

The Minnesota Equity Blueprint



Thriving by Design Rural & Urban Together

By Growth & Justice, OneMN.org,
and the members of the Thriving by Design Network

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Contributions of time and talent given by Minnesotans from across the North Star State

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Northern Minnesota's lynx is one of many species threatened by climate change.

Minnesota Equity Blueprint

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EXECUTIVE SUMMARY: THE MINNESOTA EQUITY BLUEPRINT

Widening inequalities and climate change pose the most important and immediate challenges to Minnesota's long-term economic prosperity and quality-of-life. The Minnesota Equity Blueprint is intended to serve as a comprehensive policy guidebook for the next decade, to address these demographic and geographic disparities, to build a more inclusive economy, to find more common cause between rural and urban Minnesotans and to restore our natural environment.

The Blueprint is a "open source" document co-facilitated by Growth & Justice and OneMN.org and created with the members of the Thriving by Design Network — Rural & Urban Together (TBDN). Over the course of 18 months, TBDN collected ideas, challenges, solutions, and action examples from over 300 Minnesotans at more than a dozen gatherings around the state, including two statewide gatherings. The process also included input from many professionals working in the public, private-and non-profit sectors. The Growth & Justice research team analyzed more than 700 recommendations obtained through this multi-stage work and distilled them into 141 recommendations, ranging from general strategies to specific policies.

The Blueprint has been designed not just for the Legislature or governmental decision-makers, but as a resource for individual and local community action. Story boxes throughout the document chronicle regional best practices and inspiring efforts to build a more equitable and inclusive economy.

Each of four chapters - Human Capital, Economic Development, Infrastructure, and Environmental Resilience - contain an analysis of the challenges and an array of solutions that hold promise for achieving equity or sustainability. The solutions fall on a continuum from innovative to established, large to small, immediately doable to long-term and aspirational. TBDN's problem statements and some of the key solutions are:



Jane Leonard (left, President of Growth & Justice) and Brett Buckner (right, Managing Director of OneMN.org) welcome participants to the first statewide gathering of the Thriving by Design Network.

Human Capital



Image: Santi Vedi, Unsplash

TBDN's Problem Statement: Too many Minnesotans lack access to the economic security, education and skills, sense of safety, healthcare, and wages and benefits they must have to be able to fully contribute to their families, communities and the state's economy. These barriers to opportunity disproportionately burden communities of color, Indigenous people and households living outside of the state's urban areas.

Solutions

1. Improve the economic security of households through successful safety net programs and ensure that pay and benefits for workers provide a route out of poverty.
2. Disrupt the “school to prison pipeline” and keep children out of the juvenile justice system.
3. Reform drug laws and increase equitable access to high quality substance abuse treatment programs. Focus on the prevention and treatment of opioid addiction.
4. Increase investments in Cradle to Career educational programs, promoting Career Pathways into technology, trades and entrepreneurship.
5. Greatly increase the percentage of teachers who are people of color or Indigenous people.
6. Improve access to affordable health care, including a Minnesota Care buy-in and pursuing other pathways to universal coverage.
7. Expand voter registration and restoration of voting rights to former felons and restore faith in civic engagement by reforming campaign finance and lobbying laws.

Economic Development

TBDN's Problem Statement: Minnesota's economic vitality is immediately threatened by falling numbers of small businesses, a shortage of skilled workers and insufficient access to high quality and affordable child care.

Solutions

1. Expand access to capital for small business - support community banks.



Image: skeeze, Pixabay

2. Relieve regulatory burdens through greater efficiency.
3. Develop and support new markets for Minnesota's agricultural products.
4. Increase state bonding bill investments in local placemaking projects, particularly in Greater Minnesota and in communities of color.
5. Adopt Minnesota's Uniform Collateral Consequences of Conviction Act.
6. Issue driver's license for immigrants.
7. Invest in creating greater access to affordable quality child care and improve measurement of children's program participation and their outcomes.

Infrastructure

TBDN's Problem Statement: Minnesota's physical infrastructure systems are deteriorating or lacking across the state, posing threats to vulnerable populations and to long-term business growth.

Solutions

1. Improve drinking water and wastewater management through bonding and LGA increases.
2. Expand and increase funding for Broadband partnerships and the Border-to-Border Broadband Development program.
3. Maintain and preserve existing affordable rental housing while building thousands more homes each year for the next five years to meet demand.
4. Realign Governmental regulations and taxation structures to stimulate the creation of new housing and to permit subsidized housing that includes intergenerational housing and housing that permits former felons to live with their children.
5. Develop and fund a major, long-range transportation investment plan which includes transit, biking and walkable communities across the state, focusing on regional and racial equity.
6. Intensify renewable and high-tech strategies in public transit and road planning.
7. Invest in affordable transit for metro areas and mobility options for Greater Minnesota.



Image: Granite Falls City

Environmental Resilience

TBDN's Problem Statement: Rapidly accelerating climate change and pollution of our waters and lands pose huge long-term costs to farmers, urban and rural low-income households, businesses and governments

Solutions

1. Set new goals and create action plans for a 100 percent carbon-free power grid by 2050.
2. Enact Clean Car standards and provide incentives for electrification of vehicles.
3. Expand the Conservation Improvement program.
4. Devote all of Solid Waste Tax revenue to waste management programs that establish state-wide targets for reducing the volume of waste that ends up at incinerators or landfills.
5. Establish and pursue aspirational goal of 100 percent clean and safe surface water (lakes, streams, and rivers) by 2050.
6. Respect sovereign rights and help protect native lands and waters.
7. Support sustainable land management strategies that promote climate resilience, natural resource protection and a regenerative food economy.



Image: Pine River Backus Panels

For more detail on these and the other solutions recommended, please see the appropriate Minnesota Equity Blueprint chapter. As the Table of Contents suggests, each chapter is numbered anew beginning with page 1, Exhibit 1, and its own set of endnotes. This was done to make the Blueprint more useful across different situations. Each page number is preceded by a letter, for example A-1 is the first page of the Introduction and B-1 is the first page the Human Capital chapter.



Image: Ann Treacy

INTRODUCTION

How do we achieve a more equitable prosperity and a more sustainable environment for all Minnesotans in every region of the state?

That essential and futuristic question spurred two of Minnesota's pre-eminent "Think & Do" tanks — Growth & Justice and OneMN.org — to create the Thriving by Design Network (TBDN). Since early 2018, this unique, growing network of people (and organizations) has been working to leverage collective expertise and gather specific ideas for local community action as well as statewide public policy options. All of the ideas are aimed at assuring a vibrant and growing economy, with equal access to opportunity in a state without disparities across race or region, while also accelerating climate action and reversing related forms of environmental degradation.

The primary goal of this work has been to co-create this Minnesota Equity Blueprint, a comprehensive, non-partisan, long-term guidebook for shared prosperity in a healthier environment. Community-generated ideas and action examples provide both practical immediate solutions and long-term aspirational goals in response to our state's most pressing challenges, for the new decade ahead and beyond. Exhaustively researched over the past 18 months with community members and policy experts across the state, the Blueprint reveals the deep interconnectedness of our state's people and regions. It offers a menu of promising solutions that lead to a more inclusive and equitable economy and a sustainable environment. But we are under no illusion that implementation of the Blueprint will be quick and easy. Change is hard for some and obstacles are many.

The Minnesota Equity Blueprint has four chapters: Human Capital, Economic Development, Infrastructure and Environmental Resilience. It is a living document and will be updated as new ideas and changing conditions come into view. Even though the Blueprint chapters are presented sequentially, TBDN stakeholders recognize the deep interconnections between both the challenges identified and solutions proposed. The Blueprint also focuses on solutions which fit a Triple Bottom Line operating framework, where choices and outcomes are evaluated in light of whether they are: 1) good for people, 2) good for the planet and 3) good for profit.

"I want to better understand - How do we move beyond left versus right?"

— Stakeholder at Upper Sioux Community/
Granite Falls Statewide Convening

THRIVING BY DESIGN NETWORK

The Thriving by Design Network (TBDN) is a unique statewide alliance of residents, activists, experts, and partnering organizations who in mid-2018 kicked off the process to co-create the Minnesota Equity Blueprint and disseminate its findings. TBDN members led a process of intensive dialogue, aspirational thinking, and documentation of the wisdom of Minnesotans who are striving in myriad ways to lead their communities toward equity and sustainability. TBDN's open collaboration style of issue identification and analysis combines: 1) grassroots community input with 2) briefings developed by front-line experts, and 3) TBDN's policy researchers' integration of secondary sources — such as government, non-governmental organizations, and private research sources — and original analysis of federal, state, and local data.

At the Hinckley Statewide Convening, I learned about the priorities for people from around the state; what issues resonated among the whole group as important.

— Participant at Hinckley Statewide Convening

TBDN's success depends on community involvement. TBDN hosted two state-wide gatherings along with over a dozen community listening sessions spread across the state. TBDN has conducted surveys and collected written feedback during, between and after various gatherings.

TBDN also tapped the expertise of over 50 individuals with deep applied content knowledge as writers, reviewers, map makers and other contributions to the Blueprint production. This last group of "experts from the trenches" developed 22 briefings on issues that have informed the current Blueprint.

Resources and experts were, and will continue to be, selected based on constructive expertise, not ideology. TBDN is a non-partisan entity and is committed to evidence-tested policy, as well as outcomes that are good for business, good for people and good for the environment.

Convenings, community-based meetings, and grounded research will continue as the Blueprint evolves and expands to include both existing and new Equity Blueprint demonstration communities.



Image: Jessica Gorman

I liked the good energy that fueled the process.

— Participant at Hinckley Statewide Convening

Please see the Acknowledgements Section at the end of this document to learn more about the individual and organizational participants who currently make up the Thriving by Design Network, and which remains open to all interested individuals and organizations.

TBDN stakeholders envision a more evenly prosperous and environmentally clean Minnesota where every resident has equitable access to the opportunity to reach their potential and make their unique contribution. Today, underneath a superficial profile of a strong economy, Minnesota faces four corrosive and interrelated weaknesses: racial disparities,

regional disparities, environmental degradation, and unfair exclusion from civic and political participation. Combined with growing income inequality overall, these unjust and negative forces threaten Minnesota's ability to maintain and strengthen its reputation for both economic vitality and high quality of life for all.

FOUR THEMES CRUCIAL FOR A SHARED VISION

TBDN participants emphasized throughout the process that equity and climate action have become existential imperatives, no longer secondary concerns. Demographic shifts, economic forces and climate change have combined to create pragmatic urgency for identifying the key collective actions that lead to success, to a Minnesota that benefits all Minnesotans.



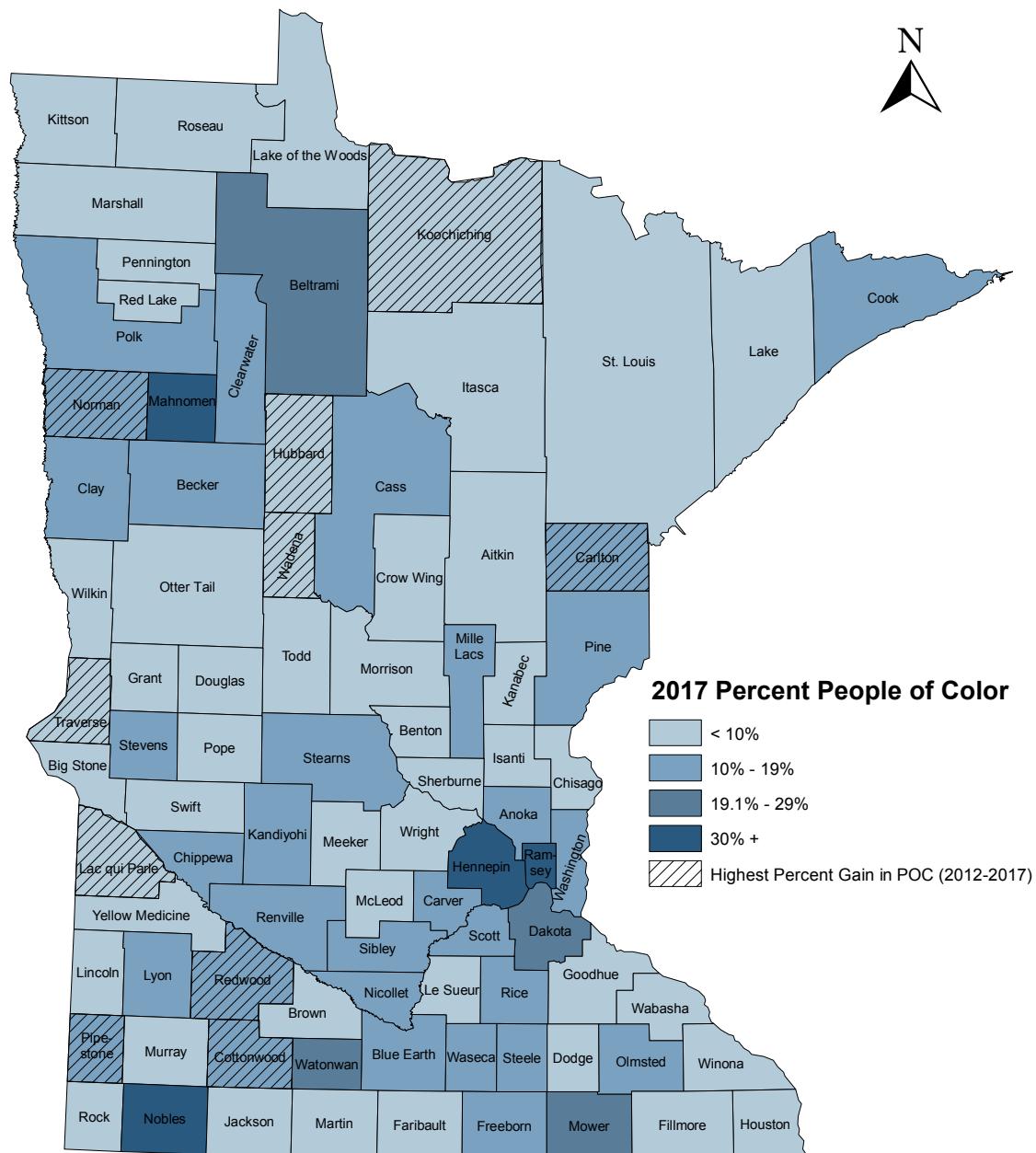
Image: actaylorjr, Pixabay

1. Demographic Diversity and Inequity. Understanding the state's demographic past and projected future is essential in designing a thriving Minnesota. Overwhelming evidence shows that historic structures have perpetuated bias and discrimination. Minnesotans of color, women, and people with various disabilities have been denied full and equal access to opportunity, resulting in highly disparate rates of educational attainment, employment, health outcomes, incarceration, and homelessness. Like other Minnesotans, TBDN stakeholders agree that disparate access to personal and economic opportunity has always been morally wrong, costly to taxpayers, and has been a significant limiting factor on the state's economy.

Over the last 50 years, Minnesotans of color have grown from 2 percent to 20 percent of the state's total population.^{1,2} Students of color are the majority of children in many school districts across urban and rural Minnesota.³ Between 2014 and 2016, Minnesota's crucial growth in labor force was almost entirely dependent on communities of color and immigrants.⁴ Contrary to commonly held beliefs about rural communities, diversity (including people of color, immigrants and low-income households) is rapidly growing in Greater Minnesota.

Exhibit 1 shows that people of color are substantial parts of the community in counties across the state. Cross-shaded counties are those with highest percentage gains in racial diversity from 2012-2017. All 10 counties with the highest percentage gains are in Greater Minnesota, tending to be in southwestern and central Minnesota.

Exhibit 1. People of color are substantial parts of the community in counties across the state, with the most rapid growth outside the Twin Cities.



Source: U.S. Census Bureau

Created January, 2019

Minnesota's future prosperity depends on the success of people of color, who live across urban, suburban, small town and rural Minnesota. The state's economic and workforce growth is, and will continue to be, dependent on communities of color and immigrant communities.

2. Geographic Diversity and Inequity.

Minnesota has a history of public-private, innovative statewide collaboration to ensure the vitality of all its remarkable regions and biomes — from big cities and sprawling suburbs, to hardwood savannas, northern forests, prairies and farmlands. Ever since the Progressive Era, the New Deal, and up through the creation of the Greater Minnesota Corporation and regional Initiative Foundations in the 1980s, Minnesotans have appreciated the economic and cultural interdependence between rural and urban regions of the state. Examples of public-private enterprise, in this regard, include the University of Minnesota's development of the taconite process, which extended the viability of mining on the Iron Range for many decades, and the growth of the state's bio-medical complex from the Mayo Clinic's pioneering model in southeastern Minnesota.

Like people in many other states, Minnesotans are facing new challenges due to a variety of international and national forces that have diminished prosperity in rural areas and the urban core, while creating homogenous islands of affluence in the urban and suburban areas. Meanwhile, the structures facilitating upward income mobility are not working as well as in the past. Increasing income inequality (where the benefits of economic growth are disproportionately claimed by a few) is also a significant shared barrier to opportunity.

Over the last couple of generations, advances in agricultural technology and corporate consolidation of agricultural production have resulted in a population shift from rural to urban and suburban areas and increasing income inequality between affluent suburban/exurban areas and small towns and inner-city neighborhoods. State policymakers have been under-responsive to the economic needs and potential of areas outside the cities by failing to adequately invest in human capital development and needed business infrastructure (such as roads, child care, and affordable housing) outside the Twin Cities' seven-county metro area. Regional disparities in public investment, like racial disparities, are putting undue strain on the state's economic engine.

3. Climate Action and Natural Resource

Protection. Deeply interconnected to racial and regional inequality are the disparate impacts of climate change and damage to our soil and water. Minnesota's infrastructure, land, biodiversity, and weather are buffeted by climate change, decaying infrastructure and failure to stay current with technological advancements.

Consumer, agricultural, industrial, and infrastructure models have become out of sync with conserving, protecting, and sustaining Minnesota's natural resources. A growing chorus of governmental, business, academic, advocacy, for-profit and non-profit leaders affirm that climate action and environmental concerns must be integrated with social and economic equity to ensure a thriving, inclusive, and sustainable economy for

Why do urban people think they know rural people, and rural people think they know urban people, and yet neither feels understood by the other?

— Participant at Upper Sioux Community/Granite Falls Statewide Convening

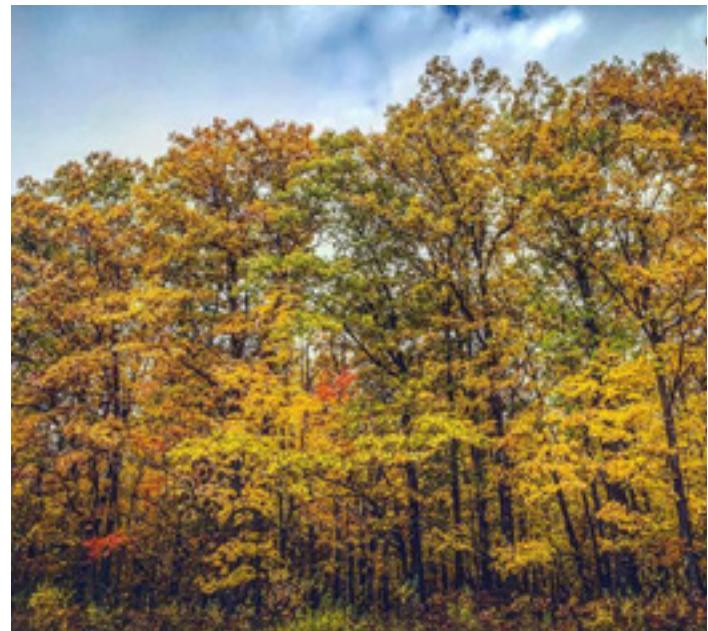


Image: Danny Smith, Danny Photography

I think we can go further than just being resilient—what can we do to curb, cut down our carbon emissions? How can we connect economy to paving the way and cutting our emissions?

— Participant at Norway House Community Conversation

all Minnesotans well into the future. Urgent and consequential changes are required to reduce the threats associated with human-generated climate change, which is now overwhelmingly supported by scientific evidence.⁵ Minnesotans must individually and collectively play an active role in accelerating their transition away from fossil fuels and other harmful activities which degrade the quality of our air, soil and waters, towards more environmentally resilient (and job creating) forms of energy and infrastructure.

Environmentalists and business leaders agree Minnesota must become more energy independent, environmentally sustainable, and must leverage advanced technologies and practices as we update the state's outdated and dangerous infrastructure. All of this will benefit both climate resilience and a more sustainable economic model.

4. Democracy and Civic Engagement. Observers of Minnesota's past success remark on the state's unique communitarian spirit and the basic health and integrity of its democratic processes. Rising inequality, and its impacts on democratic institutions, threaten the fabric of our civic society. The outsized influence of money results in a limited role for people without access to money or influence, too often resulting in cynicism and apathy.

Throughout the Blueprint, in every chapter, recommendations are offered that strengthen democracy and civic engagement, as well as providing the conditions for increased income mobility, conditions that can help us all realize the American Dream.

At Hinckley, I learned a lot about intersections beyond my area of expertise.

— Participant at Hinckley Statewide Convening

WHAT COMPLICATES THIS WORK?

Interdependency and interrelatedness are everywhere. TBDN stakeholders consistently emphasized that interdependency and interconnectedness characterize Minnesota's problems and solutions. For instance, the connections between education (an element of the Human Capital section of the Equity Blueprint) and affordable housing (an element of the Infrastructure section of the Blueprint) are significant. Likewise, interdependence between transportation (an element of the Infrastructure section) and business development (an element of Economic Development section) are critical.

As a result, any efforts to address these challenges must also be multi-faceted and coordinated. No problem identified exists in a vacuum. And none of the policy goals or solutions identified would, if enacted alone and in isolation, result in stable permanent improvements in equity or sustainability.

Success requires coordination and investment. There are many levels of government and local, regional and national non-governmental organizations (NGOs) at work on the issues raised by the TBDN stakeholders.

Often these agencies and NGOs focus primarily on one or two of the many interrelated issues. Working in silos is both less expensive and less impactful. Tackling complexity is difficult and often frustrating, but it results in better outcomes and longer-term, more sustainable solutions.

One example of a cross-sector initiative which has shown impact is Heading Home Minnesota, the state's Interagency Council on Homelessness⁶ which is made of all 11 State agencies (including Education, Corrections and Human Services), the Metropolitan Council and the Governor's Office. The Council also works closely with non-profits and service deliverers.

In conjunction with national efforts, the Council identified veterans experiencing homelessness as a target population. By marshalling and coordinating national, state and regional resources to identify vets and get them stably housed, the result has been a considerably reduced presence of veterans among Minnesotans experiencing homelessness.

TBDN's Minnesota Equity Blueprint emphasizes policies and community practices that work together to support increased rates of upward income mobility and more observable equity in that trajectory. For instance, in 2017 one in five Minnesota families headed by single mothers lived in poverty.⁷ Family structure matters and policy changes that permit more of Minnesota's children to live in two-parent or co-parenting homes will support greater income mobility. TBDN's recommended changes to existing policies related to housing, safety net benefits, criminal justice, and employment would reduce barriers to being raised by two parents, increasing the ability of both parents to participate in the lives of their children.

In the pages that follow, TBDN hopes readers will find a range of ways to approach the many and interrelated challenges facing our state. Some solutions require legislative action; others can be accomplished by communities on their own initiative. All solutions require everyone to work together, with intention, with a sense of common humanity, a shared vision, and a common purpose. Please feel free to contact TBDN with your questions and ideas by visiting www.thrivingbydesignmn.org.



Image: MinnPost

Endnotes

1 U.S. Census Bureau. *1970 Census of Population*, pt. 25, ch. b, p. 75. Retrieved from https://www2.census.gov/prod2/decennial/documents/1970a_mn.zip

2 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*, Form DP05. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

3 Hinrichs, E., & Kaul, G. (2018). The number of majority-minority school districts in Minnesota has doubled in the last five years. Retrieved from <https://www.minnpost.com/education/2018/07/number-majority-minority-school-districts-minnesota-has-doubled-last-five-years/>

4 Howard, F. (2018). "Casting a Wider Talent Net." *Twin Cities Business*. Retrieved from <http://tcbmag.com/news/articles/2018/april/casting-a-wider-talent-net>

5 The National Academies of Sciences, Engineering and Medicine (2010). *Advancing the Science of Climate Change*. Retrieved from <https://www.nap.edu/read/12782/chapter/2>

6 The Minnesota Interagency Council on Homelessness. *Heading Home Together: Minnesota's 2018-2020 Action Plan to Prevent and End Homelessness*. Retrieved from <https://mn.gov/dhs/heading-home-minnesota/>

7 U.S. Census Bureau (2017). *American Community Survey, 1-year estimates*, ACS form B17017. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>



Image: Santi Vedri, Unsplash

HUMAN CAPITAL

Thriving by Design Network's Problem Statement: Too many Minnesotans lack access to the economic security, education and skills, sense of safety, healthcare, and wages and benefits they must have to be able to fully contribute to their families, communities and the state's economy. These barriers to opportunity disproportionately burden communities of color, Indigenous people and households living outside of the state's urban areas.

Abundant research confirms what most people know intuitively: that broad uplift in the condition of all humans will foster productivity and economic growth. And conversely, that poverty and economic insecurity hinder both human development and business health. Nations and states with high poverty rates and those that do not ensure economic security and opportunity for all, tend to lag economically behind nations and states that equitably meet the needs for health, education and welfare among all the humans in their jurisdictions.¹ Economists can show with precision how rising fortunes for those in the middle and bottom income levels stimulates both aggregate demand and worker productivity.

Minnesota's socio-economic statistics have traditionally been enviable and reflect a historic commitment to investing in human development and security. But growing income inequality and widening racial and regional disparities over the last few decades are threatening both quality-of-life and business health. Although aggregate poverty rates are still low, close to a fourth of all working Minnesotans are economically insecure.² As seen in exhibits throughout this and other chapters, racial and regional income disparities prevail in Minnesota. African American, Latino, and Native American households, as well as more than a third of all residents in many Greater Minnesota counties, are disproportionately likely to live on insufficient incomes, in comparison with white and urban Minnesotans.

Poverty is not partisan.

— Participant at Norway House
Community Conversation

TBDN participants created a vision of Minnesota as a place where the needles on all the gauges measuring human capital are moving in a positive direction, and where upward income mobility across generations is

improving. Participants identified key priorities for improvement and solutions designed to realize those goals. The solutions described will provide a stronger safety net, wage and benefit adequacy, educational progress, improved health indicators, elder security, and transitioning toward investment in, rather than continued exclusion of, previously marginalized human potential.

More specific gauges and needles pegged for improvement were: increased median income and wealth levels, fewer births to teen mothers, increased kindergarten readiness, reduction in both violent crime and instances of police brutality, better health outcomes and improved longevity statistics, more participation and integration of variously disabled people in the workforce and society, greater post-secondary enrollment and attainment, and fewer people having to work two or three jobs to make ends meet.

The Human Capital solutions that emerged reflect the wisdom of both practical capitalists and ardent social justice reformers, from Henry Ford, pioneer automaker and industrialist, to Minnesota's Sen. Paul Wellstone, a U.S. Senator and champion of "the little fellers, not the Rockefellers."³ Ford drew criticism from fellow Gilded Age millionaires when he famously announced that he would double the pay of his workers, in part to secure a more stable workforce and also so they could afford the cars they were producing.⁴ And Wellstone, who kicked off his upstart 1990 U.S. Senate campaign outside a Ford plant in St. Paul, repeatedly reminded his audiences: "We all do better, when we ALL do better."⁵

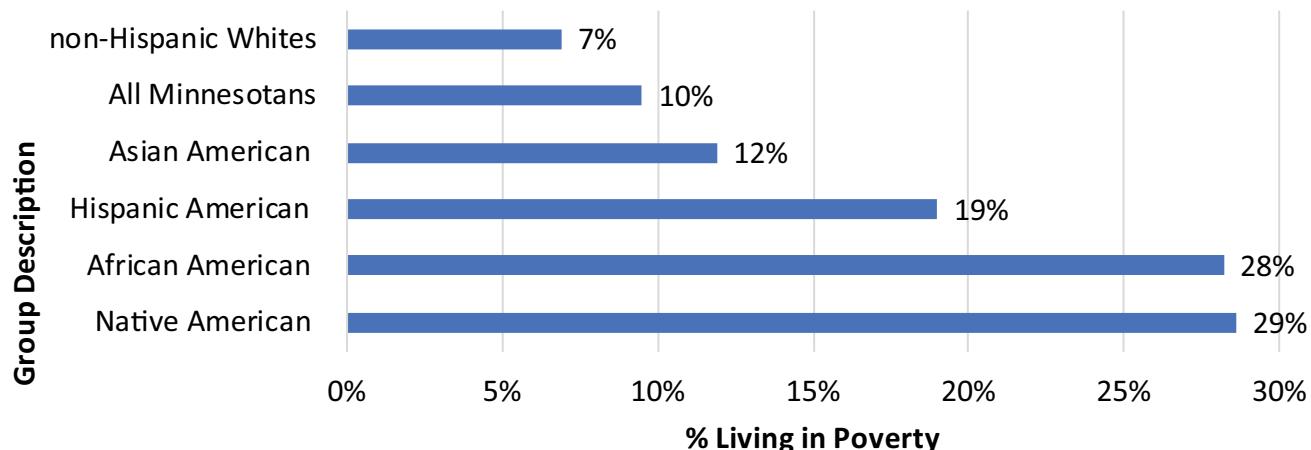
The case for reaching broader consensus on investing more in human capital was also summed up by a TBDN participant, who said, simply, "Poverty is not partisan."

ECONOMIC SECURITY

Challenges

Poverty threatens shared prosperity and has no place in the Minnesota envisioned by TBDN participants. While Minnesota is nationally known as a state with low poverty, when it comes to communities of color, Minnesota's reputation is less enviable. Compared with other states, in 2017, Minnesota had the 11th highest poverty rate among African Americans (28.2 percent) and the ninth highest poverty rate among Native Americans.

Exhibit 1. Minnesotans of Color & Native Americans are most likely to be living in poverty.



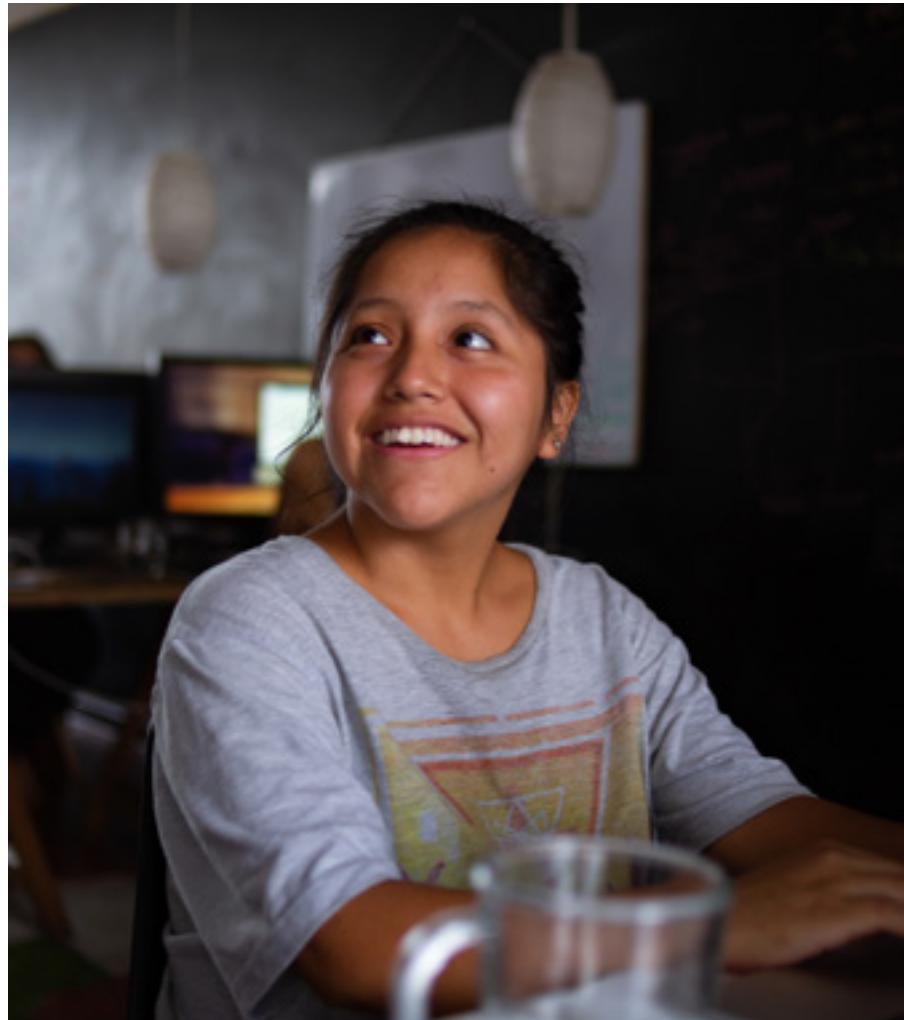


Image: Frank Romero, Unsplash

Minnesotans of Color and Native Americans are most likely to be living in poverty.

Exhibit 1 illustrates one facet of how Minnesota's prosperity is not equitably shared, by showing 2017 poverty rates for Minnesotans based on race. African American and Native American Minnesotans were four times as likely to be living in poverty, compared with non-Hispanic white Minnesotans.

In addition to racial inequities in terms of income security, 2017 Census Bureau data also point to regional inequities. County median income levels (the midpoint income level for a region) show that one in every ten (5 of 56) majority rural counties had a median income above \$60,000. In contrast, almost one in two (17 of 31) majority urban counties had an annual income above \$60,000.

According to the Census Bureau, in 2017, a family of four (two adults, two children) was living in poverty if their annual income was below \$24,858.

However, according to MIT's Living

Wage Calculator,⁶ to meet basic needs — without public assistance programs, but with no "frills" such as savings or vacations, entertainment or savings — an average Minnesota family of four (with two working adults and two children who have some child care needs) requires a minimum pre-tax income of \$68,948 (almost three times the official threshold living in poverty).

We need to better appreciate the impacts of increasing wealth inequality and identify ways to address it.

— Participant at Upper Sioux Community/ Granite Falls Statewide Convening

Exhibit 2 presents a map showing the geographic distribution of Minnesota households living on twice the federal poverty threshold, which means that this same family of four is living on less than \$49,716.

As Exhibit 2 shows, in 19 counties (including Ramsey) between one half and one third of all households were living on incomes below 200 percent of the Federal Poverty Threshold (FPT). In another 53 counties (including Hennepin), at least one in every four households was living on an income this small. The three most affluent counties (as measured by the lowest percentage of households living on incomes below 200 FPT) were Scott, Washington and Carver. In each case, 15 percent, or fewer, of the households were living on incomes this low.

Exhibit 2. Compared with urban households, households in rural counties more likely to have insufficient income.

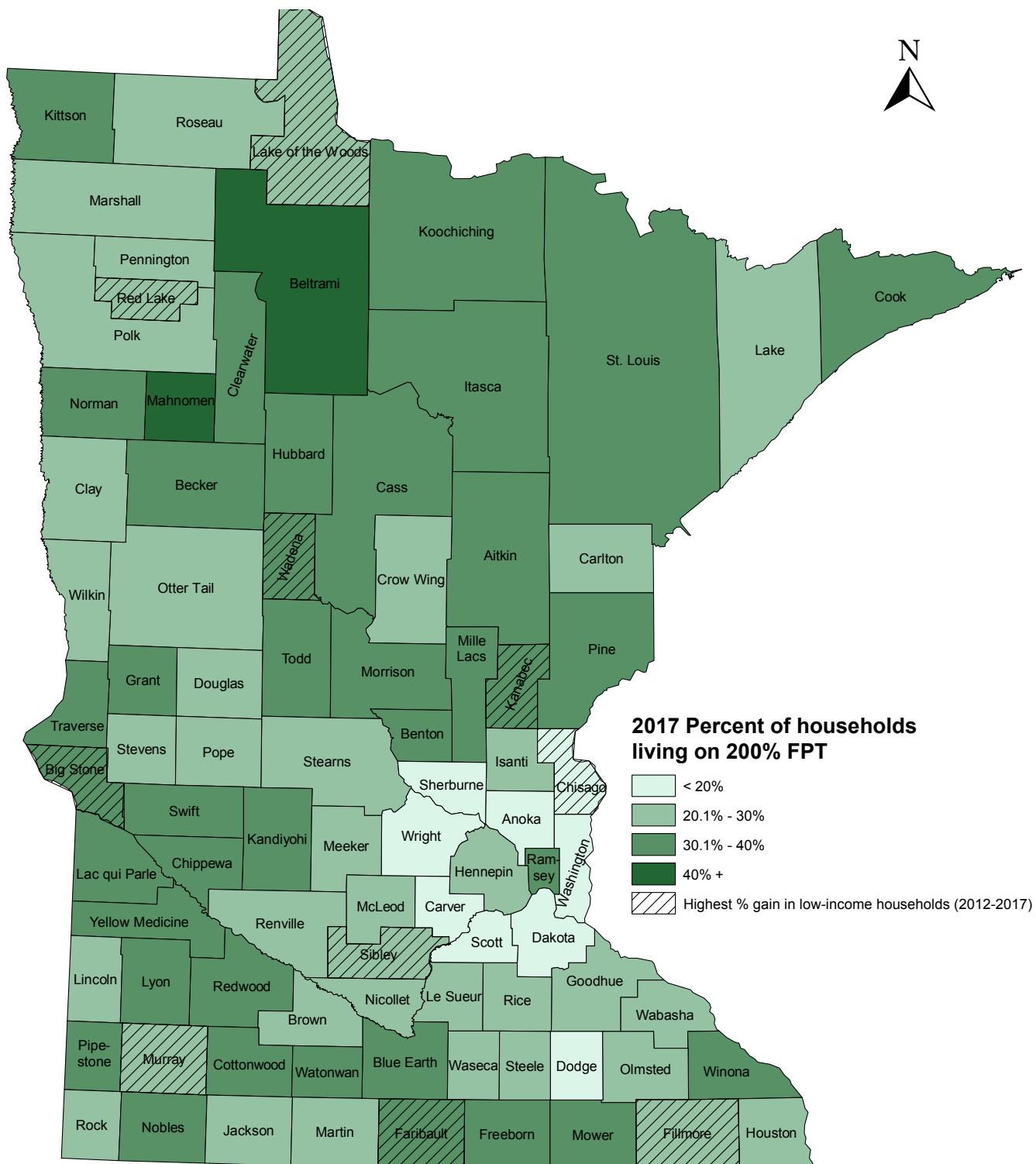


Image by Jeff Finnigan



Elders are a rapidly growing and particularly vulnerable population. The decades-long shift away from employer-provided pensions, as well as the mortgage defaults and equity loss experienced by many during the recent recession, have resulted in a more widespread lack of retirement preparation. Today's cohort of elders have also been more likely to face lowered income due to job losses and job downgrades. This level of lowered income then encounters the reality of a laundry list of financial burdens facing new retirees that includes higher rents, health care costs, the financial dependence of extended family (including having to care for grandchildren) and the threat of default on a child's student loan.

The average benefit for new Social Security retirement income awards in 2017 was \$1,4607 per month, or \$17,520 annually. At least 22 percent of Minnesota

retirees were dependent upon their Social Security payment for 90 percent of their income in 2015, according to a study from the AARP Public Policy Institute.⁸

Contrast this income with the amount the state's elders require to meet basic needs. According to the Elder Index, a single Minnesotan 65 or older, in good health (not great, but not poor) who rents a one-bedroom apartment needs an annual income of \$22,992, leaving a five-thousand-dollar income gap. An elderly couple who own their own home (don't have a mortgage) need an annual income of \$31,992. Monthly Social Security payments prevent most elderly Minnesotans from officially appearing to be "living in poverty," without providing them with income security adequate to their basic needs.

This economic vulnerability impacts residents of Greater Minnesota at a higher rate than it does the residents of the seven-county Twin Cities metro. The Minnesota chapter of the National Association of Housing and Redevelopment Officials investigated the forecasted volume of Baby Boomers entering pre-retirement and retirement between 2018 and 2030, and found that the number of Minnesotans between 75 and 84 is expected to more than double in Greater Minnesota (increasing from 124,330 in 2018 to 268,255 in 2030) while increasing by only 43 percent in the Twin Cities metro (moving from 118,493 in 2018 to 165,987 in 2030). People who are 75 or older are far less likely to be able to continue to work, and more likely to experience a shortage of retirement income. This age group, which is also the group most likely to have one or more disabilities, is the cohort most likely to challenge Minnesota's safety net in the short term.

According to the 2017 American Community Survey,⁹ over half a million Minnesotans (13 percent of the total) age 16, or older, have one or more disabilities. While 30 percent were employed, 74 percent of their non-disabled counterparts were employed. Minnesotans with disabilities were three times more likely to have left school before graduating from high school (15 percent vs 5 percent of non-disabled). Median income for disabled Minnesotans was about half of the median income for Minnesotans without a disability (\$20,957 vs \$39,234).

When compared with people who have sufficient income, people living in poverty are more likely to suffer poorer health outcomes,¹⁰ have lower educational attainment levels,¹¹ and are more likely to commit crimes as well as be victims of crimes.¹² Each of these conditions have social costs, such as emergency room visits and more stays in homeless shelters, more time interacting with police, jails, courts, and prisons, and less ability to provide for themselves, their elders and their children.

Issues as multifaceted and intractable as poverty and economic insecurity require equally interconnected and tenacious solutions. Non-partisan recommendations provided by TBDN's participants and briefing writers show remarkable overlap with the recommendations offered in the reports by *The Legislative Commission to End Poverty in Minnesota by 2020*¹³ and the AEI/Brookings Working Group on Poverty and Opportunity report.¹⁴ The consensus on key priorities for addressing poverty includes:

Solutions

1. Ensure that work provides a route out of poverty. Employers, communities and policy-makers at every level should work to ensure that employment provides a living wage with benefits. Ensure also that employment is available and incent businesses to hire and train Minnesotans seeking to escape poverty. Other routes to incentivizing work include increasing the minimum wage and expanding tax credits for all working households (both families and individuals).

2. Expand and reform of basic support. Based on the 2019 Bureau of Labor Statistics consumer price index, 2019 prices are more than two and a quarter times higher compared with 1986 prices.¹⁵

- Raise the Minnesota Family Investment Program (MFIP) grant by at least \$100 per month, which would be the first increase in more than 35 years.
- Concurrently, communities and state government must collaborate on public assistance reforms by increasing efficiencies (via streamlining services, integrating case management and automation) and maximizing impact through incentivizing work via maintaining child care, housing and health care supports.

3. Protect housing rights. Sudden loss of housing safety and stability can be averted by implementing policies that provide residents with earlier and more preventative notice before eviction or before power or other public utilities are shut off.



LOCAL EDUCATION PARTNERSHIPS AND “GROW OUR OWN” BUILD EQUITY, CRADLE TO CAREER, RURAL AND URBAN

Frustrated by the unfairness of low rates of college enrollment by growing numbers of Latinos and kids of color, a committed group of community leaders in Northfield (pop. 20,084) decided more than 15 years ago to change the story.

Under highly organized efforts called TORCH (Tackling Obstacles and Raising College Hopes), Northfield Promise, and the Healthy Communities Initiative, the entire community collaborated to provide intensive “wrap-around” social support for every student, including: early childhood development programs, individual tutoring and mentoring and navigating, and taking full advantage of early college credit programs.

All those years of collective action are paying off. Northfield has dramatically improved education equity outcomes. In 2005, the district only graduated 27 percent of all Latino students and 38 percent of low-income students dropped out before their senior year. In June of 2017, 97 percent of TORCH participants graduated on time, while 90 percent of graduating seniors applied to college; and 100 percent of those who applied were accepted to college.

Problems always get the headlines, but the larger and more important truth is that many communities like Northfield, across Minnesota, have been quietly coming together and working persistently on solutions that reduce disparities in educational attainment and achievement, and from Cradle to Career. The secret sauce in these partnerships is broader investment and nurturing of human capital, before and after the school day and in every aspect of community life.

In an unusual formal coalition of rural and urban, these spontaneously germinating local partnerships came together under the auspices of the Education Partnership Coalition in 2016. Current membership includes the Greater Minnesota cities of Austin, Northfield, Rochester, Red Wing, and the St. Cloud area, and the inner-city neighborhoods in St. Paul and Minneapolis, represented by the St. Paul Promise Neighborhood and the Northside Achievement Zone.

The rural and urban models are different, but the key ingredients for both are an “everybody in” spirit, and the total mobilization of the community around a holistic Cradle to Career approach to achieving student success. Not just schools and teachers, but everybody — parents, non-profits, local governments, charities, businesses and other employers, and philanthropies — are involved. And not just early childhood or random and faddish interventions, but all the basic support we know kids need from birth to career launch, inside and outside of school.



Image: SWI Foundation Website



Cities urban core counties — and racial diversity has been steadily increasing, with immigrants and newcomers flocking to jobs on the farms and in agriculture processing.

Grow Our Own has convened two all-day summit meetings in Marshall and the Southwest Initiative Foundation is active in both cheerleading and creating urgency and community will, while actually funding efforts that drive education equity.

At the Growth & Justice Thriving by Design conference in Granite Falls, Foundation President Diana Anderson summed up the effort as both an economic and moral imperative: “The vitality of our region and the strength of our rural economy depends on everyone being able to contribute, and it starts before birth. We need to ensure ALL our kids — our Indigenous children, our seventh-generation immigrant children, and our first-generation immigrant children — get the best possible start to life. ... But, importantly, we’re supporting all our southwest Minnesota kids because it’s simply the right thing to do.”

Meanwhile, in southwestern Minnesota, a new and even broader, region-wide equity collaboration is underway. Business leaders, educators, parents and community activists are organizing a remarkable “Grow Our Own” initiative, a 10-year commitment to closing the opportunity gaps for local youth. The project is led by the Southwest Initiative Foundation, which serves 280,000 people spread across 18 counties and 12,340 square miles. One in six children in this region now lives in poverty — a statistic similar to the Twin

4. Establish statewide paid family and medical leave. TBDN recommends that Minnesota follow the example of other states¹⁶ that have established paid Family and Medical leave insurance programs via cost-sharing between workers and their employers, thus spreading the costs of such benefits across companies of all sizes (see Washington State). Benefits include varying ranges of partial wage replacement (the average is 66 percent) for up to 12 weeks so workers can attend to their personal health and family care-giving needs.

5. Advance food and nutrition equity. Protecting SNAP (federal Food Stamp program) must be a priority, as well as building on the state’s previous investments in the Good Food Access Fund Campaign. Local efforts to scale up farm-to-school programs statewide could be phased in by requiring that districts use locally-sourced produce (purchased by the state) in school districts. This is already happening voluntarily in some Minnesota locales.

6. Expand paths to building assets and wealth.

Minnesotans can build income security with policies that:

- Provide more opportunity to save, by mandating living wages that help families avoid having to live paycheck to paycheck.
- Encourage the maintenance of assets.
- Build financial literacy through education.
- Prohibit predatory financial practices.
- Eliminate Minnesota's Temporary Assistance for Needy Families (TANF) Asset Test.
- Emphasize inclusion in asset building through programs that meet the requirements of various religious groups, such as providing interest-free financing for Muslim communities in which paying interest is religiously forbidden.
- Improve credit histories, by expanding the types of payment and credit data that are included in credit scoring models to include payroll debit cards and financial counseling programs, and individual development accounts.
- Support community-based financial cooperatives, such as the Village Financial Cooperative which proposes to serve North Minneapolis.



Image: Markus Spiske, Unsplash

7. Conduct a “Poverty Impact” analysis.

Develop an ongoing structure to monitor and improve Minnesota’s efforts to end poverty and reduce racial disparities in the experience of poverty. Poverty Impact Statements would assess and communicate the likely effects of proposed legislation on low-income Minnesotans, particularly among Minnesota’s communities of color. This tool would take into consideration the complex interactions between wages, public programs benefits, tax credits and tax liability and identify how proposed legislation would interact to fill (or fail to fill) the gap between low-wages and basic needs expenses in order to prioritize policies that provide a safety net that is flexible enough to make work pay for low-income families. Impact assessments would be developed by targeted communities themselves with clearly identified ways of providing community insights and feedback.

8. Ensure adequate and equitable retirement income and security.

Minnesota’s elders, both current and future, need income adequate to cover their costs of living. Many workers are unable to access employer-sponsored pensions or retirement plans.

- At the national level, elders need advocates to lobby Congress to expand Social Security, to address senior poverty through caregiver credits, and to remove the Social Security income cap so that high-income households pay a larger share to ensure Social Security solvency.
- State-Auto IRA workplace savings plans could be made immediately available for current and future older workers to supplement Social Security or forestall taking Social Security payments. This development would also assist future generations of retirees. In the immediate term, supplement the savings plan through a combination of state and federal income tax rebates that are based on age and income related criteria.

- A proven approach to providing universal access to a retirement savings vehicle is by leveraging state investments to create a Secure Choice Retirement Plan¹⁷ (such as in Illinois where all workers have access to a retirement savings vehicle¹⁸).
- Increase financial incentives for older workers to remain on the job by expanding the Earned Income Tax Credit (EITC) for individuals without dependent children.

9. Broaden opportunities for Minnesotans living with disabilities. Invest in policies that boost educational, employment and community engagement outcomes among Minnesotans living with one or more disabilities. Examples include:

- Expanding state investment in the Minnesota Vocational Rehabilitation Services Program.
- Reforming pay rates for Personal Care Assistants and increasing the number of voters which one person may assist during an election as current limits reduce the number of deaf/blind and otherwise disabled adults from voting.

PEACEFUL COMMUNITIES

Challenges

For all Minnesotans, quality of life is deeply shaped by the physical and social features of their neighborhood. At minimum, neighborhoods must be safe places for the people who live in them. They must be places where children, families and individuals are free of actual and anticipated violence (both of which are traumatic experiences). Peaceful neighborhoods are fundamental to residents seeking to achieve their potential and to make the economic and social contributions needed to help Minnesota thrive.

Both children and adults also must have the freedom to move between neighborhoods and throughout the state without fear of the violence that is too often associated with racially-biased policing (including police brutality) as well as criminal and gang activity. White Minnesotans tend not to live with fear due to racially biased police enforcement or police brutality, and they are less likely to be at risk of neighborhood violence. Minnesotans of color tend not to share this level of safety.

Studies by national and state groups consistently point to racial disparities in law enforcement. Research by the Minnesota Council on Crime and Justice and the Institute on Race and Poverty showed that African American, Latino and American Indian drivers were stopped by law enforcement officers at significantly greater rates than white drivers.¹⁹ Furthermore, law enforcement officers searched African Americans, Latinos and

A person's past criminal history shouldn't affect their right to equal opportunity.

— Participant at Metropolitan State University Community Conversation

"Neighborhoods with good jobs, affordable homes, healthy food and green places to play produce less conflict and fewer mental health crisis than ones that feature empty lots, under-funded schools, and starvation wages."

— "Enough is Enough: A 150 year performance review of the Minneapolis Police Department"



Image: Olya Adamovich, Pixabay

American Indians at substantially greater rates than white drivers, yet police found contraband at lower rates among the drivers of color compared to white drivers.²⁰

Racially biased police supervision and enforcement drives the inequities observed in the disproportionate entry of Minnesota's children of color into the state's juvenile justice system, beginning with apprehension and detention (rather than release to supervision at home) as well as the disproportionately higher likelihood that incarcerated juveniles of color will at some point experience the most restrictive forms of confinement.²¹ Moreover, juvenile entry into criminal activities and criminal organizations is almost always stimulated by poverty, isolation and lack of opportunity.

Police are often called into situations for which they are ill-suited, such as people experiencing homelessness, mental health crises, domestic violence and sexual violence. Police bring their enforcement training to situations requiring social work and relationship building.

We are still dealing with who is stopped, who is arrested, who is under scrutiny.... It's people of color, walking or in the car, it does not matter. Drug arrests, drug sentencing, all of it is more harsh against people of color.

— Vivian Jenkins Nelsen, chief executive officer of The INTER-RACE Institute, a Minneapolis-based think tank²²

Criminal activities, including gang-related violence, threaten all Minnesotans by preventing children in gang-ridden areas from activities associated with normal development such as playing outdoors, feeling safe enough at school that academic attainment is possible, and other aspects of optimal child development.

Solutions

Ensuring neighborhood safety as an element of every Minnesotan's quality of life occur through investments in non-police institutions as well as investment in police reforms.

10. Invest in trusted, community-based alternatives to police involvement, including:

- Youth-engagement programs providing outreach to connect youth with mentoring, employment, after-school activities and other programs shown to be effective in changing community norms.²³
- Fully funded and locally provided Transition from Jail to Community programs that assist former felons with post-release employment, housing and counselling services.
- Mental health crisis programs, including mobile psychiatric crisis response teams and re-funding Minnesota's suicide prevention hotline.

LEARNING FROM RACIAL PROFILING: COUPONS INSTEAD OF TICKETS

Instead of writing tickets after stopping drivers for minor equipment problems, officers in about 70 Minnesota police departments now have the discretion to issue \$50 coupons to help car owners pay for repairs at area auto shops.

Several Minnesota newspapers picked up a Washington Post story that chronicled this initiative, which was launched by racial justice advocates and other concerned citizens to improve policing, after too many tragic fatal shootings of African American men by police in recent years. In their aftermath, racial justice advocates documented the grossly disproportionate rate at which people of color are stopped for minor infractions and equipment malfunctions. The “Lights On” program, believed to be the first of its kind in the country, is officially sponsored by Microgrants, a non-profit organization that assists low-income households with small grants, usually for education, small business development or transportation.

This innovative approach is one very small step that addresses both policing reform and a larger and more pervasive problem for low-income Minnesotans and people of color: a system of cascading collateral consequences and penalties, often on top of racial profiling and imposed by both business and government, that compounds the disadvantages of being poor.

The Washington Post article goes on to document other progress here in Minnesota, including a new scholarship fund, local candidates winning elections by advocating for police reform, and an exhibition at the Minneapolis Institute of Art inspired by one victim’s life story.²⁴

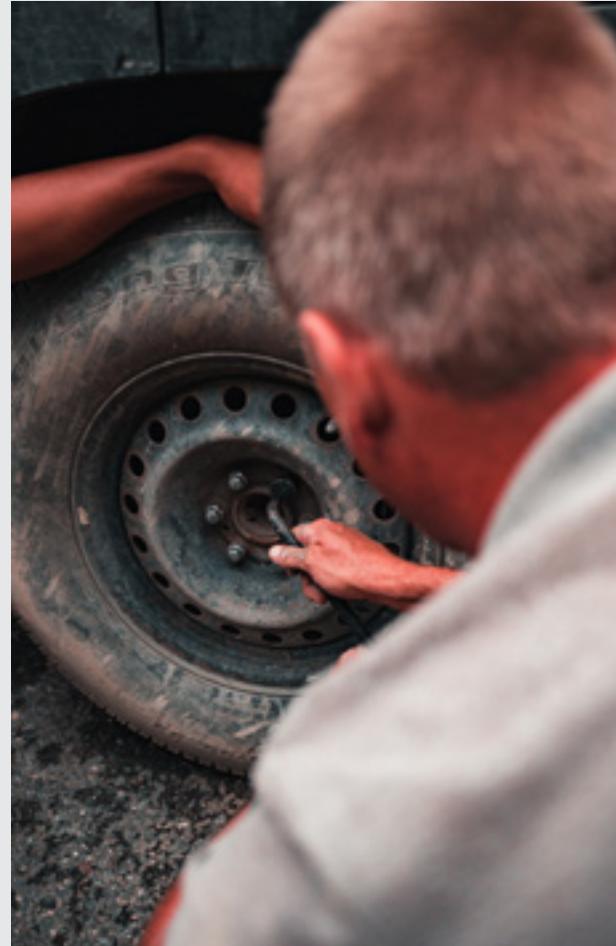


Image: Jairph, Unsplash

- Sexual violence and domestic violence prevention programs, shelters and victim treatment programs, including community outreach.
- Sex trafficking and labor trafficking programs including community outreach.

11. Prevent entry into the juvenile justice system. Young Minnesotans of color are known to be disproportionately likely to interact with police and to be at risk of system entry. Preventing the entry of boys of

color into Minnesota's juvenile justice system is a key way to reduce crime, avoid adult incarceration and reduce personal and community trauma. Examples of policies that serve to prevent system entry include:

- Equitable access to alternatives to juvenile detention.
- Banning the use of solitary confinement for youth.
- Establishing systems that support transparency and accountability to the community.

12. Enact reforms of drug laws and invest in treatment. Community safety will improve as our state pursues comprehensive reforms of drug laws and sentencing policy, including decriminalization of drug use and possession for personal use and greater investments in effective treatment programs.

13. Decriminalize homelessness and the behaviors associated with living in public spaces and invest in affordable housing.

14. Dramatically reduce traffic stops. Eliminate "routine" traffic stops which have long been disproportionately dangerous, and occasionally fatal, for Minnesotans of color. With technology so advanced that it can detect and fine speeding motorists, there are practical alternatives for sending tickets and warnings via post and e-mail for minor violations, such as broken taillights and expired tabs.

15. Reform and improve policing practices. Better policing will result in better police-community relations. Changes that would result in better policing include:

- Better screening and hiring programs.
- Better training to develop police who are community-oriented, skilled in problem solving, and focused on de-escalation (rather than being arrest-driven).
- In addition, the state must create and enforce rules for consistency and transparency regarding how and when body cameras are used and for viewing and releasing body camera footage.

EDUCATIONAL ATTAINMENT

Challenges

As TBDN participants observed, education is a social good which has been associated with a better standard of living since the founding of the United States government. Educational attainment has often been viewed as a signal of an area's potential quality of life. According to the 2017 American Community Survey,²⁵ Minnesota was tied with New Hampshire as having the nation's highest rate of people with high school diplomas or higher (93.1 percent). An upside of having such a well-educated population is found in Minnesota's family and community vibrancy, a highly engaged sense of stewardship over the state's natural and social resources, stable democratic and governing institutions, and economic growth.

Education is at the heart of community and economic development.

— Participant at Upper Sioux Community/
Granite Falls Statewide Convening

The fact is that Minnesota cannot succeed in a global economy if only 60 percent of our students can read or do math at grade level...At a time when talent is in short supply and employers are desperate for workers, we cannot afford to fail 40 percent of our students, many of whom are students of color.'

— Charlie Weaver, executive director of the Minnesota Business Partnership²⁶

However, as the 2017 data also indicate, by disaggregating the data and looking at the high school graduation rates for Minnesotans of color, the state loses its elite status. Minnesota was ranked 48th for the percentage of African American people with a high school degree or higher (81.3 percent) and was tied for 37th in the percentage of Hispanic people with at least a high school degree (66.0 percent). Clearly, Minnesota's children of color do not receive equitable access to quality education.

This racial disparity — in educational opportunity, achievement, and attainment — tracks back in our education pipeline all the way to gestation. Research by Minnesota Compass, a project of the Wilder Foundation, shows that access to prenatal care for mothers of color is 12 to 37 percentage points lower than for white mothers.²⁷ Children from lower-income families, Latino children, and American Indian children have significantly lower rates of kindergarten readiness than white children.²⁸ Further along the pipeline, tests of math and reading proficiency, as well as high-school graduation and post-secondary enrollment rates, show that low-income students and students of color lag far behind their higher-income and white counterparts.²⁹ These education gaps also impact low-income white children, and children living in rural regions. About 20 percent of the population in Minnesota's rural counties holds bachelor's degrees or higher, compared to about 40 percent of the population in Twin Cities and other metropolitan areas.³⁰

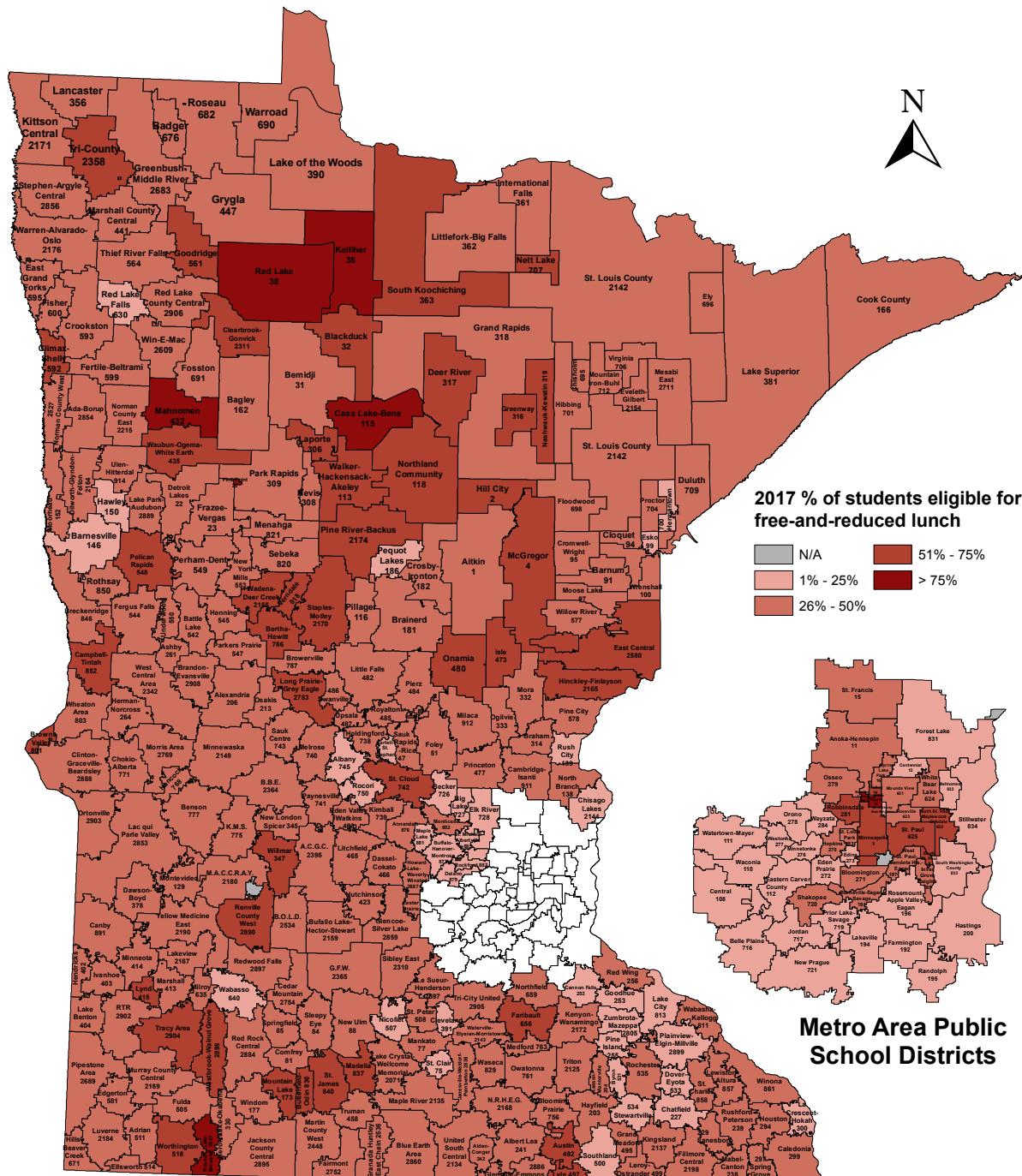
We have so many students hungry, evicted, or who lost daycare and have to drop out of our community college.

— Participant at Inver Hills Community College
Community Conversation



Exhibit 3 uses Minnesota Department of Education data,³¹ to map the level of student uptake of free -and reduced cost lunches by school district. This nutritional support program is often viewed as an indicator of the number of children living in low-income households served within a school district. The map clearly shows that Minnesota's urban core and rural regions are similar in the percentage of children coming to school who qualify for free or subsidized meals.

Exhibit 3. School districts across Minnesota serve children from low income homes.



Solutions

16. Increase investments in general education funding and in new Cradle to Career initiatives. The percentage of the state's total annual income invested in the basic K-12 funding formula by state and local governments has fallen 20 percent and by billions of dollars over the last two decades. Public funding for state colleges and universities has declined as well, while tuition has dramatically increased.

- TBDN supports full funding for special education and increased Cradle to Career appropriations earmarked for educational equity programs. This portfolio would include maximum state and local economic effort and a wide variety of efforts to lift at-risk disadvantaged students in our distressed rural and urban districts, including expanding free or low-cost education services from pre-natal instruction through at least two years of post-secondary education, toward either degrees or skills certification.
- Not all education equity efforts require broad state programs and spending. Local, homegrown, comprehensive and multi-sector Cradle to Career initiatives have been launched in six rural and metro Minnesota communities, which now serve a total of 61,000 students with integrated programming and school support. TBDN stakeholders seek expansion of these types of community-developed solutions through state seed funding.
- More investment is needed in targeted early learning scholarship programs for low-income parents and children as well as universal access to early childhood development services provided through public school systems in regions with the highest need.
- In addition, communities should work to provide more educational options such as year-round school and summer sessions. Minnesota's Advanced Placement and Post-Secondary Enrollment Options programs (which can award college credits before high-school graduation) must have a better on-ramp and stronger recruitment efforts aimed at including more students of color. Post-secondary opportunities for those whose grades and aptitudes do not necessarily offer a good fit for a four-year bachelor's degree must also be made available.



Image: ACasualPenguin, Pixabay

17. Promote Career Pathways. Increase investment in the most effective programs that equip young people for living wage careers in technology, trades and entrepreneurship by:

- Expanding course offerings in high schools that build technology skills and preparation for credentials in skilled trades.
- Establishing entrepreneurship and paid apprenticeship programs in K-12 and community colleges.
- Expanding Career Academy and skills-based education as an alternative to college.
- Expanding post-high school programs designed to link under-employed and under-educated young adults with technical or other higher-ed certificates and credentials for livable-wage jobs and careers. Examples of best practices have been developed by MSP Win³² (Minneapolis St. Paul Regional Workforce Innovation

EARLY COLLEGE CREDITS PUT AALIYAH HODGE ON THE FAST TRACK



Image: Dane Smith

*Aaliyah Hodge, Charter School
Authorizing Coordinator, University of
St. Thomas*

Aaliyah (pronounced ah-LEE-ah) Hodge got her B.A. degree virtually debt-free at the age of 19, when most college students are just getting started, and her master's degree by 21. She bought a home, 11 years earlier than the average age for first home buyers, and currently serves as coordinator for a University of St. Thomas program that evaluates and authorizes charter schools.

Hodge, the daughter of an immigrant from Trinidad, laughs modestly and avows that "I'm definitely not a genius," ruling out any extraordinary IQ as a factor in her phenomenally fast accumulation of academic and professional credentials. Rather, she gives most of the credit to Minnesota's highly regarded but little known system that allows high-school students to earn college credits, and also to her mother's nurturing and tenacity.

Moving from Brooklyn N.Y., to St. Louis Park when she was in the third grade, Aaliyah and her mom discovered excellence, personalized attention and options that simply weren't available in the New York City school system. "Mom put me into as many free things as possible," she says, noting that before coming to Minnesota, she switched schools five times

by the third grade. Without these Minnesota innovations and quality, Hodge says she's not sure where she would be today. "I'd probably be deeper in debt and still short of a master's degree, at least." The key ingredient was the Post-Secondary Enrollment Option Program, an innovation Minnesota pioneered in 1985, allowing students to take college courses that also count for high school graduation requirement, at no cost to them. Other early college credit programs include Advanced Placement, International Baccalaureate and Concurrent Enrollment.

In addition to her other responsibilities, Aaliyah is the president of a new organization, People for PSEO, which is working to dramatically expand and to market the early credit options to low-income students and students of color.

A tote bag on a cabinet in Aaliyah's St. Thomas office says "Dream Big." Her big dream is an audacious vision of a Minnesota where virtually every graduating high-school senior has credits under their belts and a start on post-secondary credentials.

"Without engaging all students in readiness and early attainment, we just won't succeed," she says earnestly. "We can't have a third of our students disenfranchised, lacking in workforce credentials for good careers, and expect to grow our economy and to be great again."

Dreaming big extends to her personal future too, and Aaliyah admits to an ambition to become the U.S. Secretary of Education. At the blazing pace she's on, why not?

Network) in collaboration with employers, higher-ed institutions, and advocates for immigrants and people of color.

- Emphasize program infrastructure and training to advance careers that are in high demand — emphasizing inclusion and equity throughout. This would include careers in such high demand areas as: renewable energy construction and technicians, long-term care workers (for in-home care as well as care facilities) and child-care, with assurances that pay and benefits will provide security and stability.

18. Increase the percentage of teachers who are people of color. Our student body in Minnesota is more than 30 percent non-white, but only 4 percent of our teachers are of color. Research by the national Learning Policy Institute and data from many other sources shows that when students of color have teachers of color, they have higher test scores, are more likely to graduate from high school, and more likely to succeed in college. Students also have fewer unexcused absences and are less likely to be chronically absent. TBDN members strongly recommend aggressive investments and incentives to diversify the teaching ranks. The Coalition to Increase Teachers of Color and American Indian Teachers in Minnesota calls for:

- Scholarships, stipends and loan forgiveness for prospective teachers of color.
- Elimination of discriminatory teacher testing.
- Alternative pathways to credentials.



19. Close the school-to-prison pipeline.

Inequitable application of discipline policies, from early grades through high school, have put too many children of color, and particularly African American boys, on a course that leads them out of school and onto a path towards incarceration and criminal records. Education policies that reform discipline practices must be adopted to disrupt the flow of children from school to prison. This means:

- Banning zero tolerance policies and other exclusionary measures.
- Replacing school resource officers with community-based representatives and elders (to cultivate a climate of care and intergenerational respect in schools).
- Identifying and communicating specific procedures for what must happen before, during, and after a suspension, expulsion, or exclusion, and providing additional K-12 educator training and support.
- Improved data collection and reporting on suspensions, expulsions and other classroom and school removals.

20. Expand “Community Schools”. Minnesota must invest more and offer incentives for districts to create Community Schools, a new breed of “full-service” schools that provide support to children in the context of their families. These “wraparound” services, include:

- Mental health services.
- Navigators for families seeking housing and other resources.

- Child care for parents who are enrolled in school.
- Extended hours for after-school programming.
- Expanded access and eligibility to reduced or free meals in K-12, including during times when school is not in session.
- Access to healthcare services such as clinics, vaccinations, and vision and hearing screenings belong in the community's most shared institution — its schools.



Image: Humphrey-Muleba

21. Two-Generation Strategies: Seizing opportunities to serve and educate parents, while helping children advance developmentally, has been a proven strategy in both site-specific and home-based program models. Minnesota's Early Childhood Family Education programs have a proven track record of bringing parents together to create supportive learning networks while their children are provided with age-appropriate socialization opportunities. Home visiting programs for families with infants and toddlers by health and social service professionals yield beneficial outcomes in terms of family planning and reducing involvement in child protective services.

22. Expand tuition aid programs and support services . Many students need assistance — with everything from tuition and child care to transportation, connection to benefits and housing — to graduate from schools of higher education. Many students arrive with little or no family support. Solutions that move this forward include:

- Increasing the current state investment of \$180 million annually in postsecondary student financial aid is an important tool for helping erase the racial and regional disparities in postsecondary attainment. As of September 2018, schools in almost two dozen states across the nation provide tuition-free access to community college for eligible students.
- Increasing the funds for tuition programs that aid students who, as children, had experienced homelessness or out-of-home placement, are necessary.

HEALTHY PEOPLE AND COMMUNITIES

Challenges

Good health is a hallmark of a high-quality life. Healthy parents are better able to take care of their families. Healthy students perform better. Healthy employees mean that employers end up paying for less sick time and employee turnover. Healthy people are a critical feature of the Minnesota that TBDN participants envision.

The question then becomes "What drives good health?" Research shows that clinical health care access and genetic predisposition account for only 40 percent of all health outcomes.³³ Among the other factors shaping health outcomes which can be addressed through smart policy and community programs are: the physical environment (including air, soil and water quality, as well as housing and transit), social and economic



Image: FatCamera, iStock

factors (such as education, employment, income and interpersonal relationship and neighborhood safety), and individual health behaviors (smoking, drinking, diet, exercise and sexual activity).³⁴

In Minnesota, geography, race and income all play decisive roles in determining who lives in the cleanest and most beneficial physical environments, who has access to good schools, living wage jobs, ample nutrition and public places to play and exercise, and violence free neighborhoods. Aspects of health care relating to economic development and environmental resilience are addressed in other chapters of the Blueprint. The focus on this chapter is on individual and family access to high-quality care and how that's influenced by geography, race and income.

One in three Minnesota counties has fewer than eight doctors per 10,000 residents. Twenty-two percent of Minnesota's Somali immigrants has been screened for colorectal cancer, compared with 70 percent of white residents. African American infants born in Minnesota have a mortality rate that is double that of white babies. Inequities in health outcomes cost Minnesotans over 700 lives and \$2.26 billion annually.³⁵ The economic health of rural hospitals is in a crisis stage, with an epidemic of hospital closings resulting in decreased access for rural residents and a threat to rural economic vitality.³⁶

Low-income people, both urban and rural, are more likely to feel the health effects of multiple other factors, including obesity, smoking/vaping, gun violence and pollution... {and lack of access to} mental health services..., especially among low-income people of color.

— MN Community Measurement, taken from 2017 Health Equity of Care Report³⁷

Access to mental health services is a pressing challenge. One in five Minnesotans experience mental illness annually.³⁸ Both children and elders are often at risk of untreated mental illness. In Minnesota, 13 percent of youth (ages 12-17) reported that in the prior year they had experienced at least 1 major depressive episode.³⁹ People with serious mental illness tend to have a 10 to 25-year shorter lifespan.⁴⁰ And adult mental health services are unevenly available across the state.

Nationally, health policy is in a state of chaos, gravely impacting Minnesotans, and threatening to reverse hard-won gains to the percentage of Minnesotans covered by quality health care. According to the U. S. Census Bureau, the number of Minnesotans without health insurance rose in 2017 for the first time since 2013. Roughly 243,000 Minnesotans lacked health insurance in 2017, an increase of 18,000 from the previous year.⁴¹ People without adequate coverage typically delay treatment until their problems reach crisis stages requiring emergency room care. Affordability is an obvious factor in the rise of the underinsured. Between 2002 and 2016, the annual cost per Minnesotan for commercially-originated insurance increased 228 percent, while inflation was 35 percent during this time.⁴²

“Healthy people make healthy communities and successful businesses.”

— Participant at Upper Sioux Community/Granite Falls Statewide Convening

Solutions

23. Expand affordable access to health care. Attempts to undo the gains in health-care access under the Affordable Care Act and to slash public health investment in general must be resisted. Minnesota's nurses, doctors, hospitals and other providers are in basic agreement on this issue. Policy-makers must also refrain from imposing work requirements for Medicaid, in recognition that health care is fundamentally different from economic programs such as SNAP and MFIP. Launched almost 30 years ago with bipartisan support, Minnesota Care provides low-income working families with high-quality coverage, an important step on Minnesota's path toward universal coverage. Until national universal coverage can be achieved, expansion of Minnesota Care to more middle-income working families remains one of the best options for expanding access and ensuring affordability.

24. Pathways to Universal High-Quality Coverage.

Many Minnesotans favor the idea of “Medicare for All” because they know that enormous economic benefits will accrue from ensuring that all Minnesotans are physically and mentally healthier. TBDN stakeholders direct policy-makers to work toward an eventual goal of high-quality universal coverage under a unified financing system, which will reduce overall health-care costs, even if it must be explored by the state of Minnesota. Simultaneously, all stakeholders in health can help create a new Health Care for All mandate that is community-led, community-centered, and incorporates all aspects of health, life, and environmental sustainability.

25. Expand access to healthy foods. Substantial research shows that many rural and urban Minnesotans lack access to fresh healthy whole foods, especially produce. Many efforts aligned with sustainable agriculture advocates are addressing this problem and these initiatives need to be funded and encouraged. Public officials must maintain and strengthen essential nutrition supports for low-income children, families and individuals through programs such as the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC).

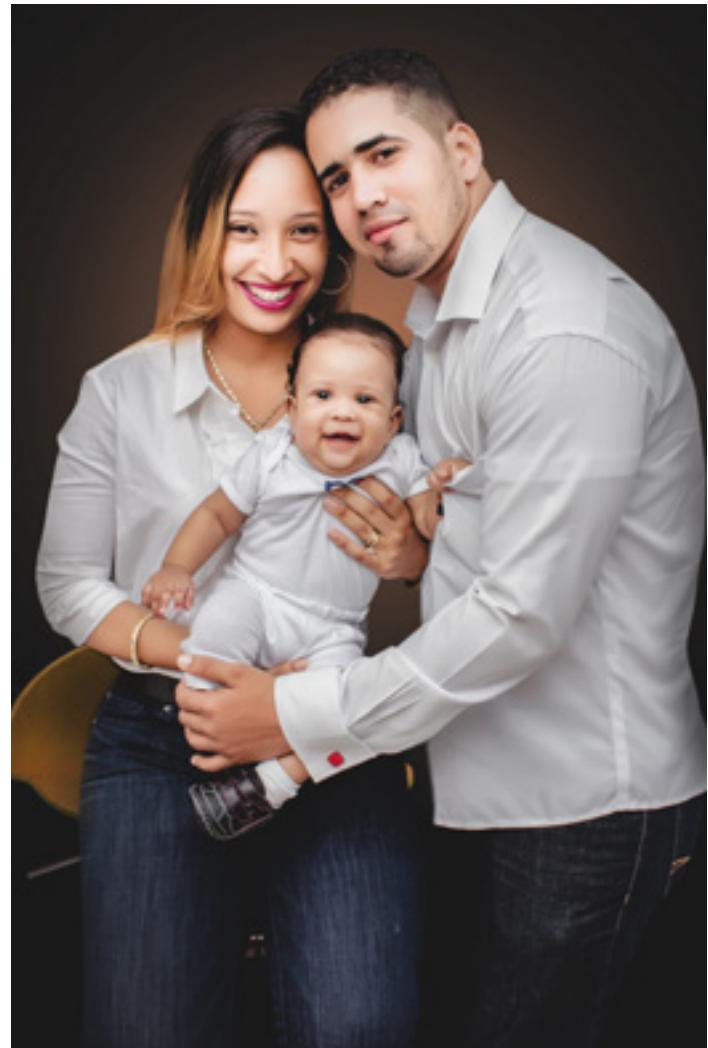


Image: Omar Medina Film

MORRISON COUNTY TAKES CHARGE TO FIGHT OPIOIDS

Monica Rudolph in 2017 was working two jobs in the Morrison County town of Little Falls (pop, 8,071), also stealing money from her parents to pay for her heroin habit. In her mid-20s, she was sliding deeper into an opioid addiction and becoming part of a lethal epidemic that has been a particular scourge in rural Minnesota.

Monica now is not only recovering, but has been trained through a federal program to become a rural peer counselor at CHI/St. Gabriels Family Medical Center in Little Falls. Her road back to health and productivity is one small chapter in a remarkable success story in this Central Minnesota region, which is attracting national attention. The St. Paul Pioneer Press highlighted the story and a national BuzzFeed headline declared “Here’s How One Small Town Beat the Opioid Epidemic.” From BuzzFeed: “(Morrison County) didn’t do anything revolutionary. It just spent real money on basic public health measures: limiting prescription refills, increasing access to addiction medications, and putting drug users in treatment programs instead of jail. In other words, they began treating addiction as a disease instead of a crime... And it worked: Emergency room visits to obtain painkillers dramatically declined within six months after St. Gabriel’s Hospital started monitoring prescriptions. There are now 100 patients on addiction medication at the hospital, and 626 people have been tapered off opioids.”

“My hometown of 8,000 people was one place in the state that picked up the phone,” Monica told BuzzFeed. “Think of all the people like me who don’t have that hometown.”

Observers agree that the opioid scourge, and for that matter, many of Minnesota’s health inequities, require a combination of community initiative and state or federal resources. Inspired by Morrison County’s pioneering effort, the Minnesota Department of Health has launched an Opioid Prevention Pilot Project in seven other communities, including Alexandria, Redwood Falls, Montevideo, Hibbing, Mora, Fergus Falls and the Mille Lacs Band of Ojibwe. These communities are projected to cut pill use by 765,000 pills per year and authorize 21 new providers of medication-assisted treatment.

OVERDOSE DEATH RATES, IN RURAL AND METRO COUNTIES (2012-16)

Deaths per 100K people ages 15-64. Metro Counties in blue, Greater Minnesota counties in red.

	Overdose deaths for all drugs	Overdose Deaths for Opioids
Washington County	12.0	6.3
Hennepin County	17.4	12.2
Ramsey County	20.1	8.5
Polk County	22.9	16.0
St. Louis County	24.4	18.0
Carlton County	26.1	19.3
Cass County	35.6	19.1



Image: St. Paul Pioneer Press

26. Create highly successful racial equity health initiatives. Authorize state agencies and cultural and ethnic leadership councils to propose, implement and evaluate the racial equity impacts of health care policies. Health policies known to reduce disparities include:

- Authorizing alternative medicine (Indigenous practices and nontraditional medicine) in health care coverage and reimbursement.
- Providing more families with immunizations and expanding education related to vaccinations.
- Investing in more preventive care, wellness programs, and community outreach programs such as: WIC, post-partum home visiting programs, community-based immunization program, refugee health and wellness efforts (one example being the programs offered by the Center for Victims of Torture) and integrative and holistic health services.
- Providing additional resources in the Minnesota Department of Health's Center for Health Equity, a clearinghouse of information and activity focused on racial disparities in health.

27. Bolster community-designed health care programs.

In many cases, local community organizations are successfully tackling the most relevant local health care challenges, such as working with families and individuals traumatized by violence and historical exploitation. More funding and support from business, philanthropic and governmental sources will help these trusted organizations plan and produce robust local solutions. The solutions will be more creative and effective when they are designed by, with and for the people most directly affected. Provide state funding for authentic community engagement on public policy decisions about health. Encourage solutions that strengthen and enable community-based and culturally appropriate responses to health care problems, such as low birth weight, substance use disorder and diabetes prevention.



Image: FatCamera, iStock

28. Rural and Greater Minnesota Health Initiatives. More attention to rural Minnesotans is necessary as federal healthcare policy evolves, especially since almost a quarter (24 percent) of non-elderly rural residents are covered by Medicaid.⁴³ Additional solutions for addressing the crisis in rural and small town health services include:

- Medicare reimbursements need to accurately reflect the relatively high costs of delivering service in rural areas.
- Increase infrastructure investment to reduce travel times and expand access in rural regions, providing regular transit and travel arrangements for routine appointments.
- Preserve grants and programs aimed at ensuring the survival of rural hospitals.⁴⁴
- Preserve public health programs that focus on rural health research, emergency preparedness, chronic disease prevention and disease monitoring.

- Increase the number of rural residency training slots for primary and specialty care, including general surgery and obstetrics and gynecology.
- Provide student debt reduction/forgiveness to health care professionals in return for their commitment to practice in underserved communities.
- Expedite H-1B and J-1 visas for foreign-born medical professionals who agree to live and work in underserved communities.

I can't think of a single person who doesn't deserve healthcare.

— Participant at Marshall Community Conversation

29. Expand telehealth. Many rural people need to drive 100 miles or more to reach a hospital or clinic, making a doctor visit a day-long mission. Many elders, persons with disabilities, and lower-income households in urban areas similarly face transportation challenges. Major advances in telehealth, featuring electronic access to every aspect of health care including robotic surgery, can be a crucial solution to address the shrinking availability of physicians, clinics and hospitals in rural areas. Telehealth can be useful in metropolitan areas as well, particularly for disabled patients with limited mobility. Modify current, restrictive reimbursement regulations to authorize telehealth services to both increase access and control costs. Incorporate online mental health and patient monitoring services into a telehealth platform. To provide telehealth services for hard-to-reach communities, fund state and federal programs to establish networks. Translation services and accommodation for cultural diversity must be aligned with telehealth expansion.

30. Improve access to care for vulnerable populations such as elders and people with disabilities by:

- Creating better and more diverse levels of care, with more oversight of elder care abuse.
- Increasing investments and incentives that improve the quality of life in assisted living facilities.
- Improving senior care cultural competence.

31. Address health care workforce shortages. Workers are critically needed for both in-home and institutional settings, and the need will become more urgent. The long-term care worker shortage is emerging just as the Baby Boomer cohort is retiring. Two-thirds of Baby Boomers are likely to need assisted living or in-home care during some period of their later lives. Accelerate recruitment into training programs in technical and community colleges and implement welcoming immigration policies as a tool to fill these vital jobs.

32. Expand access to mental health services. Mental health parity with other forms of health is still an unrealized goal. Regions across Minnesota are still waiting for the child and adult community-based mental health treatment facilities and services that were promised fifty years ago. These facilities and services include:

- Investments in crisis services. The service gap is particularly crucial for individuals experiencing their first psychotic episode (often in adolescence) and individuals in crisis and post-crisis.
- Enforcement of existing regulations, that require private plans to provide mental health services.
- Address payment rate issues which create workforce challenges.

- Investments in recruiting, training and retaining care providers of color and providers who are fluent in the languages spoken by patients will help reduce the disparities in access to mental health services.
- Additional investments in suicide prevention.

33. Prevent and treat opioid addiction. Shifting the policy focus toward health and treatment and away from criminal prosecution is gaining wider acceptance, particularly in Greater Minnesota where the opioid epidemic is significantly worse. Local communities and state health leaders can expand partnerships like the Minnesota Department of Health Opioid Prevention Pilot Project, which is comprehensively focused on reducing pill use, increasing funding for long-term chemical dependency treatment and use of medications to prevent withdrawal symptoms. The existing pilot involves eight communities but could be expanded to dozens more.



Image: Jairph, Unsplash

DEMOCRACY AND CIVIC ENGAGEMENT

The health of a democratic society may be measured by the quality of functions performed by private citizens

— Alexis de Tocqueville, Democracy in America

Challenges

“Nothing about us, without us” has become a persistent refrain among Minnesotans who have been excluded or denied a fair share of the state’s prosperity and economic growth, as well as an equal voice in our democracy and society. The statement strikes at a central problem: too often equity initiatives neglect to include the intended beneficiaries as full partners and stakeholders in the effort. It also speaks to the fact that despite Minnesota’s overall high rankings on civic health, such as voter turnout and volunteerism,⁴⁵ disparities abound in our state’s democratic process.

A glaring example is the disenfranchisement of some 60,000 ex-felons in Minnesota who have served their time but are still on parole or probation and unable to vote for that reason. The impacts on racial disparity from this exclusion are significant. African Americans are 11 times more likely to be incarcerated than whites and similar disparities exist for Native Americans and Latinos.⁴⁶ More than 15 states now enfranchise former felons — those who have returned to their communities, but are still on probation or parole. In 2018, Florida enacted a sweeping re-enfranchisement of this population, through a popular vote referendum. In Maine and Vermont, which are also two of the nation's whitest and least racially diverse states, the right to vote is so valued that even incarcerated persons never lose it.⁴⁷

There is a strong positive correlation between household income and voting.⁴⁸ Furthermore, low levels of voter turnout have been shown to be strongly correlated with higher levels of income inequality.⁴⁹ These problematic links support a spiraling effect, since those who do vote have more influence on public policy. In turn, public policy that consistently favors the already advantaged feeds cynicism and reluctance to vote or get otherwise involved in the democratic process.

Research demonstrates the diverse benefits to individuals (e.g. reduced criminal behavior) and communities (e.g. stronger social bonds) associated with people voting and otherwise being engaged in political life of their communities. When people vote, they are better role models to their children, more connected to the social fabric of the community in which they live, and they are less prone to destructive behavior.⁵⁰

Another challenge is disproportionately low representation by women, Indigenous people, and Minnesotans of color at every level of elected office, from Congress, to the Legislature to city councils and school boards. A similar lack of representation exists on the membership of many governing boards that manage corporations, businesses, and philanthropies and non-profit organizations.

A further complication is chronic under-counting of low-income people, immigrants, and people of color in the decennial U.S. Census. This puts Minnesota at immediate risk of losing one of its eight members of Congress, and it impedes fair distribution within the state of political power and public resources.⁵¹

Yet another concern is that Minnesota's reputation for both clean politics and effective government may be slipping. Reviews on this are mixed. On one hand, Minnesota continues to be rated highly overall by entities such as 24/7 Wall Street, which as recently as 2017 ranked Minnesota's first on a list of "best run states".⁵² Criteria included "economic indicators, budget allocations, and balance sheets, in addition to a range of social measures." On the other hand, the National Center for Public Integrity, using more than a dozen measures of government accountability, recently ranked Minnesota 28th among the states.⁵³ Minnesota received particularly low grades in the areas of public access to government data, accountability mechanisms for all three branches of government and ethics enforcement. Long-standing concerns persist about the impact of wealthy individuals and powerful interest groups on the state's political process, from campaigns and influencing elections to lobbying power in the Legislature and with local governments.⁵⁴



Image: Parker Johnson, Unsplash

TBDN participants consistently voiced confidence that efforts to expand voting, to improve civic participation by marginalized residents, and to reform government processes will produce more equitable outcomes on a broad range of indicators, including expanding human capital to help our economy be thriving and inclusive.

Solutions

34. Expand voter registration and restoration.

Policy-makers should adopt a broad range of franchise-expanding policies, including those recommended in the Minnesota Secretary of State's "Investing in Democracy Agenda."⁵⁵ These include restoration of rights for ex-offenders, automatic voter registration for all eligible citizens who interact with state agencies, and increased funding for election cybersecurity.

TBDN participants also recommended ranked-choice voting engaging younger voters through efforts such as NextVote and allowing 16- and 17-year-olds to vote by 2021 on municipal-level issues.

"So much of this will take much more time to build consensus around. It is important to listen and for others to know they have been heard. Perhaps that is the source of the great divide — it's not listening and not being heard."

— Participant at Upper Sioux Community/
Granite Falls Statewide Convening

35. Increase state support for Complete Count Committees⁵⁶ and for ongoing demographic data collection, analysis and dissemination.

collection, analysis and dissemination. Because a complete census count and timely demographic information is so essential to equity policy, TBDN participants recommend a full-time census operation within the State Demographer's office, to ensure all Minnesotans are counted and connected, while providing more annual real-time data on all regions and jurisdictions.

36. Adopt a non-partisan redistricting system. Although Minnesota is not considered to be a state that is grossly gerrymandered to perpetuate racial or partisan advantage, TBDN participants recommend redistricting reform in which an independent commission, not the Legislature, draws the boundaries. Redistricting that counts incarcerated persons at their address prior to imprisonment also was recommended.

37. Expand civic engagement on a broad front and accelerate inclusive representation with multiple connections to governmental and institutional decision-making. Individuals, businesses, and local groups are encouraged to learn from and adopt policies recommended by groups such as Nexus Community Partners, the League of Women Voters, the Sabo Center for Democracy and Citizenship, Citizens League, and Better Angels. A comprehensive statewide directory of civic involvement groups and associations has been compiled by the Civic Caucus. TBDN members urged innovations such as modest civic engagement vouchers, which could be used to contribute to political parties, campaigns or causes, modeled on Seattle's Democracy Voucher program.⁵⁷

38. Enact campaign finance reforms. Increase public funding of campaigns to reduce reliance on wealthy and special interests. Impose tighter limits on independent expenditures and "soft money." Ensure lower cost media and advertising access, and requirements for more transparency and immediate disclosure. Proposals developed by Common Cause Minnesota, Clean Elections Minnesota, and the League of Women Voters of Minnesota can serve as springboards for reforms.

39. Work toward reforms that embody good government principles and install new safeguards for public integrity. Using the Center for Public Integrity's scorecard as a guide, state and local policy-makers should enact reforms such as increasing public access to government information, making government services (including regulatory agencies) more customer friendly, strengthening ethics enforcement, imposing new restrictions on lobbying after leaving office, and providing better oversight of public employee pension funds.

Endnotes

- 1 International Labour Organization. (September 1, 2004). "Economic security strengthens tolerance and happiness as well as growth and development." Retrieved from https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_005218/lang--en/index.htm
- 2 Institute for Women's Policy Research. (October 2018). "Basic Economic Security in Minnesota: How Much Income Do Working Adults Need?". Retrieved from https://iwpr.org/wp-content/uploads/2018/09/R562_Minnesota.pdf
- 3 *Star Tribune*, (Oct. 26, 2002). clipping from Newspapers.com. Retrieved from https://www.newspapers.com/clip/9331385/star_tribune/
- 4 Cwiek, Sarah. (January 27, 2014). ("The Middle Class Took Off 100 Years Ago ... Thanks to Henry Ford?". *National Public Radio*. Retrieved from <https://www.npr.org/2014/01/27/267145552/the-middle-class-took-off-100-years-ago-thanks-to-henry-ford>
- 5 Wellstone, Paul. (1999). Speech to Sheet Metal Workers Union. Referenced in blog by Gary Cunningham (September 22, 2010). *Star Tribune*. Retrieved from <http://www.startribune.com/we-all-do-better-when-we-all-do-better/103588254/>
- 6 Glasmeier, A.K., *Living Wage Calculator*. Retrieved from <http://livingwage.mit.edu/states/27>
- 7 U.S. Social Security Administration (2018). *Fast Facts & Figures about Social Security*. SSA Publication No. 13-11785. Retrieved from https://www.ssa.gov/policy/docs/chartbooks/fast_facts/2018/fast_facts18.pdf
- 8 AARP Policy Institute (2015). *People Aged 65 and Older Who Rely on Social Security for 90% of Family Income (in 2013) and Average Monthly Benefit (December 2014) by State*. Retrieved from <https://www.aarp.org/ppi/info-2015/people-aged-65-and-older-who-rely-on-social-security-for-90-percent-of-family-income-and-average-monthly-benefit-by-state.html>
- 9 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*, Form S1811. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 10 Minnesota Department of Health, Center for Health Statistics (2014). *White Paper on Income and Health*. Retrieved from <http://www.health.state.mn.us/divs/opa/2014incomeandhealth.pdf>
- 11 Engle, Patrice L., & Black, M.M. (2008). The Effect of Poverty on Child Development and Educational Outcomes. *Annals of the New York Academy of Sciences*. Retrieved from <https://nyaspubs.onlinelibrary.wiley.com/doi/full/10.1196/annals.1425.023>
- 12 Harrel, E., Langton, L., Berzofsky, M., Couzens, L., & Similey-McDonald, H. (2014). *Household Poverty and Nonfatal Violent Victimization, 2008-2012* (Report no. NCJ 248384). Retrieved from U.S. Department of Justice <https://www.bjs.gov/content/pub/pdf/hpnvv0812.pdf>
- 13 A Minnesota Without Poverty. Resource Page. Retrieved from <https://mnwithoutpoverty.org/>
- 14 The AEI/Brookings Working Group On Poverty and Opportunity (2015). *Opportunity, Responsibility and Security; A Consensus Plan for Reducing Poverty and Restoring the American Dream*. Retrieved from <https://www.aei.org/research-products/report/opportunity-responsibility-and-security/> and <https://www.brookings.edu/wp-content/uploads/2016/07/Full-Report.pdf>
- 15 U.S. Department of Labor. Consumer Price Index Inflation Calculator. Retrieved from <https://data.bls.gov/cgi-bin/cpicalc.pl?cost1=100.00&year1=201901&year2=198601>
- 16 Minnesotans for Paid Family & Medical Leave. The Legislation. Retrieved from <http://paidleavemn.org/the-legislation/>
- 17 Kratz, S. (2018). What you need to know about the Secure Choice Program. *AARP New York*. Retrieved from <https://states.aarp.org/need-know-secure-choice-program/>
- 18 Illinois Secure Retirement Savings Program. A New Choice for Retirement Savings. Retrieved from <https://www.ilsecurechoice.com/>
- 19 Montgomery, D. (2016). Data dive: Racial disparities in Minnesota traffic stops. *Twin Cities Pioneer Press*. Retrieved from <https://www.twincities.com/2016/07/08/data-dive-racial-disparities-in-minnesota-traffic-stops/>
- 20 The Institute on Race and Poverty, University of Minnesota Law School (2003). *Minnesota Statewide Racial Profiling Report: All Participating Jurisdictions: Report to the Minnesota Legislature*.

- 21 Minnesota State Department of Public Safety (2012). On the Level: Disproportionate Minority Contact in Minnesota's Juvenile Justice System. Retrieved from https://dps.mn.gov/divisions/ojp/forms-documents/Documents/On%20The%20Level_FINAL.pdf
- 22 Taken from Minnesota Equity Blueprint's Criminal Justice Briefing by Louis Porter III
- 23 Harvell, S., Warnberg, C., Sakala, L., & Hull, C. (2019). Promoting a new direction for youth justice: Strategies to fund a community-based continuum of care and opportunity. Retrieved from <https://www.urban.org/research/publication/promoting-new-direction-youth-justice-strategies-fund-community-based-continuum-care-and-opportunity>
- 24 Simmons, Dan. (July 7, 2018). "Two years after Philando Castile's death, programs aim to transform relations between police, residents," Washington Post. Retrieved from https://www.washingtonpost.com/national/two-years-after-philando-castiles-death-programs-aim-to-transform-relations-between-police-residents/2018/07/06/c65a3a82-7e28-11e8-b0ef-fffcabeff946_story.html
- 25 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*, ACS form Form S1501. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 26 "Deep dive into MN student test scores shows progress not shared by all" Christopher Magan, (September 3, 2018) <https://www.twincities.com/2018/09/03/minnesota-comprehensive-assessments-mca-student-test-scores-achievement-gap-math-reading/>
- 27 Chase, R. (2013). All kids ready for kindergarten: New report card shows income and race disparities threaten reaching goal by 2020. *Minnesota Compass Trends*. Retrieved from <https://www.mncompass.org/trends/insights/2013-12-01-pre-k-income-race-disparities-minnesota>
- 28 Ibid.
- 29 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*, ACS form Form S1501. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 30 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*, ACS form Form S1501. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 31 Minnesota Department of Health. Minnesota Public Health Data Access Portal. Retrieved from <https://mndatamaps.web.health.state.mn.us/interactive/frpl.html>
- 32 Minneapolis St. Paul Regional Workforce Innovation Network. Retrieved from <http://mspwin.org/>
- 33 Artiga, S., & Hinton, E. (2018). Beyond Health Care: the Role of Social Determinants in Promoting Health and Health Equity. Henry J. Kaiser Family Foundation Disparities Policy. Retrieved from <https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>
- 34 University of Wisconsin Population Health Institute (2018). What works for Health: Evidence for Decision Making. Retrieved from <http://whatworksforhealth.wisc.edu/index.php>
- 35 Blue Cross Blue Shield of Minnesota (2018). *The Cost of Health in Equities in Minnesota*. Retrieved from https://www.bluecrossmn.com/healthy/public/portalcomponents/PublicContentServlet?contentId=P11GA_16928228
- 36 National Rural Health Association (2018). Rural hospitals: the beating heart of a local economy. Retrieved from <https://www.ruralhealthweb.org/blogs/ruralhealthvoices/july-2018/rural-hospitals-the-beating-heart-of-a-local-econ>
- 37 2017 Health Equity of Care Report," MN Community Measurement, (January 11, 2018), <https://mncm.org/reports-and-websites/reports-and-data/health-equity-of-care-report/>
- 38 Minnesota Department of Human Services (2017). *Mental Health IS Health*. Retrieved from https://mn.gov/dhs/assets/mental-health-month_tcm1053-291228.pdf
- 39 U. S. Department of Health & Human Services (2017). Minnesota Adolescent Mental Health Facts, data from Centers for Disease Control and Prevention. Retrieved from <https://www.hhs.gov/ash/oah/facts-and-stats/national-and-state-data-sheets/adolescent-mental-health-fact-sheets/minnesota/index.html>

- 40 Minnesota Department of Human Services (2017). *Mental Health IS Health*. Retrieved from https://mn.gov/dhs/assets/mental-health-month_tcm1053-291228.pdf
- 41 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*, ACS Form B27001. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 42 Coolican, P. (2019). Star Tribune Politics Morning Hot Dish, Jan. 22, 2019. *Star Tribune*.
- 43 Foutz, J., Artiga, S., & Garfield, R. (2017). *The Role of Medicaid in Rural America*. Henry J. Kaiser Family Foundation. Retrieved from <https://www.kff.org/medicaid/issue-brief/the-role-of-medicaid-in-rural-america/>
- 44 See two resources: National Rural Health Association. Save Rural Hospitals. Retrieved from <https://www.ruralhealthweb.org/advocate/save-rural-hospitals>; Frakt, A. (2018). A Sense of Alarm as Rural Hospitals Keep Closing. *The New York Times*. Retrieved from <https://www.nytimes.com/2018/10/29/upshot/a-sense-of-alarm-as-rural-hospitals-keep-closing.html>
- 45 Minnesota Compass. Civic Engagement Overview. Wilder Research. Retrieved January 24, 2020 from <https://www.mncompass.org/civic-engagement/overview>
- 46 Mannix, Andy (2016). Minnesota sends minorities to prison at far higher rate than whites. *Star Tribune*. April 14, 2016. Retrieved from <http://www.startribune.com/minnesota-sends-minorities-to-prison-at-far-higher-rates-than-whites/374543811/?refresh=true>
- 47 National Conference of State Legislatures. (October 14, 2019). Felon Voting Rights. Retrieved from <https://www.ncsl.org/research/elections-and-campaigns/felon-voting-rights.aspx>
- 48 Akee, Randall. (February 7, 2019). Voting and Income. *EconoFact Network*. Retrieved from <https://econofact.org/voting-and-income>
- 49 Mahler, Vincent (March 2008). Electoral turnout and income redistribution by the state: A cross-national analysis of the developed democracies. *European Journal of Political Research*. Wiley. 47 (2):161-183. Retrieved from <https://econofact.org/voting-and-income>
- 50 ACLU Minnesota. Voting Rights Restoration. Retrieved January 24, 2020 from <https://www.aclu-mn.org/en/campaigns/voting-rights-restoration>
- 51 Urban Institute. (June 4, 2019) 2020 Census: Who's at Risk of Being Miscounted. Retrieved January 24, 2020 from <http://apps.urban.org/features/2020-census/>
- 52 Stebbins, Samuel and Evan Comen (December 12, 2017). Best and Worst Run States in America, *USA Today*. Retrieved from <https://www.usatoday.com/story/money/2017/12/07/best-and-worst-run-states-america-which-one-top-rated/926586001/>
- 53 The Center for Public Integrity (November 12, 2015). Minnesota Gets D-minus Grade in Integrity Investigation. Retrieved from <https://publicintegrity.org/politics/state-politics/state-integrity-investigation/minnesota-gets-d-grade-in-2015-state-integrity-investigation/>
- 54 Jacobs, Lawrence R. and Kathryn Pearson (2018). Minnesota, we've got a campaign finance problem, *Star Tribune*. Nov. 6, 2018, Retrieved from <http://www.startribune.com/minnesota-weve-got-a-campaign-finance-problem/499876381/>
- 55 Office of the Minnesota Secretary of State. (January 3, 2019). Secretary Simon Announces 'Investing in Democracy' Agenda. Retrieved from <https://www.sos.state.mn.us/about-the-office/news-room/secretary-simon-announces-investing-in-democracy-agenda/>
- 56 Complete Count Committees (June 7, 2018). Everyone Counts in Minnesota: What you need to know for the 2020 Census. Retrieved from https://mn.gov/admin/assets/CCC%20workbook_6-7-18a_tcm36-341880.pdf
- 57 City of Seattle website. Democracy Voucher Program. Retrieved January 24, 2020 from <https://www.seattle.gov/democracyvoucher>



ECONOMIC DEVELOPMENT

Image: skeeze, Pixabay

Thriving by Design Network's Problem Statement: Minnesota's economic vitality is immediately threatened by falling numbers of small businesses, a shortage of skilled workers and insufficient access to high quality and affordable child care. Lack of access to business capital and burdensome regulatory arrangements suppress small business survival and entrepreneurial activity. Long-standing barriers to workforce participation disproportionately exclude people of color, Indigenous people, rural people, immigrants and refugees and former felons. Without access to convenient, reliable child care, Minnesota's working parents are unable to advance their careers.

Minnesota has long been known as a great place to do business, perennially scoring high on most national rankings of quality of life, business profitability, innovation, and attractiveness to employers and employees.¹ A record-low unemployment rate and high median income advance a portrait of a growing and dynamic economic ecosystem. Minnesota continues to benefit from a multi-sectored economy, stronger than average in agriculture and agribusiness, biotechnology, healthcare, and financial service sectors.

With some important exceptions, Minnesota's general economic conditions have recovered from the Great Recession of 2008. In 2009, the state's unemployment rate was 8 percent and 235,000 people were unemployed. As of April 2019, the state's seasonally adjusted unemployment rate had dropped to 3.3 percent, or 100,533 people.² Median household income and annual earnings for all of Minnesota's workers exceed national figures.

However, economic liabilities abound, and Minnesota faces significant challenges if it is to sustain its success. Lack of opportunity and cultural amenities has rendered some rural and urban regions less attractive to younger workers, workers supporting families and newcomers. Even as Minnesota's racial and ethnic diversity increases, racial disparities in educational attainment and access to workforce credentialing are fueling the state's workforce shortage, already shaped by an aging white population. Small businesses and entrepreneurs, particularly when led by businesspeople of color, have limited access to the capital needed to survive. Additionally, regulatory burdens discourage small business start-ups.

Minnesota's farmers, a critical part of the state's economy and cultural roots, are facing another "Farm Crisis" due to a trifecta of climate change-related weather disasters, negative impacts of U.S. tariff policies, and low commodities prices.

On the employee side of the prosperity equation, there is a shortage of skilled labor which will continue to constrain economic growth until previously excluded populations are helped to become "workforce ready." An expanded skilled workforce can be achieved by connecting lower skilled workers with training and by recruiting new workforce participants from among former felons and immigrants and refugees. Affordable, reliable child care is a necessary ingredient for both business development and workforce participation.

This chapter describes some of Minnesota's most accessible challenges to economic growth and some of the solutions which can be leveraged by state and local governments, as well as through the work of individual communities themselves.

This chapter covers major issues related to both business growth and workforce readiness and equity. The solutions recommended after each set of challenges come from the wide variety of sources that make up the Thriving by Design Network's (TBDN) stakeholders. Throughout this chapter, story boxes illustrate community-based solutions that have successfully addressed an important regional challenge.

Please note that while there are many moral and justice-related reasons for eliminating disparities and creating equity, the language in this chapter emphasizes the economic imperative that points to the same objective. Minnesota's racial and regional disparities have a profound negative impact on economic and business growth.

While unemployment rates among African American and Native American Minnesotans have declined over the past decade, as Exhibit 1 shows, they are still three to five times the unemployment rate for white Minnesotans.

Exhibit 1. Employment rates improving for people of color, but income and poverty disparities are still too wide³

Population group	Percent employed (among all persons 16+)	Unemployment rate (among ages 16+ in the labor force)	Median household income (regardless of size)	Percent of people in poverty (all ages)	Percent of children in poverty (ages 0-17)
All Minnesotans	67%	4%	\$68,400	10%	12%
American Indian	49%	15%	\$36,900	29%	31%
Asian	67%	4%	\$74,800	12%	13%
African American	66%	8%	\$38,100	28%	36%
Hispanic (of any race)	72%	5%	\$50,900	19%	24%
White, non- Hispanic	67%	3%	\$71,900	7%	6%

In order for rural Minnesota to succeed, there needs to be a strong, collective, and credible voice that can create and move forward an economic agenda at the local, state, and federal levels.... Regional Development Organizations are committed to providing that collective leadership for rural Minnesota.

— DevelopMN

Furthermore, rising employment alone does not correct income inequities. Exhibit 1 shows that, despite reduced race-based gaps in unemployment, living in poverty continues to afflict American Indian and African American Minnesotans at rates that are about four times the poverty rate for white, non-Hispanic households. Most importantly, Exhibit 1 shows that the poverty rate for African American children is six times the white rate, the poverty rate among Native American children is over five times the white rate, and the poverty rate for Hispanic children is four times the white rate.

If Minnesota's economy is to continue to grow, the entire state must work together to support the economic and social enrichment of people of color (including new immigrants and refugees), who are projected to be a principle source of the state's future population and workforce growth. The state must also alter laws, policies, and regulations that impede the return to employment for people with felony histories, a population that is disproportionately people of color, and especially African American and Indigenous people. Furthermore, these initiatives will not be effective unless they are linked with other objectives, such as increasing income mobility, creating a cleaner, more climate resilient environment, and encouraging civic participation.

MADO and DevelopMN Provide a Practical and Inclusive Guidebook

Minnesota's 10 regional development organizations (RDOs) have their origins in federal legislation in 1969, which created a national system of local economic development agencies to provide coordination and technical assistance to local employers and governments. After 50 years, Minnesota's RDOs have proven resilient and adaptable. They provide a strong and unified voice for a sustainable and equitable approach to economic development in Greater Minnesota.

The day-to-day work of each RDO reflects the dramatic differences between Minnesota's four diverse biomes and the economies they sustain, from forestry and mining in the northeast to farm commodities and agriculture processing plants in the southwest. Amid growing awareness of common community needs uniting all regions, the Minnesota Association of Development Organizations (MADO) in 2016 produced "DevelopMN, a comprehensive development strategy that has application for all of Greater Minnesota⁴." Few source documents have been more helpful to the Thriving by Design Network and The Minnesota Equity Blueprint than DevelopMN.

In a Star Tribune commentary focusing on some of the innovative initiatives by RDOs, Cheryal Hills of Region Five Development Commission and Growth & Justice Senior Fellow Dane Smith noted that "the regional strategies that have evolved in recent years involve a more holistic, creative, and community-centered approach to economic development."

The DevelopMN framework is a comprehensive approach, pinpointing 17 goals and 58 strategies for economic growth and community vitality. These goals aim to encourage local businesses, while developing and maintaining a welcoming and attractive environment for all Minnesotans.

SMALL BUSINESS AND ENTREPRENEURS

Vulnerabilities to Minnesota's business growth include insufficient nurturing of small businesses and entrepreneurs, threats to Minnesota's agricultural sector, and inadequate investment in placemaking outside of the Twin Cities. The state's low impact in supporting the success and drive of small business owners from communities of color is especially problematic.

Minnesota's entrepreneurs of color employ more employees than the Mayo Clinic. These businesses are providing employment opportunities for individuals to become gainfully employed and in the future become entrepreneurs themselves.

— Minnesota Department of Human Rights⁵



Image: skeeze, Pixabay

Despite the fact that between 2007 and 2012, businesses owned by people of color out-performed the state's average rates in terms of new business formations, job growth, payroll growth, and sales growth,⁶ the potential economic contributions of entrepreneurs of color and businesses owned by people of color, have not been fully tapped.

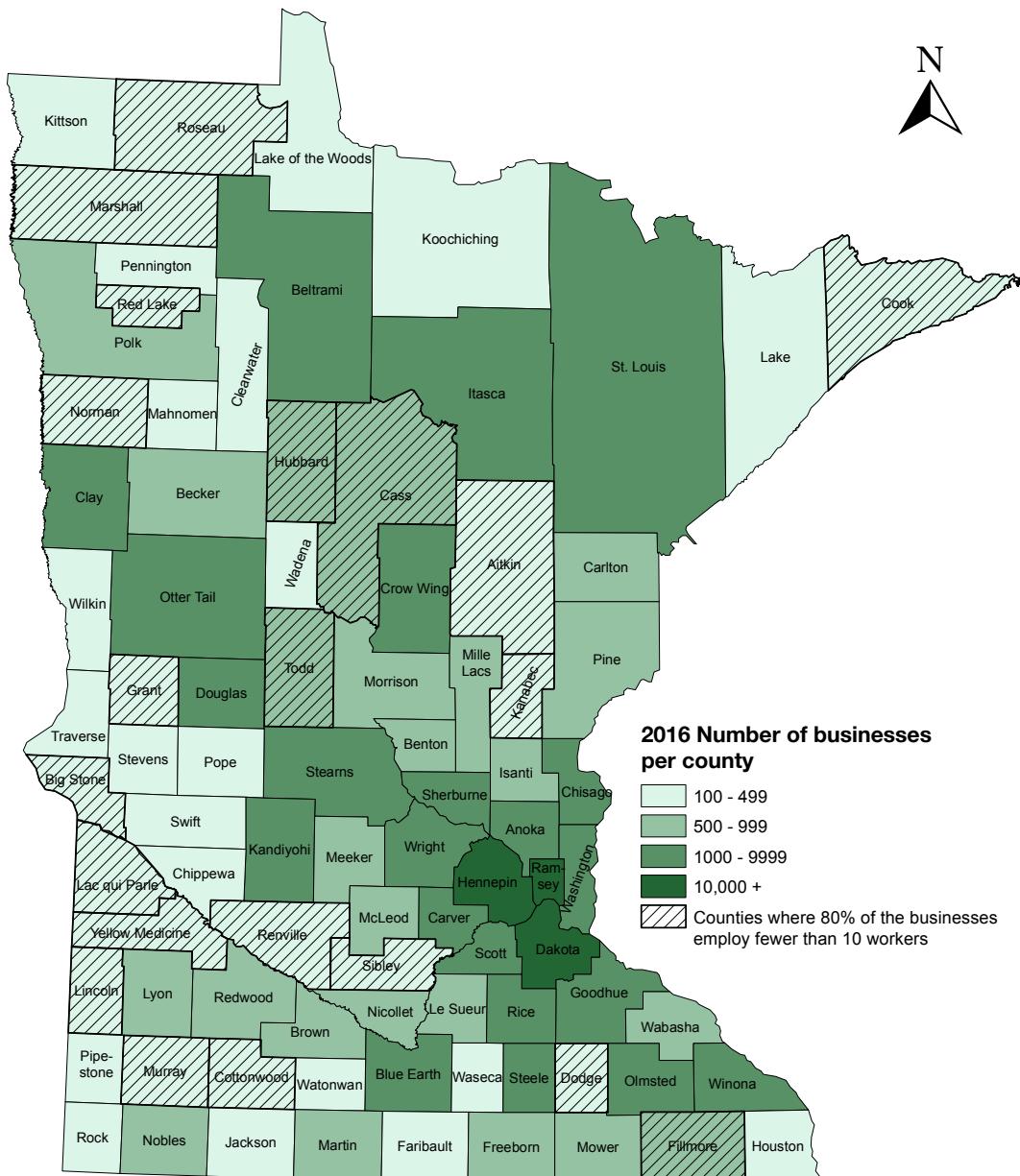
Yet another vulnerability stems from the lack of diverse perspectives usually included in shaping business-related policy decisions. By relying primarily on the perspectives of non-Hispanic white business owners, Twin Cities urban business interests and a select number of the state's largest firms, Minnesota continues to leave money on the table. By including more small business voices and more entrepreneurs of color in the state's economic policy development, greater growth and more shared prosperity will result.

To create increased and equitably shared economic prosperity, Minnesota needs a boost in the number of new and small businesses (especially businesses owned by people of color), improved stability for farms and farming communities, and focused investment in arts and placemaking programs, especially in Greater Minnesota and communities of color. Inclusive business development means better outcomes for people of color and among Greater Minnesotans. Inclusion is good for business.

Challenges

More than 94 percent of businesses in Minnesota are officially classified as small, meaning they employ fewer than 50 employees. There are also almost 400,000 non-employer businesses (where individuals are self-employed).⁷ Exhibit 2 shows the distribution of Minnesota's business establishments, with cross-hatched highlighting on those counties where more than 80 percent of all establishments are very small businesses, employing fewer than 10 employees.

Exhibit 2. Counties in Greater Minnesota are more reliant on very small businesses.



Source: U.S. Census Bureau

Created June, 2019

Self-employed people and very small businesses are particularly critical to the regional economies in some parts of Greater Minnesota, because in aggregate, they employ the most workers. They also represent enough diversity in industry sector to protect the local economics from risks associated with overreliance on one industry.

Entrepreneurs of color are an untapped resource for Minnesota and will drive the future growth of the state.

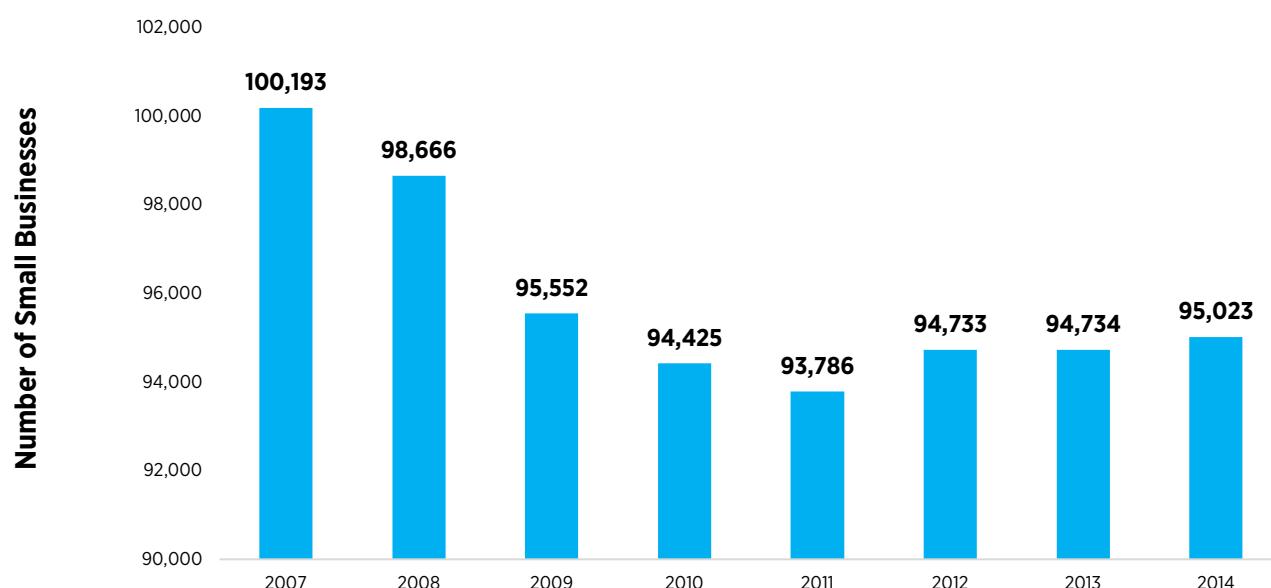
— Minnesota Department of Human Rights⁹

Except for businesses founded by entrepreneurs of color, small business start-ups have been on a long-term decline, although it appears to have plateaued over the last couple years. Had Minnesota's 2014 startup rate been as high as it was in 1977, the state would have over 8,600 additional firms.⁸

The decrease in new startups is particularly notable in Greater Minnesota. In 1977, new businesses in the Twin Cities accounted for approximately 52 percent of all Minnesota startups, but by 2014, Twin Cities startups had grown to roughly 70 percent of the entire state. Greater Minnesota's small businesses accounted for fewer employees in 2014 than they did in 1995.¹⁰

Associated with the long-term decline of entrepreneurship is a drop in the number of existing small and medium-sized businesses. As Exhibit 3 shows, the 2008–2012 financial crisis reduced the ranks of Minnesota's small and medium-sized businesses (businesses with fewer than 100 employees) by over 6,400 firms. By 2014, the state still had 5,170 fewer small and medium-sized firms than before the recession.

Exhibit 3. The total number of Minnesota's small and medium-sized businesses has not recovered since the Great Recession¹¹



Source: Business Dynamics Statistics

Why is this decline taking place? Several factors feed into this general decrease in small and medium-sized business vitality. First, Minnesota's smaller businesses have limited access to capital. Businesses of all sizes rely upon capital which is obtained via personal assets, the sale of equity or bonds, venture capital investments or loans. However, unlike large corporations, smaller businesses do not have ready access to equity and bond markets. In 2017, only 48 Minnesota companies received venture capital investment, of which one firm received a third of the total amount.¹² This means that smaller businesses are reliant on either bank lending or the personal assets/savings of the company owner.

Recent consolidation in the banking industry has resulted in fewer opportunities for smaller businesses to obtain bank loans. According to the American Bankers Association, Minnesota had 448 distinct banking institutions in 2006. By 2018, Minnesota had 293 such institutions.¹³ According to data from the Federal Deposit Insurance Corporation (FDIC), U.S. Bank and Wells Fargo Bank each had about 31 percent share of the entire Minnesota banking market. The next highest market share belonged to Bremer Bank, with 3.5 percent of the state's market share.¹⁴

The concentration of banking services has had very negative implications for Minnesota's small business lending. Small businesses tend to turn to local banks, where the entrepreneur is more likely to already have a relationship with, or at least a reputation known by, the potential lender. National retail banks tend not to have as many of those relationships, which makes obtaining a loan much more difficult. Data from the 2017 Federal Reserve's

Small Business Credit Survey shows that 72 percent of Minnesota small businesses had applied for a loan or line of credit from a small bank (instead of a large bank, an online lender, a credit union or a community development financial institution).¹⁵ Community banks are responsible for around 40 percent of lending to small businesses.¹⁶

Entrepreneurs and small business owners of color face the greatest barriers to accessing capital.¹⁷ The national loan denial rate for African American business owners is two and a half times the loan denial rate for white business owners.¹⁸ This disparity is especially disconcerting because Minnesota's businesses founded by entrepreneurs of color exhibit several relative strengths when compared with firms founded by non-Hispanic whites, including higher rates of growth in start-ups, gross receipts, number of employees, and total annual payroll.¹⁹

Many small businesses also struggle to provide the benefits upon which all Minnesotans rely. One in four entrepreneurs recently surveyed said that affordable access to health care for themselves, and their future employees, critically influenced their decision to start their own business.²⁰ The percentage of Minnesota workers at businesses with fewer than 50 employees, with access to employer-provided healthcare, dipped from nearly 37 percent in 2013 to 33 percent in 2017.²¹

Employee retirement plans are also a concern. According to AARP, significantly more workers (59 percent) at small and medium-sized Minnesota businesses lack access to an employer-provided retirement plan than at larger businesses (29 percent).²²

Employees at smaller businesses are also less likely to have paid sick leave, according to the U.S. Bureau of Labor Statistics. Nationally, 62 percent of small business employees have access to sick time benefits, compared with the nearly 90 percent of workers at large companies.²³

Regulatory requirements can be costly for new and small businesses. Although federal, state and local regulations are often needed to foster a more equitably prosperous, safe, and clean economy, regulatory start-up costs can be unnecessarily burdensome for small businesses and entrepreneurs. According to a 2017 survey by the National Small Business Association, the average small business owner spends at least \$12,000 each year on regulations.²⁴ Minnesota Gov. Tim Walz has captured the spirit of this attitude for his administration by frequently referring to the need for "regulatory humility."²⁵

Often, only a commonsense solution is needed. Minnesota, for example, shortened the time it takes to get a contractor license from six weeks to two weeks. One reform that improved efficiency was letting staff call the applicant to ask questions about the application instead of requiring communication by mail.

— Pew National Trust²⁶



Image: Marius Ciocirlan, Unsplash

Occupational licensing requirements are becoming increasingly common. However, studies show that in some cases, the occupational licensing required does little to protect consumers or improve public health, and

instead serves to create barriers to entry, hampering entrepreneurship, particularly among those in low-income occupations.²⁷ Among potential entrepreneurs with felony backgrounds, the barriers to obtaining many licenses or credentials (for example in pest control, being a dental assistant, or serving vulnerable people such as children, elderly, adults with special needs) are often unnecessarily punitive.

As of this writing, new business startups and the survival of smaller businesses are also disproportionately challenged by Minnesota's intense competition for a limited supply of trained workers. As of the fourth quarter of 2018, Minnesota businesses were facing tight labor markets, with about 5 percent of all jobs going unfilled.²⁸ Once again, job vacancy rates were highest among Minnesota firms employing fewer than 50 employees.²⁹

Solutions

There are many routes to improving Minnesota's entrepreneurial and small business climate. A dedicated focus on racial and regional equity must be front and center throughout the work. Some of the solutions recommended by TBDN stakeholders are:

1. Focus on the success of entrepreneurs and small business owners of color.

- Improve access to properly structured credit for entrepreneurs of color, including expanded support for the Minnesota Emerging Entrepreneur Loan Program, a business loan program focusing on underserved entrepreneurs.
- Support the creation of additional equity programs for businesses owned by people of color. Monitor the effectiveness of the Minnesota Innovation Loans for Entrepreneurs Program, especially in terms of the support provided to businesses of color. Evaluate the effectiveness in the MN Innovation Voucher Award program in reaching entrepreneurs of color.
- Appropriate addition of funds for the Minnesota Small Business Investment Tax Credit program, focusing larger portions of this "angel investment" tax credit to investors in firms owned by people of color.

Entrepreneurship is a pathway to creating wealth, to supporting community revitalization and to ensuring equity and inclusion.

— Granite Falls participant in Thriving By Design conference

2. Expand access to capital for entrepreneurs and small businesses.

- Consider establishing a publicly owned bank. The Bank of North Dakota has operated for a century, using state deposits to partner with community banks and credit unions, as they make loans to college students, farmers, and small businesses.³⁰ As a result, North Dakota has considerably more locally owned financial institutions per person than the rest of the country.³¹ These banks have long outpaced larger financial institutions in small business lending.³² Similar efforts to establish public banks are underway in California, District of Columbia, New Jersey, New Mexico, and Washington State.³³
- Support existing community banks. The State of Minnesota should channel its government deposits to community banks and credit unions instead of the national banks. Currently, Minnesota's various state accounts are deposited with U.S. Bank, as are many school district deposits. A 2013 legislatively-required pilot program allowed several Minnesota State Colleges and Universities (Minnesota State) colleges to shift some of their reserve deposits from the state's general fund to community banks,³⁴ where on average they received higher interest rates while giving local financial institutions the ability to originate more small business loans.

- Leverage Public Procurement. Expand access to capital by fully enforcing MN Statute 16C.16, which calls for 25 percent of all public spending to be allocated to small and targeted businesses with a preference for those owned by women and people of color. Expand this requirement to all state government agencies, the University of Minnesota and the Minnesota State system. Support initiatives aimed at expanding procurement relationships between large “anchor” institutions (hospitals, corporations, colleges, and universities) and small targeted businesses.

3. Relieve regulatory burdens through greater efficiency.

- Rationalize state and local government regulations and improve interagency coordination for greater efficiency and more positive outcomes. Use simple-to-understand language and automated compliance filings whenever possible. Allowing registrations to happen online instead of via mail can save money for small businesses and taxpayer dollars for agency staff hours.
- Target regulatory enforcement resources towards establishments posing the greatest risk. Compliance investigations within a regulated industry should prioritize firms that pose the greatest risk to health and safety.
- Shift focus and attitude from enforcement (identifying and punishing violators), toward partnering. Best practices include providing a single point of contact online with the many needed forms from different state agencies and easy-to-find phone numbers that are answered by assistance teams offering free and customized assistance. Agencies should be pro-active and call businesses to help them stay in compliance.
- Re-examine occupational licensing restrictions. Short of eliminating all occupational licenses, policymakers should examine opportunities for reciprocity agreements with other states, reducing fees and training requirements, and foregoing licensure to encourage innovation, entrepreneurship, and workforce participation where it makes sense.



Image: rawpixel, Pixabay

4. Expand worker’s benefits, which also helps small business owners.

- More portable benefits — benefits that workers can take with them as they change employers — make it attractive for entrepreneurs to take the initial leap to start their own businesses, as well as help strengthen working families, and make small businesses and young firms more attractive to talented workers.
- Increase competition on the individual health insurance market by allowing individuals to buy into the MinnesotaCare program.
- Join the seven states that require paid family leave by establishing an insurance program like that in the State of Washington’s,³⁵ which spreads the costs of such benefits across companies of all sizes.
- Leverage state investments to create a Secure Choice Retirement Plan³⁶ (see Illinois’s model³⁷) providing all workers with access to a portable retirement savings vehicle.

5. Invest in the technology and public infrastructure needed for a successful business environment, particularly in Greater Minnesota.

- Continue to support the capacity of the MN Public Finance Authority, which packages local bonding initiatives to finance improvements in wastewater, drinking water, and transportation infrastructure especially for smaller and rural communities.
- Increase the funds available to the MN Office of Broadband Development for business and community outreach. Provide more funds for the Border-to-Border Broadband Development Grant Program to improve the business climate in areas where high speed access is not yet available or affordable.

AGRICULTURE

Challenges



Image: storkalex, iStock

farms viable and support their families. U.S. tariffs are an added threat to the low commodity prices, regulatory uncertainty, and climate change that are already at work eroding farm profitability and productivity. With tariffs restricting access to some major international markets, domestic markets for farm products (including biofuels) become even more critical.

Across the U.S., 2019 adjusted net farm income is expected to fall to a level that is at least 49 percent below its 2013 peak, according to the United States Department of Agriculture.⁴⁰ In Minnesota, net median income for all crop growers dropped by half between 2016 and 2017, despite near-record yields, according to University of Minnesota Extension Division. Additionally, nearly half of Minnesota farms did not generate enough income to meet their debt commitments in 2016.⁴¹ Small and mid-sized dairy farmers are facing extreme pressure, since milk is currently selling below the cost of production and many processors favor larger dairies, where greater quantities of milk can be picked up at one time.

Farming is one of Minnesota's most troubled business sectors. Every Minnesotan is exposed to the strengths and weaknesses of the state's agricultural sector.

Farming and farm products have been a foundation of Minnesota's economy since before statehood. Today, agricultural production and processing in Minnesota accounts for \$57.5 billion in sales and more than 147,000 jobs. Agriculture is Minnesota's leading export industry, accounting for one-third of the state's total product exports. Slightly more than half of Minnesota's land mass (51 percent or 26 million acres) is farmland.³⁸

Like farmers across the country, Minnesota's farmers are finding it increasingly difficult to keep their

On top of already low prices, the agriculture sector has seen immediate negative impacts as a result of retaliatory trade actions. As time goes on without resolution, the concern of losing long-term market access only grows.

— U.S. Senator Pat Roberts, R-Kan, Chairman of the Senate Committee on Agriculture, Nutrition and Forestry, 2018³⁹

currents selling below the cost of production and many processors favor larger dairies, where greater quantities of milk can be picked up at one time.



Image: Pixabay

Farm consolidation (fewer but larger farms) is a challenge for the farm economy and community vitality. In 1978, there were just under 100,000 farms in Minnesota. In 2017 there were 73,200. Low prices put enormous pressure on farmers to produce more, which usually requires operating more acres. At the same time, overproduction drives prices down. Farm equipment and buying or renting land is very expensive. This makes it extremely challenging for new farmers to begin farming, while it further incentivizes farmers to expand in order to stay in operation. These challenges make it difficult for farmers of all scales to make a living but put extra pressure on small and mid-scale farmers who are competing with larger farms that can produce at greater economies of scale.

We must ensure access to land for new and beginning farmers, for immigrant farmers.

— TBDN Granite Falls Participant

Another concern for Minnesota farmers is land tenure and racial disparities. Of the almost 75,000 “principal operators” (federally identified leads of a farming enterprise), 91 percent were men and 90 percent were white. The average age of principal farm operators in Minnesota is 56 years old.⁴² As farmers retire or look to pass on their farms, there should be more opportunities for new farmers to own and work their own land, especially farmers of color and immigrant farmers.

Solutions

TBDN stakeholders seek to strengthen Minnesota’s farm economy and expand equitable access to farming as a way of life, maintaining a sensible balance between climate action, equity, and current economic reality, including the benefits and threats Minnesota farmers face through national trade and renewable fuel policies.⁴³

6. Create policies and programs to protect and strengthen small and medium sized farms, similar to Vermont’s Farm to Plate statewide food system plan aimed at improving quality and access to healthy local food. This includes opening a MinnesotaCare buy-in option to all farmers.

7. Strengthen programs that build bridges between rural and urban communities, such as Minnesota's Farm to School program which connects farms seeking to sell healthy foods to school district nutrition programs. Additional programs, such as exchange opportunities and widely attended gatherings that bring urban children and adults into relationships with rural people, rural life and rural activities are sorely needed.

8. Establish policies and programs that assist people seeking to become farmers, by:

- Targeting support towards immigrants and refugees who seek farming and farm ownership.
- Using tax incentives to assist new farmers, including beginning farmer tax credit from the Minnesota Department of Agriculture and tax rate reductions for agricultural property, and credits to assist farmers who convert land to water-quality buffers or no-till crops.

9. Foster, incentivize and support new markets for Minnesota's agricultural products for farmers seeking to transition or diversify what they're growing, as well as farmers suffering due to international tariffs.

10. Add to financial incentives rewarding natural carbon capture farming practices. Making climate action profitable for farmers can be achieved through:

- Support for the University of Minnesota's Forever Green initiative for perennial vegetation.
- Increased funding for conservation and water quality protection programs like Minnesota Agricultural Water Quality Certification Program.⁴⁴
- Assistance for producers in the transition to systems that keep the land in sod and perennial vegetation.

PLACEMAKING

We want sustainable main streets using the arts for revitalization and cultural sharing.

— Granite Falls Participant

Challenges

Since Minnesotans overwhelmingly voted for the *Clear Water, Land and Legacy Amendment* in 2008,⁴⁵ state investment in the outdoors, arts and culture has been bringing benefits to communities across the state. Today, Minnesota ranks first in the nation for state investment in the arts.⁴⁶ Many studies show that arts and cultural assets, in their many forms, contribute to economic development, community



Image: Jessica Gorman

building, cultural understanding, and racial equity. But are these investments shared fairly across the state?

Among the most challenging placemaking realities is the disparity between metropolitan and rural areas in arts and cultural amenities. Evidence is overwhelming that Minnesota's overall investment in arts and amenities have favored the Twin Cities, posing a further competitive disadvantage to the small towns and less densely populated areas in Greater Minnesota.

Racial disparities in placemaking investments are a significant challenge as well. Cultural and placemaking investments have historically favored white artists, European culture, and affluent institutions and places.



Image: Jessica Gorman

Artists of color find themselves more often in situations where they need 'proof' of the value of their art to funders and foundations who do not understand the cultural characteristics embedded in their crafts.... Encouragement of placemaking that's more inclusive and reflective of Minnesota's fast-growing diversity can't be over-emphasized.

— Sue Gens, Minnesota Arts Board.⁴⁷



Image: Leah Kelley, Pexels

PLACEMAKERS MAKING CAPTIVATING PUBLIC SPACES: FROM FOOD HUBS TO ARTS CRAWLS TO MUSEUMS



In Little Falls, creative folks concerned about both a lack of cultural amenities and access to healthier local food created Sprout,⁴⁸ a food hub and multi-purpose marketplace. Among its myriad activities is staging an annual production called “Minced,” a localized version of the TV cooking show “Chopped” featuring the best chefs in north-central Minnesota.

In Wabasha, the National Eagle Center, a destination that already draws thousands of visitors every year from across the country, is poised to expand into an even grander attraction, with an addition that will include more than 20,000 items of fine art, artifacts, and ephemera depicting the eagle in North American cultures.⁴⁹ This success has created a model for the National Loon Center, now in advanced planning stages in Crosslake, Minnesota.

In western Minnesota, “Meander: The Upper Minnesota River Art Crawl,” is an annual fall event built around a free self-guided tour of artist studios featuring 45 local artists from the Upper Minnesota River Valley.⁵⁰ The Meander is promoted as a “trip on a tank full” to fully experience the local history, culture, and landscape. Similar arts scenes are flourishing and sustaining some of Minnesota’s more vibrant small towns, including Lanesboro in southeastern Minnesota’s bluff country, Grand Marais on the North Shore of Lake Superior, and New York Mills in west central Minnesota.

In the Twin Cities, more arts and culture amenities are showing up in diverse neighborhoods such as St. Paul’s Frogtown and East Side, and Minneapolis’ North Side. Corporate, government, and non-profit groups ranging from the Springboard for the Arts, to the Minnesota Arts Board, to the McKnight Foundation, to the City of St. Paul have all focused on these major undertakings.

Beyond traditional concerns focused on luring tourists and snagging a few more of their dollars, Minnesota’s new place makers are using arts and cultural amenities to create communities where people want to live permanently, and where marginalized people in that region become seen, included, and appreciated.



Image: slipacre, Pixabay

Solutions

Economic development professionals and business leaders understand that in today's economy and into the future, a location's attractiveness to people and workers has become as important as attracting employers, because the future will be less reliant on natural resources and traditional location and more dependent on human brainpower and talent. TBDN stakeholders recommend the following strategies to achieve greater equity in placemaking across Minnesota:

11. Expand existing and create new artist-in-residence programs and consider increasing the share of Legacy Amendment proceeds for the arts in Greater Minnesota. Protect existing Legacy Amendment funding.

12. Exert maximum effort in state bonding bills for local projects, often the source of start-up or matching funding. The state's borrowing authority — often combined in a match with local business investment and non-profit resources — is a leading source of funding for local projects that add arts, cultural and recreational amenities. Prime examples in the 2020 bonding bill proposed by the governor's office include: \$11.25 million for new recreation, cultural and arts space at North Commons Park on the Minneapolis' North Side; \$2.25 million for a downtown riverfront corridor project in Fergus Falls, including an amphitheater, public arts space, a river market and balcony, and other amenities; and a \$30 million "Equity in Bonding" proposal to support capital projects by community-based organizations that are led by and serve communities of color and American Indians.

13. Ensure that local school districts and other educational institutions are complying with state mandated requirements to offer arts education at each grade level. The 2019 Creative MN Report disclosed that many high schools are not complying with state laws to submit data on arts education offerings.

14. Invest in eliminating disparities in placemaking by:

- Supporting the DevelopMN "SMART Goal" of increased employment in the arts industry across Greater Minnesota by 5 percent by 2021.
- Ensuring that investments in arts and cultural amenities flow more fairly to underserved populations, including communities of color and rural regions.
- Expanding and improving measurements of the economic impact and return on investment of investments in placemaking by region and statewide.

SKILLED WORKFORCE SHORTAGE

The North Star State's topmost economic asset and natural resource is a highly educated, motivated, and growing workforce. Moving forward, this asset faces interconnected threats and opportunities. Minnesota's economic growth and health is immediately threatened by a shortage of skilled workers, due in part to



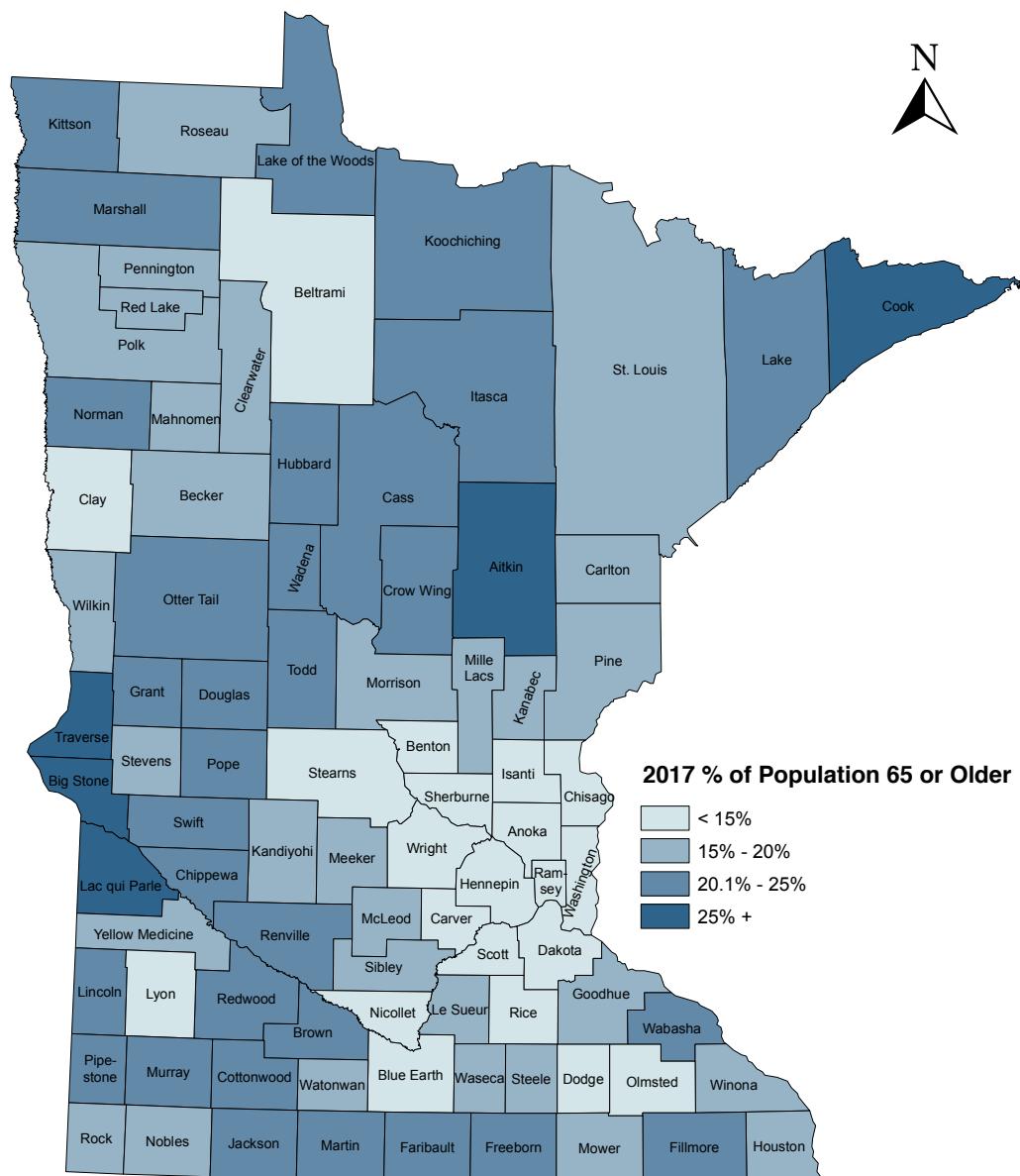
Image: Brett Sayles, Pexels

demographic changes, changing workforce needs, lagging wages, and society-wide failures to fully develop the workforce potential of Minnesotans of color, immigrants, and people with criminal backgrounds.

Challenges

The most immediate problem is an increasingly severe shortage of skilled workers, meaning workers with high school degrees and at least some post-secondary training or skill credentials. Retiring Baby Boomers, declining birth rates, and other demographic shifts, combined with national policies that discourage immigration, are causing Minnesota's business leaders to worry about a shortage of historic proportions, one that may already be limiting business and economic growth.⁵¹ These patterns mean that, without intentional changes, labor force growth (a necessary ingredient of an expanding economy) will slow to almost a standstill.

Exhibit 4. At least one in five people are 65+ in about half of Greater Minnesota counties.



As Exhibit 4 shows, counties across Greater Minnesota, except those that have attracted immigrants (primarily in southern Minnesota counties, such as Kandiyohi, Watonwan, Lyon, and Nobles), are faced with rapidly aging populations.

The second longer-term problem, which is also an investment opportunity, is an abundance of currently under-employed and under-developed human capital. Recent estimates put this amount at about 200,000 Minnesotans.⁵²

These underpaid potential rescuers of Minnesota's employers and economy are disproportionately women, low-income breadwinners, rural people, people with criminal backgrounds, immigrants, and people of color in both the metro and rural regions.⁵³

In particular, people of color are the fastest-growing demographic in Minnesota. People of color represent about a fifth of Minnesota's total population, and more than a third are under the age of 18.⁵⁴

Children of color, who disproportionately live on insufficient income today,⁵⁵ can be Minnesota's skilled workforce tomorrow. Minnesota's future prosperity is dependent on a skilled workforce coming from these very communities. Additionally, low-income white residents, often from rural regions where post-secondary completion rates have long lagged the Twin Cities, are another major source of workforce potential.

Thus, rural and racial education attainment gaps in certificates, diplomas and degrees — for everything from high school graduation to 2-year associates and technical degrees, vocational certificates and 4-year and advanced degrees — will be the most central workforce challenges for at least the next decade.⁵⁶

The present situation — allowing racial, economic, and regional inequalities in workforce development to persist — is costing Minnesota billions of dollars in potential economic growth according to a recent report by the Center for Economic Inclusion. Policy Link's 2015 report⁵⁷ found that eliminating Minnesota's racial disparities in income would unlock an "equity dividend" estimated to be \$20 billion in GDP growth annually.

In addition, the need to reduce these gaps is urgent because at some point over the next decade, the state and nation can be expected to experience a recession or economic downturn of moderate to extreme severity. In the past, this trauma has always exacerbated inequality and disparities, and would reverse the current surplus of jobs over seekers.

Labor shortages should, by the laws of supply and demand, lead directly and promptly to higher wages and better benefits. But economists generally agree that pay and benefits at the middle- and lower-income levels still lag well behind overall GDP and productivity growth.⁵⁸ Thus, the third challenge to Minnesota's economic growth and workforce incentive is the reduced purchasing power among those who are fulfilling societal expectations by working but are unable to provide for their families or otherwise participate fully in the economy.

These workers often are unable to find affordable housing, day-care or other goods and services, and end up requiring public assistance in various forms. The Economic Policy Institute reports that rising income inequality results in a workforce that is less productive and creative.⁵⁹ Higher wages are vital to Minnesota's economic



Image: StockSnap, Pixabay

growth and taxpayer savings. No less an economic authority than the Minneapolis Federal Reserve Bank President and CEO Neel Kashkari has been using his bully pulpit to prod employers into raising pay if they can't find enough skilled workers.

Almost everywhere I go, businesses tell me they can't find workers. I always ask them the same question: 'Are you raising wages?' Usually, the answer is 'no.' When you want more of something but won't pay for it, that's called whining... Until you're paying more, I know you're not serious.

— Neel Kashkari, president and CEO of Minneapolis Federal Reserve Bank.⁶⁰

Solutions

TBDN stakeholders see that without a steadily growing influx of talented workers, Minnesota's economy will lose its vibrancy. The on-ramp for earning a living wage is through acquiring skills and credentials. This on-ramp must be equitably accessible.

15. Target workforce development investments

for equity. Invest more specifically in workforce development organizations that are led by people of color and working on location in marginalized neighborhoods. Models include Summit Academy, Communidades Latinos Unidos en Servicio (CLUES), Project for Pride in Living, and the International Institute.

16. Leverage Career Pathways. Continue to improve and invest in workforce training and education methods that move adults quickly and specifically into the most in-demand occupations, through models of training that include extensive wrap-around services, social supports, and personal navigation.

Among the best practices and examples of these equity-centered Career Pathway models are:

- **Hennepin Pathways:** This highly acclaimed partnership between Hennepin County government, employers, and social service non-profits has created 18 sector-based pathway programs. The initiative has provided important post-secondary certificates and credentials to hundreds of adults, mostly from marginalized communities, and then placed them directly into jobs in high-demand fields with good wages, benefits, and a future, in both the public and private sectors.
- **Career Academies in high schools:** Communities across Minnesota are creating new vocational training for good local jobs through career academies in high schools, with direct connections to local employers



Image: LinkedIn Sales Navigator, Unsplash

Minnesota should have the best career pathway models in the US.

— Granite Falls Participant

and social support for students who otherwise might not be college bound. Examples include the Academy and Career Pathway programs in Alexandria, Brainerd, Bemidji, and Bloomington.

- **Nonprofit navigators:** Accessing social supports for people who are marginalized and long-term under-employed is vital. Exemplary organizations in Minnesota that are mastering these navigation models include Project for Pride in Living, the International Institute of Minnesota, MSPWin, and the MN FastTRAC template.

17. Expand apprenticeship programs. Learning from state-of-the-art apprenticeship systems in Germany, Minnesota has developed competency-based training programs paired with on-the-job practical experience. The Minnesota PIPELINE Program, administered by the Department of Labor and Industry, provides an overview and identifies entry points for a growing array of apprenticeship choices.⁶¹ The apprenticeships are administered and delivered by private-sector employers themselves, including many in manufacturing and technology sectors, while supplemented by state grants.

18. Reach higher education attainment goals. State higher education policy-makers should pay close heed to the Office of Higher Education's tracking and recommendations for achieving Minnesota's statewide post-secondary attainment goal, which is that 70 percent of adults age 25-44 will have some sort of post-secondary credential by 2025.⁶² Erasing racial disparities in attainment is an integral element in the statutory goal.

19. Improve pay and benefits. Employers and policymakers should explore every opportunity to raise pay and benefits, especially in the under-compensated professions most in demand, such as child care workers and personal health care attendants.

20. Plan for the next recession. To prevent loss of equity and damage to workforce during downturns and recessions, Minnesota policymakers should study the feasibility of programs that quickly provide wage subsidies, unemployment benefits, health coverage, mortgage foreclosure protection, universal basic income or guaranteed employment.



Image: skeezea, Pixabay

NEW CAREER PATHWAY MODELS LEAD TO WORKFORCE EQUITY AND QUALITY

Image: MSPWin



Mekuanent Kassa

"I love the way you can just change your life in this country and living here changed a lot of things for me," Mekuanent Kassa says. "There are big opportunities everywhere, I love this country." Kassa proudly became a U.S. citizen in 2012.

Kassa tried going to college but found himself in a cycle of "work, pay, work, pay, work, pay" and owing \$6,500 but with no degree or credential, and no good job in sight. Then he got a break and found his way into a state-of-the-art Career Pathway program that is producing great

success in meeting the needs of both the underemployed and employers facing labor shortages.

Kassa had enjoyed taking care of his grandparents in Ethiopia and discovered through career assessments at the International Institute of Minnesota that he was a good fit for a nursing program in elderly care. He gradually advanced through the Institute's College Readiness Academy, obtaining enough language instruction and coursework to qualify to become a nursing assistant. Since then he's been on a steady progression, working at nursing homes and hospitals while picking up a Licensed Practical Nursing (LPN) degree from Saint Paul College. He continues to take courses in his quest to eventually acquire a Registered Nursing (RN) degree.

Kassa now earns about \$22 an hour working part-time while attending school when he can. The path-making partnership that helps Kassa is an innovative triad, comprised of an employer partner, a postsecondary education partner, and a social service navigator partner. Key leaders in the triad describe their ongoing relationships with each other as trustful, equal, and centered on the success of the student or trainee/employee. More details on exemplary Career Pathway models like Kassa's are available from Growth & Justice⁶³ and MSPWin, the Minneapolis/St. Paul Regional Workforce Innovation Network.⁶⁴

"Minnesota businesses value the contributions of immigrants to our state. Their roles as workers, entrepreneurs, consumers and a 'link' to the world economy are increasingly important to the development and growth of our economy and communities throughout Minnesota."

— Minnesota Chamber of Commerce

CRIMINAL JUSTICE REFORM

America's demographic of formerly incarcerated persons ... represents a diversified talent pool of individuals who offer a wide range of skills and abilities, across all levels of viable experience.

— Human Resources MBA website⁶⁵

Challenges

Preventing people from entering the criminal justice system, while recognizing and investing in people who have criminal backgrounds, are both key components to improving the state's workforce and economic development.

In the Minnesota Equity Blueprint's chapter on "Human Capital," inequity in the criminal justice system was addressed through the lens of preventing police brutality and dismantling the school-to-prison pipeline, both of which destroy human potential and disproportionately burden communities of color. Since this Economic Development chapter is focused on increasing Minnesota's shared prosperity and economic development, it approaches contact with the criminal justice system by focusing on the substantial economic and social losses experienced by individuals, families, communities, and the entire state associated with the existing criminal justice structures and systems.

In 2018, an estimated 123,000 Minnesota residents were either incarcerated or under state supervision, with about 6,800 people on parole and 95,000 on probation. An estimated 21,000 Minnesotans are behind bars on any given day, with about half of them in the state prisons.⁶⁶ There are approximately 320,000 Minnesotans (8 percent of the state's adult population)⁶⁷ with felony records.

Employers historically have been reluctant to hire these individuals, due to concerns regarding liability, reputation, skills, lost credentials, and parole-related requirements that may compete with work scheduling. However, voices from across the political spectrum, from Mark Holden of Koch Industries⁶⁸ to Van Jones of Dream Corps⁶⁹, are urging a reconsideration of the nation's approach to arrest, conviction, incarceration, and re-entry to community.



Image: Marmaduke St. John, Alamy Stock Photo

ALL SQUARE AND RESTORATIVE JUSTICE: HELP EX-OFFENDERS JOIN WORKFORCE

To get a job at the popular and trendy new All Square restaurant in Minneapolis (which specializes in creative and tasty versions of grilled cheese sandwiches), you actually need to have a criminal record. All of the employees are ex-offenders. On Mondays, when the non-profit restaurant closes, employees take classes in entrepreneurship and law.

All Square founder Emily Turner, a former employee of the federal Housing and Urban Development Department, was motivated to act by the grossly unfair treatment she saw in housing, employment, and the many other obstacles facing people with criminal records trying to re-enter mainstream society.

Efforts by the Minnesota Legislature at criminal justice reforms, such as the “collateral consequences”⁷⁰ bill being advanced by groups such as the Minnesota Second Chance Coalition,⁷¹ are just beginning to get traction. Progress has been slow and piecemeal, with some recent success in the passage of “Ban the Box” legislation that prohibits questions about criminal records on some employment applications.

But employers and communities on their own are finding creative ways to forge ahead, to both reduce an unacceptable incarceration rate and to bring ex-offenders back to productive and rewarding lives.

In southwestern Minnesota’s rural Yellow Medicine County, for instance, county government officials have been celebrating remarkable success with their innovative Restorative Justice Department, a partnership between the county, social service agencies, and employers. Specializing in early intervention and working with offenders under the age of 18, the program focuses on restitution and community service, vocational training, chemical dependency treatment if needed, and it all culminates with a clean criminal record for those who complete the program.

Yellow Medicine County saw out-of-home placement costs drop dramatically and recidivism rates for participants have been low. The West Fargo Pioneer recounted the story of a young woman, convicted in 2010 for taking one of her children with her to a drug deal, who is now a registered nurse and a volunteer for the Restorative Justice program.⁷²



All Square is non-profit restaurant, which hires only ex-offenders.

Image: All Square Facebook

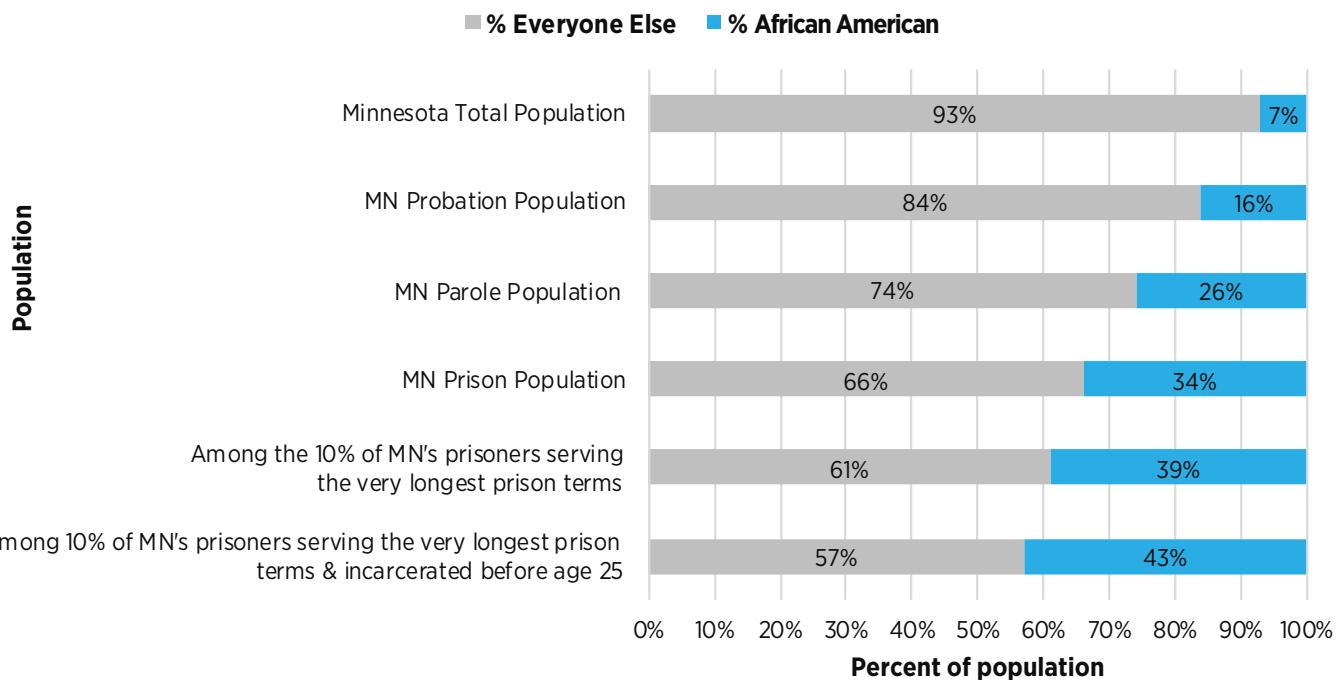
Compared with white Minnesotans, African Americans and Native Americans are disproportionately more likely to be issued citations, arrested, charged, convicted, incarcerated, and face barriers to re-entry to society.

A 2016 Star Tribune article pointed out that while American Indians made up about 1 percent of the population, they constitute more than 9 percent of the state prison population.⁷³ Between 1995 and 2014, the

total number of people sentenced to felony charges in Minnesota rose from 9,421 to 16,125. Throughout this time, African American Minnesotans represented between 24 and 28 percent of all convicted felons.

As Exhibit 5 illustrates, African American Minnesotans are disproportionately more likely to be on probation or parole, as well as more likely to experience incarceration and to be incarcerated for the longest periods of time, compared with all other racial groups combined.

Exhibit 5. African American Minnesotans are disproportionately likely to be incarcerated^{74,75}



Solutions

TBDN stakeholders, in conjunction with many experts in this domain, assert that all changes to the state's criminal justice system must lead to racial and class equity in terms of contact with, and progress through, that system. Indeed, input from TBDN members shows that racial inequities manifest in arrest rates, level of charges, rate of jail entry, remaining in jail solely due to inability to raise the amount needed for bail and the experience of permanent post-conviction collateral consequences.

21. Lower the incidence of obtaining a felony records and reduce rates of incarceration by:

- Reforming adjudication of infractions stemming from mental illness and substance abuse disorder.
- Supporting larger societal investments in reducing poverty and homelessness and implementing restorative justice models.
- Increasing public funding for public defenders, treatment courts, and efforts by social workers to divert people from incarceration.

22. Increase visibility of incarcerated people. Re-open the Ombudsman's office for the state prison system. Currently prisoners feel that they have no voice, which leads to increased violence within prisons.

23. Change laws and regulations to remove barriers to successful re-entry to family and community.

Appropriate actions include those that:

- Invest in and create a climate for rehabilitation while incarcerated.
- Pass legislation that provides more training while in prison and coordinates more supportive services when returning to community.
- Improve employment and housing regulations and practices to reduce unemployment, homelessness, and family fragmentation for those with criminal records.
- Increase and broaden access to expungement.
- Re-enfranchise people with felony records. As of 2016, 7.34 percent of Minnesota's African American potential voters are disenfranchised due to felony disenfranchisement.⁷⁶
- Develop and widely promote human resources education to the state's public and private employers, to train hiring professionals to make better decisions regarding the employment of former felons.

24. Reduce recidivism. Reform laws and sentencing practices that have been proven to be linked to higher rates of re-offending. These include asset forfeiture, drug laws, restricted expungement options, employment and housing laws barring former felons, and disenfranchisement.

25. Adopt Minnesota's Uniform Collateral Consequences of Conviction Act which provides both criminal justice proceedings transparency and court options to grant relief.

WELCOMING IMMIGRANTS AND REFUGEES

Challenges

Changing demographics are headed on a crash course for Minnesota's employers, business community and the entire economy without immediate action to reform federal immigration laws. Minnesota's workforce is growing slower while the economy tries to expand. The result is a shortage of workers of all skill levels.

— Minnesota Business Immigration Coalition

Statistical evidence proving the long-term net benefit and value of immigrants to Minnesota's economy is overwhelming. The Minnesota Business Immigration Coalition documents that the immigrant portion of the state's workforce is growing rapidly, with foreign-born workers filling many of the jobs now being vacated by the state's older native-born population. Immigrants are concentrated among both the least and most educated workers in Minnesota, serving a diverse set of industries with varying education level requirements. Minnesota ranks 5th among the 50 states in the rate of immigrant population growth since 2000 (a 20 percent increase).⁷⁷

Although they currently represent only about 8 percent of Minnesota's overall population, immigrants now account for 16 percent of all health-care workers and 13 percent of all manufacturing employment in Minnesota, higher percentages than the national averages for those sectors. Other sectors that are relatively more reliant on immigrants are restaurants and food service, colleges and universities, hospitals, construction, medical equipment manufacturing, farming, and animal slaughtering and processing.⁷⁸

DRIVING THE MINNESOTA WELCOME WAGON: WINONA, PROJECT FINE AND FATIMA SAID

The Winona City Council was the first in Minnesota to officially join the burgeoning national Welcoming America movement,⁷⁹ but dozens of other cities are in close step with initiatives to embrace immigrants and to dispel resentment toward newcomers from diverse backgrounds.

In a recent Star Tribune article about this trend, Bosnian immigrant Fatima Said, founder and leader of Winona's Project FINE (Focusing on Integrating Newcomers through Education), described the ample benefits of welcoming immigrants, to employers who are often desperately seeking new workers, and to Greater Minnesota communities seeking ways to retain population and vitality.

Many Minnesota communities, from regional centers to smaller towns, are working on initiatives like Project FINE and attitudes are gradually changing. The Blandin Foundation's latest Rural Pulse survey found that younger rural Minnesotans are increasingly likely to have a diverse set of friends.⁸⁰

Project FINE is a particularly strong model to replicate because of its comprehensive effort and specific services, often in collaboration with other regional organizations, from healthcare providers and arts advocates to employers and legal services providers. Another key strength is that Project FINE reaches out to newcomers and initiates contact, rather than waiting for requests from the new arrivals.



Project FINE and the City of Winona hosted a Welcoming Week Celebration.

Image: Project FINE annual report

The Minnesota Business Immigration Coalition emphasizes that almost 40 percent of the state's Fortune 500 companies were started by immigrants or their children. Across the country, the rate of immigrant entrepreneurship exceeds that for the U.S.-born population.

Minnesota's state government is becoming more involved in immigration legislation as the federal government fails to address current and future immigration issues, intimidates immigrants, and aggressively discourages immigration. Most state proposals increase the burden on employers to check each employee's immigration status. If states continue along this path, this cumbersome system will become more confusing and expensive to manage and it will be unfair to both workers and employers.

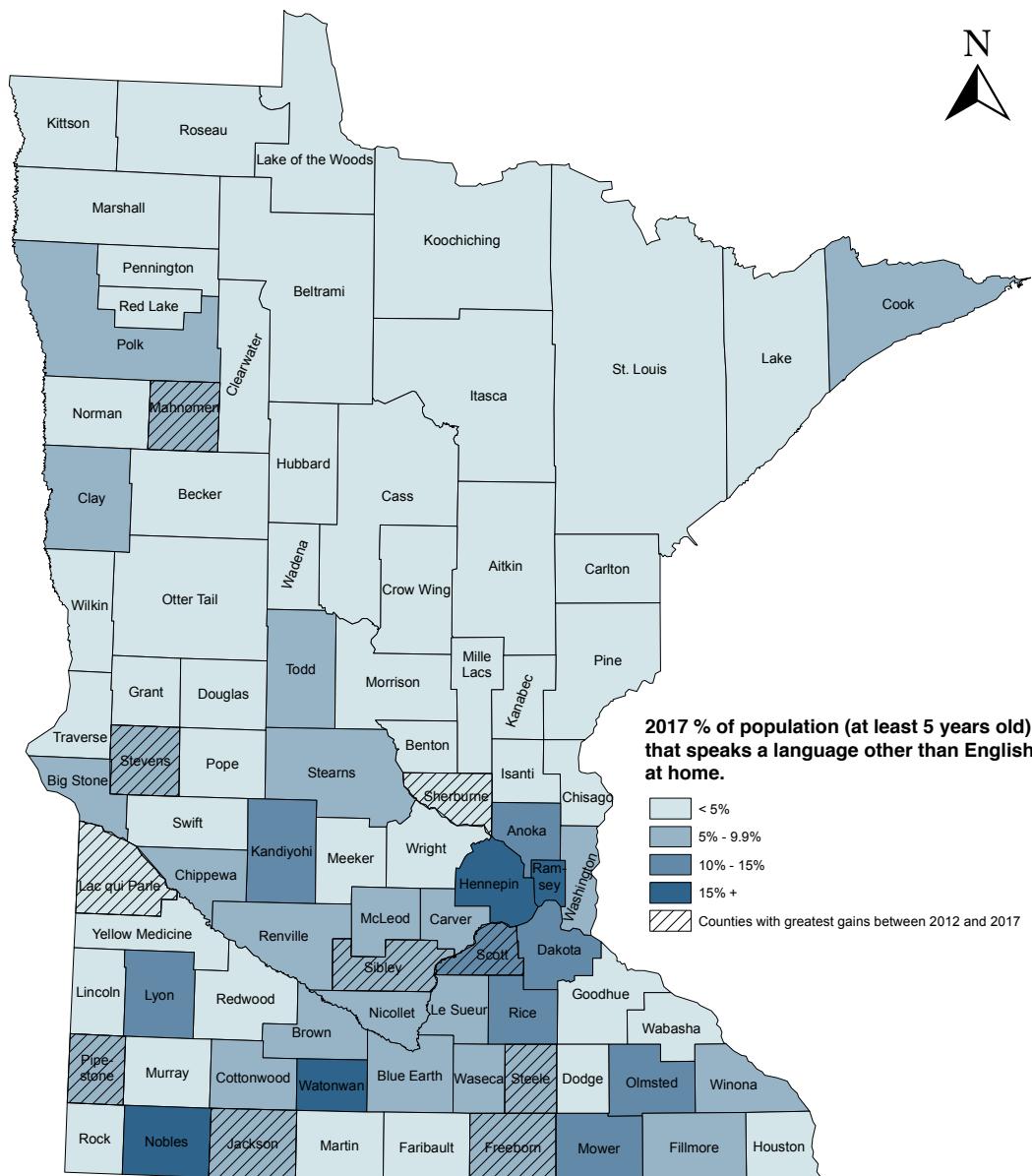
A large percentage of Minnesota's immigrants are not simply seeking to improve their lives, but they are fleeing imminent danger from government persecution, marauding gangs, and other sources of violence in their homelands. Minnesota's reputation as a favored destination for refugees — from Southeast Asia and East Africa

in particular — has served the state well economically. As the flow of Central American refugees now increases, policymakers and community leaders should bear in mind existing statistics showing that refugee immigrants are even stronger net contributors to economic growth than those who come strictly for economic reasons.⁸¹

Minnesota needs immigrants for more than just their workforce and consumption potential. Population data show that for much of rural Minnesota, welcoming immigrants has proven to be the main means of avoiding population loss.⁸²

Exhibit 6 further illustrates that the counties with the greatest rate of increase in their immigrant populations tend to be located outside the Twin Cities urban metro. Nine of the top ten counties seeing the largest increases in non-native English-speaking households are in Greater Minnesota.

Exhibit 6. Immigrants are more than 10 percent of the county population in 12 Counties.



Solutions

TBDN stakeholders prioritize the work involved in welcoming immigrants and refugees, both as neighbors and as fellow workers.

26. Local groups and policymakers should exert influence at the federal and state levels

to adopt immigration reform that provides a timely and affordable path for current immigrants and their families, regardless of status, to become documented participants in society. The Minnesota Immigration Business Coalition supports such a path to permanent residency for immigrants who are not otherwise excluded for reasons such as criminal convictions.

27. Prioritize reduction of case backlogs where family and professional workers have been waiting to immigrate for many years. Reform should include a simple and accurate status verification that is affordable and accessible, especially for small businesses. Reform should include a simple and timely approach to the future flow of immigrants, including permanent and temporary status. A temporary immigration program that works for sectors important to Minnesota (e.g. dairy and nursery industries) should also be implemented.

28. Support the federal Dream and Promise Act. Minnesota has already made progress in expanding higher education access to children who arrived in Minnesota undocumented and grew up here as their parents worked in the region's factories and fields. Minnesotans must unite to push for passage of the federal Dream and Promise Act, as well as complementary state policies.

29. Issue drivers' licenses for all immigrants. Due to concerns related to taxpayer costs and public safety, Minnesota must issue drivers licenses to everyone who passes the tests, regardless of immigration status. Business leaders and immigrant rights groups are in strong agreement on this priority, which made progress but ultimately failed to be enacted by the 2019 Legislature.

30. Ensure that the 2020 Census counts all Minnesotans. Over the next year, communities, business groups, and philanthropies are supporting the "We Count MN" initiative, which is being coordinated by the Minnesota State Demographic Center and will heavily depend on local Complete Count Committees.

I can't understand how many people have problems with Welcoming America. We work together because there is no other way. You love your own and you respect others. That's what people need to learn — to be open-minded and respect each other.

— Fatima Said, founder, Project FINE⁸³



Image: Minnesota State Demographic Center

31. Embrace refugees. Expand state policies and local initiatives that sustain Minnesota's status as the most attractive state for refugees⁸⁴ including donating money to refugee advocacy groups such as CLUES or the Center for Victims of Torture or the Minnesota Immigrant Rights Action Committee (MIRAC), and directly helping pay immigration bonds through the Minnesota Freedom Fund.⁸⁵

32. Expand Welcoming Community initiatives and other programs that promote acceptance of difference. Many urban and rural communities in Minnesota are recognizing the value of the new talent in their communities and are mounting highly visible efforts to embrace and welcome new immigrants. Some have joined the official Welcoming America national network,⁸⁶ working to overcome opposition from extremists who work to magnify xenophobic fears.⁸⁷ The Minnesota Chamber of Commerce recommends community efforts such as sponsoring community-wide conversations, fostering respect for cultural differences in schools and businesses, and finding ways to celebrate diversity with food and entertainment events.

QUALITY CHILD CARE

If employees can't find quality care for their children, they won't work for you. They won't move to your community, or they'll be forced to move away, or they might have to consider quitting their job to stay home with their children because they have no other option.

— Kris Bevell, Prairie Business Magazine

Challenge

Business and economic development leaders are prioritizing access to affordable, quality child care because they are realizing that reliable, convenient, high quality child care contributes to:

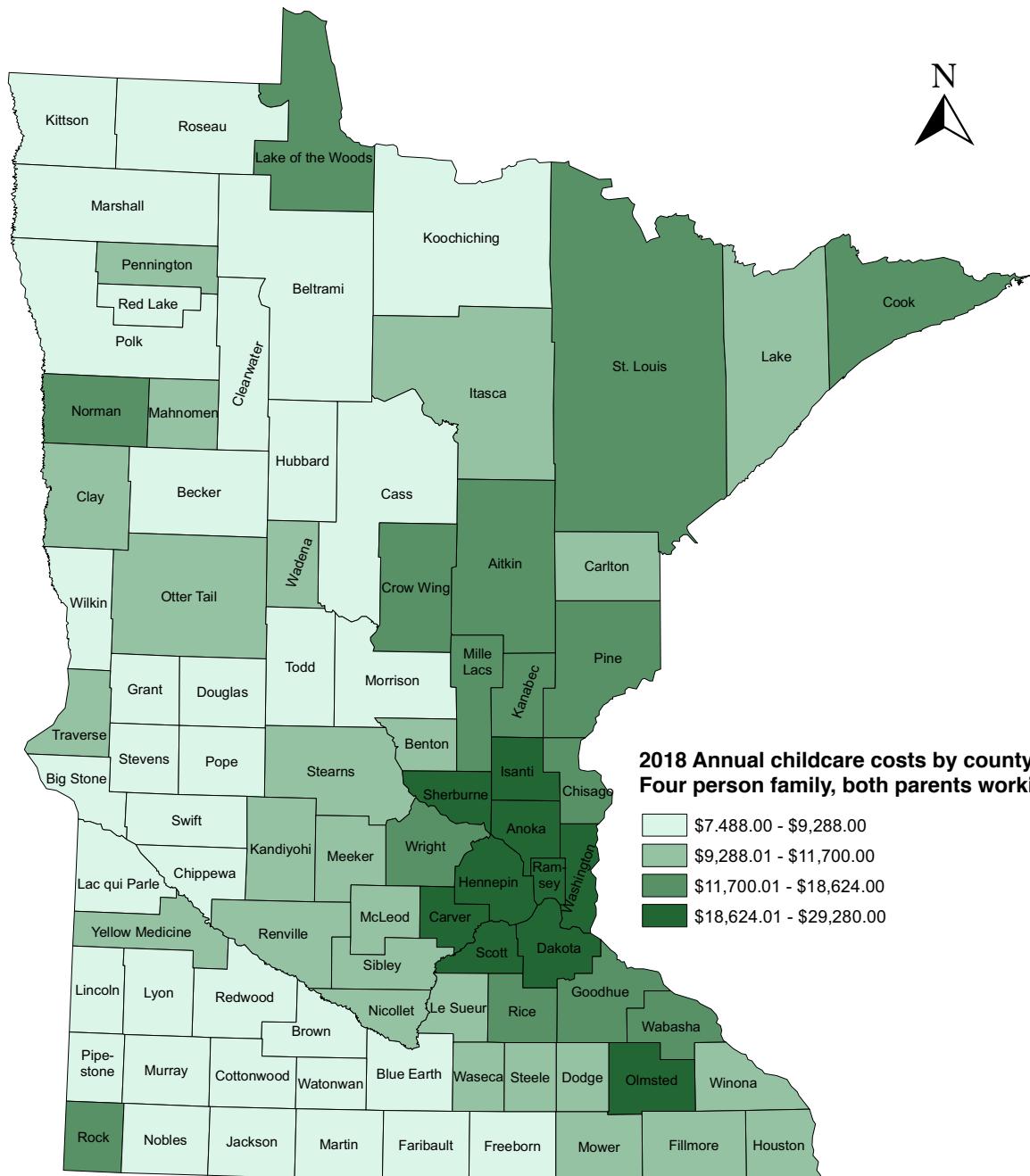
- Recruiting and retaining new businesses, workers, and families.
- Positive developmental outcomes for young children.
- Women's economic empowerment .
- The success rate of families attempting to escape poverty .
- Improved business profitability through increased employee productivity, lower turnover, and reduced absenteeism.



Image: jenifferth, Pixabay

However, high child care costs and low availability have reached a crisis point for Minnesota's workers and their employers. As Exhibit 7 makes clear, child care costs — for a family of four, with both parents working — exceeds a mortgage payment in most counties across Minnesota.

Exhibit 7. Child care expenses are prohibitively high across Minnesota



Source: Minnesota Department of Employment and Economic Development

Created May, 2019

This crisis may be felt more acutely in Minnesota than in many other states, because of its higher than average rates of employment among women. The U.S. Census Bureau estimates that in 2014, 74 percent of Minnesota households with children under age 6 had all parents in the workforce, ranking third in the nation, behind Iowa and South Dakota.⁸⁸

Like other states, Minnesota's workers rely on both licensed center-based and licensed home-or family-based providers. There are regional variations in the prevalence of child care supplier types. About two-thirds of the child care capacity in Greater Minnesota is provided by family providers, compared to less than one-third of capacity in the Twin Cities metro.

According to a 2018 survey of child care providers conducted by the Center for Rural Policy and Development (CRPD), close to 30 percent of Minnesota's licensed family providers have gone out of business since 2005. In terms of capacity — the total number of children providers are licensed to care for — this translates to a loss of approximately 36,500 spaces. Since 2005, center-based care capacity in the Twin Cities increased by 31 percent, or 19,400 spaces, while in Greater Minnesota, center-based capacity increased by only 18 percent, or 5,039 spaces.

CRPD's 2019 report stated that “....the mass exodus of in-home family child care providers from the business is alarming, but the providers can't make a living at it.” The median hourly wage in Minnesota for a child care worker is only \$11.44 per hour. More than 85 percent of Minnesota's child care workers would be considered low-wage workers, making less than \$20,000 annually. Many people want to work with children, but this sector tends not to pay benefits, and many of the would-be employees are loaded with student debt.

Without reliable quality convenient child care, workers in every field are unlikely to be their most productive or to remain with their jobs as long as they otherwise would. Lack of access to quality child care reduces worker productivity and business profitability.

Solutions

“Economic Development starts with quality, equitable, affordable and available child care.”

— Granite Falls Participant

In their numerous 2018 statewide and community meetings, TBDN participants proposed several solutions aimed at improving Minnesota's child care affordability, availability, and quality. The TBDN network has also endorsed recommendations put forth by partnering organizations, such as First Children's Finance, Minnesota Center for Rural Policy and Development, and Think Small.

33. Invest in child care affordability. Expand access for children of families with low incomes to high-

quality child care and education programs that serve the child from birth to kindergarten entry. This can be done by increasing funding for flexible, parent-directed scholarships. Encourage state lawmakers to increase the Child Care Assistance Program (CCAP) to a level that comes closer to covering providers' costs.

- Protect and enhance state and federal programs that provide income tax credits for dependent care expenses. Child care tax credits are particularly valuable to lower-income households when they result in a tax refund.
- Subsidize licensing costs or even offer free licensing. Such cost savings can mean the difference for a provider between staying in business or quitting.
- Support the Minnesota Department of Human Services in their efforts to make it easier to be a child care provider in Greater Minnesota. This includes making training more accessible and more affordable through Child Care Aware, Parent Aware, and other organizations.



Image: Kevin Lopez, Pixabay

34. Increase child care availability.

- Support public-private partnerships in stimulating supply of high-quality child care options. No one-size-fits-all solution will resolve the child care crisis across Minnesota. The success of a unique solution in each community setting depends on the child care needs and strengths of each locale, the collaborative leadership capabilities of that community and its businesses and other organizations, the shared commitment to pay fair wages to child care providers, and a deeper understanding of all the variables involved.
- Ensure that policies don't over-rely on growth in child care centers to address the entire state's child care shortage. Child care centers are very difficult to open and maintain in rural areas and therefore can't be counted on as the sole solution. Family-based providers must be part of the strategic approach. As such, proposals must ensure that *family child care* providers are represented on committees and in other policy-making discussions, especially those that set regulations.
- Require training for county licensors to ensure they understand child care regulations. This includes training on how to assist as well as enforce, and the importance of enforcing regulations consistently across the state.
- Broaden access to the highest quality training and supportive services for child care providers.

35. Improve tracking and data collection of children's program participation and their outcomes. This should include a focus on the groups of children who are typically underserved, such as children of low-income households, children with special needs, children of immigrants and refugees, and children whose parents work non-traditional shifts. Special attention must be paid to parental satisfaction in order to assess the degree to which parents are able to exercise choice in their child care arrangements.

Image: Cynthia Logan, Pixabay

Endnotes

- 1 America's Top States for Business (2018). Retrieved from <https://www.cnbc.com/2018/07/10/americas-top-states-for-business-2018.html>
- 2 Minnesota Department of Employment and Economic Development. Minnesota Unemployment Statistics LAUS (Local Area Unemployment Statistics) Data. Retrieved from <https://apps.deed.state.mn.us/lmi/laus/CurrentStats.aspx>
- 3 U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates, Forms S2301, S1903, S1701, B17020. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- 4 Minnesota Association of Development Organizations (2017). *DevelopMN: Comprehensive Development Strategy for Greater Minnesota*. Retrieved from <http://www.mnado.org/wp-content/uploads/2018/12/DevelopMN-2017-for-Appendix-w-revisions.pdf>
- 5 Minnesota Department of Human Rights (2015). Minority Business in Minnesota. Retrieved from <https://mn.gov/mdhr/news-community/videos/minority-entrepreneurs/minority-businesses.jsp>
- 6 Vilsak, Rachel and Minnesota Department of Employment and Economic Development (2015). "Minority-Owned Firms in Minnesota", *TRENDS*, https://mn.gov/deed/assets/dec-2015-TRENDS-Rachel_tcm1045-202490.pdf
- 7 Bodin, Chet and Minnesota Department of Employment and Economic Development (2017). Small Business Success. Retrieved from <https://mn.gov/deed/newscenter/publications/review/december-2017/small-business-success.jsp>
- 8 Author's calculations using Business Dynamics Statistics data from the U.S. Census Bureau.
- 9 Minnesota Department of Human Rights, Minority Entrepreneurs, retrieved from <https://mn.gov/mdhr/news-community/videos/minority-entrepreneurs/>
- 10 Stofferahn, Justin and Growth & Justice, (11/20/2017) Let's Turn Attention to Small Business in Minnesota, retrieved from <https://www.growthandjustice.org/blog/2017-11/lets-turn-attention-to-small-business-in-minnesota>
- 11 Ibid
- 12 St. Anthony, Neal (2018). Venture capital investments rose in Minnesota, nationally in 2017. *Star Tribune*. Retrieved from <http://www.startribune.com/venture-capital-investments-rose-in-minnesota-nationally-in-2017/473615713/>
- 13 American Bankers Association (2018). Number of Institutions by State. Retrieved from <https://www.aba.com/Tools/Economic/Documents/NumberofInstitutionsbyState.pdf>
- 14 Federal Deposit Insurance Corporation (2018). Deposit Market Share Report, Minnesota. Retrieved from <https://www5.fdic.gov/sod/sodMarketRpt.asp?barItem=&sCounty=all>.
- 15 Fed Small Business (2019), Report on Employer firms Based on the 2018 Small Business Credit Survey. Retrieved from <https://www.fedsmallbusiness.org/survey/2019/report-on-employer-firms>
- 16 George, Esther (2017). President's Message: Why Community Banks Matter. Retrieved from https://www.kansascityfed.org/publications/ten/articles/2017/summer/presidents_message
- 17 Robb, Alicia and A. Morelix (2016). *Startup Financing Trends by Race: How Access to Capital Impacts Profitability: Annual Survey of Entrepreneurs Data Briefing Series*. Retrieved from https://www.kauffman.org/-/media/kauffman.org/research-reports-and-covers/2016/ase_brief_startup_financing_by_race.pdf
- 18 U.S. Department of Commerce, Minority Business Development Agency (2010). Disparities in Capital Access between Minority and Non-Minority Businesses. Retrieved from <https://www.mbda.gov/page/executive-summary-disparities-capital-access-between-minority-and-non-minority-businesses>
- 19 Corrie, Bruce P. and Samuel Myers Jr (2015) Latest Data on Minority Businesses in Minnesota. Retrieved from <http://www.csp.edu/wp-content/uploads/MBE-2015-Latest-Data.pdf>
- 20 Puente, Lucas (2018). *2018 Small Business Friendliness Survey*. Retrieved from <https://www.thumbtack.com/survey#/2018/24/states>
- 21 Henry J. Kaiser Family Foundation. Percent of Private Sector Establishments that Offer Health Insurance to Employees, by Firm Size – Minnesota. Retrieved from <https://www.kff.org/other/state-indicator/firms-offering-coverage-by-size/?activeTab=graph¤tTimeframe=0&startTimeline=4&selectedDistributions=firms-with-fewer-than-50-employees&selectedRows=%7B%22states%22:%7B%22minnesota%22:%7B%7D%7D%7D&sortModel=%7B%22collId%22:%22Location%22,%22sort%22:%22asc%22%7D>
- 22 John, David and G. Koenig and AARP Public Policy Institute (2015). Fact Sheet: Minnesota. Workplace Retirement Plans Will Help Workers Build Economic Security. *State Fact Sheet*. Retrieved from <https://www.aarp.org/content/dam/aarp/ppi/2015-07/AARP-Minnesota-state-fact-sheet.pdf>
- 23 U.S. Department of Labor, Bureau of Labor Statistics (2018). Employee Benefits in the United States – March 2018. News Release. Retrieved from <https://www.bls.gov/news.release/pdf/ebs2.pdf>

- 24 National Small Business Association (2017). *2017 NSBA Small Business Regulations Survey*. Retrieved from <https://www.nsba.biz/wp-content/uploads/2017/01/Regulatory-Survey-2017.pdf>
- 25 Morris, William (2019). Walz calls for cooperation at Minnesota Chamber event. *Finance & Commerce*. Retrieved from <https://finance-commerce.com/2019/01/walz-calls-for-cooperation-at-chamber-event/>
- 26 The Pew Charitable Trusts (2018). *State Strategies to Help Businesses Launch and Expand*. p. 3, Retrieved from https://www.pewtrusts.org/-/media/assets/2018/08/state-strategies-to-help-businesses-launch-and-expand_v1.pdf.
- 27 U.S. Department of the Treasury Office of Economic Policy, the Council of Economic Advisors and the Department of Labor (2015). *Occupational Licensing: A Framework for Policymakers*. Retrieved from https://obamawhitehouse.archives.gov/sites/default/files/docs/licensing_report_final_nonembargo.pdf
- 28 Minnesota Department of Employment and Economic Development (2018). Job Vacancy Survey, 2018 Fourth Quarter. Retrieved from <https://apps.deed.state.mn.us/lmi/jvs/Results.aspx>
- 29 Statewide Job Vacancy Survey, 2018, Fourth Quarter, Minnesota Employment and Economic Development, <https://apps.deed.state.mn.us/lmi/jvs/Results.aspx>
- 30 Bank of North Dakota. Retrieved from <https://bnd.nd.gov/>
- 31 Mitchell, Stacy, (2015). "How One State Escaped Wall Street's Rule and Created a Banking System that's 83% Locally Owned", Institute for Local Self-Reliance September 1, 2015, <https://www.publicbankinginstitute.org/studies-reports/>
- 32 Ibid
- 33 Public Banking Institute. Reports. Retrieved from <https://www.publicbankinginstitute.org/studies-reports/>
- 34 Minnesota Management and Budget (2013). Report to the Minnesota Legislature: Local Bank Deposit Pilot. Retrieved from https://mn.gov/mmb/assets/bank-compliance_tcm1059-126540.pdf
- 35 Employment Security Department of Washington State. Paid Family and Medical Leave. Retrieved from <https://esd.wa.gov/paid-family-medical-leave>
- 36 Kratz, Stacey (2018). What You Need to Know About the Secure Choice Program. AARP New York. Retrieved from <https://states.aarp.org/need-know-secure-choice-program/>
- 37 Illinois Secure Choice. Retrieved from <https://www.ilsecurechoice.com/>
- 38 Ye, Su and Minnesota Department of Agriculture (2019). Minnesota Agricultural Profile. Retrieved from <https://www.mda.state.mn.us/sites/default/files/inline-files/mnagprofile2019.pdf>
- 39 Remarks by U.S. Senator Pat Roberts, R-Kan, Chairman of the Senate Committee on Agriculture, Nutrition and Forestry, before hearing title "Perspectives on U.S. Agricultural Trade Policy", published September 13, 2018 in *Morning Ag Clips*. Retrieved from <https://www.morningagclips.com/entire-food-agriculture-value-chain-relies-on-trade/>
- 40 U.S. Department of Agriculture (2019). Highlights from the March 2019 Farm Income Forecast: Farm Sector Profits Expected to Increase in 2019. Retrieved from <https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/highlights-from-the-farm-income-forecast/>
- 41 Center for Farm Financial Management at University of Minnesota, College of Extension (2017). *2016 FINBIN Report on Minnesota Farm Finances*. Retrieved from
- 42 U.S. Department of Agriculture (2019). *2018 State Agriculture Overview: Minnesota*. Retrieved from https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=MINNESOTA
- 43 *Morning Ag Clips* (2018). Farm groups urge Trump to restore RFS integrity. Retrieved from <https://www.morningagclips.com/farm-groups-urge-trump-to-restore-rfs-integrity/>
- 44 Minnesota Department of Agriculture. Minnesota Agricultural Water Quality Certification Program. Retrieved from www.mylandmylegacy.com
- 45 *State of Minnesota. Legacy Funds*. Retrieved from <https://www.legacy.mn.gov/about-funds>
- 46 National Assembly of State Arts Agencies. Creative Economy State Profiles. Retrieved from https://nasaa-arts.org/nasaa_research/creative-economy-state-profiles/
- 47 Monica Segura-Schwartz, Arts, Culture and Placemaking policy brief developed for The Minnesota Equity Blueprint.
- 48 Sprout MN. Retrieved from <https://www.sproutmn.com/>
- 49 National Eagle Center. Retrieved from <https://www.nationaleaglecenter.org/>
- 50 Meander: Upper Minnesota River Art Crawl Brochure. Retrieved from http://www.artsmearnder.com/pdfs/2018_Brochure_full.pdf
- 51 Gilyard, Burl (2018). Labor Shortage is Hurting Minnesota's Employment Growth. *Twin Cities Business Magazine*. Retrieved from <http://tcbmag.com/news/articles/2018/may/labor-shortage-is-hurting-minnesota-s-employment-g>

- 52 Minnesota Department of Employment and Economic Development. *Alternative Measures of Unemployment*. Retrieved from <https://mn.gov/deed/data/current-econ-highlights/alternative-unemployment.jsp>
- 53 Minnesota State Demographer (2017). *Greater Minnesota Refined and Revisited*. Retrieved from https://mn.gov/admin/assets/greater-mn-refined-and-revisited-msdc-jan2017_tcm36-273216.pdf
- 54 Minnesota State Demographer (2017). Age, Race & Ethnicity. Retrieved from <https://mn.gov/admin/demography/data-by-topic/age-race-ethnicity/>
- 55 Minnesota State Demographer (2016). *The Economic Status of Minnesotans: A Chartbook with Data for 17 Cultural Groups*. Retrieved from https://mn.gov/admin/assets/the-economic-status-of-minnesotans-chartbook-msdc-jan2016-post_tcm36-219454.pdf
- 56 Minnesota Office of Higher Education. Educational Attainment Goal 2025. Retrieved from <https://www.ohe.state.mn.us/mPg.cfm?pageID=2187>
- 57 Tran, Jennifer and S. Treuhaft (2014). *Minnesota's Tomorrow: Equity is the Superior Growth Model*. PolicyLink. Retrieved from https://www.policylink.org/sites/default/files/MNT_032514.pdf
- 58 Economic Policy Institute, (2018) The Productivity-Pay Gap. Retrieved from <https://www.epi.org/productivity-pay-gap/>
- 59 Bivens, Josh (2017). Inequality is slowing US economic growth. Economic Policy Institute. Retrieved from <https://www.epi.org/publication/secular-stagnation/>
- 60 Business North. Regional Fed chief urges firms to raise wages (2018). Retrieved from http://www.businessnorth.com/daily_briefing/regional-fed-chief-urges-firms-to-raise-wages/article_715b14da-3769-11e8-a754-6b74fe8ee919.html
- 61 Minnesota Department of Labor and Industry. Pipeline Program. Retrieved from <https://www.dli.mn.gov/pipeline>
- 62 Minnesota Office of Higher Education. Educational Attainment Goal 2025. Retrieved from <https://www.ohe.state.mn.us/mPg.cfm?pageID=2187>
- 63 Growth & Justice. The Path to Success. MSPWin. Retrieved from https://growthandjustice.org/publication/The_Path_to_Success_Story_1.pdf
- 64 Minneapolis St. Paul Regional Workforce Innovation Network, <http://mspwin.org/about/>
- 65 Human Resources MBA. Five Reasons to Consider Hiring a Convicted Felon. Retrieved from <https://www.humanresourcesmba.net/lists/5-reasons-to-consider-hiring-a-convicted-felon/>
- 66 Prison Policy Initiative. Minnesota State profile. Retrieved from <https://www.prisonpolicy.org/profiles/MN.html>
- 67 Moylan, Martin (2018). Ex-cons get a deeper look from employers in tight Minnesota Job market. MPR News. Retrieved from <https://www.mprnews.org/story/2018/12/13/ex-prisoners-opportunity-tight-job-market-minnesota>
- 68 Koch Industries (2019). Mark Holden: Collaboration on criminal justice reform works. Retrieved from <https://news.kochind.com/news/2019/mark-holden-collaboration-on-criminal-justice-refo>
- 69 DreamCorps. Our Initiatives. Retrieved from https://www.thedreamcorps.org/our_programs#cut50
- 70 Tennessen, Robert J. (2018). To improve the workforce and serve equity, Minnesota must reform 'collateral consequences of conviction.' *MinnPost*. Retrieved from <https://www.minnpost.com/community-voices/2018/01/improve-workforce-and-serve-equity-minnesota-must-reform-collateral-consequ/>
- 71 Minnesota Second Chance Coalition. 2019 Legislative Agenda. Retrieved from <http://www.mnsecondchance.org/Legislative-Priorities>
- 72 Chervey, Thomas E. (2017). Minn. County turns to 'traditional' justice, and it's working. *West Fargo Pioneer*. <https://www.westfargopioneer.com/news/4220419-minn-county-turns-traditional-justice-and-its-working>
- 73 Mannix, Andy (2016). Minnesota sends minorities to prison at far higher rates than whites. Star Tribune. Retrieved from <http://www.startribune.com/minnesota-sends-minorities-to-prison-at-far-higher-rates-than-whites/374543811/>
- 74 Carson, E. Ann and D. Kaebble, U.S. Department of Justice, Bureau of Justice Statistics. *Data Collection: National Corrections Reporting Program (NCRP)*. Retrieved from <https://www.bjs.gov/index.cfm?ty=dcdetail&iid=268>
- 75 U.S. Census Bureau. *Comparative Demographic Estimates, 2014 American Community Survey, 1 year estimates Form CP05*.
- 76 The Sentencing Project. State-by-State Data, Minnesota. Retrieved from <https://www.sentencingproject.org/the-facts/#detail?state1Option=Minnesota&state2Option=Texas>
- 77 Batalova, Jeanne and E. Alperin (2018). Immigrants in the U.S. States with the Fastest-Growing Foreign-Born Populations. *Migration Policy Institute*. Retrieved from <https://www.migrationpolicy.org/article/immigrants-us-states-fastest-growing-foreign-born-populations>
- 78 The Minnesota Business Immigration Coalition. Retrieved from <https://www.mnbic.org/>
- 79 Welcoming America. About Us. Retrieved from <https://www.welcomingamerica.org/about/who-we-are>

80 Herder, Russell and The Blandin Foundation (2019). Rural Pulse 2019. Retrieved from https://blandinfoundation.org/content/uploads/BLF_RuralUrban_Report_2019.pdf?utm_source=rural-pulse-2019&utm_content=features-single

81 National Immigration Forum (2018). Immigrants as Economic Contributors: Refugees are a Fiscal Success Story for America <https://immigrationforum.org/article/immigrants-as-economic-contributors-refugees-are-a-fiscal-success-story-for-america/>

82 Raya, Maya (2019). In Minnesota counties losing population, immigrants slow the decline, *Star Tribune*. Retrieved from <http://www.startribune.com/in-minnesota-counties-losing-population-immigrants-slow-the-decline/509801492/>

83 Browning, Dan (2018). In some Minnesota cities, welcome turns into a fighting word. *Star Tribune*. Retrieved from <http://www.startribune.com/welcoming-or-wary-minnesota-cities-weigh-their-approach-to-newcomers/481837471/>

84 Shaw, Bob (2018). Minnesota has the most refugees per capita in the U.S. Will that continue? *Twin Cities Pioneer Press*. Retrieved from <https://www.twincities.com/2018/01/13/the-not-so>Welcome-mat-minnesota-winges-at-refugee-cutbacks/>

85 Walsh, Jim (2019). 10 things you can do right now to help immigrants and refugees in Minnesota and beyond. *MinnPost*. Retrieved from <https://www.minnpost.com/new-americans/2019/02/10-things-you-can-do-right-now-to-help-immigrants-and-refugees-in-minnesota-and-beyond/>

86 Welcoming America. Retrieved from <https://www.welcomingamerica.org/about/who-we-are>

87 Browning, Dan (2018). In some Minnesota cities, welcome turns into a fighting word. *Star Tribune*. Retrieved from <http://www.startribune.com/welcoming-or-wary-minnesota-cities-weigh-their-approach-to-newcomers/481837471/>

88 Werner, Marnie (2016). A quiet crisis: Minnesota's child care shortage. Center for Rural Policy and Development. Retrieved from https://www.ruralmn.org/a-quiet-crisis-minnesotas-child-care-shortage/#_ftn3



Image: Granite Falls City

INFRASTRUCTURE

Thriving by Design Network's Problem Statement: Minnesota's physical infrastructure systems are deteriorating or lacking across the state, posing threats to vulnerable populations and to long-term business growth. Estimates of needs for waste and drinking water management, broadband, housing, and transportation and transit amount to billions of dollars over the next decade.

The term “Infrastructure” is relatively recent in public policy parlance, and over the last 40 years has become more commonly used than its predecessor “public works.”¹ Both terms refer to the physical structures and systems, which are often publicly financed (through utilities, taxes or user fees), usually regulated by our governments, and that are required for an economy and a society to function and thrive. For this chapter, the word “Infrastructure” is used to refer to the systems that support, or provide, transportation, clean drinking water and sewage management, safe and affordable housing, and Internet-based communications grids. Energy is discussed separately in the next Minnesota Equity Blueprint chapter, “Natural Resources and Climate Resilience.”

Infrastructure quality and sufficiency improve quality of life, provide basic standards of universal access, and stimulate economic growth. Infrastructure allows everyone to gather in public space, go to work, get products to market, attend religious services, go to political gatherings or just stay home and happily flush the toilet. Public-sector infrastructure enables Minnesota’s private-sector businesses, and especially smaller businesses and entrepreneurs, to be productive, competitive and profitable.

We're worried about the impact of neglected, aging and (probably eventually) failing basic infrastructure- including roads, bridges, sewers, utilities, streets, and sidewalks - on individual families and entire communities.

— Participant at Thriving by Design Statewide Convening in Granite Falls

Some thought leaders emphasize the economic aspects of infrastructure investments, aside from human comfort and safety. For instance, Chuck Marohn (founder of Strong Towns) has said that “...infrastructure is a platform for expanding wealth. The reason to build infrastructure is that it builds wealth in a place beyond what would happen without infrastructure.”²

Marohn and similar development professionals stress that infrastructure projects must be financially sustainable for a community; that it is unwise to seek funding for a project which the community cannot afford to maintain. These considerations are a significant constraint for regions with low population density and a small tax base.

Much of Minnesota’s public infrastructure (especially road pavements, utility pipes and bridges) have reached their service age, the time when replacement or improvements are required. Decades of disinvestment and slow adoption of climate resilient systems are likely to create infrastructure emergencies in the future. Minnesota’s rural and urban public works structures are crumbling, posing an urgent threat to vulnerable populations as well as threatening long-term business growth.

The reason Minnesota thrives today is we’re living off the fat of yesterday, and [that’s] a very dangerous place to be.

— Former Governor Arne Carlson³

The Minnesota chapter of the American Society of Civil Engineers’ (ASCE) 2018 Report Card on Minnesota Infrastructure graded nine categories of facilities and systems (ranging from Aviation to Wastewater) needed for the health and prosperity of Minnesota’s people and economy. The categories were graded “... on the basis of capacity, condition, funding, future need, operation and maintenance, public safety, resilience, and innovation.”⁴

Minnesota’s overall average was a “C” (“Mediocre: Requires Attention”). Of particular concern were the state’s network of systems for water management (drinking water was a “C-” and wastewater was a “C”) and transportation (Roads were a “D+”, Transit was a “C-”, and Bridges were a “C”).



MN2050 CREATES BROADER INFRASTRUCTURE VISION

Many organizations focus on the important specific pieces of Minnesota's massive infrastructure challenge, but few are as devoted to long-term vision and comprehensive investment as MN2050.

This coalition of 18 professional organizations includes many civil engineers who are committed to community service. The central message on the MN2050 website meshes with the values of the Minnesota Equity Blueprint: "Lack of timely attention to reasonable public infrastructure investment hinders economic development, safety, and quality of life in Minnesota."

Launched a decade ago, MN2050 traces its origins to a seminal 2006 national study by the American Public Works Association, entitled "America 2050: A Prospectus." This sweeping and prophetic framework called for extensive and "integrated investments in mobility, environment, and economic development that are needed to guide the nation's growth in the 21st century."

Attention to racial equity and concentrated poverty, to climate change and "green infrastructure," and to regional disparities and bypassed areas was spelled out in that 2006 document. And those themes permeate MN2050's considerable portfolio.

Among recent initiatives and accomplishments, MN2050:

- Developed and promoted a new comprehensive statewide "Asset Management" survey. The formal tool showed for the first time the extent that cities, counties, Met Council and MnDOT are adopting asset management to map and inventory their numerous infrastructure assets, and better plan for maintenance and assessment.
- Coordinated with former State Auditor Rebecca Otto and the U of M to create a comprehensive statewide "infrastructure stress" tool, showing among other things, the relatively old age of sewer and water systems in both inner-ring Twin Cities suburbs and in Greater Minnesota. MN2050 is currently working with State Auditor Julie Blaha to expand the tool.
- Collaborated with the Minnesota Rural Water Association, to help smaller communities in Greater Minnesota locate and document their sewer and water assets and needs, and identify replacement costs.
- Helped another partner, the Minnesota Chapter of American Society of Civil Engineers (ASCE), build public awareness of the 2018 Report Card for Minnesota's Infrastructure. The Minnesota Report Card is an important resource and covers not only transit, transportation, drinking water, and waste water, but dams, ports, bridges, aviation, and energy systems.

Brad Henry, a MN2050 Steering Committee Member, says one important revelation in the group's research has been the scale and total value of public infrastructure, along with the discovery that most of it actually belongs to local city and county governments.

"The combined value of city and county infrastructure is greater than the combined value of Met Council's and MnDOT's infrastructure," Henry says. "And there is an annual infrastructure funding gap for all levels of government of \$2 billion."



Duluth Harbor.

Image: MN Section of ASCE

In this report, the analysts observed that most of the public infrastructure in use today was built before smart phones, electronic sensors and fuel-efficient cars were common.

New materials and expanded awareness of pollutants in waste streams and drinking water constantly require upgraded approaches and equipment. The energy grid, roads, sewers, and drinking water systems of decades ago need upgrading to better prepare for larger storm events, increased use of renewable fuels, and a changing population.

— Report Card for Minnesota's Infrastructure 2018⁵

In addition, Minnesota's population has grown by about 2 million people over the last half-century, when much of the state's current infrastructure was built. Estimates of needs for waste and drinking water management, broadband, housing, transportation, transit, and other crucial infrastructure updates amount to billions of dollars of new investment required over the next decade.

All Minnesotans will be impacted by the state's aging and failing infrastructure. Infrastructure affects our state's economy, our vaunted quality of life (good for many of us, although racial, regional and other disparities remain) and basic public safety. Economic growth requires dependable lifeline services to attract employers, employees and customers. Businesses of all kinds are hindered by gaps in safe drinking water and wastewater systems, inability to access high-speed Internet, lack of access to affordable workforce housing, and traffic congestion and bad roads. The opposite scenarios — reliable water management, accessible safe housing, good roads, and convenient transit — combine to lower overhead for business, reduce employee turnover, and boost productivity.

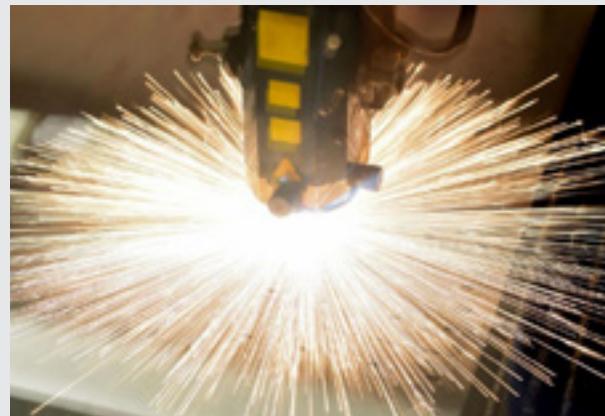
Infrastructure improvements must be climate resilient.

— Participant at TBDN Granite Falls Statewide Convening

INFRASTRUCTURE GRANTS BOOST RURAL JOB GROWTH

Like many small-to-medium manufacturing enterprises in Greater Minnesota, Kappers Fabricating Inc. in Spring Valley (pop. 2,518) has been thriving, bursting at the seams in fact. The company recently sought to expand its warehouse for storing the parts it manufactures for all-terrain and utility vehicles, but that required the city to improve water, sewer and transportation systems that serve the site, an expensive proposition for local taxpayers.

Despite concerns about expense, the city moved forward with the expansion, adding 20 jobs to the southeastern corner of the state, thanks in large part to a \$609,000 grant from DEED's Greater Minnesota Business Development Public Infrastructure Grant Program (BDPI). The improved infrastructure added capacity for as many as five new businesses nearby and gives the city a tool to attract new commerce.



Laser cutting process at Kappers Fabricating Inc.

Image: Rochester Post-Bulletin

Among grants in the same round that helped Spring Valley was a \$689,000 award to Wadena in central Minnesota, to improve streets and water and sewer systems for a new business park. The park will provide 15 new industrial lots and an estimated 30 new jobs. Meanwhile, in east central Minnesota, a \$401,000 grant for North Branch assists the extension of a large trunk water main that will provide service for a 252-acre industrial park. The park has been mostly vacant due to inadequate water service. And the city estimates over time the park could generate up to 2,800 jobs.

The BDPI grant program was designed to exclusively serve areas outside the seven-county Twin Cities metropolitan area. Under the program, DEED awards 50 percent of eligible capital costs for the qualifying public infrastructure projects, including wastewater collection and treatment, drinking water systems, storm sewers, and more.

“By utilizing these BDPI grants, cities around the state are improving their local economies,” says DEED Commissioner Steve Grove. “These infrastructure projects signal that Greater Minnesota is open for business, and these communities are eager to welcome new opportunities.”

Both the Coalition of Greater Minnesota Cities and the Greater Minnesota Partnership have been staunch supporters of expanding the BDPI program and ensuring that it is reserved for rural regions.

“As a direct result of the BDPI program, more than 2,000 jobs have been created in Greater Minnesota and the state’s tax base has increased by millions of dollars,” said Coalition member and Le Sueur Mayor Robert Broede in a recent Coalition statement. “As the House and Senate prepare their bonding bills, we hope they will also show a commitment to helping more cities take advantage of the opportunities a BDPI grant provides.”



Image: Wikipedia

Broadway Avenue, Spring Valley's main street.

Infrastructure is not of much interest to most of us; we take it for granted, as long as it works. Life will get more interesting and exciting as infrastructure ages and fails to perform more frequently across the state.

— Participant at Thriving by Design Statewide Convening in Granite Falls

Throughout TBDN’s listening sessions, participants called out uneven access to adequate and safe infrastructure based on race, region (rural vs. urban), income group, age and other key characteristics. Participants emphasized that all of Minnesota’s diverse and numerous communities must benefit from infrastructure investments, in updated water management, expanding affordable housing choices, and providing better access to transportation and Internet connectivity. TBDN stakeholders also emphasized the importance of avoiding one-size-fits-all solutions, since problem specifics vary with population density, culturally specific needs, and major differences in the state’s biomes.

DRINKING WATER AND WASTEWATER MANAGEMENT

Bacteria in Minnesota lakes and streams mainly come from sources such as failing septic systems, wastewater treatment plant releases, livestock, and urban stormwater. Waste from pets and wildlife is another, lesser source of bacteria.

— Minnesota Pollution Control Agency⁶

Challenges

Minnesota's serious and pressing water management deficits disproportionately impact people based on their race, income and location. Failing, aging and insufficient systems for handling drinking and waste water are typically most burdensome in older neighborhoods, on rural and lower-income households and particularly in communities of color. Businesses in these vulnerable communities suffer similarly. Recent disasters in Flint, Michigan and Newark, New Jersey, underscore the racially disparate impact of water infrastructure neglect.⁷

The general rule is, “The older your neighborhood, the closer you are to an infrastructure crisis.” For the most affluent older suburban areas, where property wealth and the tax base have funded infrastructure maintenance, this rule will likely not apply. Newer developments, in suburban and exurban neighborhoods across Minnesota may not be impacted for many years. However, it’s the people who live in lower-income neighborhoods in older Minnesota cities, suburbs, towns and rural areas who depend on aged infrastructure. With time and neglect, older neighborhoods are at heightened risk of becoming unlivable when the water mains break or the wastewater management system ceases to work.

Using age of housing units as a proxy for age of neighborhoods, Exhibit 1 shows the median age of housing units in each of Minnesota’s 87 counties. The “median” age of housing refers to the age at which 50 percent of the housing units in the county are that age or older and 50 percent of the housing units are that age or newer. The map clearly shows how rural and inner-city counties contrast with the exurban counties surrounding the Twin Cities.

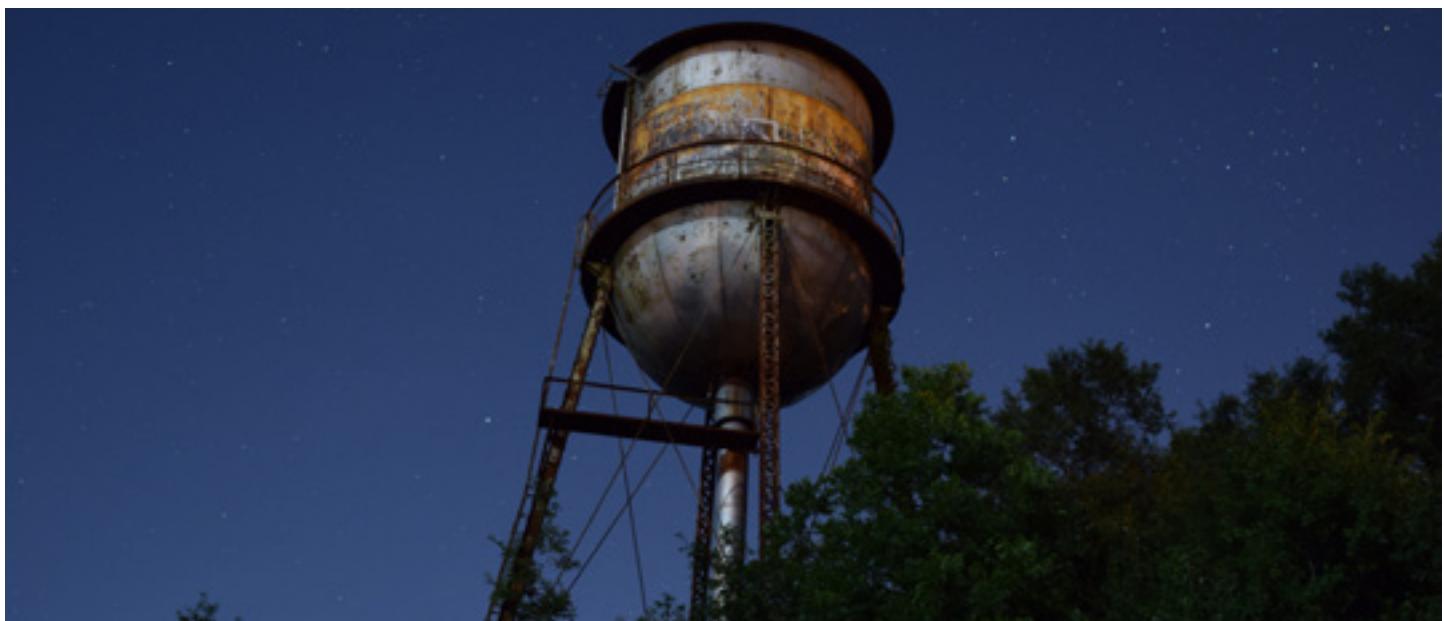
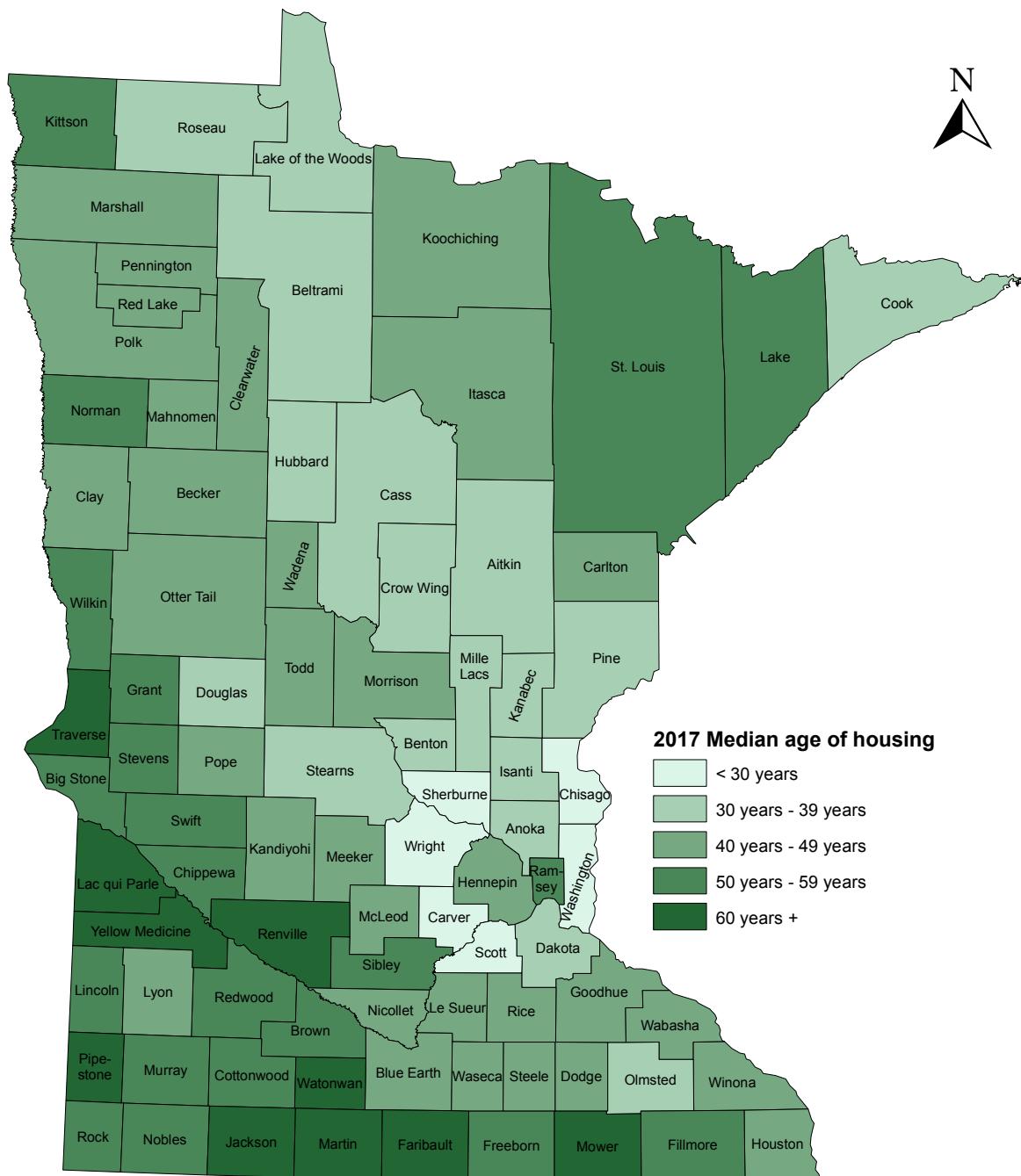


Image: Jeremy Olson, Unsplash

Exhibit 1. Counties in Greater Minnesota tend to have the oldest infrastructure



Source: U.S. Census Bureau

Created July, 2019

Exhibit 1 shows that median age of residential units varies widely across the state. There is an arc of newer housing units in the counties immediately surrounding Hennepin county. The oldest housing is in the south and southwestern parts of the state. Given the similarities in median age of Ramsey and Renville counties, clearly some of the same infrastructure challenges experienced in the Capitol City are shared by cities and towns in many rural sections of the state.

Solutions

1. Increase funding for the Minnesota Public Facilities Authority (MPFA). The state should approve the MPFA's 2020 capital budget increased request of \$200 million which will serve communities across the state as they work to improve their water infrastructure.⁸ The MFPA provides low interest loans and grants to help communities finance improvements to wastewater and drinking water infrastructure. Grants are based on affordability (targeting funds primarily to small rural communities) and provided to upgrade treatment facilities to meet water quality goals.⁹

2. Increase funding for Local Government Aid (LGA) and maximize annual legislative bonding bill effort. LGA and state bonding bills (which extend borrowing authority for public works projects) provide life blood for local governments seeking to maintain their infrastructure quality and address new demands imposed by climate change. LGA formulas are especially beneficial for both rural and urban communities with relatively higher needs, lower incomes and lower property tax wealth. LGA should be restored at least to its 2002 levels, when large cuts were imposed during a state budget crisis. Local projects also are often tucked into state bonding bills and maximizing the total bonding bill in each legislative session will enable more investment in transportation, housing, water quality, and infrastructure that improves environmental quality. A broad consensus exists that bonding was woefully inadequate in 2019.¹⁰



Image: City of Thief River Falls

Thief River Falls wastewater ponds.

3. Create a blue-ribbon cross-sector infrastructure initiative. In the early 1980s, St. Paul, Minneapolis and South St. Paul, as the oldest metro cities, put together a model partnership with state and federal governments that dramatically improved water quality by separating sanitary sewer systems from stormwater drains. It's now time for another successful federal, state, and local partnership to meet an even larger and more complex and comprehensive statewide challenge: simultaneous repair and improvement of streets, bridges, transit, drinking water, access to high speed broadband and affordable housing in Minnesota's older rural and metro cities of all sizes. A new blue-ribbon cross-sector infrastructure initiative — led by state government and supported by cities, counties, professional organizations, and existing coalitions — would comprehensively inventory assets and needs, estimate the cost to meet those needs, prepare an action plan and schedule to allocate costs and perform the work, and then supervise the work's completion.

4. Prioritize sewer and water improvements using cost-efficient and innovative technologies.

Minneapolis, St. Paul and other larger utility operations in the state are using innovative pipe-lining technology, in which a flexible fiber sleeve is inserted into cracked pipes, then inflated and chemically hardened. Access causes minimal street disruption and damage since it can be done without digging up entire blocks; existing access structures are often insufficient. Pipelining works best on gravity lines. Pressure pipes (used mainly for drinking water) are more challenging. Lining is most cost-effective when the street above the pipe is very good and only the pipe itself is in structurally bad condition. According to Bruce Elder, St. Paul Public Works Sewer Utility Division manager, this city has lined over 250 miles of sanitary and storm sewers using pipelining technology. Funding this type of pipelining is an investment in sustainable, non-disruptive infrastructure for the future.

5. Promote Asset Management. Minnesota state government should create a program dedicated to providing Asset Management technology and training assistance to local governments. Asset Management training is one of the recommendations identified as a critical step in increasing the ASCE Report Card grades for categories such as drinking water, waste water, roads and transit. Asset Management technology encompasses techniques, tools, systems and procedures to gather data on location, condition, repair records, cost and expected service life for physical facilities. Larger public infrastructure agencies presently utilize various versions, but smaller rural cities and some counties often do not have the budget nor staff to acquire and use these techniques.¹¹

While a statewide campaign is critical, this initiative must avoid one-size-fits-all assumptions. Regulations built to solve problems in very densely populated regions can needlessly result in unaffordable mandates for local governments, particularly small rural cities with more sparse populations.

6. Restore the State Planning Office. The new water and sewer system interactive maps developed by the University of Minnesota and the State Auditor's Office provide detailed public utility data on a city-by-city basis. The data for these maps comes from the annual surveys of water and sanitary sewer needs published by the state Public Health Department and Pollution Control Agency respectively. Although the data exist in a variety of locations and formats, there is no one state source of data, expertise or planning on the complete array of public infrastructure. Placing this data in a restored Minnesota Planning Agency, which was abolished in 2003, is an optimal solution.¹²

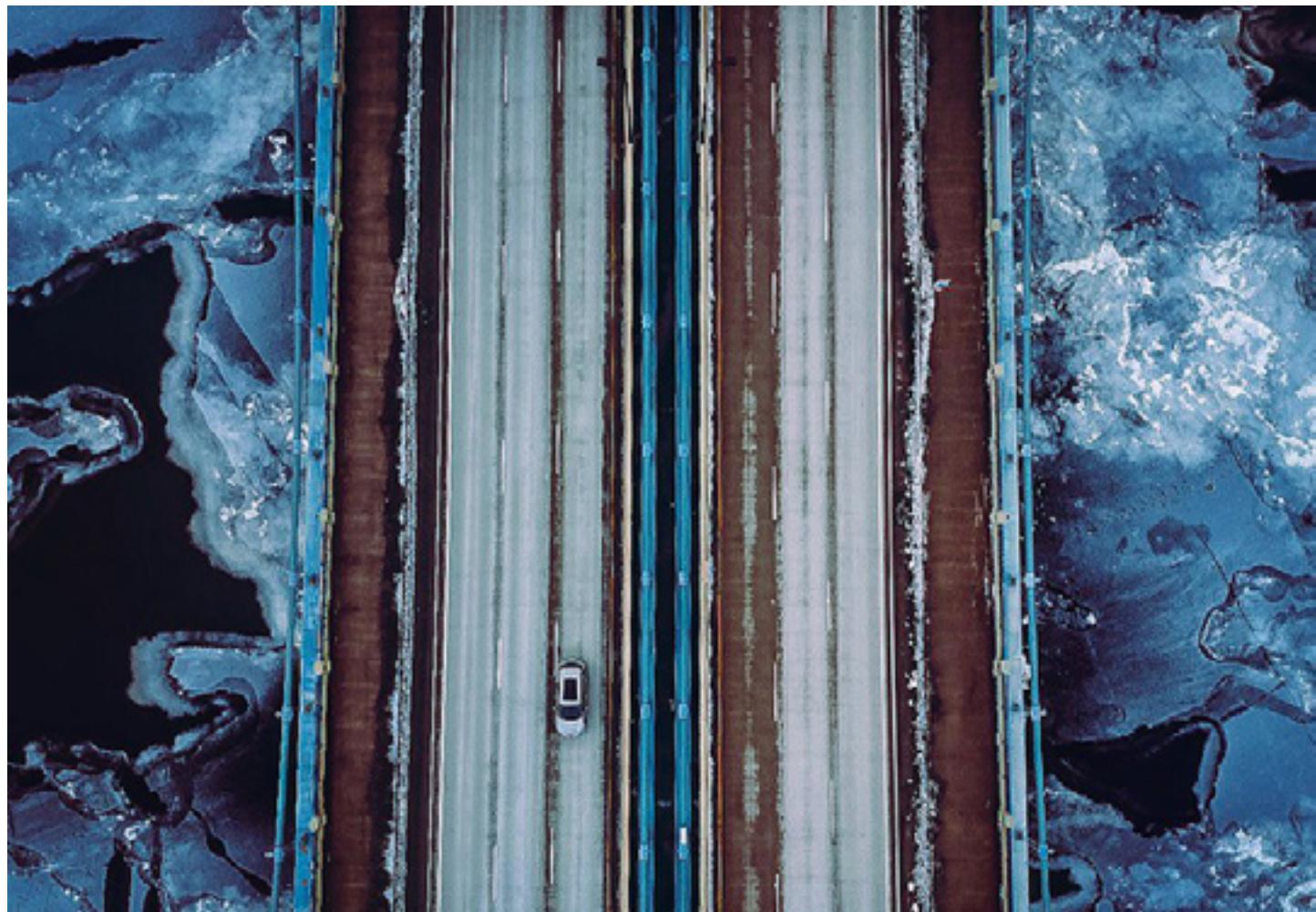


Image: Danny Photography

BROADBAND AND DIGITAL INCLUSION

Challenges

Among all the infrastructure components discussed in this Blueprint, broadband is the youngest sector and still has not reached all Minnesotans; not everyone has the ability to connect to this type of high-speed Internet at work or at home. This is important because broadband is a critical ingredient for today's successful businesses, educational institutions, systems of delivering health care, and governments.

Broadband is an economic development and a wealth issue, whether it's from the employer or the consumer perspective. The Blandin Foundation estimates that broadband access drives an additional \$1,850 in household economic benefits annually,¹³ including a 3 percent increase in home values.¹⁴

However, too many of Minnesota's people and businesses do not yet have access to high speed, affordable broadband. Many do not have access to computers and other Internet-enabled devices, nor the basic and advanced skills training, to make use of the Internet access for home, school, and business improvement. As the array of valuable home and business web-based tools increases, the demand for greater broadband equity and more inclusive broadband digital literacy will continue to grow. Minnesota will continue to need to invest in both the physical infrastructure and the human capacity to make good use of it for the foreseeable future.

BROADBAND DEFINITIONS

- “**Broadband**” refers to high capacity, high-speed Internet access which is always available. Wired broadband relies on a physical connection to a concrete location (such as a home, school, clinic or business) most typically conducted through a cable of some kind, usually a traditional copper telephone line (DSL), coaxial cable, or fiber. Wireless broadband is transmitted through fixed wireless, satellite, and mobile technology connections. With wireless Internet access, connection speed, capacity, and lag time may be affected by distance, objects in the way, and other factors.
- “**Digital Inclusion**” refers to the actions and investments needed to ensure that all individuals and communities, regardless of location, race, income or other trait, have access to and the skills required to use information and communication technologies.
- “**Mbps**,” short for “**megabits per second**,” is the standard measure of Internet speed, according to the Federal Communications Commission. It refers to the speed with which information is downloaded from or uploaded to the Internet. One megabit is equal to one million bits or 1,000 kilobits. The higher the number of Mbps, the speedier the connection. With higher bandwidth upload speeds, around 25 Mbps, uploading and downloading high-resolution images and HD-quality video takes seconds or minutes, instead of hours. However, speed is also impacted by capacity needs up and downstream. If a household, for example, has more than one Internet-dependent device in use at the same time, it will need to increase Mbps capacity accordingly. For rural Minnesotans with lower upload speeds, a single telephone call using the Internet (known as “voice over IP”) can cause all other Internet-based applications to lag, challenging both productivity and stable business operations.
- “**Latency**” is the amount of delay of signal, measured in milliseconds, that occurs in a round-trip transmission. Latency is the stutter you see on your Netflix movie, for example, when multiple devices in your household are using the same Internet connection simultaneously. Latency is an especially critical problem for certain applications using Internet — telemedicine, for example.

- **“Dig Once”** Installing high-speed fiber-optic infrastructure is incredibly expensive, costing up to \$8,000 per home to put the cabling in place. Yet a Federal Highway Administration report detailed that up to 90 percent of this cost was tied up in the process of actually digging up the roadways to install the fiber lines. As a result, some cities and states champion the idea of future-proofing PROW’s (public rights-of-ways) during road construction projects. This common-sense concept is frequently referred to as ‘Dig Once’ and it mandates the inclusion of broadband conduit during the construction of any road receiving federal funding. The conduit, the flexible plastic pipes, provides access to more easily install fiber-optic communications cable during construction or later, without tearing up the road again.

“Digital inclusion” is a social state where every person, regardless of location, race or income, has access to broadband, and the training, tools and skills necessary to fully leverage this access. As of today, access to high speed Internet and the devices and skills needed to leverage Internet access to improve one’s quality of life is least likely to be available Minnesotans who are:

- Living in low-income areas in rural Minnesota.
- Children and youth (people under 25 years old).
- Members of African American, Hispanic and Native American communities.
- People who are not currently participating in the labor force (either unemployed or not looking for work).
- People who never graduated from high school.¹⁵

Is city wi-fi attainable in rural Minnesota?

— Participant at Thriving by Design Community

For over thirty years, government, private and non-profit organizations have collaborated across Minnesota to reach access and inclusion goals. In 2013, then-Governor Mark Dayton established the Governor’s Task Force on Broadband, and the state legislature created the Minnesota Office of Broadband Development (OBD), which is located within the MN Department of Employment & Economic Development (DEED), signaling the state’s appreciation of the link between inclusive infrastructure investment and equitable wealth building.

The Legislature also established the Border-to-Border Broadband Infrastructure grant program which works to ensure that all Minnesota homes and businesses have access to broadband service of at least 25 Mbps download and 3 Mbps upload (referred to as “25/3”) by 2022 and, that all homes and businesses have access to at least one provider offering significantly faster service of at least 100 Mbps download/20 Mbps upload (“100/20”) by 2026.

The share of Minnesota households with access to wireline broadband at the 25/3 state speed goal has increased from 69.64 percent in 2011 to 92.70 percent in April 2019. However, rural households still lag by almost ten percentage points, meaning that almost a fifth lack this basic economic necessity.

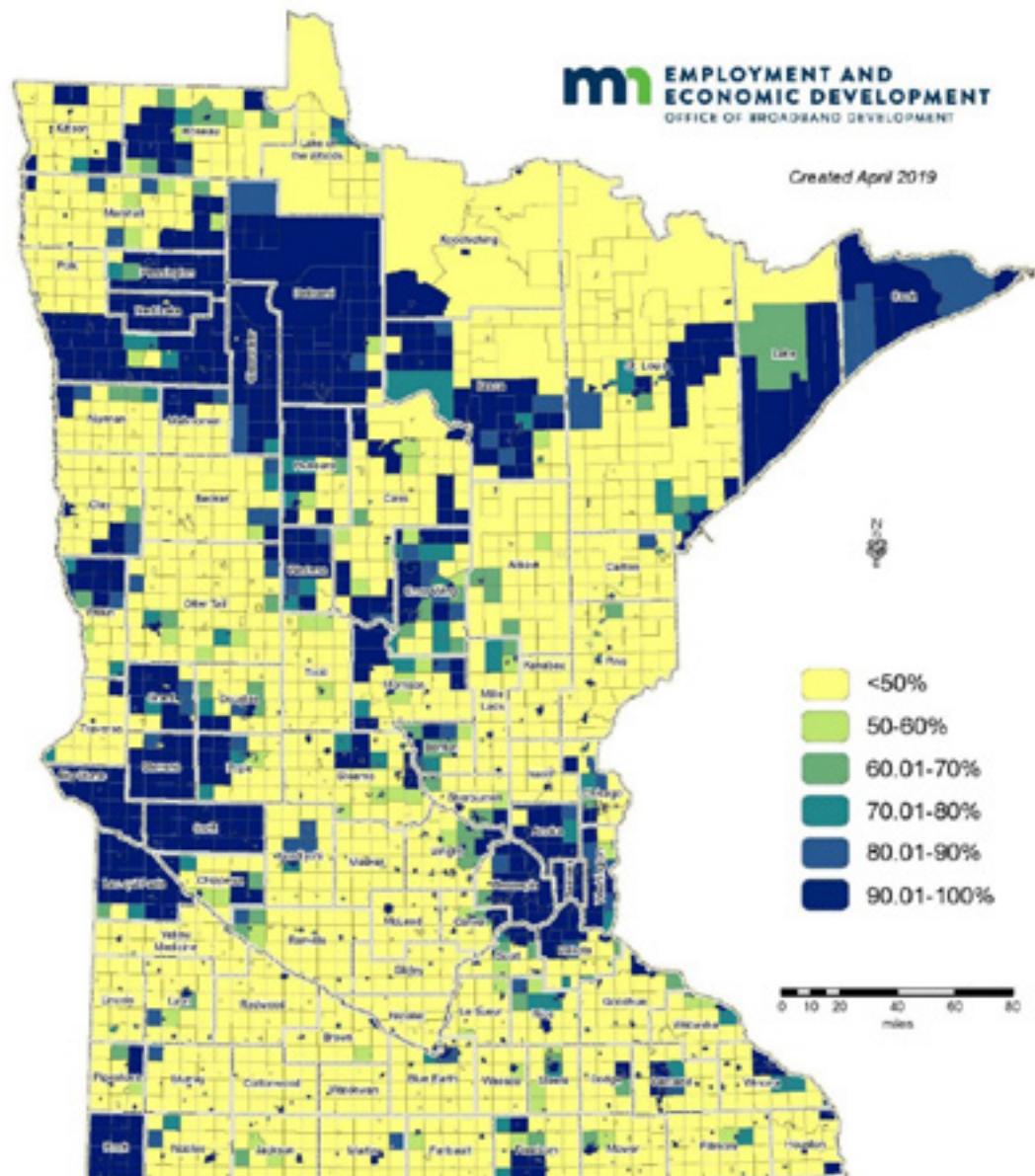
While better than the dial-up service prevalent at the end of the 20th century, the 25/3 state speed goal is nowhere near the download and upload speeds needed going forward for business, health care, government, and schools. Institutional users and home users require more bandwidth — higher speeds, higher capacity, and no latency — especially when multiple users (at work or at home) are on the Internet simultaneously and are uploading large files such as images or video conferencing. In addition to consuming data, individuals and employers (including hospitals, universities, and police departments) produce and upload data in significant amounts. All communities must have the infrastructure that enables higher upload speeds. As Exhibit 2 illustrates, more than half of the households in many rural Minnesota cities, townships, and school districts still do not have access to broadband that meets the state’s standard.

Exhibit 2. Many rural homes and businesses lack high speed Internet.

2019 Broadband Availability in the State of Minnesota

Percentage of Households Served by Wireline
Broadband Service by City/Township

At Least 100 Mbps Download/20 Mbps Upload Speeds
Statewide Availability: 85.98%, Rural: 68.43%



This map was prepared by Connected Nation under contract with the Minnesota Department of Employment and Economic Development. The map represents areas of broadband service availability based on provider data submitted to and analyzed by Connected Nation. This data is current as of December 31, 2018.

Additional maps and data are available at <http://mn.gov/deed/programs-services/broadband/maps>. Upon request, this information can be made available in alternate formats for people with disabilities by contacting the DEED Office of Broadband Development at 651-259-7510.

IMPROVING LIVES AND BUSINESSES, ONE BY ONE, WITH BROADBAND GRANTS

As Dick Sjoberg's family-owned business continues its efforts to connect rural northwestern Minnesotans to high-speed Internet service, he gets downright passionate about all the ways life improves when rural folks finally get fully up to speed with the world economy.

Sjoberg loves to reel off anecdotes: the lady who breeds springer spaniels and has seen her business improve because customers can now see the puppies online; kids who can now do more homework at home instead of trekking into town to work at the local library; life-saving improvements in response time for stroke victims because of high-speed telemedicine; farmers feeling more secure because broadband technology helps them track moisture content in their bins; small micro-enterprises flourishing because owners can reach more customers and more easily comply with licensing and regulations; and providing back-up service to even large high-tech employers (notably DigiKey), which already had its own Internet service but needed redundancy in case of system failure. "A lot of things are changing in the ecosystem out here," Sjoberg says. "It's always good when we can provide a service that's useful and uplifting to people, and make a little money doing it."

Absolutely crucial to providing this modern necessity, Sjoberg adds, is Minnesota's Border-to-Border Broadband Grant program, from DEED's Office of Broadband Development. Since 2014, the Border-to-Border Broadband Grant program has awarded \$85.2 million for both wireline and wireless infrastructure solutions, in turn leveraging \$110.6 million in matching local and private investments from communities, private businesses, and cooperatives. As a result, service has been extended in mostly remote and rural areas to an additional 34,000 households, 5,200 businesses and 300 community institutions.

Many Minnesotans may be unaware of the extent to which broadband grants really nurture local private businesses and co-ops, representing authentic public-private partnerships. They are not your classic government programs or projects.

As noted in NCTA, the trade journal of Internet cable providers, the Sjoberg family business started in the 1940s (selling appliances and TVs), and remains relatively small, with 22 employees serving 37 towns and townships. "We've got a business that's doing a lot of good for a lot of people," Sjoberg told the NCTA. "It's a nice business to be in."



Image: Dick Sjoberg, Thief River Falls, MN

Crew from Olson Underground, at work for Sjoberg Inc. installing a broadband cable west of Thief River Falls, funded by DEED's Border-to-Border Broadband Grant and local public and private matching dollars.

Solutions

Everyone in Minnesota will be able to use convenient, affordable world-class broadband networks that enable us to survive and thrive in our communities and across the globe.

— Minnesota Rural Broadband Coalition's vision for Minnesota

7. Prioritize digital inclusion. Digital inclusion and equity efforts must continue focusing on Minnesota's rural and tribal areas and on areas in the cities where there has been a history of neglect in delivering advanced residential technologies to lower-income communities. State and federal subsidies are needed to help bridge the gap between what it costs to deploy broadband in rural, low-density population areas versus high-density urban areas. Federal assistance is available from agencies such as USDA Rural Development and the U.S. Department of Commerce. State level strategies for improving equity and inclusion¹⁶ include:

- Develop a widely accessible best practices inventory for deployment and management of broadband service in rural, sparsely populated and high-cost regions.
- Identify measures of, and continuously track, broadband adoption and affordability, especially for low income and rural consumers, as important aspects of evaluating deployment success.
- Uplift the digital neglect issue and report on lasting damage due to historic policies followed by certain providers in withholding the last generation of advanced residential technologies from lower-income urban communities and rural areas.
- Enforce the non-discrimination provisions of the federal Telecommunications Act regarding full and fair deployment of high-speed broadband networks. This would include creating and enforcing fines for those providers not bringing necessary speeds to all households.
- Fully fund the Telecommunications Equity Aid and Regional Library Telecommunications Aid to facilitate broadband in K-12 education and libraries.

8. Invest in digital literacy. Improving the digital skills of residents, workers and organizations is critical. Libraries, K-12 schools, higher educational institutions, workforce development programs and non-profits should offer free digital literacy workshops for people of all ages. "Hackathons" can be used to encourage community members to develop digital solutions to local challenges.

9. Broaden access to reliable computing devices. Even when broadband is available and affordable, people are unlikely to invest time on Internet-based activities if their devices are inadequate or unreliable. Community leaders can reach out to local businesses and support programs to recycle computing devices and sell or loan them to community residents. PCs for People, founded in Minnesota in 1998, is a nationally recognized model for this. The non-profit acquires computers in partnership with local businesses that typically retire computers before their useable life is over. Together they keep the computers out of landfills and once refurbished, provide them to people and organizations with limited income in order to help them benefit from the "life changing impact" of computer fluency and mobile Internet.

To further digital inclusion we need to continue to support libraries as digital device and training resources and as community-based destinations for people without devices. Internet researcher Roberto Gallardo also recommends that communities "... establish technology hubs with free access to computers and makerspaces at strategic points in the community where all residents are within 10-15 minutes walking distance from these technology hubs."¹⁷ And some libraries in Minnesota are doing just that, in partnership with the Libraries Without Borders project which brings literacy, digital literacy, and library services to people outside of a traditional library — for example in pop-up libraries in laundromats and manufactured housing parks.

10. Prepare for future technologies. As technology and applications continue to advance, consumer and business demand for ever faster broadband will also continue. Minnesota must stay committed to both the investments required for broadband maintenance and the investments required to maintain capacity and productivity. The following two recommendations are abridged from the 2018 Governor's Task Force

on Broadband Report, as well as recommendations made to the Task Force by the Minnesota Rural Broadband Coalition,¹⁸ which represents a broad range of statewide community voices.

- Agencies with construction oversight and funding, and agency partners with land stewardship responsibilities must insist on "Dig Once" practices to promote broadband competition and increased deployment.
- Establish a legislative cybersecurity commission to enable information-sharing between policymakers, state agencies, and private industry and to develop legislation to support and strengthen Minnesota's cybersecurity infrastructure.

11. Expand and increase funding for broadband partnerships and the Border-to-Border Broadband

Development program. TBDN stakeholders want state legislators to advocate for, create, and leverage public and private partnerships (at local, state, federal, and tribal levels) to fund and sustain improved broadband access and functionality. Specific policy directions include:

- Increase funding to \$70 million for the Border-to-Border Broadband Development Grant Program, which has been instrumental in advancing the state's broadband goals and allowing qualified providers and community applicants to extend and improve networks in the hardest to reach places in Minnesota. While the Legislature appropriated \$40 million for the 2020-2021 biennium, the total amount requested by qualified applicants will continue to exceed the money available in the fund.
- Continue the Minnesota Broadband Task Force as a resource to the Governor and the Legislature on broadband policy, with a broad representation of perspectives and experiences, including provider, community, business and labor interests. Membership on the Task Force must be reviewed in light of equity and inclusion goals.

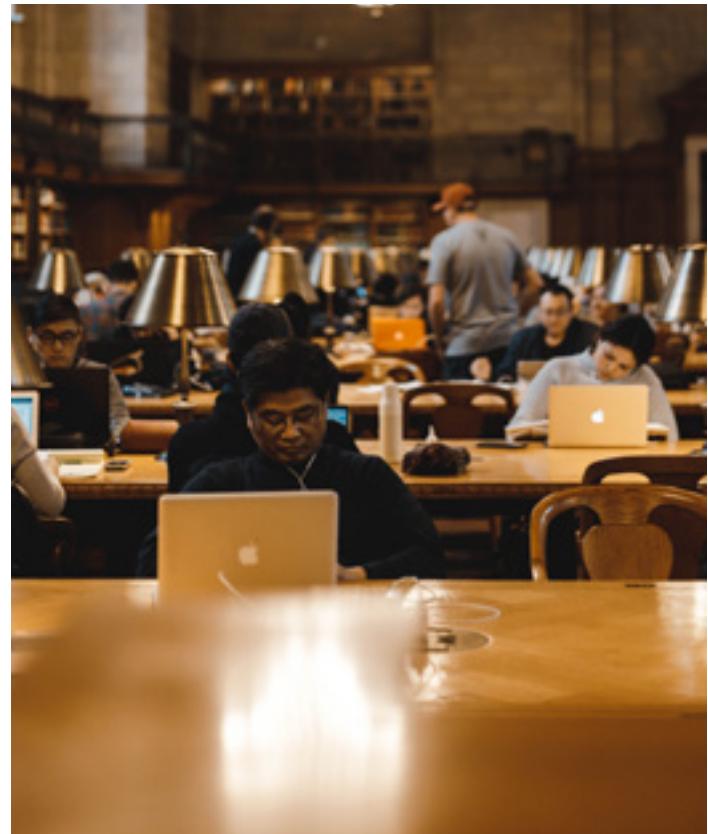


Image: Mollie Sivaram, Unsplash

In its current form, broadband service providers have outsized representation [on the Minnesota Broadband Task Force] compared to consumers, business owners, agriculture, and other important groups that are dedicated supporters and beneficiaries of broadband funding.

— Minnesota Rural Broadband Coalition

12. Sustain and expand Office of Broadband Development (OBD). The OBD is more than a symbolic entity; it links communities, businesses, and providers, and it promotes successful infrastructure project design, execution and management. After a year hiatus, the 2019 Minnesota Legislature approved \$40 million in additional state broadband grant funding. The OBD reported receiving 78 applications at the close of the application period in September 2019, for the first \$20 million allocation of the grant funds. For the first time, the Legislature also approved multi-year funding from the grants, which is essential to achieving more effective and efficient construction planning and local match leveraging.

Stable, biennial funding should be incorporated into DEED's base budget. Funding must be sufficient for OBD to meet its statutory mandates and create an OBD operating fund to advance and promote programs and projects to improve broadband adoption and use. OBD's mapping program continues to be particularly useful as both planning and communications tools. This would give confidence to providers and communities alike to continue to plan and build partnerships and prepare effective project proposals. The Legislature must also remove, or raise, the \$5 million cap per project, which can limit applications for projects covering larger areas, such as an entire county. In some cases, larger projects allow for more cost-efficient network planning and construction.

13. Reform the Broadband Grant Challenge Procedure to encourage competition. According to community leaders who have experienced working on state broadband grant applications, the Broadband Challenge process: "...remains an obstacle to delivering the best network possible to communities, by being overprotective of incumbent providers and discourages non-incumbent providers from participating in the program over concerns their efforts will be undermined. The process does not require the incumbent to install the same or better service as proposed by the applicant, rather it allows a challenger to improve service — not to 2026 speed goals — but just enough to prevent a grant, to the detriment of the community. If a provider is not meeting a community's needs, they should not be allowed to place undue burdens on access to state grants."¹⁹



Image: Jane Leonard, Kenyon MN

SAFE AND AFFORDABLE HOUSING

We need programs that address housing needs for everyone (workers, new homeowners, renters, refugees and immigrants, families, disabled people and seniors).

— Participant at Thriving by Design Statewide Convening in Granite Falls

Challenges

Housing is “affordable” when it requires less than 30 percent of a household’s income, according to the US Department of Housing and Urban Development (HUD). Households paying 30 percent or more of their monthly income are identified as “cost-burdened.” Those paying 50 percent or more are identified as “extremely cost-burdened.” These definitions apply to both renting and home-owning households.



Image: MN Housing Fun Inpractice

Access to safe, stable and affordable housing is a critical ingredient for creating thriving families and communities. “Affordable” is the keyword here. There may be safe and available housing, but if it is not affordable, then it’s not a stable housing solution. The benefits to taxpayers of ensuring that all households have safe and stable housing are typically measured in terms of lower public costs (for emergency room visits, jail, court, detox, public benefits uptake) and higher tax revenues through better health and educational outcomes and higher employment and job retention. For these reasons, policy experts and housing advocates increasingly categorize affordable housing as public infrastructure.²⁰

Consequences of widespread housing instability include more school students who are identified as “high mobility” (being admitted to more than one school during an academic year) and the persistent increases in newly homeless elders and chronically homeless (homeless for two years or more) households. In addition, and harder to quantify, there are the invisible homeless, the households that move between their own housing and doubling-up with kin and strangers.

When you don’t have a home, education is difficult.

— Participant at Thriving by Design Community Conversation in Bemidji

Housing instability functions as a major barrier to individuals and families being able to access opportunity and it constrains our state’s potential prosperity. Lack of affordable housing burdens some communities more than

others, some age groups more than others, and some regions more than others. Across Minnesota, there are significant racial disparities in housing stability, as evidenced in the following:

- According to the Minnesota Housing Finance Agency, Minnesota's homeownership disparity is the fifth largest in the country. Three fourths (76 percent) of white non-Hispanic households in Minnesota own their own home, while fewer than half (41 percent) of Minnesota's households of color own their own homes.²¹
- Regardless of rental vs ownership status, Minnesota's households of color are disproportionately likely to live in housing they cannot afford. In 2017, about one in five (23 percent) of Minnesota's white non-Hispanic households devoted 30 percent or more of their income to their monthly housing costs. Minnesotans of color are almost twice as likely (40 percent) to be housing cost burdened.²²
- People of color are also disproportionately reflected among Minnesota households experiencing homelessness. Among all Minnesotans experiencing homelessness in January 2018, 43 percent were African Americans²³, which is over five times the presence of African Americans in the general population of Minnesota (8 percent as of 2017).²⁴

Children experiencing homelessness are the most vulnerable, paying the highest personal lifetime price. The younger the children, and the longer their homelessness, the more pronounced the negative future impacts will be.²⁵ Childhood homelessness is linked to developmental delays, failure to thrive in school,²⁶ and poor health outcomes.

Individuals living with mental illness are another group facing major housing stability challenges. Wilder Research indicates that of the persons in Minnesota experiencing long-term homelessness, nearly 59 percent have a mental illness.²⁷ Severe persistent mental illness (SPMI) can impede daily functioning in areas of self-care, social functioning, employment and education. Although having a SPMI is not, in many cases, the cause of homelessness, it does put people at a higher risk for this occurrence. Adults living with SPMI may experience difficulty maintaining housing as a result of mental health-related symptoms, a lack of or loss of income, or overall difficulty in managing daily living activities.²⁸

"We need local Senior Housing that creates community for isolated residents 'age in place' and opens housing stock for young families."

— Participant at Thriving by DesignStatewide
Convening in Granite Falls

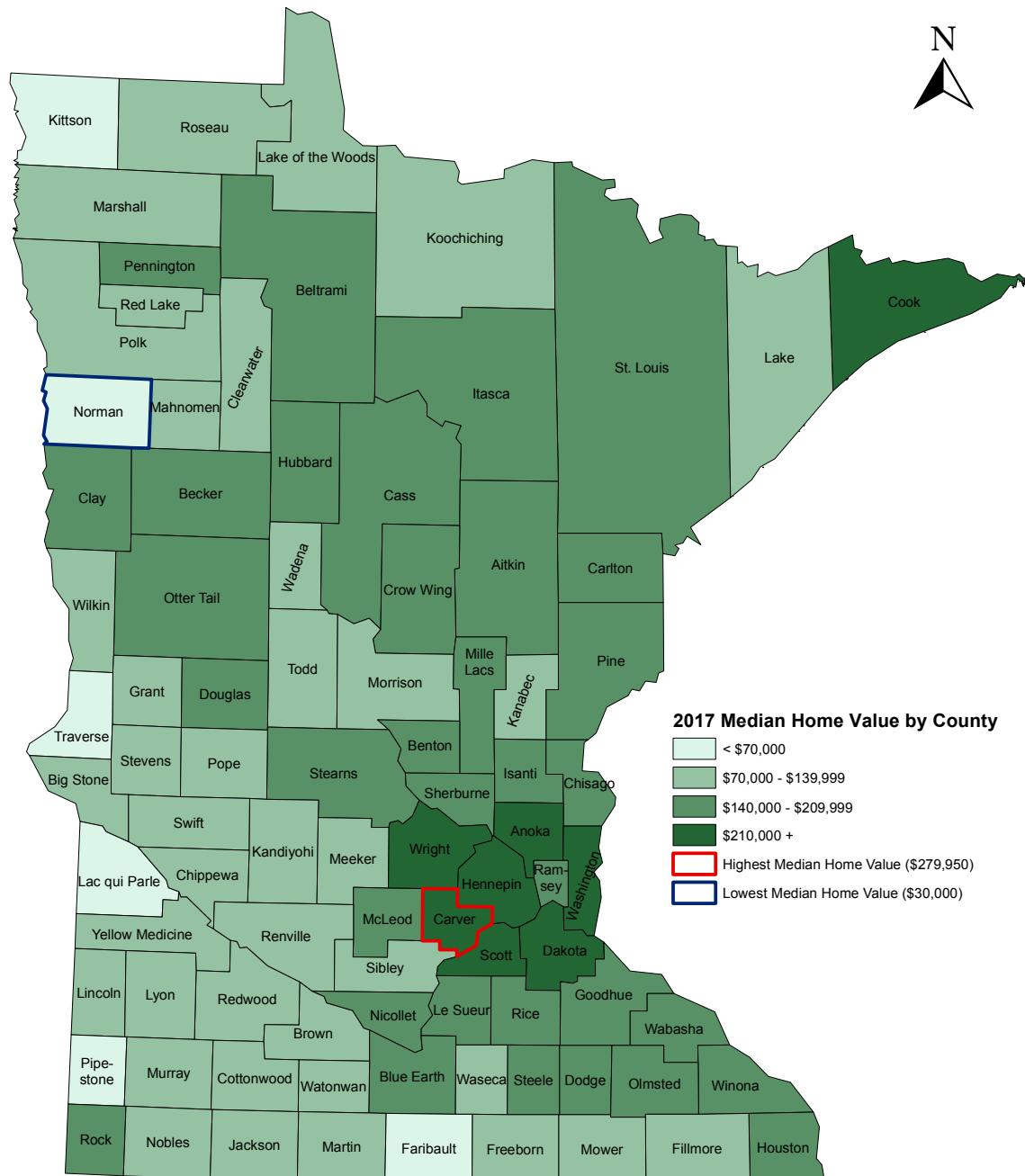
In addition, there are disparities in housing stability based on age cohort. In 2017, almost one in five (19 percent) of Minnesota's rental households was headed by a person who is 65 years old or older. Among these elderly renters, 60 percent are cost burdened, paying 30 percent or more of their monthly income on their housing. This is the second highest rate of elderly renter cost burden in the United States.²⁹

Elders are a particularly vulnerable group among the population of people experiencing homelessness. They have three to four times the mortality rate compared with the general population due to unmet health needs (physical, mental, and chemical).³⁰ Combining the negative physical and mental health impacts associated with homelessness with the expected consequences of aging (such as greater challenges to physical mobility, higher likelihood of chronic health conditions, etc.) results in a unique set of needs that emergency shelters are not usually equipped to meet.

Finally, there are disparities based on region, with rural areas being the most likely to be under resourced. Federal housing policy has historically been focused on urban areas, both the suburbs and urban core, overlooking concerns about rural equity and disparities. As Exhibit 3 shows, the median home value in rural

Norman County is one-ninth the median home value in suburban Carver County. Home ownership is known to be American's primary means for intergenerational wealth transfer, and the disparities in home value across the state represent a significant rural disadvantage.

Exhibit 3. Rural homes offer less asset value than urban homes



Source: Minnesota Realtor's 2017 Annual Report on the Minnesota Housing Market

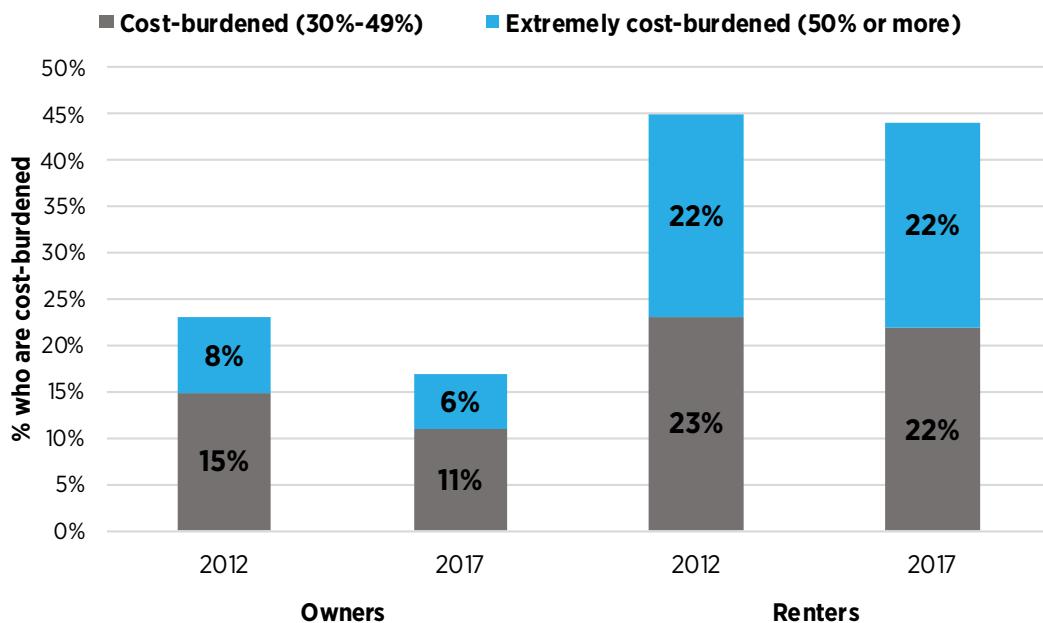
Created February, 2019

Homeowners' median net worth is 80 times larger than renters' median net worth.

— United States Census Bureau report³¹

Renters are significantly more likely to spend more than thirty percent of their household income on housing, than those living in owner-occupied homes. The graphic in Exhibit 4 shows that in 2017, 18 percent of all households living in owner-occupied housing spent 30 percent or more of their monthly income on housing. During the same year, Exhibit 4 demonstrates that renters were over twice as likely (44 percent) to spend more than thirty percent of their household income on housing. Exhibit 4 also shows that half of all cost-burdened renters were extremely cost-burdened, meaning that they were paying 50 percent or more of their income on their housing.³² Only one in three cost-burdened homeowners were extremely cost-burdened.

Exhibit 4. Cost-burdened households by ownership status: comparing 2012 and 2017.



Lastly, Exhibit 4 indicates that homeowners were less likely to be cost burdened in 2017 (17 percent), than they were in 2012 (23 percent). Renters on the other hand have made very little progress in terms of housing affordability during that time frame. Renters paying over half their monthly income on housing continue to represent 22 percent of all rental households.

The most affordable rental housing (often referred to as “naturally occurring affordable housing,” or NOAH) is generally found in the existing housing stock. These are usually older units which have been maintained well, but do not attract upmarket renters. When these buildings are sold to new ownership, the tenants are often evicted as updates are made so higher rent can be charged.

It should be a human right that people have a roof over their head.

— Participant at Thriving by Design
Community Conversation in
North Minneapolis

In terms of subsidized housing, existing project-based Section 8 rental units are too frequently leaving the affordable housing market through contract expirations, sales to upmarket developers, and demolitions.

Solutions must address not only construction of new homes for Minnesotans but ensuring that housing opportunities are built to fit every budget level. Even in communities with high vacancy rates, affordability is not synonymous with availability, and vice versa. There may be subsidized housing in a community but none of it is vacant and there may be a healthy level of vacancies, but none of it affordable to lower-income households.

Solutions

14. Maintain and preserve existing rental housing. The state of Minnesota can assist communities by providing funds to rapidly increase the number of rental units rehabilitated across the state. This could include either low cost debt or equity sources for loans and grants for rehab.³³

Increased access to affordable housing means more than just building more subsidized housing.

— Participant at Thriving by Design Statewide Convening in Granite Falls

Financial and contractual incentives may also be good tools for stopping conversions of existing project-based Section 8 rental units into market-rate rental units due to contract expiration sales to upmarket developers and demolitions. Finally, the state could fund NOAH acquisitions through dedicated housing partners such as the Greater MN Housing Fund — NOAH Impact Fund.

15. Build 10,000 more homes per year for the next five years to meet the demand. Increasing the overall supply of housing affordable and accessible to lower- and middle-income households is a critical need across the state. Increasing the supply should be accompanied by increased diversity in housing solutions, based on density and affordability including cooperative and multi-generational housing, and tiny house communities.

Building many more homes in a limited period requires more skilled workers, a need which dovetails with the building trades training needs of young persons, especially people of color and rural people.

Because the need for additional affordable housing will be a long-term need, TBDN stakeholders and partners recommend creating a new, permanent state funding source for affordable housing.

“Our three young adult children can’t afford to live in their own hometown!”

— Participant at Thriving by Design Community Conversation at Inver Hills Community College



Image: Kelly Sikkema, Unsplash

16. Invest in income mobility. Housing investments should expand residency options for lower-income families to live in neighborhoods linked to higher income mobility, as well as investing housing and other infrastructure resources in neighborhoods with higher concentrations of poverty. Public and private housing advocates must emphasize the building and maintenance of scattered site affordable housing programs in neighborhoods with lower concentrated poverty. Households that do not need permanent supportive housing are more likely to prosper when living outside the concentrated poverty characteristic of the larger developments managed by the community's Public Housing Authority. This means reducing Minnesota's reliance on site-based housing projects, including public housing. At least half of the state's rental housing investment should be invested in scattered site housing and the remainder in site-based (public projects).

In the interest of improving the value of existing neighborhoods, policy makers should fund programs for demolition of vacant, unsafe and dilapidated housing units, and authorize expedited tax foreclosure procedures for vacant properties.

...affordable housing needs to be in mixed income neighborhoods and not exacerbate income and race segregation in housing development.

— Participant at Thriving by Design Legislative Agenda Convening in Hinckley

Because local needs and visions vary, the state's funding must empower local leaders to create solutions that meet the housing affordability and access issues in their communities, including options to attend to "problem properties," where neighbors repeatedly ask for outside assistance with a property because crime is occurring and the community feels unsafe.

In addition, municipal infrastructure investments must support both business development and affordable housing, particularly larger investments in workforce housing across the state. Minnesota's employers themselves must be involved in the development and funding of workforce housing.

17. Realign government regulations and taxation. The state of Minnesota should develop and lead a statewide review panel to identify state and other regulations regarding occupancy requirements, building standards, land use and environmental protections that suppress access to stable housing by barring occupancy and constraining the creation of new affordable housing units. Examples of regulatory changes that would expand occupancy include:

- Altering voucher restrictions so that seniors can care for their grandchildren and grandchildren can provide care for their elders. Create programs similar to the Grandfamily housing model recently developed in Washington D.C.³⁴
- Review state and local housing regulations and policies that exclude applicants with criminal records and that preclude formerly incarcerated individuals from rejoining their families. Given the unfair disproportionate burden that criminal justice policies have imposed on communities of color, these policies reinforce disparities in housing stability.



Image: MN Equity Fund Mysa House Groundbreaking

We need to redefine what “affordable” means in affordable housing.

— Participant at Thriving by Design Community Conversation in North Minneapolis

- Identify and re-examine the intent behind state and local building codes and affordable housing regulations which often drive up the cost of building new housing. According to HUD’s Office of Policy Development and Research, state and local regulations regarding land use and construction standards often make the production of even middle-income housing unprofitable.³⁵
- Split-rate property tax systems, also known as “value-capture” taxes, have been proven to expand affordable housing and incentivize its location in the most infrastructure rich locations. Under this approach, there is a differential tax on structures and the underlying value of the land it sits on. Usually these systems result in reduced taxes for all but speculators and slumlords.³⁶

18. Enable local and community housing solutions. Minnesota’s state policy makers should fully empower local leaders and regional economic development organizations to create solutions that meet the housing affordability and access issues in their communities. In addition, the state should issue additional permits for rural congregate housing for older adults and create more options for workforce housing expansion in rural smaller towns that bring in workers (including immigrants) to sustain and revitalize businesses.

We need veterans housing in Brainerd!

— Participant at Thriving by Design Statewide Convening in Hinckley

Foundations and state and local governments must invest in the capacity of hometown non-profits and community development financial institutions. Local champions for rural and other underrepresented communities need a leg up in the complex and competitive world of housing finance.³⁷ One example of an underrepresented community are Muslims,

whose faith practice prohibits interest-bearing mortgages. The Minnesota Housing Finance Agency (MHFA) was the first state agency to offer a type of financing known as “Murabaha” or “cost plus sale” loans. In this type of loan, the state purchases the home and then sells it to the buyer at a higher price, in which the agreed upon down payment and subsequent monthly payments reflect the current mortgage rate.

19. Expand protections for renters. Additional protections are needed for renters who are often one crisis or one landlord decision away from eviction and homelessness. There should be local funds that give one-time subsidies to households facing sudden job loss or a catastrophic health event.

State and local authorities should implement contracts with housing developers that prohibit drastic rent increases, as well as city rental ordinances that strengthen tenant rights. These contracts could also require new developer/owners who want to take over a building, increase rent, and change rental requirements, to provide notice to tenants, the city, and the state Minnesota Housing Finance Agency (MHFA) one year in advance.

Policy makers should ensure that affordable legal services are available to lower-income households who are facing eviction or who need assistance in pursuing



Image: Westwinds Townhomes, Brainerd Dispatch

criminal records expungement (including unlawful detainers). The Legislature should also pilot and then expand the use of pre-court landlord mediation programs.

State and local policies should reduce expensive fees for rental housing application and background checks. It's also imperative to end discrimination by landlords against households who have Section 8 vouchers.

20. Prioritize the homeless. The very most vulnerable are the Minnesotans experiencing homelessness. Minnesota must create and expand housing solutions that are sustainable for formerly homeless households. For those individuals experiencing homelessness who require additional supportive services, the state must increase funding to encourage development of service-enriched transitional and permanent supportive housing, especially investing in wrap-around services related to child care, jobs, mental health, and transportation.

Elders are the fastest growing age group among Minnesota's newly homeless and unstably housed. Housing programs must create more safe, thriving, creative, and intentional living communities for older Minnesotans to "age in place" while they continue their vital involvement in the communities they've invested in over their lifetimes. Key components to Minnesota's elder housing portfolio are cooperative housing and other pilots providing alternatives such as intergenerational housing, shared housing, and senior communities connected to developments housing families with young children. These programs contrast with the potential cultural isolation in traditional senior high-rises. The Legislature must also re-assess housing choice voucher programs based on current senior housing needs and affordability. Creating more affordable and desirable spaces for elders will also open housing stock for young families.



Image by Huy Phan, Unsplash

21. Support homeownership. Becoming a home owner can be a step toward wealth accumulation and intergenerational income mobility. Policy-makers should increase funding for lower- and middle-income households seeking home ownership. Find ways to increase home ownership among people of color and Indigenous people.

You can solve a lot of these [other social] problems if people have a place to live.

— Participant at Thriving by Design Community Conversation at Norway House in Minneapolis

TRANSPORTATION

...for many working-class and rural households, transportation costs actually exceed housing costs.

— U.S. Housing and Urban Development Report³⁸

Challenges

From a public sector perspective, transportation is the largest and most complex public infrastructure category, as it combines multiple modes (each having many components), involves controversial and conflicting policies and constituencies, intricate private-sector connectivity, as well as seemingly intractable politics.

TRANSPORTATION HAS MANY COMPONENTS

- road pavements
- bridges
- bus shelters
- sidewalks
- traffic control devices
- rail
- buses
- lighting
- trains
- locks
- airports
- planes
- ports
- buildings
- train stations
- dams
- channels
- bike trails

For business owners and employers, Minnesota's location as an economic hub near the center of North America provides access to global markets via roads, water, rail and air. Delayed investments, budget shortfalls, and increasing transportation demands threaten to slow the growing economy and restrict access to a qualified workforce.

Transportation is typically the second largest household budgeting category and it poses an increasing burden on families of color, and low-income households in metro and Greater Minnesota.

The most substantial, ongoing cost for transportation infrastructure is upkeep of roads and bridges. Minnesota's weather is especially taxing on transportation infrastructure, as frigid temperatures, frequent freeze-thaw cycles, and heavy snowfalls and flooding crack and wear pavement. Every summer, potholes must be filled, and roads must be repaved to maintain traveler and environmental safety and ease of use, especially for those with mobility limitations due to disability or age.



Image: Minnesota Department of Transportation

Although Minnesota is the 12th largest state by area,³⁹ it has the nation's fifth-largest state highway system, with over 143,000 miles of public roads. These roads connect people across the state, but their condition has been

steadily worsening.⁴⁰ Further deterioration is a given considering the significant transportation budget shortfalls forecasted for the near future. Almost \$40 billion is needed to maintain roads over the next 20 years, but only \$21 billion can be anticipated from existing revenue sources. This funding shortfall will particularly affect rural Minnesotans, as the vast majority of highways and roads are in Greater Minnesota. An additional \$3 billion gap is expected in terms of bridge maintenance over the same time period.⁴¹

Both Minnesota businesses and consumers depend on the shipment of goods from producers to customers, including farm commodities from one of the largest agricultural regions in the country. In 2017, sales of Minnesota's agricultural products totaled over \$18 billion, and the state ranked first in sales of all grains.⁴² In addition, manufacturers, the state's largest industry,⁴³ and other businesspeople must move their products. A well-functioning freight system is important for Minnesota's companies and economy to continue to prosper and grow.

Trucking has dominated, and will likely continue to dominate, freight transportation modes. Transport via truck provides flexibility, especially in terms of the first mile (freight pickup) and last mile (delivery) stretches. The Minnesota Department of Transportation (MnDOT) estimates that trucking will continue to account for more than 60 percent of freight mode share for the next twenty years.⁴⁴

However, larger vehicles, greater freight quantities (with associated additional release of greenhouse gases) and aging transportation infrastructure (with associated weight limitations) are making trucking less cost-effective than in the past.⁴⁵ Trucks cause the heaviest wear and tear on roads and bridges, and they tend to not cover the costs of repairing this damage.⁴⁶ Thus, Minnesota must maintain its appeal to shippers while addressing transportation budget shortfalls and environmental impacts of trucking.

Public transit helps local economies by attracting new residents⁴⁷ and increasing the local consumer base.⁴⁸ By focusing on improving and expanding public transit in Greater Minnesota, smaller urban and rural areas can better compete. In Rochester, for instance, the Mayo Clinic's Destination Medical Center and Rochester Public Transit are working together to construct a "circulator" bus rapid transit line to improve transportation throughout the city.⁴⁹ In addition to fostering new economic activity along those transit corridors, public transit encourages existing companies to invest in the city where they are located.⁵⁰

Due to demographic shifts, the need for transit options in Greater Minnesota is expected to grow substantially over the next few decades. Like many places in the United States, Minnesota is facing an aging white population and an expanding and younger population of people of color. As the former retires from the workforce, the latter group becomes the most readily available source for Minnesota's future workforce. At the same time, growing income inequality and stagnant wages are increasing financial stress on low- and middle-income workers. The transportation needs of these three sub-populations intersect.

- To age in place, elders who are unable to drive or unable to afford to drive, require transportation to meet their physical, medical, social and spiritual needs. In Greater Minnesota, seniors make up 32 percent of transit riders.⁵¹ That percentage is expected to increase as the population ages.
- Over the last fifty years, Minnesota's communities of color have been under-served and over-stressed. Lack of convenient transportation to and from work, school, child care, grocery stores and medical services have



Image: Minnesota Department of Transportation

formed barriers to achievement among low-income communities of color. To meet the needs of the state's future workforce, these barriers must be removed.

- Public transit provides needed solutions for low income households. Over half (58 to 69 percent) of transit riders in Greater Minnesota and 30 percent in the seven-county Twin Cities metro have annual incomes below \$15,000.⁵² As of 2017, 6.1 percent of households in Greater Minnesota did not own a vehicle.⁵³ Minnesota's rural and urban low- and middle-income workers are financially challenged to find a residence where the combined costs of housing and transportation are affordable. Transportation reliability is causally related to job tenure. Many rural and urban households are living one car breakdown away from losing a job.

Although transit users, in general, appear to be most likely to rely on public transportation to commute to and from work, households in smaller communities are most likely to also use public transit to get to school and to do other household errands.⁵⁴

The climate impacts of transit use are strongly positive. An average passenger vehicle typically emits 4.6 tons of carbon dioxide annually.⁵⁵ In 2016, the total carbon emissions of passenger cars in Minnesota was over 8 million tons, while buses emitted about 272 thousand tons.⁵⁶

Transit ridership throughout the state is growing as the state's population increases. Despite assumptions that public transit benefits only urban areas, Greater Minnesota's ridership has increased at twice the rate as the Twin Cities over the last decade.⁵⁷ Greater Minnesota's population also trends older than the Twin Cities metro. With time, more services and additional hours will be needed to transport seniors to medical appointments, especially in less-dense areas where the span of service is solely during business hours. However, it's clear that the state's public transit resources have been concentrated in the Twin Cities.

Minnesota is making progress on improving the reach of public transit options throughout the state. In its 2018 transit report, MnDOT highlighted the launch of the Greater Minnesota Public Transit Service Expansion Program, which aims to "encourage public transit service growth, system efficiency, and service effectiveness throughout Greater Minnesota" and established a target of meeting 90 percent of Greater Minnesota transit need by 2025.⁵⁸



Image: Danny Photography

A twenty-minute drive turns into a two-hour bus ride for students.

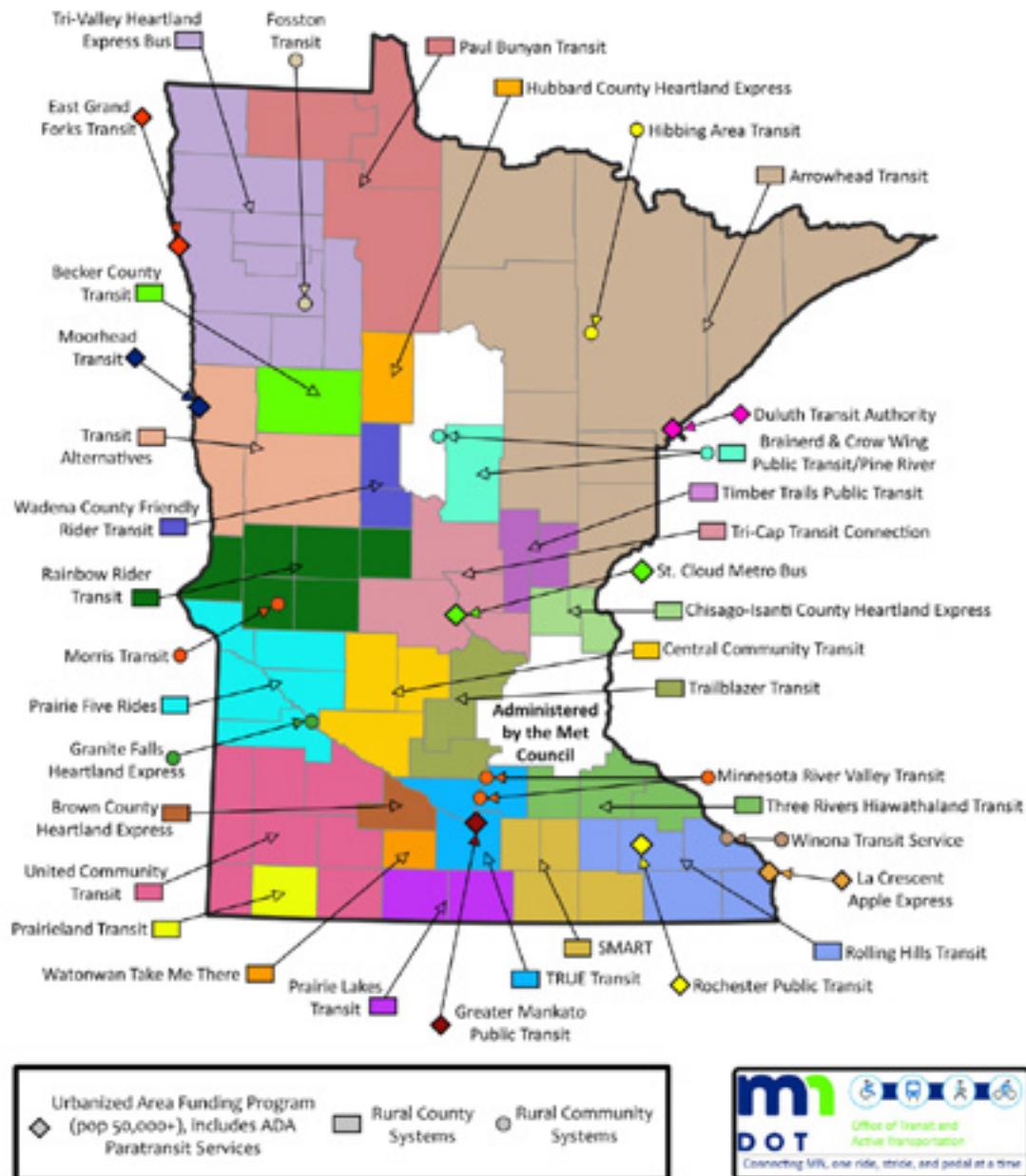
— Participant at Thriving by Design Community Conversation at Inver Hills Community College

Increasing numbers of Minnesota's rural counties are developing strong demand response transit solutions (such as "dial-a-ride"). Growing numbers of mid-sized areas have both fixed-route bus systems and complementary paratransit demand response systems (dedicated resources for serving people with disabilities) within their regions.⁵⁹

Exhibit 5 presents a map of the Greater Minnesota public transit systems administered by MnDOT, which are primarily demand response programs, although some are deviated routes supported by demand response.⁶⁰ Two examples are: Friendly Rider which provides demand response buses in Wadena and Staples,⁶¹ and Hibbing Area Transit which provides regular services between major stores,

but riders can call to be picked up from a different location.⁶² Moorhead, East Grand Forks, La Crescent, Rochester, Duluth, St. Cloud, and Mankato, are all midsized urban areas, with fixed-route systems that provide transportation at set times throughout the day.

Exhibit 5. Greater Minnesota has developed a variety of MnDOT-administered transit solutions.



While Greater Minnesota has made strides toward developing transit systems, rural community leaders and policy analysts say the supply does not meet demands, that greater coordination and improved service is needed, especially for the disabled and elderly, and that affordable transportation options between communities and regions is lacking.⁶³

Minnesota has over 4,000 miles of paved bike trails that traverse the state.⁶⁴ Although the Twin Cities metro is the dominant hub for bike riders and commuters, 26 percent of people in Greater Minnesota bike at least once a week.⁶⁵

Walking or biking is an easy, healthy, and environmentally friendly option to get from one place to another. While transit riders still contribute to greenhouse gas emissions, people who bike or walk to work do not.⁶⁶ Although bike safety has been steadily improving over the last decade, there has also been a recent spike in pedestrian crashes and fatalities.⁶⁷

Walk Friendly Communities declared Fergus Falls as a bronze-level walk friendly community for its Safe Routes to School program and walkability initiatives,⁶⁸ including the pedestrian lane near Lake Alice.⁶⁹ Plentiful bike lanes and wide, walkable sidewalks, in addition to the availability of public transit, make Minnesota's neighborhoods, towns and parks accessible to all.



Image: Danny Photography

“COMPLETE STREETS” AND “ROAD DIETS” ARE THE NEW NORMS, RURAL AND METRO

The town of Glenwood (pop. 2,527) on scenic Lake Minnewaska in western Minnesota recently completed a downtown makeover that includes: new pedestrian and bicycling options, a smoother road surface, upgraded curb ramps and sidewalks, flood mitigation, and improvements to water, sewer, storm sewer and lighting.

These holistic infrastructure makeovers go by the name “Complete Streets” and dozens of rural, suburban and urban communities now belong to the Minnesota Complete Streets Coalition.

Wikipedia defines this national Complete Streets movement as policy *“that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities, regardless of their mode of transportation... Complete Streets emphasize the importance of safe access for all users, not just automobiles.”*

Much of the progress toward Complete Streets goals has occurred in dense urban areas, as public health and safety and climate action rise as priorities in transportation planning. The Glenwood story shows how the principles are catching on in rural areas as well.



Image: KMRS/KKOK Radio Stations

Cutting the Ribbon on Glenwood’s “Complete Streets” Project

Another iteration of the Complete Streets concept is the “Road Diet,” or basically reducing lanes from four to two or three, adding bike lanes, medians and pedestrian-friendly amenities. This encourages transit usage and healthier alternatives to total reliance on automobiles for transportation, especially in highly congested, high-growth urban areas. Both St. Paul and Minneapolis, which have added some 75,000 residents between them over the last decade, have been aggressively pursuing these kinds of streetscapes, with suburban areas joining in.

A Star Tribune article on the “Road Diet” trend focused on a Larpenteur Avenue project as a classic example of how some urban counties are aggressively putting many or most of their four-lane roads on diets. From the article: “Ramsey County, with the blessing of St. Paul on one side of Larpenteur and (suburban) Roseville on the other, is converting a bustling stretch of the road from four driving lanes to two, along with a dedicated left-turn lane. Crews also will add new bike lanes and medians at different intersections to aid safe crossing. According to Hennepin County, such a conversion typically reduces crashes by 33 percent to 50 percent and leaves room for a buffer between sidewalks and moving vehicles.”

Solutions

22. Develop and fund a major, long-range transportation investment plan. The Minnesota Legislature must develop a strategic and long-range transportation plan and allocate at least 7 billion new dollars to support substantial new investment over the next decade. Minnesotans across the state need a pragmatic and equitable transportation portfolio with a consistent source of increased funding. More than a decade has elapsed since the Legislature passed its last significant transportation funding bill. The updated package must include maintenance and improvement of roads, bridges, transit, and bike and pedestrian paths in both metro and Greater Minnesota.

Historically, Minnesota taxpayers have paid for road maintenance and construction through the state gas tax, a debt-service surcharge, vehicle registration fees, and motor vehicle sales taxes. Increases in either or both the gas tax and the debt service surcharge are clearly warranted. In addition, Minnesota must adopt various forms of use-based funding streams such as a mileage-based user fee and congestion pricing. Other innovative funding structures may also be developed. Political intransigence against increasing the gas tax may necessitate emphasizing other options. A debt-service surcharge, for instance, would act to pay off bonds and increase the budget for transportation costs such as bridge repair and restoration.⁷⁰ A mileage-based user fee becomes more important as Minnesotans acquire electric and hybrid vehicles.

Congestion pricing also is a proven approach to both reducing traffic flow and increasing funding for state transportation systems. Two of the most common forms of congestion pricing are: tolling programs that incentivize high-occupancy vehicle travel and cordon pricing. In the former, drivers traveling through and around an urban core are charged a fee to enter “fast lanes.” That fee increases or decreases depending on the current volume of cars on the road (congestion), peaking during morning and afternoon rush hours. Vehicles carrying more than one or two passengers are given access to the fast lane for free. Three of Minnesota’s highways use a kind of congestion pricing in the form of high occupancy toll (HOT) lanes. Under cordon pricing, drivers pay a fee to enter a restricted area, (usually a city center). The results of this policy have been so positive that New York City is slated to implement cordon pricing for vehicles entering the central business district below 60th street in 2021.⁷¹ Additionally, cities sometimes offer discounted access to low-income people and people with disabilities.⁷²

23. Fund new transit initiatives to improve mobility services across Minnesota. Substantial new investments by state and local governments, in partnership with private carriers where possible, are needed

throughout Minnesota, but especially in small towns, rural and suburban areas where the population is increasingly elderly, disabled or otherwise underserved. Although Minnesota's intercity bus network is improving, few consider it a viable long-distance transit option. As of 2015, only two-thirds of Minnesotans were aware of inter-city bus options and only 19 percent had used one in the past two years.⁷³ In 2015, MnDOT set out to develop a "robust intrastate and interstate intercity passenger rail system that results in improved travel options, lower costs and higher speeds for Minnesotans and interstate travelers."⁷⁴ The trains proposed would include a supplement to the Empire Builder and new services between the Twin Cities and Duluth and the Twin Cities and Rochester.

24. Transportation investments must be inclusive and focus on both regional and racial equity. Regional equity must be advanced by increasing the percentage of Greater Minnesota's roadways quality rated as "Fair" over the next 20 years, including arterials and collectors under both state and local jurisdictions. In rural Minnesota, state and federal funding distributions are so sparse that road maintenance is usually paid for out of personal property tax levies, which are insufficient to cover the real costs.⁷⁵ As a result, some counties have resorted to "unpaving" roads, where the county decides, usually due to budget constraints, to convert asphalt roads back to gravel.⁷⁶

Racial equity must be advanced by intentionally including communities of color in transit planning to ensure that residents and businesses also benefit from investments that are proposed near or in their community. In the Twin Cities' urban area, where the Metropolitan Council and other local planners expand the region's transit systems, there must be substantially improved investments in transit equity in currently lower-income and under-served neighborhoods.

25. Invest in electric trucks and other forms of electrification for moving freight, to reduce negative environmental impact. Globally, trucks account for 57 percent of emissions incurred while moving freight.⁷⁷ Adding electric trucks to fleets decreases their negative environmental impact while maintaining their economic viability.

26. Enhance freight rail use through improved intermodal terminals.⁷⁸ Transport via rail is cleaner environmentally but does not have the same flexibility as trucks. Improving the efficiency of rail terminals and transferring between rail and concurrent modes of transportation could make them a more attractive option.

27. Explore innovative transit equity options for Greater Minnesota. Although all counties are minimally served by at least one public transit service, these generally are insufficient to meet the growing demands of an increasingly elderly and low-to-middle-income population. Minnesota should follow the example of North Central Montana Transit (NCMT), a fixed-route bus service that allows reliable transit every day of the week and has been in operation for a decade.⁷⁹

28. Intensify renewable and high-tech strategies in public transit. Promote electronic vehicle (EV) and autonomous vehicle (AV) innovations, as well as smart (electronic) management of highways and transit to reduce greenhouse gas production. Many midsized urban areas such as Duluth, La Crescent,



Image: Rainbow Rider bus, MnDot

and Rochester are already on their way to incorporating electric buses into their transit fleets and should continue these developments.⁸⁰ Minnesota should follow the lead of other states by investing in smart highway management to improve driver safety and decrease crash response time,⁸¹ and provide automatic/driverless buses to complement current bus systems and cover the first/last mile.⁸² Micro-mobility options, such as dockless electric bikes and scooters, complement buses and light rail while decreasing car use in moderate and higher density areas.⁸³ Combining these forms of transportation into one Mobility-as-a-Service (MaaS) application can improve the ease and efficiency of commutes. WHIM is one example of this type of app. It combines every mode of transit into one app that finds, books, and pays for people's trips.⁸⁴

29. Accelerate the current trends that encourage pedestrian and bicycling alternatives. In 2010, Minnesota joined about 20 other states in adopting a statewide Complete Streets Law which stipulates a planning and design process that emphasizes safety and access for all users of roadways (regardless of whether they are walking biking, riding transit or in their own vehicles). Since Complete Streets applies only to roads owned and funded by MnDOT, there are still communities throughout the state that need to improve their walking and biking accessibility and safety. Other options include: creating more Safe Routes to School to make it easier for students to walk or bike to school and reduce the risk of pedestrian injury by 44 percent;⁸⁵ reevaluating underutilized four-lane roads and standard lane widths to provide space for bike paths or sidewalks; supporting legislation that modifies bike traffic regulations to make roads safer for bicyclists; install pedestrian-activated flashing beacons to increase driver's awareness of pedestrian priority and safety.



Image: Danny Photography

Endnotes

- 1 Marshall, Alex (2015). Why the Word 'Infrastructure' Replaced 'Public Works'. *Governing*. Retrieved from <https://www.governing.com/columns/transportation-and-infrastructure/gov-the-word-infrastructure.html>
- 2 Marohn, Charles (2019). My Journey from Free Market Ideologue to Strong Towns Advocate, Part 3: What is Infrastructure?. *Strong Towns*. Retrieved from <https://www.strongtowns.org/journal/2019/7/7/my-journey-from-free-market-ideologue-part-3-what-is-infrastructure>
- 3 Platt, Adam (2018). 'The reason Minnesota thrives today is we're living off the fat of yesterday': A Q&A with Gov. Arne Carlson. *MinnPost*. Retrieved from <https://www.minnpost.com/twin-cities-business/2018/09/the-reason-minnesota-thrives-today-is-were-living-off-the-fat-of-yesterday-a-qa-with-gov-arne-carlson/>
- 4 Minnesota Section of the American Society of Civil Engineers (2018). Report Card for Minnesota's Infrastructure 2018. p. 5. Retrieved from <https://www.infrastructurereportcard.org/wp-content/uploads/2016/10/FullReport-MN-Final.pdf>
- 5 Minnesota Section of the American Society of Civil Engineers (2018). Report Card for Minnesota's Infrastructure 2018. p.1. Retrieved from <https://www.infrastructurereportcard.org/wp-content/uploads/2016/10/FullReport-MN-Final.pdf>
- 6 Minnesota Pollution Control Agency. Water pollutants and stressors: Bacteria. Last access date January 15, 2020. Retrieved from <https://www.pca.state.mn.us/water/bacteria>
- 7 Hennelly, Bob (2019). Economies of racism and neglect: Flint, Newark and a generation of children at risk. *Salon*. Retrieved from <https://www.salon.com/2019/08/18/economics-of-racism-and-neglect-flint-newark-and-a-generation-of-children-at-risk/>
- 8 Minnesota Public Facilities Authority (2019). 2020 Project Summary and Project Narratives. Retrieved from <https://mn.gov/mmb-stat/documents/budget/capital-budget/preliminary-capital-budgets/2020/public-facilities-authority.pdf>
- 9 Communication with Jeff Freeman | Executive Director, *Minnesota Public Facilities Authority*. (09/10/2019).
- 10 Salisbury, Bill (2019). Mn Legislature didn't do a public works bill this session. Expect some big requests next year, *St. Paul Pioneer Press*. Retrieved from <https://www.twincities.com/2019/06/10/mn-legislature-didnt-do-a-public-works-bill-this-session-expect-some-big-requests-next-year/>
- 11 Minnesota Section of the American Society of Civil Engineers (2018). Report Card for Minnesota's Infrastructure 2018, p. 32. Retrieved from <https://www.infrastructurereportcard.org/wp-content/uploads/2016/10/FullReport-MN-Final.pdf>
- 12 Dornfeld, Steven (2011). Tough economic times – and no state agency. *MinnPost*. Retrieved from <https://www.minnpost.com/cityscape/2011/09/tough-economic-times-and-no-state-planning-agency/>
- 13 Treacy, Ann and Bernadine Joselyn (2019). "Making the Case for Investment in Broadband Infrastructure" presented at the *Connecting Entrepreneurial Communities Conference*, Waseca, MN, September 2019. Retrieved from <https://blandinonbroadband.org/bbroi/>
- 14 Satterwhite, Ellen (2015). Study shows home values up 3.1% with access to fiber. *Fiber Briber Broadband Association*. Retrieved from <https://www.fiberbroadband.org/blog/study-shows-home-values-up-3.1-with-access-to-fiber>
- 15 Gallardo, Roberto (2019). Digital Distress in the Upper Midwest. Center for Regional Development, Purdue University. Retrieved from <https://pcrd.purdue.edu/blog/digital-distress-upper-midwest-second.php>
- 16 Adapted in part from the National Digital Inclusion Alliance comments in advance of the Federal Communications Commission's 2018 annual broadband report. Retrieved from <https://www.digitalinclusion.org/blog/2018/09/18/ndia-to-fcc-closing-digital-divide-means-your-annual-broadband-report-should-look-at-affordability-digital-redlining/>
- 17 Gallardo, Roberto (2019). Digital Inclusion in the Upper Midwest: Implications for Regional Development. Center for Regional Development, Purdue University. Retrieved from <https://pcrd.purdue.edu/blog/digital-inclusion-upper-midwest-third.php>
- 18 Minnesota Rural Broadband Coalition (2018). Recommendations submitted in testimony to the Governor's Broadband Task Force, (06/04/2018).
- 19 Ibid
- 20 Voorman, Heather (2018). Housing is Infrastructure: Why We Should Make the Case to Congress. *Affordable Housing Finance*. Retrieved from https://www.housingfinance.com/news/housing-is-infrastructure-why-we-should-make-the-case-to-congress_o

- 21 Minnesota Housing Finance Agency (2019). *2018 Disparities Report*, Retrieved from <http://www.mnhousing.gov/wcs/Satellite?c=Page&cid=1358904870907&pagename=External%2FPage%2FEXTStandardLayout>
- 22 Wilder Research (2018). 2006-2017 Minnesota's Cost-Burdened Households by Race. Retrieved from <https://www.mncompass.org/housing/cost-burdened-households#1-12700-g>
- 23 HUD Exchange (2019). January 2018 Persons Experiencing Homelessness Point-in-Time (PIT) Count. Retrieved from https://files.hudexchange.info/reports/published/CoC_PopSub_State_MN_2018.pdf
- 24 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*. ACS form DP05. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 25 Sandel, Megan, Richard Sheward, and Lisa Sturtevant (2015). Compounding Stress: The Timing and Duration Effects of Homelessness on Children's Health. Center for Housing Policy and Children's Health Watch. Retrieved from http://childrenshealthwatch.org/wp-content/uploads/Compounding-Stress_2015.pdf
- 26 National Association for the Education of Homeless Children and Youth (2016). Fact Sheet: Young Children Experiencing Homelessness. Retrieved from https://naehcy.org/wp-content/uploads/2018/04/ECE_Fact_Sheet_2016_September19-v2018.pdf
- 27 Smith, Daryl (2014). Barriers to Maintaining Independent Housing Faced by SPMI Adults. Retrieved from Sophia, the St. Catherine University repository website: https://sophia.stkate.edu/msw_papers/387
- 28 Montgomery, Anne Elizabeth, Stephen Metraux, and Dennis P. Culhane (2013). Rethinking homelessness prevention among persons with serious mental illness. *Social Issues and Policy Review*, Vol. 7, No. 1 pp 58-82. Retrieved from https://works.bepress.com/dennis_culhane/123/download/
- 29 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*. ACS form B25072. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 30 Corporation for Supportive Housing and Hearth Inc. (2011). Ending homelessness among Older Adults and Elders through Permanent Supportive Housing. Retrieved from https://www.csh.org/wp-content/uploads/2012/01/Report_EndingHomelessnessAmongOlderAdultsandSeniorsThroughSupportiveHousing_112.pdf
- 31 U.S. Census Bureau (2019). Gaps in the Wealth of Americans by Household Type. Retrieved from https://www.census.gov/library/stories/2019/08/gaps-in-wealth-americans-by-household-type.html?utm_campaign=20190827msacos1v1stors&utm_medium=email&utm_source=govdelivery
- 32 U.S. Census Bureau (2017). *American Community Survey 1-year estimates*. ACS form B25070. Retrieved from <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- 33 Minnesota Multi-Housing Association (2018). MHA Sets Affordable Housing Strategies. Retrieved from <http://mnhousingnews.com/mha-sets-affordable-housing-strategies/>
- 34 Burger, Kevyn (2019), A Home for Grandfamilies,Forbes. Retrieved from <https://www.forbes.com/sites/nextavenue/2019/05/17/a-home-for-grandfamilies/#1516c2513532>
- 35 HUD Office of Policy Development and Research (2018). Exploring the Current State of Knowledge on the Impact of Regulations on Housing Supply. *Evidence Matters*. Retrieved from <https://www.huduser.gov/portal/periodicals/em/spring18/highlight2.html>
- 36 Rybeck, Rick (2016). Want affordable housing? Look to the land!. *Solid Ground*, Retrieved from <http://solidgroundcampaign.org/blog/want-affordable-housing-look-land>
- 37 Daily Yonder (2019) Rural Policy: 'Here's What We Need,' Advocates Say. Retrieved from <https://www.dailyyonder.com/rural-policy-heres-what-we-need-advocates-say/2019/08/19/>
- 38 HUD Exchange (2018). About the Location Affordability Index. Retrieved from <https://www.hudexchange.info/programs/location-affordability-index/about/>
- 39 Office of Highway Policy Information (2018). State & Urbanized Area Statistics. Retrieved from <https://www.fhwa.dot.gov/ohim/onh00/onh2p11.htm>
- 40 MinnesotaGO Performance Dashboard (2018). Pavement Condition. Retrieved from <https://performance.mnnesotago.org/system-stewardship/condition/annual-percent-state-highway-miles-poor-ride-quality-travel-lane>
- 41 Salisbury, Bill (2018). How bad are Minnesota's roads and bridges? And how do we pay to repair them?. *St. Paul Pioneer Press*. Retrieved from <https://www.twincities.com/2018/12/24/how-bad-are-minnesotas-roads-and-bridges-and-how-do-we-pay-to-repair-them/>

- 42 Gunderson, Dan, Elizabeth Dunbar, and Jiwon Choi (2019). A look at Minnesota farming in 7 charts. *MPR News*. Retrieved from <https://www.mprnews.org/story/2019/04/11/ag-census-2017-minnesota-snapshot>
- 43 Minnesota Compass (2018). Economic Output (GDP). Retrieved from <https://www.mncompass.org/economy/economic-output#1-4238-g>
- 44 Minnesota Freight Advisory Committee (2017). *Components of an Attractive Minnesota Freight Market*. Retrieved from <https://www.dot.state.mn.us/ofrw/mfac/pdf/wp.pdf>.
- 45 Ibid
- 46 Austin, David (2015). Pricing Freight Transport to Account for External Costs. *Congressional Budget Office Working Paper Series*. Retrieved from https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/workingpaper/50049-Freight_Transport_Working_Paper-2.pdf
- 47 Cortright, Joe (2014). The Young and Restless and the Nation's Cities. *City Observatory*. Retrieved from <http://cityobservatory.org/wp-content/uploads/2014/10/YNR-Report-Final.pdf>
- 48 Dowell, Paula (2017). The top five ways transportation impacts economic development. *Civil + Structural Engineer*. Retrieved from <https://csengineermag.com/article/top-five-ways-transportation-impacts-economic-development/>
- 49 Jacobson, Don (2018). Rochester, DMC Prepare to Roll Out Plans for Downtown Bus Rapid Transit Service. *Twin Cities Business*. Retrieved from <http://tcbmag.com/news/articles/2018/august/rochester-dmc-prepare-to-roll-out-plans-for-downtown-bus-rapid-transit-service>
- 50 Destination Medical Center (2019). Destination Medical Center Corporation Board Green Lights Mobility Hub Locations in Rochester. Retrieved from <https://dmc.mn/destination-medical-center-corporation-board-green-lights-mobility-hub-locations-in-rochester-2/>
- 51 Center for Rural Policy and Development (2016). Rural Reality: City transit, rural transit. Retrieved from <https://www.ruralmn.org/rural-reality-city-transit-rural-transit/>
- 52 Minnesota Department of Transportation (2017). Greater Minnesota Transit Plan 2010-2030. Retrieved from <http://www.dot.state.mn.us/transit/reports/transit-report/pdf/greater-mn-transit-plan.pdf>; Metro Transit (2014). 2014 Metro Transit Rider Survey. Retrieved from <https://www.metrotransit.org/data/sites/1/media/blog/metro-transit-rider-survey-2014---final.pdf>
- 53 Ibid
- 54 Clark, Hugh M. (2017). Who rides public transportation? Passenger demographics and Travel. American Public Transportation Association, p. 57. Retrieved from <https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA-Who-Rides-Public-Transportation-2017.pdf>
- 55 U.S. Environmental Protection Agency (2018). Greenhouse Gas Emissions from a Typical Passenger Vehicle. Retrieved from <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>
- 56 MinnesotGO Performance Dashboard (2017). Greenhouse Gas Emission. Retrieved from <https://performance.minnesotago.org/healthy-communities/healthy-environment/annual-greenhouse-gas-emissions-transportation-sector>
- 57 Minnesota Section of the American Society of Civil Engineers (2018). Report Card for Minnesota's Infrastructure 2018. p. 63. Retrieved from <https://www.infrastructurereportcard.org/state-item/minnesota/>
- 58 Minnesota Department of Transportation (2019). 2018 Transit Report: A Guide to Greater Minnesota's Public Transit. p.11. <https://www.dot.state.mn.us/govrel/reports/2019/2018-annual-transit-report.pdf>
- 59 Ibid
- 60 Ibid
- 61 Friendly Rider. Last access date January 15, 2020. Retrieved from <https://friendlyrider.com/>
- 62 City of Hibbing, MN (2019). Hibbing Area Transit. Retrieved from <http://www.hibbing.mn.us/services/hibbing-area-transit>
- 63 Center for Rural Policy and Development (2016). Rural Reality: City transit, rural transit. Retrieved from <https://www.ruralmn.org/rural-reality-city-transit-rural-transit/>
- 64 Explore Minnesota. Pedal MN. Last access date January 15, 2020. Retrieved from <https://www.exploremn.com/pedal-mn/>
- 65 University of Minnesota Extension. (2019) Bicycling in Minnesota: Economic value and health effects. Twin Cities Research Group Brown Bag Speaker Series, 07/17/2019.

66 Map My Emissions. Last access date January 15, 2020. Retrieved from <https://mapmyemissions.com/about>

67 Prather, Shannon (2019). Ramsey County and others reduce driving lanes to make streets safer for pedestrians, bikers. *Star Tribune*. Retrieved from <http://www.startribune.com/ramsey-county-and-others-reduce-driving-lanes-to-make-streets-safer-for-pedestrians-bikers/511024641/>

68 Walk Friendly Communities. Fergus Falls, MN. Last access date January 15, 2020. Retrieved from <http://walkfriendly.org/communities/fergus-falls-mn/>

69 Walk Friendly Communities (2017). Improving Safety and Walkability in Small and Rural Communities. Retrieved from <http://walkfriendly.org/2017/06/23/smalltowns/>

70 Salisbury, Bill (2019). DFLers want to know: If you aren't willing to pay more gas taxes, would you mind a small fee increase for roads?. *St. Paul Pioneer Press*. Retrieved from <https://www.twincities.com/2019/07/08/mn-democrats-explore-fee-increase-for-roads-instead-of-gas-tax/>

71 Eby, Brianne (2019) New York OK's First Cordon Congestion Pricing Program in U.S., With Many Details Still Undetermined. *Eno Transportation Weekly*, The Eno Center for Transportation. 04/05/2019, Retrieved from <https://www.enotrans.org/article/new-york-oks-first-cordon-congestion-pricing-program-in-u-s-with-many-details-still-undetermined/>

72 TransForm (2019). Pricing Roads, Advancing Equity. Retrieved from http://www.transformca.org/sites/default/files/Pricing_Roads_Advancing_Equity_Combined_FINAL_190128_0.pdf

73 Minnesota Department of Transportation, Office of Transit (2014) (prepared by KFH Group and WBA Research) Minnesota Intercity Bus Study. Retrieved from <https://www.dot.state.mn.us/transit/reports/system-studies/pdf/intercity-bus-study.pdf>

74 Minnesota Department of Transportation, (2010). Minnesota Comprehensive Statewide Freight and Passenger Rail Plan. p. E-3. <https://www.dot.state.mn.us/planning/railplan/finalreport/Executive%20Summary%20SA.pdf>

75 Kaul, Greta (2018). Squeezed by tight maintenance budgets and rising pavement costs, Minnesota counties consider another option for roads: unpaving them. *MinnPost*, Retrieved from <https://www.minnpost.com/politics-policy/2018/01/squeezed-tight-maintenance-budgets-and-rising-pavement-costs-minnesota-county/>

76 Ibid

77 Environmental Defense Fund - EDF + Business (2020). Green Freight facts and figures. Retrieved from <http://business.edf.org/projects/green-freight-facts-figures>

78 Minnesota Freight Advisory Committee (2017). Components of an Attractive Minnesota Freight Market. Retrieved from <https://www.dot.state.mn.us/ofrw/mfac/pdf/wp.pdf>

79 Thomhave, Kalena (2017). Revving Up Rural Public Transit. *The American Prospect*. Retrieved from <https://prospect.org/article/revving-rural-public-transit>

80 Petersen, Randy (2018). Rochester may add electric buses within 2 years. *Post Bulletin*. Retrieved from https://www.postbulletin.com/news/local/rochester-may-add-electric-buses-within-years/article_af7a83c2-c5e4-11e8-81eb-637054f67b4b.html; Prelutsky, Zach (2018). La Crosse receives grant to help purchase new electric buses. *WEAU News*. Retrieved from <https://www.weau.com/content/news/La-Crosse-receives-grant-to-help-purchase-new-electric-buses-491675241.html>; Slater, Brady (2019). MN: Status update on electric buses in Duluth? It's complicated. *Duluth News Tribune*. Retrieved from <https://www.duluthnewstribune.com/business/transportation/3004653>Status-update-on-electric-buses-in-Duluth-Its-complicated>.

81 Giarratana, Chris (2018). Dumb Roads Are Getting Much Needed Upgrades. *Safety Resource Center*. Retrieved from <https://www.trafficsafetystore.com/blog/smart-highway-technology-illuminating-roads-of-the-future/>

82 Zaleski, Andrew (2019). The future is coming—at 11 miles per hour. *Curbed*. Retrieved from <https://www.curbed.com/2019/4/17/18410988/autonomous-vehicle-local-motors-navya-may-mobility>

83 Lindsay, Greg (2018). The State of Play: Connected Mobility + U.S. Cities. *CityLab Insights*. Retrieved from https://cdn.theatlantic.com/assets/media/files/citylab_insights_connected_mobility.pdf

84 Ibid

85 Minnesota Department of Health. Safe Routes to School Factsheet. Last access date January 15, 2020. Retrieved from <https://www.health.state.mn.us/communities/physicalactivity/docs/srtsfactsheet.pdf>



Image: Pine River Backus Panels

ENVIRONMENTAL RESILIENCE

Thriving by Design Network's Problem Statement: Rapidly accelerating climate change and pollution of our waters and lands pose huge long-term costs to farmers, urban and rural households, business and governments. These costs impose disproportionate burdens on disadvantaged people and regions.

TBDN members know that our livelihoods and the quality of our lives depend on our interactions with Minnesota's resplendent natural environment. How we heat and cool our homes, transport ourselves, acquire our food, dispose of our garbage, and so much more, all hold the potential to threaten or to improve the health and equitability of our economy, our environment and our communities.

Since the impacts of industrial pollution began to compound and create disasters more than 50 years ago, Minnesotans at all levels of government, as well as communities and businesses, worked for cleaner air, water and soil, and for protection of our natural beauty and native forms of life. In more recent decades, Minnesotans have also become more informed and alarmed about global climate change, a more subtle but more existential danger¹ that poses a threat to the state's health, social justice, and economic stability.

It has been scientifically established that the primary cause of climate change are emissions known as "greenhouse gases" (GHGs). GHGs are gases capable of absorbing infrared radiation, thereby trapping and holding heat in the atmosphere, resulting in what is known as "global warming" and climate change.

It really boils down to this: that all life is interrelated. We are all caught in an inescapable network of mutuality, tied into a single garment of destiny. Whatever affects one destiny, affects all indirectly. We are made to live together because of the interrelated structure of reality.

— Reverend Dr. Martin Luther King, Jr., Christmas Sermon on Peace²



Image: Li-An Lim, Unsplash

Among scientists, the consensus is overwhelming on the urgent realities of climate change³ and the threats posed to our quality of life, the economy and national security. In fact, in January 2019, the Pentagon released a report listing the national security threats associated with climate change.⁴ Minnesota, the nation, and the planet face an acute need for comprehensive action.⁵

Environmental degradation also exacerbates our already worsening economic inequality and stubborn racial and regional disparities. Like the historic damages associated with pollution, climate change disproportionately burdens Minnesotans who are already vulnerable due to financial insecurity and structural racism. A growing body of research documents how climate change and environmental degradation unequally affect people of color and Indigenous people, those with low incomes, the disabled, and those who are otherwise marginalized.⁷ Negative impacts are also disproportionately heavy for rural residents and farmers, who are dependent on a stable climate, natural resources, and unimpaired water for their livelihood.⁸

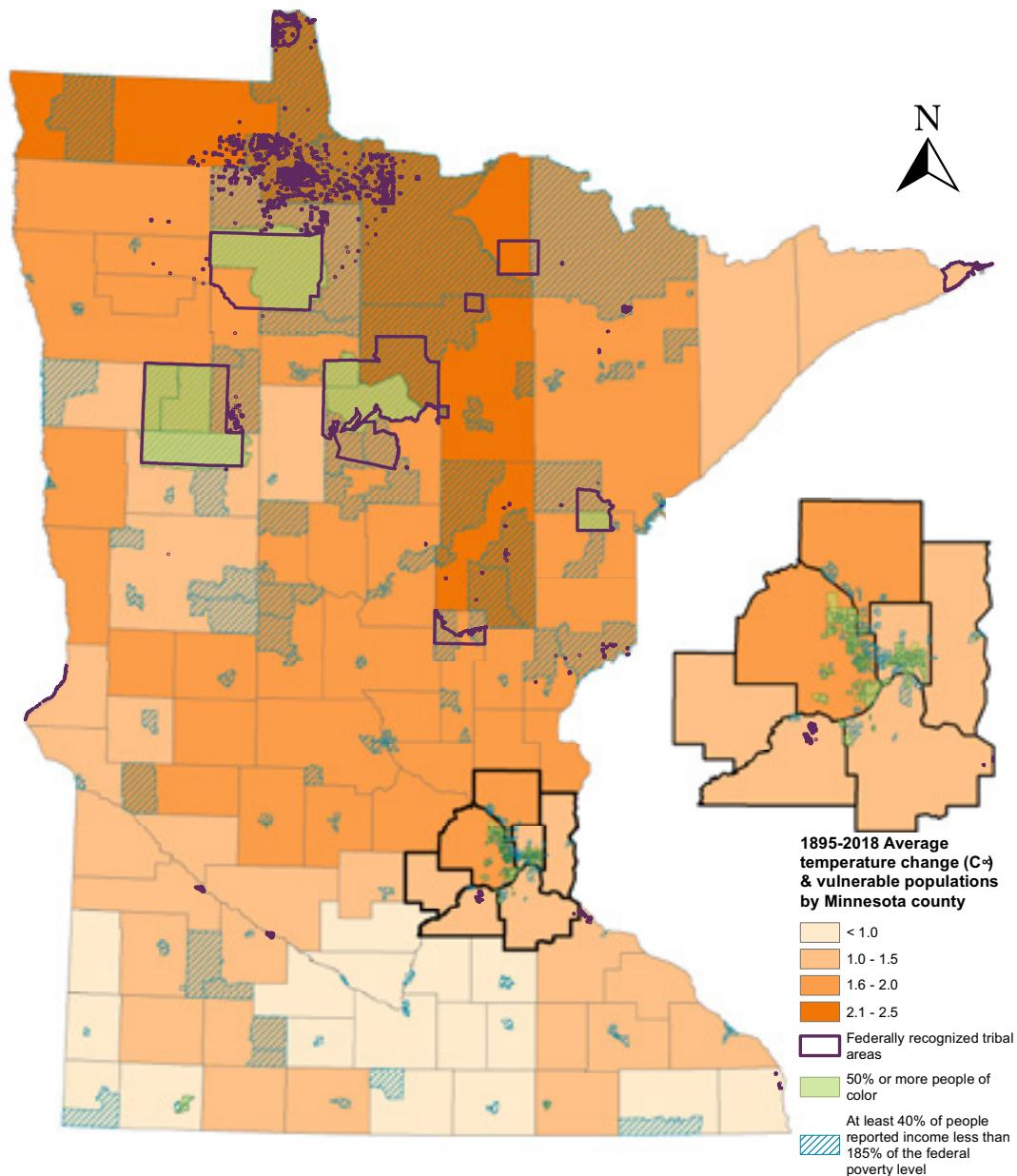
Some of these more vulnerable populations have been mapped and are labelled as areas of “Environmental Justice” concern by both the U.S. Environmental Protection Agency (EPA) and the Minnesota Pollution Control Agency (MPCA).

Exhibit 1 and subsequent exhibits highlight Minnesota’s many areas of Environmental Justice concern where low incomes, racial inequities, regional disadvantages and the greatest exposure to climate change and pollution co-occur. For example, Exhibit 1 overlays the areas of Environmental Justice concern onto Minnesota counties with a heat map showing the greatest average increases in temperature, derived from MinnPost’s analysis of U.S. National Oceanographic and Aeronautics data.⁹ Exhibit 1 shows that the northern part of the state — with many low income communities and American Indian nations — will most likely see irreversible climate change effects due to those counties rising by an average of more than 2 degrees Celsius.

There are in nature neither rewards nor punishments — there are consequences.

— Robert Green Ingersoll, 19th Century American writer and orator⁶

Exhibit 1. Climate change hits hardest where economic, regional, and racial disparities are greatest.¹⁰



Sources: U.S. Census Bureau, Minnesota Pollution Control Agency
National Oceanic and Atmospheric Administration

Created December, 2019

Meanwhile, key business sectors that face disruption and loss include all of agribusiness, forestry, energy, tourism, manufacturing, transportation, and housing. Spillover effects can be expected on all other forms of human enterprise in private, non-profit and public sectors.

Encouragingly, government, community, and business leaders in Minnesota and the nation are joining multiple global efforts to change behaviors and practices. In Minnesota at every level — from the Governor's Office to corporate boardrooms, from city halls to local watershed agencies to non-profits and philanthropies — communities and individuals are kicking into gear and elevating a cleaner and greener environment as a topmost priority.

The economy is a wholly owned subsidiary of the environment, not the reverse.

— Herman E. Daly, Economist, 1977¹¹

Although news media and activists often focus primarily on the threats and upfront costs of remediation, aggressive efforts to clean up our natural world also present enormous opportunity for sustainable economic growth. A case in point is the increasingly profitable renewable energy industry, which already has become one of Minnesota's fastest growing sectors, offering tens of thousands of new jobs and entrepreneurial opportunities. New methods of farming, innovations in carbon capture, more electrification of energy and transportation for rural and inner-city neighborhoods, increasing private and public investments in conservation and retro-fitting buildings, and widespread adoption of zero waste principles — all present further opportunities for increased employment and profits. As one of very few states that produces no fossil fuels,¹² Minnesota will enjoy a growing competitive advantage as it accelerates this transition to renewable energy. Burnishing our reputation as a clean and healthy state will have a positive effect on the economy in untold ways.

All economic activity is dependent upon that environment and its underlying resource base of forests, water, air, soil, and minerals. When the environment is finally forced to file for bankruptcy because its resource base has been polluted, degraded, dissipated, and irretrievably compromised, the economy goes into bankruptcy with it.

— Gaylord Nelson, American Senator and founder of Earth Day¹³

As threats become more imminent and the potential for sustainable profit becomes more obvious, it is increasingly important to implement policies that stabilize our climate, protect and conserve our precious waters, lands, air, and other natural resources, while ensuring racial and regional equity and inclusion. With immediate and comprehensive action — by individuals, businesses, communities, non-profits and government at every level — the people and the economy of Minnesota will begin to reap substantial benefits.

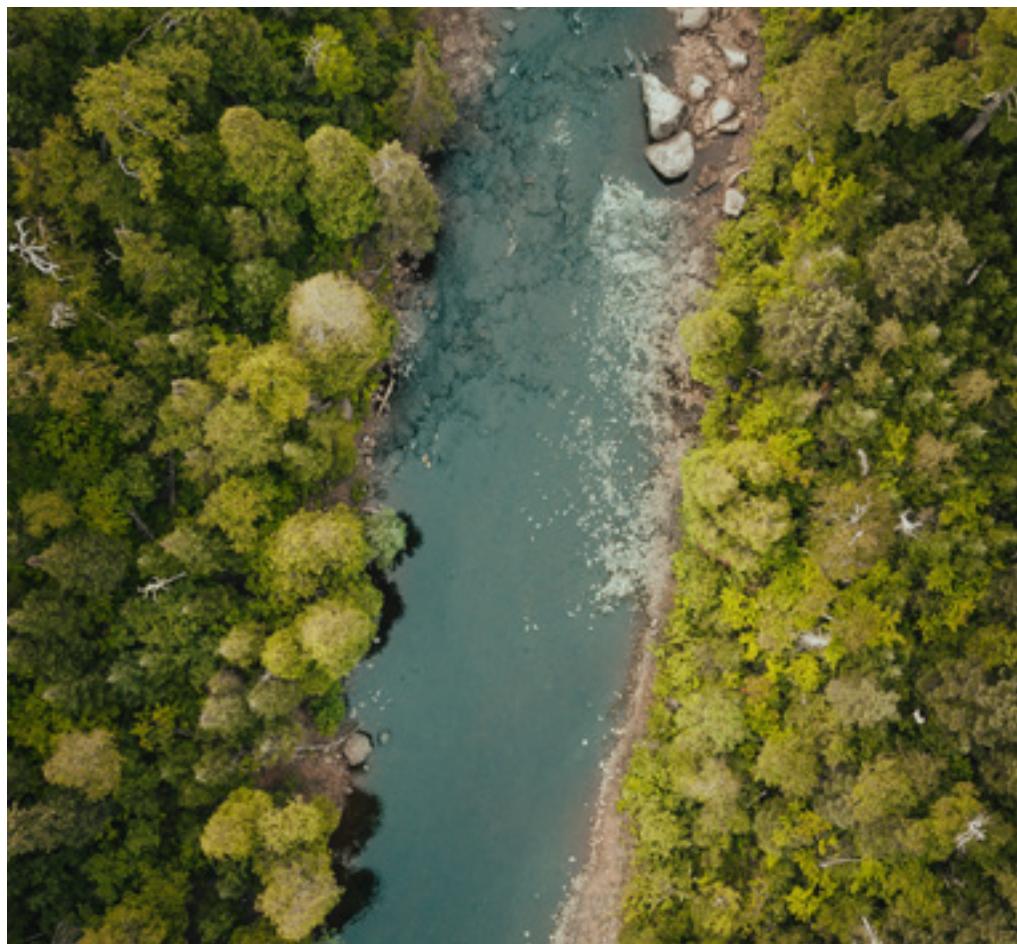


Image: Josh Hild, Unsplash

A review of the most basic evidence on climate change and environmental degradation in Minnesota underscores the need for action. In the Twin Cities, annual average temperatures increased by 3.2° F from 1951 to 2012, higher than both national and global averages.¹⁴ Northern Minnesota has experienced one of the nation's most dramatic average temperature increases since 1895¹⁵ and the region is projected to further experience some of the strongest impacts due to extreme weather events in the coming years. These shifts are having a negative effect on many species of plant and animal life and ecosystems at large, as well as on the people who live there.

Water quality is strongly correlated with climate change, population growth, and development patterns. Despite some progress in recent decades, 56 percent of our cherished lakes and streams and other surface waters are officially impaired,¹⁶ and do not meet requirements for safe fishing and swimming or fall short of other environmental standards.

Exhibit 2 offers more information on the specific GHGs annually tracked by the MPCA, as well as providing more details on the relative distribution of the specific gases and their sources as measured in 2016.

Exhibit 2. Carbon Dioxide was three quarters of Minnesota's 2016 e-tons of Green House Gas Emissions.¹⁷

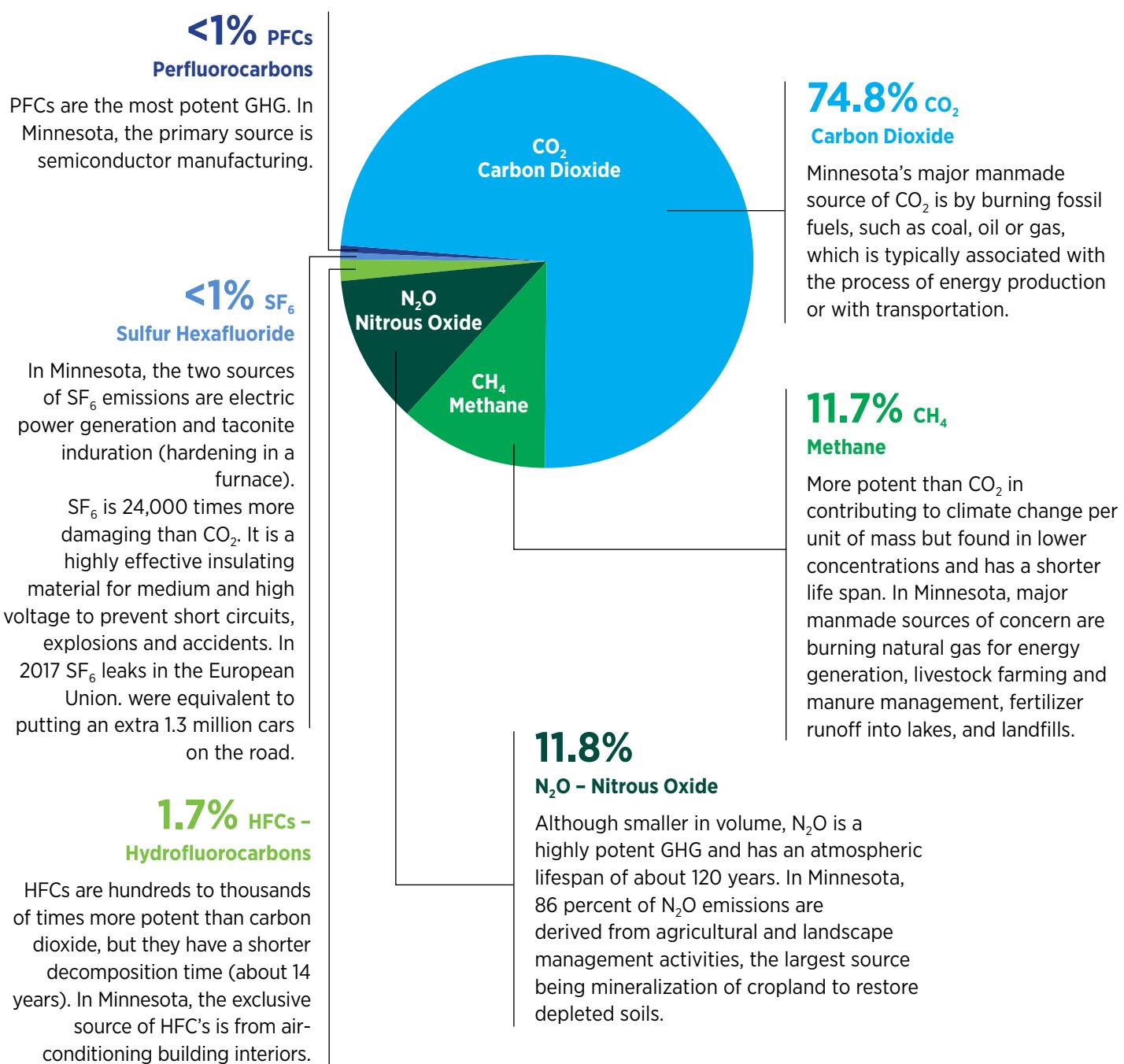
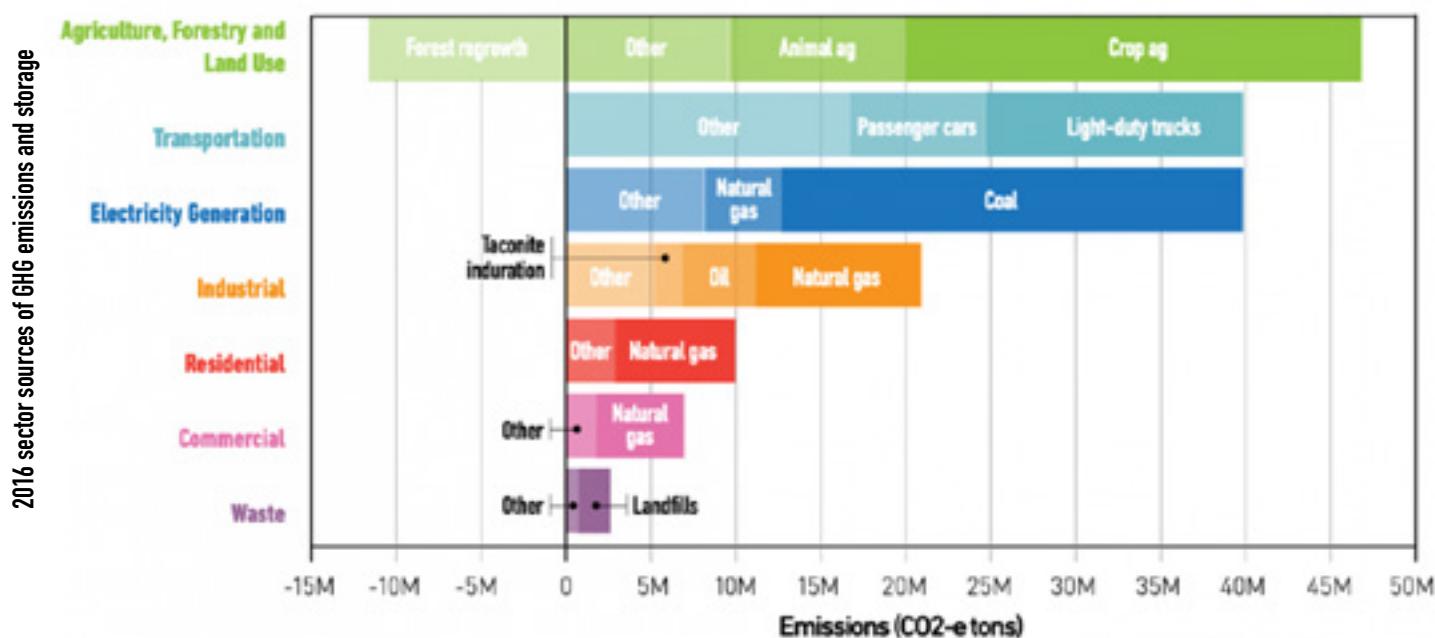


Exhibit 3 contains the MPCA's representation of the sector sources for all the state's GHGs. The larger emissions sources are identified in Exhibit 3, including transportation, electricity generation and various land uses. Note that Forest Regrowth appears to the left of the zero emissions line, indicating that forests provide GHG storage and have a beneficial impact.

Exhibit 3. Agriculture, Transportation and Electricity Generation are leading sectors for both GHG emissions and storage.¹⁸



Reproduced from a graph and data from the Minnesota Pollution Control Agency available at pca.state.mn.us/air/greenhouse-gas-emissions-data.

Electricity Generation	Fuel combustion, emissions from electricity consumption in Minnesota, including electricity imported to meet demand.
Transportation	Fuel combustion in gasoline and diesel vehicles, aviation, rail, air conditioning leakage, natural gas pipelines
Agriculture and forestry	Livestock flatulence, animal feedlots and manure management, fertilizer use, crop cultivation, fuel combustion, sequestration of carbon in forest regrowth
Industrial	Fuel combustion, taconite processing, petroleum refining, magnesium casting, lead recycling, and manufacturing steel, glass, insulating foam, and semiconductors
Residential	Fuel combustion (space and water heating, dryers), fertilizer and product use, carbon storage in housing material, air conditioner and refrigerator leakage
Commercial	Fuel combustion, solvent use, medical N ₂ O, includes institutional sources
Waste	Waste processing and incineration, methane from landfill gas and wastewater, carbon storage in demolition landfills

In six distinct sections, this Blueprint chapter unpacks the array of interdependent environmental, societal, and climate challenges, along with practical solutions and examples of effective community responses. Sections will investigate: transitioning our electric power generation to renewable energy, creating sustainable transportation systems, conserving energy in our built environment, shifting to a zero waste framework where landfills and incinerators are no longer major parts of the state's waste solutions portfolio, reclaiming the state's waters that are impaired, and transforming our agriculture, forests, mining and other land management practices to maintaining eco-sustainability.

THE CLIMATE GENERATION EMERGES

“Generation Z” seems to be emerging as the nickname for people under the age of 20, but a determined set of young Minnesotans intent on building a more sustainable world are making an impact under what might be a more apt label for their cohort: The Climate Generation.

Launched more than a decade ago with the help of Will Steger (Minnesota’s famed polar explorer), the program Climate Generation promotes environmental education in schools, organizes events and demonstrations, conducts

trainings and sends delegations of students to global conferences.

Climate Generation deservedly gets attention when it leads high-profile events in Minnesota like the school walkouts during the international Youth Climate Strike, inspired by Sweden’s charismatic Greta Thunberg, on Sept. 20, 2019.

But the group is about much more than protest. Since 2006, Climate Generation has reached 5,000 teachers and educators with its materials, engaged 3,500 youth, attracted 500 donors, and has active chapters in 25 high schools.

The group increasingly is taken seriously by key players in policy and politics and is at the table of many coalitions forming around climate and environmental action. Climate Generation recently partnered with Xcel Energy on a major conference at the University of Minnesota, under the banner “Leading the Clean Energy Transition.” And the group’s members were given special recognition and the nickname “EELs” (for their Emerging Environmental Leadership Initiative) at a recent Minnesota Environmental Congress in Mankato, sponsored by the Minnesota Environmental Quality Board.



Image: Climate Generation website

These are parts of the state’s crucial preventive or “mitigating” measures. In addition to pursuing mitigation, policymakers and all Minnesotans will have to spend time and money immediately to address existing damage and develop effective policy responses to environmental emergencies that are already here or are destined to arrive in very short order. The latter set of policies falls under the label “adaptation”, as opposed to mitigation. Adaptation seeks to reduce or avoid immediate harm, and even exploit potential opportunities associated with climate change. Examples of adaptation include flood control projects and public health initiatives to help victims of asthma and other climate-sensitive diseases. Minnesota has begun to approach adaptation and emergency response in a more systematic and comprehensive framework, as highlighted in the state’s 2017 Interagency Climate Adaptation Team report.¹⁹ The report considers how the state might respond to such immediate threats as power grid disruption, negative health impacts, and damages from extreme weather.

A RENEWABLE POWER GRID

Challenges

Electricity generation — through Minnesota’s electric power companies, utility co-ops and other fossil fuel-powered generators of energy — perennially ranks as one of the state’s top three sectors generating GHGs, along with transportation and land uses. Emissions from coal-burning plants account for most of total GHG emissions from power generation, although reliance on coal is decreasing. In 2007, coal made up 59 percent of the state’s electricity generation, compared to 39 percent in 2017. In the same period, “renewable energy sources” went from 8 percent to 25 percent of energy generation.²⁰ Renewable energy is defined as energy that is collected from sources that are naturally replenished and abundant, including sunlight, wind, flowing water and geothermal heat.

Nuclear power also qualifies as essentially GHG-free, although its critics argue that it should not be included as a renewable energy source because of the risks associated with it, which include:

- It is powered by a rare and finite source — uranium.
- It presents problems with storage of spent radioactive fuel (which is both exceedingly toxic and has a half-life of 700 million years).²¹
- Uranium mining activities too often have negative environmental impacts that most burden Indigenous people and other vulnerable populations.

Despite these concerns, many top climate scientists are beginning to advocate for re-visiting the nuclear power industry as technological advances promise to make this carbon-free source more safe.²² Minnesota’s two nuclear power plants, at Red Wing and Monticello, accounted for about 23 percent of the state’s electrical power in 2018 and the state has published plans to eventually close those plants. However, Xcel recently announced it wants to extend their life to 2040 and Gov. Tim Walz’s “100% Renewable Energy by 2050” plan keeps the nuclear option open. Nuclear power’s role in reaching the 2050 carbon-free goals will continue to be an ongoing debate for the foreseeable future.

Agreement on the urgent need to continue to reduce the energy production portion of the state’s carbon footprint and shift to renewable energy sources has grown exponentially in recent years. Utility owners and their shareholders are beginning to take the lead. The two biggest players in Minnesota — Xcel and Great River Energy — are now considered national leaders in working with governments and climate action experts to accelerate the state’s shift to renewable energy.²³

I’d put my money on the sun and solar energy. What a source of power! I hope we don’t have to wait until oil and coal run out before we tackle that.”

— Thomas Edison, 1931, to Henry Ford and Harvey Firestone²⁴

As renewables become increasingly efficient, inexpensive, and profitable, the case for a faster shift strengthens. And because Minnesota lacks fossil fuels,²⁵ a shift away from carbon-based energy builds competitive advantage over states that rely on extracting and exporting oil, coal and natural gas. And every community can participate, even schools.

A SOLAR SCHOOLS PARTNERSHIP FOR THE CENTRAL LAKES

Investments in local renewable energy save money in the long run, but the initial price can be an obstacle, for households and businesses. This holds true also for other institutions, and especially smaller rural school districts and community colleges that must convince sometimes skeptical taxpayers and public officials to pony up the construction costs.

When other partners in a larger regional community pool resources and pull together, however, these obstacles can be surmounted.

Proving this point, the Solar Schools partnership in Minnesota's Central Lakes region cut the ribbon in September 2019 on six solar arrays that provide 1.5 megawatts of power to the Pine River-Backus and Pequot Lakes school districts, as well as Central Lakes College.

This \$3.5 million project will dramatically reduce the carbon footprint of the schools, reducing CO₂ emissions by an estimated 1,420 metric tons over the next 25 years, in addition to dramatically reducing annual energy bills.

The partnership includes: four electric utilities and co-ops, two school districts, a community college, a five-county regional development commission, an energy equity firm, a foundation, and Xcel Energy's Renewable Development Fund. This collaboration put together a project large enough to attract outside financial investment instead of school district tax revenue.

Erica Bjelland of the Rural Renewable Energy Alliance described the effort in a Minnesota Public Radio Report²⁶ as one of the largest projects of its kind, and a model for the state and nation. The National Association of Development Organizations awarded the project a 2019 Aliceann Wohlbruck Award for significant impacts on economic development and quality of life.

Image: Region Five Development Commission



Solar array for Pine River-Backus High School

Pine River-Backus Superintendent Dave Endicott told MPR that the project will save his district \$5,000 a month in energy bills, and that money can now go to staff or education resources. Plus Endicott says, it's just plain "cool" to have the largest solar panel arrays of any school district in the state, especially considering that poverty in the district is relatively high (40-60 percent of the students in the Region 5 counties qualify for the free-and-reduced price lunch program) and school budgets are tight.

"I mean, I go to a football game and you can see the solar array out there," Endicott told MPR. "and that's so cool."



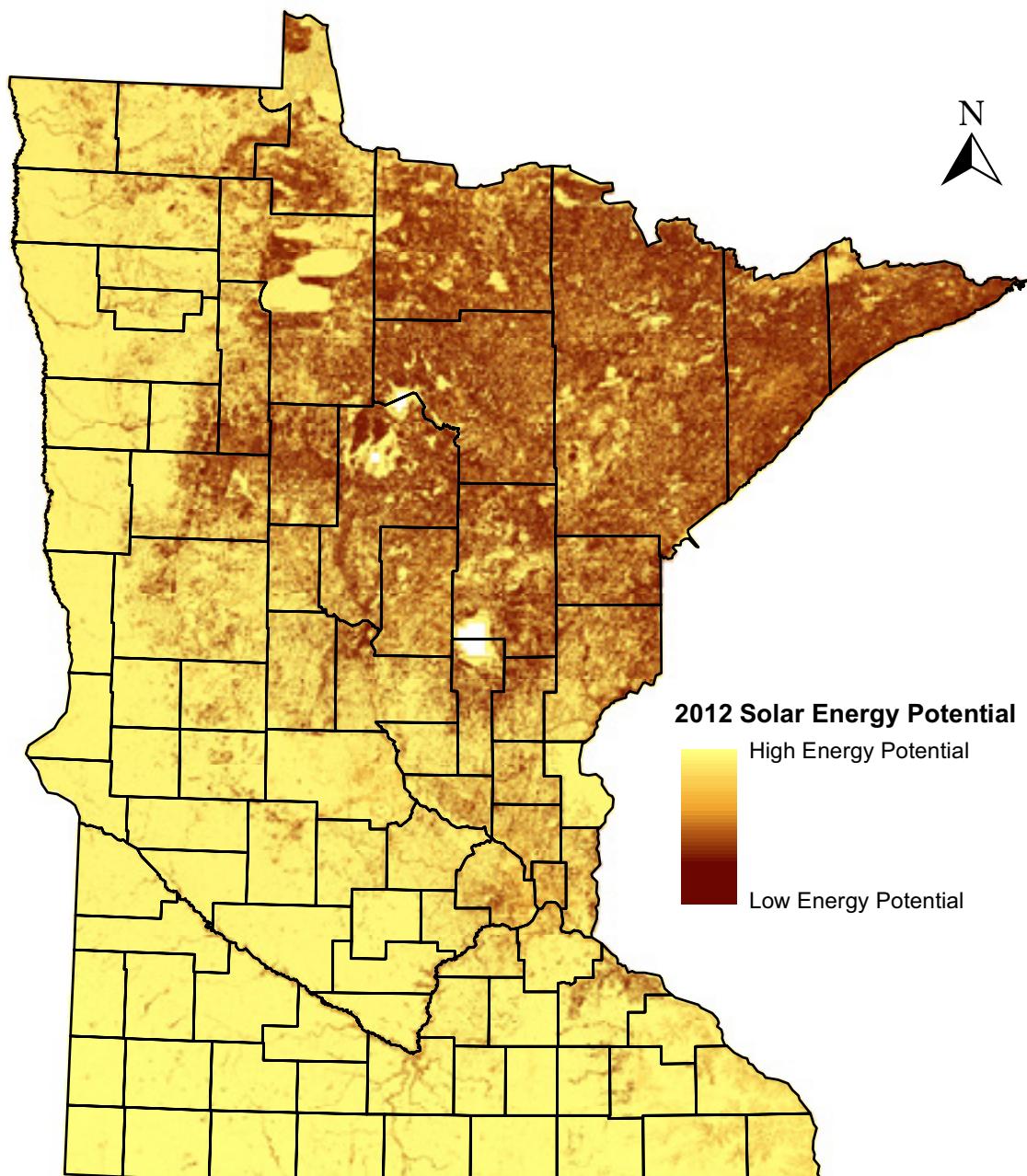
Electric vehicle charging station outside Pequot Lakes School

Image: Region Five Development Commission

As a windy and relatively sunny state, Minnesota has ample material and resources to enact renewable energy generators, such as wind farms and solar panels. Exhibits 4 and 5 provide maps indicating both solar and wind power potential across the state.

Exhibit 4 shows that from the northwest down to the entire southern parts of Minnesota, many regions are great candidates for solar powered energy generation.

Exhibit 4. Minnesota is rich in solar power potential²⁷



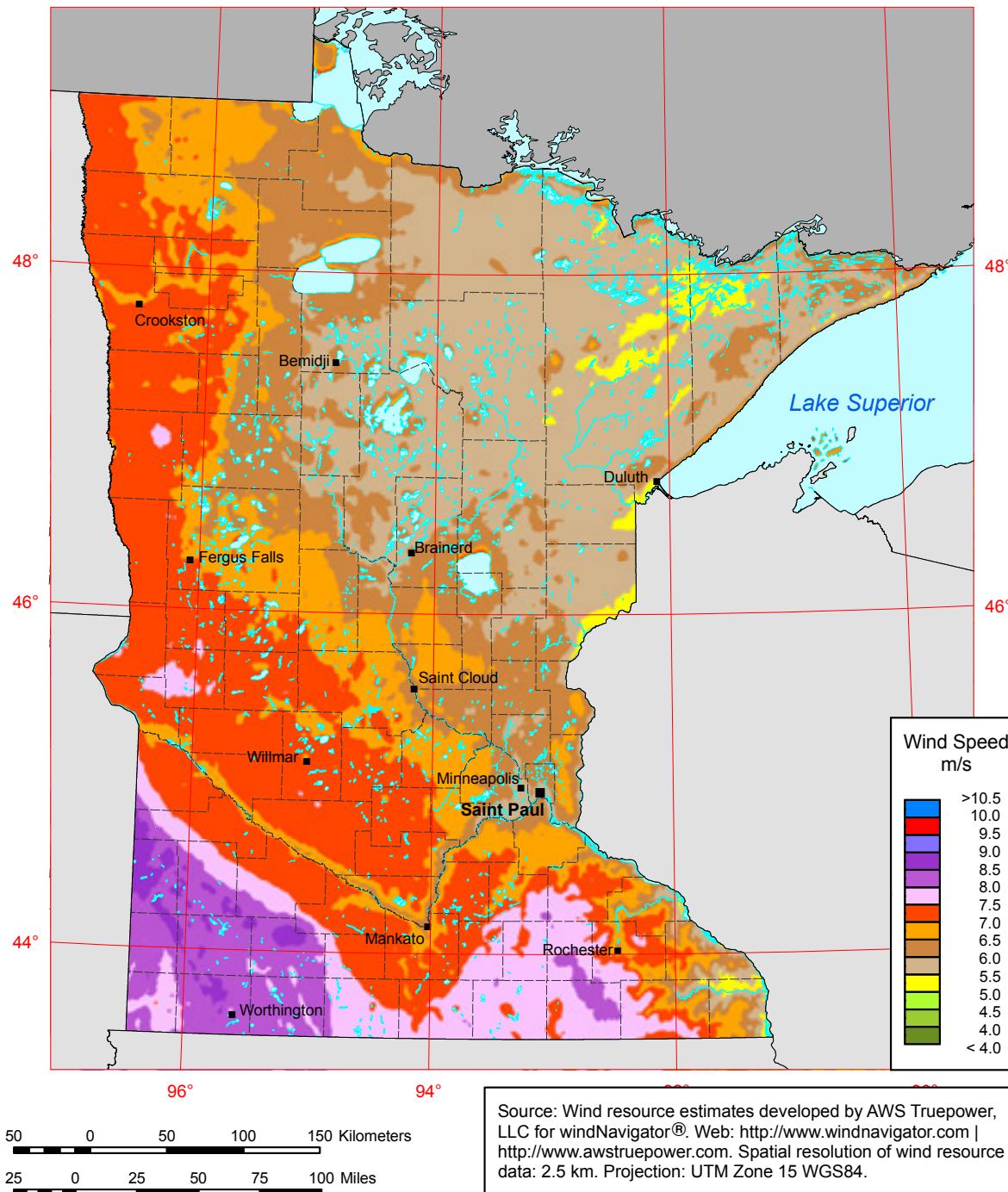
Source: University of Minnesota

*Solar potential refers to those areas that have the capability of producing high amounts of solar energy

Created November, 2019

In Exhibit 5, Minnesota's annual average wind speeds are estimated at a wind turbine hub height of 80 meters. As the exhibit shows, Minnesota has several regions that would be great candidates for wind power generation.

Exhibit 5. Minnesota has robust wind power potential²⁸



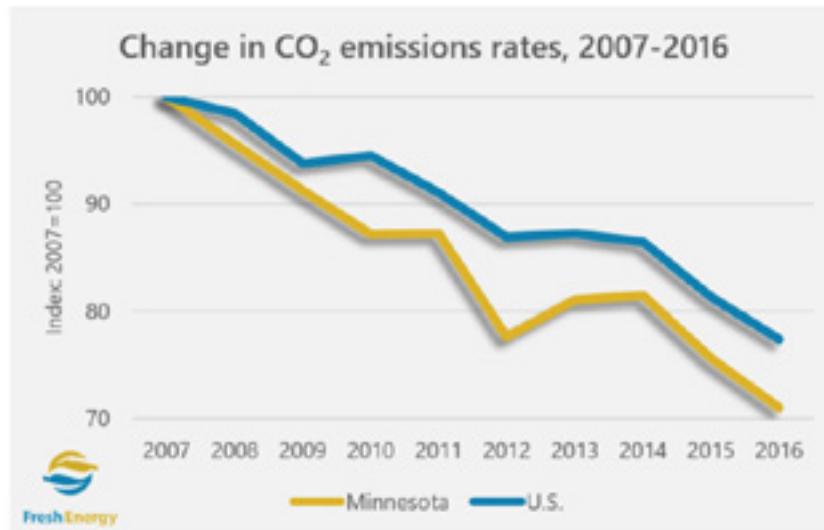
Shifting to renewable energy sources will not only help lower Minnesota's carbon footprint but also boost the local and state economy by providing jobs and potential business opportunities. It will move Minnesota from being a net energy importer to being a net energy exporter, which represents a clear competitive advantage long into the future.

A legitimate concern for taxpayers and politicians alike is how shifting to renewable energy will affect the state's economy and energy costs, short-term and long-term, especially regarding jobs and energy affordability. Economic analysis by Fresh Energy, a renewable energy advocacy organization, shows that annual residential energy bills in Minnesota have, on average, remained lower than in surrounding and comparable cold-weather states, even as Minnesota has surpassed those states, and exceeded its own goals, in reducing GHG emissions.²⁹

Fresh Energy reports that Minnesota's relative cost advantage is due to increasing reliance on renewable energy. Minnesota's topography enables this reliance particularly regarding wind speeds, enabling wind farms to generate electricity for less than 2¢ per kilowatt hour. In comparison, it costs between 2.5 - 7.5¢ per kilowatt hour to run an existing coal or natural gas power plant.³⁰

Exhibit 6, also from Fresh Energy, compares Minnesota's decrease in CO₂ emissions between 2007 and 2016, with the national average decrease during the same time period. Fresh Energy reports that Minnesota's decrease in CO₂ emissions is also the result of the state's increasingly available renewable energy.

Exhibit 6. Between 2007 -2016, Minnesota's reduction in CO₂ emissions per kilowatt hour was greater than the national average³¹



Opposition to climate action and environmental investment is eroding but still problematic, as ideologically driven critics and some powerful economic interests delay and obstruct policies that impose upfront costs or regulations. But this is not an inherently partisan issue in Minnesota. Renewable energy use advanced considerably under Republican Gov. Tim Pawlenty in the early 2000s. During his administration, the state passed a renewable electricity standard requiring that 25 percent of electricity be generated by renewable energy by 2025.³² And progress continues under Democratic Governor Tim Walz and the Minnesota Environmental Quality Board.

Despite this remarkable progress over the last two decades, Minnesota is not yet moving fast enough to meet the impending challenges, as climate change impacts accelerate and compound over the next few years. Consensus is building toward a goal of 50 percent renewable energy by 2030 and Governor Walz is pushing for 100 percent carbon free electricity by 2050.³³ Time is of the essence.

RURAL CLIMATE DIALOGUES CHANGE ATTITUDES

Harvey Krage, a retired tire plant worker and truck driver from rural Winona County, actually changed his mind about climate change as a result of his participation in a respectful citizen engagement process called “Rural Climate Dialogues.”

“I came out of it a total winner as far as believing in global warming,” Krage told Sierra Magazine³⁴, which published a lengthy feature article on the dialogues in early 2018.

“Rural Climate Dialogues” is a joint project of the Minnesota-based Institute for Agriculture & Trade Policy, the Sierra Club, and the Jefferson Center — an organization that has pioneered the citizen jury process in civic engagement. Dialogues were conducted from 2014 through 2016 in Winona, Stevens, and Itasca counties. More conversations are being planned.

The “citizen jury” process, as described by the Sierra Club, is “a collection of people plucked from opposing sides of the political spectrum and the socioeconomic divide, packed into a room to discuss a hot-button subject— a recipe for a shouting match, given the political climate of the last few years.”

To minimize the shouting, the Dialogues project was carefully designed to be held over a few days with extra emphasis on listening, mutual respect and careful consideration of factual presentations. In the end, the Winona County dialogue produced an extraordinary joint statement, to the effect that Minnesota’s climate is changing faster than elsewhere and that this will have “a real measurable impact on our overall economy, our environment, fish and wildlife habitat, health, insurance rates, and more.”

The regional divide is wider on some issues than others, but evidence suggests that rural and metro Minnesotans and Americans are coming closer together in recognizing the reality of climate change and support for corrective climate action.

Polling in Minnesota and across the Upper Midwest also shows environmental concerns rising to the top.³⁵ A recent national poll (with more than 22,000 respondents, conducted by Yale and George Mason universities)³⁶ found that 69 percent of urban and 68 percent of suburban respondents believed climate change is real and that action is warranted. The percentage for rural Americans was not too far behind, at 57 percent. More good-faith conversations like those fostered by Rural Climate Dialogues can only help.



Shona Snater, (left), a one-time organic farmer, and Dave Johnson, (right) a retired construction worker, were among participants in the Rural Climate Dialogues project, sponsored by the Sierra Club, the Institute for Agriculture and Trade Policy, and the Jefferson Center.

Solutions

1. Elevate Minnesota's clean energy goals and accelerate momentum while regularly and transparently reporting on progress toward carbon-free power generation. In 2019 Governor Walz proposed a "One Minnesota Path to Clean Energy", calling for a 100 percent carbon free power grid by 2050, and the state's largest privately-owned power utility, Xcel Energy, announced the same. Following the lead of this public-private partnership, businesses, local governments and community organizations should join forces to maximize efforts to reach the 2050 goal. Goal setting should be accompanied by detailed action plans, identification of responsible parties, establishing firm interim targets, and providing both incentives and mandates to measure and report compliance.

Goals must include equitable outcomes for low-income communities, people of color, rural regions and other vulnerable groups by ensuring participation and honoring recommendations coming from these fellow Minnesotans. To ensure more equity and shareholding by people of color and small businesses, two obvious areas of concern are affordable utility rates and the subsidies needed for energy conversion and conservation. Incentives must be structured to encourage local ownership of clean energy enterprises. Diverse policymakers in public, private and non-profit spheres must collaborate to identify culturally congruent and community-based methods of measuring "equity impact" as well as "environmental impact" on all proposed policies and investments.

2. Customers and consumers must pitch in. Individual customers and ratepayers can look for ways to step up their individual and collective advocacy, giving positive feedback to decarbonization efforts by their utilities, thanking them for progress achieved, and cooperating with further efforts toward a renewable shift. There are a variety of ways individual action can help, including buying renewable energy certificates online as a way of ensuring that the energy your household uses is generated through renewable sources.³⁷ Many companies and co-ops are actively offering incentives to shift or conserve power. Customers should take maximum advantage of all such offers and help less fortunate neighbors do likewise.

3. Join the "Beneficial Electrification" movement. Great River Energy, an association of 28 co-ops that provide most of the power to Greater Minnesota, supports the national Beneficial Electrification League (BEL). The BEL's recently established "Electrify Minnesota"³⁹ initiative promotes the benefits of electric space and water heating technology, electric vehicles (EVs) and charging infrastructure (for passengers, delivery and freight), premise-based battery systems, as well as myriad commercial, agricultural and industrial applications.

We need to also just do the simple things like unplug your microwave. I know people listening to this right now feel like, "There's nothing I can do" but there's plenty of things you can do, and it's just unplugging your cell phone when you're not using it. Or maybe if you don't have to drive, just walk.

— Robert Blake, Founder Solar Bear Solar Panel Installation Services³⁸

4. Reconsider the long-term potential of nuclear power, in light of new technologies. A healthy bipartisan debate already has begun on rethinking the proposed phase-out of nuclear power. Long-term storage problems and concerns of affected tribal nations such as Prairie Island must be accommodated, but a trade-off for reduced emissions might prove necessary.

5. Exert pressure on national leaders to employ market mechanisms to incent emission reductions. A diverse group of world-leading economists and Nobel Laureates have endorsed carbon tax-and-dividends as the most fair and efficient way to price carbon emissions, and thus drive CO₂ emissions reductions.⁴⁰

A bi-partisan Energy Innovation and Carbon Dividend bill has been introduced in Congress and other versions likely will emerge. The carbon tax should increase annually until emission reduction goals are attained. The income raised through these taxes should be returned to the American people as lump sum allocations to assist them with increased energy costs. Voters must exert pressure on Minnesota's Congressional delegation to enact a national carbon pricing fee-and-dividend mechanism to tax fossil fuel users for the climate damage their fuel use causes, knowing that if the tax or charge is high enough, carbon emissions will decline.

However, Minnesotans don't necessarily have to wait for federal legislation. State legislators can direct the state to join a regional greenhouse gas initiative or coalition. The Regional Greenhouse Gas Initiative (RGGI) — an east coast nine-state cooperative effort — was the nation's first mandatory market-based program aimed at capping and reducing CO₂ emissions from power producers. Minnesota voters can insist on a similar partnership.

6. Invest in extended battery and energy storage capacity and encourage new technologies that align storage supply and demand while avoiding added GHG emissions risks. Unpredictable wind and sun cycles and fluctuations in peak demand have long challenged renewable energy engineers. Technologies are emerging to address this problem.



Image: Karsten-Wurth, Unsplash

A carbon tax offers the most cost-effective lever to reduce carbon emissions at the scale and speed that is necessary. By correcting a well-known market failure, a carbon tax will send a powerful price signal that harnesses the invisible hand of the marketplace to steer economic actors towards a low-carbon future.

— Joe Cortright, City Observatory 2019⁴¹

Further investments to improve functionality and expand battery storage facilities, from utility scale to private homes, are required. Environment Minnesota Research & Policy Center has conducted a comprehensive overview of new storage technologies and strategies and recommends improvements in how and when energy is available, investments in utility-scale, commercial and residential batteries and other pragmatic and affordable options.⁴²

One of the most important means by which the GHG SF₆ gets into the atmosphere is through leaks in the switchgears used by the electricity industry.⁴³ Renewable energy generation operates in a dispersed fashion across geographies with more connections to the electricity grid. This results in greater demand for electrical switches and circuit breakers to enhance energy throughput and increases concerns about preventing SF₆ leaks and major accidents. Newer switchgears have much lower leak rates and some switchgear manufacturers do not incorporate SF₆ in their designs. State regulations must ensure that all Minnesota utilities either use newer SF₆-reliant technologies or turn to equipment that does not incorporate SF₆ in its design.

DECARBONIZING TRANSPORTATION

Challenges

Minnesota has witnessed encouraging progress in reducing GHGs by relying on renewables for electric power generation and modest progress on reducing the carbon footprint of agriculture and other land uses. However, 2016 MPCA data shows that transportation has recently emerged as the single largest emitter and progress on transportation's emissions reductions lags that of power generation and land use.⁴⁴

Accelerating the development of transit systems in metropolitan areas, investing in more biking and pedestrian options, and providing ride-sharing and other mobility options in Greater Minnesota are key ingredients in transportation decarbonization. In this chapter, Climate Resilience transportation strategies align with the transportation solutions recommended in the Human Capital and Infrastructure chapters of the Minnesota Equity Blueprint. Those earlier recommendations were made because Minnesota's transportation and transit sectors are both in need of infrastructure investment and are key elements to increasing income mobility. This section will deal more specifically with a transition to cleaner surface transportation vehicles, passenger cars, light-and heavy-duty trucks (note that the light-duty truck category includes SUV's), buses, motorcycles and mobile air conditioning.

The obvious and essential problem is that Minnesotans are emitting about 40 million tons of CO₂ every year (and many other pollutants that affect human health) from the 7.4 million registered vehicles they use to transport themselves to work and school, to shop and run errands, and to travel for recreation.



Image: MN DOT



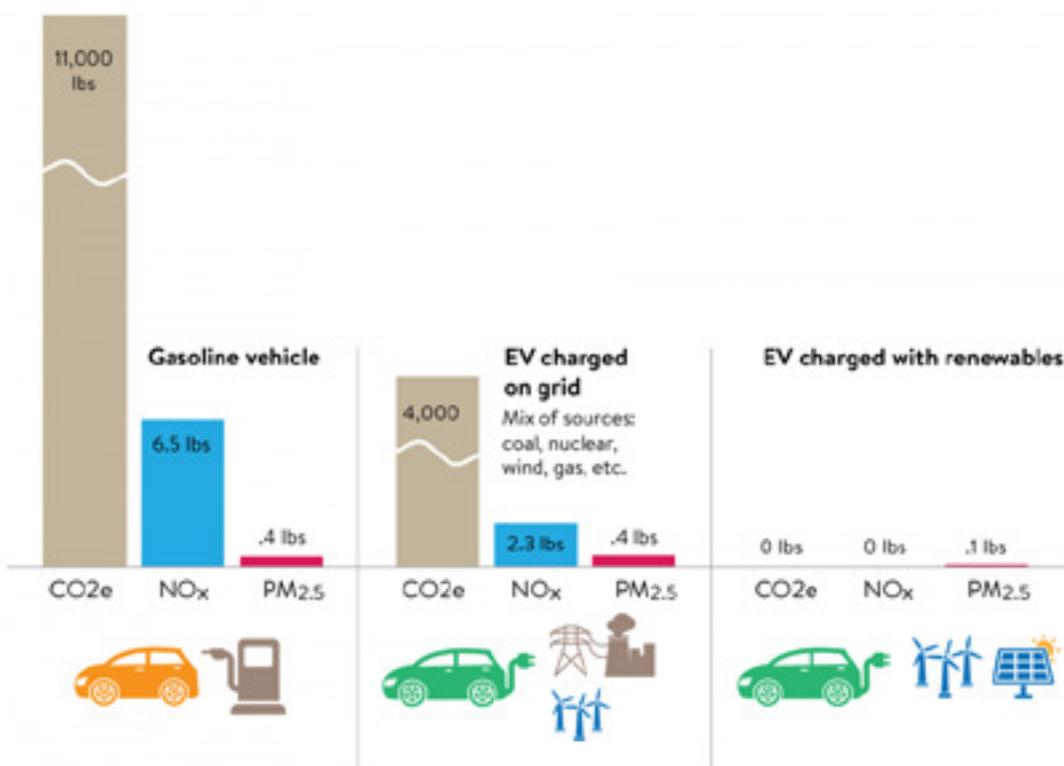
Image: RiverNorthPhotography, iStock

Effects of climate change and pollution on people of color, rural regions and low-income neighborhoods are increasingly well-documented. For years, researchers have been documenting the impacts of transportation policy that favored a white suburban car culture.⁴⁵ More recently, researchers and policy makers promote a new emphasis that highlights "transportation equity" in Minnesota. Although people of color and low-income households are less likely to own a car, they are too often located near major roads or highways and thus more likely to experience the negative health effects of being exposed to vehicle-generated pollution. Investments in public transit too often fail to fully materialize in lower-income neighborhoods.

Although technology has been advancing rapidly toward carbon-free and more efficient vehicles — electric cars, hybrids, better mileage in fossil-fueled vehicles — the Trump Administration's reversal of federal standards and attempts to subvert state efficiency standards will make it more difficult for states to make progress on decarbonizing transportation. Nevertheless, governors in almost half the states, Minnesota included, have expressed resolve to press ahead with their own various measures, incentives and regulations, to improve efficiency and reduce emissions.⁴⁶

Attracted by increasing affordability, lower maintenance costs and concerns about climate change, consumers are finally beginning to move toward low-emission and zero-emission vehicles. Sales in Minnesota have risen briskly in recent years, but still represent a small fraction of total vehicles on the road. Exhibit 7 shows the annual well-to-wheel car emissions by fueling arrangement for a compact/midsized car that drives 12,000 miles per year. "well to wheel" refers to the full life cycle analysis or the "dust to dust" energy cost. Exhibit 7 shows that Minnesota would net zero emissions from EVs charged from renewable sources, but the state would also benefit from dramatic reductions associated with EVs charged on the grid, compared to gasoline-fueled vehicles.

Exhibit 7. Large GHG emissions reductions are possible as Minnesotans move away from fossil fuel powered vehicles.⁴⁷



Although electric vehicle (EV) registrations have increased significantly since 2011, progress towards this cleaner future has been slower than desirable. In 2017 there were only 5,843 plug-in EVs registered in Minnesota.⁴⁸ The slow development of charging stations and other infrastructure remains a major impediment to a transition. As of the summer of 2019, there were only about 25 public fast-charging stations in Minnesota (primarily in the Twin Cities metro).⁴⁹



Image: Tony Webster, Flickr

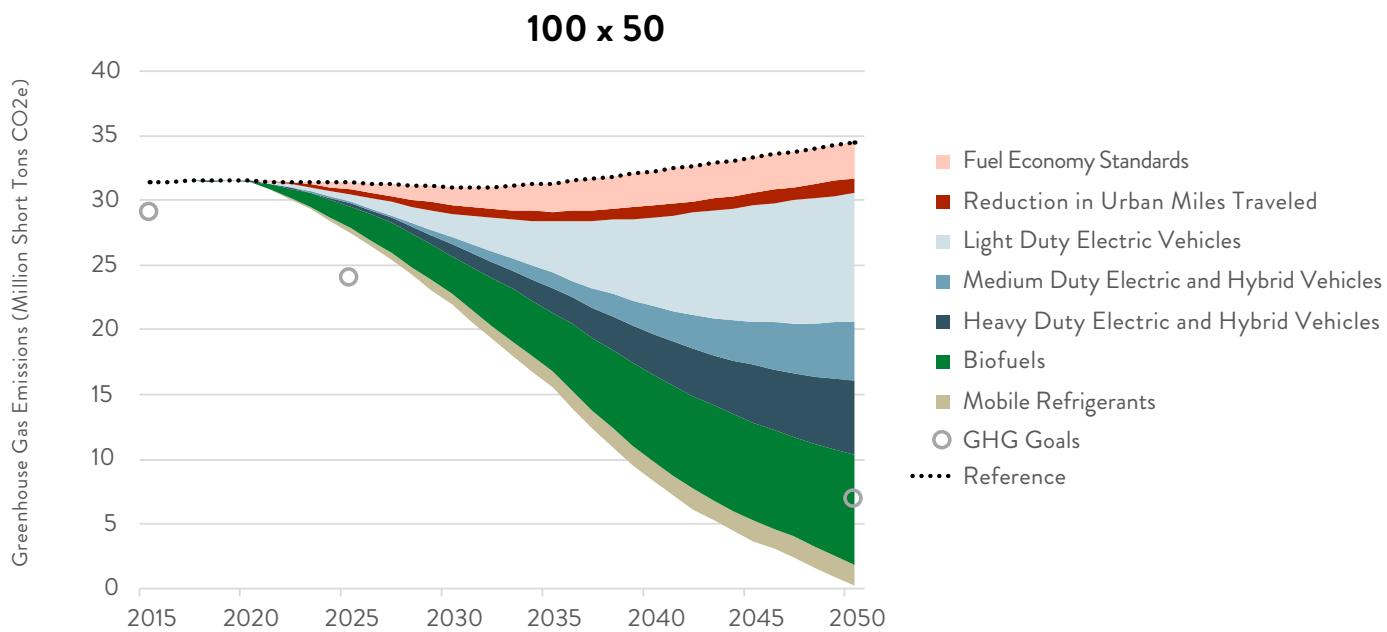
Exhibit 8 depicts a scenario from the Minnesota Department of Transportation's (MnDOT's) 2019 report, "Pathways to Decarbonizing Transportation in Minnesota." This model shows how Minnesota could achieve 100 percent GHG reduction in the state's personal vehicle transportation sector by envisioning a massive conversion to electric and hybrid vehicles. Investment in necessary EV infrastructure and greater use of biofuels would be required to provide the greatest impact on reducing GHGs from this part of the transportation sector (100 percent reduction by 2050, shorthand "100x50").

Minnesota's Environmental Quality

Board's executive director, Will Seuffert, states "Electrification as a strategy is probably the biggest opportunity to drive down significant reductions in emissions."⁵⁰

It's important to note that the emissions reductions shown in Exhibit 8 do not reflect the potential GHG emissions reductions that would accompany larger investments in mass transit or creating more bikeable and walkable communities.

Exhibit 8. Projected emissions reduction by vehicular strategy area with 100 percent reduction by 2050⁵¹



Solutions

7. Enact Clean Car Standards. Gov. Tim Walz has proposed standards, similar to those proposed in 14 other states, that require manufacturers to deliver more low-emission and zero-emission passenger cars, trucks and SUVs. Initial estimates indicate that these two policies combined may reduce annual greenhouse gas emissions by two million tons by 2030. The plan emphasizes greater choice instead of regulatory coercion on consumers. However, Minnesota should join other states in offering more generous incentives to existing EV-related federal and state tax breaks.⁵²



Image: Smallman12qf, Wikimedia Commons

8. Increase funding to expand infrastructure that supports EVs. MnDOT and its local partners should work together to create more charging stations and alternative fuel availability, especially in communities and corridors where market providers are lacking or where affordability presents obstacles.

9. Prioritize clean energy transit routes and clean energy buses, including school buses, especially those serving low-income neighborhoods. Communities statewide should follow the lead of partners like Great River Energy and the Lakeville School District, which is pioneering the use of all-electric school buses. Metropolitan Transit has announced intentions to buy 50 new electric buses over the next three years, end purchase of all diesel buses by 2022, and eventually convert its entire Twin Cities bus fleet to EVs.⁵³



Image: warrengoldswain, iStock

10. Promote biofuels. Promoting biofuels would achieve the twin goals of reducing GHG emissions and stabilizing a Greater Minnesota economy with jobs in ethanol and other biofuels production. Strengthen Minnesota's Petroleum Replacement Goals through additional mandates and incentives to ensure higher biofuel blends are available.

11. Seek integrated partnerships and solutions and rely on regional collaboration. Support the effort of the new Sustainable Transportation Advisory Council to advise the state on reducing GHG emissions, while promoting equity, environmental justice, and economic development. Reduce miles driven through programs that enable and reward walking, biking and taking transit. Minnesota should take the lead in collaborating with surrounding states on EV corridors, with marketing and outreach, and interoperability standards.

12. Require state and local governments to buy and use EVs. The Center for American Progress has documented best practices and nationwide efforts towards EV fleet conversion by state and local agencies, noting cost savings and the relative ease of adoption due to public fleets following set and shorter daily routes.⁵⁴

CONSERVATION IN THE BUILT ENVIRONMENT

Challenges

Heating, cooling, and regulating humidity inside Minnesota's residential and commercial spaces have always been a challenge, given our famously frigid winters, hot and humid summers, and some of the world's most extreme and unpredictable temperature fluctuations.

Long before the climate crisis emerged, Minnesotans were national leaders in efforts to conserve, weatherize and ensure that their built environment is efficient and affordable and ecologically sound. Minneapolis, for instance, has typically ranked among the top 10 cities in the nation for LEED-certified buildings and for policies advancing energy efficiency.⁵⁵ In 2018, the American Council for an Energy Efficient Economy ranked Minnesota eighth on its State Scorecard Ranking, and further recognized the state's government-led initiatives as tied for most effective in the country.⁵⁶

According to MPCA data, energy uses, primarily heating and cooling in commercial and residential buildings, accounts for GHG emissions amounting to almost 20 million CO₂ e-tons. As climate change worsens, weather patterns and seasons will become more extreme, which makes it even more critical that our built environment is up to the task. This obligation will involve more than just better insulation and smarter thermometers. In addition to relying on renewable energy sources, an environmentally sound built environment includes optimal water usage, waste disposal, and use of building materials that are environmentally friendly.

Sustainability and environmental issues are inherently interdisciplinary, therefore almost all individuals across multiple sectors will be affected. Similar to many other environmental issues, it is Indigenous people, low-income households, people of color and rural communities who will be the most affected by inadequate housing in the face of climate change. Older houses and commercial buildings offer less protection from the elements and are not as efficient. This results in people needing to spend more money on heating, cooling, and water. In poorer communities, there are fewer resources available for adequate renovations and investments.



Image: J Ferrer, iStock

Green roof at Lebanon Hills Visitor Center, Dakota County.

GREENSTEP CITIES ARE STEPPING UP

The city government of Cologne, serving residents who are both exurban commuters and farmers on the southwestern edge of the Twin Cities metro area, recently became the first in Minnesota to power all its municipal operations with a solar garden.

The city of Fergus Falls, in northwestern Minnesota, recently won national awards for its LEED (Leadership in Energy and Environmental Design) -certified police station, for its bicycle friendliness, and as a “Tree City USA.”

In August 2019, St. Paul published a grand 66-page Climate Action & Resilience Plan and has prioritized clean energy in its sweeping proposed redevelopment of an old Ford Plant site. In recent years the city has achieved a 30 percent energy use reduction in 60 city facilities.⁵⁷

From the agribusiness center of Marshall in southwestern Minnesota to picturesque Grand Marais on Lake Superior’s North Shore — and in 124 rural, urban and suburban cities and tribal nations in between — Minnesota communities are taking specific steps and making plans to develop environmental resilience, address climate action, and improve the lives of their residents.

Almost half the state’s population lives in these “Green Step Cities,”⁵⁸ which follow a voluntary program launched almost a decade ago and managed by the Minnesota Pollution Control Agency. The group includes about an equal number of small, medium and large cities and is coordinated by a public-private partnership. Cities work from a menu of 29 optional best practices focused on cost savings and energy-use reduction or conversion to renewable energy.

In 2016, the Humphrey School of Public Affairs at the University of Minnesota presented GreenStep with a State Government Innovation Award, one of ten awards to recognize state government entities engaged in innovation and service redesign. A TPT documentary⁵⁹ revealed how the Green Step Cities of Duluth, Elk River, Morris, Rochester, and Warren are collaborating and learning from five peer cities in Germany to create comprehensive climate action solutions.



Image: Great Plains Institute Website

As both the country and state move towards cleaner environmental policies and conservation principles, improvements in the built environment are imperative. Without these changes, massive amounts of energy will be lost (releasing GHG emissions at a rapid pace), and the effect of inefficiencies will continue to disproportionately burden our most vulnerable communities.

Solutions

13. Expand Minnesota’s Conservation Improvement Program (CIP). CIP is funded by ratepayers, administered by electricity and natural gas utilities and has regulatory oversight provided by the Minnesota Department of Commerce, Division of Energy Resources. The program promotes energy-efficient technologies and practices by providing energy audits, where a trained energy consultant examines homes and offers specific advice on energy improvements; rebates on high-efficiency heating, cooling, and water-heating appliances, CFLs (compact fluorescent lights) and LED (light emitting diodes) lighting, and low-flow showerheads and

faucet aerators; and air-conditioner cycling programs, which allow the utility to manage its peak energy demand in return for discounted electric bills for participating customers.⁶⁰ CIP has saved Minnesota households and businesses some \$6 billion over the last 20 years, supports over 47,000 jobs in the labor-intensive work of retrofitting and weatherizing buildings,⁶¹ and by conserving energy, reduces CO₂ emissions. The CIP program should increase its focuses on older and multi-family housing and low-income communities in urban and rural areas (which are the households with the highest energy costs relative to income). The CIP program should have additional resources with which to aid Minnesota households and small businesses in becoming weather- and climate- resilient.

14. Seek ways to expand the Minnesota Sustainable Building 2030 (SB2030) standards.⁶²

The SB2030 standards, currently in place for state government buildings, should be gradually extended to all new construction and renovation of apartment buildings, multi-family housing, rental properties, and commercial-industrial spaces.



Image: tzalivV, iStock

15. Ensure that a “Green Protocol” is integrated into affordable housing initiatives.

Although many people may see that creating new buildings, whether it be residential or commercial, under new stricter guidelines to ensure sustainability, will be economically draining, it actually offers cheaper and more cost-effective options in the long term. With better, more eco-friendly buildings, people require less energy to remain comfortable as well as emitting fewer GHGs. An exemplary model is the Minnesota Green Communities Initiative,⁶³ which works with affordable housing advocates to improve building standards, find capital and advance policies that create affordable housing that is also energy-efficient and healthier for residents.

16. Ramp up investment in training for green jobs. Educators and policy-makers should create a more ambitious Green Jobs training system for all vocations associated with environmental improvement, from installation of renewable energy technology, to monitoring and assessment, and with special focus on the labor-intensive task of construction skills needed to ensure energy efficiency in the old and new built environment. Green jobs initiatives must focus first on under-employed and low-income individuals in those urban and rural places most in need of weatherization and conservation.

17. Expand Energy Disclosure requirements. Like the miles-per-gallon disclosure requirements for a car, Energy Asset Disclosures⁶⁴ inform owners and buyers of buildings on the energy efficiency of their structures. Assets include wall and attic insulation, heating system age and type, and window efficiency. An Energy Asset Disclosure can also include recommendations for how to improve the energy efficiency of these assets.



Image: Vicki Beaver, Alamy

TOWARD ZERO WASTE AND A CIRCULAR ECONOMY

To date, efforts to tackle the {climate change} crisis have focused on a transition to renewable energy, complemented by energy efficiency. Though crucial and wholly consistent with a circular economy, these measures can only address 55% of emissions. The remaining 45% comes from producing {and disposing of} the cars, clothes, food, and other products we use every day. These cannot be overlooked.

— Ellen MacArthur Foundation's report, 2019⁶⁵

Challenges

Many Minnesotans don't think too much about the waste they send from their homes and offices, once the stuff has been placed in the trash can to be collected by the garbage hauler. Waste disposal and management are perfect examples of what economists call negative externalities — damaging or costly consequences of market activities that impact other people and the environment but are not reflected in the pricing of the product or service.

These blind spots reflect linear thinking, where the movement from extracting raw materials from the earth to making the products, to selling the products to buying the product to disposing of the product are treated as discrete stages where accountability at one stage is independent of those responsible at earlier or later stages. The results can be measured in the amount of waste for which individuals are responsible.

Based on 2017 American Community Survey data and 2017 MPCA data, the average Minnesotan generated over a ton (2,100 pounds) of mixed solid waste. And for every can of garbage at the curb, there are 87 cans worth of materials that come from extraction industries (e.g. timber, agriculture, mining and petroleum) and those that manufacture finished products from natural resources.⁶⁹ This leaves the environment holding the bag, so to speak.

TBDN stakeholders and partners believe that it is urgent that Minnesota's consumers, legislators and businesses shift to new ways of thinking about product design, ownership and disposal. This better way is based on the concept of a "Circular Economy" and "Zero Waste" principles. In a Circular Economy, product design, ownership and disposal mimic the natural world's cycles, where natural resources are kept in motion from bloom, to bugs, to birds to larger predators to end-of-life decay and return to the earth. Contrast this with the linear "take, make, buy, throw out" sequence which characterizes most human relationships with non-human things. A Circular Economy begins with designing out waste and pollution — think using compostable packaging or designing appliances which can be taken apart and reassembled rather than thrown out. In addition, products are kept in use — think of community recycling, programs that create community computing centers using retired IT hardware, and thrift stores which provide new uses to discarded clothing and furniture. For example, recycling steel requires 10 percent to 15 percent of the energy needed to make new steel.⁷⁰



Image: Rich Legg, iStock

TENNANT SHOWS BUSINESS HOW TO WALK THE TALK

Talking the talk on sustainability is an important first step. Acknowledging the fact of climate change and verbal commitment to climate action actually represents progress in the corporate world, where accepting responsibility for the environmental impact of commerce and industry has not always come easily.

Walking the talk is the next step, and Minnesota is home to a growing number of responsible and far-sighted companies that are taking aggressive action. Few are as advanced as Tennant Co., a Golden Valley-based manufacturer of floor cleaning equipment. The company earns about \$1 billion in annual revenue and employs more than 4,300 workers worldwide.

Tennant received the 2018 Sustainability Award for large manufacturers from the Minneapolis-St. Paul Business Journal.⁶⁶ Comprehensive sustainability and equity initiatives by the company have focused not only on ambitious goals and steep reductions in GHG emissions, but also toward zero waste, including recycling of its own equipment.

Outstanding achievements cited by the Business Journal:

- Tennant was among the first 100 companies globally to join the Science Based Targets initiative, a partnership launched by CDP Worldwide, the U.N. Global Compact, the World Wildlife Foundation and others to promote best practices in setting science-based emissions goals. In joining, Tennant committed to reducing emissions from facilities, fleets and purchased energy by 25 percent by 2030, and emissions from customers using Tennant products by 50 percent by 2030.
- In 2017 Tennant recycled over 76,000 more pounds of material than it had in 2016. The company also committed to long-term subscriptions for community solar gardens around the state, along with the University of Minnesota and others.
- Tennant's bottom line has seen a boost because of its sustainable practices. Introducing eco-advantaged technology — like ec-H2O NanoClean® — continues to provide strategic advantages over competitors. Since the 2008 introduction of ec-H2O™, over 110,000 units have been sold. Revenue from ec-H2O over 2008-2018 is more than \$1.34 billion. The company is gaining clients that demand attention to environmental footprints.



Amy Fredregill, managing director of the Minnesota Sustainable Growth Coalition,⁶⁷ told the Business Journal that Tennant is a model company for adaptation toward a “circular economy,” a term for a holistic take on sustainability, from a company’s operations to its products’ waste. The coalition is growing and building support for its “Business Case for Collective Action.”

Tennant was one of nine iconic corporate brand names from Minnesota (including General Mills, Best Buy, Aveda, Cargill, and Target) that sent a letter urging action on climate change and decarbonization to Gov. Tim Walz and legislative leaders during the 2019 legislative session.

The companies’ joint public statement included this unequivocal declaration:

“We support decarbonization strategies because they will help us ensure prolonged profitability, reduce risk, safeguard the resilience of our supply chains and allow us to better meet the growing demands of our customers and investors.”⁶⁸

Zero waste is a continuous quality improvement approach that works to eliminate waste before it can end up in a landfill or an incinerator. In Minnesota, a Zero Waste plan could aim to recover 90 percent of discarded materials prior to incineration or landfill. Zero Waste education programs help community members and elected officials shift from waste tolerance —disposable thinking — to common responsibility for our shared environment (like when family members take responsibility for their shared home and yard).

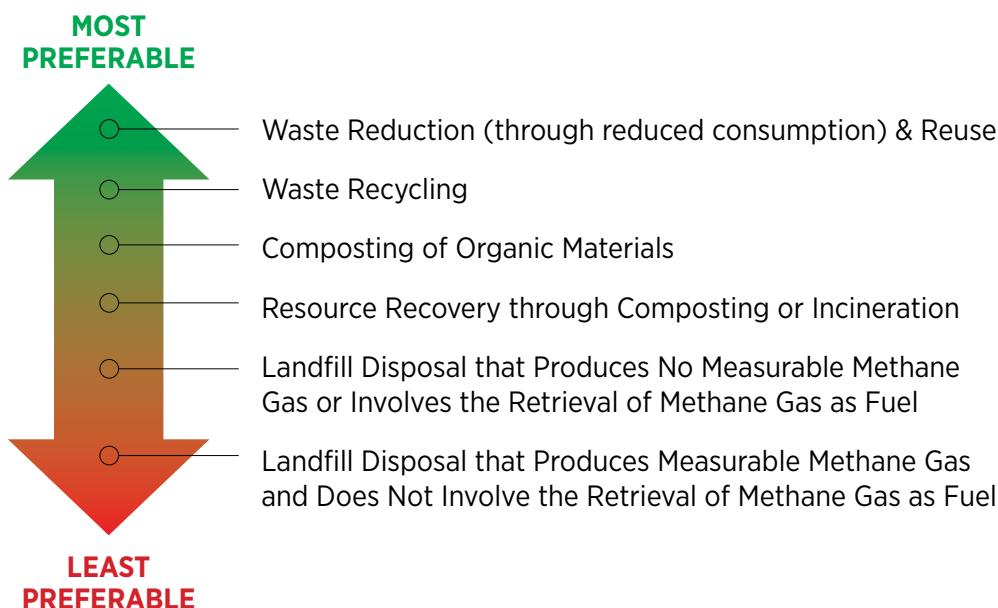


Image: Bogdan Kurylo, iStock

At the front end, Zero Waste activities promote ways of product design, consumption and disposal that prevent wasteful and polluting outcomes. Accountable and clean manufacturing processes and smart product design mean that manufacturers are held responsible for the full life-cycle of their products and thus have a significant incentive to design and build for the environment, not the landfill. Producers would be incented or otherwise encouraged to explore packaging options that are either reusable, compostable or recyclable (thus avoiding products like polystyrene foam).

Minnesota's 2014 Waste Management Act, which reflects a serious intention to reduce and reuse waste, sets forth a hierarchy (shown in the Exhibit 9), from most beneficial to least beneficial strategies for waste management.

Exhibit 9. Minnesota's best way to manage waste is to avoid the incinerator and the landfill.



While the state recommends this hierarchy, counties do not have to adopt it as the basis of their individual solid waste plans in order to qualify for grants from the Select Committee on Recycling and the Environment (SCORE). Counties are required to provide residents the opportunity to recycle. But recycling programs vary by county, from regular pickup of mixed recycling to drop off sites, which only accept a few types of recycling materials.

Sixty-three percent of what we do discard as trash could still be recovered as recyclable material, so we want people to do a really good job of pulling that material out of trash.

— Peder Sandhei, Planner Principal for the Minnesota Pollution Control Agency,
March 2019 interview, WCCO-TV

State funding to counties for recycling programs amounts to only \$17.25 million annually, through the Solid Waste Management Tax.⁷¹ Unfortunately, much of the tax revenue generated through the Solid Waste Tax is used in the General Fund, rather than being dedicated to improvements to county waste management programs across the state. As a result, too many of Minnesota's counties continue to rely on landfills and incineration, the least preferable options, as key components to their waste management strategies.

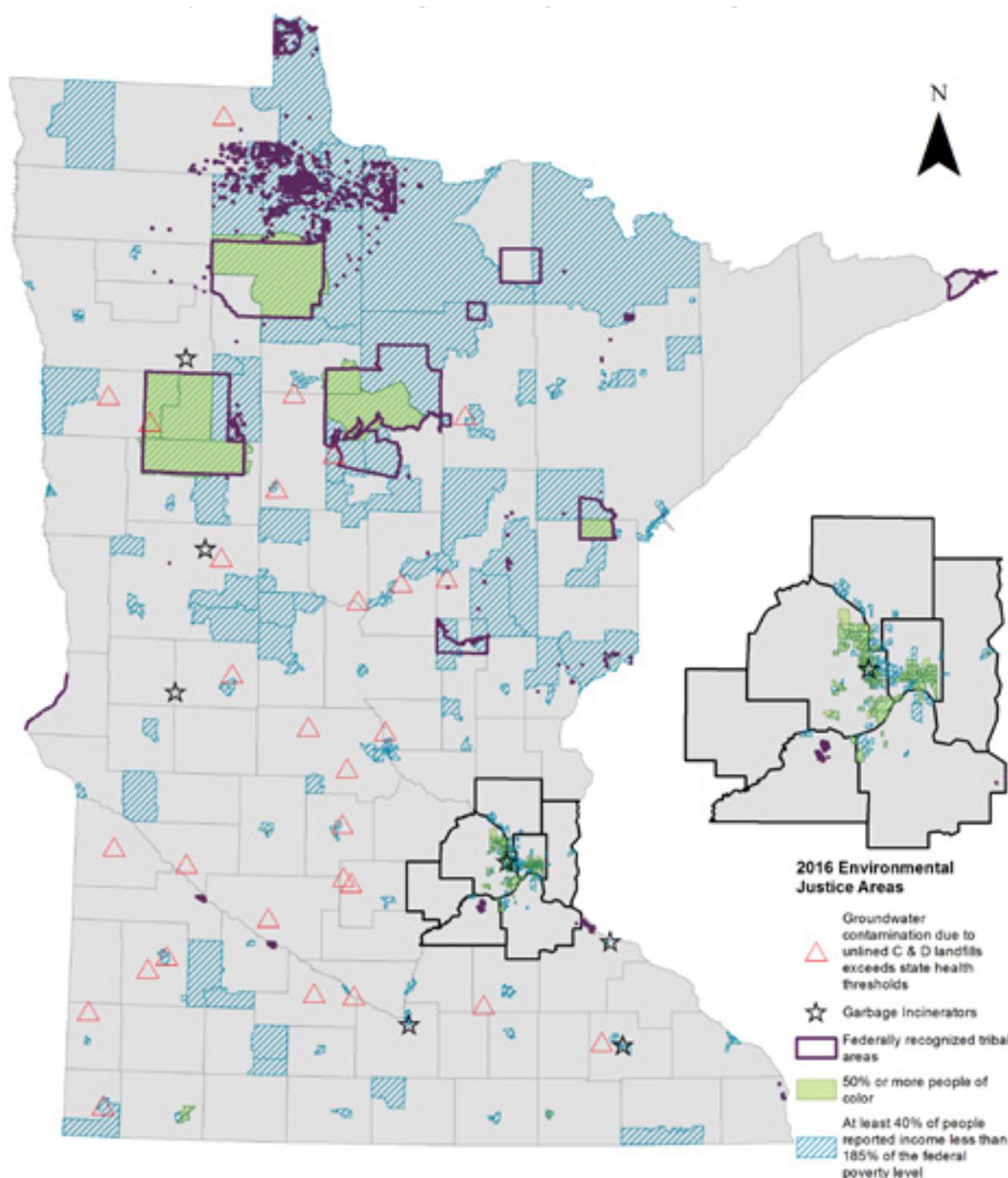
Landfills and incinerators are well-known contributors of GHG emissions, including carbon dioxide, methane and nitrogen, as well as contributing to pollution of water wells, soil, and surface water. Minnesota's reliance on incineration is disproportionately high. In 2019, 10 percent of the nation's municipal solid waste incinerators were in Minnesota (7 of 73), while Minnesota has less than two percent of the total U.S. population.⁷²



City of Litchfield wastewater treatment plant.

Maps of landfills and incinerator locations show that Minnesotans living on very low incomes, people of color and Indigenous nations, and rural residents are disproportionately exposed to the damaging effects of these operations. As Exhibit 10 illustrates, six of Minnesota's seven incinerators are located in Environmental Justice impacted communities —where at least 40 percent of the people are living on incomes below the 185 percent of Federal Poverty Level or more than 50 percent of the people are people of color or Indigenous people. Also as shown in Exhibit 10, as of 2017 Minnesota had 88 landfills without linings that accepted construction and demolition debris. Almost half (42) of these landfills had polluted the local groundwater at levels above state and federal standards.⁷³ These leaking landfills are also disproportionately located in Greater Minnesota and in areas of Environmental Justice concern.

Exhibit 10. Minnesota's Environmental Justice communities are disproportionately burdened by the polluted air and water associated with incinerators and unlined construction and demolition landfills.



Source: U.S. Census Bureau, Minnesota Pollution Control Agency

Created December, 2019

Image: Matt Gush, iStock



Currently Minnesota state law requires waste collection firms to bring household waste to incinerators first. If the incinerator is full, then the hauler is permitted to take the waste to a landfill. Recyclables are supposed to be sorted out before waste is taken to either place. According to a 2019 report by WCCO-TV, Minnesota has 21 landfills and seven incineration plants that do not remove recyclables.⁷⁴

The economics of waste management in Minnesota is characterized by perverse incentives, motivating behavior in conflict with the state's official waste management hierarchy. Both county-owned and for-profit incinerators obtain revenue through a combination of "tipping fees"—the amount haulers pay to dump waste at the incinerator facility—and by selling the energy created via incineration to the local power grid.

Recycling is preferred over incineration in the state's official hierarchy, but by removing recyclables from the waste stream, incinerators have reduced revenue because there are both fewer haulers paying tipping fees and there is less waste they can burn in order to make and sell energy.

Although incinerating waste is preferred by the state over dumping garbage in landfills, tipping fees at Minnesota's incineration plants are, on average, 26 percent higher than the tipping fees at landfills.⁷⁵ For waste haulers, taking waste to incinerators cuts into profits more than taking waste to landfills.

Solutions

18. Advance policies based on Circular Economy assumptions. TBDN stakeholders recommend the waste management hierarchy based on Circular Economy assumptions presented in Exhibit 11. This hierarchy begins with pressure on raw material suppliers and product manufacturers to accurately measure and report on the lifecycle cost of their goods, consumers to take ownership of their buying behavior, and both government and industry to move forward with advancements in technology and enforcement, all while factoring in the economic value of a clean and healthy environment and stable and livable climate.

Exhibit 11. The Circular Economy's Ideal Waste Hierarchy.**1**

Adopt corporate and government policies and practices that reduce the impact of externalities by increasing manufacturer, producer, and seller accountability for the waste associated with entire product life cycle.

- *Product pricing would include complete product life cycle waste and toxicity in calculating total product cost.*

2

Educate and empower consumers and businesses to reduce waste production by:

- *Reducing consumption in the first place. Products made of hazardous materials — poisons and products in aerosol cans — and products designed to fail in a short time period should be avoided completely.*
- *Ask for and purchase goods made from recycled materials or compostable materials. Avoid items made with non-recyclable plastics.*
- *Buy products that can be re-used, such as rechargeable batteries and multi-use storage containers.*
- *Require deposits and charges for bottles, cans, and plastic bags. Reducing litter and garbage reduces the need for making new bags, cans, and bottles.*
- *Participate in second hand, thrift, and consignment retail organizations as a form of product recycling.*

3

Use waste to improve the environment via composting of separated waste materials (including yard, garden and food waste).

4

Invest in improved and economical recycling technologies. Plastics formed through injection molding or stamp molding processes or involve additives — such as Styrofoam, plastic pipes, and shrink wrap — must be recyclable or discontinued entirely.

5

Set goals and regularly measure and report progress in improved recycling and composting via local and state programs. Measurements must report on the volume of waste entering each waste stream (recycling, composting, incinerators, landfills).

6

At all costs, avoid the very least beneficial forms of waste management which are:

- *Resource recovery — where mixed municipal solid waste is used as an input to create energy (or other products) via composting, anaerobic digestion or incineration.*
- *Landfill disposal that either produces zero methane or only yields methane that is retrieved for use as fuel.*
- *Landfill disposal that produces measurable methane that is not retrieved.*

19. Adopt Zero Waste Goals and Plans.

Manufacturers and producers of products should begin their product design process with a commitment to avoiding waste production and pollution. For instance, some manufacturers have begun to substitute bamboo — in some ways as strong as steel — or bio-based plastics in place of traditional inputs that result in higher emissions. Bamboo products and living plants can sequester 2.9 tons per acre of carbon dioxide annually.⁷⁶ Consumers can help by setting their own goals, reusing clothing and furniture, and shopping in thrift, consignment, or charity stores. Expanding this success to homes and other businesses will require improved infrastructure for removing and reusing resources prior to final disposal and improvements in waste management industry practices, including regulating transparent and accurate reporting.



Image: monkeybusinessimages, iStock

20. Expand state-wide targets to include activities in addition to recycling and devote all the Solid Waste Tax revenues to improving county-level waste management programs across the state. Reform solid waste tax formulas to reward counties for progress in implementing required composting programs as well as recycling. Rather than continuing to devote significant portions of these tax revenues to the General Fund, these revenues must be used in programs that are verifiably shown to reduce the volume of waste that is sent to either landfills or incinerators. Given shifts in global relations and policies — notably the impact of China's declining demand for recycled materials⁷⁷ — Minnesota's recycling industry will need this additional revenue, as well as support from the state and other businesses for finding domestic markets for recycled materials.

21. The Minnesota Legislature should set up the conditions for moving toward Zero Waste. This can be accomplished by:

- Providing clear goals to the counties for all the levels of the waste management hierarchy, including landfill and incineration. The goal must be that waste has been fully processed before it reaches a landfill.
- Increasing resources and issue a mandate for MPCA to develop markets that use recyclable materials.
- Compelling counties and the MPCA to report on progress toward achieving these goals.
- Identifying the MPCA as the agency responsible for overseeing state agency recycling.
- Creating incentives to encourage counties to pursue disposal methods aligned with the state's management hierarchy and to cooperate in waste management activities across jurisdictions.
- Further empowering MPCA to take leadership on the issue of solid waste management through developing more accurate means of assessing recycling taking place at the county level.

22. Expand recycling efforts statewide. Treating waste as a resource benefits both our environment and our economy. Recycling one ton of paper conserves 7,000 gallons of water.⁷⁸ Recycling creates jobs: approximately 60,000 jobs in our state are directly or indirectly supported by the industry. These jobs pay almost \$3.4 billion in wages and add nearly \$15.7 billion to Minnesota's economy.⁷⁹ Not recycling is also expensive. In 2012 the MPCA estimated that 1.3 million tons of recyclable materials — with a value of \$312 million — is thrown away annually.⁸⁰

RESTORING WATER QUALITY

What we really need is to establish an ethic of clean water practices....and that clean water practices are every Minnesotan's responsibility and that anything less is unacceptable. It is achievable if all of us do our part.

— Former Minnesota Governor Mark Dayton, address to 2016 Governor's Water Summit.⁸¹

Challenges

No state is more closely connected — spiritually, historically and economically — to the ethos of water quality than Minnesota. The state's original people, the Dakota, named their place "Mni Sota Makoce," which literally means "land where the water reflects the clouds." "Land of 10,000 Lakes" is on our license plates and is perhaps our best-known of several state mottos.

We enjoy an important distinction as eastern North America's fountainhead of clear and clean water. We are the source for all three of the continental watersheds that flow north, south and east, to Hudson Bay and the Arctic Ocean, to the Gulf of Mexico, and through the Great Lakes to the Atlantic Ocean. Clean and abundant water sustains our agriculture (the nation's 5th largest farm economy), our resorts and tourism business, and our transportation systems. We are stewards of the source and the starting miles of one of North America's greatest rivers, the Mississippi.



Image: Wikimedia Commons

Confluence of the Minnesota River and Mississippi River, in Fort Snelling State Park, Minnesota.

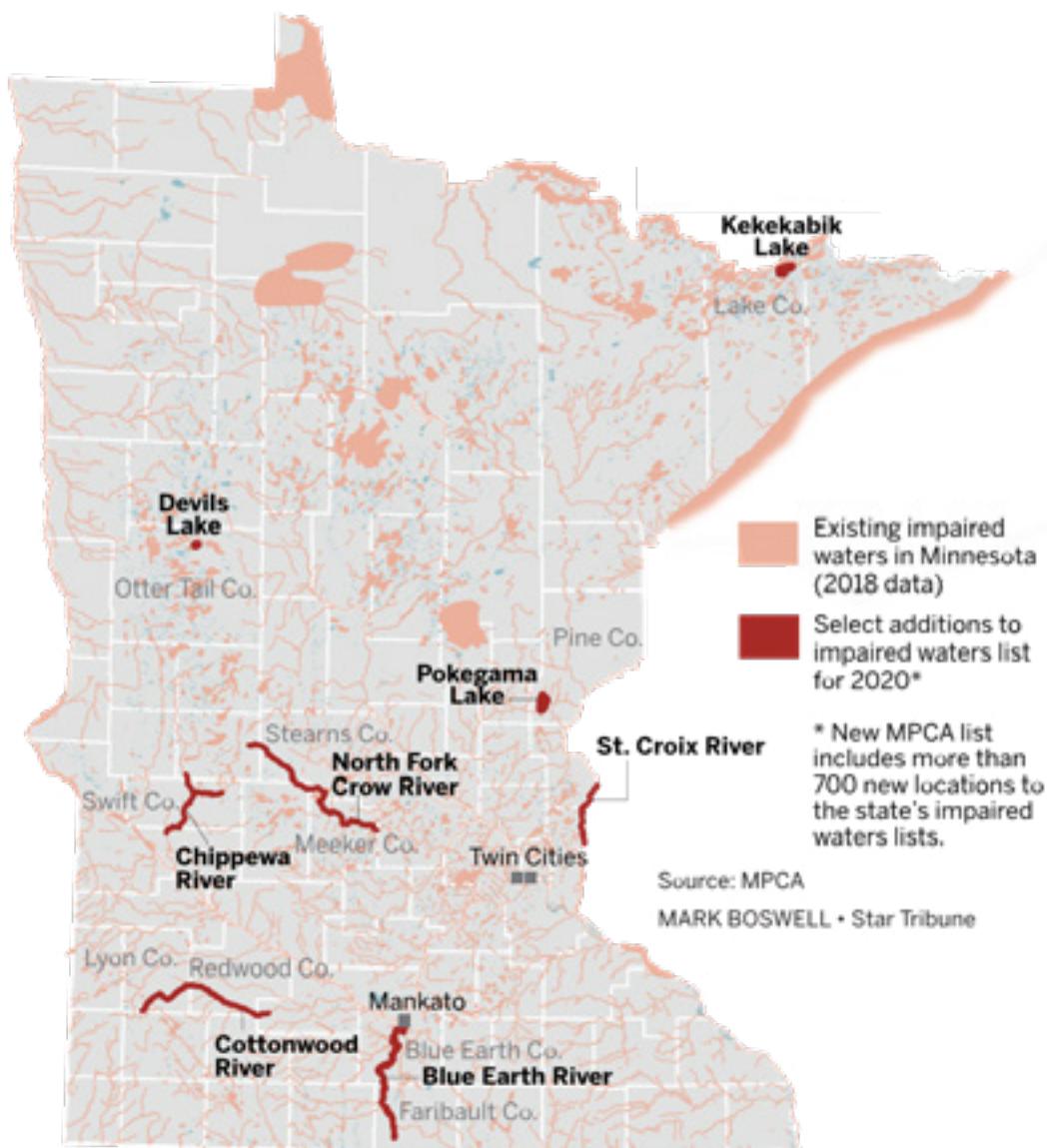
Our largest metropolitan area owes its origin and growth to the fact that it is at the confluence of three great rivers, the Mississippi, the Minnesota, and the St. Croix. Most recently Minnesota has become a hub for companies specializing in water technology.

Regard for water is an ethic that unites Minnesotans of every race, income level, region, and gender. From the Camp Turtle Island and Water is Life movements⁸² to anglers and boaters and community groups galore, Minnesotans tend to see water quality and integrity as sacred.

The harsh reality is that far too much of Minnesota's precious water — on the surface in lakes, wetlands and streams, and underground in aquifers — has been degraded to "impaired" status as Exhibit 12 shows. The term "impaired" has become preferable to "polluted" by hydrologists and pertains to a variety of problems that go beyond the classic problem of raw sewage or highly toxic industrial wastes being discharged into public waters, such as fertilizer and road salt runoff.

Exhibit 12. Minnesota's waters are increasingly likely to be impaired or polluted.⁸³

More than half of Minnesota's lakes, streams and other waters are classified as "impaired," or polluted in some way, under an inventory the state updates every two years. This year officials added 581 new water bodies, a few of which are highlighted.



Since the rise of the environmental movement in the 1970s, Minnesota and the nation have worked successfully to halt the most egregious forms of water pollution. New potential threats — from proposed mining and oil and gas pipeline projects, and industrial point pollution such as the Gremlin case in White Bear Lake — remind us that those classic sources of pollution still require continued vigilance and caution. But in general today's water quality issues are more subtle, pervasive, and difficult to manage. That's because agricultural and residential runoff — so-called non-source point pollution — are now the largest challenges. When all of us, from ordinary urban homeowners and renters to rural farmers, are the collective primary polluters, solutions become more difficult.

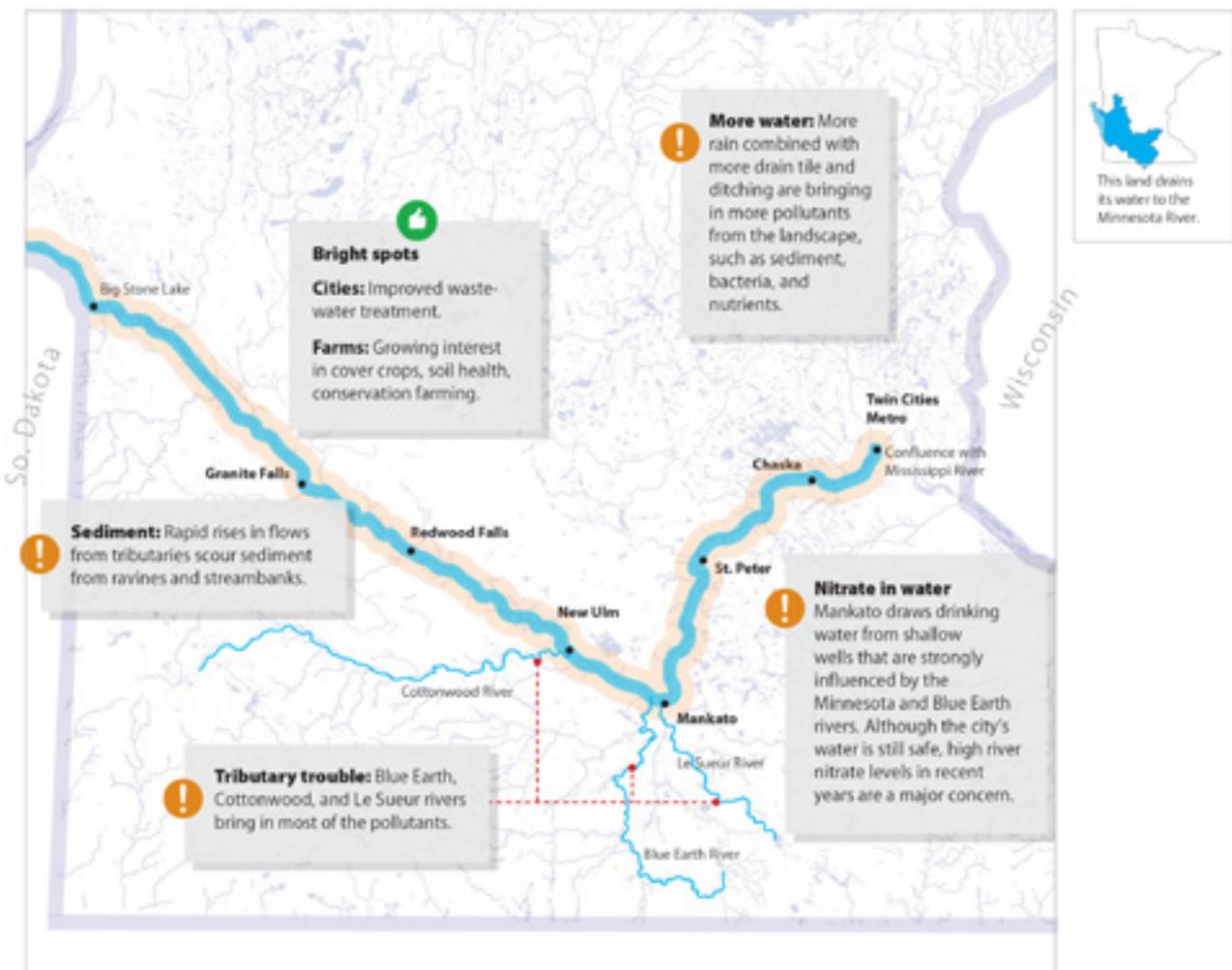
Climate scientists studying Minnesota say one of the most important shifts in climate has been the severity and frequency of storms. Measurements get complicated, but far more really big storms — defined as those in which at least 6 inches of rain fall over an area of 1,000 or more square miles and the core of the storm generates at least 8 inches of rain — have hit in recent years.

— Jaime Chismar, MPR News⁸⁴

Under the federal Clean Water Act, Minnesota is required to test and report impairment. About 56 percent of Minnesota's waters have been recently found to be impaired,⁸⁵ meaning they don't meet water quality standards needed for drinking, swimming, fishing or survival of aquatic species. Ironically, one of the most impaired watersheds feeds the river that bears the state's lyrical Dakota name — the Minnesota River. This is the second largest river in the state, and it collects water from the intensively farmed southwestern quarter of Minnesota, a watershed that includes parts of South Dakota and Iowa.

Exhibit 13 highlights four of the key factors contributing to the impairment of the Minnesota River, which has become one of the least healthy in the state, and the one bright spot where people take action to protect the river.

Exhibit 13. The Minnesota River faces multiple threats.⁸⁶



LOCAL PARTNERSHIPS IMPROVING WATER QUALITY

The Lutsen Ski Resort on Minnesota's North Shore changed how it builds ski runs and maintains slopes to retain topsoil and prevent runoff, one of many local efforts in recent years that measurably improved the quality of the nearby Poplar River.

At the other end of the state, in the southwest region, dedicated work over two decades, involving many local partners, gradually reduced agricultural and stormwater runoff into First Fulda Lake, making it safe for swimming and recreational use for the first time in decades.

"The only way to make a change on the landscape is to make behavioral changes for the people who live here," Jan Voit, administrator for the Heron Lake Watershed District, told MPR News, in reference to the First Fulda success. "You can make a difference. It takes a long time...but it is possible."⁸⁶

MPR's story about Poplar River and First Fulda Lake illustrate that with sustained persistence over many years, some local communities in Minnesota are on their way to removing their local lakes and streams from the federal and state lists of impaired waters.

The Minnesota Pollution Control Agency has begun keeping track and promulgating such success stories and its website cites a growing list of communities where water quality is improving.⁸⁷

Other examples include Seven Mile Creek (Nicollet County) and the Clearwater River (Red Lake County) which have reduced pesticide levels low enough to meet the standard for aquatic life such as fish. The agency reports that for the first time it is proposing to remove an impairment listing for PCBs in fish sampled in the Red River of the North, although some impairments, such as mercury, remain. The story of PCBs (polychlorinated biphenyls) illustrates how hard and long the task of clean-up can be. The MPCA notes that PCBs, often used as insulators in electrical equipment, were banned in 1979.

Progress in the metro area also is being made and recent upgrades include Bryant Lake and Mitchell Lake (Hennepin County), Crystal Lake (Dakota County), Gem Lake (Ramsey County), and McMahon Lake (Scott County).

These successes are important to keep in mind as the state completes its 10-year effort to inventory all 80 of the state's major watersheds.



Image: JimBlake, iStock

Some of the most common impairment symptoms include turbidity, low dissolved oxygen, sewage from rural and exurban septic systems, fertilizer runoff, mercury from carbon emissions and coal plants, phosphorus, PCBs and other harmful chemicals.⁸⁹ The interconnectedness of water quality with air quality, climate change, and all the ways humans interact with the land is infinitely complicated.

“Turbidity” refers to water cloudiness, the number of suspended particulates, and amount of algal growth.⁹⁰ Unnatural turbidity mostly occurs due to human land use activities which cause erosion, such as construction and roadbuilding, farm tillage, streamflow changes, channel alteration and residential build up, all of which affect water clarity.⁹¹ Excessive turbidity can prevent light penetration and have a cascading negative effect as too much sediment or algae can make lakes and streams inhospitable for aquatic life and human recreation (or other uses).

The primary source of mercury in aquatic systems is airborne, from coal combustion, waste incineration and metal processing.⁹² Mercury concentrations have doubled due to industrialization. Once in the surface water, trace amounts of mercury find their way into the food web and through a process of bioaccumulation culminate in levels that are toxic for larger species and premium game fish such as northern pike and walleye.⁹³

Another example of non-point complexity is impairment from nitrates and phosphorus, naturally occurring elements which, when present in excessive amounts caused by human activity, do extensive damage to lakes, rivers, and wetlands. Excess nitrates and phosphorus in aquatic reserves are typically associated with fertilizer runoff, as well as pesticides and herbicides, cleaning products, sewage and manure.⁹⁴

Recent studies are raising new concerns about the accumulation of salt and chloride, primarily from use on roadways and paved surfaces for driving safety, and the impacts they have on surface and ground water quality.

Invasive species have become yet another high and rising source of concern for those who treasure Minnesota’s waters, especially the vital recreation sector. Various forms of human interaction and intervention have created ongoing struggles to keep out, or at least contain, three major invasions, from the common carp, Eurasian water milfoil, and the zebra mussel.⁹⁵

Finally, Minnesotans need to face the fact that we may be loving our lakes to death. A recent Star Tribune op-ed⁹⁶ documented severe degradation of water quality on most of Minnesota’s most desirable lakeshores, basically from too many lakefront residences on too many lakes. Experts at the University of Minnesota have found that if about 75 percent of a lakeshore remains mainly forested, the chance of maintaining lake quality is good. But when that percentage falls below 60 percent, lakes begin to deteriorate.

Solutions

23. Maximize funding of existing programs and expand new initiatives aimed at improving water quality. These entities and initiatives include the Clean Water Fund and the Clean Water Legacy Act, the Working Lands Driving Water Protection Program, the Safe Water Drinking Fee (enabling more testing of wells and other drinking water sources by the Minnesota Department of Health), and the Minnesota Agricultural Water Quality Certification Program.

24. Set aspirational goal for 100 percent clean, safe, and affordable water by 2050. Goal setting should include specific statewide and regional action plans to dramatically reduce impaired waters on the MPCA’s baseline inventory through identification of critical ecosystems and promotion of conservation best practices.

25. Protect watersheds by better management of surface water, wetlands and groundwater by:

- Prioritizing sewer and waste water treatment upgrades.
- Promoting adherence to federal Clean Water Act standards that presume a water body should sustain healthy aquatic life, recreation and additional uses, such as drinking water (domestic consumption), industry, agriculture, navigation, and aesthetic enjoyment.
- Enforcing mandatory well testing and stringent ground water regulations.
- Supporting conservation and water quality protection programs like the Minnesota Agricultural Water Quality Certification Program.
- Achieving de-listing of impaired waters on MPCA baseline inventory through identification of critical ecosystems and promotion of conservation best practices.
- Implementing the recommendations in the Working Lands Watershed Restoration Feasibility Study⁹⁷ — a program that encourages Minnesota's farm, ranch, and forest lands ("working lands") to continue to produce food, fiber, and timber to support families of the operators, local economies, and also safeguard the state's future. The pilot focus should be on Drinking Water Supply Management Areas where farmers, ranchers, and forest owners are provided contract payments to incorporate sustainable land management practices, alongside state support for development of markets for new land outputs and new revenues that will make subsidies unnecessary in the long run.
- Providing more assistance to rural watershed districts. Minnesota's Clean Water Council recommends more assistance and collaboration with Greater Minnesota's Local Watershed Management Plans.⁹⁸

26. Maintain but restructure aggressive efforts to reduce agricultural sources of water impairment.

Recognize that enforcement of regulations and standards are essential, but that farmers, landowners, and small rural communities must be involved in program development and may need help with cost-sharing. The Center for Rural Policy and Development has examined water quality issues and offers useful advice on how farmers and other stakeholders can be consulted, assisted and compensated for their efforts to set up drainage ponds and buffers, and adopt conservation practices that reduce runoff.⁹⁹

27. Continue strong efforts to repel invasive species. In recent decades, Minnesota's natural resources have come under increasing attack from invasive species such as zebra mussels, Eurasian watermilfoil, common buckthorn, and emerald ash borer.¹⁰⁰ Investment in research, remediation, and educational programs should be increased and improved.

28. Minimize chloride and salt pollution. The Minnesota Environmental Partnership and Clean Water Council recommends Smart Salting training and certification programs that greatly reduce chloride and salt application rates by 30 to 70 percent without compromising safety.¹⁰¹

29. Discourage over-development of lakefront property. Environmental experts recommend larger setbacks for new lakeside homes, natural buffers between lakes and yards, a prohibition against nitrogen fertilizers, frequent inspections of septic systems, while encouraging native plants, rain gardens, maximum tree coverage and permeable pavers.¹⁰² What's required is a built environment that harmonizes with nature rather than defying it.

SUSTAINABLE LAND MANAGEMENT

The Nation that destroys its soil destroys itself.

— President Franklin D. Roosevelt, Letter to State Governors on Uniform Soil Conservation Law, February 26, 1937

Challenges

Although atmospheric and water issues dominate public policy debates, land management and agricultural and forestry practices loom large in the threats of both increasing GHG emissions and degradation of water quality. Minnesota's GHG emissions due to various negative aspects of land use are as significant as the emissions associated with transportation and electricity generation.¹⁰³ Land use impacts on surface and groundwater have been a concern for decades.

TBDN members strongly agreed that climate change and deteriorating soil and water quality are a direct result of decades of unsustainable development and exploitation of Minnesota's uniquely distinct and varied ecosystems — from evergreen wilderness forests in the northeast, to the deciduous trees of central Minnesota to the hardwood hills in the southeast, to vast stretches of prairie long ago converted to farmland in the south and west.



Hull-Rust-Mahoning Open Pit Iron Mine.

TBDN partners recommended accelerating a shift in Minnesota toward sustainable land management (SLM).¹⁰⁴ In recent years, SLM has become a widely accepted concept that encompasses all the activities by which the land resources (soil, sub-soil, water, plants and animals) are both protected and put to use. Removing GHGs through SLM solutions could mitigate as much as one-fifth of the net annual greenhouse gas emissions in the United States, approximately the equivalent of removing GHG emissions by all of the cars and trucks in the country.¹⁰⁵

TBDN partners also strongly prioritized environmental justice and especially its relevance to Minnesota as home to seven Anishinaabe nations and four Dakota nations. The tragic history of conquest, persecution and colonialism is finally becoming better understood. Minnesota faces a monumentally important decision on a proposed new "Line 3" oil pipeline that crosses Indian Country on which native people still have the right to hunt, fish and use.¹⁰⁶ The planned project violates treaties while it cuts through culturally and ecologically significant land.¹⁰⁷

Climate changes that impact Minnesota farmers include more “mega rain” events and flooding, rising temperatures, longer periods between last spring frost and first fall frost, and changes in hardiness zones. In 1990, Minnesota was split evenly between Zones 3 and 4. By 2006, the lower fourth of the state was Zone 5 and only the top fourth was still Zone 3.¹⁰⁸ Minnesota farmers in 2019 experienced their least profitable year in three decades, largely because of heavy and ill-timed rains.¹⁰⁹

Agriculture has the largest impact, both by total land area and economic scope, and farming is both impacted by and a contributor to climate change and water quality. Agribusiness in all its forms also continues to serve as a linchpin for the Minnesota economy and national food security, providing more than 340,000 jobs linked to 74,542 farms.¹¹⁰

Agriculture is a prodigious generator of methane (CH_4), from both gaseous emissions from ruminant livestock (cows and sheep) and animal manure. These two categories accounted for 8 million e-tons and 44 percent of the state’s CH_4 emissions. Larger, industrial farms with confined single paddock feedlots or manure lagoons contribute more to these high emission levels than do other systems of raising livestock.¹¹¹ Manure lagoons also frequently cause water contamination, poor air quality, and nuisances such as smell and truck traffic for surrounding community members.

Continued saturation of soils with fertilizers, herbicides and pesticides further impairs our water and air.¹¹² Key among the factors driving this saturation is that the purchasing power for farm outputs has become concentrated among a limited number of global food industry giants. Generations of corporate advertising and marketing have influenced consumer palates and increased the demand for cheap and convenient processed foods. In the name of efficiency (profit maximizing), agribusiness customers encourage farm consolidation and industrial farming practices. Too much emphasis on low prices for farm commodities puts enormous pressure on farmers to produce more (usually requiring operating more acres), to shift to monocultures like corn and soybeans, instead of a more varied crop mosaic, and to rely on lower cost methods of factory farming that turned out to be damaging to the environment. Also, farm equipment and buying/renting land is very expensive. All of this makes it extremely challenging for new farmers to begin farming, for small and medium-scale farmers to stay afloat, and further incents existing farmers to get bigger to have the capital necessary to stay in operation.

Our farm motto has always been to leave the farm in better condition than we found it, and the way we do that is by building our soils with carbon: by taking carbon out of the air, through the use of plants and grazing, and storing it in our soil.

— Jared Luhman, Minnesota farmer¹¹⁵



Image: sveta-fedorava, Unsplash

Fortunately, some of the world’s largest corporate agribusiness concerns — among which Minnesota firms are leaders — are beginning to cooperate with, rather than resist, the visionaries calling for SLM practices. Support is growing for revolutionary changes needed to lead to “regenerative” agriculture, a farming framework that increases biodiversity, enriches soils, improves watersheds, captures carbon in the soil, crops and trees, and advances the long-term viability of smaller farms. NBC News reports

that “Big Food corporations are jumping on the regenerative agriculture bandwagon, escalating the buzz around the idea that capturing carbon in the soil could reverse climate change.”¹¹³ Minnesota’s own General Mills showed leadership when it announced that it would extend regenerative agriculture to one million acres by 2030 — about a quarter of the land from which it sources ingredients in North America.¹¹⁴

SLM agricultural methods and technologies — such as carbon sequestration, low tillage, cover crops, and agroforestry (raising trees, livestock and crops in one field)¹¹⁶ can be implemented by both large and small farms and will both counter the effects of global warming and produce profitable yields.¹¹⁷ Carbon sequestration works by planting grass or other crops in between harvests, serving to take in the carbon from the atmosphere and regenerate the soil. Low tillage, which minimizes plowing and disturbing the soil, is another important method of sequestration,¹¹⁸ offering better nutrient and water retention than the current system of industrial plowing, which releases massive quantities of stored CO₂ into the atmosphere.¹¹⁹

We've been no-till for the better of 20 years, and in the last five to six years, we've been trying to incorporate cover crops. ... (Low tillage) is a huge leap forward for nutrition availability for the crops, for water holding, for all kinds of things.

— Myron Sylling, Minnesota farmer¹²⁰

conservation cropping and results in the largest net GHG reduction. Conservation cropping is considered a “first line of defense to protect water quality.”¹²¹ Clearly a great variety and combination of choices are available to farmers.

Exhibit 14. Conservation Cropping and multipaddock grazing result in dramatically reduced GHG emissions.¹²²

Hypothetical North American net greenhouse gas (GHG) emission scenarios for: (1) current agriculture; (2) current agriculture with 50% current ruminants; (3) 25% conservation cropping and adaptive multipaddock (AMP) grazing with current numbers of ruminants; (4) 50% conservation cropping and AMP grazing with current numbers of ruminants; and (5) 100% conservation cropping and AMP grazing with current numbers of ruminants.

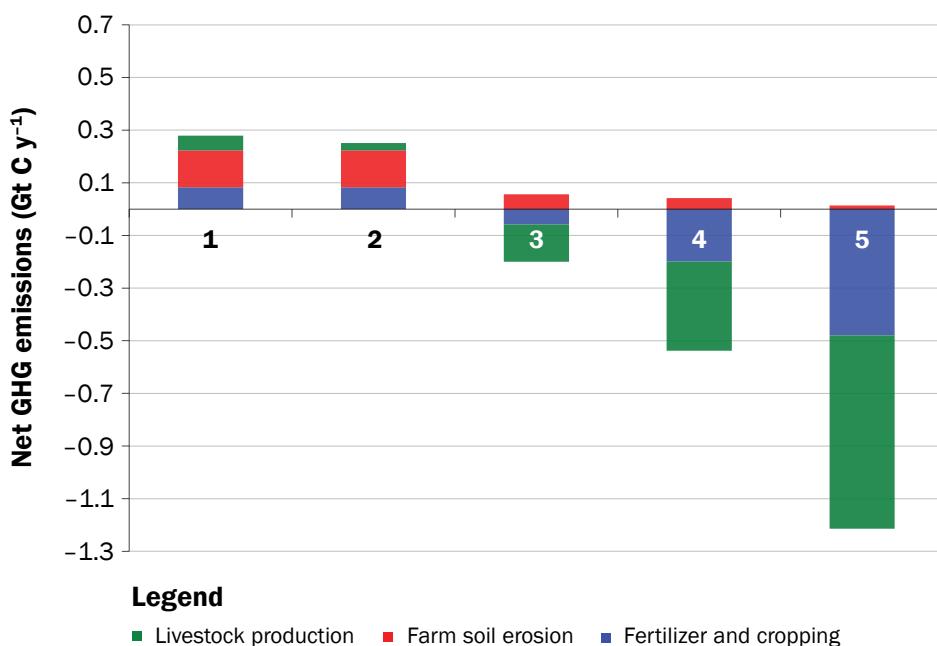


Exhibit 14 shows the estimated impacts on GHG emissions associated with several different farming practice scenarios, as reported in the Land Stewardship Project. Scenario 1 is status quo. Scenario 2 is current system with 50 percent fewer cows and sheep. Scenario 3 employs 25 percent of farmland converted to conservation cropping (no-till and cover crop rotation strategies) and multi-field pasturing of cattle. Scenario 4 is same as 3, adding 50 percent conservation cropping. Scenario 5 adds 100 percent

Minnesota has no greater assets than its public lands and waters. Wildlife management areas. Scientific and natural areas. Aquatic management areas. State parks. National parks. National Wild and Scenic Rivers. The Boundary Waters Canoe Area Wilderness.

— Dennis Anderson, Star Tribune outdoors columnist¹²³

Trees and forestry practices have also been negatively impacted by climate change and thus hold the potential to mitigate climate change. Northward shifting climate zones have made aspen and tamarack trees more vulnerable to insects and disease, and maples, which used to cover the center of the state, have shifted to the north, as far as the Canadian border.¹²⁴ Forest cover is hugely important to sequestration. According to 2016 MPCA data, Minnesota's forests reduced the state's carbon emissions totals by over 12 million e-tons.

Climate change's impact on Minnesota's animal life includes the decline in moose and lynx (which need deep snow to compete), and a subsequent increase in bobcats. Several bird species, such as purple finch, and their predators, such as the sharp-shinned hawk, have moved north.¹²⁵

One of the more pressing concerns in the cause of resilient and regenerative agriculture is the well documented plight of bees and pollinators. Beekeepers in Minnesota lose 50 percent of their hives annually to the synergistic effects of exposure to toxic pesticides like neonicotinoids, lack of flowers in ecosystems, and parasites and disease. More than 400 species of wild bees face similar fates. Without hungry bees to pollinate plants, Minnesota will lose yields in agricultural commodities, and flowering plants across the state's ecosystems.¹²⁶

By definition, miners are land managers. They extract natural resources, acquire pastoral land surrounding mines, change hydrology regimes and destroy landforms and soils that have developed over geological time scales. All of this affects wildlife. The legacy of mining remains branded into landscapes for millennia.

— David Bowman, Professor,
University of Tasmania, 2013¹²⁷

Among the many land management activities discussed in this chapter, the processes involved in the extraction and transportation of minerals, natural gas and oil are often the most controversial. These activities are high emitters of GHGs and have the potential to be lethally polluting.

Minnesota's Mesabi Range has a long and storied history as an iron and taconite mining region. The negative consequences of this well-established industry include extremely high levels of GHG emissions associated with taconite hardening, which is done in the induration furnaces. This may explain

the well-documented "heat island" between Grand Rapids and Hibbing, in the Mesabi Range, which has the highest average annual temperature increase in the state.

TBDN partners voiced strong concerns about both the sustainability and environmental justice impacts of pending proposals for major new "Line 3" pipeline¹²⁸ and Twin Metals and PolyMet mining projects¹²⁹ in northern Minnesota. Dozens of non-partisan statewide groups and associations focused on sustainability and equity have produced an array of lawsuits and objections before courts and regulatory agencies, forcing decision-makers to give longer pause in granting permission for these projects.

An extraordinary editorial in the Star Tribune captured the spirit of the TBDN opposition to all three projects. "The proposed Twin Metals copper-nickel mine near Ely unambiguously threatens the waters of the BWCA and beyond — waters that aren't just meant to be kept pristine but that are particularly sensitive to pollutants. Evidence that regulatory processes can help matters has grown slim. Some mining should be acceptable to Minnesotans, but not this mine, not this location."¹³⁰

An important consideration when discussing the perils associated with Minnesota's local extraction industries is that, until suitable alternatives are identified or consumers are willing to pay a premium for more environmentally-friendly alternatives, minerals and fossil fuels are going to be extracted and transported from somewhere on the planet. At present, a third of the world's copper comes from mines in Chile, where miner deaths rise with the price of copper¹³¹ and toxic mine tailings or sludge are dumped in the ocean.¹³² Global nickel mining also threatens the health of miners, the surrounding environment, and climate change.

Solutions

30. Protect sovereign rights and native lands. State and local policymakers should enforce, and honor treaties made with Minnesota's sovereign Indigenous nations. Existing treaty violations are exacerbated by proposed pipeline projects which run the risk of destroying sacred places and harming ecosystems in the event of a spill.¹³³ State and local policy-makers also should: honor tribal opposition to additional pipelines and sulfide mining on tribal lands, create environmental protections for wild rice stock, and support the inherent right of Native Indian tribes to petition the federal government to put land owned by a tribe into a trust. State policy-makers should delay for further study and consider rejecting pending new major proposals for pipelines and mining projects.

31. Support sustainable land management strategies that promote climate resilience, natural resource protection, and a regenerative food economy by:

- Increasing Legacy Act investment in Greater Minnesota to support and enhance stronger conservation efforts across all the state's natural resources.
- Ensuring that every local economic development plan, land use development plan or other comprehensive plan incorporates elements that support biodiversity and sustainability of watersheds, wetlands, critical habitats, grasslands, farmland, minerals, forest habitat and migration corridors.¹³⁴
- Investing in long-term planning and innovative approaches that support development of a more regenerative food economy, such as that encompassed in the Headwaters Community Food & Water Bill and the associated Farm Bill.¹³⁵



Image: Spencer Pugh, Unsplash

32. Use every workable policy tool and funding mechanism to encourage sustainable agriculture with equitable access to farming. Specific initiatives include:

- Strengthen Minnesota's farm economy and expand equitable access to farming as a way of life, maintaining sensible balance between climate action, equity, and current economic reality. TBDN stakeholders also acknowledge that to assist farmers in moving away from industrial production techniques, both public and private sectors must start from the premise that farmers must be fairly compensated — having their operating and maintenance costs covered and having enough left over to support their households — through economic policies grounded in ecological frameworks.

- Enact policies and programs to protect and strengthen small and medium sized farms, and bring in new farmers and support farmers of color. Increase efforts to stimulate ownership opportunities to people of color and Indigenous farmers, such as investing in succession planning programs to support transitions when current farmers (many retiring soon) need to pass on that land.
- Provide incentives such as tax credits for new farmers and small farms, to assist in conversion to buffers, perennial vegetation (no-till crops), and more sustainable rangeland management activities such as multi-paddock grazing.
- Fund public and private efforts to build, develop and accelerate market development for newer cover crops — such as for Kernza® (a perennial grain from intermediate wheat grass) and Camelina — to scale-up profits and production on enough acreage to provide significant environmental benefits.¹³⁶ This will likely include investment in processing facilities and incentives for building markets, and creating a sustainable supply chain that is profitable for producers and stable for end-users.¹³⁷ This support is necessary to assist farmers seeking to transition or diversify their crops. Target new and existing farmers, particularly farmers of color and Indigenous farmers.¹³⁸
- Use Clean Water Fund dollars, made possible by the Legacy Amendment, to advance the University of Minnesota's Forever Green initiative¹³⁹ to develop new markets and promote the profitable planting of perennial and annual winter crops that serve as natural climate solutions and enhance water and soil quality. Fund pilot programs to help farmers plant and sell alternative crops that protect drinking water in the state's most vulnerable wellhead areas while maintaining farm profitability - a major step forward in the working lands strategy.¹⁴⁰
- At the local level, advocate for farmers' co-ops and soil and water conservation districts to lease, loan, or contract equipment for inter-seeding of cover crops.¹⁴¹
- Use crop insurance to provide incentives for and to gather data on conservation practices.

33. Stop further loss of forests and move assertively toward net expansion of acres of forest.

of acres of forest. Minnesota has almost 8 million acres of “certified” forests in both public and private ownership. The Department of Natural Resources (DNR) manages about half of these acres.¹⁴²

Working with forestry industries, state and local decision-makers should expand forestry conversion under the Conservation Reserve Program (CREP) and invest in urban, suburban, and rural re-forestation programs. Minnesota’s Sustainable Forest Incentive Act (SFIA), which

provides annual incentive payments to private landowners to keep their forests undeveloped and follow a forest management plan for a set period, should be enhanced and expanded.



Image: Lawrence Sawyer, iStock

34. Restore habitat for pollinators. A collapse in bee populations has become an increasingly important dimension of climate change policy as it relates to agriculture and sustainability. Policymakers should ban or further restrict the chemicals causing apiary die-off¹⁴³ and invest in restoration of pollinator habitat and health.

35. Increase emphasis on wilderness preservation and water quality protection for existing and future mining operations.

Working with employers and industries, state and local decision-makers should improve regulation and enforcement of clean air and water standards associated with taconite mining and processing. Communities should organize to more tightly oversee and limit hardrock mineral mining on public lands, particularly in or near the Superior National Forest. Permits to mine on public lands are not always allocated with a reasonable consideration of long-time risks to immediate and surrounding regions.¹⁴⁴



Image: Yinan Chen, Pixabay

36. Encourage local civic engagement and urban, suburban, and rural consumer participation in sustainable land management practices.

Policies and practices could include: funding more community gardens and farm-to-school programs; support for farmers markets and enabling consumers to also use SNAP entitlements to pay for healthy, locally grown food; welcoming and supporting immigrants as they fill rural workforce needs; educating and encouraging individual reflection on the impact that food preferences and habits have on the environment, particularly the connections between increased GHG emissions and diets rich in cheap and convenient foods or beef and dairy heavy diets.

37. Expand, enhance and protect wilderness and public lands.

Prioritize conservation easements on lands that currently provide climate benefits, including increased carbon sequestration and GHG avoidance, and that are most at risk of conversion to development or transportation uses that would also increase emissions. Provide public and private funding for outdoor heritage education and preservation programs that draw connections between historic land uses and natural ecosystems. This will support agri-tourism, mining and timber tourism, transportation tourism, and flora/fauna tourism.¹⁴⁵



Image: Rodrigo deMendoza, Unsplash

Endnotes

- 1 U.S. Global Change Research Program (April 2016). The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment. [Washington, D.C.](#) Retrieved from https://s3.amazonaws.com/climatehealth2016/high/ClimateHealth2016_FullReport.pdf
- 2 A Christmas Sermon on Peace (1967). Retrieved from <https://www.ccl.org/blog/a-christmas-sermon-on-peace-from-mlk/>
- 3 National Aeronautics and Space Administration – Global Climate Change (2019). Scientific Consensus: Earth's Climate is Warming. Retrieved from <https://climate.nasa.gov/scientific-consensus/>
- 4 Office of the Under Secretary of Defense for Acquisition and Sustainment (January 2019). Report on Effects of a Changing Climate to the Department of Defense. Downloaded from <https://climateandsecurity.org/2019/01/18/new-pentagon-report-the-effects-of-a-changing-climate-are-a-national-security-issue/>
- 5 Union of Concerned Scientists (August 3, 2017). Scientists Agree: Global Warming is Happening and Humans are the Primary Cause. Retrieved from <https://www.ucsusa.org/resources/global-warming-happening-and-humans-are-primary-cause>
- 6 Ingersoll, Robert G. (1881). *The Christian Religion: An Enquiry*. Retrieved from Project Gutenberg - <http://www.gutenberg.org/files/38093/38093-h/38093-h.htm>
- 7 Geller, Andrew M., et. al. (December 2016). Environmental Justice: Research Roadmap. *U.S. Environmental Protection Agency*. Retrieved from https://www.epa.gov/sites/production/files/2017-01/documents/researchroadmap_environmentaljustice_508_compliant.pdf
- 8 U.S. Global Change Research Program (2018). *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. Washington, DC, USA, 1515 pp. doi: 10.7930/NCA4.2018. Retrieved from <https://nca2018.globalchange.gov/>
- 9 Kaul, Greta (August 23, 2019). Why some of the fastest-warming counties in the U.S. are in Minnesota. *MinnPost*. Retrieved from <https://www.minnpost.com/environment/2019/08/why-some-of-the-fastest-warming-counties-in-the-u-s-are-in-minnesota/>
- 10 Minnesota Pollution Control Agency – Environmental Justice Communities (Last access date January 10, 2020). <http://mpca.maps.arcgis.com/apps/MapSeries/index.html?appid=f5bf57c8dac24404b7f8ef1717f57d00>
- 11 Attributed to Herman Daly (1977), an ecological economist who was the author of *Steady-State Economics*.
- 12 U.S. Energy Information Administration (April 8, 2019). State Profile and Energy Estimates – Minnesota. Retrieved from <https://www.eia.gov/state/analysis.php?sid=MN>
- 13 Nelson, Gaylord, et.al. (2002). *Beyond Earth Day — Fulfilling the Promise*, The University of Wisconsin Press, Madison, Wisconsin.
- 14 Minnesota Pollution Control Agency. Effects of Climate Change in Minnesota. Retrieved January 10, 2020, from <https://www.pca.state.mn.us/air/effects-climate-change-minnesota>
- 15 Mufson, Steven, et.al. (August 13, 2019). 2°C Beyond the Limit. *Washington Post*. Retrieved from <https://www.washingtonpost.com/graphics/2019/national/climate-environment/climate-change-america/>
- 16 Bjorhus, Jennifer (November 13, 2019). State finds 56% of Minnesota's lakes and streams are 'impaired'. *Star Tribune*. Retrieved from <http://www.startribune.com/state-finds-56-of-minnesota-s-lakes-and-streams-are-impaired/564825512/>
- 17 Minnesota Pollution Control Agency. Greenhouse gas emissions data downloaded from *2016 sector sources of GHG emissions and storage*. Retrieved January 10, 2020, from <https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data>
- 18 Russell, Trevor (July 9, 2019). Cornell Research: Fertilizer plants emit 100 times more methane than reported. *Friends of the Mississippi River*. Retrieved from <https://www.fmr.org/legislative-updates/cornell-research-fertilizer-plants-emit-100-times-more-methane-reported>
- 19 Minnesota's Interagency Climate Adaptation Team (May 2017). Adapting to Climate Change in Minnesota. Retrieved from <https://www.pca.state.mn.us/sites/default/files/p-gen4-07d.pdf>

- 20 Kaul, Greta. (January 25, 2019). Minnesota has done a pretty good job reducing greenhouse gas emissions from electricity generation. Reducing emissions from transportation could be harder. *MinnPost*. Retrieved from <https://www.minnpost.com/environment/2019/01/minnesota-has-done-a-pretty-good-job-reducing-greenhouse-gas-emissions-from-electricity-generation-reducing-emissions-from-transportation-could-be-harder/>
- 21 National Geographic Resource Library Encyclopedic Entry. Non-renewable energy. Retrieved January 10, 2020, from <https://www.nationalgeographic.org/encyclopedia/non-renewable-energy/>
- 22 Maize, Kennedy. (January 1, 2019). Debate Continues: Can New Technology Save Nuclear Power? *Power*. Retrieved from <https://www.powermag.com/debate-continues-can-new-technology-save-nuclear-power/>
- 23 Moylan, Martin and Elizabeth Dunbar and Kristi Marohn (May 20, 2019). Xcel's New Plan: Coal-free by 2030, nuclear until 2040. *Minnesota Public Radio*. Retrieved from <https://www.mprnews.org/story/2019/05/20/xcel-energy-coal-nuclear-power-wind-solar-minnesota>
- 24 Rogers, Heather (June 3, 2007). Current Thinking. *New York Times*. Retrieved from <https://www.nytimes.com/2007/06/03/magazine/03wwln-essay-t.html>
- 25 Institute for Energy Research. Minnesota. Retrieved January 10, 2020, from <https://www.instituteforenergyresearch.org/states/minnesota/>
- 26 Dunbar, Elizabeth (September 26, 2019). Here comes the sun: Solar schools project launches in central Minn. *Minnesota Public Radio News*. Retrieved from <https://www.mprnews.org/story/2019/09/26/here-comes-the-sun-solar-schools-project-launches-in-central-minn>
- 27 Data from University of Minnesota's Solar Suitability Analysis. Retrieved January 10, 2020, from <https://solar.maps.umn.edu/products.php#gisdata>
- 28 WINDEXchange, U.S. Office of Energy Efficiency & Renewable Energy. Minnesota – Annual Average Wind Speed at 80 m. Retrieved January 10, 2020, from <https://windexchange.energy.gov/states/mn>
- 29 Twite, Andrew. (March 27, 2019). Minnesotans Pay Much Less for Electricity Than Their Neighbors. *Fresh Energy*. Retrieved From <https://fresh-energy.org/minnesotans-pay-less/>
- 30 Ibid.
- 31 Ibid.
- 32 Division of Energy Resources, Minnesota Department of Commerce (January 15, 2019). Minnesota Renewable Energy Standard: Utility Compliance. Retrieved from <https://www.leg.state.mn.us/docs/2019/mandated/190330.pdf>
- 33 Minnesota Department of Commerce (March 4, 2019). Walz, Flanagan propose plan to achieve 100 percent clean energy in Minnesota by 2050. Retrieved from <https://mn.gov/commerce/media/news/?id=17-374074>
- 34 Ostrander, Madeline (December 14, 2017). Talking About Climate Change in Trump Country. *Sierra*. <https://www.sierraclub.org/sierra/2018-1-january-february/feature/talking-about-climate-change-trump-country>
- 35 Uren, Adam (November 8, 2019). Survey: Healthcare, climate change are the top issues for Minnesota voters. Retrieved from <https://bringmethenews.com/minnesota-news/survey-healthcare-climate-change-are-the-top-issues-for-minnesota-voters>
- 36 Chinni, Dante and Sally Bronston (December 30, 2018). Polling: Consensus emerges in climate change debate. *NBC-News*. Retrieved from <https://www.nbcnews.com/politics/meet-the-press/consensus-emerges-climate-change-debate-n950646>
- 37 Garcia, Eduardo and John Schwartz (September 18, 2019). One Thing You Can Do: Switch to a Green Energy Provider. *New York Times*. Retrieved from <https://www.nytimes.com/2019/09/18/climate/nyt-climate-newsletter-green-energy.html>
- 38 <http://ampers.org/minnesota-native-news/minnesota-native-news-solar-energy-with-robert-blake/>
- 39 The Beneficial Electrification League (November 28, 2018). Electrify Minnesota! The Future is Electric. Retrieved from <https://beneficialelectrification.com/electrify-minnesota/>

- 40 Robertson, Joseph (February 4, 2019). Bipartisan carbon fee and dividend bill new before U.S. Congress. *Carbon Pricing Leadership Coalition*. Retrieved from <https://www.carbonpricingleadership.org/blogs/2019/2/3/bipartisan-carbon-fee-and-dividend-bill-now-before-us-congress>
- 41 Cortright, Joe (July 30, 2019). Economists & Scientists agree: To save the planet, we have to price carbon. *City Commentary*. Retrieved from <http://cityobservatory.org/economists-agree-to-save-the-planet-we-have-to-price-carbon/>
- 42 Berg, Elizabeth, Abi Bradford and Rob Sargent (December, 2017). Making Sense of Energy Storage: How Storage Technologies Can Support a Renewable Future. *Environment Minnesota Research and Policy Center*. Retrieved from https://environmentminnesotacenter.org/sites/environment/files/reports/Making%20Sense%20of%20Energy%20Storage%20vMN_1.pdf
- 43 McGrath, Matt (September 13, 2019). Climate Change: electrical industry's 'dirty secret' boosts warming. *BBC News*. Retrieved from <https://www.bbc.com/news/science-environment-49567197>
- 44 Minnesota Pollution Control Agency. 2016 sector sources of GHG emissions and storage. Retrieved January 10, 2020, from <https://www.pca.state.mn.us/air/greenhouse-gas-emissions-data>
- 45 Handy, Susan (2005). Smart growth and the transportation - Land use connection: What does the research tell us? *International Regional Science Review*, 28(2), 146-167. Retrieved from <https://escholarship.org/uc/item/7j45s8s0>
- 46 Associated Press (July 9, 2019). 23 Governors join California in opposing Trump gas mileage standards. *Los Angeles Times*. Retrieved from <https://www.latimes.com/business/la-fi-mileage-standards-emissions-trump-california-20190709-story.html>
- 47 Minnesota Pollution Control. Electric Vehicles. Retrieved January 10, 2020, from <https://www.pca.state.mn.us/air/electric-vehicles>
- 48 Minnesota Department of Transportation, Minnesota Pollution Control Agency and Great Plains Institute. Accelerating Electric Vehicle Adoption: A Vision for Minnesota. p.7. Retrieved January 10, 2020, from <http://www.dot.state.mn.us/sustainability/docs/mn-ev-vision.pdf>
- 49 Bocklund, Katelyn (January 19, 2018). Close-up of DC Fast Chargers in Minnesota. *Drive Electric Minnesota*. <https://www.driveelectricmn.org/close-up-of-dc-fast-chargers-in-minnesota/>
- 50 Jossi, Frank (November 14, 2019). Minnesota looks to electric vehicles, biofuels to cut transportation emissions. *Energy News Network*. Retrieved from <https://energynews.us/2019/11/14/midwest/minnesota-looks-to-electric-vehicles-biofuels-to-cut-transportation-emissions/>
- 51 Minnesota Department of Transportation (August 2019). Pathways to decarbonizing transportation in Minnesota, p.5. Retrieved from <https://www.dot.state.mn.us/sustainability/docs/pathways-report-2019.pdf>
- 52 U.S. Office of Energy Efficiency and Renewable Energy. Electric Vehicles: Tax Credits and Other Incentives. Retrieved January 10, 2020, from <https://www.energy.gov/eere/electricvehicles/electric-vehicles-tax-credits-and-other-incentives>
- 53 Sierra Club North Star Chapter (December 10, 2018). Metro Transit Sets 100% Electric Bus Fleet Target. Retrieved from <https://www.sierraclub.org/minnesota/blog/2018/12/metro-transit-sets-100-electric-bus-fleet-target>
- 54 Alexander-Kearns, Myriam (April 26, 2016). Leading by Example: State and Local Governments Are Adopting Electric Vehicles. *Center for American Progress*. Retrieved from <https://www.americanprogress.org/issues/green/news/2016/04/26/136454/leading-by-example-state-and-local-governments-are-adopting-electric-vehicles/>
- 55 City of Minneapolis, Minneapolis Sustainability. Building & Energy. Retrieved January 10, 2020, from <http://www.ci.minneapolis.mn.us/sustainability/buildings-energy/index.htm>
- 56 Minnesota Commerce Department (December 2018). Conservation Improvement Program. Retrieved from <https://www.leg.state.mn.us/docs/2019/mandated/190250.pdf>
- 57 City of St. Paul (October 2019). City of St. Paul Climate Action and Resilience Plan. Retrieved from https://www.stpaul.gov/sites/default/files/27s%20Office/SaintPaul_ClimateActionPlan_Wide_11_20.pdf

58 Minnesota Pollution Control Agency. Welcome to GreenStep Cities. Retrieved January 10, 2020, from <https://greenstep.pca.state.mn.us/>

59 Twin Cities PBS (January 1, 2018). Climate Smart: Cities Working Together. Retrieved from <https://www.tpt.org/climate-smart-cities-working-together/>

60 Minnesota Department of Commerce (December 2018). Conservation Improvement Program: Energy Savings, CO₂ Reductions and Economic Benefits Achieved 2015-2016. Retrieved from <https://www.leg.state.mn.us/docs/2019/mandated/190250.pdf>

61 Conservation Minnesota. Conservation Improvement Programs. *Center for Energy and Environment*. Retrieved January 10, 2020, from <https://www.conservationminnesota.org/redesign/wp-content/uploads/CIP-PieChart-flyer.pdf?ic=133&fs=1>

62 Buildings, Benchmarks and Beyond (B3). B3 Sustainable Building 2030 Energy Standards. *B3*. Retrieved January 10, 2020, from <https://www.b3mn.org/2030energystandard/>

63 Affordable Housing Collaboration (January 2014). Minnesota Green Communities Initiative. *Family Housing Fund*. Retrieved from https://www.flfund.org/wp-content/uploads/2019/07/MN-Green-Communities_Final_January-2014.v2.pdf

64 City of Minneapolis. Time of Sale Energy Disclosure: Frequently Asked Question. Retrieved January 10, 2020, from <http://www.ci.minneapolis.mn.us/www/groups/public/@health/documents/webcontent/wcmsp-213844.pdf>

65 Ellen Macarthur Foundation (September 26, 2019). *Completing the picture: How the circular economy tackles climate change*. Volume 3. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/Completing-The_Picture_How_The_Circular_Economy-_Tackles_Climate_Change_V3_26_September.pdf

66 Wittenberg, Alex (December 6, 2018). 2018 Business of Manufacturing: Tennant Co. *Minneapolis/St. Paul Business Journal*. Retrieved from <https://www.bizjournals.com/twincities/news/2018/12/06/2018-business-of-manufacturing-tenant-co.html>

67 Environmental Initiative. Minnesota Sustainable Growth Coalition. Retrieved January 10, 2020, from <https://environmental-initiative.org/work/minnesota-sustainable-growth-coalition/>

68 Dunbar, Elizabeth (May 8, 2019). Cargill, Target ask lawmakers to address climate change in final Capitol negotiations. *MPR News*. Retrieved from <https://www.mprnews.org/story/2019/05/08/cargill-target-ask-lawmakers-to-address-climate-change-in-final-capitol-negotiations>

69 Eco-Cycle: Building Zero Waste Communities. *Zero Waste: The Choice for a Sustainable Community*. Retrieved January 10, 2020, from <https://www.ecocycle.org/zerowaste>

70 Ellen Macarthur Foundation. (September 26, 2019). *Completing the picture: How the circular economy tackles climate change*. Volume 3. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/Completing-The_Picture_How_The_Circular_Economy-_Tackles_Climate_Change_V3_26_September.pdf

71 Solid Waste Management Tax Information, Department of Revenue. Retrieved January 10, 2020, from <https://www.revenue.state.mn.us/solid-waste-management-tax-information>

72 The Tishman Environment and Design Center (May 2019). U.S. Municipal Solid Waste Incinerators: An Industry in Decline, p.69. *The New School*. Retrieved from https://static1.squarespace.com/static/5d14dab43967cc000179f3d2/t/5d5c4bea0d59ad00012d220e/1566329840732/CR_GaiaReportFinal_05.21.pdf and U.S. Census Bureau. 2019 American Community Survey data. Retrieved from <https://data.census.gov/cedsci/advanced>

73 Orenstein, Walker. (January 21, 2019). The problem, and politics, of throwing old houses in the garbage. *MinnPost*. Retrieved from <https://www.minnpost.com/environment/2019/01/the-problem-and-politics-of-throwing-old-houses-in-the-garbage/>

74 Brown, Heather (March 12, 2019). Where does our trash go? *WCCO-TV*. Retrieved from <https://minnesota.cbslocal.com/2019/03/12/where-does-our-trash-go-good-question/>

75 The Tishman Environment and Design Center, "U.S. Municipal Solid Waste Incinerators: An Industry in Decline", The New School. May 2019. page 69. Retrieved from https://static1.squarespace.com/static/5d14dab43967cc000179f3d2/t/5d5c4bea0d59ad00012d220e/1566329840732/CR_GaiaReportFinal_05.21.pdf

76 Urevig, Andrew (October 21, 2019). These 3 circular economy principles can help combat the climate crisis. *WasteDive*. Retrieved from <https://www.wastedive.com/news/these-3-circular-economy-principles-can-help-combat-the-climate-crisis/565362/>

77 Rosengren, Cole and Max Witynski, Rina Li, E.A. Crunden, Cody Boteler and Katie Pyzyk (November 15, 2019). How recycling has changed in all 50 states. *WasteDive*. Retrieved from <https://www.wastedive.com/news/what-chinese-import-policies-mean-for-all-50-states/510751/>

78 Minnesota Pollution Control Agency. Media Toolkit Print Ads. Retrieved January 10, 2020, from <https://www.pca.state.mn.us/waste/media-toolkit>

79 Minnesota Pollution Control Agency. Recycle More. Retrieved January 10, 2020, from <https://www.pca.state.mn.us/waste/recycle-more>

80 Caliendo, Heather (August 29, 2012). Minnesota State Fair sends a message in a bottle. *Plastics Today*. Retrieved from <https://www.plasticstoday.com/content/minnesota-state-fair-sends-message-through-bottle/86344523917884>

81 Coolican, J. Patrick (February 27, 2016). Governor Dayton rallies support for clean water at summit after facing a protest. *Star Tribune*. Retrieved from <http://www.startribune.com/ideas-concerns-flow-at-gov-dayton-s-water-summit/370389591/>

82 Droz, Dr. PennElys (March 2017). Finding Balance: The Mni Wičóni Sustained Native Community at Standing Rock. *Cultural Survival Quarterly Magazine*. Retrieved from <https://www.culturalsurvival.org/publications/cultural-survival-quarterly/finding-balance-mni-wiconi-sustained-native-community>

83 Bjorhus, Jennifer (November 13, 2019). State finds 56% of Minnesota's lakes and streams are 'impaired'. *Star Tribune*. Retrieved from <http://www.startribune.com/state-finds-56-of-minnesota-s-lakes-and-streams-are-impaired/564825512/>

84 Chismar, Jaime (February 2, 2015). Climate Change in Minnesota: 23 signs. *Minnesota Public Radio News*. Retrieved from <https://www.mprnews.org/story/2015/02/02/climate-change-primer>

85 Bjorhus, Jennifer (November 13, 2019). State finds 56% of Minnesota's lakes and streams are 'impaired'. *Star Tribune*. Retrieved from <http://www.startribune.com/state-finds-56-of-minnesota-s-lakes-and-streams-are-impaired/564825512/>

86 Nelson, Cody (April 23, 2018). Cleaning up polluted water is tough, but possible. Here's how. *Minnesota Public Radio News*. Retrieved from <https://www.mprnews.org/story/2018/04/23/cleaning-up-polluted-water>

87 Minnesota Pollution Control Agency (October 11, 2017). 2018 Impaired waters list: Success Stories surfacing for Minnesota lakes, streams. *MPCA News Releases*. Retrieved from <https://www.pca.state.mn.us/news/2018-impaired-waters-list-success-stories-surfacing-minnesota-lakes-streams>

88 Minnesota Pollution Control Agency (October 2017). The Minnesota River: Evaluating its health. Retrieved from <https://www.pca.state.mn.us/mn-river-study>

89 Minnesota Department of Natural Resources. Water Quality. Retrieved January 10, 2020, from https://www.dnr.state.mn.us/whaf/about/5-component/wq_concepts.html

90 Fondriest Environmental Learning Center. Turbidity, Total Suspended Solids and Water Clarity. Retrieved January 10, 2020, from <https://www.fondriest.com/environmental-measurements/parameters/water-quality/turbidity-total-suspended-solids-water-clarity>

91 Minnesota Department of Natural Resources. Water Quality. Retrieved January 10, 2020, from https://www.dnr.state.mn.us/whaf/about/5-component/wq_concepts.html

92 Ibid.

93 Ibid.

94 U. S. Geological Survey (2019). Phosphorus and Water. Retrieved January 10, 2020, from https://www.usgs.gov/special-topic/water-science-school/science/phosphorus-and-water?qt-science_center_objects=0#qt-science_center_objects

95 Minor, Nathaniel (April 2014). Map: Aquatic invasive species spread across Minn. *Minnesota Public Radio News*. Retrieved from <http://minnesota.publicradio.org/projects/2014/04/invasive-aquatic-species-map/>

96 Way, Ron and Steve Berg (August 7, 2015). From runoff to ruin: the undoing of Minnesota's lakes. *Star Tribune*. Retrieved from <http://www.startribune.com/from-runoff-to-ruin-the-undoing-of-minnesota-s-lakes/321099071/>

97 Minnesota Board of Water and Soil Resources (February 1, 2018). Working Lands Watershed Restoration Feasibility Study and Program Plan. Retrieved from <https://www.leg.state.mn.us/docs/2018/mandated/180132.pdf>

98 Minnesota Pollution Control Agency (November 30, 2018). Clean Water Council: FY20-21 Clean Water Fund and Policy Recommendations Report. Retrieved from <https://www.pca.state.mn.us/sites/default/files/lr-cwc-1sy18.pdf>

99 Main, Rylee. Beyond buffers: Investing in clean water for resilient communities. *Center for Rural Policy and Development*. Retrieved January 10, 2020, from <https://www.ruralmn.org/?s=buffers>

100 Minnesota Department of Natural Resources. Aquatic Invasive Species. Retrieved January 10, 2020, from <https://www.dnr.state.mn.us/invasives/ais/index.html>

101 Clean Water Council (November 2018). Clean Water Council FY20-21 Clean Water Fund and Policy Recommendations Report, page 25. Retrieved from <https://www.pca.state.mn.us/sites/default/files/lr-cwc-1sy18.pdf>

102 Freshwater Society (2004). Guide to Lake Protection and Management. *Minnesota Pollution Control Agency*. Retrieved from <https://www.pca.state.mn.us/sites/default/files/lakes-guidetoprotection-2.pdf>

103 Minnesota Environmental Partnership. Our Awesome Future – Minnesota Environmental Partnership 2019 Briefing Book, page 3. Retrieved January 10, 2020, from <https://www.mepartnership.org/wp-content/uploads/2019/02/MEP-Briefing-Book-2019.pdf>

104 Center for International Earth Science Information Network. What is Sustainable Land Management? *Earth Institute, Columbia University*. Retrieved January 10, 2020, from <http://www.ciesin.org/lw-kmn/slsm/slsm.html>

105 Gustin, Georgina (November 14, 2018). Natural Climate Solutions Could Cancel Out a Fifth of U.S. Emissions, Study Finds. *Inside Climate News*. Downloaded from <https://insideclimatenews.org/news/14112018/climate-change-solutions-forests-farms-carbon-storage-cancel-out-emissions-study>

106 Honor the Earth. Stop Line 3. Retrieved January 10, 2020, from http://www.honorearth.org/stop_line_3

107 Ibid.

108 Chismar, Jaime (February 2, 2015). Climate Change in Minnesota: 23 signs. *Minnesota Public Radio News*. Retrieved from <https://www.mprnews.org/story/2015/02/02/climate-change-primer>

109 Belz, Adam (March 26, 2019). Farm income in Minnesota fell 8%; worst year since early 1980s. *Star Tribune*. Retrieved from <http://www.startribune.com/farm-income-in-minnesota-fell-8-percent-last-year-worst-year-since-early-1980s/507632382/>

110 Farm Flavor. Minnesota Agriculture. Retrieved January 10, 2020, from <https://www.farmflavor.com/minnesota-agriculture/>

111 Estabrook, Barry (December 28, 2011). Feedlots vs. Pastures: Two Very Different Ways to Fatten Beef Cattle. *The Atlantic*, <https://www.theatlantic.com/health/archive/2011/12/feedlots-vs-pastures-two-very-different-ways-to-fatten-beef-cattle/250543/>

112 The Water Resources Center (January 25, 2017). 'Moving the Needle': Improving Water Quality in Minnesota While Developing our Agricultural Economy, page 5. *University of Minnesota*. Retrieved from https://www.wrc.umn.edu/sites/wrc.umn.edu/files/moving_the_needle_final_22_may_2017.pdf

113 Wozniacka, Gosia (October 29, 2019). Can regenerative agriculture reverse climate change? Big Food is banking on it. *NBC News*. Retrieved from <https://www.nbcnews.com/news/us-news/can-regenerative-agriculture-reverse-climate-change-big-food-banking-it-n1072941>

114 General Mills news release (March 4, 2019). General Mills to advance regenerative agriculture practices on one million acres by 2030. Retrieved from <https://www.generalmills.com/en/News/NewsReleases/Library/2019/March/Regen-Ag>

115 Allen, Tess (August 3, 2018). How Four Local Farms are Combating Climate Change. *Mpls St Paul Magazine*. Retrieved from <http://mspmag.com/arts-and-culture/general-interest/how-4-local-farms-are-combatting-climate-change/>

116 Montenegro, Maywa and Annie Shattuck and Joshua Sbicca (July 5, 2019). U.S. agriculture needs a 21st-century New Deal. *MinnPost*. Retrieved from https://www.minnpost.com/community-voices/2019/07/u-s-agriculture-needs-a-21st-century-new-deal/?utm_source=MinnPost+e-mail+newsletters&utm_campaign=478a1d5a77-EMAIL_CAMPAIGN_2019_07_05_07_12&utm_medium=email&utm_term=0_3631302e9c-478a1d5a77-123349838

117 Hertel, Nora (June 13, 2019). How to reduce the carbon hoof-print: How a Minnesota farm family fights climate change. *Saint Cloud Times*. Retrieved from <https://www.sctimes.com/story/news/2019/06/13/minnesota-long-prairie-mn-climate-change-news/1431772001/>

118 Allen, Tess (August 3, 2018). How Four Local Farms are Combating Climate Change. *Mpls St Paul Magazine*. Retrieved from <http://mspmag.com/arts-and-culture/general-interest/how-4-local-farms-are-combatting-climate-change/>

119 Cherne-Hendrick, Margaret (December 14, 2018). Carbon Sequestration is Part of the Clean Energy Equation. *Fresh Energy*. Retrieved from <https://fresh-energy.org/carbon-sequestration/>

120 Allen, Tess (August 3, 2018). How Four Local Farms are Combating Climate Change. *Mpls St Paul Magazine*. Retrieved from <http://mspmag.com/arts-and-culture/general-interest/how-4-local-farms-are-combatting-climate-change/>

121 American Farmland Trust (May 2016). Conservation Cropping Systems. Retrieved from http://www.farmlandinfo.org/sites/default/files/AFT_CAE_CCS_whitepaper2.pdf

122 DeVore, Brian (October 1, 2016). Carbon, Cattle & Conservation Grazing. *Land Stewardship Project*. Retrieved from <https://landstewardshipproject.org/posts/838>

123 Anderson, Dennis (February 11, 2019). Advocates of public land and waters gather at Capitol rally. *Star Tribune*. Retrieved from <http://www.startribune.com/advocates-of-public-land-and-waters-gather-at-capitol-rally/505619032/>

124 Jaime, Chismar (February 2, 2015). Climate Change in Minnesota: 23 signs. *Minnesota Public Radio News*. Retrieved from <https://www.mprnews.org/story/2015/02/02/climate-change-primer>

125 United State Environmental Protection Agency (September 25, 2019). Proposed Rule- National Emissions Standards for Hazardous Air Pollutants: Taconite Iron Ore Processing Residual Risk and Technology Review. *Federal Register*. Retrieved from <https://www.federalregister.gov/documents/2019/09/25/2019-19091/national-emission-standards-for-hazardous-air-pollutants-taconite-iron-ore-processing-residual-risk>

126 Pollinate Minnesota, Statement of Purpose. Retrieved January 10, 2020, from <http://www.pollinatemn.org/>

127 Bowman, David (December 8, 2013). Restoration won't work: a new way to fix old mines. *The Conversation*. Retrieved from <https://theconversation.com/restoration-wont-work-a-new-way-to-fix-old-mines-21236>

128 Kraker, Dan and Cody Nelson (June 18, 2018). Minnesota's Line 3 oil pipeline proposal: The basics. *Minnesota Public Radio News*. Retrieved <https://www.mprnews.org/story/2018/06/18/enbridge-line-3-oil-pipeline-basics-faq-tar-sands>

129 Bjorhus, Jennifer (October 23, 2019). What you need to know about Minnesota's PolyMet and Twin Metals mine projects. *Star Tribune*. <http://www.startribune.com/what-you-need-to-know-about-the-polymet-and-twin-metals-mines/513211171/>

130 Editorial Board (November 23, 2019). Not this mine. Not this location. *Star Tribune*. Retrieved from <http://www.startribune.com/potential-impact-of-copper-mining-in-northern-minnesota/564914692/>

131 Long, Gideon (October 5, 2010). How safe are Chile's copper mines? *BBC News*. <https://www.bbc.com/news/world-latin-america-11467279>

132 Augliere, Bethany (March 28, 2018). Countries like Chile still dump toxic mine waste in the sea. Can they stop? *Oceana*. Retrieved from <https://oceana.org/blog/countries-chile-still-dump-toxic-mine-waste-sea-can-they-stop>

133 Orenstein, Walker and Gabe Schneider (July 23, 2019). Enbridge's Line 3 project is becoming an issue in the 2020 presidential race. *MinnPost*. Retrieved from <https://www.minnpost.com/environment/2019/07/enbridges-line-3-project-is-becoming-an-issue-in-the-2020-presidential-race/>

134 MADO – Minnesota Association of Development Organizations (November, 2019). DevelopMN: 2019 – Comprehensive Development Strategy for Greater Minnesota. Retrieved from <http://www.mnado.org/wp-content/uploads/2019/11/DevelopMN-1.pdf>

135 Just Food and Water. Community Food & Water and Farm Bill. Retrieved January 10, 2020, from <https://www.justfoodandwater.org/farm-bill-1>

136 Ditmore, Jack and Dane Smith (July 12, 2019). Natural Carbon Capture and 'working lands' are gaining ground in climate action playbook. *MinnPost*. Retrieved from: <https://www.minnpost.com/community-voices/2019/07/natural-carbon-capture-and-working-lands-are-gaining-ground-in-climate-action-playbook/>

137 Minnesota Board of Water and Soil Resources (February 1, 2018). Working Lands Watershed Restoration Feasibility Study and Program Plan, Report to the Minnesota Legislature. Retrieved from <https://bwsr.state.mn.us/planning/WLWRP/wlwrp.html>

138 Hirsi, Ibrahim (June 26, 2018). With help from farmer-training programs, more Minnesota Somalis are putting down roots – literally. *MinnPost*. <https://www.minnpost.com/new-americans/2018/06/help-farmer-training-programs-more-minnesota-somalis-are-putting-down-roots-li/>

139 Office of the Revisor of Statutes, H.F. 1928/S.F. 2262 (May 2, 2019). Retrieved from https://www.revisor.mn.gov/bills/text.php?number=HF1928&ctype=div&version=1&session=ls91&session_year=2019&session_number=0

140 Office of the Revisor of Statutes, H.F. 1569/S.F. 1637 (April 11, 2019). Retrieved from <https://www.revisor.mn.gov/bills/bill.php?b=House&f=HF1569&ssn=0&y=2019>

141 Minnesota Board of Water and Soil Resources (February 1, 2018). Working Lands Watershed Restoration Feasibility Study and Program Plan, Report to the Minnesota Legislature. Retrieved from <https://bwsr.state.mn.us/planning/WLWRP/wlwrp.html>

142 Department of Natural Resources (May 13, 2019). Certified Forests in Minnesota. Retrieved from https://www.dnr.state.mn.us/forestry/certification/certifiedforest_data.html

143 Fresh Energy. Pollinator-Friendly Solar Scorecards. *Fresh Energy's Center for Pollinators in Energy*. Retrieved January 10, 2020, from <https://fresh-energy.org/beeslovesolar/pollinator-friendly-solar-scorecards/>

144 Bureau of Land Management (May 15, 2019). BLM renews hardrock mineral leases in the Superior National Forest. *U.S. Department of Interior*. Retrieved from <https://www.blm.gov/press-release/blm-renews-hardrock-mineral-leases-superior-national-forest>

145 MADO – Minnesota Association of Development Organizations, *DevelopMN: 2019 – Comprehensive Development Strategy for Greater Minnesota, November, 2019*, Retrieved from <http://www.mnado.org/wp-content/uploads/2019/11/DevelopMN-1.pdf>



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IN CLOSING...A BEGINNING

Hundreds of Minnesotans came together over the past 18 months to create the Minnesota Equity Blueprint. The aspirations, ideas and actions recommended here reflect their faith that we can be, as our process label declares, “Thriving by Design — Rural & Urban Together.” In the months and years ahead, we will continue this loving journey toward a more equitable and sustainable home for everyone in our Minnesota community.

The Blueprint is a living document. This first attempt is thoroughly researched and reflects both the voices of Minnesotans statewide in the Thriving by Design Network and the hard data behind their recommendations (thank you to the TBD Network team headed by Sarah Leistico and the writing and research team headed by Kate Searls and Dane Smith). Because of its community-based origins and its nod to interdependent and interconnected challenges and solutions, the Blueprint is both a policy and practice crucible. It will evolve over this next decade as a guidebook for moving forward, a catalyst and connector for further dialogue and idea sharing, and a compendium of inspiring equity and inclusion action. The people behind its creation will always seek to recognize, lift up, and make good use of the diverse dynamics at play within and between the unique peoples and places that embody Minnesota.

You can join the TBD Network and help continue the work ahead to a thriving, inclusive economy, with vibrant communities that embrace regional, racial, and environmental equity. Sign up and check in often at www.thrivingbydesignmn.org for updates.

I want to especially thank our primary partner in this journey, Brett Buckner, Managing Director of OneMN.org, and all of you who believed with us in those early days of 2018 that amazing good can happen when we cross the divides and build a society where all can participate and prosper.

— Jane Leonard, President of Growth & Justice, February 2020

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Individuals and Partner Organizations

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