



Credit: Metropolitan Council

# Connecting Transportation and Public Health

TOD Forum: Transit-Oriented Development and Public Health

Nissa Tupper, Transportation and Public Health Planning Director,  
MnDOT Office of Sustainability & Public Health

Nov. 10, 2022

# Office of Sustainability and Public Health – Focus Areas



Lead by example through MnDOT Sustainability Efforts



Reduce Transportation Carbon Pollution



**Support Transportation that Improves Public Health**



Improve Resilience of the Transportation System



Develop Strategic External Partnerships to Expand Innovation

# Differing perspectives on creating health



## MnDOT Vision

Minnesota's multimodal transportation system maximizes the health of people, the environment, and our economy.

### **MN transportation system:**

- One of the top 5 largest transportation systems in the U.S. – total public miles owned by MnDOT and partners
- MnDOT owns/operates ~10% of all roads in MN
- Transportation is the #1 source of carbon pollution
- Car ownership cost ~\$11,000/yr

# MN Transportation System Context



**Trucks, Buses,  
Limos, STS**



**Transit**



**Cars**



**Rail**



**Aeronautics**



**Waterways**



**Bikes**



**Pedestrians**



## MnDOT Vision

Minnesota's multimodal transportation system maximizes the health of people, the environment, and our economy.

### **MN community context**

- Anticipated to gain 1.1M new residents between 2018 and 2070
- 65+ population anticipated to double between 2010 and 2030
- ~30% growth in Communities of Color since 2010, ninth highest among states
- One of the healthiest states in the country, yet some of the worst health disparities

# Transportation, Health, and Equity Connections

## Traffic Fatalities & Safety



**What:** Safe transportation for all

**Higher Risk:** People walking, biking or taking transit, older drivers, rural communities, Communities of Color

## Obesity & Heart Disease



**What:** Active transportation options

**Higher Risk:** People without access to physical activity or, healthy diet options, children, men, American Indian populations

## Breathing Impacts



**What:** Air pollution

**Higher Risk:** People with respiratory or cardiovascular conditions (i.e., asthma, bronchitis), Communities of Color, people living near freeways

## Heat-Related Illness

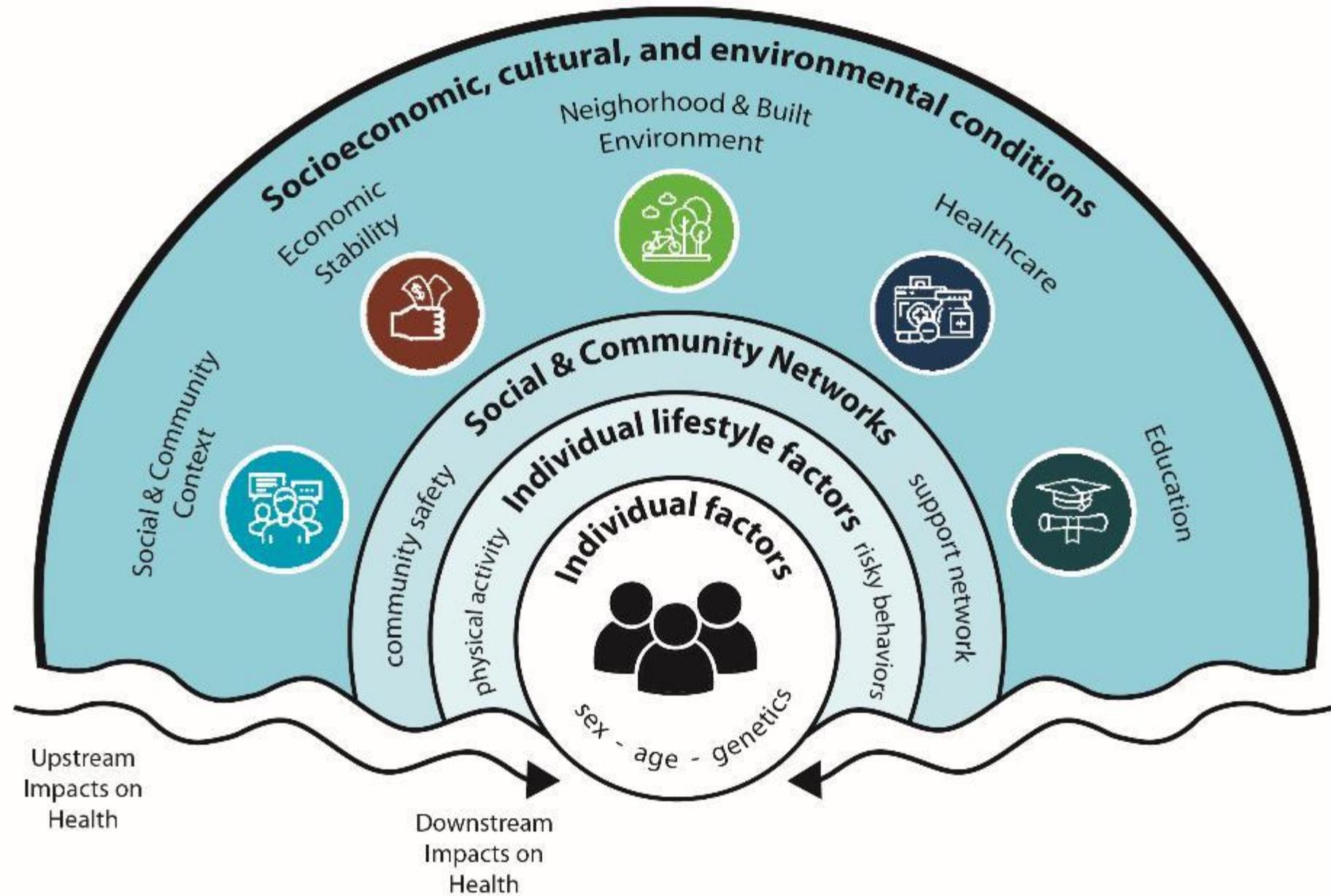


**What:** Heat islands

**Higher Risk:** Children, older adults, people with chronic medical conditions, people who work outdoors

# The Social Determinants of Health (SDoH)

How non-medical factors influence health outcomes. SDoH are the conditions in which we live, play, learn, and work.





Good health starts long before the doctor's office.  
Health is created where we live, learn, work, and play.  
**Healthy communities make healthy people.**

# How MnDOT's Wide Reach Impacts People

*"If you're going to live up here **you need a car** or you'll be homebound."*

- District 2 Community Member

*"There **aren't enough options for affordable transportation and access** for our members to conduct daily activities."*

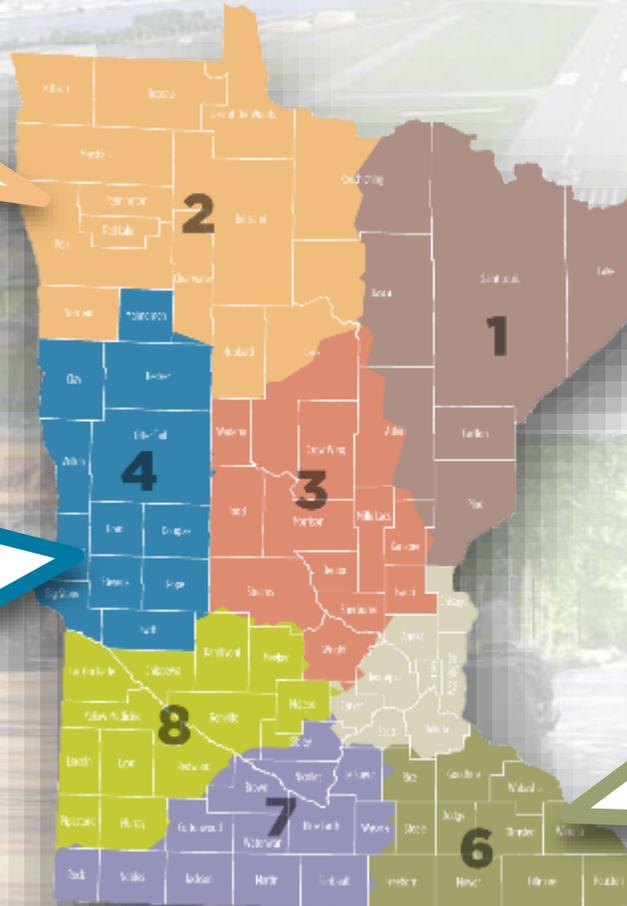
- District 1 Community Member

*"It's a challenge for those who have **low income or people with disability that do not drive**. It's very difficult for them to get where they need to go. **The way we've built our communities makes it difficult**"*

-District 4 Community Member

*"Transit reliability, transit access, and safe walking and [bicycling] **options prevent some in our community...from regularly seeing a doctor**.*

- District 6 Community Member



# Health and Transportation Nexus Research – Key Questions

- 
- What **pathways** between transportation and public health are important to promote in collaborative transportation and health planning?
  - What can we learn from **peer organizations** that are prioritizing transportation and public health?
  - How can we conceptualize a **framework** to navigate these pathways and inform MnDOT's approach moving forward?

# Health and Transportation Nexus - Research Tasks



## Literature Review

Identified 8 frameworks  
& 3 tools

Result: a new, transportation-  
specific comprehensive  
framework



## Semi-structured Interviews

Looked at all 50 states and  
identified 6 pioneers. Conducted  
interviews with 6 states.

Result: 4 recommendations for  
MnDOT



## Public Report

Published report:  
[www.dot.state.mn.us/  
research/TRS/2022/TRS2201.pdf](http://www.dot.state.mn.us/research/TRS/2022/TRS2201.pdf)

# A Unified Model of the Health and Transportation Nexus

## Neighborhood & Built Environment

Reduce emissions and provide access to clean air, nutritious food, and greenspace



## Healthcare

Provide access to preventative health services, medical treatment, and emergency care



**Behavioral Health**  
opportunities for physical activity, social interaction, nutritious food, and healthcare

**Social Inclusion**  
access to places, people, and power

**Equitable Health & Wellness**

**Environmental Health**  
safety from crashes, noise, crime, disproportionate enforcement, pollution, and climate change



## Education

Provide access to learning and training opportunities for all ages

## Economic Stability

Provide access to options related to employment and building wealth



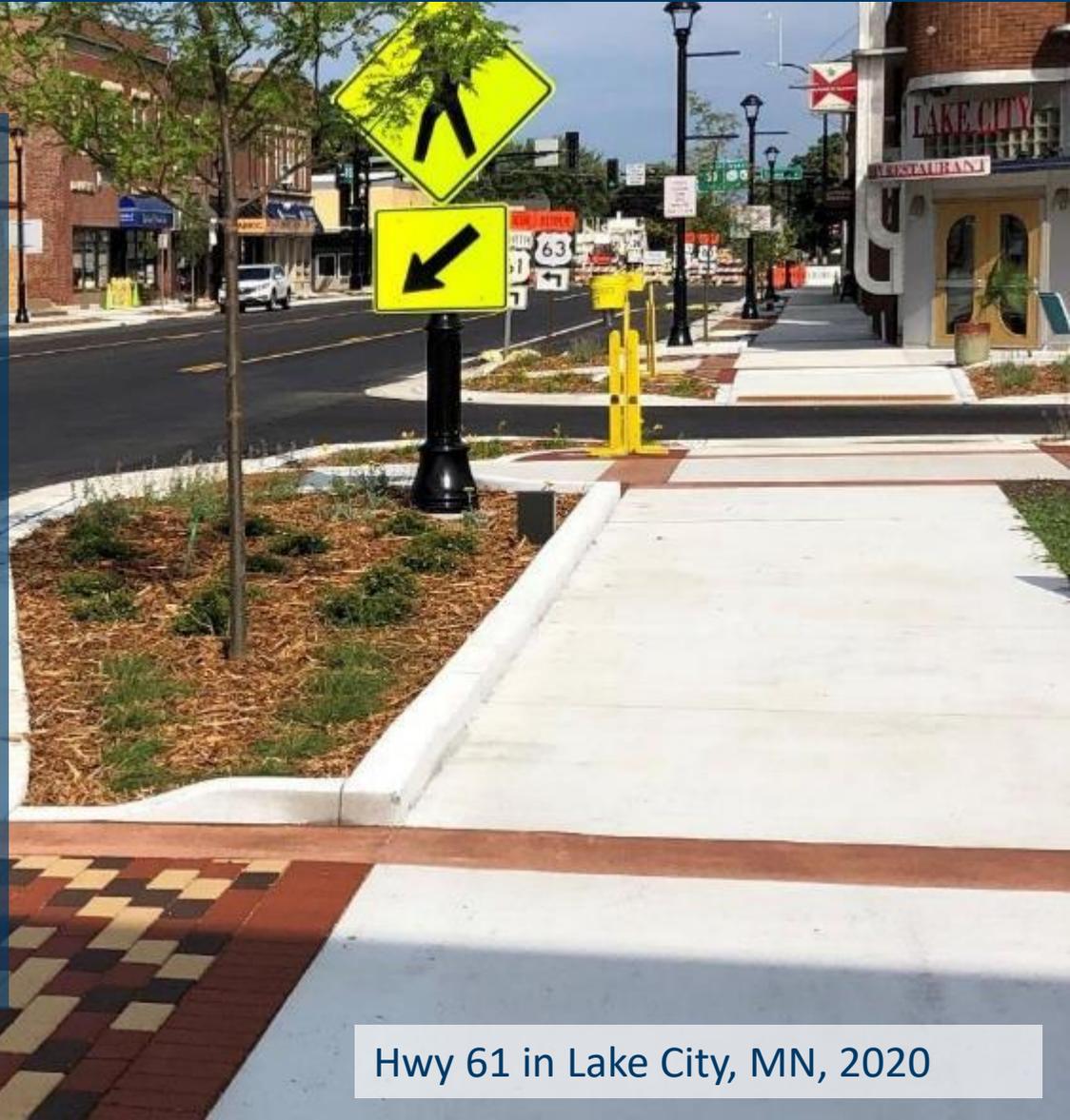
## Social & Community Context

Provide connection with community to support social, physical, and mental wellbeing



# MnDOT's commitment to Complete Streets

- One of the first DOTs to develop a statewide Complete Streets Policy (2013)
- Address safety and access needs for users of all ages and abilities
- Flexible, multimodal approach for any transportation project, any context
- Updated Policy (2022) - new implementation tools and performance measures



Hwy 61 in Lake City, MN, 2020

Thank You!

Nissa.tupper@state.mn.us



www.dot.state.mn.us/sustainability/public-health.html