

Transportation Planning in Rural Communities

Thomas McMurtry, AICP, GISP

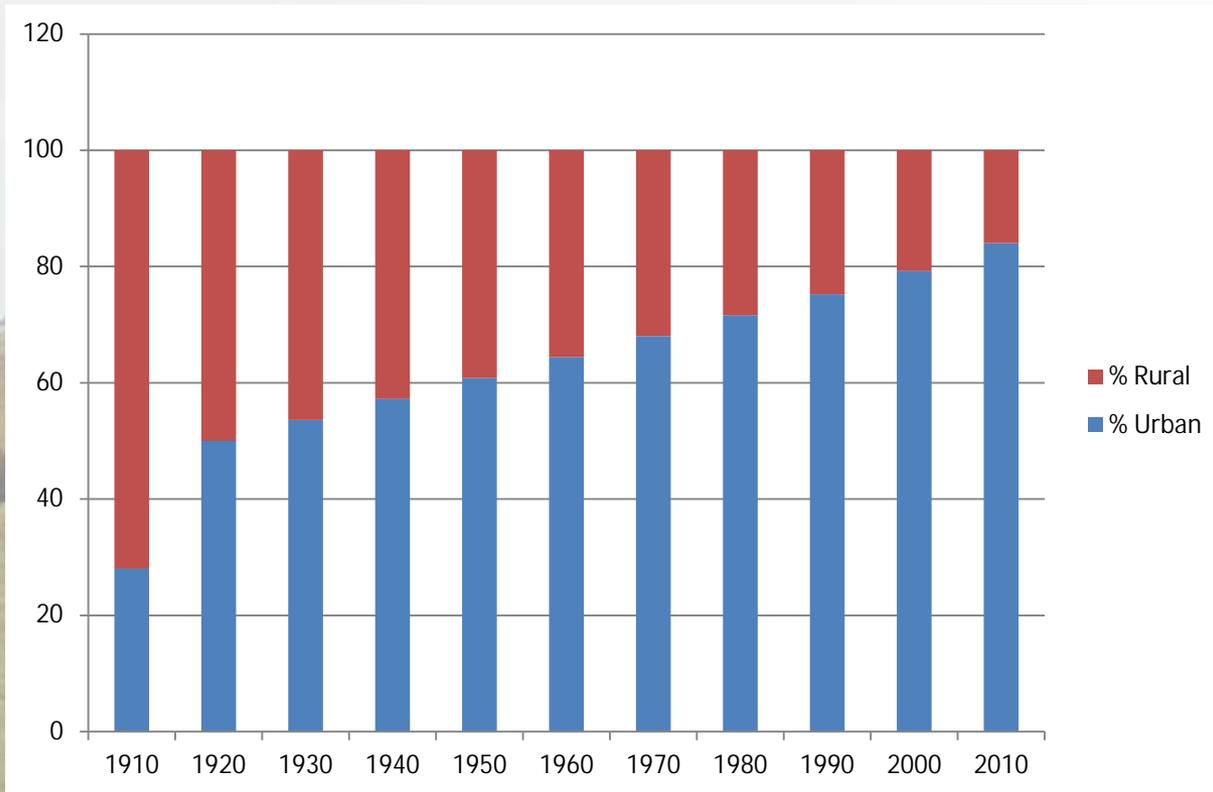
KLJ



Unique Challenges

- Declining rural populations
- Aging infrastructure
- Agricultural challenges
- Fewer transportation options
- Limited Access to services
- Getting products to market
- Environment issues
- others

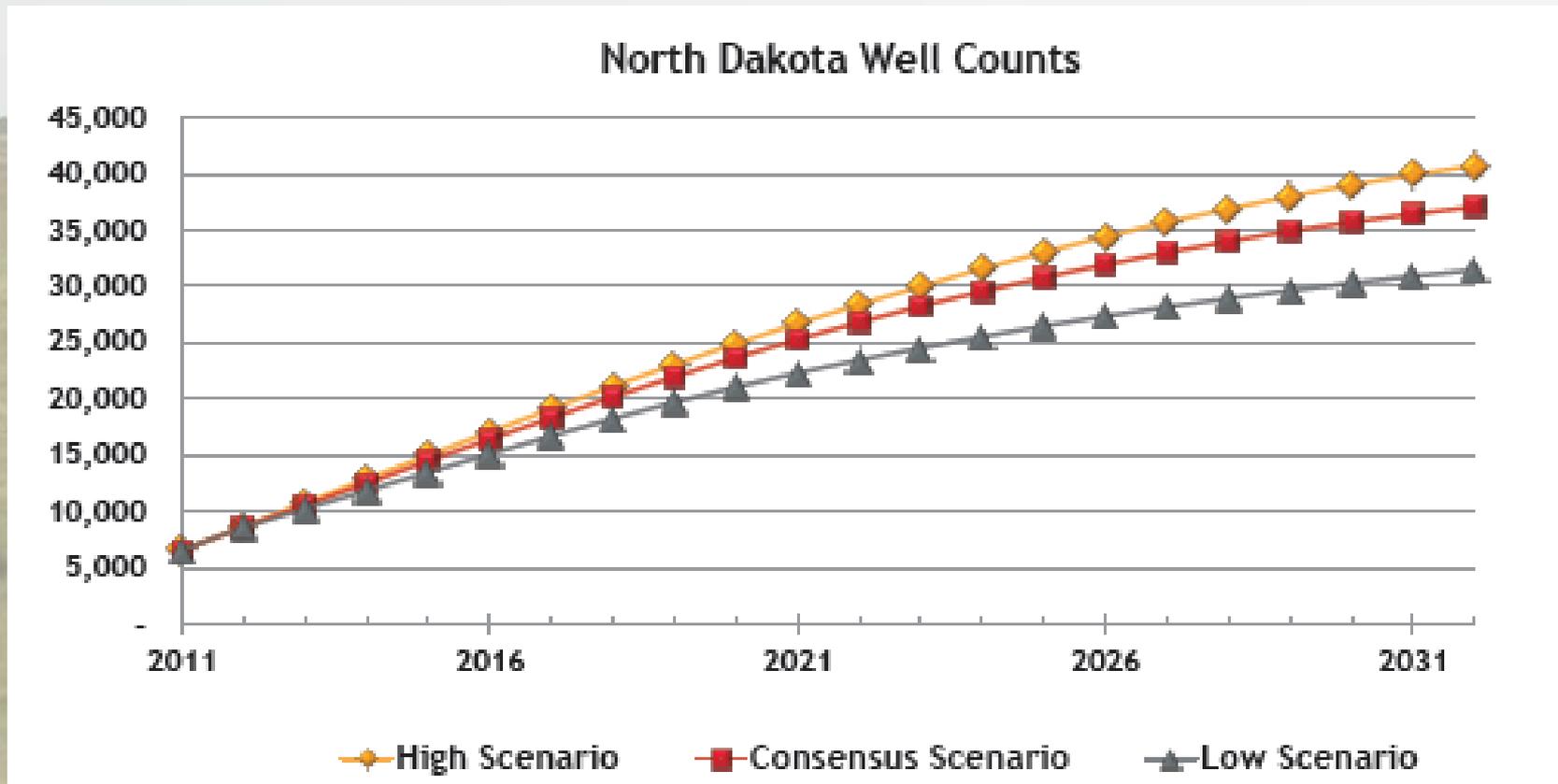
Rural populations



- 60 % of North Dakotans live in Urban areas

Rural populations

- Oil counties booming



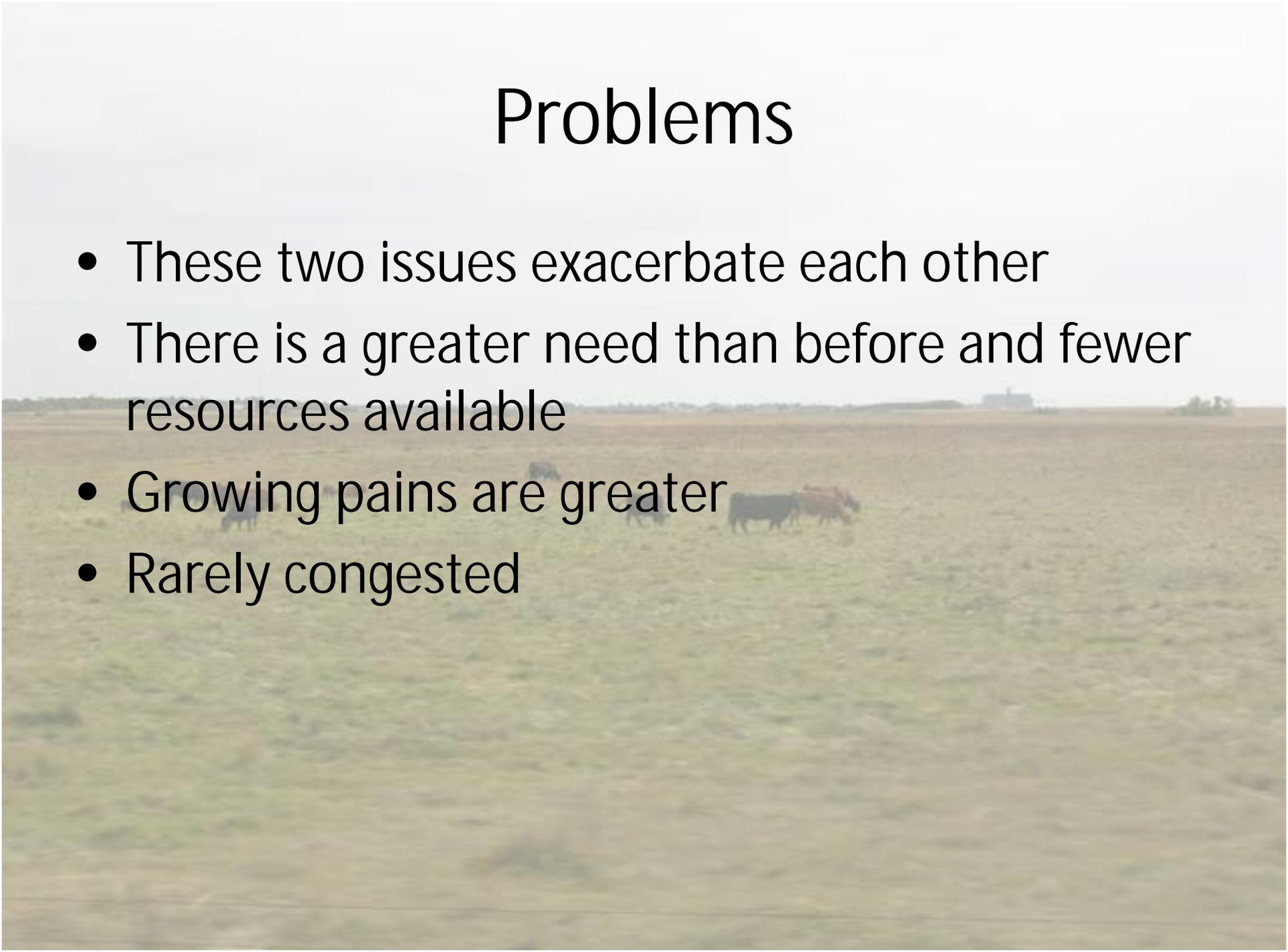
Aging infrastructure

- Many paved roads are decades old
- Larger/heavier trucks and equipment traveling on roads that weren't built for it
- As County roads deteriorate travelers are more reliant on State Highway system



Problems

- These two issues exacerbate each other
- There is a greater need than before and fewer resources available
- Growing pains are greater
- Rarely congested



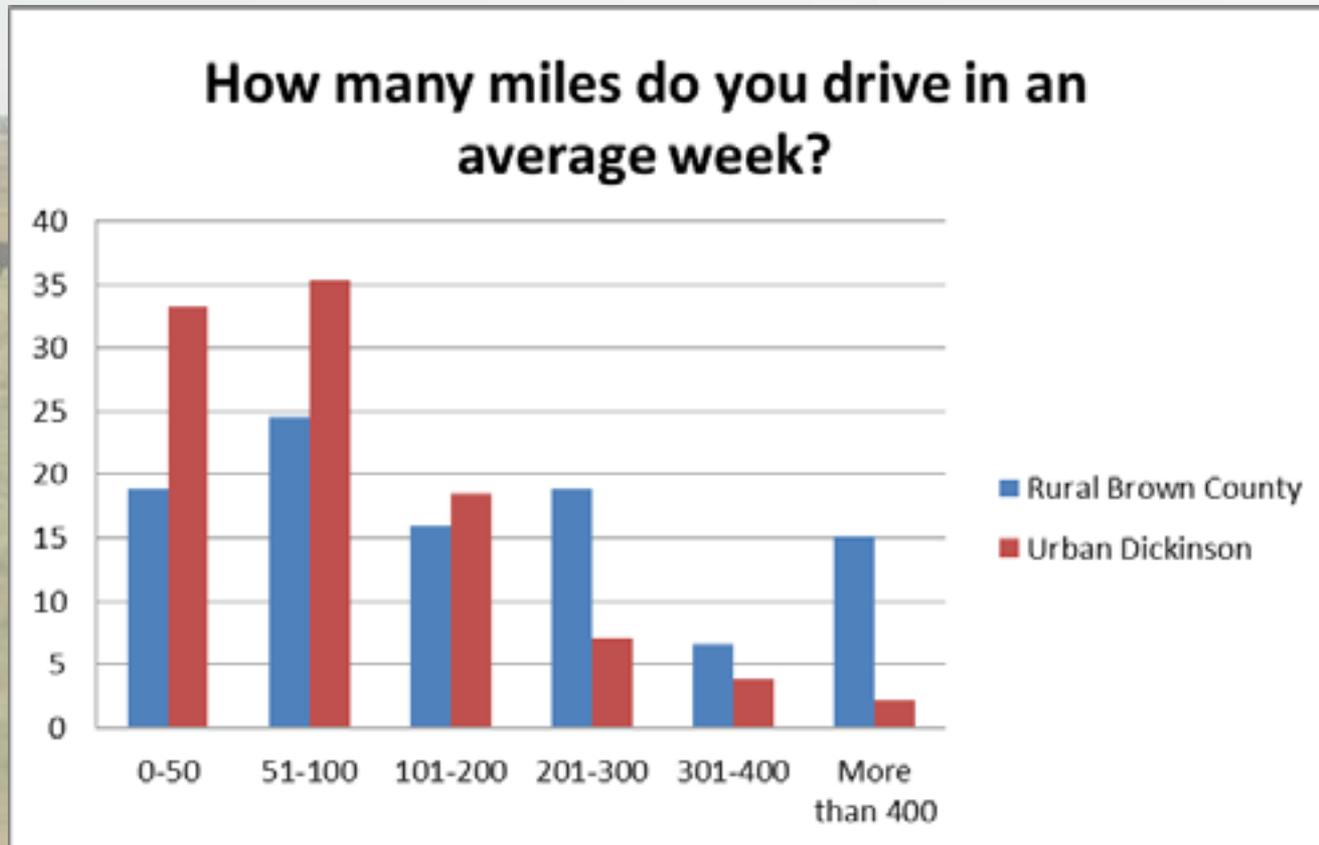
Rural Transportation Plan

- Important to address rural issues
- Prioritize needs
- Identify funding sources
- Need to be implementable
- Financially constrained plan



Rural Transportation Plan

- Important to address rural issues

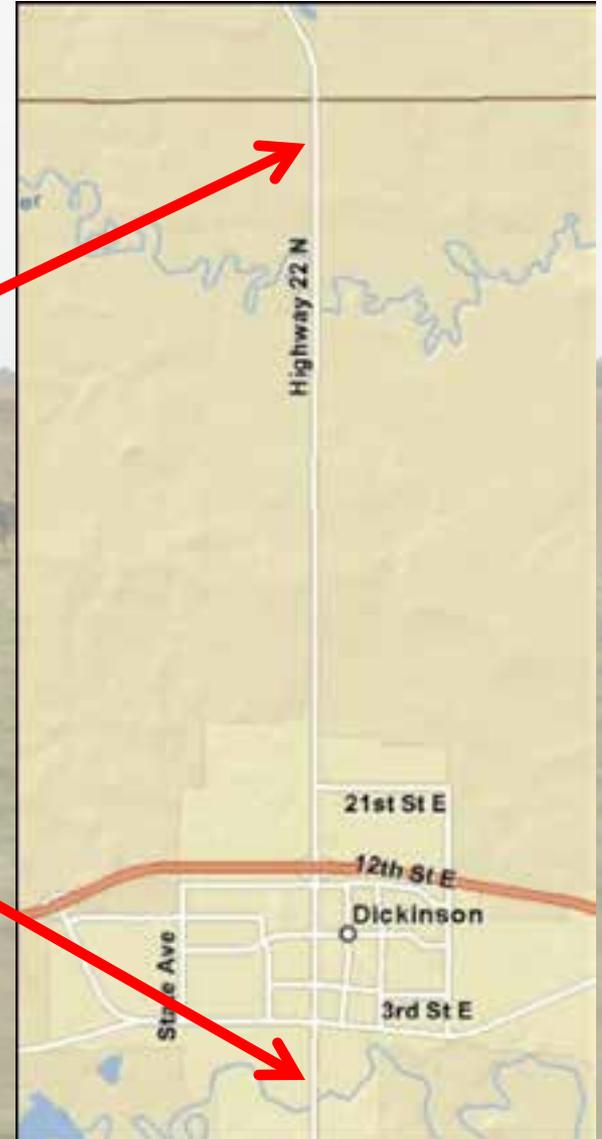


Rural Transportation Plan

- Important to address rural issues

27% Trucks

10% Trucks



Rural Transportation Plans

- Traffic Trends
- Truck Traffic
- Hotspots
- Prioritized Projects
- Other Issues
- Funding Sources



Traffic Trends

- Most rural areas have little to no congestion
- Some areas have heavy traffic growth, a new rural subdivision, grain elevator, or oil well may cause an influx of traffic onto one road that serves the area

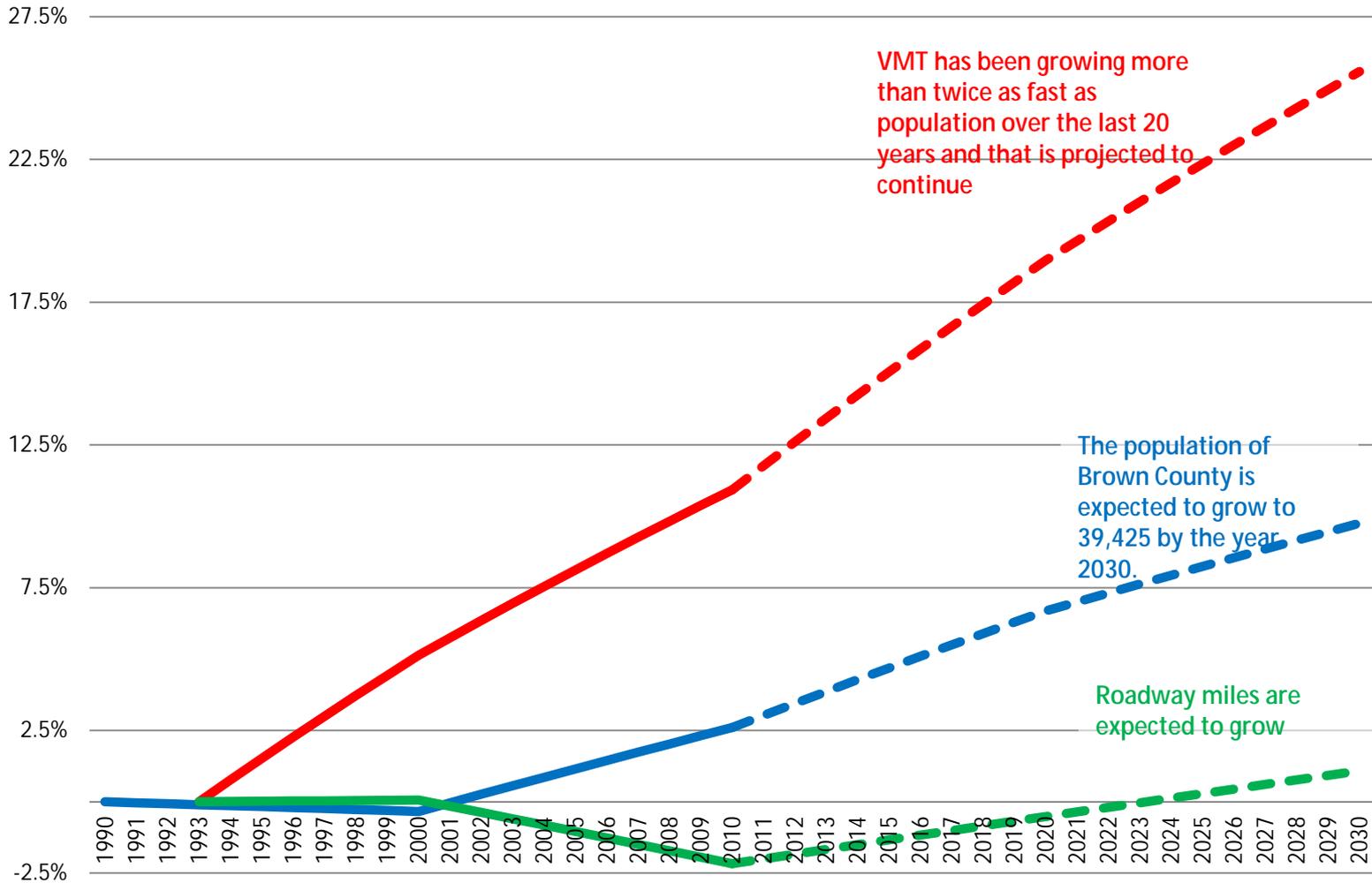


Traffic Trends

- 2-lane rural roads typically have higher speed limits, but lower capacities than 2-lane urban roads
- Rural level of service many times depends on being able to pass a slow moving vehicles, like trucks , RVs, or vehicles towing trailers.

Traffic Trends

Brown County Road Miles, Population and VMT Growth



Truck Traffic

- Disproportionally higher than in urban areas
- Trucking is important to rural communities as it is the main way farmers move their goods to market.
- The energy sector also relies heavily on trucks in rural areas.



Truck Traffic

- Trucks cause to damage to roads (16x)
 - One 40 ton truck does as much damage as 9,600 cars
- Monitoring truck traffic help prioritize maintenance projects



Hotspot Analysis

- Rural communities have problematic areas even if they are not congestion related
- These areas could include large truck generators like gravel pits, or grain elevators, skewed intersections, areas with high crashes, schools and pedestrian conflict areas, or others.
- Understanding the true nature of the problem at these locations and developing a plan to address them is important part of rural planning.

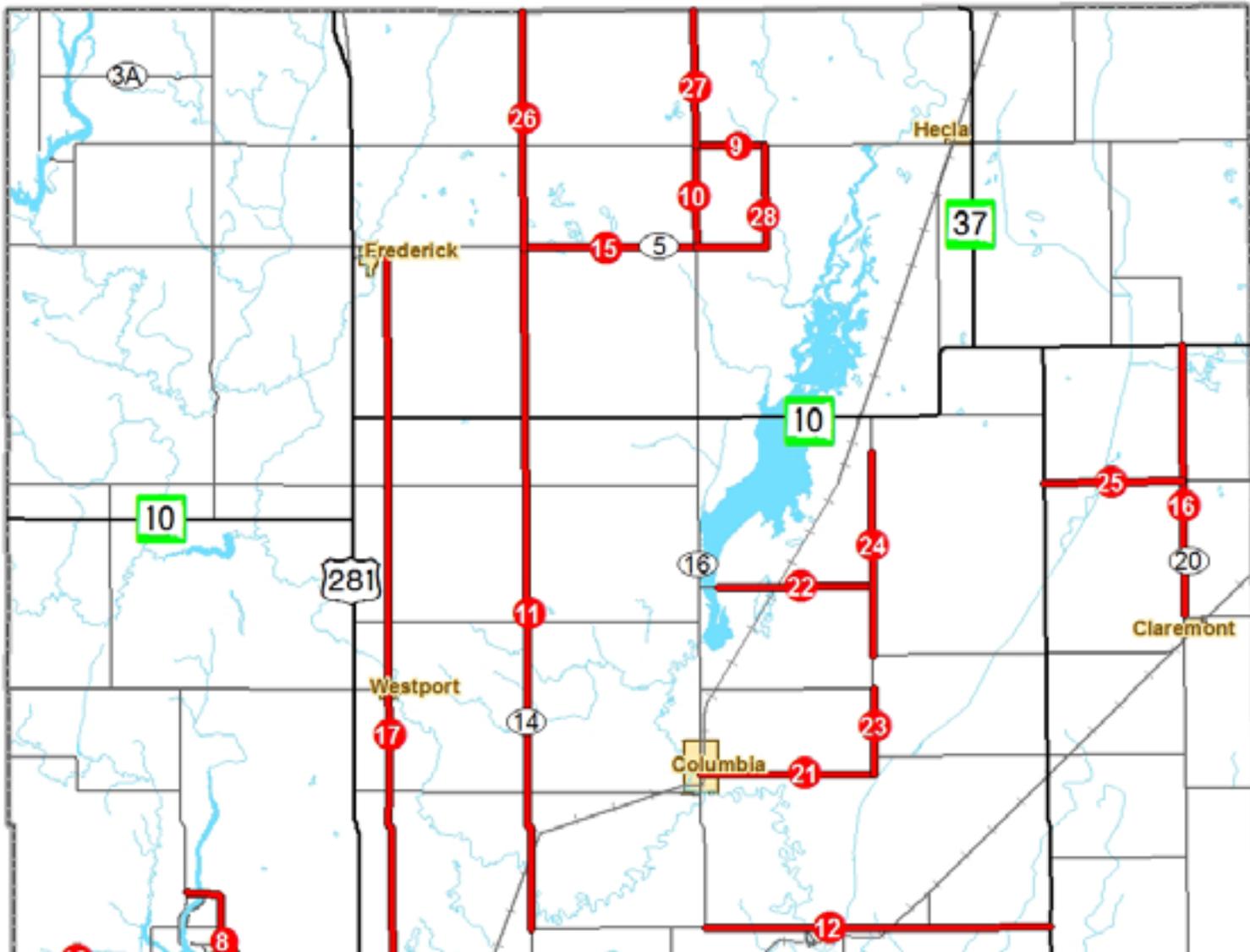
Hotspot Analysis



Prioritized Projects

- Helping communities focus their limited funds
- Biggest bang for the buck
- Accomplished by developing a realistic project list
- Prioritizing those projects using performance measures based on the values of the community
- Special consideration is typically given to projects that help reduce crashes or improve safety
- Resonate with the community's residents and give elected officials a clear focus for funding allocation.

Prioritized Projects



Prioritized Projects

7	6	129th St	US-12	Widen and Improve	Primary Artery	5.0	\$1.50
8	6	126th St	129th St	Widen and Improve	Primary Artery	4.2	\$1.26
9	5	396th Ave	398th Ave	Resurface and Stripe	Secondary Artery	2.0	\$0.20
10	16	104th St	107th St	Resurface and Stripe	Secondary Artery	3.0	\$0.30
11	14	107th St	127th St	Resurface and Stripe	Secondary Artery	20.0	\$2.00
12	13	396th Ave	SD-37	Resurface and Stripe	Secondary Artery	10.0	\$1.00
13	16	US-12	142nd St	Resurface and Stripe	Secondary Artery	9.0	\$0.90
14	23	393.7 Ave	395th Ave	Resurface and Stripe	Secondary Artery	1.3	\$0.13
15	5	391st Ave	396th Ave	Resurface and Stripe	Secondary Artery	5.0	\$0.50
16	20	118th St	SD-10	Resurface and Stripe	Paved Collector	8.0	\$0.80
17	10	107th St	129th St	Mill pavement to gravel	Gravel collector	22.0	\$0.40
18	18	129th St	138th St	Mill pavement to gravel	Gravel collector	9.0	\$0.16

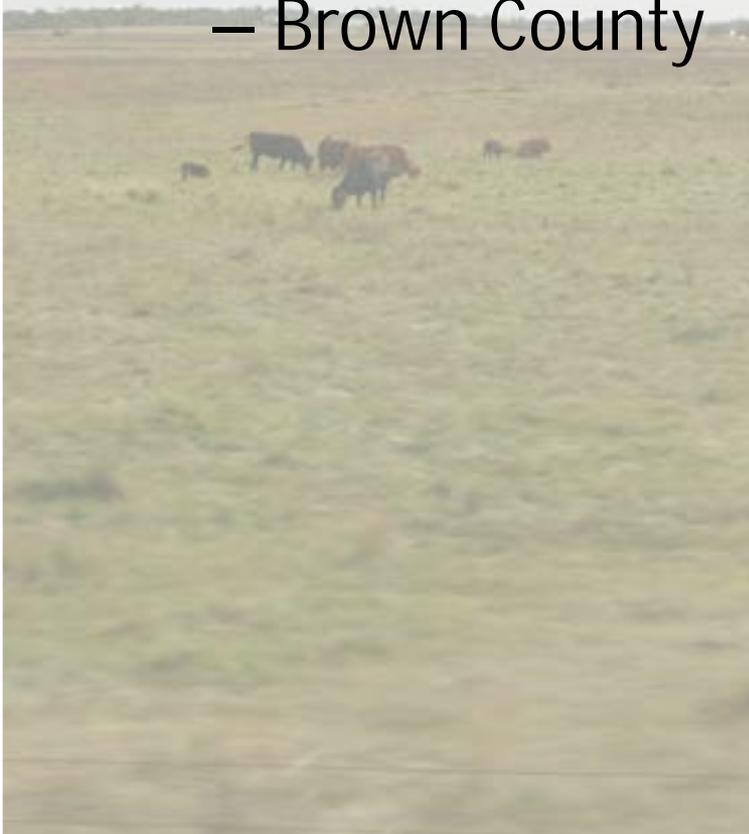
Other Issues

- Unique to each community
- Flooding areas
- Bike/Ped issues
- Recreational/Seasonal traffic
- Rural transit
- Specific Industries



Other Issues

- Flooding areas
 - Devils Lake
 - Brown County



Other Issues

- Bike/Ped issues
 - Bicyclists groups



Other Issues

- Recreational Traffic
 - Typically seasonal but can be year round



Other Issues

- Rural transit
 - Transit exists even if not organized



Other Issues

- Specific Industries
 - Fiber Glass blades



Other Issues

- Specific Industries
 - Oil industry



Funding Sources

- Investing a small amount on a transportation plan can help rural communities meet requirements for state and federal funding programs.

Table 10 – Brown County Sustainable Road Program

Surface	Miles	Preservation Assumptions	Annual Cost
Asphalt	479	x \$300,000 / 15 years	\$9,580,000
Concrete	2.5	x \$420,000 / 22.5 years	\$47,000
Gravel	195	x \$25,000 / 5 years	\$975,000
Total	676.5		\$10,602,000

Funding Sources

- KLJ's transportation plans also include a section in the report which identifies possible funding sources for transportation improvements. Many rural communities may not be taking advantage of these funding sources.
- Completing a transportation plan is often a good investment for rural communities.

Conclusion

- Even with little traffic rural communities face unique transportation challenges
- Transportation plans can help these area deal with growing needs and pressing issues
- Every community should have a viable transportation plan

Thank You

Thomas McMurtry, AICP, GISP

thomas.mcmurtry@kljeng.com

(801) 897-7650

ASHE Scanner Magazine article

