TODAY'S WEBINAR AGENDA

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

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

NOVEMBER 17, 2021

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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.

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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.
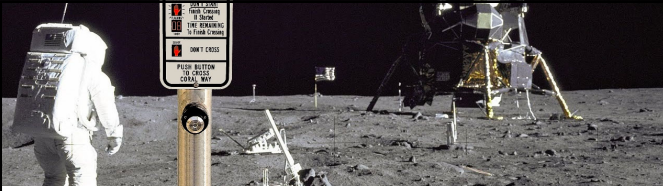
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TODAY'S WEBINAR PRESENTERS

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.
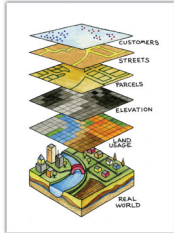
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SPACE: The New Frontier

Sonja Piper & Eric DeVoe
Office of Traffic Engineering
November 17, 2021

DEPARTMENT OF TRANSPORTATION

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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

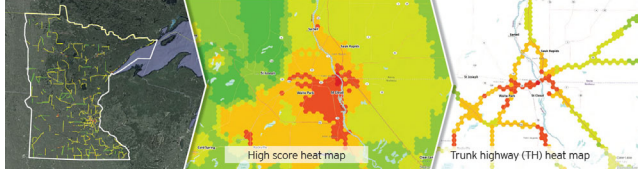- Keep it simple
  - Numerical, scaled values, binary thresholds

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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

High score heat map   Trunk highway (TH) heat map

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ZIP Code Tabulation Areas (ZCTAs)

8

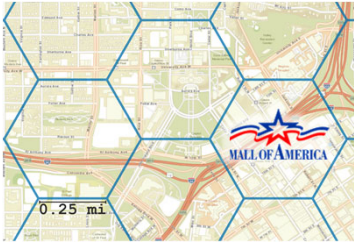www.census.gov/geo/reference/zcta/zcta_defin_anim.html

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.

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Standardized Grid

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

0.25 mi

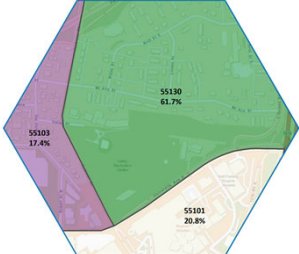11/19/2021   17
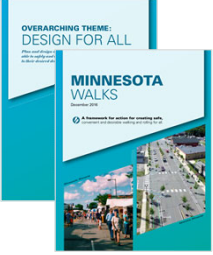
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Aggregating

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

55130
61.7%

55103
17.4%

55101
20.8%

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Target Populations

OVERARCHING THEME: DESIGN FOR ALL

MINNESOTA WALKS

- 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

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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?"

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SPACE Score Definition

Category			Category
Priority Populations	Percent of population AGE 5-17 > average	Percent of workers COMMUTING 15 MIN or less > average	Latent Demand
	Percent of population AGE 65+ > average	Percent of workers COMMUTING BY TRANSIT > 0%	
	Percent of population FOREIGN BORN > average	Percent of workers COMMUTING BY WALKING > 0%	
	Percent of population NATIVE AMERICAN > average	Percent of workers COMMUTING BY BICYCLE > 0%	
	Percent of population with DISABILITY > average	Percent of workers with NO ACCESS TO A VEHICLE > 0%	
E.J.	"Area of concern" by MPCA ENVIRONMENTAL JUSTICE	≥ 25% population within half-mile of SUPERMARKET	Trip Generators
	UNEMPLOYMENT rate ≥ average	Within 1-mile of K-12 SCHOOL	
	Percent of population in POVERTY IN URBAN area ≥ 25%	Within 500 feet of BUS STOP	
Risk	HIGH RISK trunk highway intersection for non-motorists	Within an URBAN area	
	19 factors	Contains a state BICYCLE TRAIL	

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Mankato, MN

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Bemidji, MN

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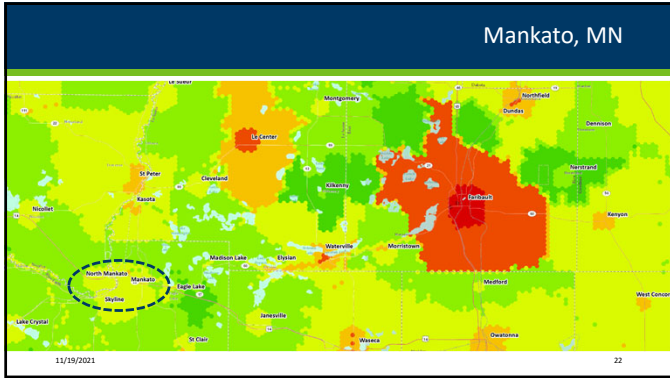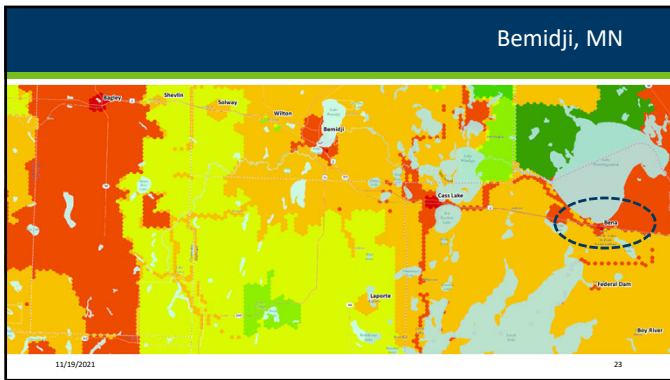
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Systemic/Proactive Safety Story

Eric DeVoe | MnDOT

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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

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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

11/19/2021   26
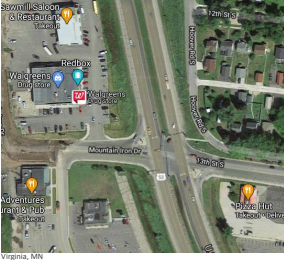
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Can we identify high risk sites?

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Applying the Risk Rating

★ **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

Virginia, MN
11/19/2021   28

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SPACE Score as a Risk Factor

SPACE Score to Non-motorist Crashes, 2015-2019
■ Roadway Miles   ■ Nonmotorist K+A Crashes

71% of crashes at 15% of road miles

SPACE Score

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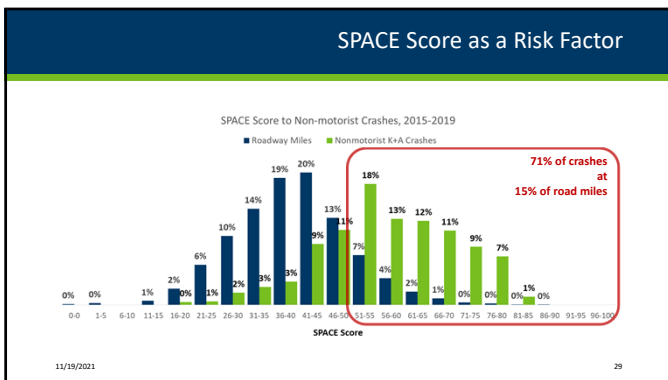
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Summary

Sonja Piper | MnDOT

mn DEPARTMENT OF TRANSPORTATION

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Future

- 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
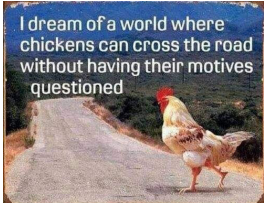 - Metro District (Twin Cities Area) specific "SPACE Score"

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Contacts

Sonja Piper, P.E.
Bicycle and Pedestrian Safety Engineer
sonja.piper@state.mn.us

Eric DeVoe
Senior Researcher and Data Wrangler
eric.devoe@state.mn.us

I dream of a world where chickens can cross the road without having their motives questioned

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

APBP Presentation
November 17, 2021

BOLTON & MENK
Real People. Real Solutions.

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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

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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

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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

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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 → **Snow and Ice** → **Subdivision Sidewalks**

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

- MUST be cleared within 24 hours of snow event

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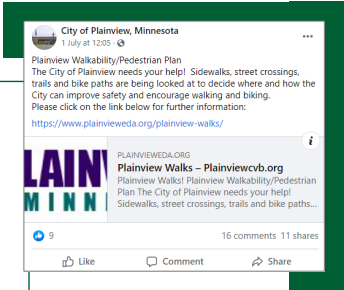
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Community Priorities

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/

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
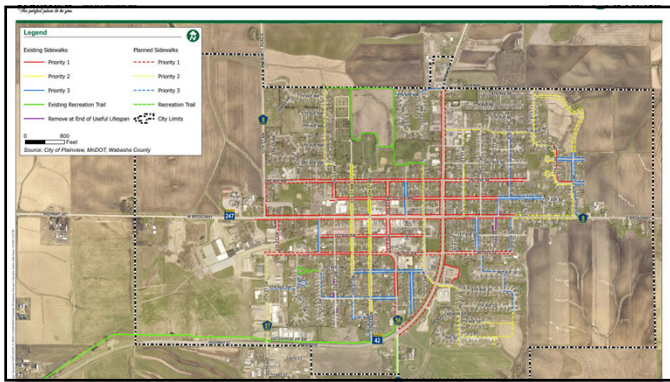
Like   Comment   Share

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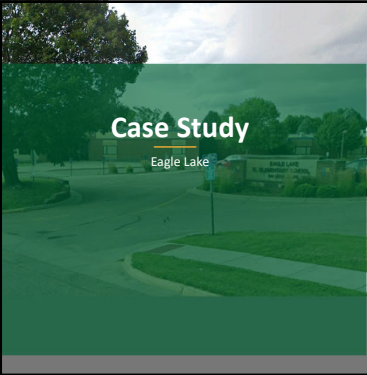## Recommendations & Implementations

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
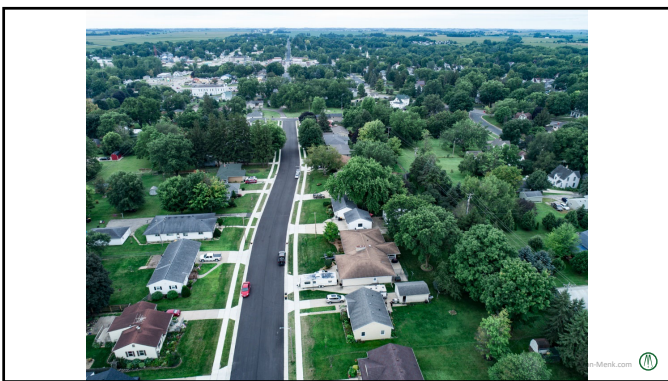 - Evaluate future increases to the sidewalk fee
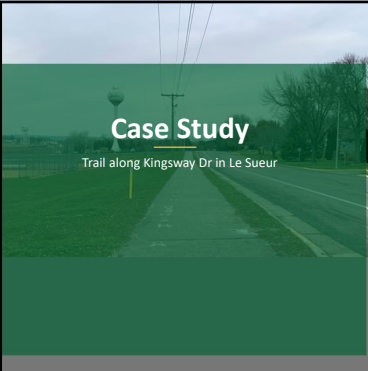
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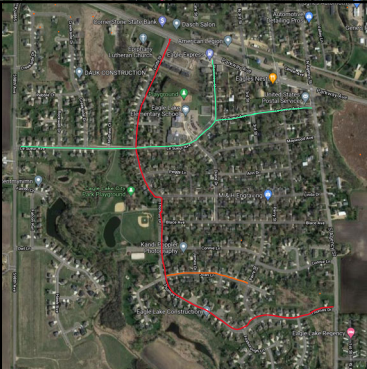
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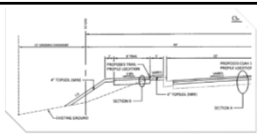
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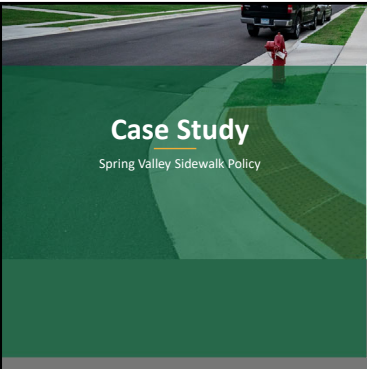
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Case Study

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.
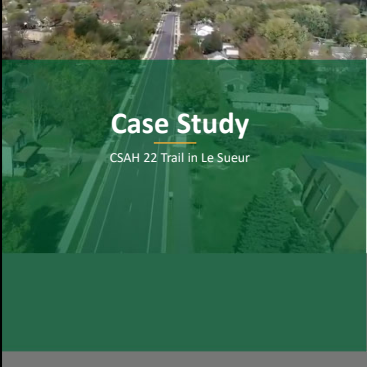
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Implementation

- 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.

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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.

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Planning

LESUEUR 2040 Comprehensive Plan OCTOBER 2016

Adopted City of Le Sueur Comprehensive Plan

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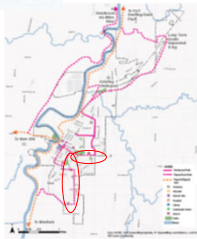
These adopted plans provided background for elected officials to support the proposed improvements.

Figure 4.11 – New Trail Connections

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Planning

LESUEUR 2040 Comprehensive Plan OCTOBER 2016

Adopted City of Le Sueur Comprehensive Plan

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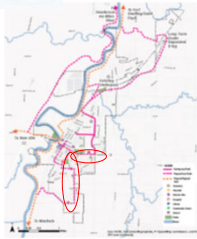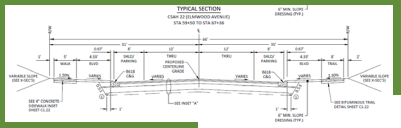
These adopted plans provided background for elected officials to support the proposed improvements.

Figure 4.11 – New Trail Connections

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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.

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BEFORE AFTER

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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.

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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.

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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

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

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

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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

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