies



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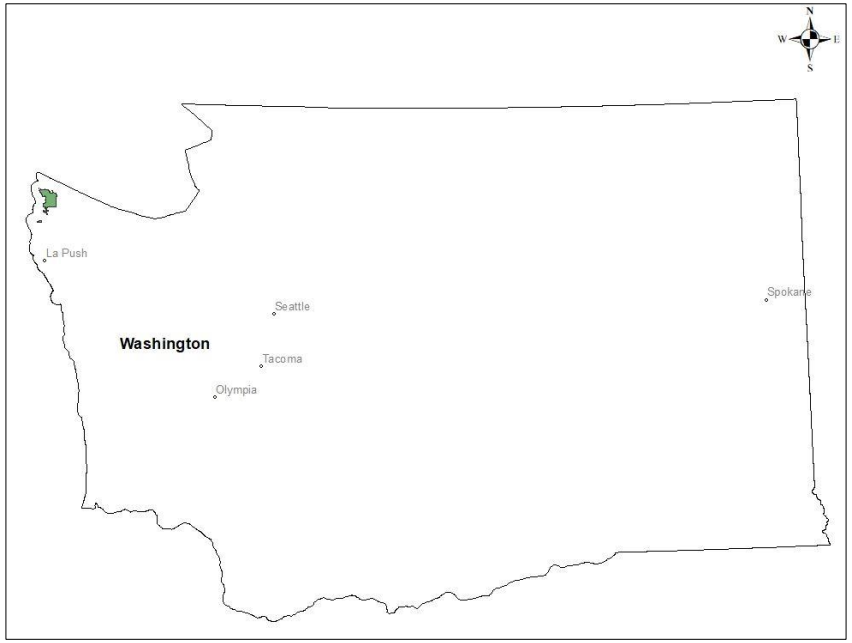
Tribal Transit Performance Measures, Median Agency Values, 2019

Performance Measure	Median Value
Trips per Vehicle Revenue Mile	0.11
Trips per Vehicle Revenue Hour	2.11
Operating Expense per Trip	26.73
Operating Expense per Vehicle Revenue Mile	3.04
Operating Expense per Vehicle Revenue Hour	66.64
Farebox Recovery Ratio	0.01

Source: 2021 Rural Transit Fact Book

Tribal Transit and Livability

- Case Studies
  - Standing Rock Reservation
  - Makah Indian Reservation



Demographics

	Standing Rock	Makah Tribe	United States
Population age 5-19	29%	24%	20%
Population age 65 or older	9%	9%	15%
Population below poverty level	42%	24%	15%

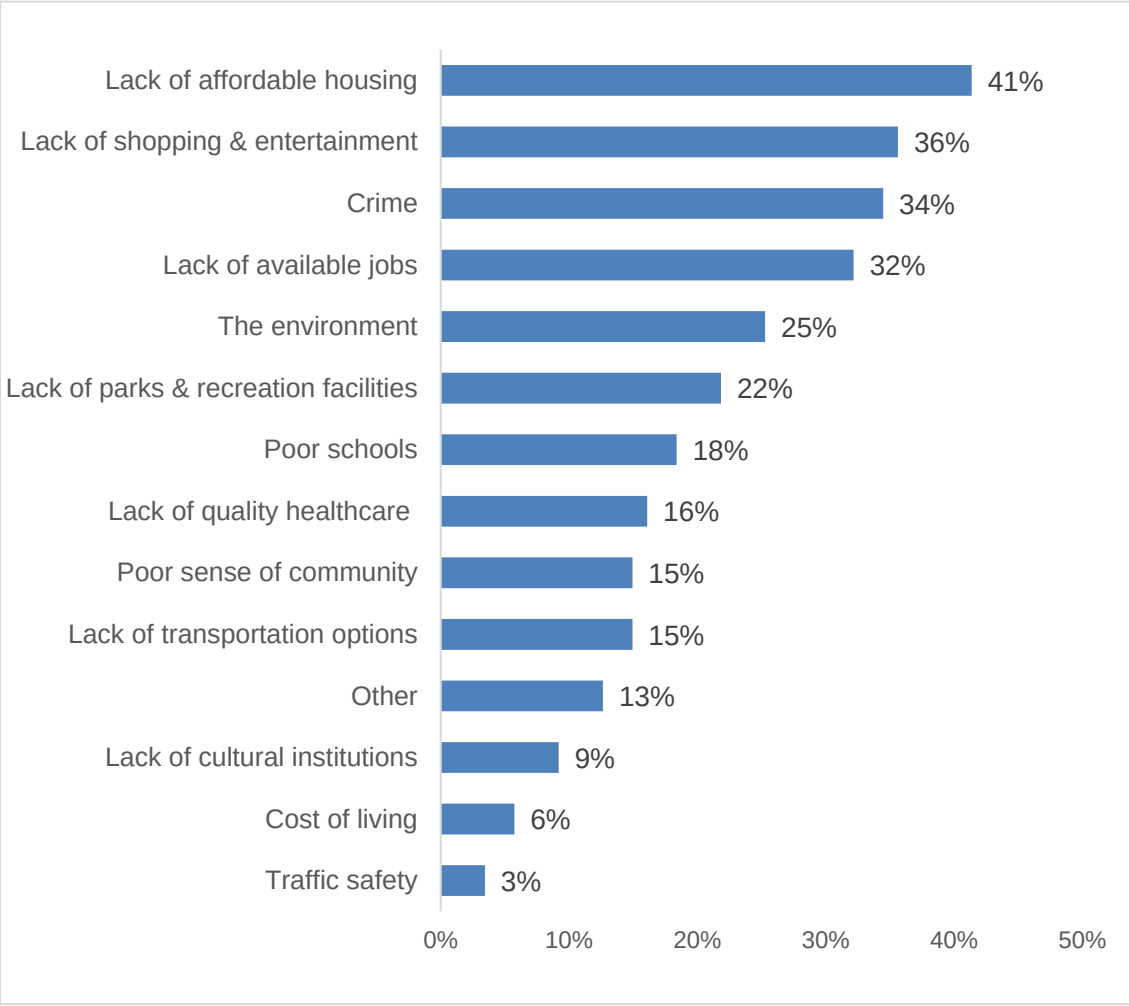
Source: American Community Survey 2013-2017 5-year Estimates, U.S. Census Bureau

Survey

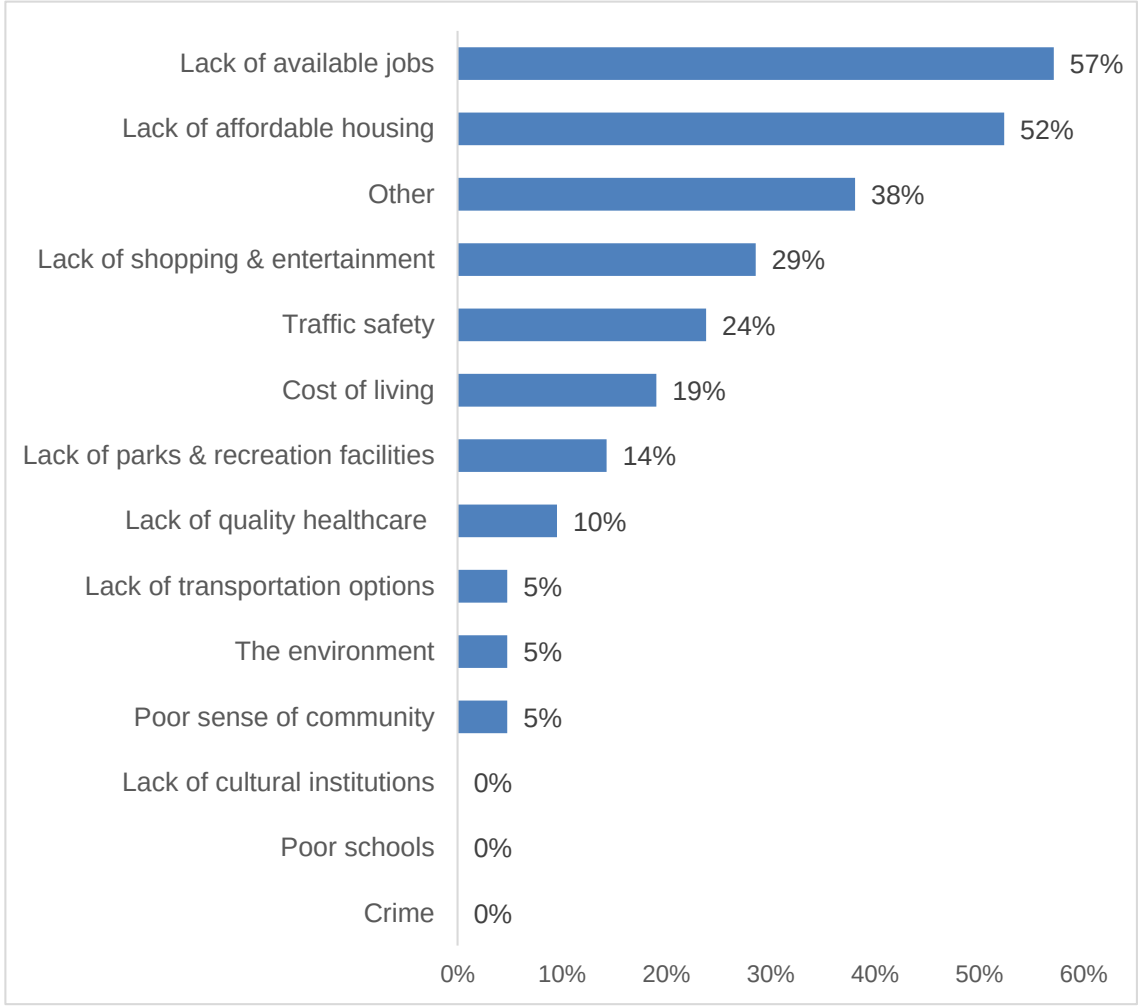
- Standing Rock
  - 163 responses
- Makah Tribe
  - 100 responses

Reasons for Respondents Not Living on the Reservation

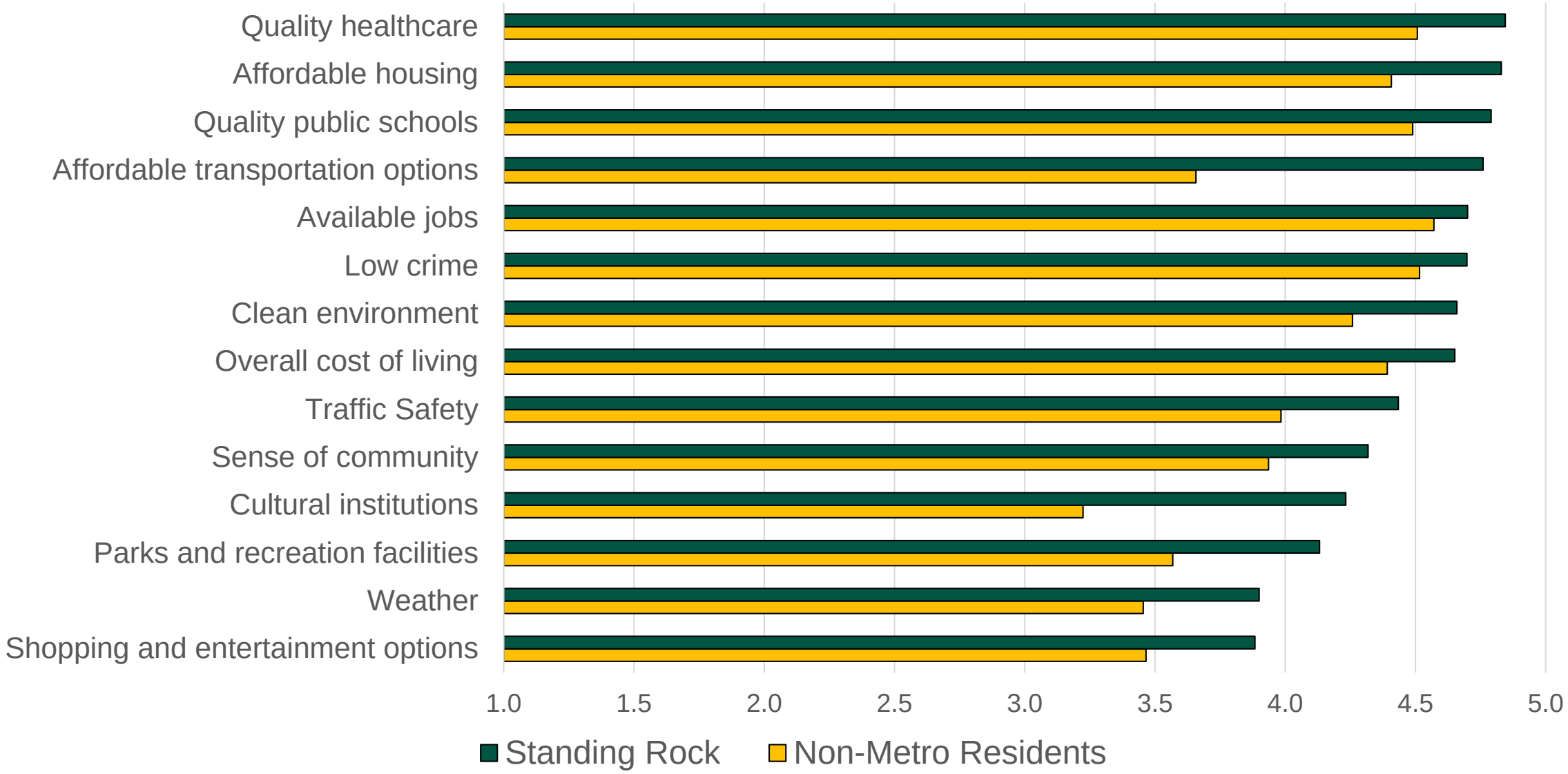
Standing Rock



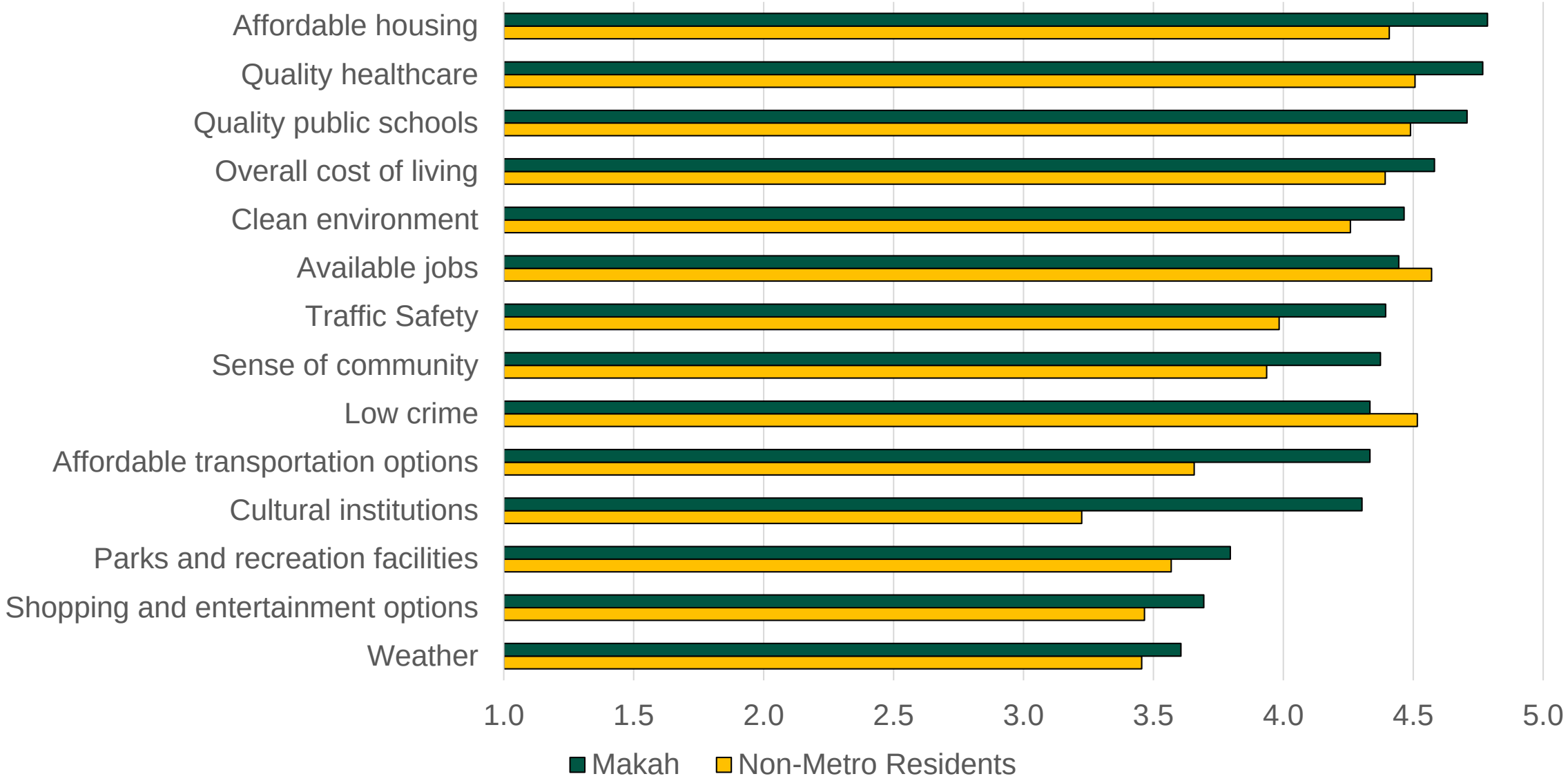
Makah Tribe



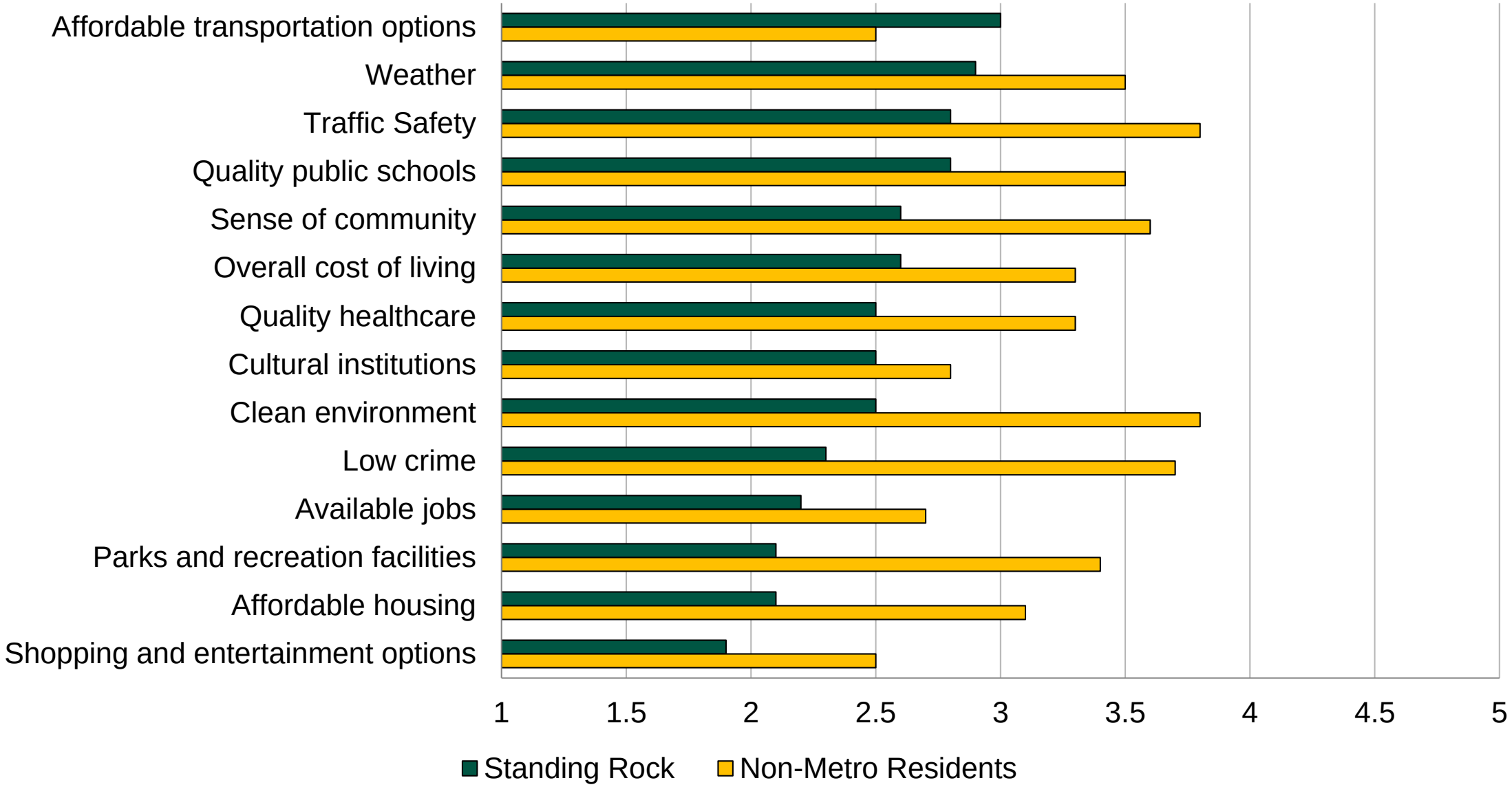
Livability Importance – Standing Rock



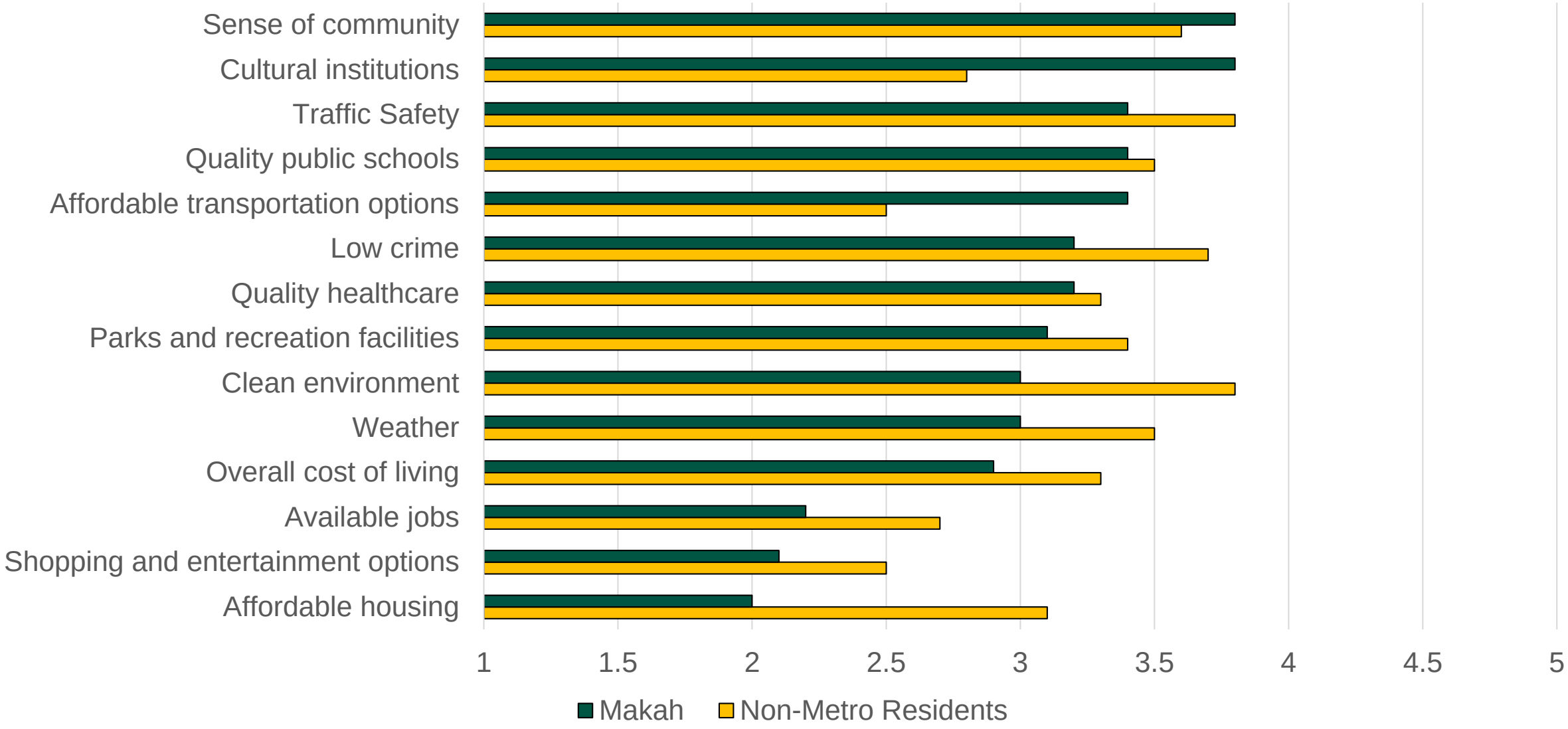
Livability Importance – Makah Tribe



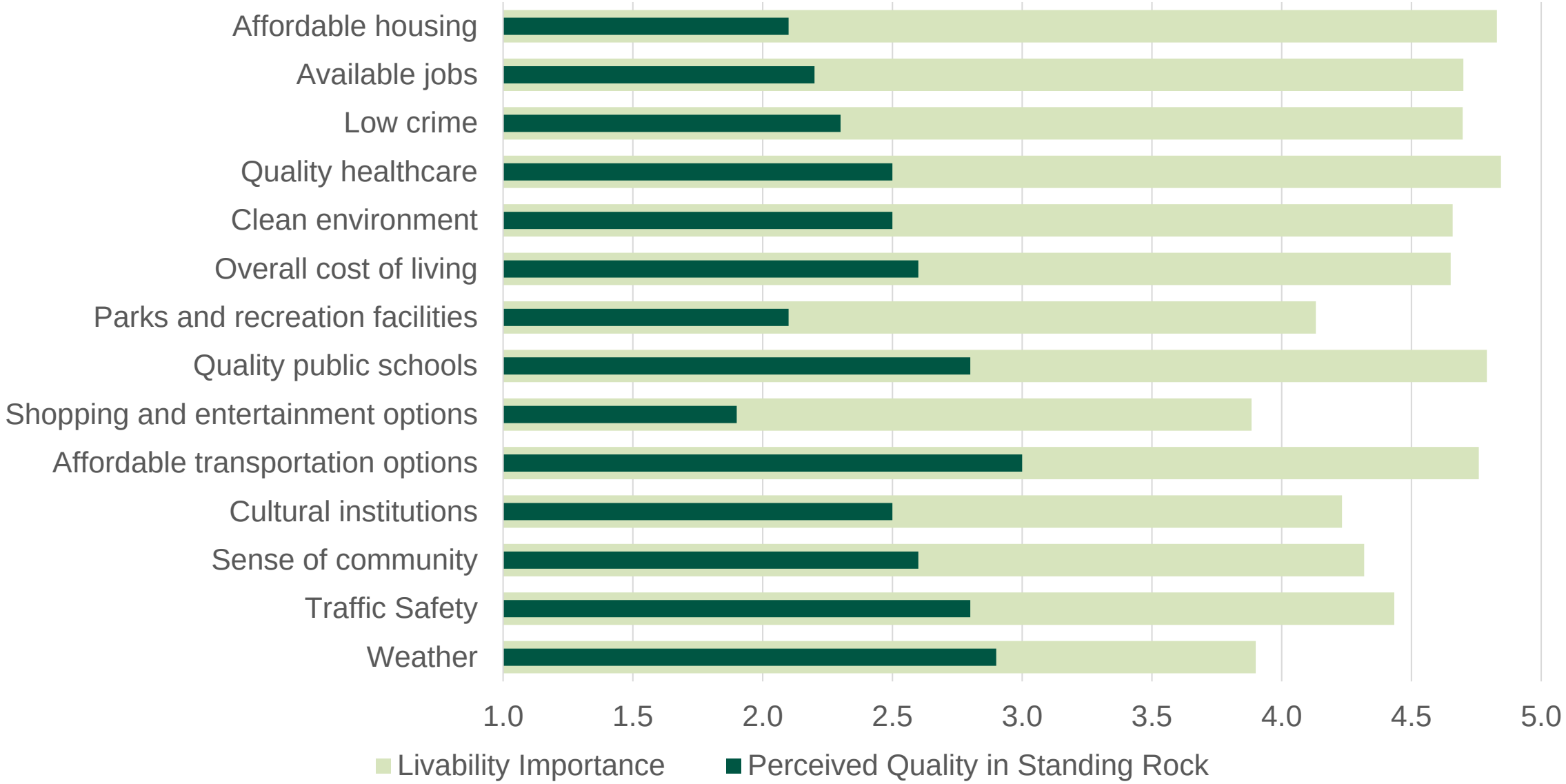
Quality of Livability Factors – Standing Rock



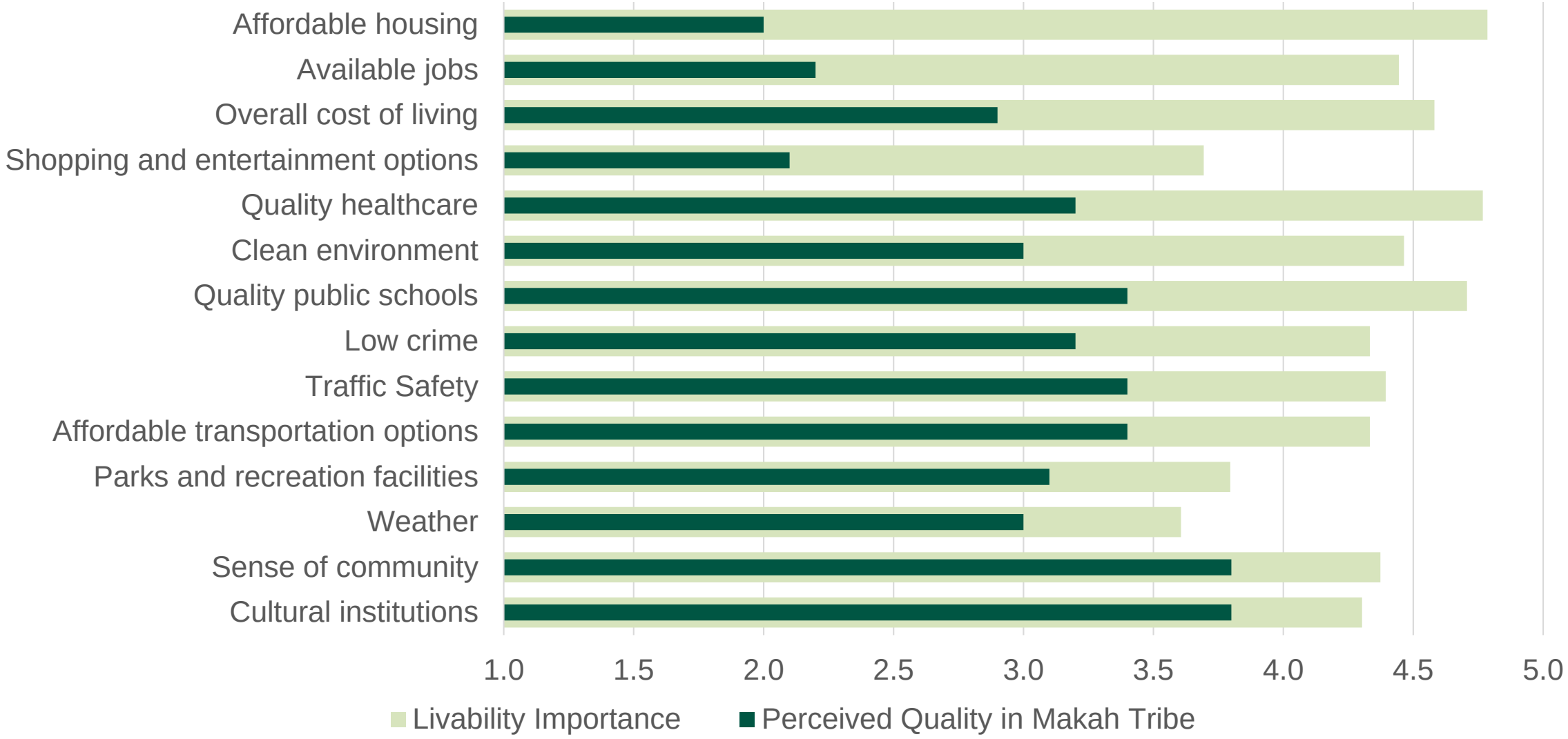
Quality of Livability Factors – Makah Tribe



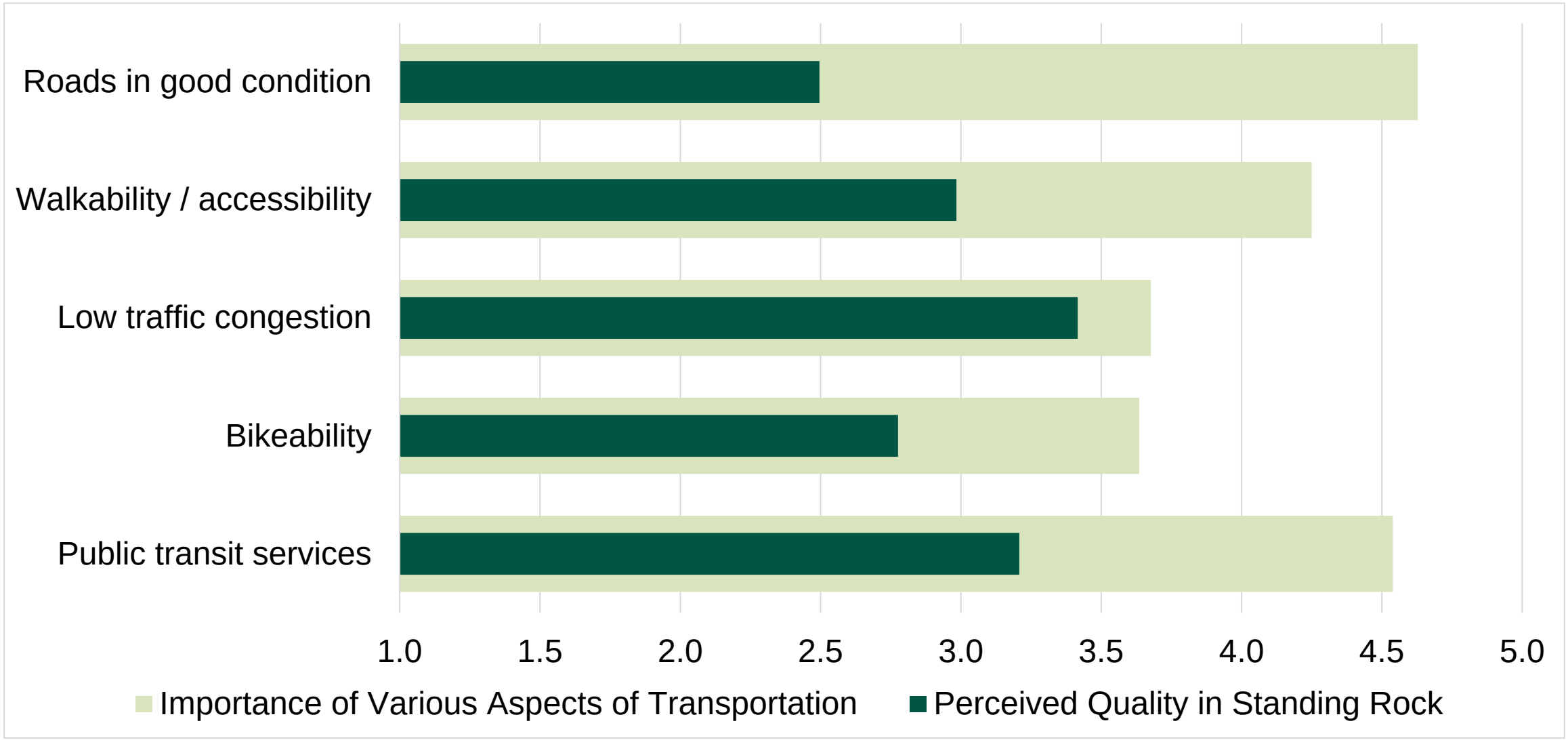
Livability Importance vs. Perceived Quality – Standing Rock



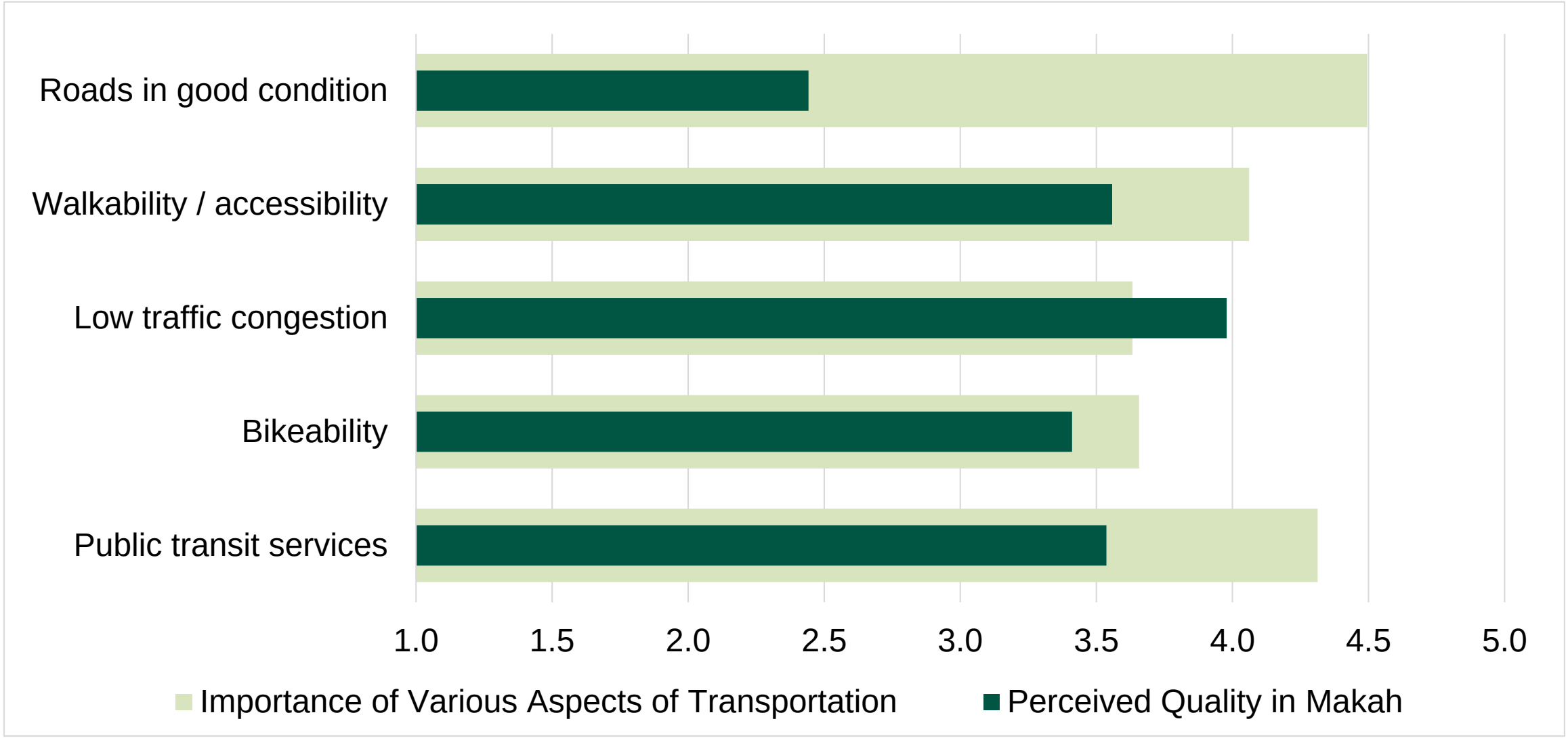
Livability Importance vs. Perceived Quality – Makah Tribe



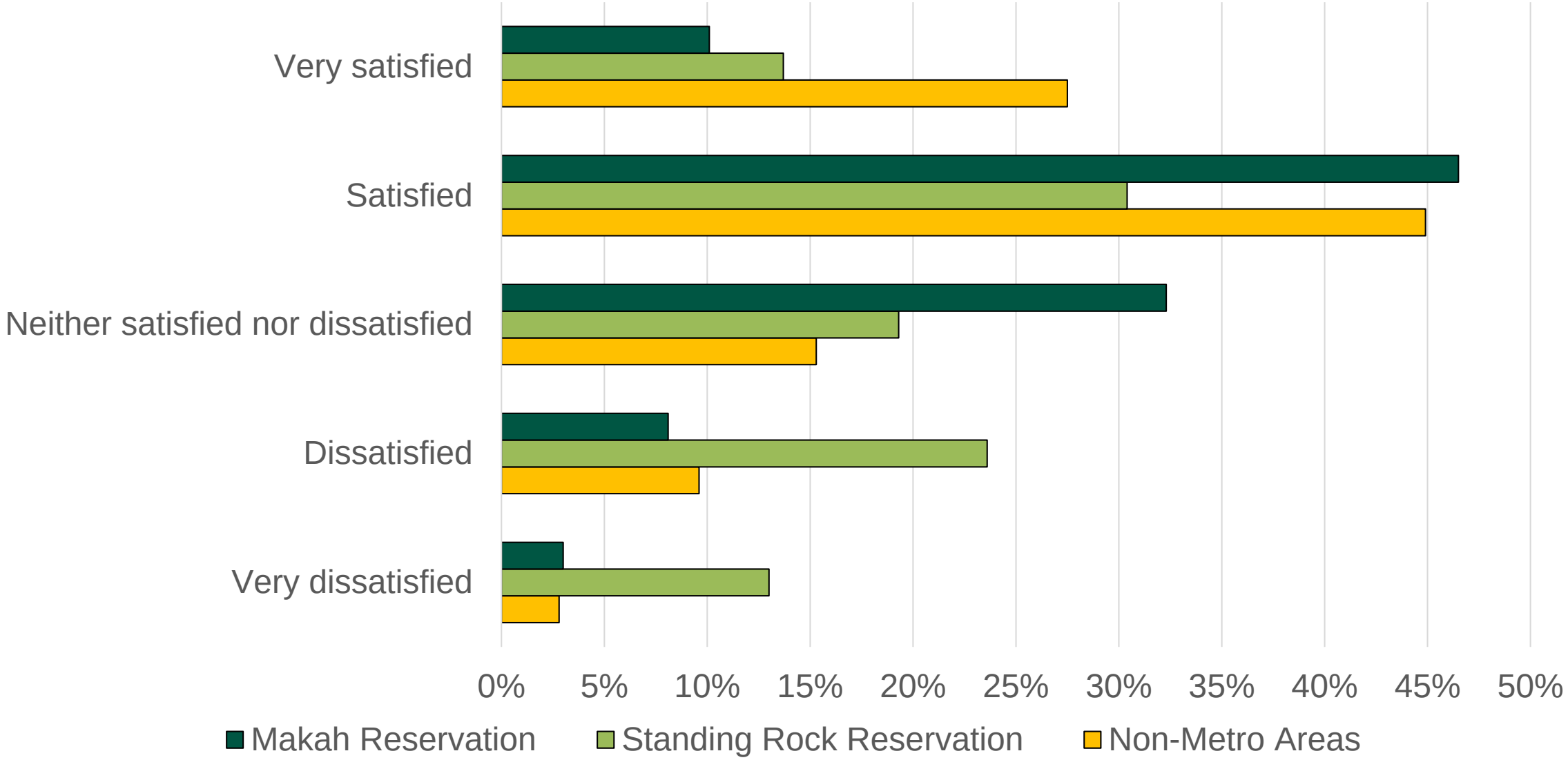
Transportation Factors – Standing Rock



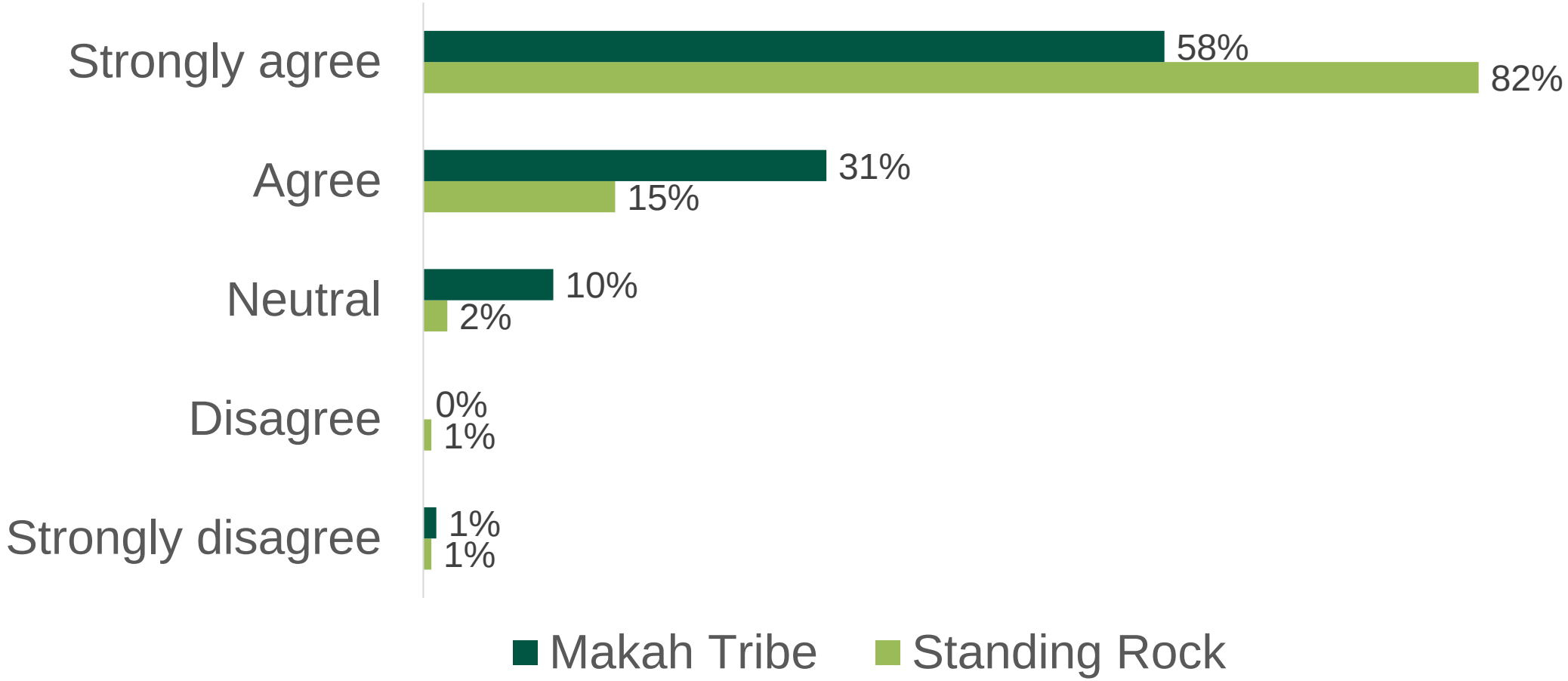
Transportation Factors – Makah Tribe



Satisfaction with Quality of Life in the Community



It is important for public transit to be available to my community's residents



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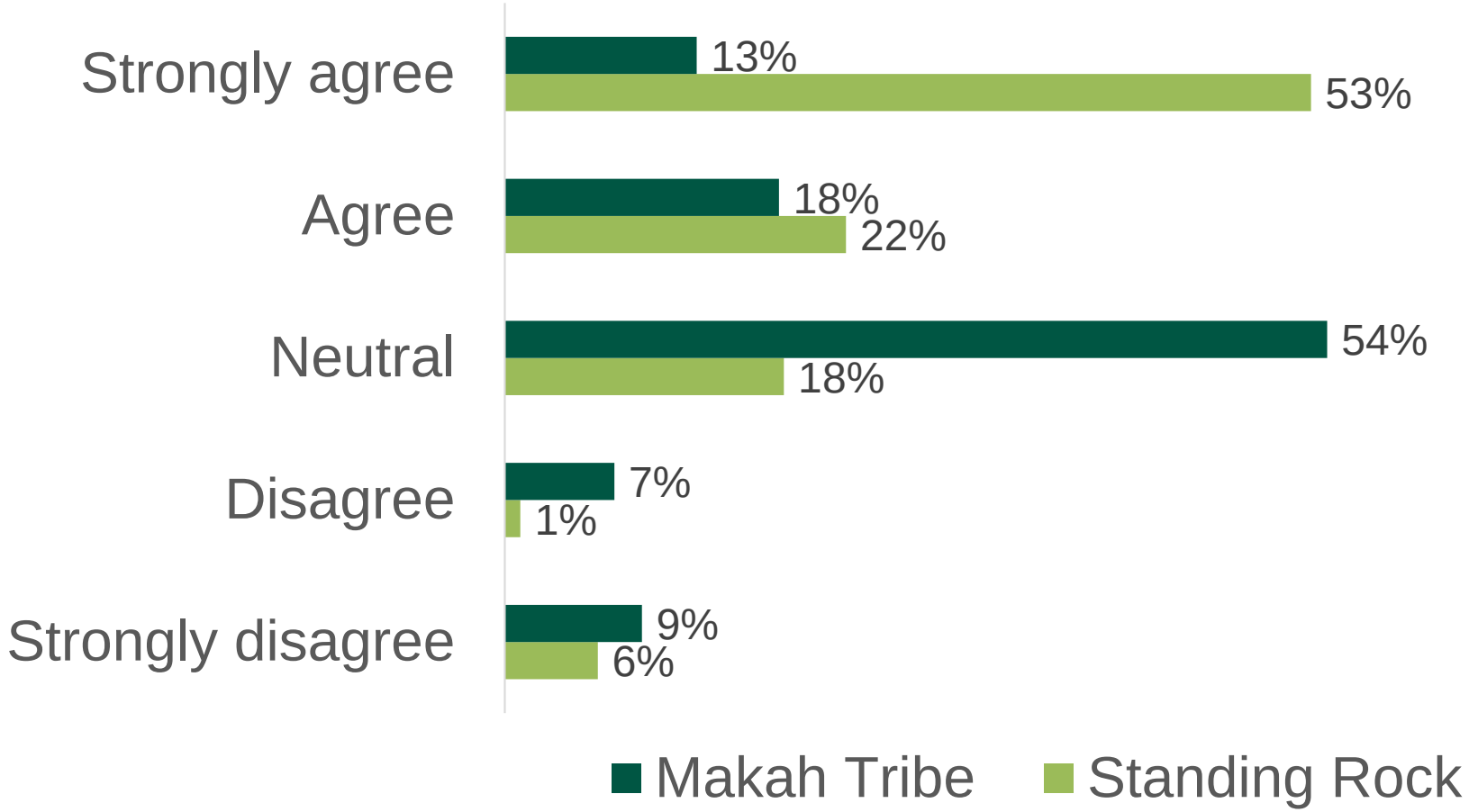
Transit Riders: “Public transit is very important to my quality of life”



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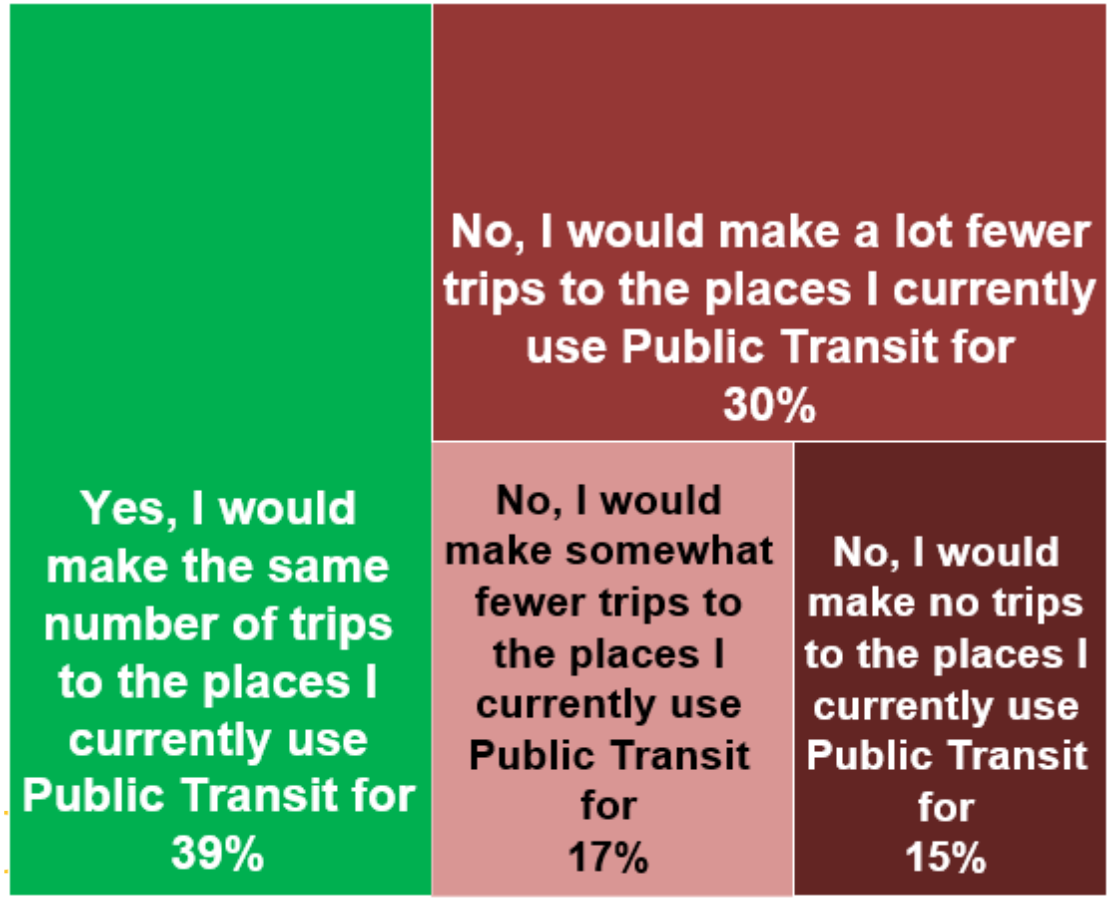
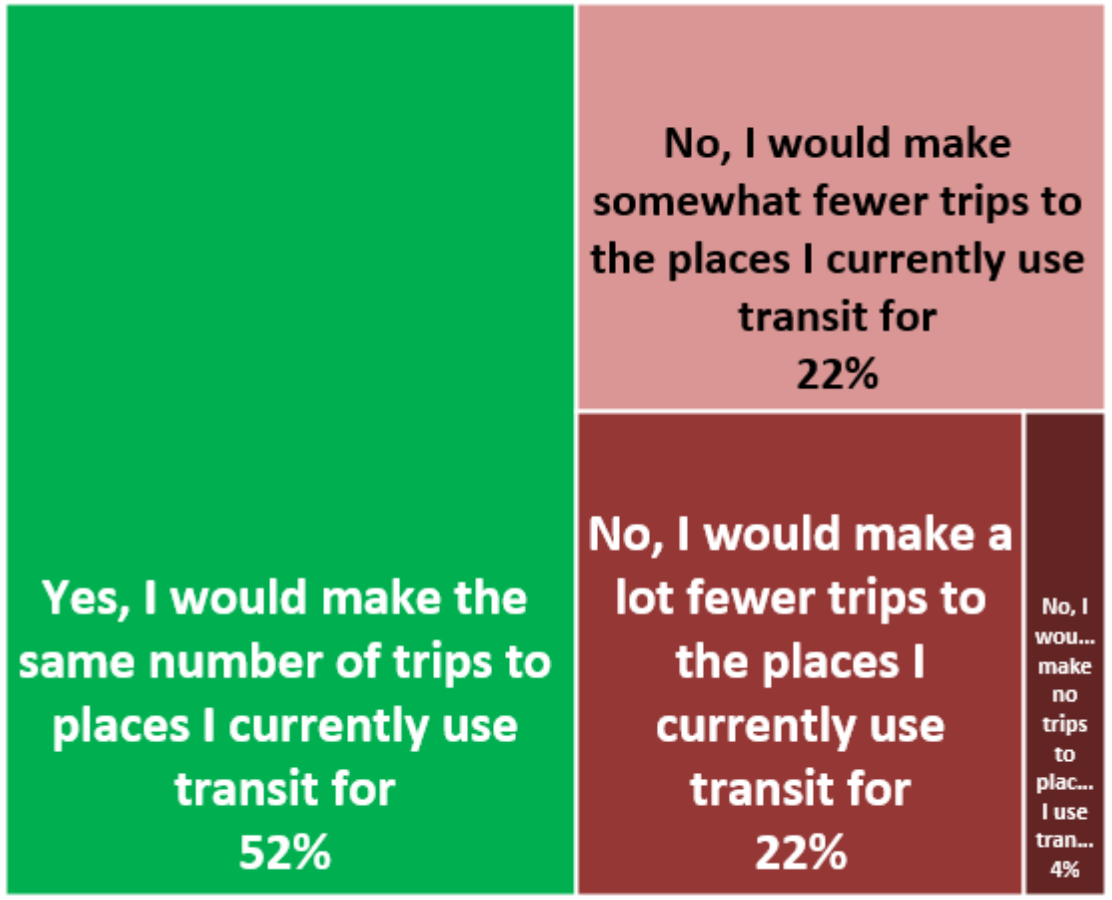
Transit Riders: “If public transit were not available, would you make the same number of trips?”

Standing Rock



Makah Tribe



Summary

- Low population densities create challenges in providing transportation
- Demographics indicate a need for transit
- The number of tribal transit systems and ridership has plateaued
- A number of factors contribute to livability
- Transportation plays a role

Contact

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Shared Use Mobility in Rural Areas and Tribal Communities

Ranjit Godavarthy

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Introduction

- Shared-Use Mobility (SUM): transportation services that are shared among users
- Smartphones, and technological advancements have presented new convenient and flexible options: ridesourcing, carsharing, bikesharing, microtransit, etc., - “technology enabled SUM.”
- Technology enabled SUMs are much prominent in urban setup compared to rural.
- Transit services are critical for rural and tribal communities - SUM practices have the potential to fill the mobility gaps
- What are the opportunities for SUM in rural setup and tribal communities?

Shared-Use Mobility (SUM) Practices

Ridesourcing (TNCs)

Carsharing

Bikesharing

Microtransit

Mobility as a Service (MaaS)

Eight In-depth Case Studies of Rural SUM Implementation – NCHRP Task 76 Study

NDSU UPPER GREAT PLAINS TRANSPORTATION INSTITUTE

Project No: NCHRP 20-65 Task 76

Opportunities for State DOTs (and others) to Encourage Shared-Use Mobility Practices in Rural Areas

FINAL REPORT

Prepared for
National Cooperative Highway Research Program
Transportation Research Board

of

The National Academy of Sciences, Engineering, and Medicine

Ranjit Godavarthy
Jill Hough
Small Urban and Rural Center on Mobility,
Upper Great Plains Transportation Institute,
North Dakota State University

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SMALL URBAN AND RURAL CENTER ON MOBILITY

Sean Libberton,
Russell Koff
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December 2019

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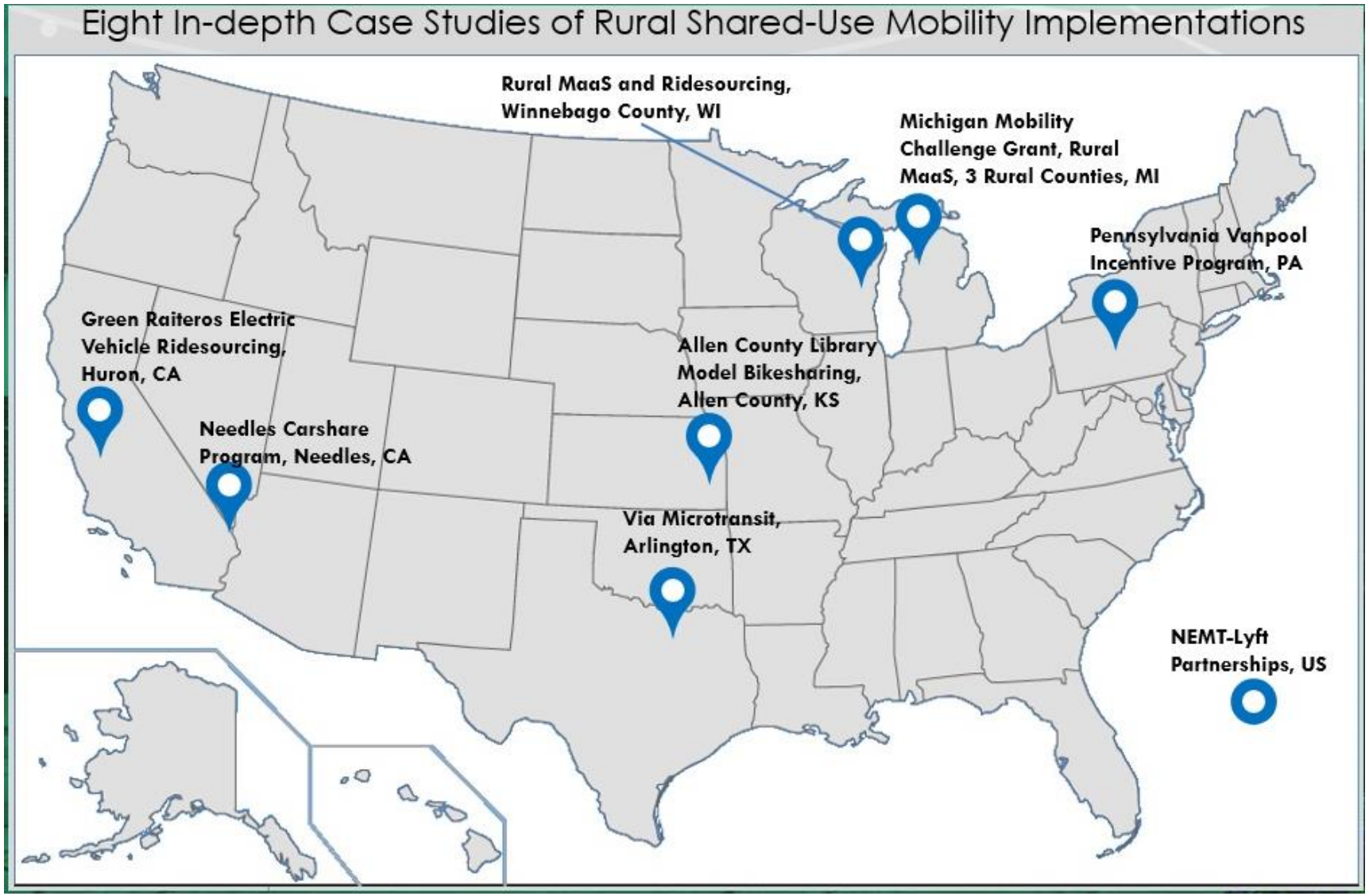
Eight In-depth Case Studies of Rural Shared-Use Mobility Implementations



Case study 1: Needles car-share program in rural California

Summary: Needles Carshare is a rural small-scale carshare program providing a flexible transportation option for carless rural residents, helping them to overcome isolation, become independent, and access basic facilities.

Impact: 50 registered members, 70 percent of the program cost covered by utilization revenue generated.

Victor Valley Transit Authority Fees and Rates

One-Time Application Fee	Annual Membership Fee
~~$20~~ Waived!	~~$50~~ Waived!

Vehicle Class	Hourly	Daily
Full Size	$5	$40
Minivan	$6	$48

- First 200 miles per day are free; additional miles are $0.25 per mile.
- Age restrictions may apply

Source: Enterprise Carshare Website

Source: Google Maps

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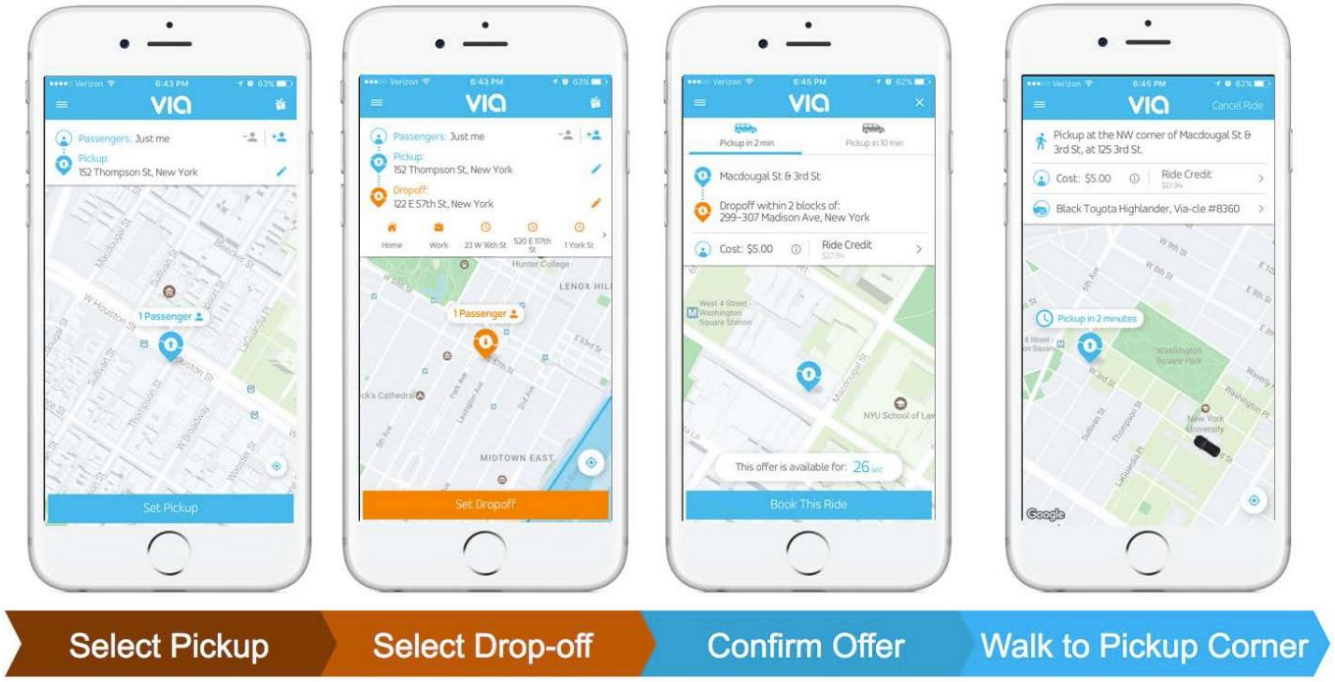
enterprise CarShare

Case Study 5: Via Microtransit Service in the City of Arlington

Summary: The City of Arlington is the first city in the nation to offer on-demand ridesourcing as its sole public transportation solution.

Impact: 100 percent increase in public transit ridership, 97 percent customer satisfaction rate, and efficient public transportation service.



Source: Via Microtransit User Interface and Steps to Access a Ride.

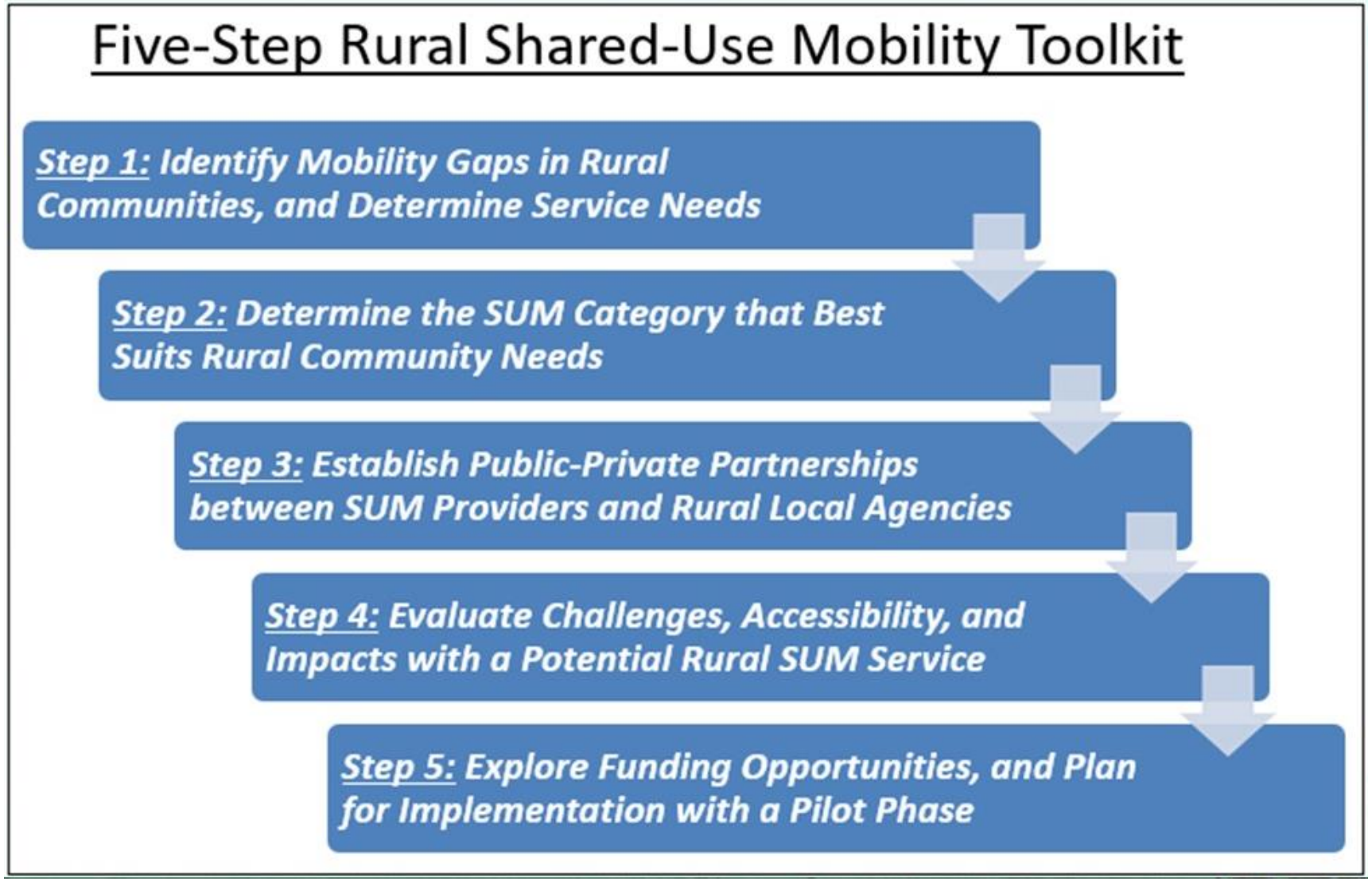
Case Study 7: Allen County, Kansas, Bikeshare

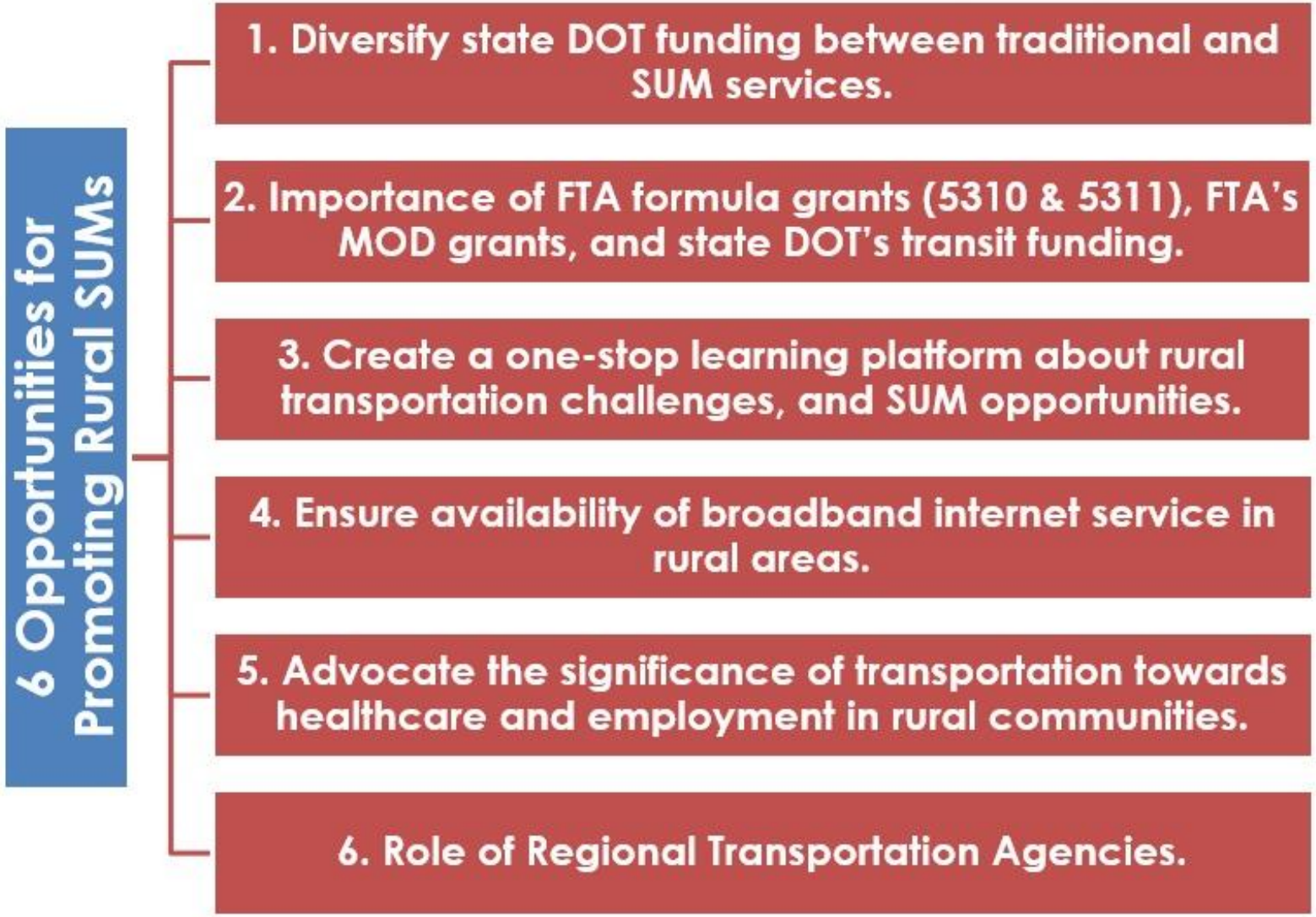
- **Summary:** A bikeshare program in Kansas offers bike access to rural community residents.
- **Impact:** Free bike rentals within the county for residents and visitors. 100 bike checkouts in the first three months of the program.

Output from various research efforts

1. **Draft Rural SUM Toolkit:** Inform State DOTs, regional transportation agencies, rural transit agencies, local governments, human service agencies, and other state and local agencies about various tasks involved for strategically planning to pilot and implement technology enabled SUM strategies in rural communities to address rural transportation challenges.

2. **Guidance for State DOTs and Other Agencies to Promote SUM services in Rural Areas:** Provide detailed guidance on the role that government, state DOTs, rural transit agencies, transportation planning agencies, and/or state economic development or small business development agencies to promote and advance rural SUM practices.


Five-Step Rural Shared-Use Mobility Toolkit
Step 1: Identify Mobility Gaps in Rural Communities, and Determine Service Needs
Step 2: Determine the SUM Category that Best Suits Rural Community Needs
Step 3: Establish Public-Private Partnerships between SUM Providers and Rural Local Agencies
Step 4: Evaluate Challenges, Accessibility, and Impacts with a Potential Rural SUM Service
Step 5: Explore Funding Opportunities, and Plan for Implementation with a Pilot Phase


6 Opportunities for Promoting Rural SUMs
1. Diversify state DOT funding between traditional and SUM services.
2. Importance of FTA formula grants (5310 & 5311), FTA's MOD grants, and state DOT's transit funding.
3. Create a one-stop learning platform about rural transportation challenges, and SUM opportunities.
4. Ensure availability of broadband internet service in rural areas.
5. Advocate the significance of transportation towards healthcare and employment in rural communities.
6. Role of Regional Transportation Agencies.

Interest of Shared-Use Mobility Services in Tribal Communities – Upcoming UTC-USDOT Study

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Interest and Opportunities for Shared-Use Mobility Services in Tribal Communities

- How can the rural shared-use mobility implementations be relevant to tribal communities?
- What are opportunities for shared-use mobility services in tribal communities?
- What types of shared-use mobility services would be relevant for tribal communities?

Tribal SUM Study – Objectives

- Gather feedback from tribal community stakeholders.
- Conduct interviews with private shared-use mobility providers
- Interview residents from tribal communities – 1 to 3 case study communities

Feedback from Tribal Community Stakeholders

- Input through a 5-Minute Qualtrics Survey

Contact

Ranjit Godavarthy, Ph.D.

Email: ranjit.godavarthy@ndsu.edu

Website: www.ugpti.org/surcom

During this portion, we will briefly discuss food insecurity, food deserts and seek input from the audience to better understand the difficulties in access to food for Tribes. We want to expand the study's scope of work to examine ways that public transportation or mobility options may play a role to provide access to good, healthy, and culturally appropriate foods to Native American Tribes in the United States

Principal Investigator:
Jill Hough

What is Food Insecurity?

Food insecurity is the limited and uncertain availability of healthy foods. Food security is having enough healthy food to lead an active healthy life.

Source: National Research Council, 2006

What are Food Deserts?

USDA defines a food desert as an area that lacks a grocery store. A food desert can also be defined as an area where residents lack the financial capabilities to purchase healthy food because the stores in the area are overpriced.

In rural areas, the most important predictor of food access is availability of transportation. For example, people who do not have access to a bicycle, vehicle, or public transportation are more likely to lack access to healthful foods.

Food Insecurity and Food Deserts often Cause Health Problems

- Food insecurity is strongly correlated with malnutrition and underweight as well as obesity and type 2 diabetes.
- Experts suggest that living in a food desert may put people at an increased risk of obesity, diabetes, and other weight-related conditions.

Food Insecurity in the United States Pre-COVID-19

Black Americans (25.2%), Hispanic Americans (16.8%), and White Americans (10.4%) experienced food insecurity (USDA study on Food Insecurity).

Not good data on food insecurity among Native Americans. A study in the *Journal of Hunger & Environmental Nutrition*, 2017 reported that over a ten-year period, tribal communities averaged a food insecurity rate of 25%.

There is extreme food insecurity experienced in some Native American communities. A study, prior to COVID-19 of Native American Tribes in Northern California/Southern Oregon revealed that 92% of the households had a lack of access to enough good, healthy, and culturally appropriate food.

To Address Food Insecurity: USDA's Supplemental Nutrition Assistance Program (SNAP)

- Only effective if authorized grocery stores are easily accessible.
- Areas with low population densities and high poverty rates lack large grocers.

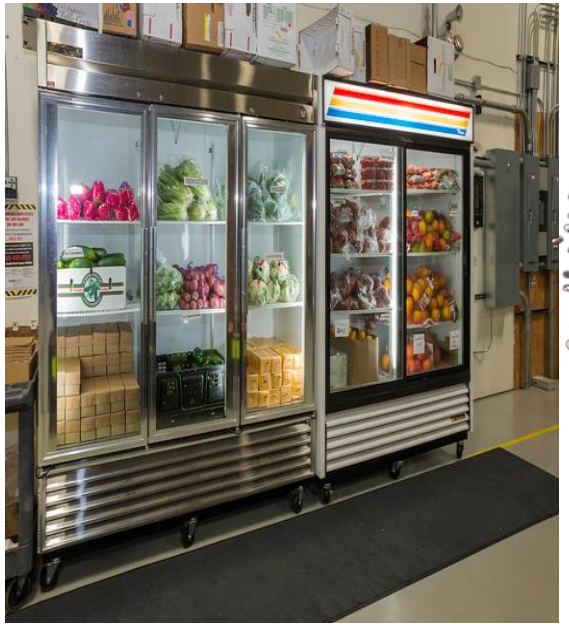
Photo Credit: USDA photo by Bob Nichols

Food Distribution Program on Indian Reservations (FDPIR)

- When SNAP is not feasible, USDA funds this alternative program.
- USDA purchases and ships selected healthful food to Indian Tribal Organizations or State governments.
- Warehouses, Tribal stores, and local sites are used to distribute the USDA food.
- In 2019, approximately 276 Tribes received benefits through FDPIR with an average monthly participation of 83,800 people.

COVID-19 revealed gaps in the federal system as many Tribes needed to look for additional assistance.

The Emergency Food Assistance Program (TEFAP) did not list Tribal governments as eligible administrator of the program; however, many states changed this to approve Tribal citizens to be recipients.



What other Gaps Exist?

- Quantity
- Quality
- Nutritional knowledge
- Transportation

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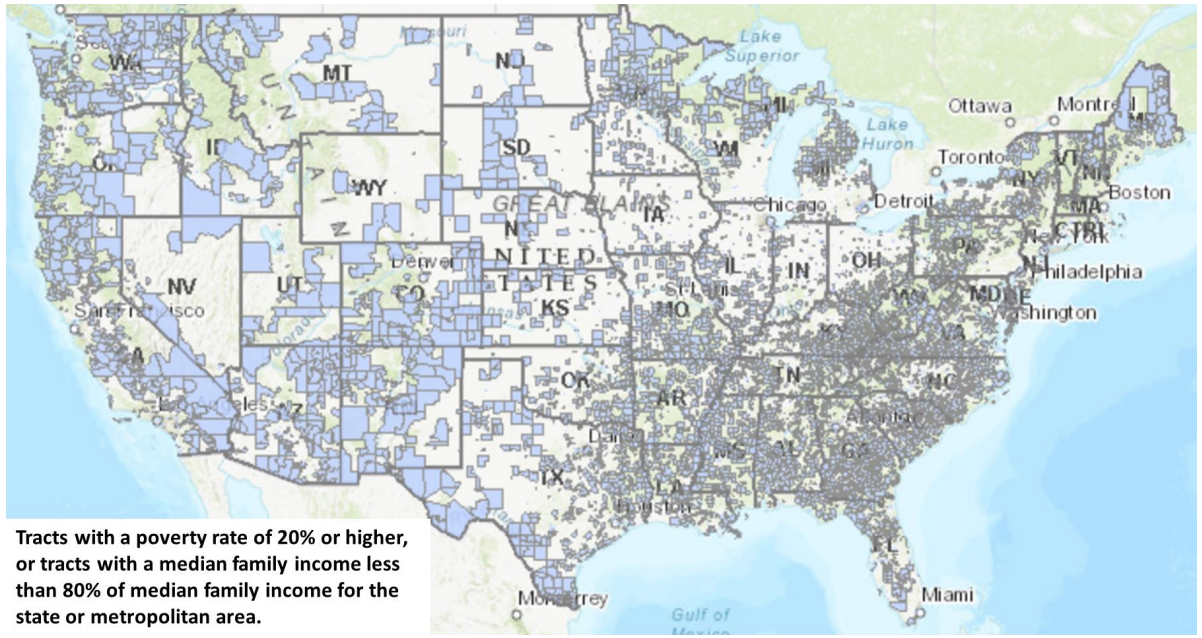

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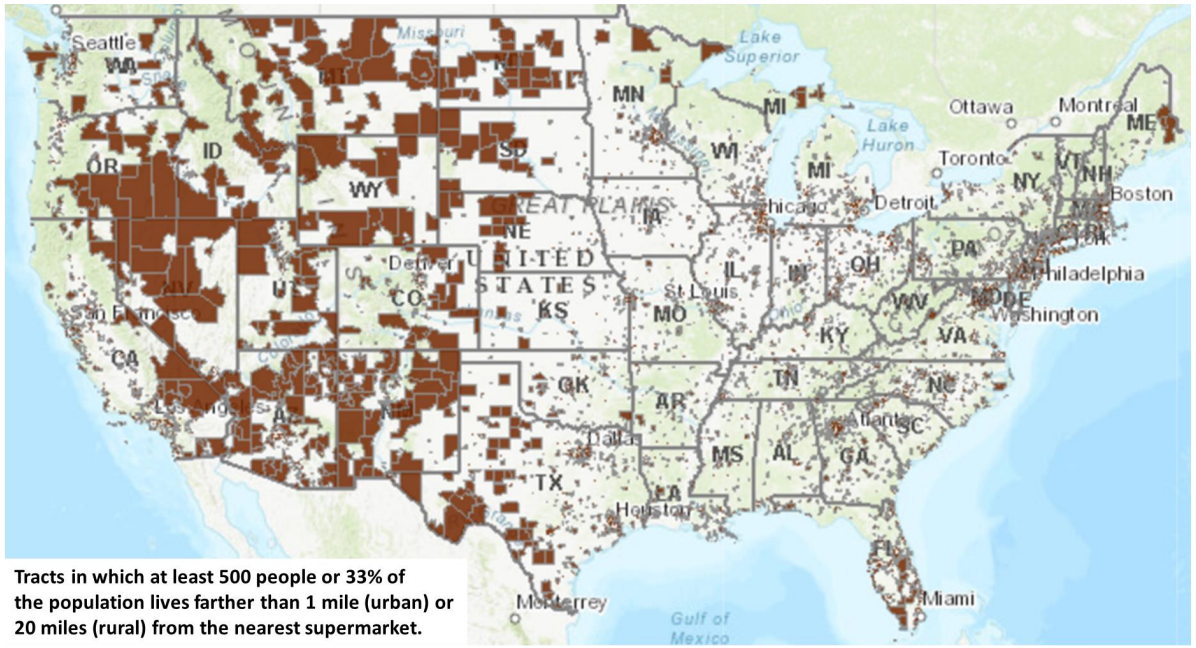

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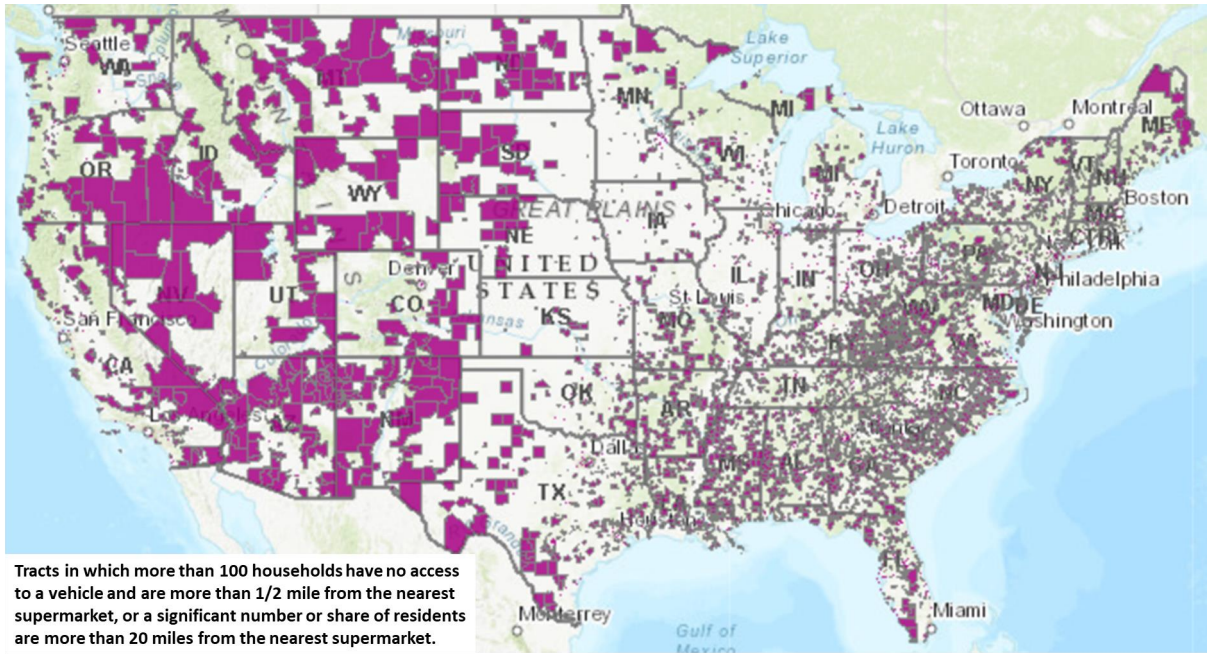

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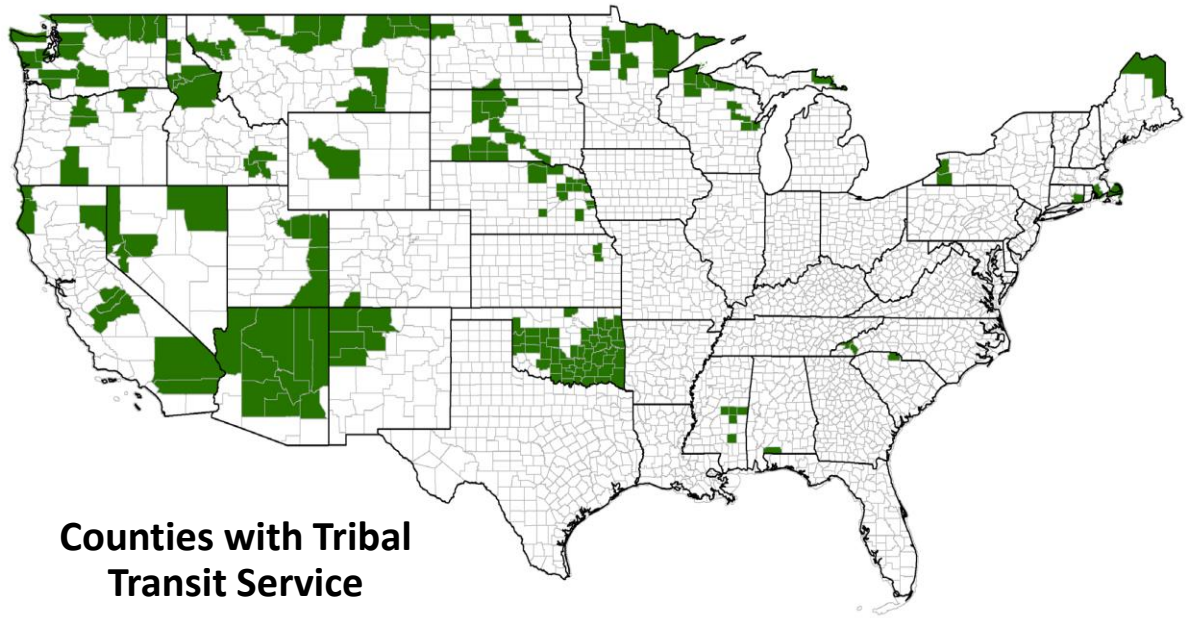
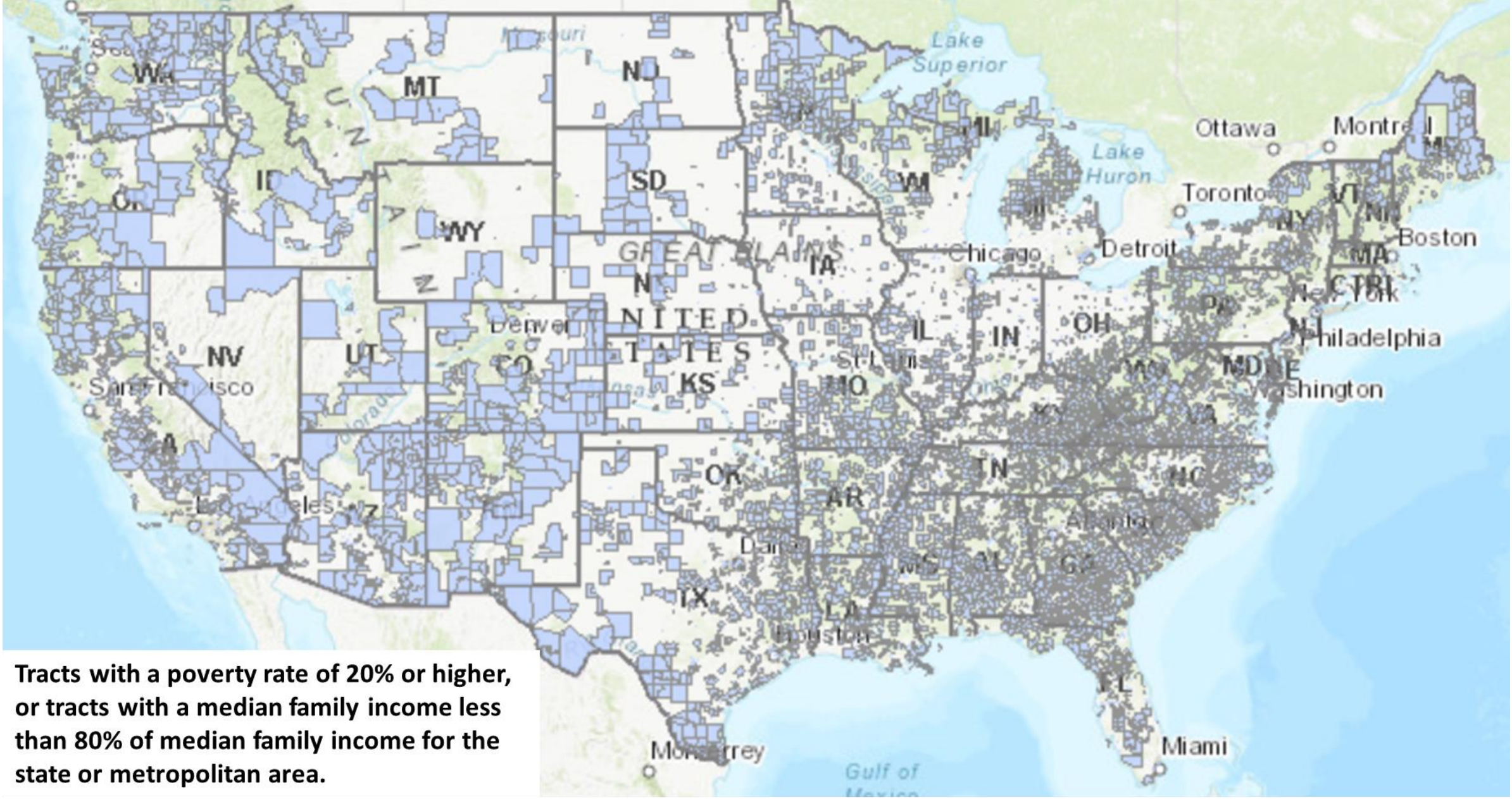


Counties with Tribal Transit Service



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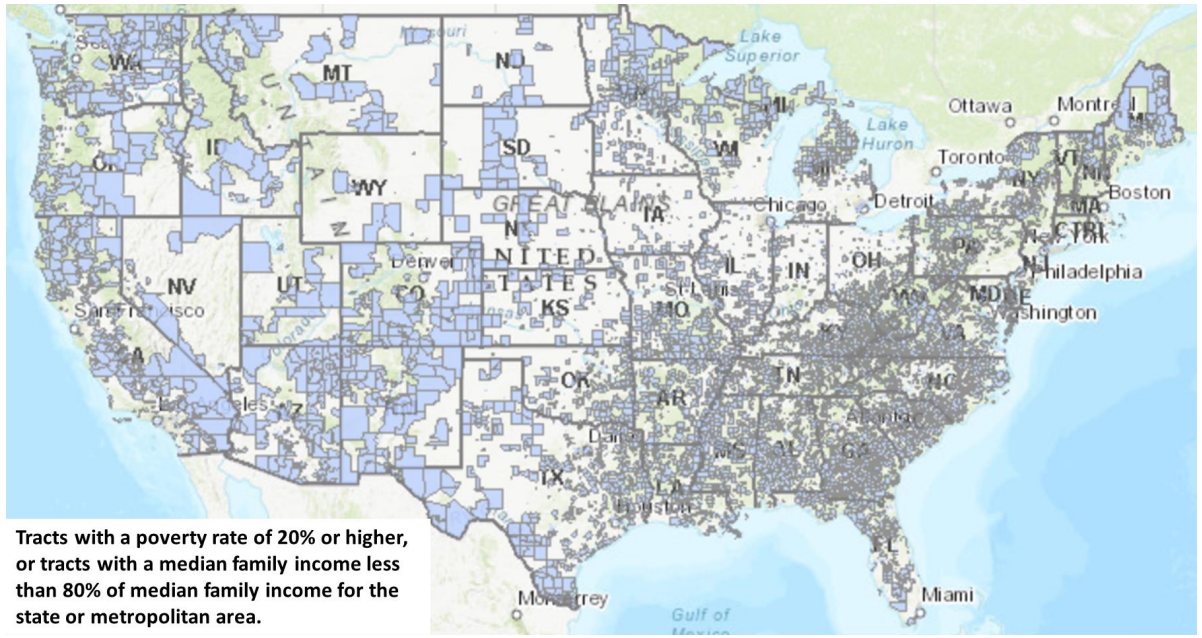

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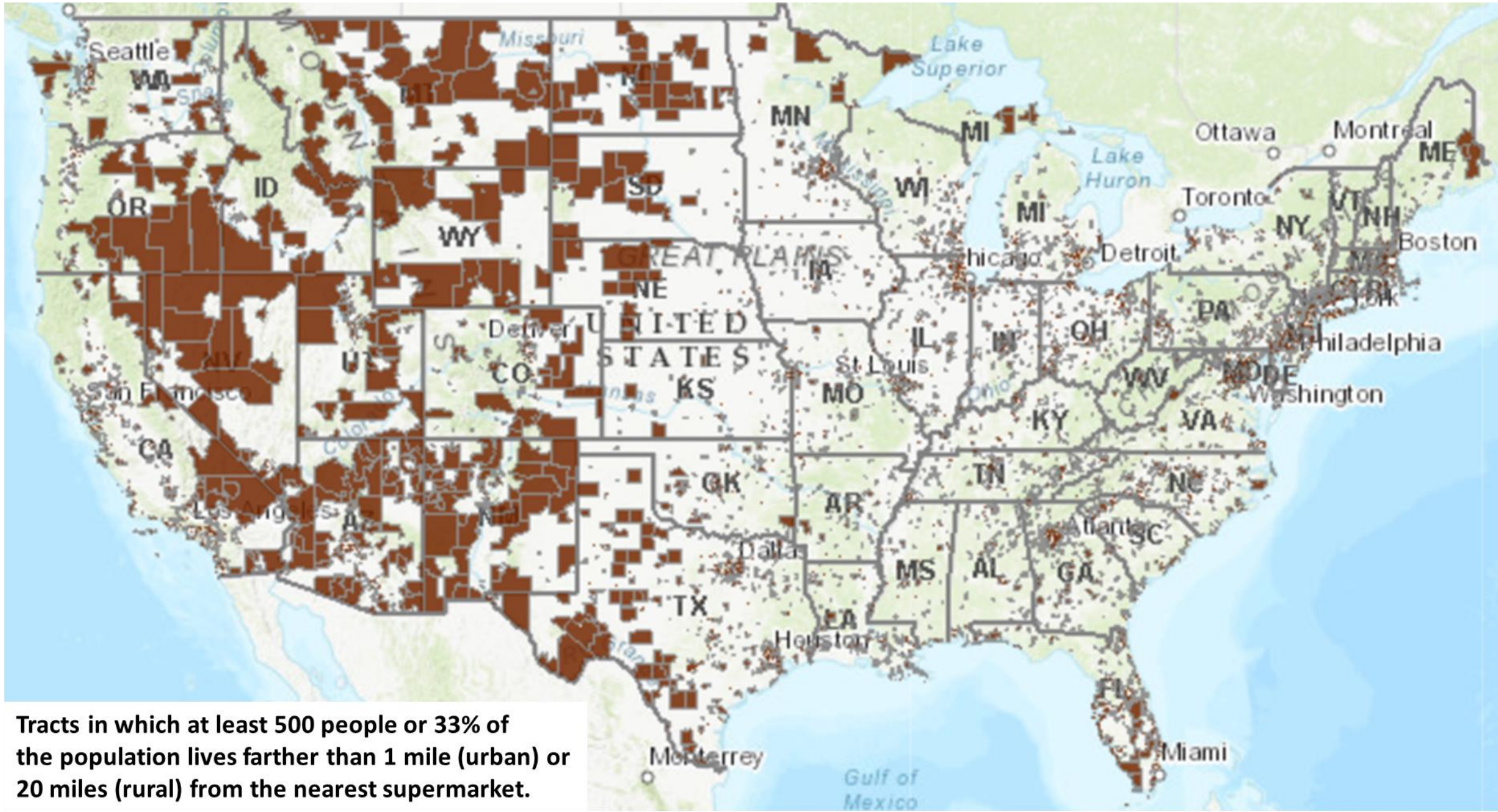

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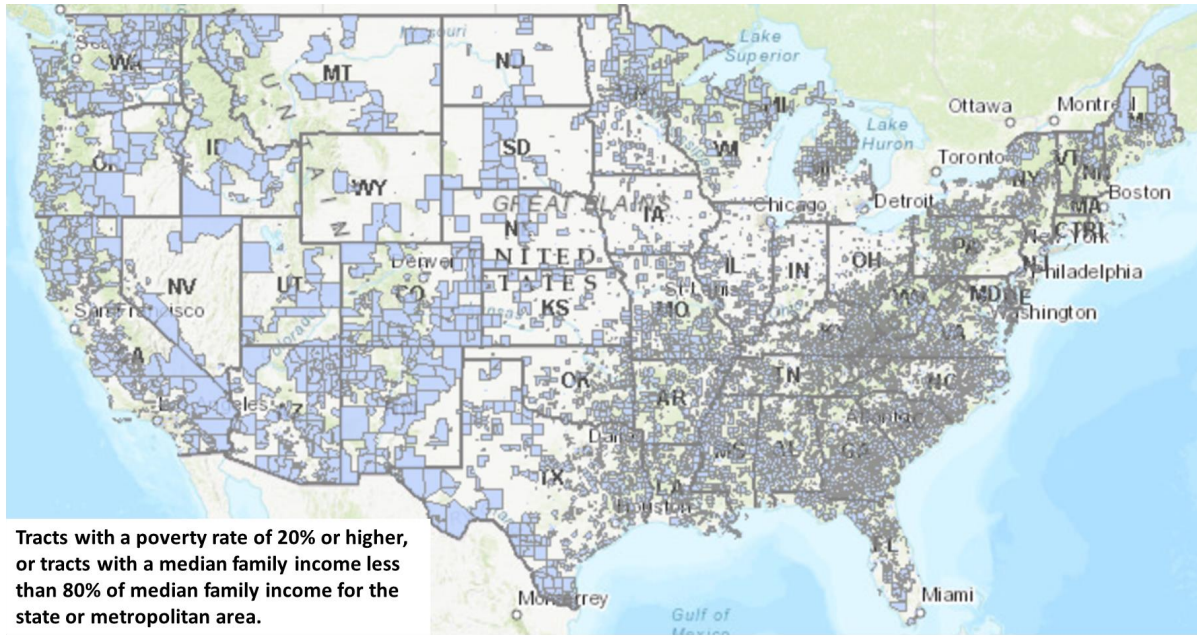

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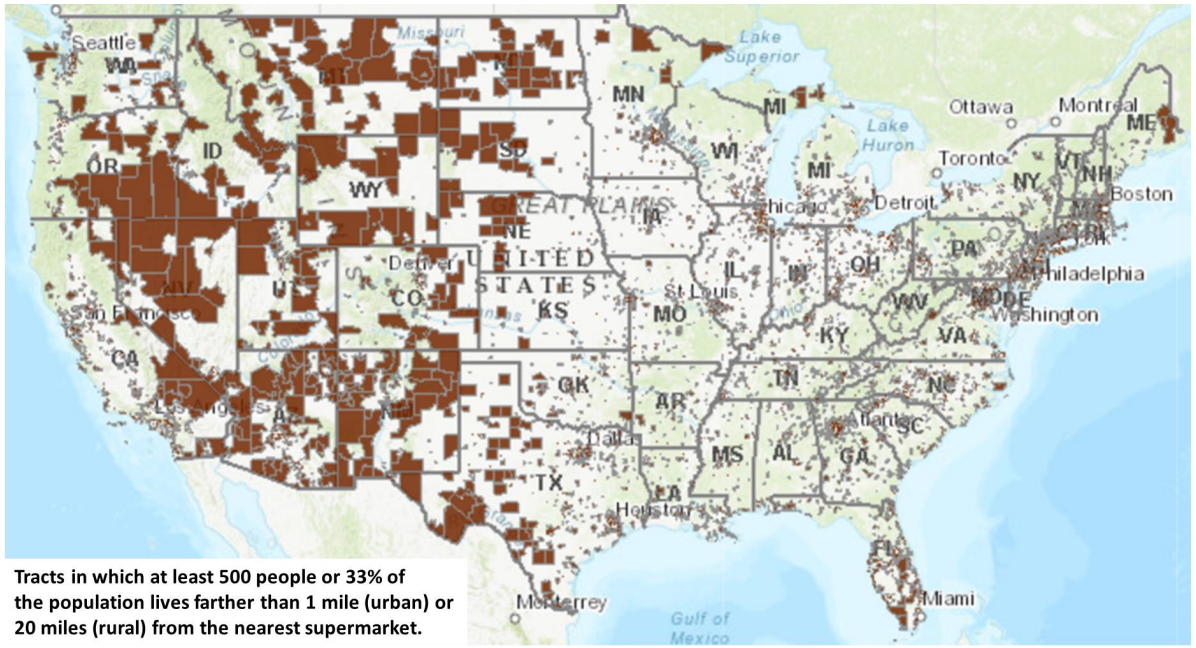

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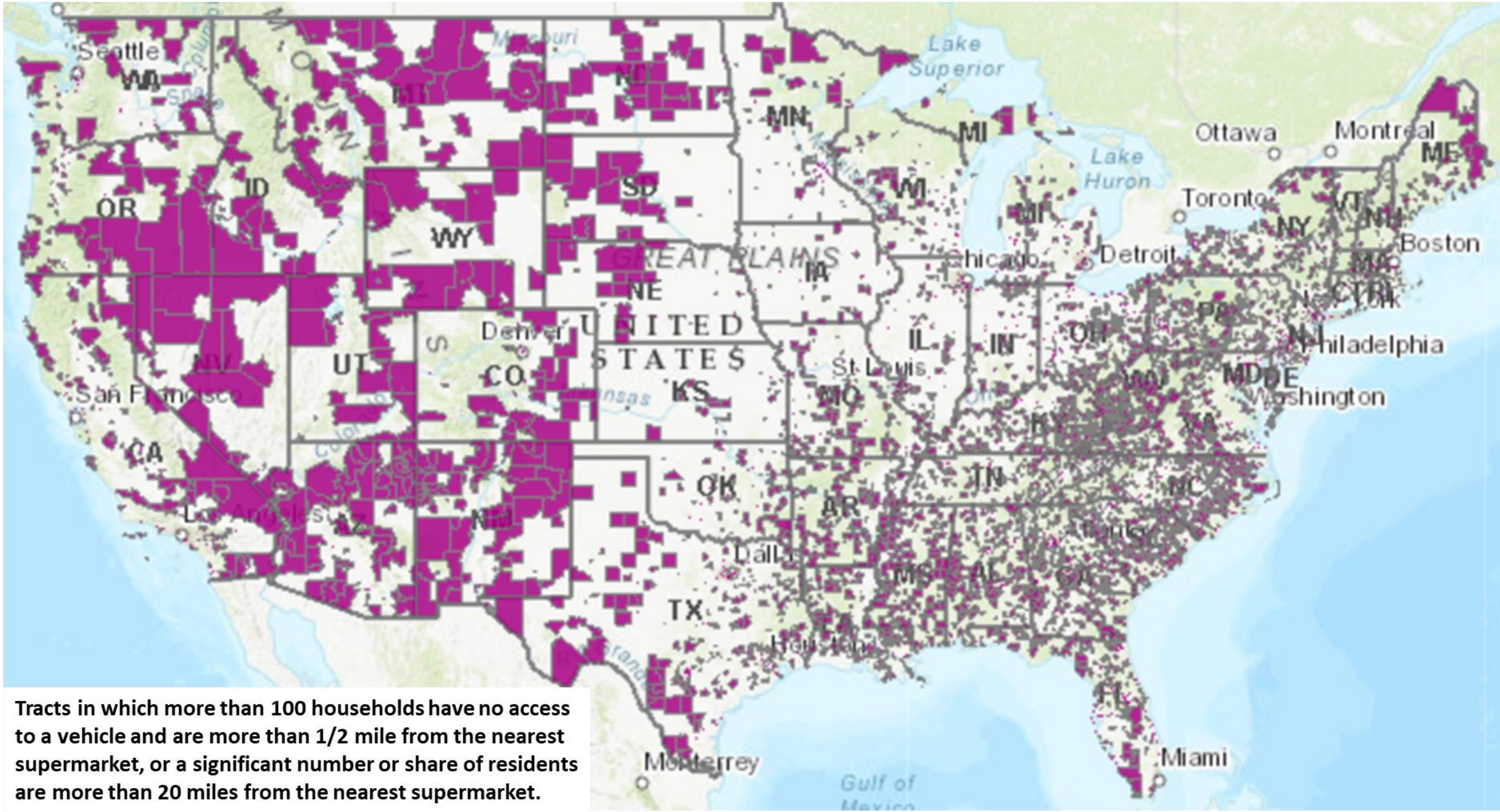

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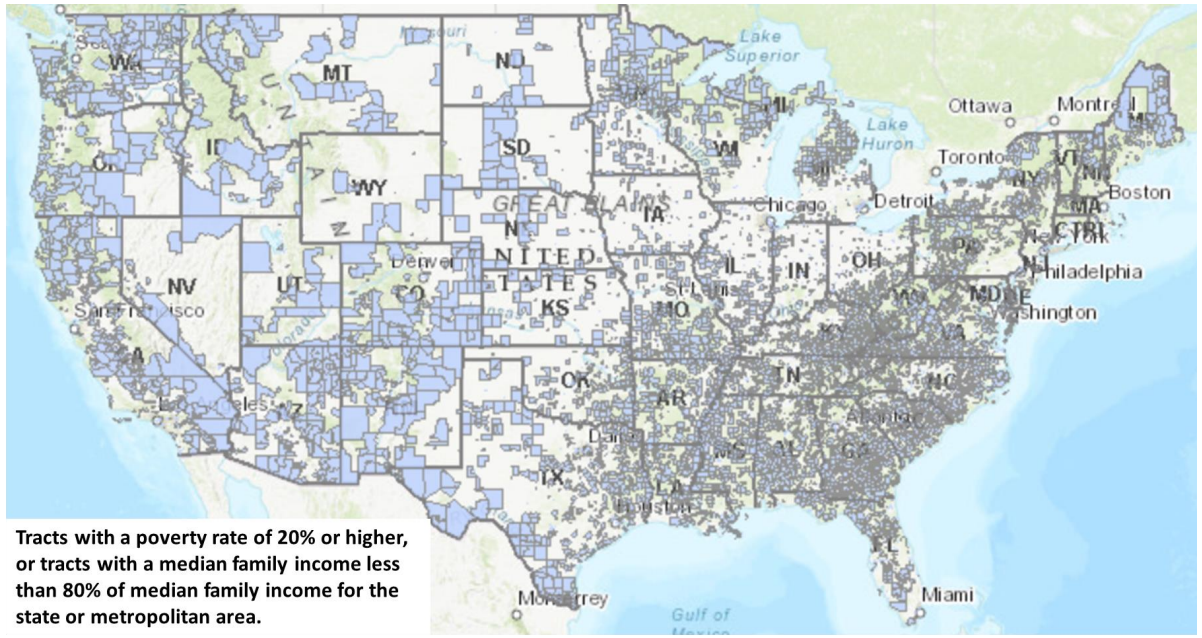

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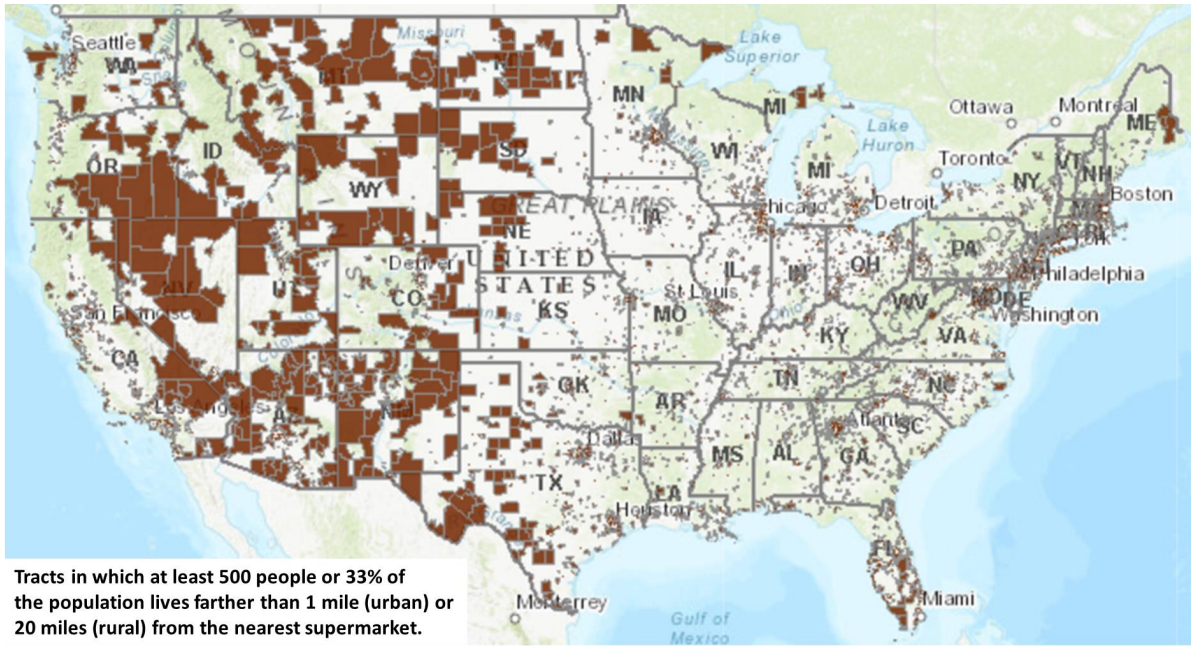

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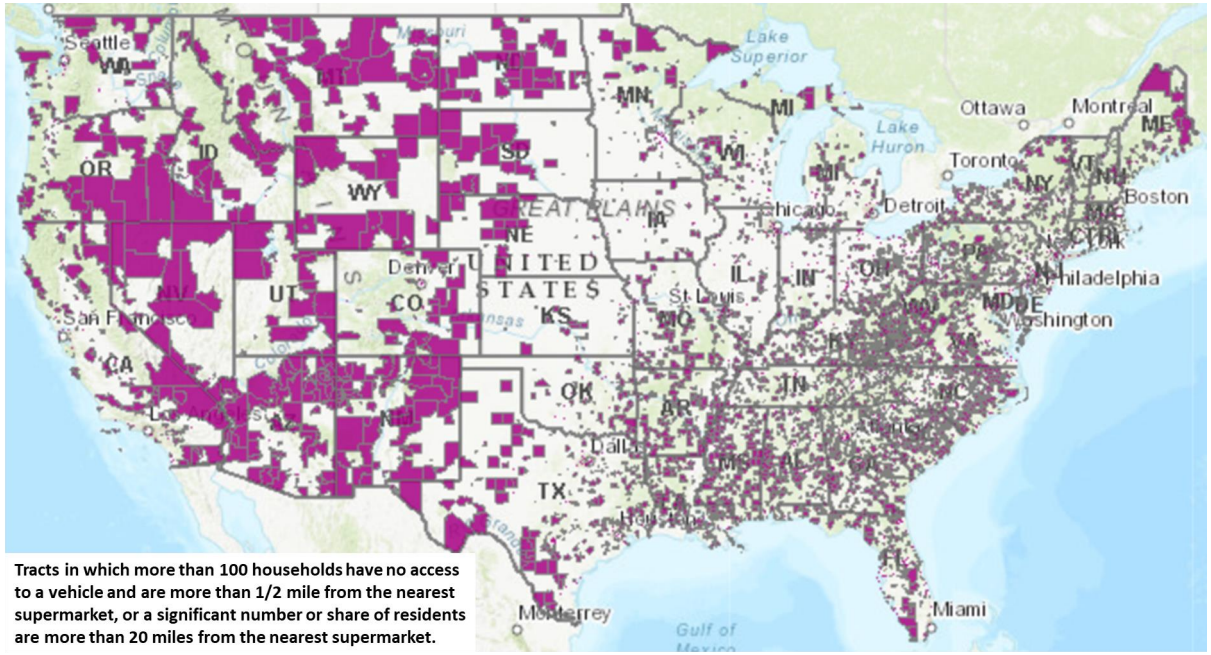

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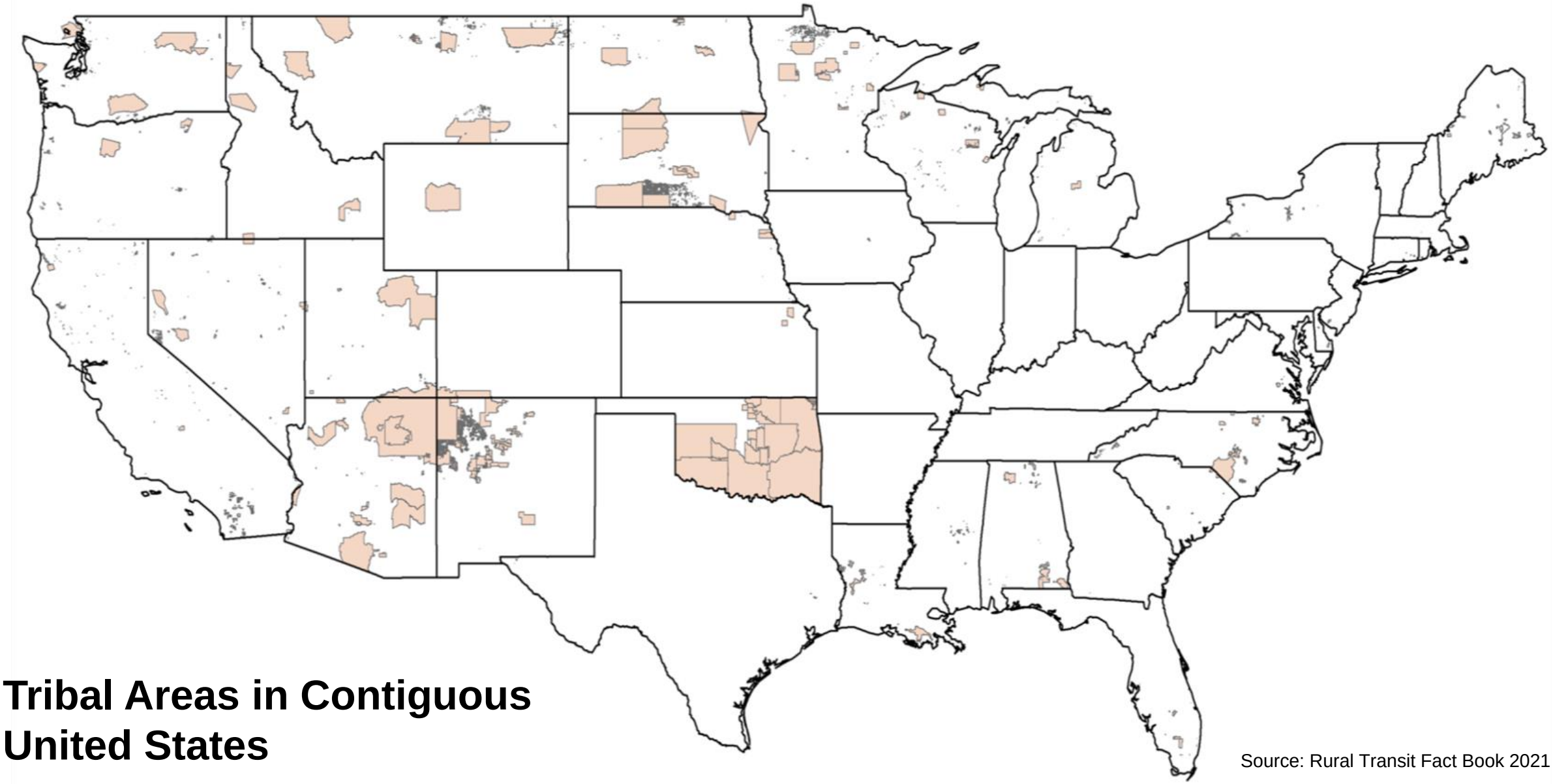
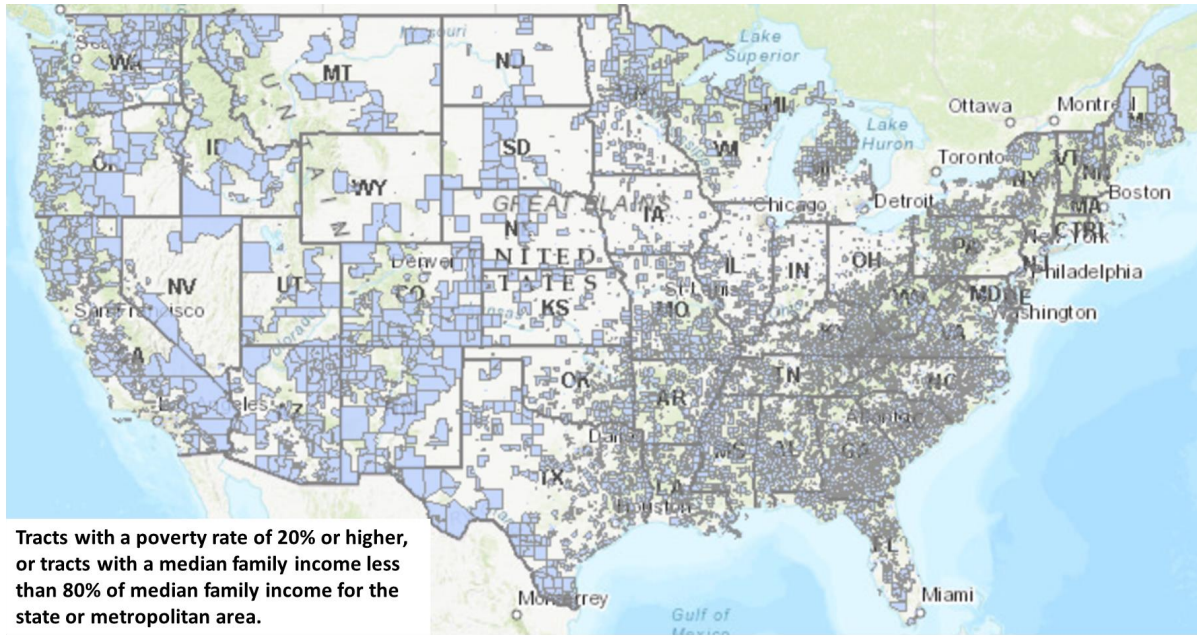


Tribal Areas in Contiguous United States

Source: Rural Transit Fact Book 2021



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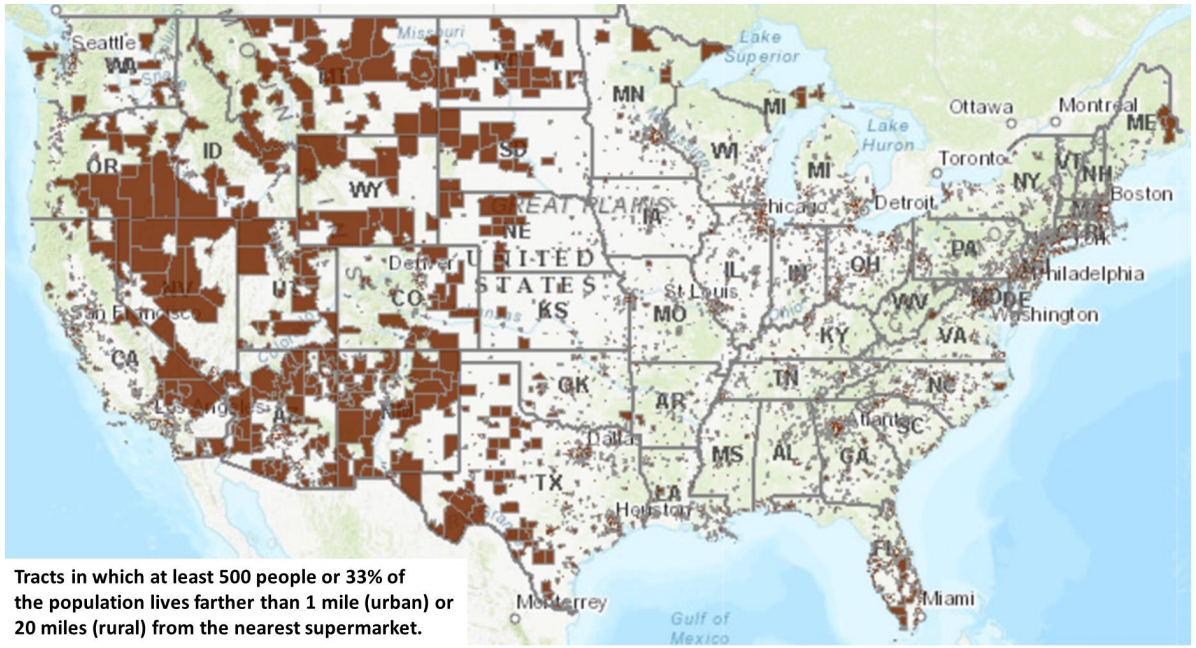

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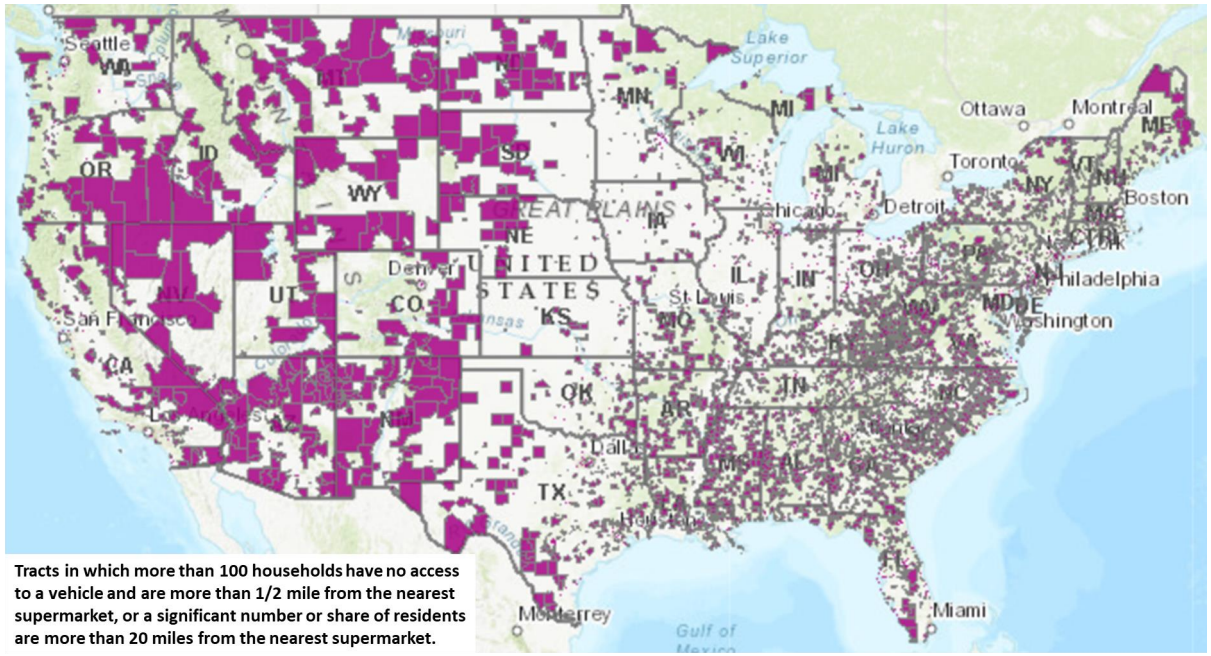

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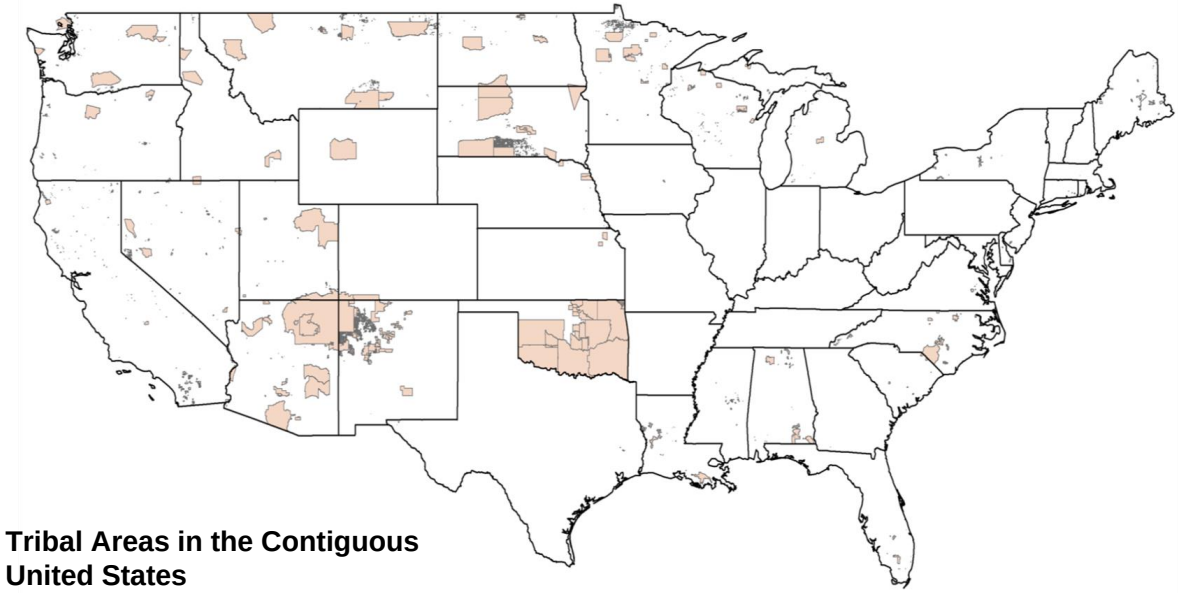

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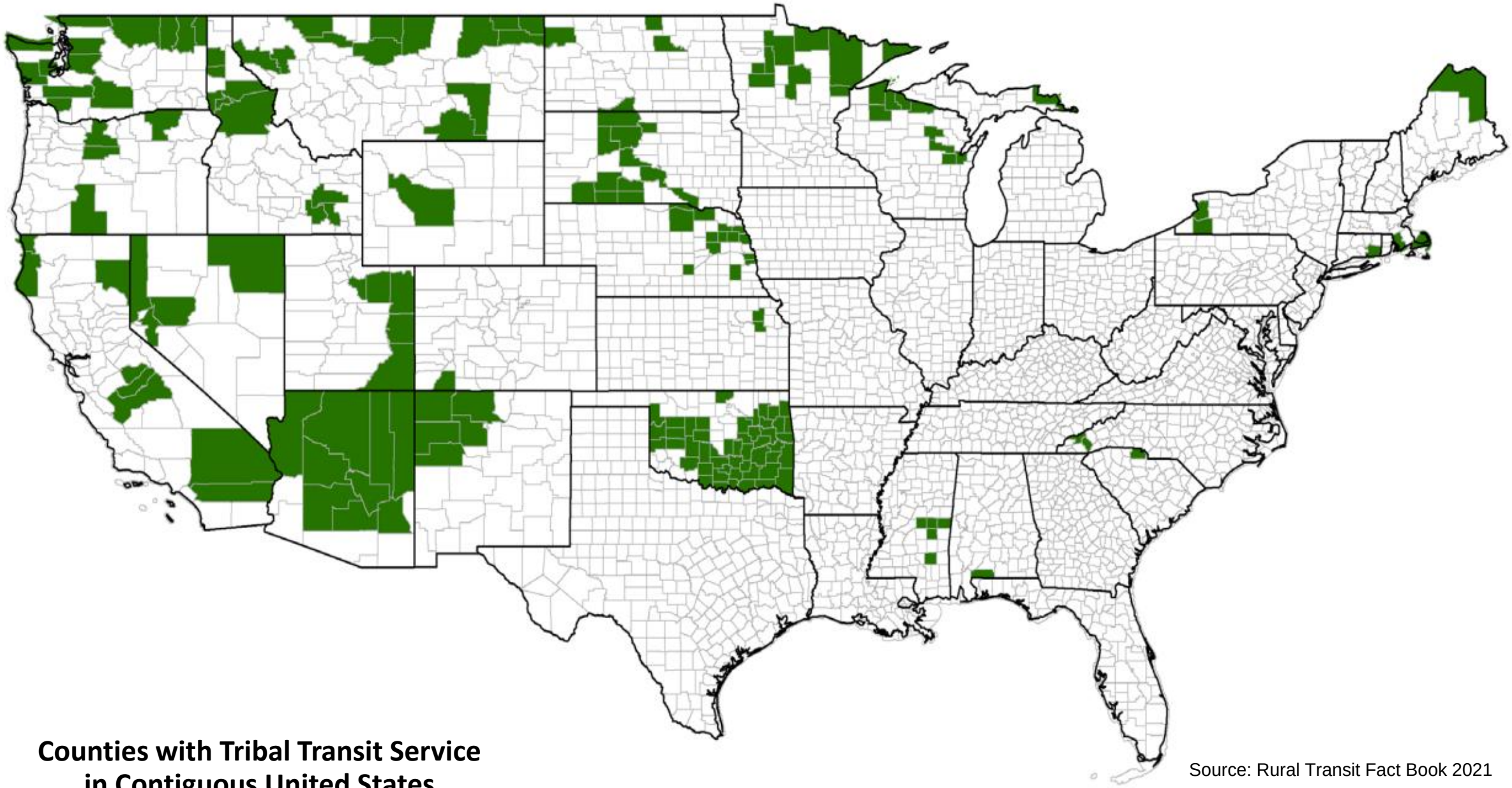

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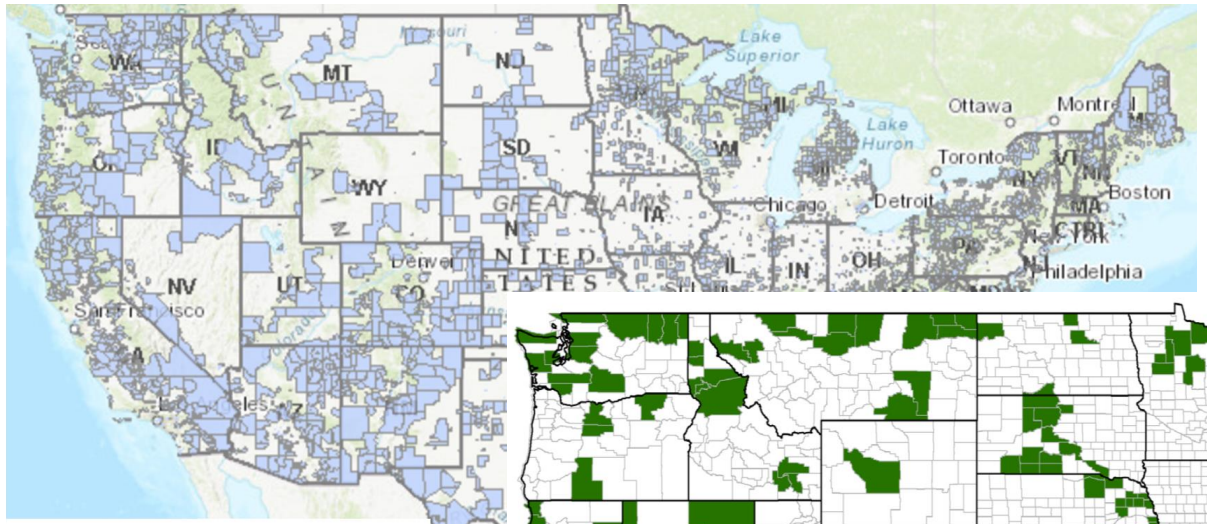

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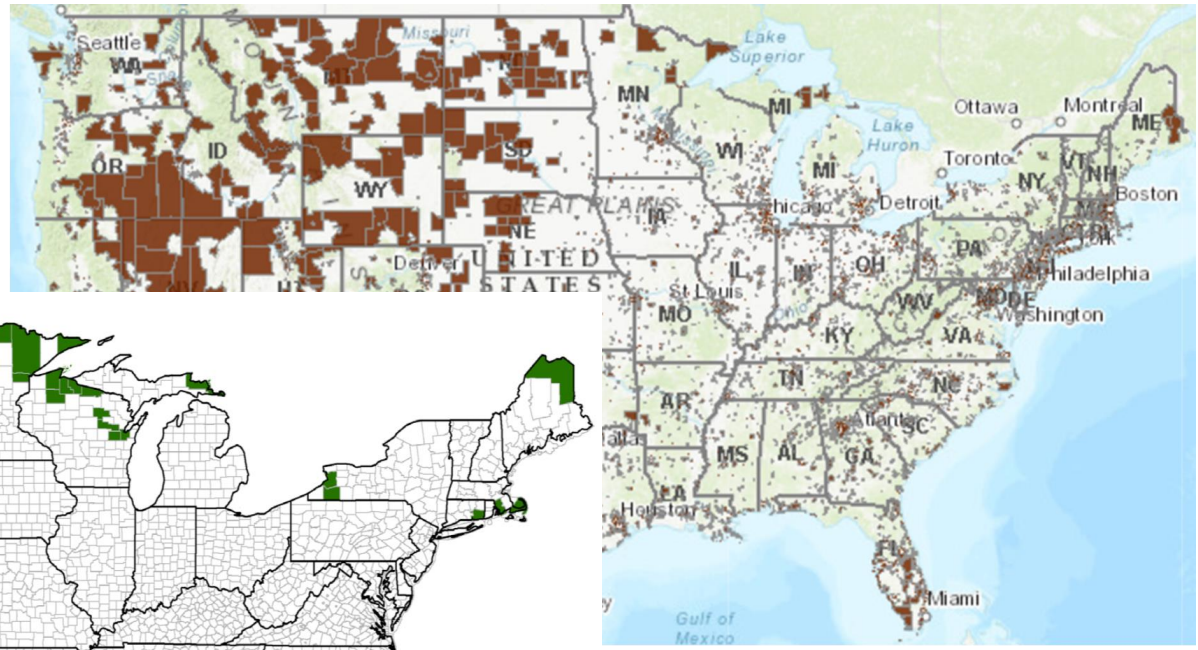

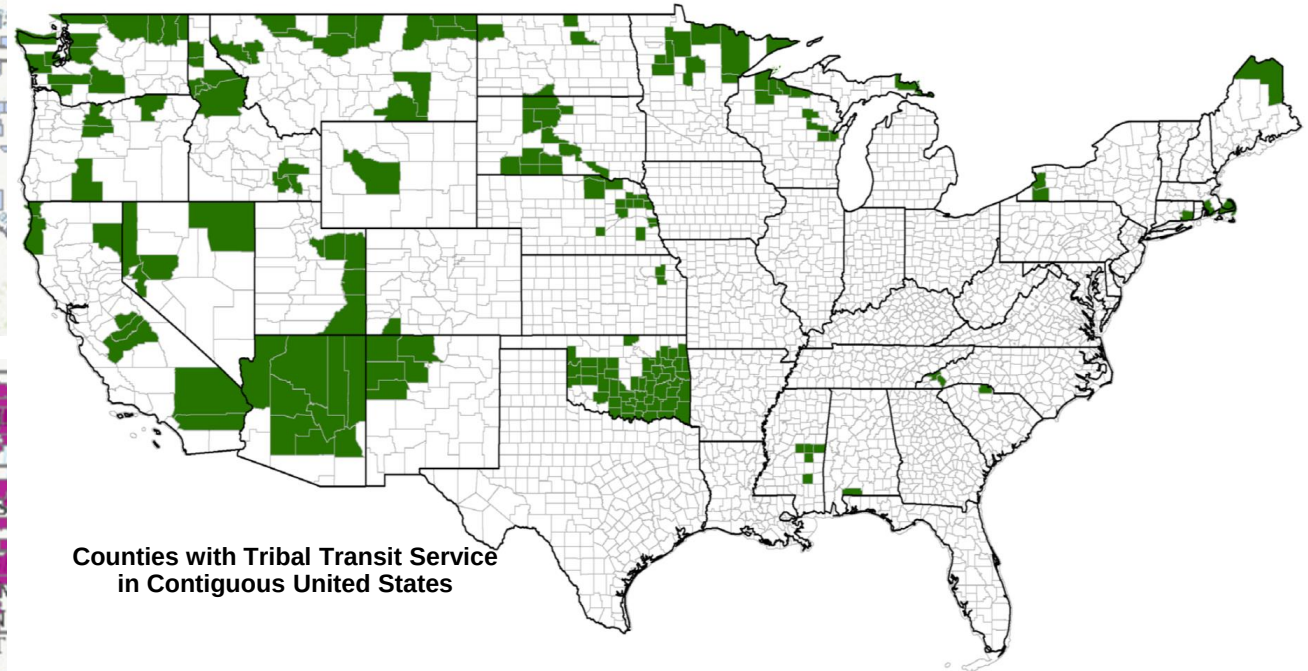

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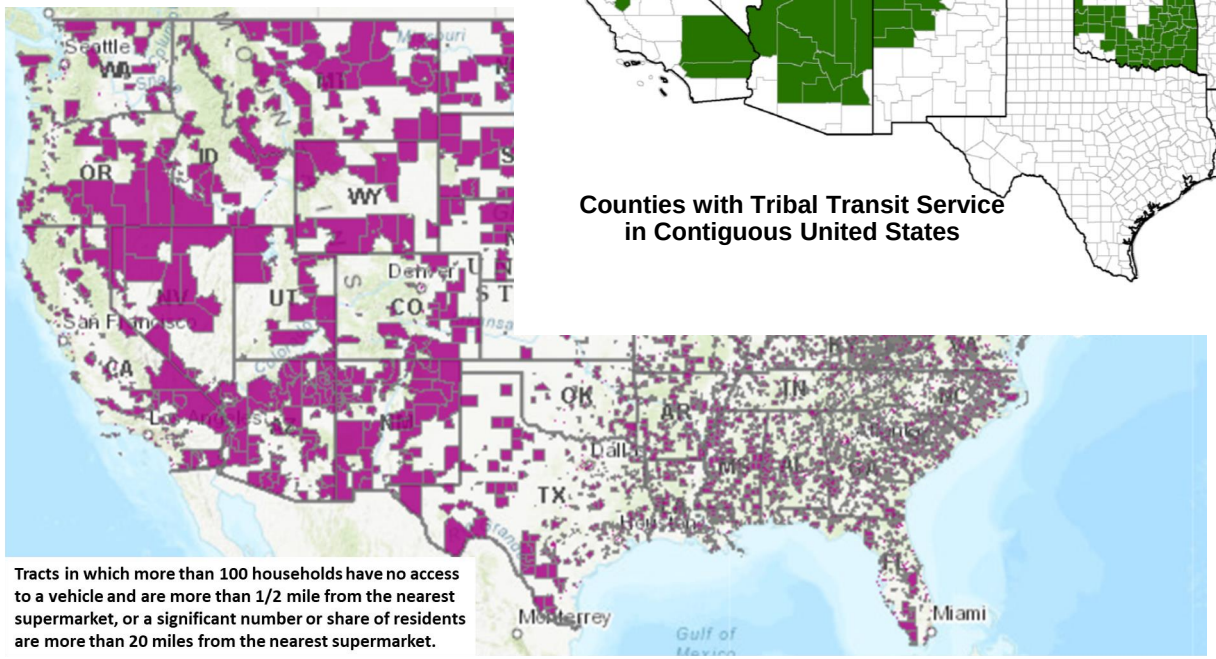

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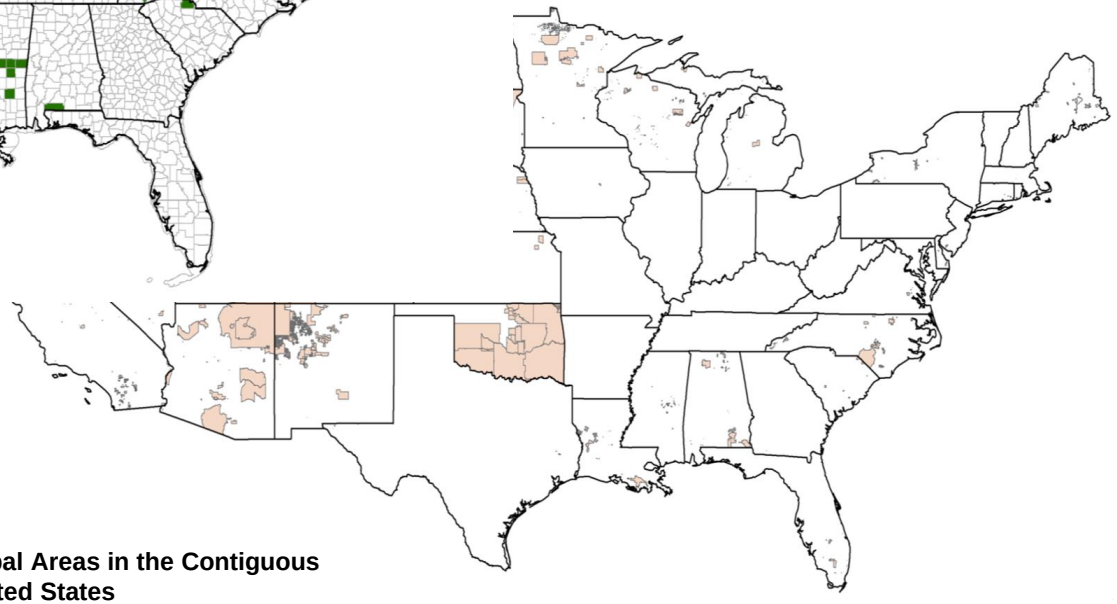

Tribal Areas in the Contiguous United States

Questions

Have you or someone close to you experienced food insecurity prior to COVID-19?

Did you or someone close to you experience food insecurity during COVID-19?

Is public transportation available for you to utilize to access healthy foods?

Are more transportation options needed where you or people that you know live in order to access healthy foods?

Is more knowledge/education needed on nutritious tribal foods?

References

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Contact

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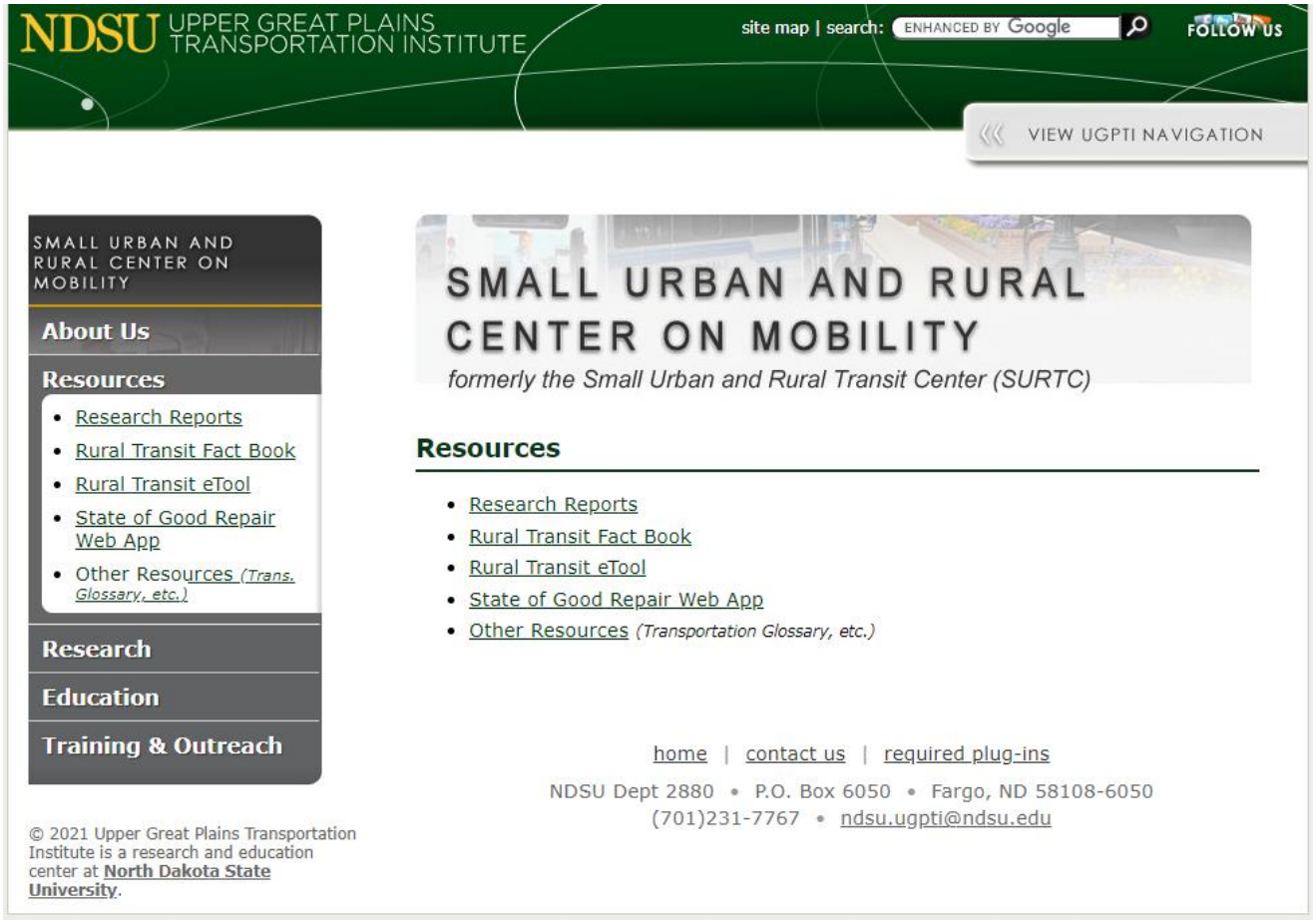
Phone: 701-793-1364

Email: jill.hough@ndsu.edu

Website: www.ugpti.org/surcom

Demonstration of Rural Transit eTool

Dilip Mistry



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Contact

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