



TODAY'S WEBINAR AGENDA

- 3:00 pm: Introduction
- 3:05 pm: Presentation
- 3:45 pm: Questions
- 4:00 pm: Webinar Ends

For technical assistance
during the webinar:

1-800-263-6317

Choose these prompts: 1, 1, 1

CONTINUING EDUCATION

Planners: APBP has applied to the AICP for 1.0 CM credits for this live webinar.

Be sure to log into APA and claim your Professional Development Hours (PDH) or Certification Maintenance (CM) credit for the AICP.

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FINAL 2021 WEBINAR FROM APBP:



City as a Canvas - How Three Florida
Cities Approach Placemaking

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– OR –

Submit a complete panel of presenters

Deadline: December 3

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click on “Present A Webinar” tab

Themes:

- Accessibility / Universal Design
- Children & Older Adults
- Community engagement and partnerships
- Equity and Inclusion
- Micro-mobility
- Social Justice
- Transit Integration
- Youth and Safe Routes to School

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SUPPORTER LEVEL





WALKING & BIKING IN RURAL COMMUNITIES: HOW PLANNING, PARTNERSHIPS & EQUITY PLAY A ROLE

NOVEMBER 17, 2021

For technical assistance during the webinar:

Call 1-800-263-6317

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TODAY'S WEBINAR PRESENTERS



Sonja Piper, P.E.
Minnesota Department of Transportation

Sonja is a Pedestrian and Bicycle Safety Engineer with MnDOT's Office of Traffic Engineering. Sonja's role involves working with MnDOT project managers and local partners to find ways to make Minnesota a safer place for people walking and bicycling along and across state highways.

Sonja earned her degree in Civil Engineering from Iowa State University and is a registered Professional Engineer in the state of Minnesota. She has an over 20-year career working across government agencies and the private sector.

TODAY'S WEBINAR PRESENTERS



Eric DeVoe
Minnesota Department of Transportation

Eric is a senior researcher with MnDOT's Office of Traffic Engineering. Eric works at the intersection of crash data and environmental justice, distilling complex data into effective safety plans and projects. He currently administers the Highway Safety Improvement Program. He holds a degree in economics and history from the University of Minnesota.

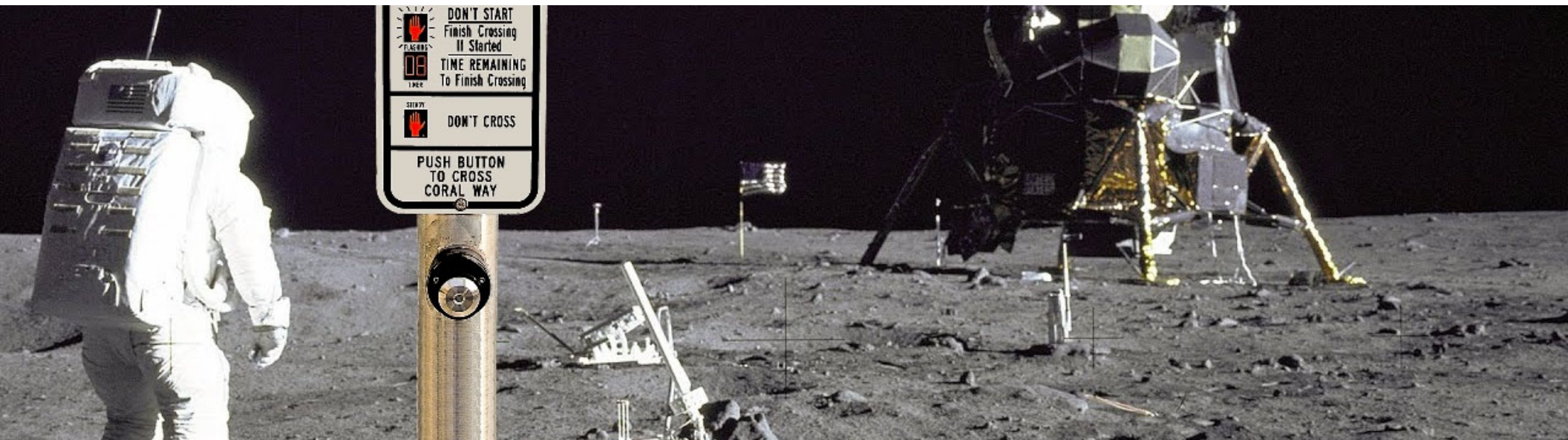
TODAY'S WEBINAR PRESENTERS



Cody Christianson, P.E., ENV SP
Bolton & Menk, Inc.

Cody is a Transportation Project Manager with Bolton & Menk, based out of their Minneapolis, MN office. Cody has national bicycle and pedestrian expertise that helps build support for improved multimodal infrastructure. By listening to community input, coordinating with project stakeholders, and using his industry experience, Cody designs improvements that create an inviting environment, enhance pedestrian and bicycle safety, and address community goals. He uses that experience to create accessible designs that integrate into the existing infrastructure, are easy to navigate, and improve the region's transportation system for those who walk, bike, or roll.

Cody has worked on projects throughout the country and is a registered Professional Engineer in Alaska, Colorado, Minnesota, New Mexico, North Dakota, and Wyoming, and is also an Envision Sustainability Professional.



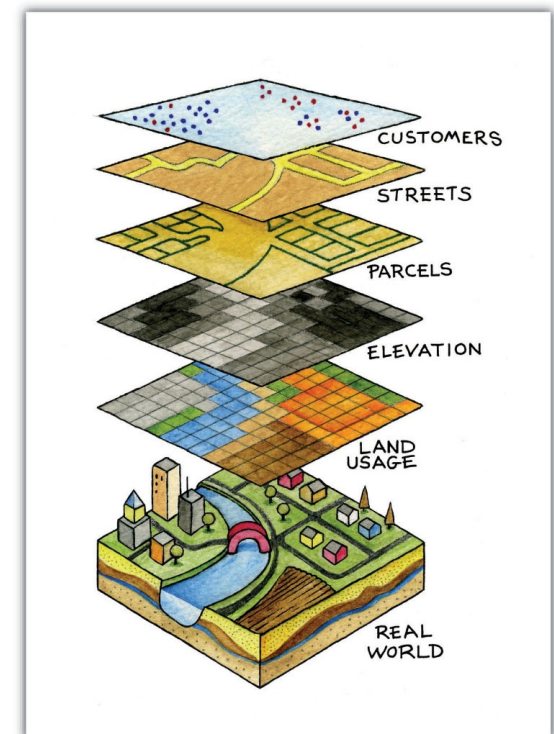
SPACE: The New Frontier

Sonja Piper & Eric DeVoe
Office of Traffic Engineering

November 17, 2021

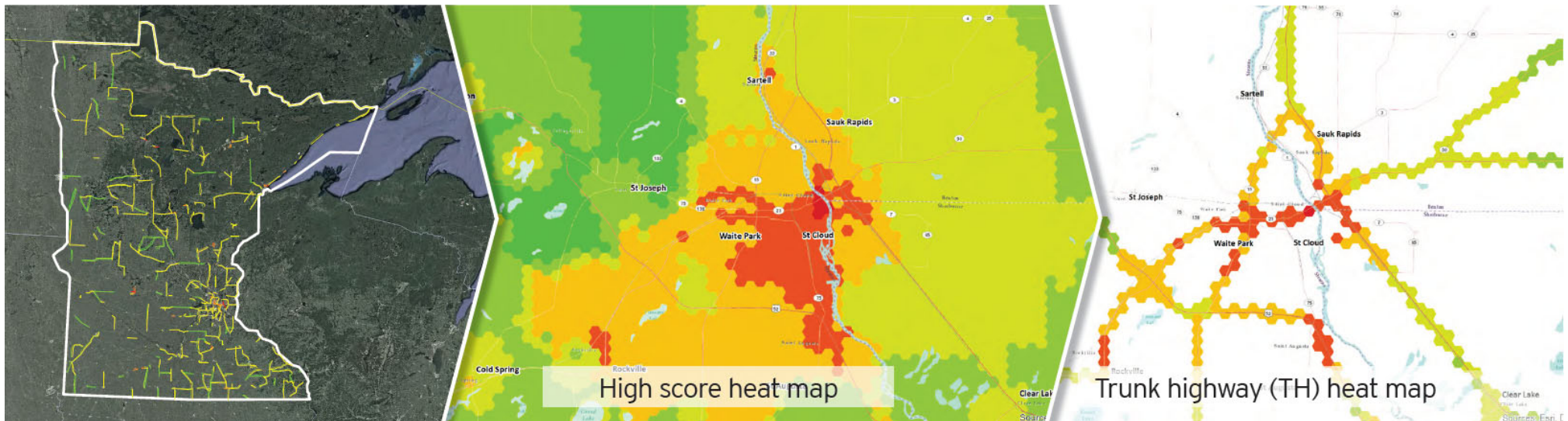
Key Takeaways

- Layering data stories builds a more complete picture.
- Equity analysis is a missing layer.
 - We already do safety analysis, are there gaps?
- Let data—not intuition—guide you
- Keep it simple
 - Numerical, scaled values, binary thresholds



Active Transportation Project Scoping

- Coordinate project selection with Districts
- Use high-level screening tool to select projects
- Field walk each project location and prepare recommendation report



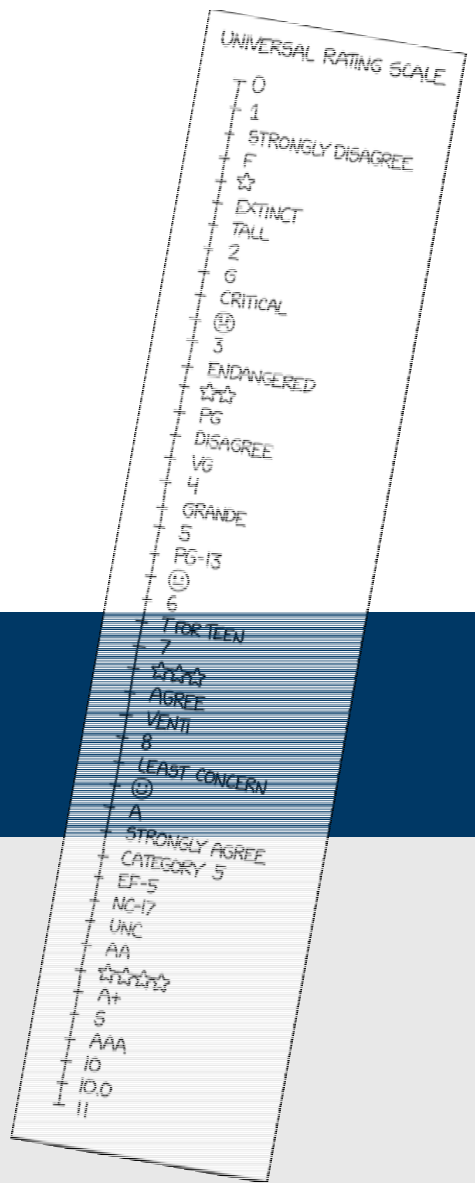
11/19/2021

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AMAZING WATCHING A PHYSICIST AT WORK, EXPLORING UNIVERSES IN A SYMPHONY OF NUMBERS.
IF ONLY I HAD STUDIED MATH, I COULD APPRECIATE THE BEAUTY ON DISPLAY HERE.



OH NO. THIS HAS TWO UNKNOWN'S. THAT'S GONNA BE REALLY HARD.
UGHHHHHHH.
THINK. THERE'S GOTTA BE A WAY TO AVOID DOING ALL THAT WORK...



Can We Measure That?!

Eric DeVoe | MnDOT

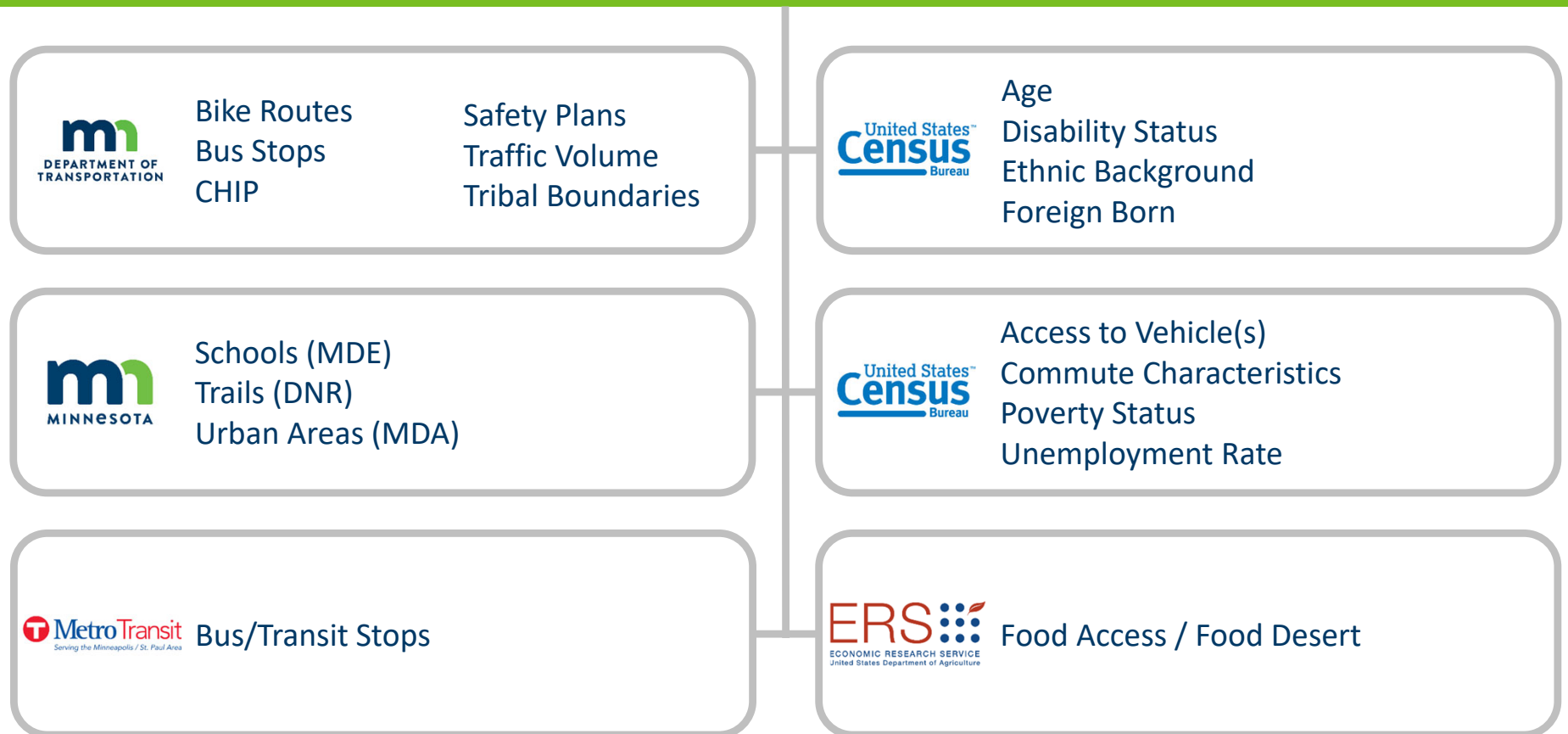
SOURCE: xkcd.com

Combing for Data Sources

- Screening Criteria
 - a. Spatially represented
 - b. Consistent across entire state
 - c. Localized, i.e. smallest area possible
- Preference
 - a. Non-roadway attributes
 - b. Maintained by other

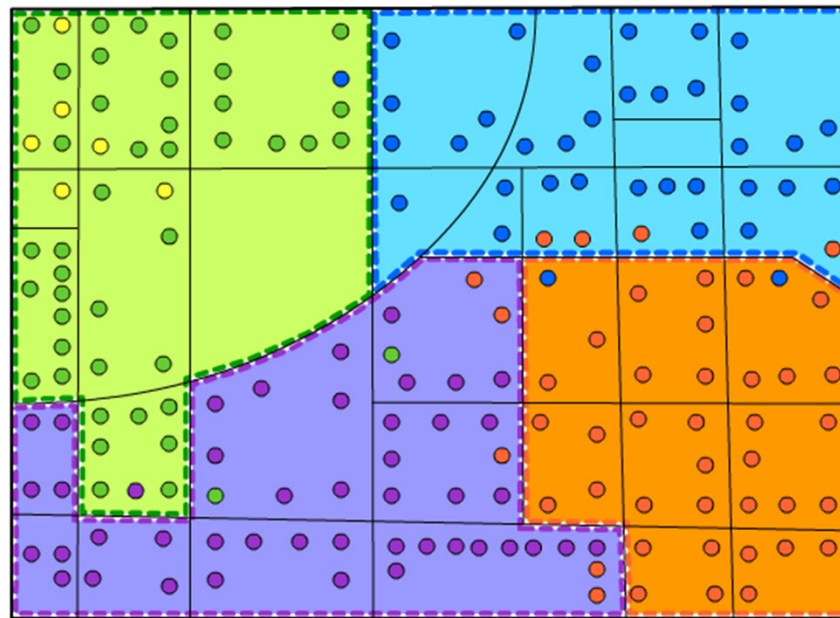


Chart of Sources



ZIP Code Tabulation Areas (ZCTAs)

8



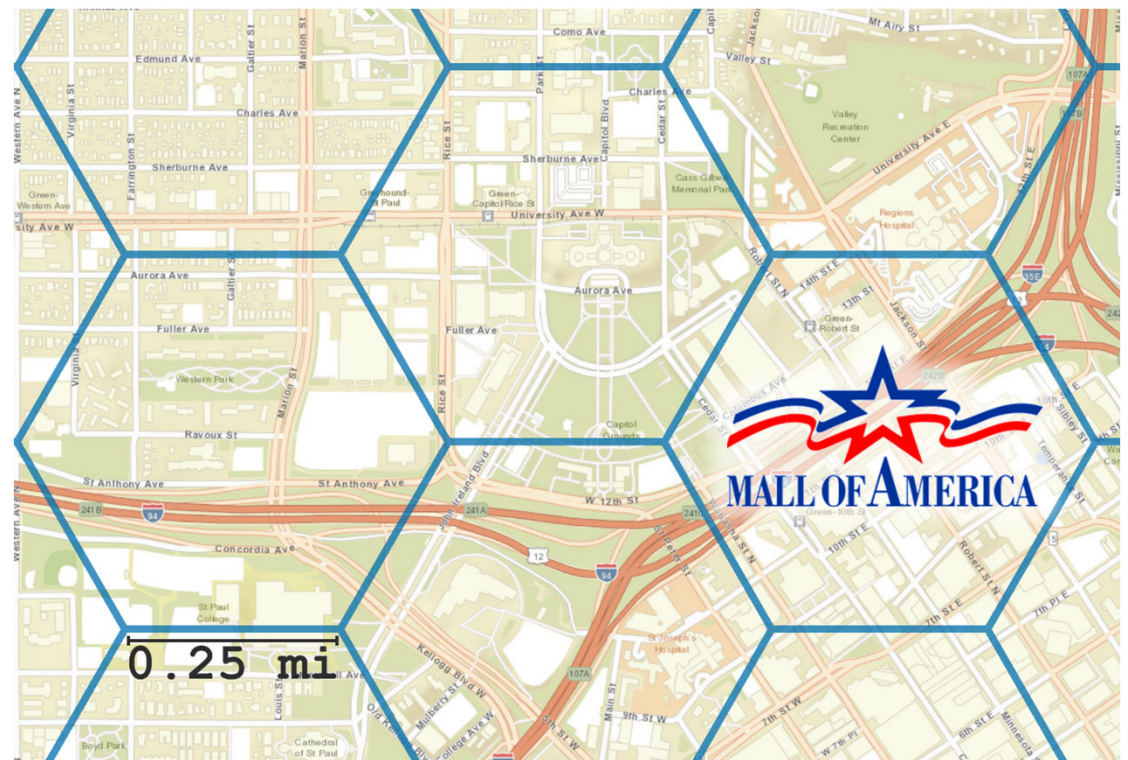
www.census.gov/geo/reference/zcta/zcta_delin_anim.html

Interactive review

During the interactive review, the following steps were performed: evaluation of the overall shape of the ZCTAs, removal of erroneous and invalid ZCTAs, evaluation of sliver geography, expansion or reduction of large unpopulated areas larger than two square miles, and verification of cross state ZCTAs.

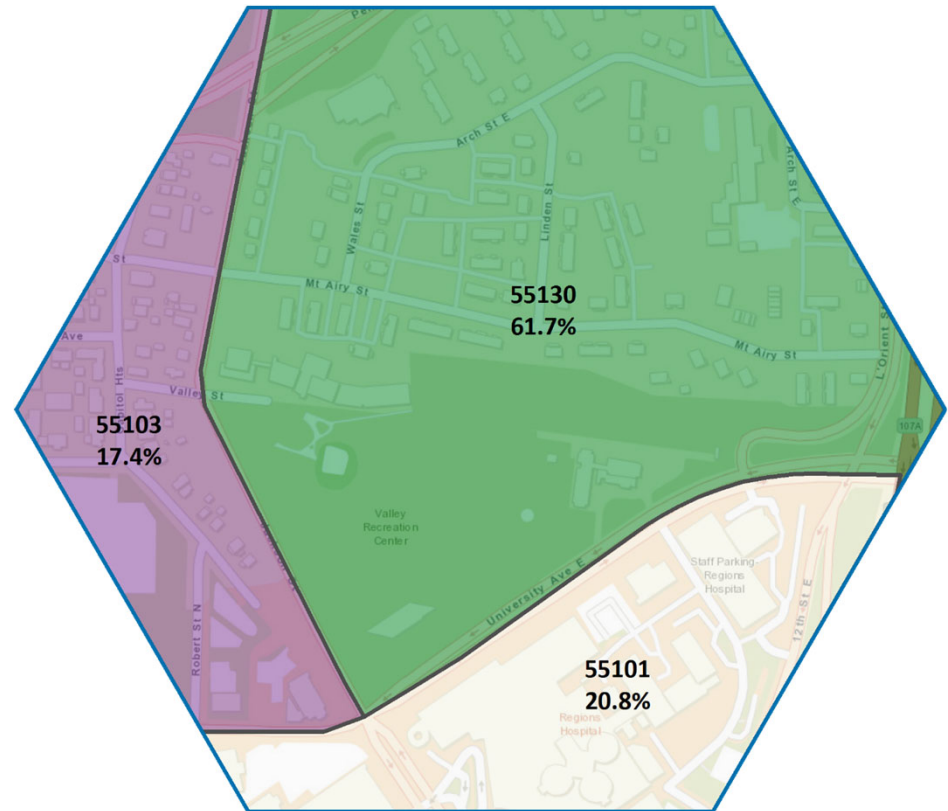
Standardized Grid

- Roads tend to be boundaries
- Hexagons
 - a. Regular tessellation
 - b. Edges equidistant from center
- Contouring

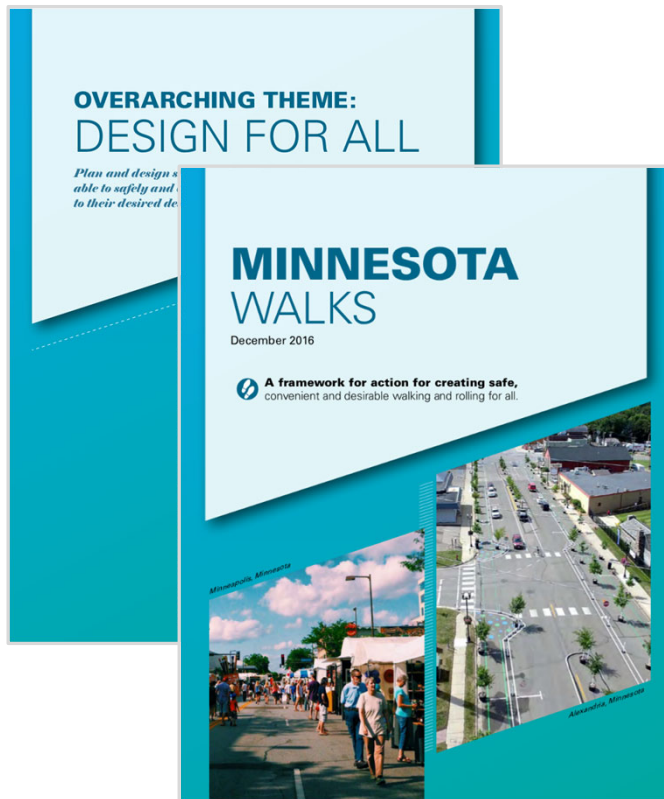


Aggregating

- Weighted average by percent of area
- Assumed uniform distribution across geography
- Not unreasonable if data at relatively fine grain



Target Populations



- MN Walks Priority Populations
 - a. Small, rural communities
 - b. Urban, low-income
 - c. Children & youth
 - d. Older adults
 - e. Native American
 - f. People with disabilities
- Other walking/biking factors

Building an Intuitive Score

a. Pithy Name

- Suitability of Pedestrian And Cyclist Environment (SPACE) Score

b. Binary Thresholds

- Integrate into existing processes
- Spend resources on analysis rather than complex metrics

c. Scaled Out of 100

- “What percent of this project has characteristics for further consideration?”

SPACE Score Definition

Priority Populations

Percent of population **AGE 5-17** > average

Percent of population **AGE 65+** > average

Percent of population **FOREIGN BORN** > average

Percent of population **NATIVE AMERICAN** > average

Percent of population with **DISABILITY** > average

Percent of workers **COMMUTING 15 MIN** or less > average

Percent of workers **COMMUTING BY TRANSIT** > 0%

Percent of workers **COMMUTING BY WALKING** > 0%

Percent of workers **COMMUTING BY BICYCLE** > 0%

Percent of workers with **NO ACCESS TO A VEHICLE** > 0%

Latent Demand

E.J.

“Area of concern” by MPCA **ENVIRONMENTAL JUSTICE**

UNEMPLOYMENT rate ≥ average

Percent of population in **POVERTY IN URBAN** area ≥ 25%

≥ 25% population within half-mile of **SUPERMARKET**

Within 1-mile of K-12 **SCHOOL**

Within 500 feet of **BUS STOP**

Trip Generators

Risk

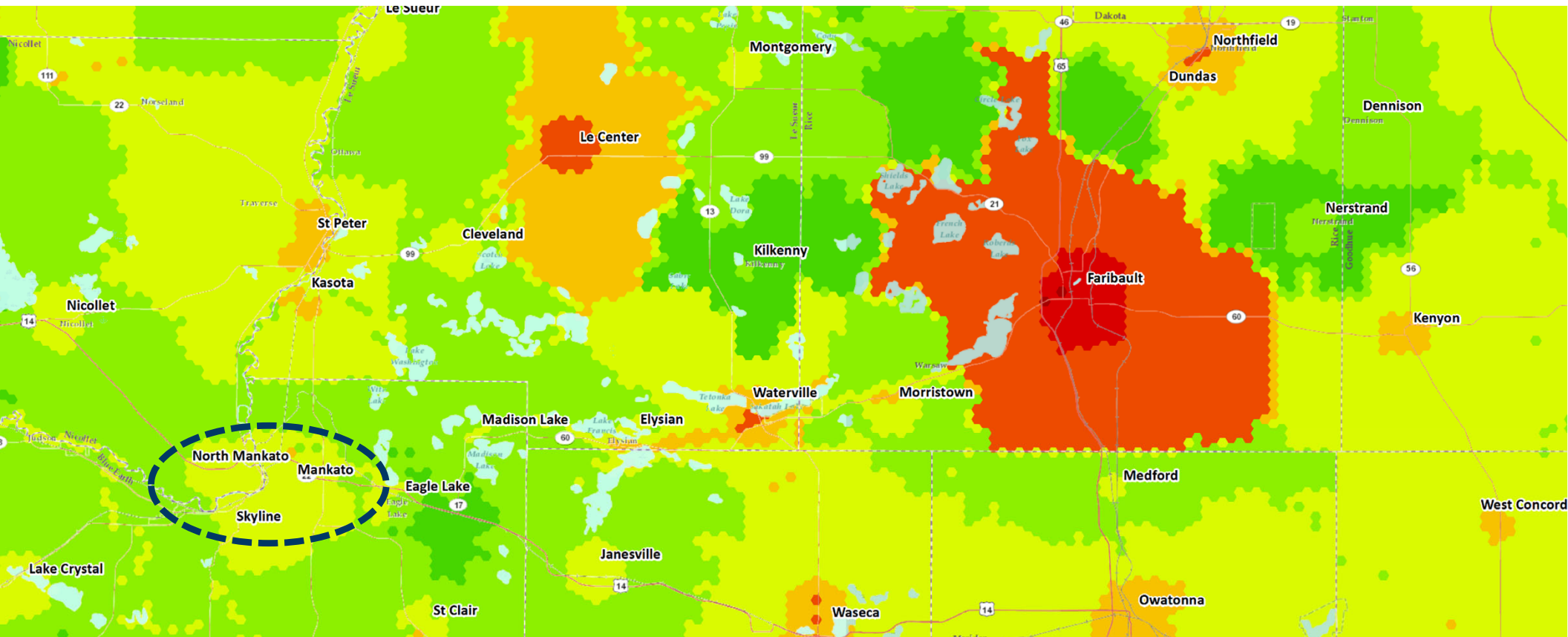
HIGH RISK trunk highway intersection for non-motorists

Within an **URBAN** area

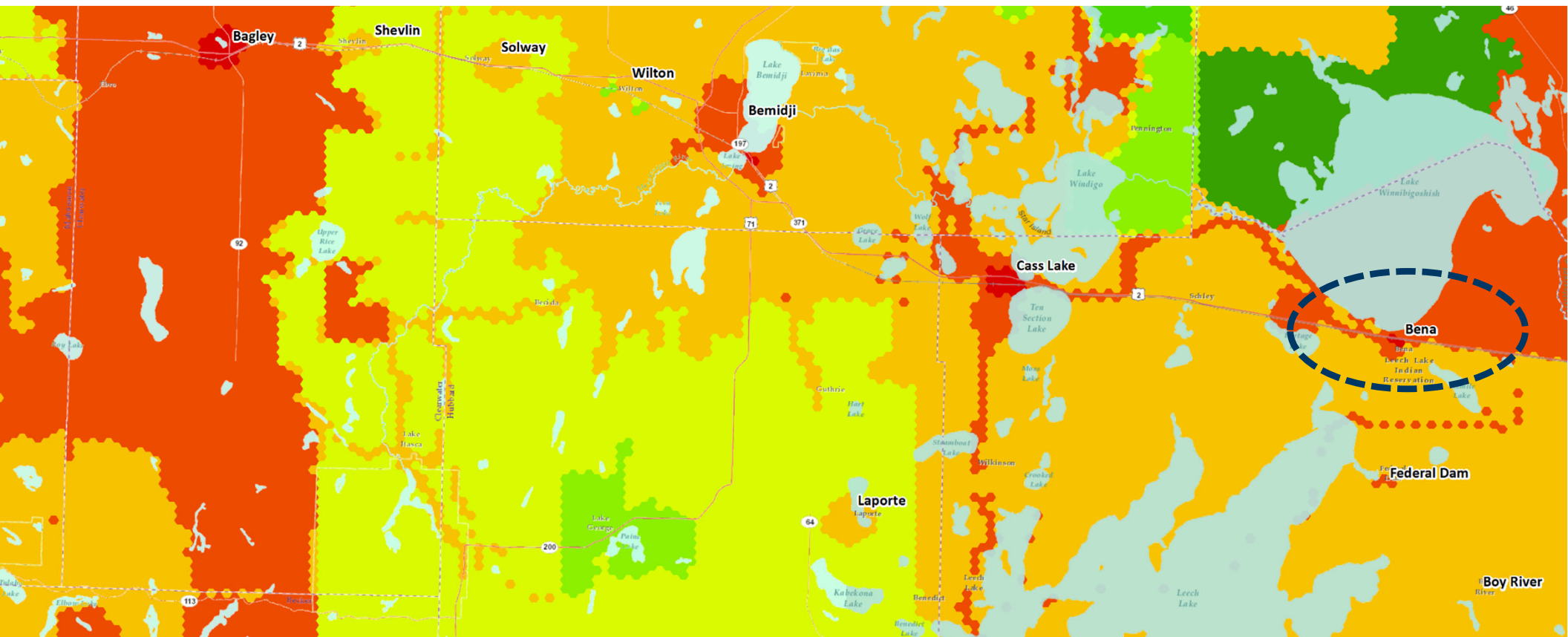
Contains a state **BICYCLE TRAIL**

19 factors

Mankato, MN



Bemidji, MN



11/19/2021

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Systemic/Proactive Safety Story

Eric DeVoe | MnDOT

District Safety Planning

- Identify at-risk intersections, suggest countermeasures, reduce K+A crashes
- Analyzed characteristics at over 2,600 intersections
- What characteristics are over-represented?
 - Example: outside of the Metro, signals make up 18% of urban intersections but are involved in 73% of severe non-motorist crashes and 55% of all severe crashes!
- Created ranking system for intersections

Intersection Risk Assessments

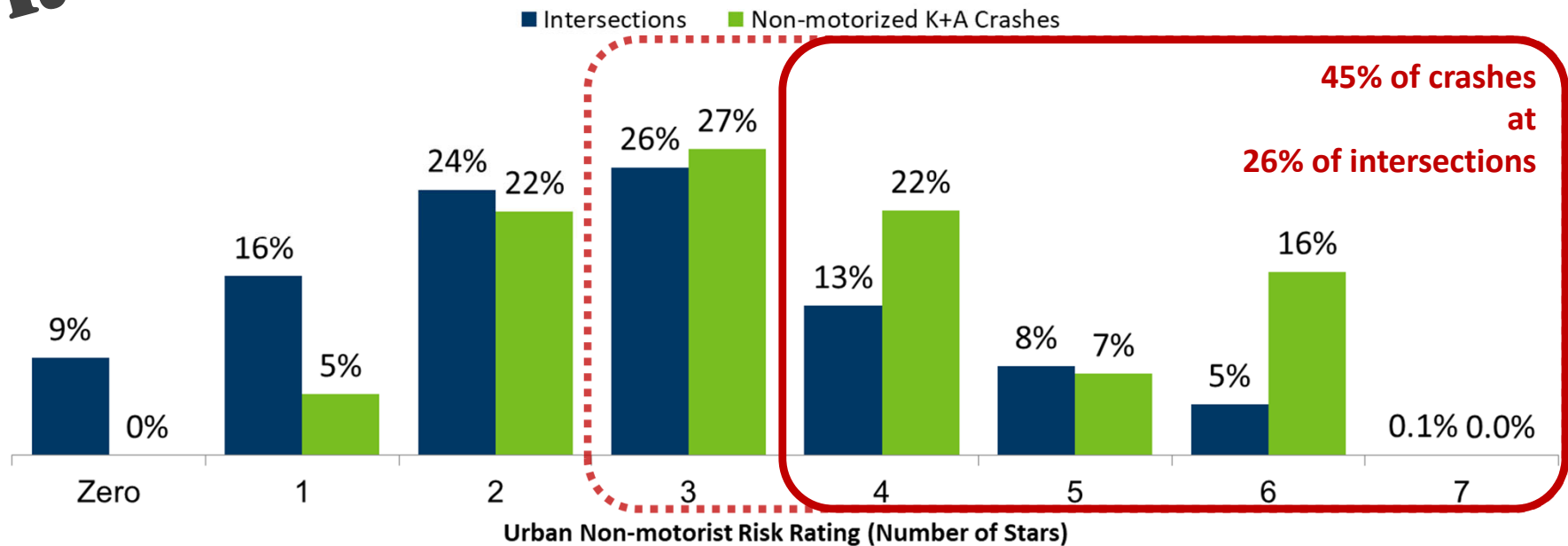
- Intersections Analyzed
 - On state highway
 - Within city limits
 - Manually supplement dataset!
- Over-representation?
 - Is the percent of severe crashes greater than the percent of sites?
- Factors
 - a. Vehicle traffic volumes
 - b. Signalized
 - c. Major route posted speed
 - d. Skew
 - e. Primary land use
 - f. Lighting
 - g. Street parking

Can we identify high risk sites?

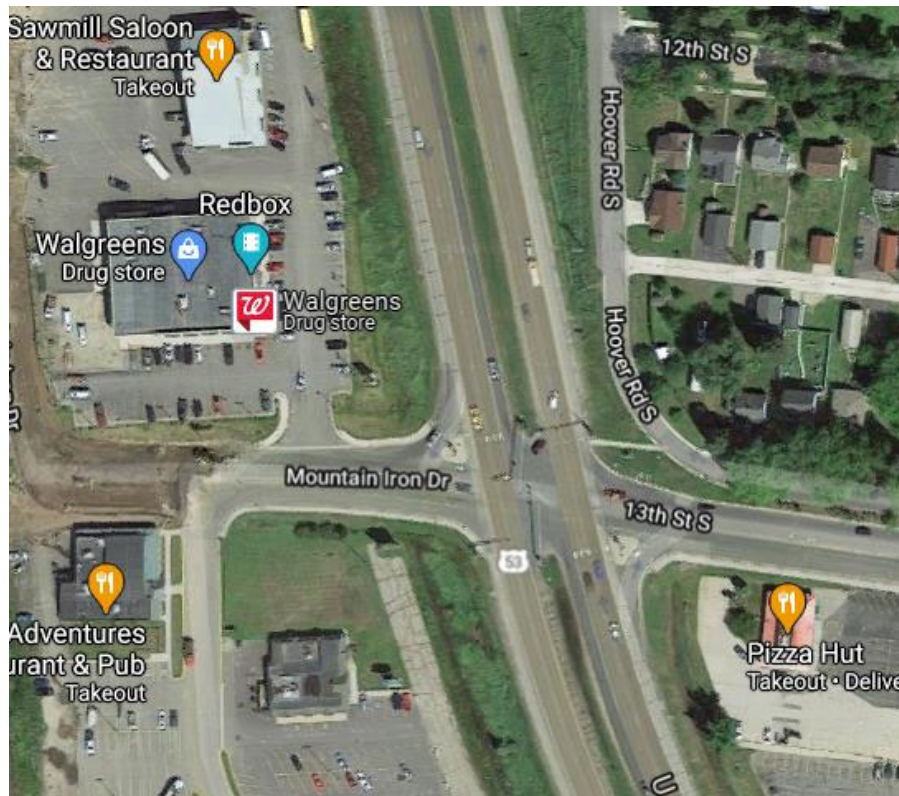
TRUE

Statewide District Safety Plan Intersection Risk Rating

2014-2015 Fatal and Serious Injury Crashes



Applying the Risk Rating



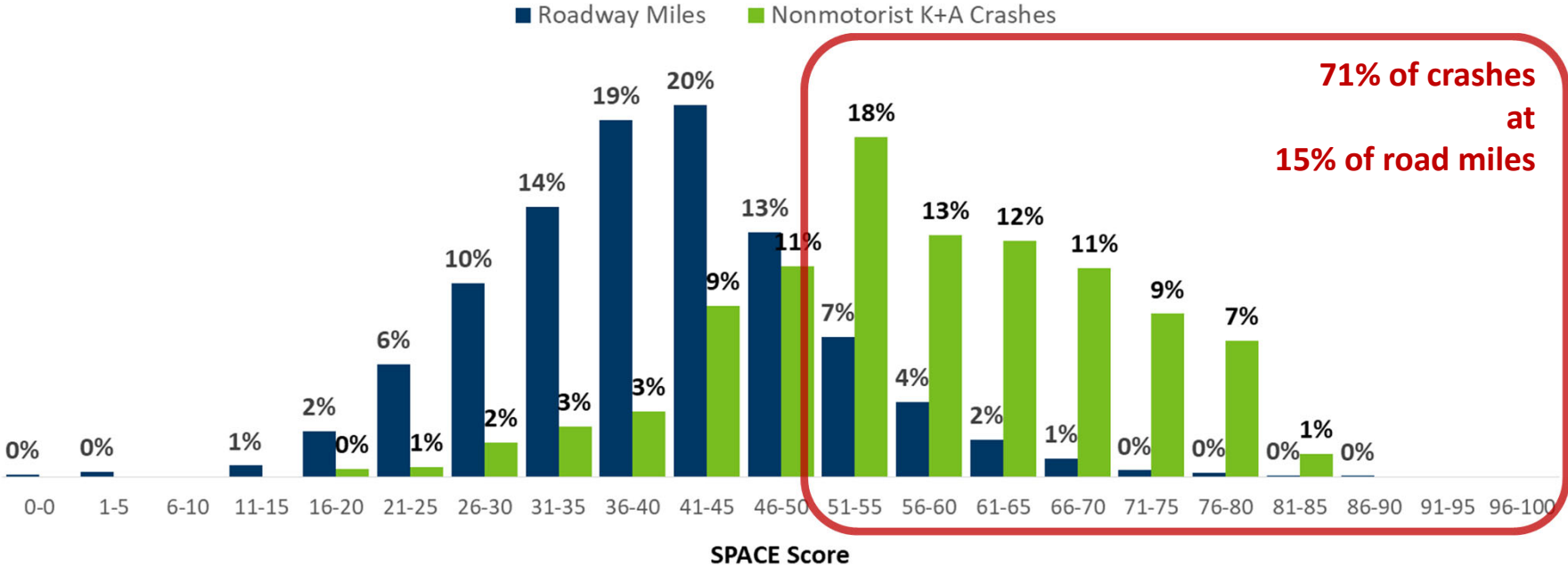
Virginia, MN

11/19/2021

- | | | | |
|---|---|---|--|
| ★ | Cross Product
Major = 14,900
Minor = 2,600
xProduct = 39M | ★ | On/Near Curve
Yes |
| ★ | Traffic Control
Signal | ★ | Land Use
Retail/Suburban
Primary |
| ★ | Major Speed
Posted 45 MPH | ★ | Severe Crashes
1 ped/bike KA crash
in 5 years |
| ★ | Skew
15 degrees | ? | SPACE Score
= 63/100 |

SPACE Score as a Risk Factor

SPACE Score to Non-motorist Crashes, 2015-2019

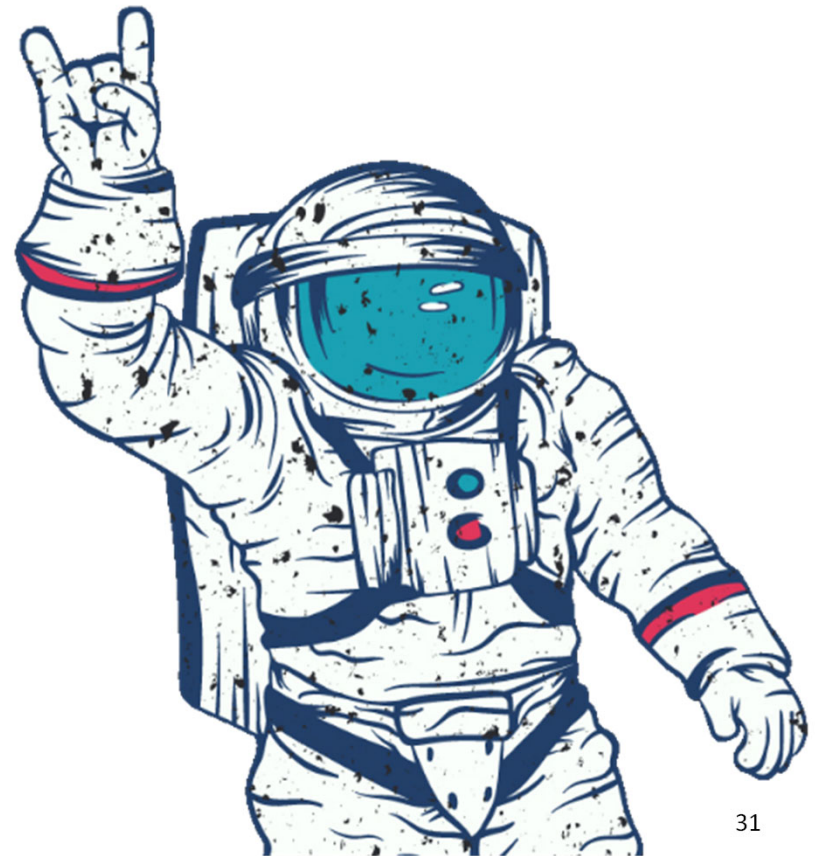




Summary

Sonja Piper | MnDOT

- Data Storytelling:
 - Identity the priorities FIRST, then let the data take you away
- Overlapping Methodologies
 - District Bicycle Plans, Safe Routes to School, Statewide Pedestrian Plan
- In Development
 - Metro District (Twin Cities Area) specific “SPACE Score”



11/19/2021

31

SOURCE: Space Cost Launches Blog <<https://spacecoastlaunches.com/wp-content/uploads/2018/02/SCT18-035-SCL-February-Blog-1-Design-1-1.jpg>>

Contacts

Sonja Piper, P.E.

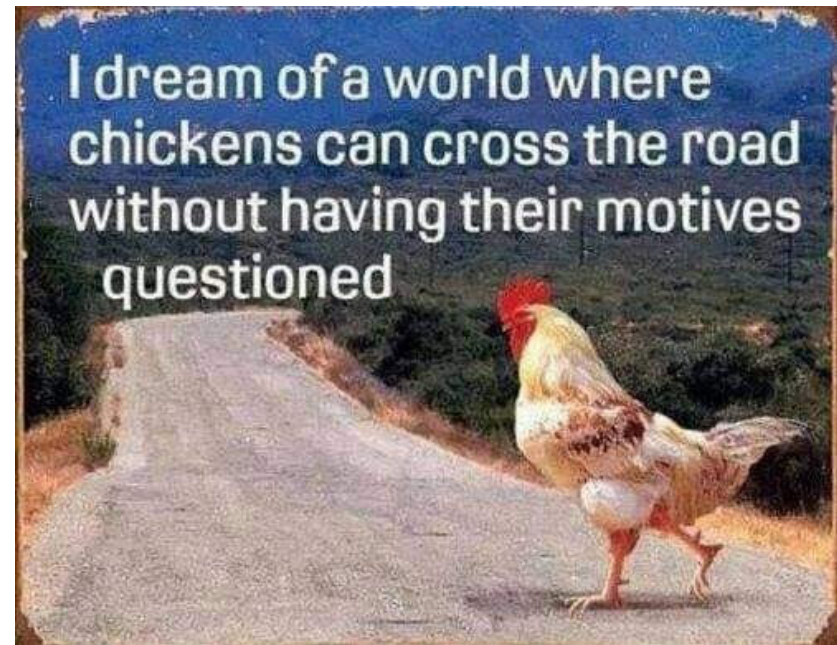
Bicycle and Pedestrian Safety Engineer

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Senior Researcher and Data Wrangler

eric.devoe@state.mn.us





Walking & Biking in Rural Communities: How Planning Partnerships & Equity Play a Role

APBP Presentation
November 17, 2021



Real People. Real Solutions.



Challenges

- Sidewalks are some of the most controversial projects in rural MN
- Overcoming resistance to change
- People not wanting these facilities next to their property
- Proving that it's a good use of public monies when there are so many other needs
- Snow removal
- Lack of a policy or plan



Case Studies



- Plainview Pedestrian/Sidewalk Plan
- Eagle Lake Sidewalks
- Spring Valley Sidewalk
- Trail along Kingsway Dr (CSAH 35) in Le Sueur
- CSAH 22 trail along Elmwood Ave and Ferry St





Case Study

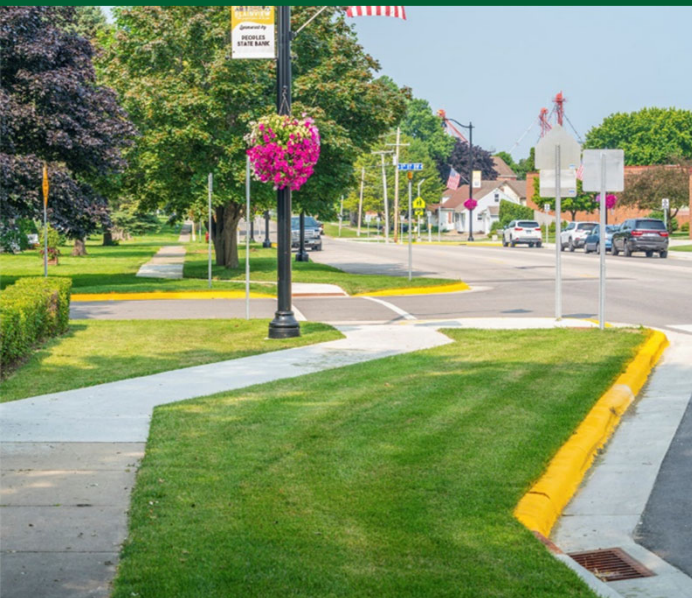
Plainview Pedestrian/Sidewalk Plan

- 01.** Reviewed City ordinances and policies on sidewalks
- 02.** Identified and prioritized sidewalk locations and connections
- 03.** Developed an implementation plan



City Code

- Last revised in 2009
- Construction & Maintenance



City will participate in cost sharing for replacement sidewalks, no participation in new sidewalks

- Every property is assessed a small fee on water bills

Sidewalk Widths

- Defines sidewalk widths
- No ADA requirements
- Reducing sidewalk widths is a suggested method for reducing amount of impervious on a site

Snow and Ice

- **MUST** be cleared within 24 hours of snow event

Subdivision Sidewalks

- Sidewalks need to be constructed in all new subdivisions
- No explicit requirement that sidewalks must be construction on both sides of the roadway



Community Priorities

Engaged with residents

- Project webpage
- Interactive map
- Survey
- Resident Focus Group
- Public Input Meeting
- (materials in English & Spanish)


City of Plainview, Minnesota
1 July at 12:05 · 🌐

Plainview Walkability/Pedestrian Plan
The City of Plainview needs your help! Sidewalks, street crossings, trails and bike paths are being looked at to decide where and how the City can improve safety and encourage walking and biking. Please click on the link below for further information:
<https://www.plainvieweda.org/plainview-walks/>

PLAINVIEW MINN | PLAINVIEWEDA.ORG
Plainview Walks – Plainviewcvb.org
Plainview Walks! Plainview Walkability/Pedestrian Plan The City of Plainview needs your help! Sidewalks, street crossings, trails and bike paths...

👍 9 16 comments 11 shares

👍 Like 💬 Comment ➦ Share

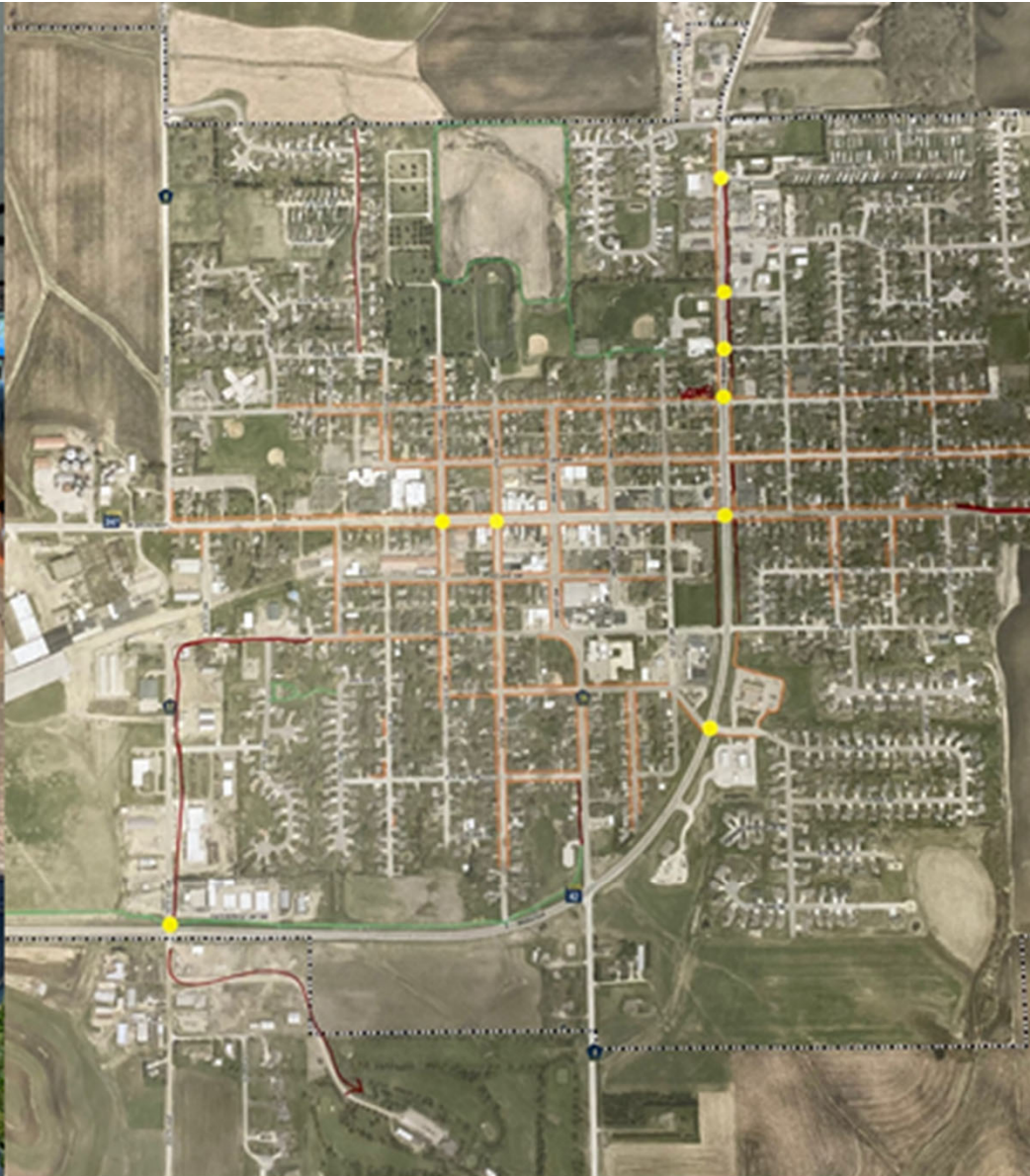
Bolton-Menk.com 



Legend 5

- Existing Sidewalks
- Existing Recreation Trail
- City Limits

Red dots
Along with Orchard
4th & 5th St. (yellow dots)
2nd St. St.
(yellow dots)



Recommendations & Implementations

Policy Revisions



- Revise ordinance to reflect city's current policy to provide all sidewalks w/ fee assessed in monthly billing
- Consider additions to prevent vehicles, especially RV's and boats, from creating temporary obstructions
- Revise language to ensure sidewalks aren't reduced below 5' or eliminate altogether to reduce a site's impervious
- Subdivision language should be amended to provide additional guidance

Funding & Implementation



- Current funding levels would take 35 to 45 years to implement full network
- Opportunities to expedite Priority 1 network:
 - Focus on gaps and small connections
 - Incorporate sidewalk construction into future roadway projects
 - Work w/ jurisdictional partners on cost sharing opportunities
 - Work w/ MnDOT to identify grant opportunities through Trans Alt Program
 - Complete SRTS Plan
 - Evaluate future increases to the sidewalk fee



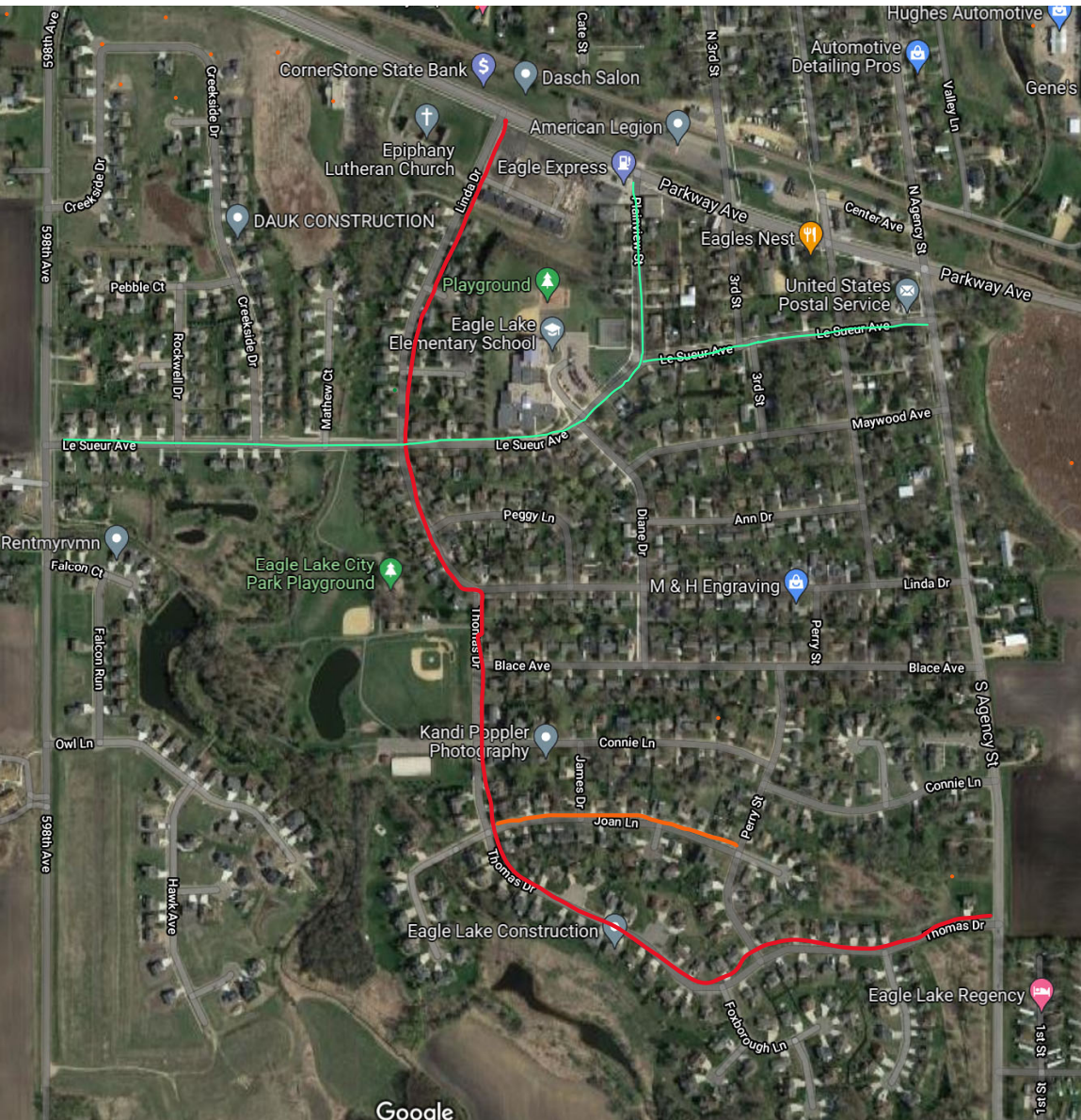


Case Study

Eagle Lake

- 01.** Successful SRTS Plan
- 02.** Joan Ave successfully put in sidewalks
- 03.** Public push-back on both





SRTS Plan

- Developed in 2015
- Noted existing sidewalks along Plainview St, Le Sueur Ave, and Diane Dr
- Planned for sidewalks along Linda Dr from Parkway Ave to Thomas Dr and Thomas Dr from Linda Dr to S Agency St

Joan Ln Sidewalks

- Successfully installed along north side





Case Study

Spring Valley Sidewalk Policy











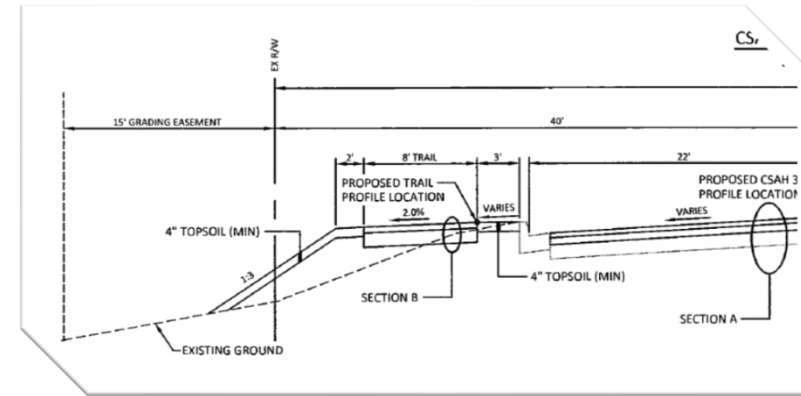
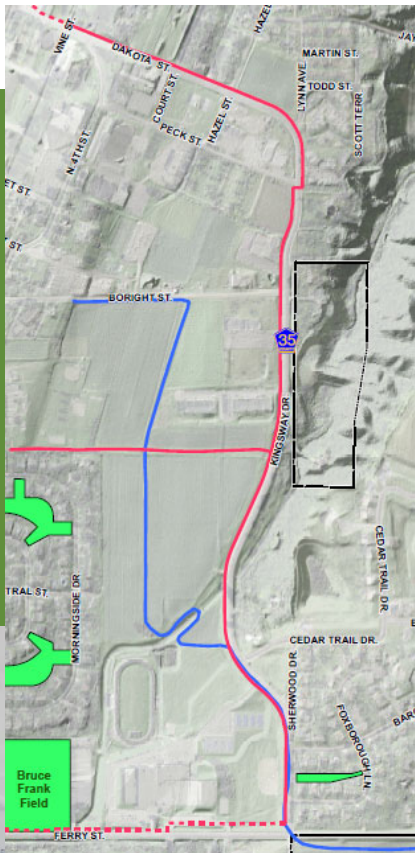


Case Study

Trail along Kingsway Dr in Le Sueur

- 01.** First major trail route in City of Le Sueur.
- 02.** Constructed in 2014 utilizing both City and County dollars.
- 03.** Frequently used with connection to high school, elementary school, multi family housing, dog park, and residential neighborhoods.





Implementation

- Project originated as a County pavement rehabilitation project.
- City staff successful in expanding scope to include construction of new bituminous trail along full corridor, including financial support from County.
- Trail based on strategic connections (i.e. schools, dog park, etc.) is frequently used and viewed as a successful story.





Case Study

CSAH 22 Trail in Le Sueur

- 01.** Unique turnback project transferring jurisdiction from MnDOT to County, which required improvements consisting of both rural and urban.
- 02.** County supported new pedestrian facilities based on adopted transportation plan.
- 03.** City was able to negotiate upgrade to a new trail based on adopted comp plan.



Planning

Adopted Le Sueur County Transportation Plan See clipping from plan, below

Sidewalk/Trail – Sidewalks and/or trails are encouraged in urban area adjacent to all Minor Collector, Major Collector, and Minor Arterial roadways to accommodate pedestrian, bicycle, and other non-motorized travel in a safe and comfortable manner and would be developed as a result of local initiative and funding. If bituminous trails are desired, an 8'-10' section meeting Mn/DOT bikeway standards is recommended. Concrete sidewalks of 5'-6' wide should be designed to comply with American's with Disabilities Act (ADA) requirements.

These adopted plans provided background for elected officials to support the proposed improvements.



Adopted City of Le Sueur Comprehensive Plan

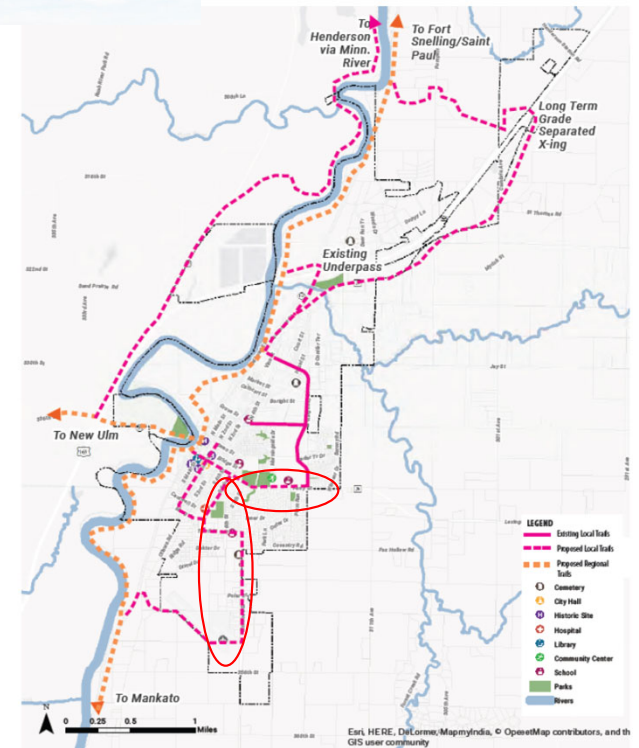


Figure 4.11 – New Trail Connections



Planning



Le Sueur County
Transportation Plan

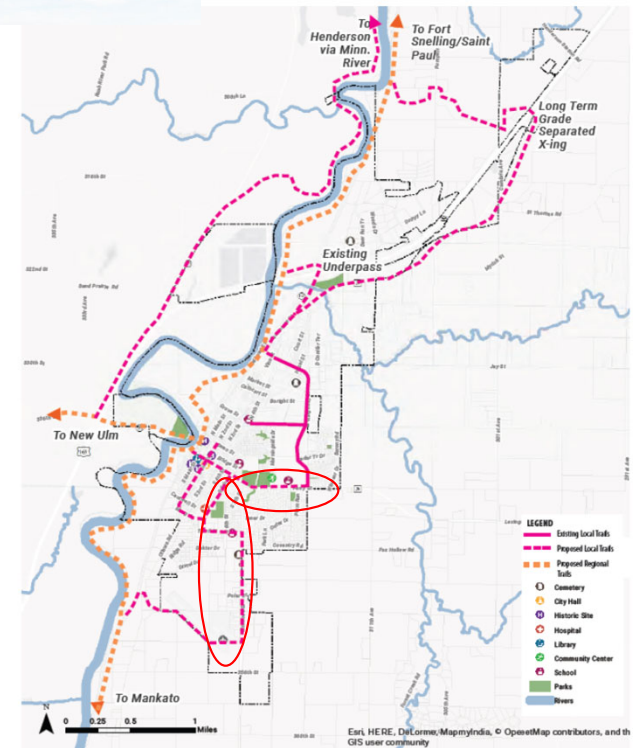
“Trail and sidewalks are the basic building blocks that allow for active living and active transportation throughout a community. Improving the trail network strengthens recreational opportunities, economic opportunities, and overall quality of life.”

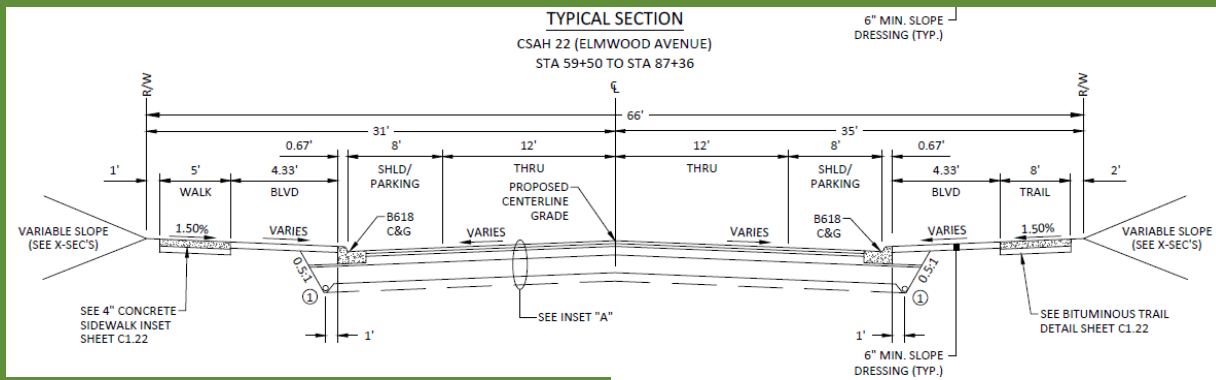


These adopted plans provided background for elected officials to support the proposed improvements.



Adopted City of Le Sueur
Comprehensive Plan





Implementation

Sidewalk and Trail Maintenance Policy:*

- The City will remove ice and snow from sidewalks that are adjacent to City trails.
 - The City will remove ice and snow from City trails.
- County minimum section included both sidewalk sides in urban environment. County supported construction of a trail based on City agreement that would cover additional cost.
 - County supported shift of roadway centerline to fit new trail within the existing right-of-way.
 - City policy states snow removal on all trails is the responsibility of the City.
 - To assist with public support, the City passed snow removal policy* to provide snow removal on all sidewalks adjacent to a trail route.



BEFORE



AFTER



Post-Construction



- Positive feedback, with frequent-use observed and adjacent homeowners expressing support of new pedestrian facilities.
- County and City working together on another reconstruction project (CSAH 36) and existing condition does not have sidewalk both sides. Homeowner feedback received from the first public meeting was in support of extending sidewalks like the CSAH 22 project.





Post-Construction

- Positive feedback, with frequent-use observed and adjacent homeowners expressing support of new pedestrian facilities.
- County and City working together on another reconstruction project (CSAH 36) and existing condition does not have sidewalk both sides. Homeowner feedback received from the first public meeting was in support of extending sidewalks like the CSAH 22 project.



Lessons Learned

1.

Resistance up front, but well received when proven effective

2.

Fears or concerns are diminished once facilities are completed and in use

3.

Agency partnerships can prove very effective

4.

Biggest obstacle? Lack of overall plan showing how the city envisions the future sidewalk system

Also applies to bike infrastructure

5.

Have policies for new subdivision developments that require sidewalks, preferably on both sides of every street

Le Sueur Example:

- County receptive to a trail
- Allowed shifting centerline to fit within ROW
- City willing to pay 100% of extra costs associated with trail over a sidewalk





Best Practices

*Community leaders tend to believe their peers in other communities to a greater degree, rather than trusting a consultant or the DOT

- 01.** Have the community leaders visit other communities where similar facilities are installed*
- 02.** Cities should develop a very basic pedestrian / sidewalk plan (include bike facilities if needed)
- 03.** City of Rochester has a policy where they only require residents to plow a 5-ft width on multi-use trails in the winter



Thank You!



Cody Christianson, PE ENV SP

Active Transportation Project Manager



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Real People. Real Solutions.

QUESTION & ANSWER

MODERATED BY:
Mary McGuirk,
APBP Board Member



Sonja Piper



Eric DeVoe



Cody Christianson

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SUPPORTER LEVEL



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