Wisconsin Department of Safety and Professional Services
Division of Policy Development
4822 Madison Yards Way
PO Box 8366
Madison, WI 53705

Phone: 608-266-2112
Web: http://dsps.wi.gov
Email: dsps@wisconsin.gov

Tony Evers, Governor
Dan Hereth, Secretary

TELECONFERENCE/VIRTUAL
UNIFORM DWELLING CODE COUNCIL
Virtual, 4822 Madison Yards Way, Madison
Contact: Brad Wojciechowski (608) 266-2112
May 23, 2025

The following agenda describes the issues that the Council plans to consider at the meeting. At the time of the meeting, items may be removed from the agenda. Please consult the meeting minutes for a record of the actions of the Council.

AGENDA

9:00 A.M.

OPEN SESSION – CALL TO ORDER – ROLL CALL

A. **Adoption of Agenda (1-3)**

B. **Approval of Minutes of April 25, 2025 (4)**

C. Reminders: Conflicts of Interest, Scheduling Concerns

D. Introductions, Announcements and Recognition

E. **Administrative Matters – Discussion and Consideration**
1) Department, Staff and Council Updates
2) Council Members
   a. Brunner, Donald
   b. Degnan, Abe
   c. Etrheim, Mark A.
   d. Hawkins, Meghan M.
   e. Juarez, Brian
   f. Kobb, Scott
   g. McIntosh, Dawn
   h. Ruetten, Kirk
   i. Satula, W. Scott
   j. Wald, Daniel
   k. Weber, Christina L.
   l. Wert, Brian E.
3) Advisory Council Role and Overview

F. **Administrative Rules Matters – Discussion and Consideration (5-217)**
1) Discussion of Rule Drafting for SPS 320 to 325, Update to the Uniform Dwelling Code **(5-6)**
   a. 2021 Minnesota Housing Comparison Report **(7-107)**
   b. Presentation: Kirk Ruetten, DSPS DIS – 2022 UDC vs. IRC Analysis **(108-137)**
   c. Presentation: Dan Wald – UDC-IRC Comparison **(138-161)**

d. Presentation: Darren Port, Slipstream – 2024 IRC Analysis **(162-217)**
e. Presentation: Tim O'Brien, O'Brien Homes – IRC

2) Pending or Possible Rulemaking Projects

G. Legislative and Policy Matters – Discussion and Consideration

H. Discussion and Consideration of Items Added After Preparation of Agenda:
1) Introductions, Announcements and Recognition
2) Administrative Matters
3) Election of Officers
4) Appointment of Liaisons and Alternates
5) Delegation of Authorities
6) Education and Examination Matters
7) Credentialing Matters
8) Legislative and Policy Matters
9) Administrative Rule Matters
10) Council Liaison Training and Appointment of Mentors
11) Informational Items
12) Division of Legal Services and Compliance (DLSC) Matters
13) Motions
14) Petitions
15) Appearances from Requests Received or Renewed

I. **Public Comments**

CONVENE TO CLOSED SESSION to consider licensure or certification of individuals (s. 19.85(1)(b), Stats.); to consider individual histories or disciplinary data (s. 19.85(1)(f), Stats.); and to confer with legal counsel (s. 19.85(1)(g), Stats.).

J. Deliberation of Items Added After Preparation of the Agenda
1) Education and Examination Matters
2) Credentialing Matters
3) DLSC Matters
4) Council Liaison Training
5) Motions
6) Appearances from Requests Received or Renewed

K. Consulting with Legal Counsel

RECONVENE TO OPEN SESSION IMMEDIATELY FOLLOWING CLOSED SESSION

L. Vote on Items Considered or Deliberated Upon in Closed Session if Voting is Appropriate

M. Open Session Items Noticed Above Not Completed in the Initial Open Session

ADJOURNMENT

NEXT MEETING: JUNE 27, 2025

****

MEETINGS AND HEARINGS ARE OPEN TO THE PUBLIC, AND MAY BE CANCELLED WITHOUT NOTICE.

Times listed for meeting items are approximate and depend on the length of discussion and voting. All meetings are held virtually unless otherwise indicated. In-person meetings are typically conducted at 4822 Madison Yards Way, Madison, Wisconsin, unless an alternative location is listed on the meeting notice. In order to confirm a meeting or to request a complete copy of the board's agenda, please visit the Department website at https:\\dsps.wi.gov. The board may also consider materials or items filed after the transmission of this notice. Times listed for the commencement of any agenda item may be changed by the board for the convenience of the parties. The person credentialed by the board has the right to demand that meeting at which final action may be taken against the credential be held in open session. Requests for interpreters for the hard of hearing, or other accommodations, are considered upon request by contacting the Affirmative Action Officer or reach the Meeting Staff by calling 608-267-7213.

HYBRID (IN-PERSON/VIRTUAL)
UNIFORM DWELLING CODE COUNCIL
MEETING MINUTES
APRIL 25, 2025

PRESENT: Donald Brunner, Abe Degnan, Mark Etrheim, Meghan Hawkins, Brian Juarez, Scott Kobb, Dawn McIntosh, Kirk Ruetten, W. Scott Satula, Daniel Wald, Christina Weber, Brian Wert

STAFF: Brad Wojciechowski, Executive Director; Joseph Ricker, Legal Counsel; Jake Pelegrin, Administrative Rules Coordinator; Ashley Sarnosky, Board Administration Specialist; and other Department Staff

CALL TO ORDER

Brian Wert, Chairperson, called the meeting to order at 9:03 a.m. A quorum was confirmed with twelve (12) members present.

ADOPTION OF AGENDA

MOTION: Abe Degnan moved, seconded by Mark Etrheim, to adopt the Agenda as published. Motion carried unanimously.

APPROVAL OF MINUTES OF MARCH 21, 2025

MOTION: W. Scott Satula moved, seconded by Brian Juarez, to adopt the Minutes of March 21, 2025 as published. Motion carried unanimously.

ADJOURNMENT

MOTION: Abe Degnan moved, seconded by Scott Satula, to adjourn the meeting. Motion carried unanimously.

The meeting adjourned at 10:52 a.m.

State of Wisconsin
Department of Safety & Professional Services

AGENDA REQUEST FORM

1) Name and title of person submitting the request:	2) Date when request submitted:
Jake Pelegrin **Administrative Rules Coordinator**	**5/13/25** **Items will be considered late if submitted after 12:00 p.m. on the deadline date which is 8 business days before the meeting**

3) Name of Board, Committee, Council, Sections:

Uniform Dwelling Code Advisory Council

4) Meeting Date:	5) Attachments:	6) How should the item be titled on the agenda page?
5/23/25	☒ Yes ☐ No	**Administrative Rule Matters – Discussion and Consideration** 1. Discussion of Rule Drafting for SPS 320 to 325, Update to the Uniform Dwelling Code 2. Pending or Possible Rulemaking Projects

7) Place Item in:	8) Is an appearance before the Board being scheduled? *(If yes, please complete Appearance Request for Non-DSPS Staff)*	9) Name of Case Advisor(s), if required:
☒ Open Session ☐ Closed Session	☐ Yes ☒ No	**N/A**

10) Describe the issue and action that should be addressed:

Attachments:
-Presentation from Slipstream
-Background materials on UDC and IRC

11) Authorization

Jake Pelegrin 5/13/25

Signature of person making this request **Date**

Supervisor (if required) **Date**

Executive Director signature (indicates approval to add post agenda deadline item to agenda) **Date**

Directions for including supporting documents:
1. This form should be attached to any documents submitted to the agenda.
2. Post Agenda Deadline items must be authorized by a Supervisor and the Policy Development Executive Director.
3. If necessary, provide original documents needing Board Chairperson signature to the Bureau Assistant prior to the start of a meeting.

State of Wisconsin
Department of Safety & Professional Services

AGENDA REQUEST FORM

1) Name and title of person submitting the request: Brad Wojciechowski, Executive Director			2) Date when request submitted: 5/13/2025 Items will be considered late if submitted after 12:00 p.m. on the deadline date which is 8 business days before the meeting
3) Name of Board, Committee, Council, Sections: Uniform Dwelling Code Council			
4) Meeting Date: 5/23/2025	5) Attachments: ☒ Yes ☐ No	6) How should the item be titled on the agenda page? Administrative Rule Matters – Discussion and Consideration 1) 2021 Minnesota Housing Comparison Report 2) Presentation: Kirk Ruetten – 2022 UDC vs. IRC Analysis 3) Presentation: Dan Wald – UDC-IRC Comparison 4) Presentation: Darren Port, Slipstream – 2024 IRC Analysis 5) Presentation: Tim O'Brien, O'Brien Homes – IRC	
7) Place Item in: ☒ Open Session ☐ Closed Session	8) Is an appearance before the Board being scheduled? *(If yes, please complete Appearance Request for Non-DSPS Staff)* ☒ Yes <Appearance Name(s)> ☐ No		9) Name of Case Advisor(s), if applicable: <Click Here to Add Case Advisor Name or N/A>
10) Describe the issue and action that should be addressed: <Click Here to Add Description>			
11) Authorization  5/13/2025 Signature of person making this request — Date Supervisor (Only required for post agenda deadline items) — Date Executive Director signature (Indicates approval for post agenda deadline items) — Date			
Directions for including supporting documents: 1. This form should be saved with any other documents submitted to the Agenda Items folders. 2. Post Agenda Deadline items must be authorized by a Supervisor and the Policy Development Executive Director. 3. If necessary, provide original documents needing Board Chairperson signature to the Bureau Assistant prior to the start of a meeting.			

Revised 03/2021

State of the State's Housing

2021

a biennial report of the Minnesota Housing Partnership

Table of Contents

mhp

This report is produced by Minnesota Housing Partnership, a nonprofit established in 1988 to strengthen development capacity and promotes systems change to expand opportunity, especially for those with the greatest need. We support, lead, and collaborate with a diversity of partners to stimulate innovation and drive positive impact in affordable housing and community development in Minnesota and beyond.

Introduction

In its third edition, MHP's State of the State's Housing shows that more than a quarter of Minnesota families pay more than they can afford for housing — and that number is growing. In addition to spotlighting key trends, like the gap between the costs of housing and the salaries of in-demand jobs, the report also ranks counties on benchmarks like renter cost burden and showcases issues like aging housing stock with dynamic maps. The report also shares stories from communities collaborating to tackle local needs.

First released in 2017, the State of the State's Housing has been used by members of the media to tell a more complete story of Minnesota's housing challenges. The report has been cited in legislative hearings as an authoritative source of solid housing information. For communities around the state, the State of the State's Housing has been key to advancing new housing projects and programs.

The underlying housing data contained in this report provides an important baseline of what housing looked like in 2019. In 2021, new and sometimes unquantifiable challenges have made analyzing housing trends more difficult, and we've done our best with this edition to put those challenges — like COVID-19 and widescale loss of incomes — into context.

We know that housing challenges are ahead of us, and our hope is that when advocates and decision-makers are armed with information, we can attack those challenges head on.

Author

Gabriela Norton is the Research Manager for the Minnesota Housing Partnership.

Contributor

Andy Birkey, Director of Communications and Research for MHP, designed this report including graphics and layout, and crafted the community narratives. Anne Mavity, Executive Director of MHP, provided the COVID-19 and Housing narrative.

Data

Data for the State of the State's Housing is gathered from a variety of sources including the American Community Survey (ACS) from the U.S. Census, the U.S. Department of Housing and Urban Development, the Bureau of Labor Statistics, Minnesota Department of Employment and Economic Development, and the Minnesota Department of Revenue.

Photo credits: Above, Michael Hicks. Used under Creative Commons License Attribution 2.0 Generic.

Why does housing matter?

Minnesota is stronger when everyone has a path to prosperity — regardless of income, race, or age. When all Minnesotans have access to a safe, affordable home that is near their work, that allows them to spend time with their family and friends, that helps them stay healthy, and helps them build wealth, our communities and businesses will grow and thrive.

That vision is within our reach. But only if we address our state's growing lack of affordable housing.

State of the State's Housing 2021 shows that we have failed to address significant and increasing gaps between housing costs and incomes. Our lack of affordable homes impacts everyone, everywhere across our state. However, for Black, Indigenous, and People of Color (BIPOC), Minnesotans at the lowest incomes, and seniors, the impacts are particularly severe.

With a growing population and expanding economy, it's time to take action to ensure all Minnesotans can prosper.

HOUSING DEFINITIONS

Cost Burden occurs when a household spends more than 30 percent of income on housing. Severe cost burden occurs when a household spends more than 50 percent of income on housing. Cost-burdened households often have to sacrifice food, health care, education, transportation, or other necessities in order to afford a home.

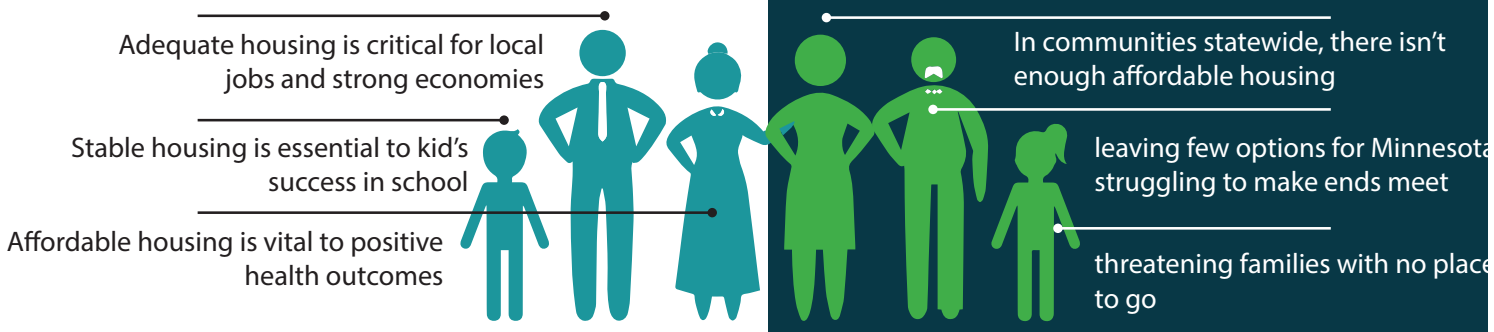
Extremely Low-income Households have incomes at less than 30 percent of the Area Median Income.

Area Median Income/Renter Median Income/ Owner Median Income is the midpoint of an area's income distribution – half of families in an area earn more than the median and half earn less than the median.

Gross Rents are the monthly rent contracted for plus the estimated monthly cost of utilities.

Affordable and Available refers to homes that are affordable to an income level and also not occupied by households at higher income levels. For example, there may be 100 homes that are affordable to households at 30 percent of area median income, but 40 of those homes might be occupied by people with 50 percent of area median income or higher. That only leaves 60 homes that are available and affordable.

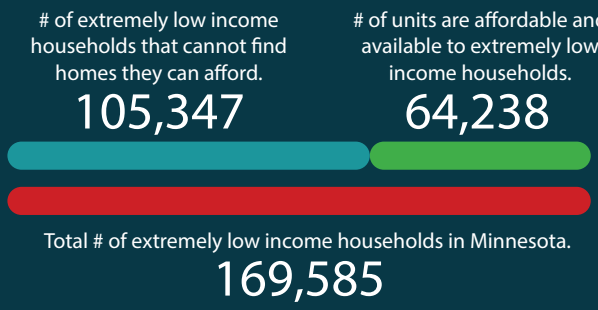
BIPOC refers to Black, Indigenous, and People of Color.



Key Findings

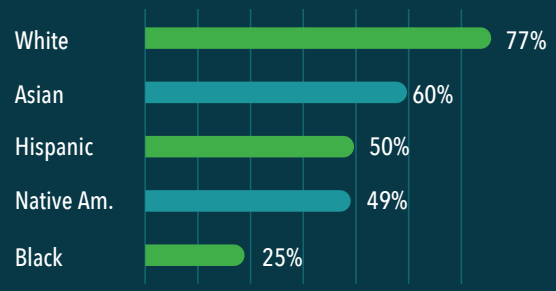
More affordable housing needed

In Minnesota, there is critical need for housing particularly for extremely low-income renters, or renter households that earn at or under 30% of area median income (AMI). There are approximately 169,585 renter households in the state fall into this category; yet, there are only 64,238 affordable and available units at this income level across the state.



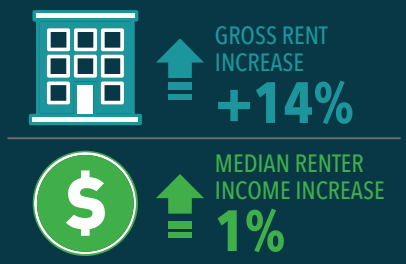
Homeownership disparities persist

Racial disparities in Minnesota are among the worst in the nation. While 77 percent of all white households own their home, 60 percent of Asian, 50 percent of Hispanic, 49 percent of Native American, and just 25 percent of Black households own their homes.



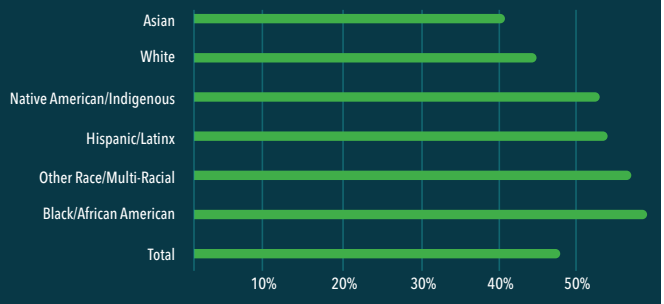
Housing costs are increasing

Housing costs continue to increase disproportionately to income. Between 2000 and 2019, the median renter income in Minnesota increased by just 1 percent, while median gross rent for the state increased by 14 percent.



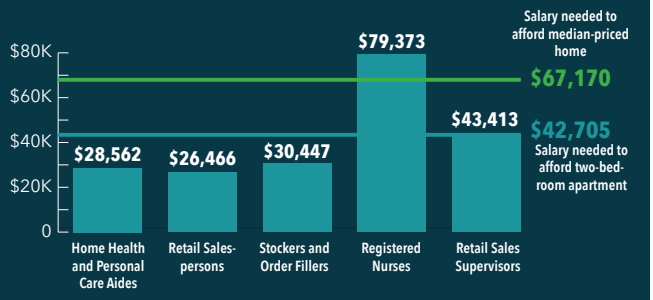
Cost-burden disparities magnified

The cost-burden disparity for renters and homeowners of color is stark. In Minnesota, 44 percent of white renters are cost burdened; in contrast, 58 percent of Black renters — 82,364 renter households — pay more than they can afford on housing.



Wages are not keeping up with housing costs

Of the top five in-demand jobs in the state, three do not earn enough for quality housing to be affordable. Relatively low-earning positions central to the healthcare industry, particularly home health and personal care aides and nursing assistants, are expected to see some of the largest increases in demand over the next ten years.



2021 State Housing Profile

Minnesota

2,185,603 Households

Access to safe, affordable homes builds a strong foundation for families and communities. But too many Minnesotans lack good housing optons.

Statewide, the price of rent continues to rise and incomes are not keeping up, making it increasingly challenging for renters to make ends meet.

RENTER HOUSEHOLDS

620,733 | 28% of all households

Median rent, 2000:	$838
Median rent, 2019:	$977
rent up	14%
Renter income, 2000:	$39,295
Renter income, 2019:	$39,637
income up	1%

The income for families is not rising at the same pace as home values, making it more difficult for families to purchase and own a home.

OWNER HOUSEHOLDS

1,564,870 | 72% of all households

Home value, 2000:	$181,152
Home value, 2019:	$223,900
value up	24%
Owner income, 2000:	$81,900
Owner income, 2019:	$86,805
income up	6%

HOUSING STOCK: While a significant portion of the rental and owner-occupied housing is aging (built before 1970), new construction is not keeping up with demand. Of particular concern is the gap between the number of available units for extremely low-income households – and the number of people who need them.

% of homes built before 1970	40%
Single-family units permitted in 2019	13,709
% of rental units built before 1970	39%
Multi-family units permitted in 2019	14,877
Number of extremely low income households	169,585
Units affordable to extremely low income households	64,238
Gap between ELI households and units	105,347

Disparities: Disparaties are stark for BIPOC residents of all 87 counties. Homeownership disparities are above 65% in every county in Minnesota with most over 90%. Cost-burden is higher for BIPOC renters (47%) than white renters (44%) in Minnesota.

	Renter Cost Burden	Severe Renter Cost Burden
White	44%	22%
Black	58%	30%
Indigenous	52%	33%
Hispanic	53%	26%

Homeownership Rate in Minnesota

BIPOC Homeowners: 128,995

41%

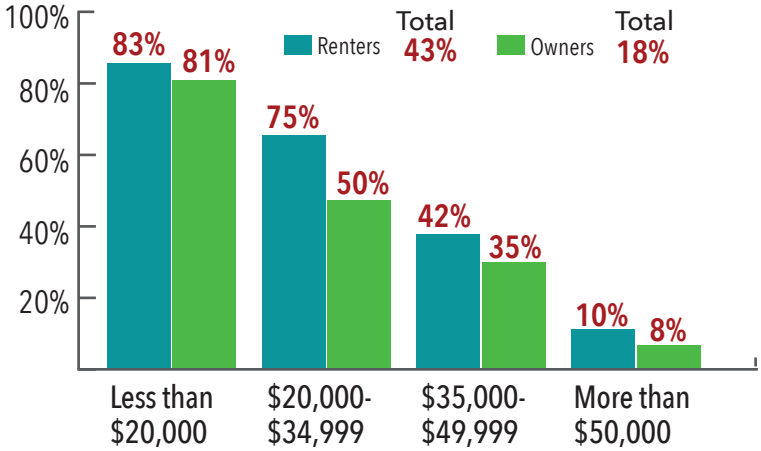
77%

White Homeowners: 1,435,875

554,272 Minnesota Households pay more than 30 percent of their income toward housing costs, putting them at risk of being unable to afford basic needs like food and medicine. 232,840 are severely cost burdened and pay more than 50 percent of their income on housing.

COST BURDEN

Percentage of households paying more than 30% of their income toward housing



Number of households paying more than 30% of their income toward housing

	RENTERS	OWNERS
Under $20,000	116,412	70,892
$20,000-34,999	87,568	65,291
$35,000-49,999	41,119	54,524
Over $50,000	23,665	94,801
Seniors	66,034	99,108
All cost-burdened households	268,764	285,508

SEVERE COST BURDEN

Number and percent of households paying **more than 50%** of their income toward housing

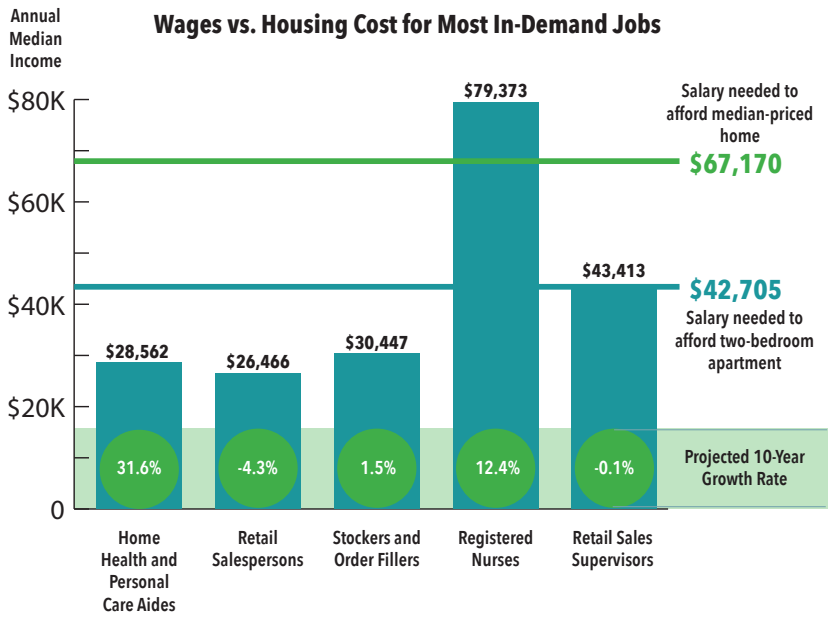
Severe Renter Cost Burden **130,332** households or **22%** of all renter households

Severe Owner Cost Burden **102,508** households or **7%** of all owner households

WAGES: Housing remains a challenge even for Minnesotans who are fully employed. The median earnings for most of the top in-demand and high-growth jobs do not cover housing costs at an affordable level. Those working at the median wage – and especially those earning the minimum wage – cannot afford a two-bedroom apartment or the mortgage for a median price home.

HOMELESSNESS: Too many families, seniors and children are still suffering the devastating consequences of having no place to call home.

Statewide Data



Median household income for the state **$71,306**

Hours / week minimum wage employee must work to afford 1- bd apartment **65**

# of homeless on a given night in 2018 **10,233**

Change in homeless since 2015 **10%**

Number of homeless children **3,584**

Number of homeless seniors **1,053**

SOURCES – Renter households: Rent and income adjusted for inflation. U.S. Census Bureau, American Community Survey 2019, 5 year estimates | Owner households: Home value and income adjusted for inflation. U.S. Census Bureau, American Community Survey 2019, 5 year estimates | Cost burden: U.S. Census Bureau, American Community Survey 2019, 5 year estimates | Evictions: Minnesota State Court Administrator, Monthly Unlawful Detainers by County | Foreclosures: Minnesota Homeownership Center, County Sheriff's Data 2019 | ELI Units and Renters: MHP Analysis of HUD's CHAS Portal Data using the NLIHC methodology | Wages: Minnesota Department of Employment and Economic Development (MN DEED), Occupations in Demand, November 2020; Employment Outlook, MN DEED | Housing Stock: U.S. Census Bureau, American Community Survey 2019, 5 year estimates, U.S. Census Bureau, Building Permits Survey, 2019 | Homelessness: Wilder Research Center, 2018 Minnesota Homeless Study

COVID-19 and Housing

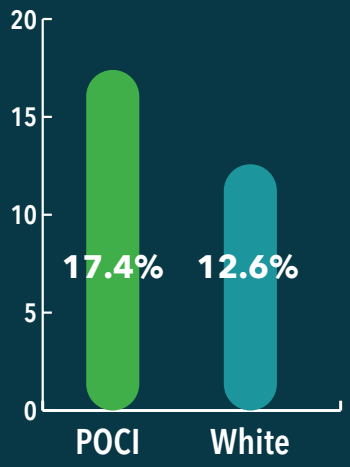
This report makes clear that Minnesota already had an affordable housing crisis before the pandemic arrived with all its' disruption and pain. The impacts of COVID-19 will continue to emerge over the coming weeks, months, and years. But one thing is clear: this pandemic has demonstrated how essential stable, affordable housing is to maintaining health and weathering one of the worst health and economic challenges experienced in generations.

Two separate national research publications conducted during COVID-19 have provided evidence that housing literally saves lives. The first examines the relationship among "Eviction, Housing Instability, Health Inequity, and COVID-19 Transmission".[1] It describes how housing instability can be a driver of COVID-19 transmission, a challenge that disproportionately affects those with pre-existing health conditions and households of color. A second publication[2] points to the extraordinary benefit that eviction moratoriums nationally and in Minnesota have had on reducing COVID-19 transmissions and mortality. It finds that states that lifted their eviction moratoriums during 2020 led to a collective estimate of 433,700 excess COVID-19 cases and 10,700 excess deaths.

Other research is pointing to the economic challenges that COVID-19 has created, particularly on households of color. As many as 1,060,000 – or 26% - of Minnesota's adults reported difficulty in covering usual household expenses. These include food, rent or mortgage, car payments, medical expenses, or student loans in the last seven days. And at least 17% of renters (167,000 adults) are not caught up on their rent.[3] These trends point to ongoing cost burdens and pressures for low income renters, many still without stable or predictable income.

Emergency housing assistance from Federal, State and local governments to pay housing costs has helped mitigate the looming lifting of the eviction moratorium, by covering the growing unpaid rents, and helping to

A higher proportion of BIPOC are working in food service, and personal care and services jobs



FOOTNOTES

Footnote 1: Benfer, Emily and Vlahov, David and Long, Marissa and Walker-Wells, Evan and Pottenger, J.L. and Gonsalves, Gregg and Keene, Danya, Eviction, Health Inequity, and the Spread of COVID-19: Housing Policy as a Primary Pandemic Mitigation Strategy (November 1, 2020). Journal of Urban Health (2020), Available at SSRN.

Footnote 2: Leifheit, Kathryn M. and Linton, Sabriya L. and Raifman, Julia and Schwartz, Gabriel and Benfer, Emily and Zimmerman, Frederick J and Pollack, Craig, Expiring Eviction Moratoriums and COVID-19 Incidence and Mortality (November 30, 2020). Available at SSRN.

Footnote 3: Center for Budget and Policy Priorities, CBPP.org March 15, 2021 "Tracking the COVID-1 Recession's Effects on Food, Housing and Employment Hardships".).

COVID-19 and Housing

ensure renters stay current. More help is needed, as the pandemic and its economic ramifications continue.

Black, Indigenous, and People of Color (BIPOC) have been hit the hardest by income losses during COVID-19 lockdowns. In addition, BIPOC are more likely to work in jobs that involve potential exposures to COVID-19.

One area where we have seen an impact from COVID-19 is in the data on wages and housing. The State of the State's Housing tracks housing affordability and how it compares to wages in the top in-demand occupations. During COVID-19, those in-demand occupations have shifted. Food service industry occupations have vanished from those lists and been replaced by health care occupations and stock and order fillers (like those at Amazon). It remains unclear how the economy will rebalance post-pandemic, and how those in-demand jobs will be impacted.

Please note, that while much of the data analyzed in this report is from 2019, before COVID-19 was known and before impacts were felt in Minnesota, the trends toward increasing unaffordability continue.

Job	Median Income	Unemployment Payment (Monthly)	% Income Spent on Rent	% Income Left Over	# Affected
Retail Salespersons	$31,146	$1,073	90%	10%	87,430
Cashiers	$25,746	$1,016	95%	5%	65,840
Fast Food Cooks	$23,892	$996	97%	3%	2,620
Short order cooks	$28,684	$1,195	81%	19%	720
Food Prep workers	$27,013	$1,126	86%	14%	8,670
Bartenders	$22,517	$938	103%	-3%	16,790
Food Counter Attendants	$23,058	$961	101%	-1%	14,340
Food Prep and serving- fast food	$24,064	$1,003	97%	3%	66,060
Waitstaff	$23,072	$961	101%	-1%	50,490
Barbacks and dining room attendants	$23,781	991	98%	2%	5,140
Dishwashers	$25,129	$1,047	93%	7%	7,390
Hosts	$24,141	$1,006	96%	4%	6,890

BIPOC workers are overrepresented in jobs that are at the most risk during COVID-19. These jobs are also some of the lowest paying in Minnesota.

For some of these jobs, a worker's entire unemployment insurance income would be too little to cover the rent.

This table does not include CARES Act payments or other federal and state supports other than unemployment insurance. These figures paint a realistic portrait of those not eligible for CARES Act, and reflects circumstances as federal supports end this summer.

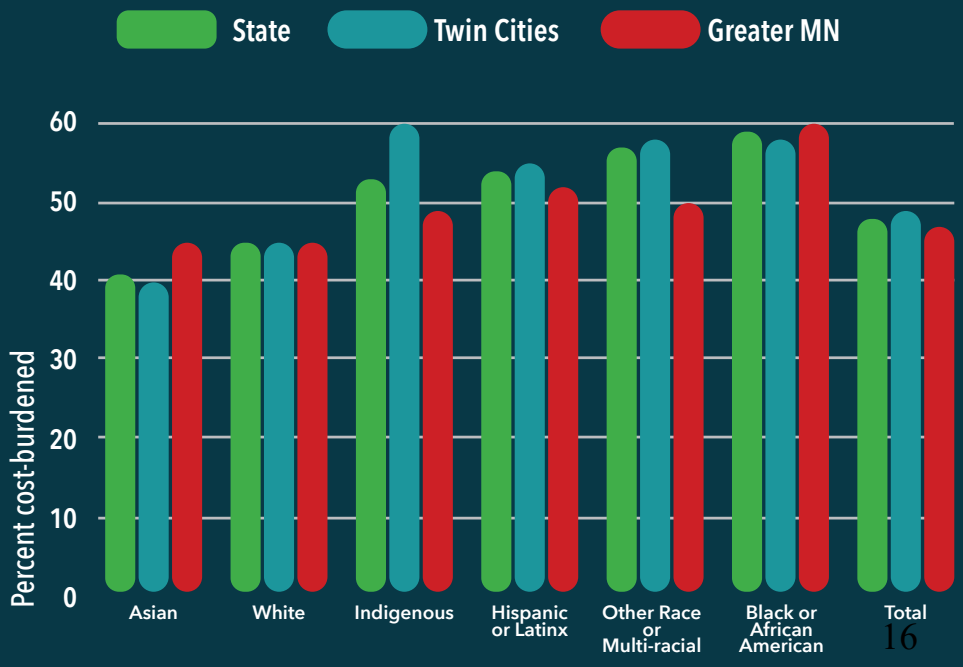
Minnesota: Overview

Minnesota is home to a growing number of renter and owner households yet the state faces many challenges in providing quality homes for all residents. In Greater Minnesota, major housing issues include wage stagnation, renter cost burden, and aging housing in need of rehabilitation. In the Twin Cities, large percentages of renters pay more than they can afford for housing — and there is a significant deficit of affordable and available rental units. Racial disparities in homeownership around the state are among the highest in the nation, and cost burden disproportionately impacts households of color.

With rising housing costs, a growing number of families are paying more, sacrificing other necessities like food and health care to make ends meet. Because of the lack of affordable housing options across Minnesota, families are forced to make impossible decisions on a daily basis. Cost burden, a key metric in assessing housing affordability, occurs when a household spends more than 30 percent of its annual income on housing. Twenty-five percent of all households in Minnesota are cost burdened. That means an estimated 554,272 households are struggling to make ends meet. And cost burden disparately impacts households of color: 36 percent experience cost burden compared to 22 percent of white households.

COST BURDEN is when a household spends more then 30% of its income on housing. Research shows that families spending more then 30% on housing often have inadequate resources to pay for other necessities like food and medicine.

BIPOC communities are more likley to experience cost-burden due to historical injustices such as redlining, racial covenants and disinvestment.



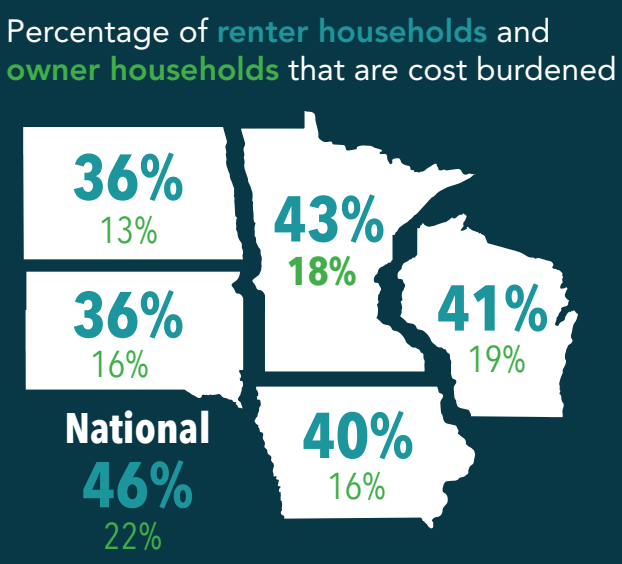
Minnesota: Renters

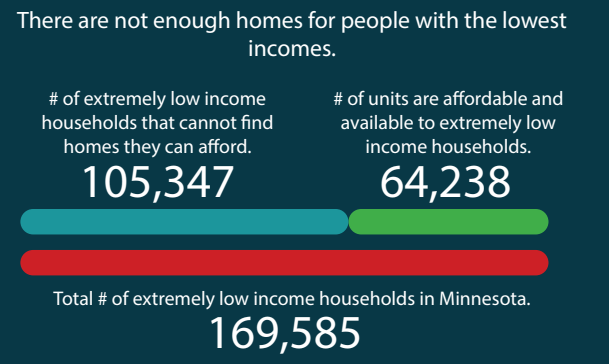
Minnesota has one of the largest renter populations in the Upper Midwest with 620,733 renter households, gaining an additional 138,471 renter households since 2000. In Minnesota, 43 percent of renter households experience housing cost burden and 22 percent experience severe housing cost burden — meaning they pay more than 50 percent of their income on rent. Renter cost burden has increased significantly since 2000 when 35 percent of renters experienced cost burden in the state. Of the Upper Midwest states, Minnesota contains the highest percentage of cost-burdened renters, outpacing Wisconsin, Iowa and the Dakotas. While many housing trends vary by region, renter cost burden is an issue in every Minnesota county.

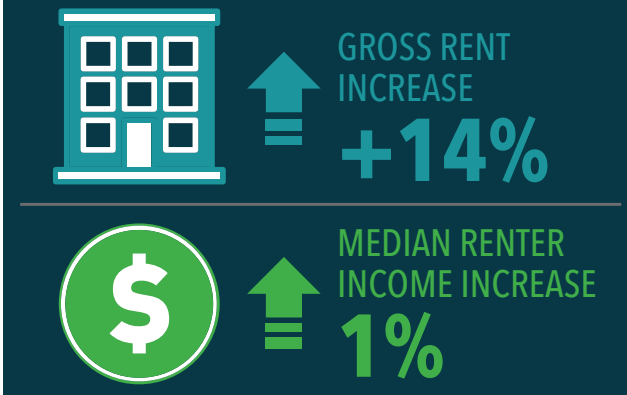
In Minnesota, there is critical need for housing particularly for extremely low-income renters, or renter households that earn at or under 30 percent of area median income (AMI). There are approximately 169,585 renter households in the state fall into this category; yet, there are only 64,238 affordable and available units at this income level across the state. With projected population increase and an already tight housing market, affordable units — especially for those at the lowest incomes — will be critical to develop and preserve.

In part, many renters experience housing cost burden because their wages have decreased relative to housing costs. Between 2000 and 2019, the median renter income in Minnesota increased by 1 percent, while median gross rent for the state increased by 14 percent. Minnesota's median gross rent is the highest in the Upper Midwest area, at $977 per month, greatly surpassing neighboring Midwestern states by as much as $250 per month.

Housing cost burden disproportionately affects households of color. In Minnesota, 44 percent of white renters are cost burdened. In contrast, 58 percent of Black renters — 82,364 renter households — pay more than they can afford on housing. Cost burden rates are significantly higher as well for Hispanic, Indigenous, and multiracial renters. Additionally, while 22 percent of white renter households are severely cost burdened around the state, 30 percent of Black renters and 33 percent of Indegenous renters pay over half of their income on housing.







Minnesota: Owners

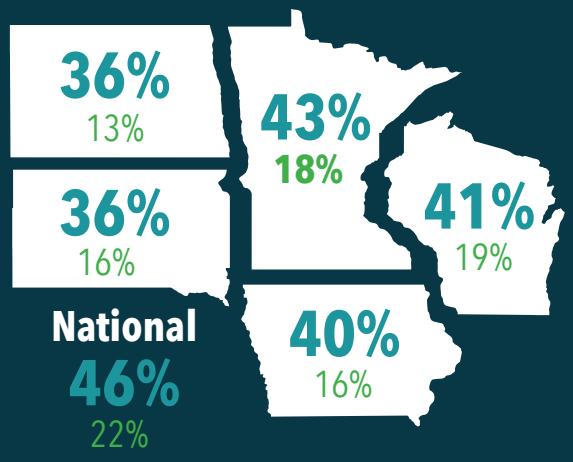
In 2019, there were 1.56 million owner-occupied households in Minnesota, and 285,508 — or 18 percent — of owner households experienced housing cost burden. Owner cost burden has increased since 2000, when just 13 percent of homeowners paid more than they could afford for housing. Minnesota sees higher rates of owner cost burden than surrounding Midwestern states such as Iowa, North Dakota and South Dakota. Additionally, Minnesota has the second highest rate of severe owner cost burden in the Upper Midwest with 7 percent of owner households paying more than 50 percent of their income on housing.

Owner income has increased by 6 percent in Minnesota since 2000 (adjusted for inflation). Meanwhile, the median value of homes has increased by 24 percent over the same time period.

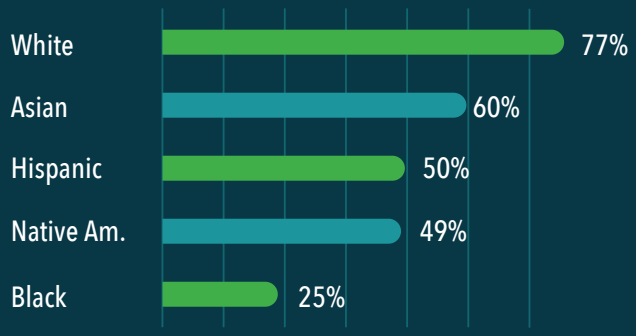
Racial disparities in homeownership rates — widely referred to as the homeownership gap — continue to be a major issue in Minnesota. While 77 percent of all white households own their home, 60 percent of Asian, 50 percent of Hispanic, 49 percent of Native American, and just 25 percent of Black households own their homes. Nationally, the homeownership gap is 25 percent; in Minnesota it is far wider at 35 percent. The Upper Midwest states see the worst racial disparities in homeownership in the country, with Wisconsin, Minnesota, North Dakota and South Dakota ranking with the most severe gaps in the nation.

Cost burden disparately impacts owners of color in Minnesota. In total, 19 percent of white homeowners are cost burdened, compared to 38 percent of Black homeowners and 27 percent of Hispanic homeowners.

Percentage of **renter households** and **owner households** that are cost burdened



HOMEOWNERSHIP BY RACE



Minnesota: Housing Stock

Across the state, 39 percent of renter occupied and 40 percent of owner occupied units were built prior to 1970; and regionally, housing stock varies in age and quality. In 2019, 14,877 new multifamily units were permitted for construction, along with 13,709 single family homes. This marks a significant increase in multifamily permits from just two years prior, when 8,303 new units were issued in 2017.

In 2019, there were 88,996 subsidized units across the state, providing housing to 165,016 total people. Across HUD's subsidized programs, 52 percent of occupants are white non-Hispanic, 71 percent of heads of households are women, and 42 percent of heads of households are over the age of 62 years. The majority of subsidized housing consists of smaller units, with 57 percent of housing in the form of a studio or a one bedroom. The average waitlist time for subsidized housing in Minnesota is approximately 22 months.

MULTI-FAMILY PERMITS BY YEAR

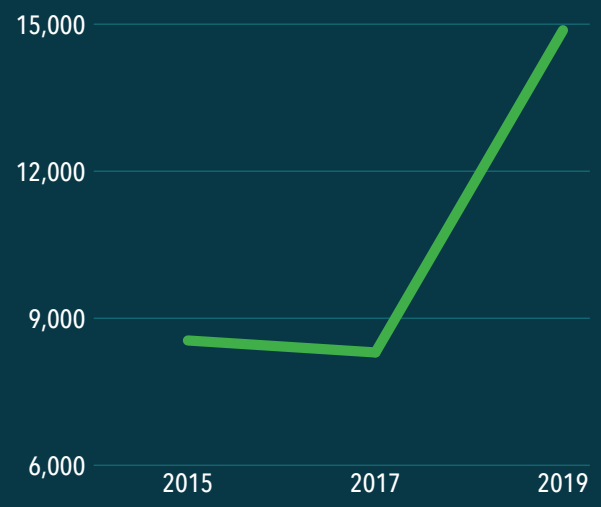


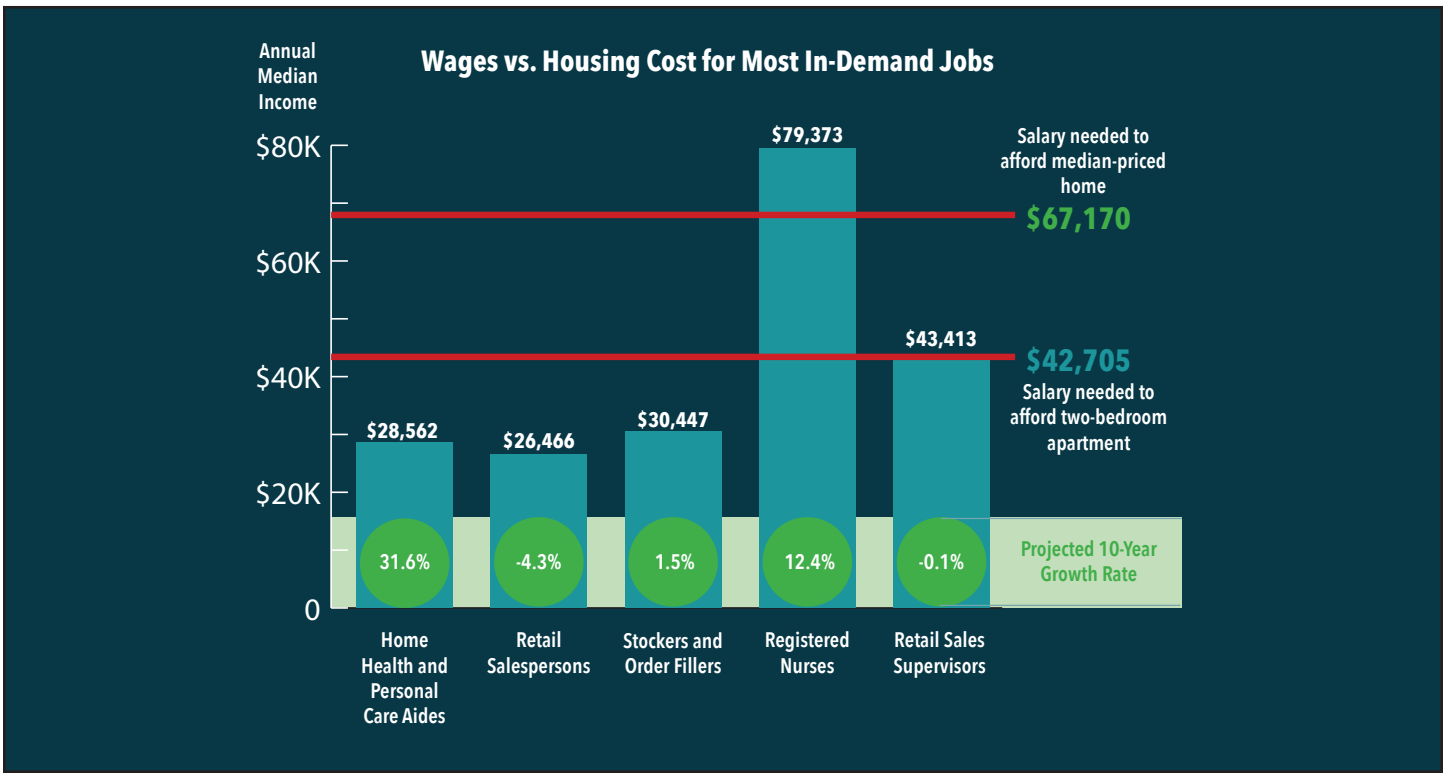
Photo: Minnesota Farm House. Larry Jacobsen. Used under Creative Commons License Attribution 2.0 Generic.

Minnesota: Housing Affordability

The current top five in-demand occupations in Minnesota are home health and personal care aides, retail salespersons, stockers and order fillers, registered nurses, and first-line supervisors of retail sales workers. Over the next ten years, demand for these occupations is expected to grow by an average rate of 8 percent, with home health and personal care aides alone seeing an expected demand growth rate of 32 percent. Many of these positions only pay a fraction of what is needed to afford prevailing rents and the cost of a median-value home.

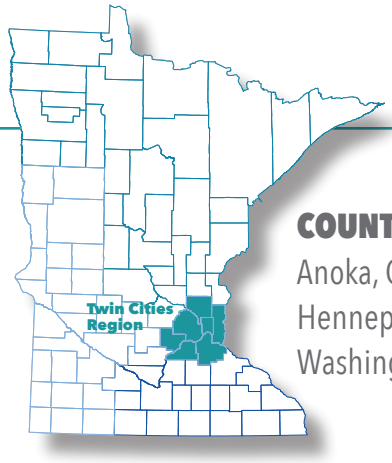
Of the current top occupations, median annual income ranges from $26,466 (retail salespersons) to $79,373 (registered nurses). At these income levels, workers can afford to spend $662 to $1984 on housing per month. Of these occupations, only registered nurses, and first-line supervisors of retail sales workers are able to afford the median gross rent for the state at $977 per month. Home health and personal care aids, retail salespersons and stockers, and order fillers would require an increase of $216 to $315 monthly to be able to afford median gross rent. In other words, these top occupations would need to earn $2,592 to $3,780 more annually to afford a median rent. Furthermore, an annual income of $67,170 is needed to afford a median-value home in the state, meaning that of the top occupations, only registered nurses are able to afford homeownership.

In both Greater Minnesota and the Twin Cities region, many of the occupations that are projected to see the most openings over the next ten years are relatively low-wage. A significant amount of occupations in growing demand are in the healthcare sector, including personal care aides, home health aides, and nursing assistants, which do not earn enough for quality housing to be affordable.



Twin Cities Region

The Twin Cities region comprises the majority of the state's total household population with nearly 1.8 million households. In the Twin Cities, significant percentages of renters pay more than they can afford for housing — and racial disparities in homeownership are among the highest in the nation.



COUNTIES:
Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, Washington

Key Findings

From 2000 to 2019, the percent of cost-burdened renters in the region increased from 36 percent to 45 percent, and the overall number of cost-burdened renters increased by 61,871 renters.

The Twin Cities region contains 61 percent of the state's population of extremely low-income renters (ELI), or renter households that earn less than 30 percent of area median income (AMI). While there are 103,140 ELI renter households in the region, there are only 35,105 units that are affordable and available to ELI renter households.

While the region accounts for 76 percent of POCI households in the state, only 40 percent of BIPOC households are homeowners, compared to 75 percent of white households – a 35 percent gap.

Photo: Minneapolis by Andy Birkey

Twin Cities Region: Rental Housing

With nearly one-third of all households living in rental units, the Twin Cities region has the highest percentage of renter households of any region in the state, increasing from 29 percent of all households in 2000 to 32 percent in 2019. Sixty-one percent of the state's rental households reside in the Twin Cities, with Hennepin County containing the highest number of renters in the state with 191,183 households. Hennepin and Ramsey Counties contain the largest percentage of renter households, at 38 percent and 41 percent, respectively. Outside of Hennepin and Ramsey, the proportion of renter households declines, ranging from 17 percent in Scott County to 26 percent in Dakota County.

The Twin Cities region has the highest overall gross rent in the state, with all seven counties ranking top 10 for highest rent in the state. Washington County leads with the highest rent in the state at $1,307 in 2019. Renter income has fallen in three of the seven counties in the region since 2000. Scott County saw a 1 percent decline in renter income, Ramsey County saw a 4 percent decline, and Dakota County saw a 10 percent decline — making it one of the bottom ten counties in the state for growth in renter income. Meanwhile, rent has increased in every county in the region, ranging from 10 percent in Dakota County to 26 percent in Washington County.

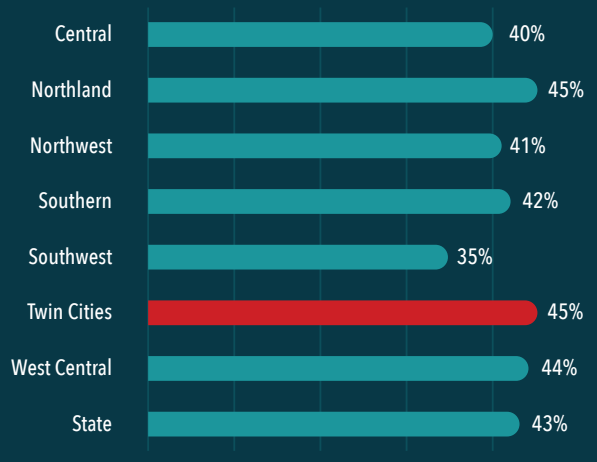
A significant amount of renters are cost burdened in the metro area; in total 45 percent or 168,108 renter households pay more than they can afford on housing. Washington County contains the highest percentage of cost-burdened renters in the region, with 49 percent of renters spending more than 30 percent of their income on housing; Ramsey and Scott Counties follow closely behind with 48 percent of renters experiencing cost burden. By sheer number, Hennepin and Ramsey contain the largest amount of cost-burdened renters at 84,402 and 39,521 households; Ramsey County contains the highest percent of severely cost-burdened renters, with nearly a quarter of renters (19,705) spending more than half of their income on housing. Overall, from 2000 to 2019, the percent of cost burdened renters in the region increased from 36 percent to 45 percent, and the overall number of cost-burdened renters increased by 61,871 renters.

TEN COUNTIES WITH HIGHEST GROSS RENT

Washington*	$1,307
Dakota*	$1,174
Scott*	$1,170
Carver*	$1,146
Hennepin*	$1,135
Anoka*	$1,118
Isanti	$1,019
Ramsey*	$1,007
Sherburne	$995
Wright	$969

*Twin Cities Region

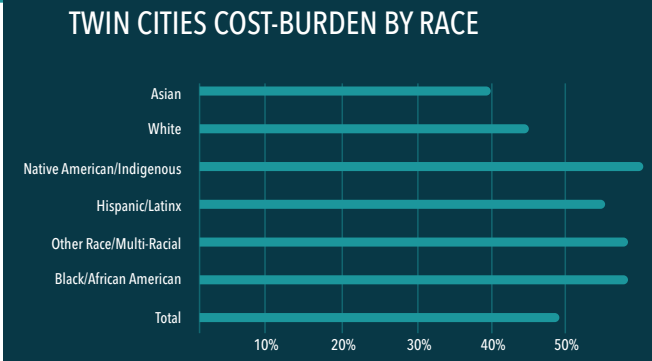
PERCENT OF COST-BURDENED RENTERS BY REGION



Twin Cities Region: Rental Housing

Additionally, cost burden disproportionately affects low income renters and renters of color. In the Twin Cities region, 44 percent of white renters are cost burdened. Renters of color see much higher rates of cost burden. Well over half of Black renters experience cost burden in the region, at 57 percent; 54 percent of Hispanic renters are cost burdened; and nearly 60 percent of Indegenous renters are cost burdened. In total, there are 197,765 renter households that earn under $50,000 annually in the Twin Cities region; 75 percent of these households pay more than they can afford on housing.

The Twin Cities region contains 61 percent of the state's population of extremely low-income renters (ELI), or renter households that earn less than 30 percent of area median income (AMI). While there are 103,140 ELI renter households in the region, there are only 35,105 units that are affordable and available to ELI renter households. Hennepin and Ramsey Counties have the highest deficit of 30 percent affordable units, with 26,570 and 14,180 affordable units needed, respectively. Meanwhile, Anoka and Ramsey have the lowest ratios of affordable units per 100 renter households at 30 percent AMI, at 44 percent and 49 percent, respectively.



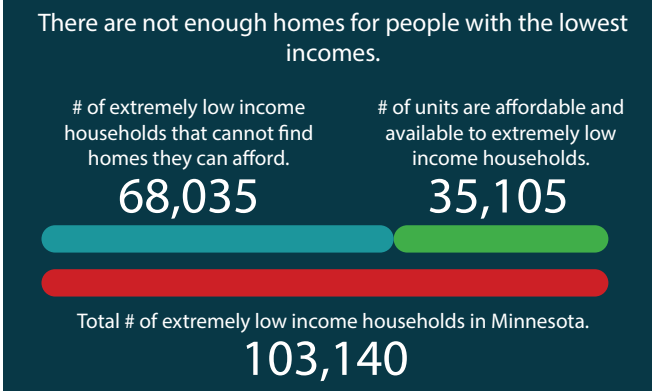


Photo: St. Paul. Bruce Schwierske Used under Creative Commons License Attribution 2.0 Generic.

Twin Cities Region: Homeownership

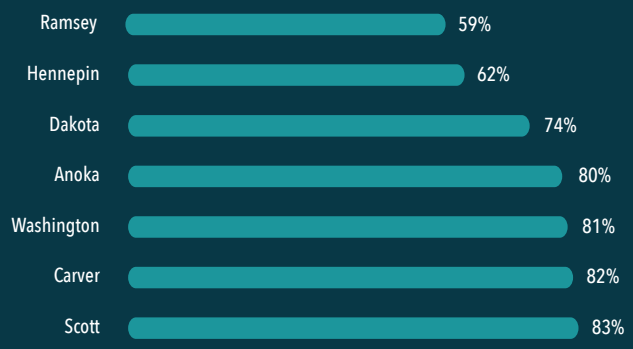
The Twin Cities region is home to approximately 811,023 homeowner households, accounting for just over half of the state's owner household population. In the 7 County metro, 68 percent of all households are owners, with Scott and Carver containing the highest rates of homeownership at 83 percent and 82 percent respectively. While Hennepin and Ramsey counties have the lowest rates of homeownership in the state, with 62 percent and 59 percent, they account for 35 percent of the region's total owner household population. Currently, 18 percent of owner households pay more than 30 percent of their income on housing in the region.

While owner income in the metro area is highest in the state, two counties in the region rank in the bottom five for owner income growth; Anoka and Dakota counties each saw a 1 percent decline in owner income since 2000. Outside of these two counties, owner income grew minimally from 2 percent in Ramsey County to 9 percent in Scott County.

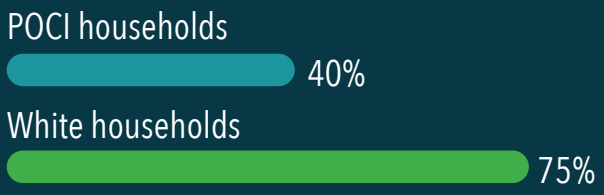
The Twin Cities region has the largest homeownership gap in the state and the largest population of Black, Indigenous, People of Color (BIPOC) households in the region. While the region accounts for 76 percent of POCI households in the state, only 40 percent of BIPOC households are homeowners, compared to 75 percent of white households — a 35 percent gap. These disparities are partly due to historical policies of racism, including redlining and racial covenants that have historically blocked BIPOC families from purchasing homes.

Of the counties in the Twin Cities region, the discrepancy between BIPOC and white homeownership is highest in Hennepin. While 71 percent of white households own their home in Hennepin, only 34 percent of BIPOC households own their home. The homeownership rate for Black households is even lower in the county, with a homeownership rate of just 22 percent.

HOMEOWNERSHIP IN THE TWIN CITIES REGION



HOMEOWNERSHIP DISPARITIES IN THE TWIN CITIES



Twin Cities Region Spotlight: Hope Community

In Minneapolis' Phillips neighborhood, Hope Community is working to help communities gain access to wealth through homeownership.

"Hope's focus since the early 1990s has really been to take a comprehensive approach to community development, an approach we often refer to as 'placekeeping,'" says Will Delaney, Associate Director at Hope Community. "That means prioritizing meaningful community listening and engagement; building a strong base of affordable housing, commercial and community spaces; organizing and building power; and in general recognizing that the people in our community are the experts and authors of their own lives and in how to build a better, more just community and society."

Hope Community is based in the Phillips neighborhood which is situated just south of downtown Minneapolis. It's one of the most diverse in the state and Hope Community is intentional in its work with a primarily BIPOC population.

Delaney says, "All of our work relates to building an alternative to gentrification."

One of Hope Community's newest efforts is a Community Ownership program that trains and supports aspiring homeowners to become owner-occupants of small multi-family buildings using a community land trust model (in partnership with the City of Lakes Community Land Trust). Land trusts are a form of permanently affordable ownership housing in which the Trust owns the land and sells the housing on that land at affordable prices. In exchange for the significant upfront subsidy to make their home more affordable, the buyer promises that when they sell the land, they will take a portion of the equity from the home's increased value and the land trust will use the other portion to keep it affordable for the next buyer.

"We have recognized for a long time the creeping displacement of residents for neighborhoods like Phillips as properties in Minneapolis get more and more unaffordable, and while we know that the housing we own as Hope is an important piece of the puzzle, we also believe that helping community members become owners themselves is another crucial strategy."

"All of our work relates to building an alternative to gentrification."

Solutions to the inequities present in the city and neighborhood need to center those experiencing the inequities.

"We think that the model we're piloting here -- being borne out of listening and engagement from our community -- makes sense because it is aimed at helping people move from rental to ownership but also to think about future generations being able to do that as well," said Delaney.

In 2021, the cohort of trainees has grown from four to twelve. The training involves helping participants understand the land trust model, what it means to own a duplex, and how to work toward their goals.

"Long-term, we hope to be able to support folks even after purchase so that there is a network of community-minded owners who have come through the program and can

Twin Cities Region Spotlight: Hope Community

Photo: A Hope Community property. Courtesy of Hope Community.

support each other."

Being a small landlord with one or two units, Delaney adds, provides an additional source of income in addition to the wealth-building opportunities.

For some folks this new model creates some skepticism that it doesn't build the same level of wealth as traditional homeownership.

Delaney says, the program "is serving folks who otherwise pretty clearly are not typically able to get into traditional homeownership."

"And further, if you actually analyze the finances of it, for many buyers, depending on how long you stay in the home, the land trust may actually provide more wealth-building opportunities because the depth of affordability investment means you pay much less in mortgage costs every month and thus have more money left over for other things."

As for the future, Hope Community is connecting with more collaborating organizations and developers to expand the pilot project. "There is a lot of interest right now in the potential of this model."

Learn more about Hope community at www.hope-community.org

Twin Cities Region: Housing Stock

In the Twin Cities region, 39 percent of renter-occupied and 39 percent of owner-occupied units were built prior to 1970.

In 2019, 12,342 multifamily units (including 84 units for two unit buildings) were permitted in the metro area, marking a significant increase since just two years prior in 2017, when 6,170 multifamily units were permitted.

In 2019, 6,966 single-family homes were permitted for construction, accounting for 51 percent of single-family new construction in the state. The majority of existing subsidized units in the state are located in the Twin Cities region, with 50,374 subsidized units or 57 percent of the state total. From 2010 to 2018, 8,529 units were produced in the region that were affordable to 60 percent of AMI; 631 of those units were affordable to 30 percent of AMI.

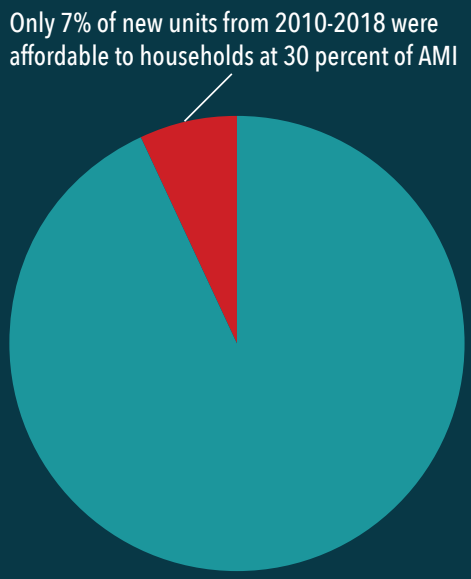


Photo: New apartments in Minneapolis. Payton Chung Used under Creative Commons License Attribution 2.0 Generic.

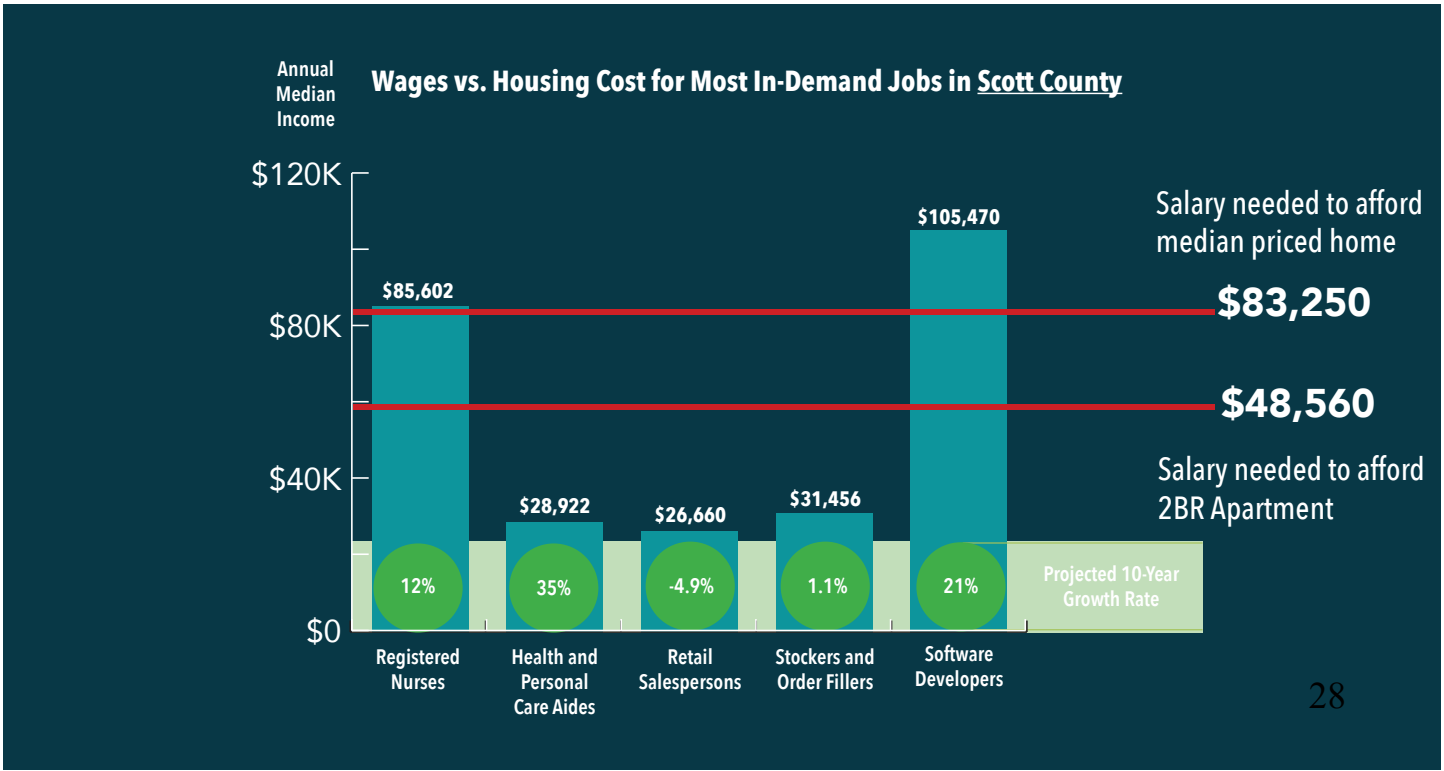
Twin Cities Region: Housing Affordability

In the Twin Cities region, median rent is out of reach for the majority of median-income renter households. While median gross rent ranges from $1,007 in Ramsey County to $1,307 in Washington County, the median income-earning renter can only afford a range of $972 in Ramsey County to $1,263 in Washington County. Ramsey, Scott and Washington counties, the median earning renter would need to earn an additional $1,389 to $3,941 annually to afford median rent.

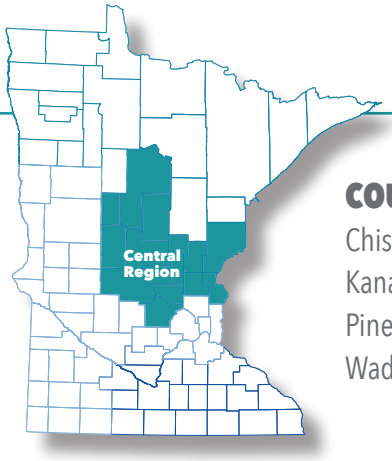
In the 7-county region, the top five in-demand occupations as of November 2020 include registered nurses, home health and personal care aides, retail salespersons, stockers and order fillers, and software developers.

The median annual incomes for three of the five top occupations in the region earn under $32,000. Annually, the income for these top occupations ranges from $26,660 (retail salespersons) to $105,470 (software developers), leaving employees between $667 and $2,637 to put toward housing without spending more than 30 percent of their income. Yet, an annual salary of $40,280 (Ramsey) to $52,280 (Washington) is needed to afford median rent in these counties. Effectively, three of the top five in-demand jobs do not earn a salary that can afford median rent in any county in the Twin Cities region; employees in these in-demand jobs would need to earn an additional $341 to $1,630 more per month to afford median rent in the region. In all counties in the region, a minimum wage worker would need to work 75 hours per week to afford a one bedroom apartment at fair market rent.

In the region, an annual salary of $63,778 to $87,000 is needed to own a median value home. Of the top in-demand jobs, only software developers and registered nurses can afford homeownership — and even registered nurses are priced out of a median-value home in Carver County.



Central Region



COUNTIES: Benton, Cass, Chisago, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison, Pine, Sherburne, Stearns, Todd, Wadena, Wright

The Central region is located just north of the Twin Cities metropolitan area and includes 14 counties and the St. Cloud Metropolitan Statistical Area. The region is home to 287,812 households, 78 percent of which are homeowners and 22 percent are renters. The region has seen significant population growth and housing development. As the Central region grows, it will be critical to expand affordable housing opportunities for renters and homeowners.

Key Findings

Chisago and Kanabec counties have the first and second highest rate of homeownership in the state at 86 and 85 percent, respectively.

The Central region has the highest rate of owner cost burden with 20 percent of all owner households paying more than 30 percent of their income on housing. In total, 43,542 owners in the Central region pay more than 30 percent on housing, and 15,582 pay over half of their income on housing.

The region has the youngest housing stock for both rental and owner housing in the state. In the Central region, just 27 percent of renter-occupied and 26 percent of owner-occupied units were built prior to 1970.

Photo: Lindstrom water tower. Doug Kerr Used under Creative Commons License Attribution 2.0 Generic.

Central Region: Rental Housing

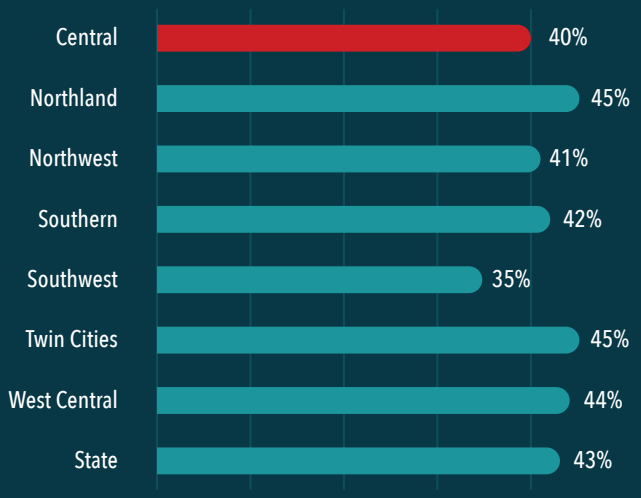
There are approximately 64,278 renter households in the Central region, accounting for 22 percent of total households; this is the lowest percentage of renters in the state. Thirty percent of renter households in the region reside in Stearns County, where the city of Saint Cloud is located.

In total, 25,921 renter households (40 percent) in the Central region pay more than 30 percent of their income on housing, with cost burden affecting from 35 percent of renter households in Todd County to 49 percent in Crow Wing and Wadena Counties. In 2000, 32% of renter households were cost burdened; the region has seen a total increase of 12,575 cost burdened renter households since 2000. Additionally, 11,594 renter households in the region experience severe cost burden, or pay over half of their income on housing.

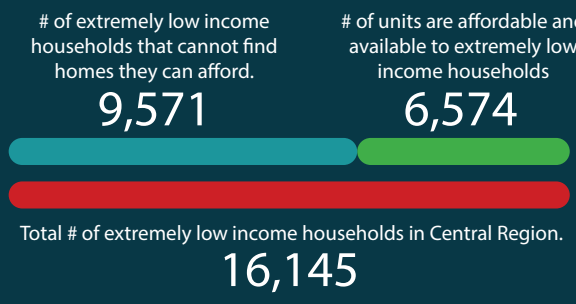
The Central region contains approximately 16,145 renter households that earn less than 30 percent of area median income. Yet, the region contains just 13,909 units that are affordable to households at that income and only 6,574 of those units are affordable and not occupied by renters with higher incomes.

From 2000 to 2019, four Central counties (Benton, Kanabec, Mille Lacs and Pine) saw declines from 10 to 6 percent in renter median income. Other counties saw modest increases — with the exceptions of Todd and Wadena counties, which ranked in the top ten percent of renter income increases in the state at 24 percent and 43 percent, respectively. Meanwhile, median gross rent rose in every county in the region, from 7 percent in Benton County to 35 percent in Cass County.

PERCENT OF COST-BURDENED RENTERS BY REGION



There are not enough homes for people with the lowest incomes.



Central Region: Homeownership

The Central region is home to more than 223,530 owner households, accounting for 78 percent of the region's household distribution. Chisago and Kanabec counties have the first and second highest rate of homeownership in the state at 86 and 85 percent respectively. The Central region contains the second highest sheer number of owners after the Twin Cities metro area. However, compared to all other regions in the state, the Central region has the highest rate of owner cost burden with 20 percent of all owner households paying more than 30 percent of their income on housing.

In total, 43,542 owners in the Central region pay more than 30 percent on housing, and 15,582 pay over half of their income on housing. The region contains four of the 10 counties with the highest percentages of owner cost burden and severe owner cost burden: Pine, Cass, Mille Lacs, and Kanabec Counties. Compared to the percent of homeowners who were cost burdened in 2000 in these same counties, there has been an additional increase in cost burden, with these four counties seeing increases ranging from 36 percent in Kanabec to 55 percent in Pine County.

In part, owner housing cost burden may be due to little growth or declining growth in owner income. Since 2000, median owner income fell by 2 percent in Pine County, and only rose as much as 12 percent in Todd County. In contrast, median home values have seen increases from 12 percent in Sherburne County to 47 percent in Todd County.

TEN COUNTIES WITH HIGHEST SEVERE COST BURDEN AMONG HOMEOWNERS

Cook	13%
Lake of the Woods	12%
Aitkin	11%
Cass*	10%
Clearwater	10%
Pine*	10%
Hubbard	9%
Nobles	9%
Kanabec*	8%
Mille Lacs*	8%

*Central Region

Central Region Spotlight: Central Minnesota Housing Partnership

Minnesota's Central Region faces unique housing challenges. It's a region that has some of the largest cost-burden rates among homeowners in the state, and slow growth in incomes coupled with rising home values is making the situation more complicated. Renting a home, particularly if you have income below 30 percent of the area median income, is incredibly difficult as the supply for that level of affordable housing is dwindling.

Central Minnesota Housing Partnership exists to preserve, improve, and increase affordable housing in the region. Its homeowner rehabilitation program coupled with the affordable multi-family properties CMHP manages, aims to reverse these trends.

People who want to downgrade to a smaller home find themselves unable to build; instead they stay in their larger homes creating a lack of supply.

"This has tightened the existing housing stock, thus increasing prices, and squeezing low- and moderate-income households out of affordable homeownership opportunities," Deanna says.

CMHP manages subsidized housing to help those with lower incomes. But, even then, income barriers present issues for housing stability. Some folks make just above the income limit, while others make too little.

> "The single-family housing market has become increasingly more expensive in our region."

CMHP was incorporated in 1993 as a developer of affordable housing but has since expanded into a range of programs. In addition to multifamily affordable housing development, CMHP currently administers programs such as Continuum of Care, Coordinated Entry and the Small Cities Development Program. CMHP also maintains the Central Minnesota Community Land Trust (CMCLT).

"The single-family housing market has become increasingly more expensive in our region," says Deanna Hemmesch. "New construction costs have skyrocketed due to large increases in material costs, and access to materials."

"Households just over income limits are forced to find a naturally occurring affordable property, or a market rate property that will stretch their housing budget," says Deanna. "As the demand for housing continues to grow, finding an affordable, "quality" rental unit without restrictions is harder to come by."

She adds, "With the market being so tight, landlords can charge more rent for their units. Many of the local housing studies I have seen have vacancy rates below 5%. As we know, a 5% vacancy rate is considered healthy, but dipping below that indicates a tight rental market."

CMHP recently expanded into a new type of

Central Region Spotlight: Central Minnesota Housing Partnership

housing for the organization: senior housing. "We have preserved senior housing properties but have not developed a new construction property utilizing Minnesota Housing funding," says Deanna. "As the senior population continues to grow, especially in rural areas of our region, we would like to take the model used in North Branch and develop affordable senior housing throughout our region."

Another of CMHP's projects, called Willow Grove, is located in North Branch. It's permanent supportive housing with a range of on-site services for people with severe and persistent mental illness.

We have seen residents at the property coming from homelessness to housing," says Deanna.

"Their first few months were a struggle and many of the residents were having a hard time living independently."

The on-site services help the residents make Willow Grove their home.

"One gentleman stated he wanted to leave a few months after signing his one-year lease," CMHP's team talked it through with him and worked to connect him with the things he needed.

"When we worked through those issues, this gentleman began to like living at Willow Grove. So much so, that he signed another one-year lease at the time of his recertification."

Photo: Willow Grove Apartments. Via www.cmhp.net

Central Region: Housing Stock

High housing costs in the Central region may be due to the region seeing relatively more development of both rental and single family homes in the past few decades; the region has the youngest housing stock for both rental and owner housing in the state. In the Central region, just 27 percent of renter-occupied and 26 percent of owner-occupied units were built prior to 1970.

In 2019, the region added an additional 614 multifamily units — including 40 units in two-unit buildings — and 3,345 single-family units, constituting the second highest amount of single family units permitted in the state, after the Twin Cities region. In 2017, there were approximately 7,177 subsidized units in the region.

PERCENT OF PROPERTIES BUILT BEFORE 1970

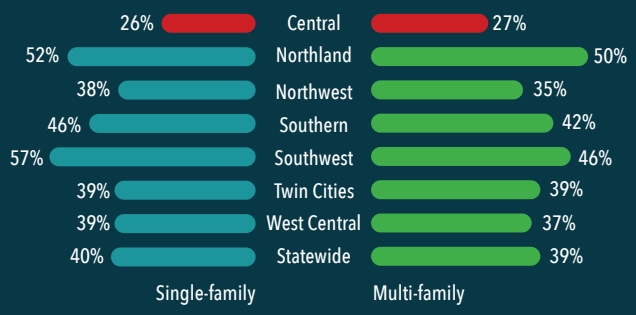


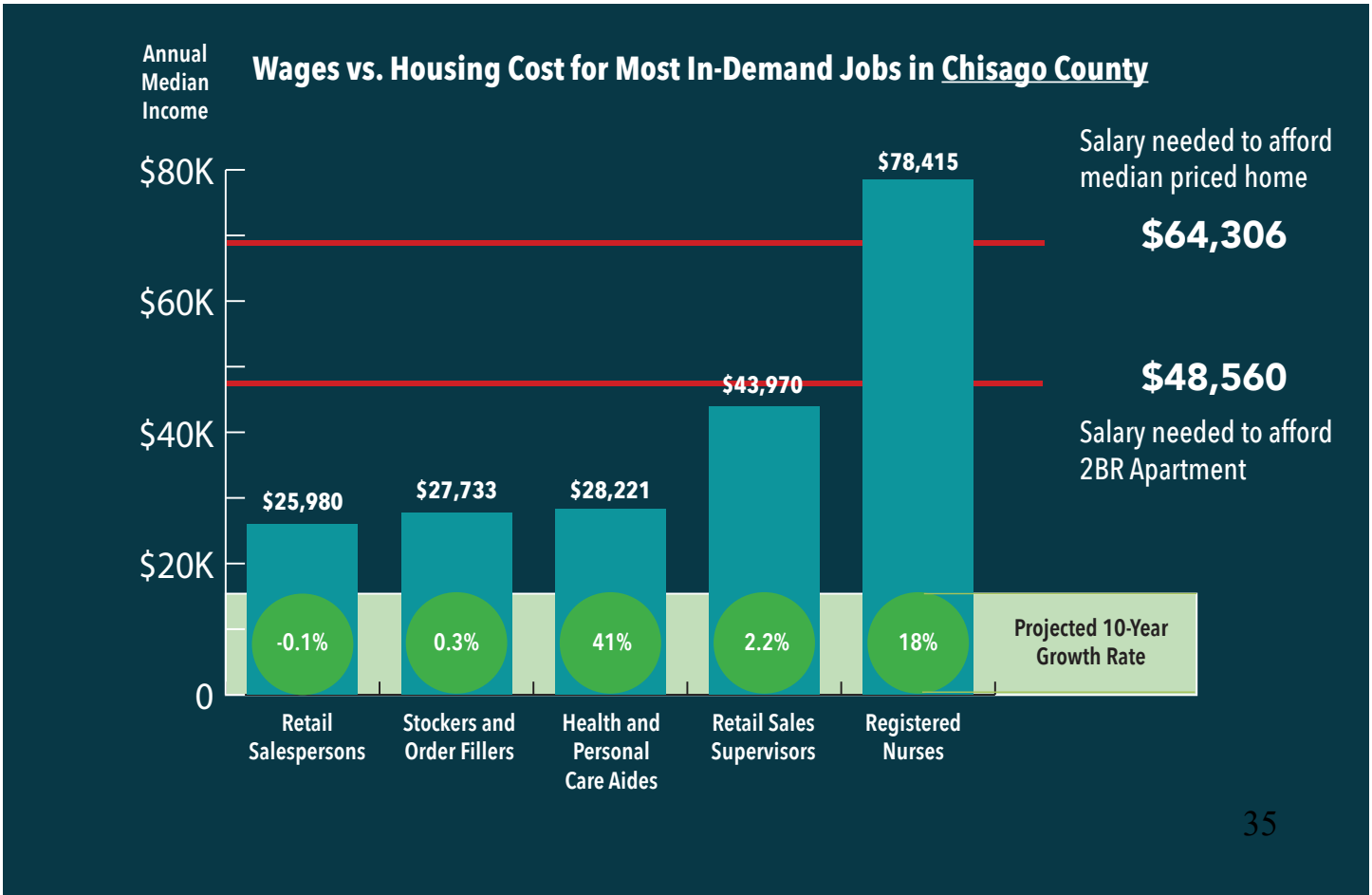
Photo: Brainerd Sign. formulanone Used under Creative Commons License Attribution 2.0 Generic.

Central Region: Housing Affordability

Only one of the most in-demand jobs on the Central Region earns a salary that can afford a median value home or a median apartment: registered nurses. On average, retail salespersons, stockers and order fillers, home health and personal care aids, and first-line supervisors of retail workers don't earn enough to afford housing without becoming cost burdened.

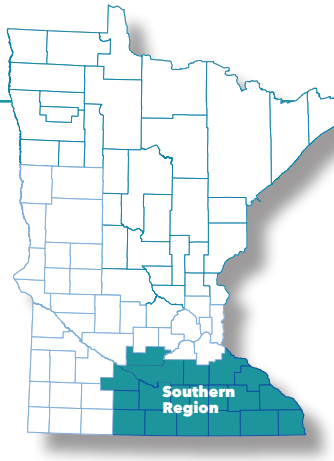
Median gross rent ranges from $649 in Todd County to $1,019 in Isanti County, with median renter income ranging from $26,865 in Mille Lacs County to $45,099 in Wright County. At these income levels, renter households can afford to spend between $672 and $1,127 per month on housing.

In the Central region, the top five in-demand occupations in 2020 included retail salespersons, stockers and order fillers, home health and personal care aids, first line supervisors of retail workers, and registered nurses. These occupations have median salaries that range from $25,980 (retail salespersons) to $78,415 (registered nurses), meaning that these occupations can afford to spend from $650 to $1960 monthly on rent.



Southern Region

The Southern region is the second most populous region in the state with 294,259 households spanning 20 counties. The region includes three major metropolitan areas: Rochester, Mankato, and Lacrosse-Onalaska. From 2000 to 2019, four counties in the region saw some of the sharpest declines in median renter income in the state, yet housing costs continued to rise. In total, nearly a quarter of all households in the Southern region pay more than they can afford on housing.



COUNTIES: Blue Earth, Brown, Dodge, Faribault, Fillmore, Freeborn, Goodhue, Houston, Le Sueur, Martin, Mower, Nicollet, Olmsted, Rice, Sibley, Steele, Wabasha, Waseca, Watonwan, Winona

Key Findings

The Southern region accounts for half of the 10 Minnesota counties with the greatest declines in renter incomes from 2000 to 2017. All but one are outside of the Rochester metro area.

The Southern region contains the second highest amount of extremely low-income renters (ELI) in the state. While there are 19,855 ELI renter households in the region, there are only 8,008 units that are affordable and available to ELI renter households.

Many counties in the region saw some of the lowest increases in the value of homes in the state, indicating that rehabilitation may be needed in the region to maintain housing quality. In total, the region contains six of the top 10 counties that saw the lowest increases in value from 2000 to 2019.

Photo: Downtown Rochester. Licensed to MHP.

Southern Region: Rental Housing

With 75,964 renter households, the Southern region has the second largest population of renter households in the state. Rental households account for 26 percent of all households in the region. Blue Earth County, which contains the city of Mankato, has the highest percentage of renter households at 38 percent, which is on par with the percentage of renters in Hennepin County. Additionally, Olmsted County contains the highest sheer number of renter households at 16,930.

Many counties in the Southern region have seen significant declines in renter income since 2000. From 2000 to 2019, median renter income decreased in 60 percent of the counties in the Southern region, with income depreciation in these counties ranging from 1 to 33 percent. Waseca County has seen the steepest decline in median renter income of all counties in the state, dropping 33 percent. Rice County saw the second steepest decline in renter income in the state with a 24 percent decline, and Goodhue and Faribault counties also saw declines in renter income that ranked among the top 10 in the state. In total, the Southern region accounts for four of the ten Minnesota counties with the greatest declines in renter incomes.

While there were significant renter income declines across the region, rent increased from 7 percent in Brown and Wabasha counties to 34 percent in Watonwan County, with median gross rents ranging from $590 (Faribault County) to $964 (Olmsted County). The growing gap between renter incomes and housing costs has resulted in more than 1 in 4 renter households experiencing cost burden. The Southern region also includes three of the 10 counties with the highest rates of severe cost burden — renter households paying more than half of their income on housing. In Rice, Waseca and Winona counties, 46 to 56 percent of all renter households are cost burdened and more than a quarter are severely cost burdened.

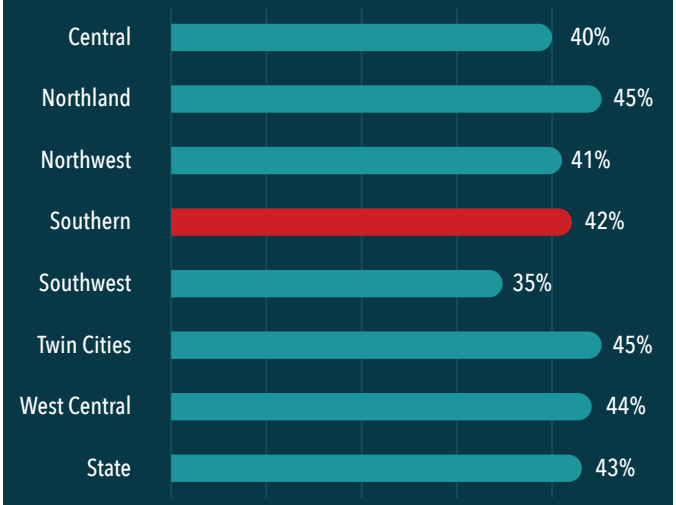
The Southern region contains the second highest amount of extremely low-income renters (ELI) in the state, or renter households that earn less than 30 percent of area median income (AMI). While there are 19,855 ELI renter households in the region, there are only 8,008 units that are affordable and available to ELI renter households. Olmsted and Steele have the lowest ratios of affordable units per 100 renter households at 30 percent AMI, at 59 percent and 64 percent respectively.

TEN COUNTIES WITH LARGEST DECLINES IN RENTER INCOMES

Waseca*	-33%
Rice*	-24%
Renville	-23%
Itasca	-22%
Swift	-16%
Goodhue*	-14%
Faribault*	-13%
Norman	-12%
Roseau	-11%
Dakota	-10%

*Southern Region

PERCENT OF COST-BURDENED RENTERS BY REGION



Southern Region: Homeownership

In the Southern region, there are 218,295 owner households, accounting for 74 percent of total households in the region. Three of the four counties within the Rochester MSA have homeownership rates of 79 percent or more – significantly above the state ownership rate of 72 percent. Dodge County of the Rochester MSA contains the third highest rate of homeownership in the state.

In the region, median value homes currently range from $89,500 in Faribault County to $214,600 in Olmsted County. Many counties in the region saw some of the lowest increases in the value of homes in the state, indicating that rehabilitation may be needed in the region to maintain housing quality. In total, the region contains six of the top 10 counties that saw the lowest increases in value from 2000 to 2019; Freeborn and Watonwan counties occupy the bottom two value increases in the state, with value of home increasing by only 1 and 5 percent, respectively.

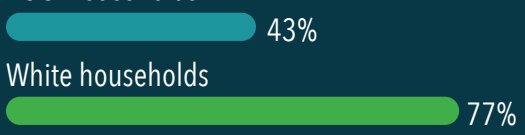
At 25,735 BIPOC households, the Southern region has the second largest population of households of color. Yet, only 43 percent of households of color own their homes in the region compared to a homeownership rate of 77 percent for white households. In 2019, the homeownership gap, or gap in ownership rates of white households and households of color in the region equated to 35 percent, a significantly higher gap than the national average of 24 percent.

TEN COUNTIES WHERE HOME VALUE INCREASES ARE LAGGING THE MOST

Freeborn*	-33%
Watonwan*	-24%
McLeod	-23%
Steele	-22%
Faribault*	-16%
Swift*	-14%
Sherburne	-13%
Mower*	-12%
Brown*	-11%
Dakota	-10%

*Southern Region

HOMEOWNERSHIP GAP IN THE SOUTHERN REGION



A Voice at the Table for Housing Justice: Rice County Neighbors United

Rice County Neighbors United began with four immigrant women who organized against poor housing conditions in their community -- Northfield, Minnesota. Mar Valdecantos was one of those women.

The group saw the need for an advocacy group for the immigrant and refugee communities after getting complaints of a very bad situation at a four-building apartment complex.

"Large immigrant and low-income communities in Northfield have been largely invisible for many years and suffer issues that are specific to them," says Mar. "Neighbors United and other groups in town work to bring visibility while empowering these communities."

After alerting the City of Northfield, the City Council and the Human Rights Commission, Northfield issued mandatory inspections and fumigation commenced. "Northfield issued the first temporary rental license in its history following the inspections," Mar says. "The issues [with that specific apartment building] continue and we are still working as a city to find long term solutions."

In addition to Neighbors United, Mar has been part of the Northfield Affordable Housing Task Force and Governor Dayton's Housing Task Force.

"I joined the Northfield Affordable Housing Task Force to have a voice at the table to represent the interests of a community that is usually voiceless: that of immigrants and especially undocumented immigrants," says Mar. "As part of the conversations we started an awareness campaign to show everybody how the community is different from what people think it is."

She adds, "Many people have no idea of the struggles of many community members nor the existence of really bad apartments or the two trailer parks, all located on the north side of town and tucked away from view."

> "Being present in conversations and creating groups to work on this, has been very important."

The Task Force is working in partnership with Carleton College to create maps of inequality in Northfield.

A Voice at the Table for Housing Justice: Rice County Neighbors United

"We live in segregated cities and Northfield is just one more example of that sad and avoidable reality," Mar said. "When George Floyd was murdered it was refreshing to hear Governor Walz acknowledge the homeowner gap and how Minnesota is a wonderful state if you are white. But it is failing many other communities in big ways which explains the gap in homeownership and the education gap as well."

The Task Force is also working on ownership for residents in manufactured home parks through Opportunity to Purchase. It is also working to hold negligent landlords accountable for the health and safety of their properties.

"The housing stock we have for a lot of people is aging and needs repairs," says Mar.

"For some people that don't feel they can voice their discontent for fear of retaliation or worse. The rundown apartments are the only choice."

Community organizing is helping improve life and housing in Northfield, however slowly. Folks from immigrant communities were recently elected into office. George Zuccolotto became a City Council Member, and Claudia Gonzalez-George became a school board member.

"Being present in conversations and creating groups to work on this, has been very important," Mar says.

Mar says that Neighbors United will continue to advocate for safe, healthy, affordable housing in Northfield.

Photo: An example of subsidized apartments utilized by immigrant communities in Northfield. Photo by Andy Birkey

Southern Region: Housing Stock

In the Southern region, both rental and owner housing is aging; the region ranks third out of the seven regions in the state for the highest percentage of housing built prior to 1970. In 2019, 46 percent of owners lived in a home built prior to 1970. That same year, there were 1,369 new permits issued for single family homes for construction, the third highest regional number in the state.

Rental housing in the Southern region is also aging. Forty-two percent of the rental housing stock was built prior to 1970. In Faribault, Freeborn, Martin and Mower Counties more than 58 percent of the rental housing stock was built prior to 1970, marking four of the seven counties with the highest percentage built before 1970.

In 2019, there were 954 new multifamily units permitted for construction in the region, the second highest amount after the Twin Cities region. Of the new multifamily permits issued in 2019 in the Southern region, 52 percent were located in Olmsted County.

In 2019, there were approximately 10,718 subsidized units in the Southern region, the second highest amount after the Twin Cities region.

COUNTIES WITH THE MOST RENTAL HOUSING BUILT BEFORE 1970

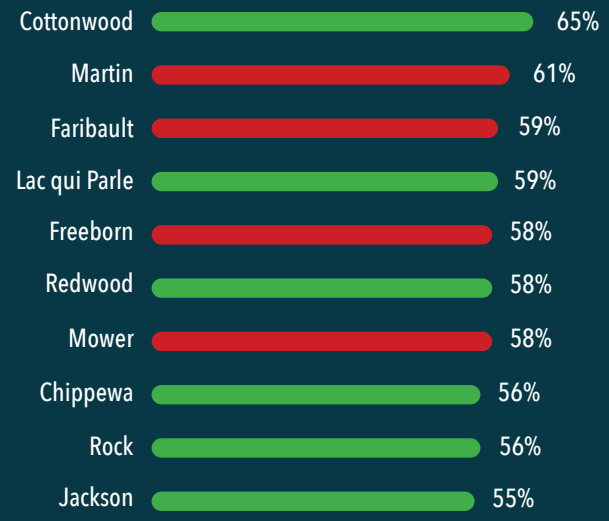


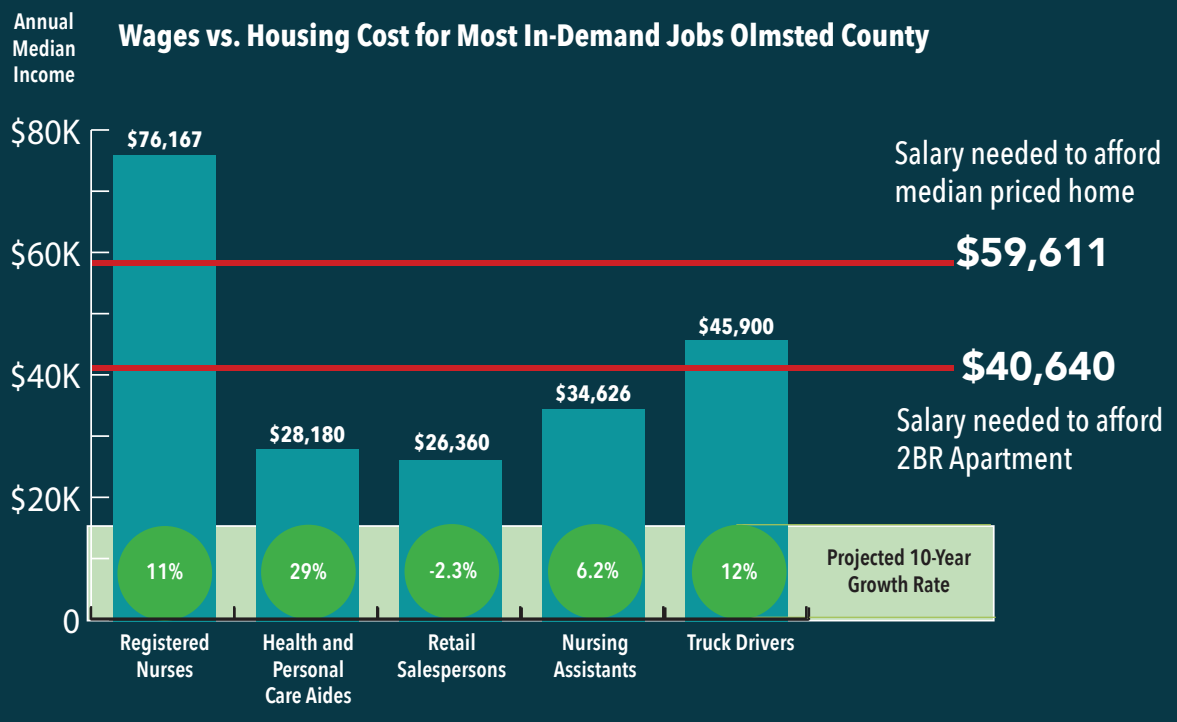
Photo: Subsidized apartments in Faribault by Andy Birkey

Southern Region: Housing Affordability

In the Southern region, median-income renter households can afford monthly rent ranging from $625 in Waseca County to $990 in Olmsted County.

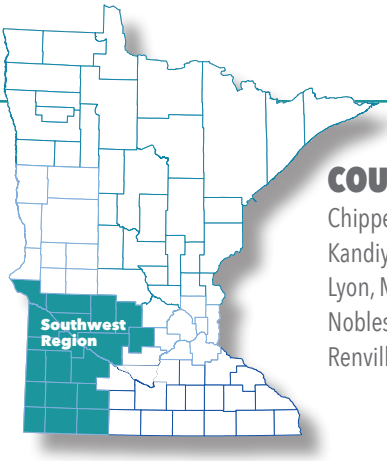
In 2020, the top five in-demand jobs in the region included registered nurses, home health and personal care aides, retail salespersons, nursing assistants and heavy and tractor-trailer truck drivers. Only registered nurses and truck drivers can afford 2-bedroom apartment, and only registered nurses can afford both a 2-bedroom apartment or a median value home. All other in-demand occupations — home health and personal care aides, retail salespersons, and nursing assistants cannot afford a home in the Southern Region without the risk of being cost burdened.

The median annual incomes for these top occupations range from $26,360 (retail salespersons) to $76,167 (registered nurses), meaning workers in these occupations can afford to spend a range of $659 to $1,904 on housing.



Southwest Region

The Southwest region includes 18 counties and approximately 113,421 total households, with 75 percent homeowners and 25 percent renter households. The largest regional centers are Worthington, Marshall, and Redwood Falls. Compared to other regions, the Southwest region has the lowest rates of both renter and owner cost burden in the state. However, the region has the oldest housing stock in the state for both owner and rental occupied units — which indicates the need for additional costs to upkeep the quality of housing for residents in the region.



COUNTIES: Big Stone, Chippewa, Cottonwood, Jackson, Kandiyohi, Lac qui Parle, Lincoln, Lyon, McLeod, Meeker, Murray, Nobles, Pipestone, Redwood, Renville, Rock, Swift, Yellow Medicine

Key Findings

The Southwest region has the lowest rate of renter cost burden in the state, with 35 percent of renters spending more than 30 percent of their income on housing – significantly below the state rate of 43 percent.

Overall, homes have a relatively low median value in the region, with five counties (Big Stone, Cottonwood, Lac qui Parle, Lincoln, and Pipestone) accounting for the lowest ranking values in the state.

The Southwest region has the highest percentage of aging owner-occupied homes in the state, with over half – 57 percent – in the region built prior to 1970. Aging owner-occupied housing is particularly severe in Big Stone, Chippewa, Cottonwood, Jackson, Lac qui Parle, Pipestone and Renville counties.

Photo: Redwood Falls licensed by MHP

Southwest Region: Rental Housing

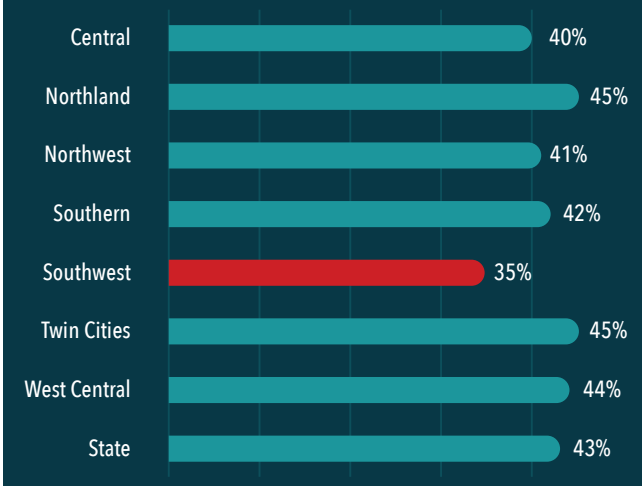
The Southwest region is home to 27,814 renter households, which account for 25 percent of households in the region. Chippewa County, Lyon County and Swift County have the highest percentage of renter households in the region at 33 and 30 percent respectively.

The Southwest region has the lowest rate of renter cost burden in the state, with 35 percent of renters spending more than 30 percent of their income on housing — significantly below the state rate of 43 percent. The region contains five of the top ten counties in Minnesota with the lowest renter cost burden: Cottonwood, Lac qui Parle, Murray, Nobles and Pipestone counties. In these counties, between 27 and 34 percent of renter households experience housing cost burden.

Rent trends vary significantly across the region. Big Stone, Cottonwood and Jackson saw some of the largest rent increases in the state since 2000, with Big Stone leading the state with a rent increase of 77 percent. Conversely, four counties in the region saw the lowest changes in rent; Chippewa, Lac qui Parle, Lyon and Murray saw minimal rent increases between 1 and 5 percent. Despite many counties seeing high increases in rent over the past twenty years, the region contains some of the most affordable gross rents in the state. Compared to all other regions in the state, the Southwest Region has the lowest rate of cost burden and severe cost burden at 35 and 16 percent, respectively.

In the Southwest region, there are approximately 7,550 renter households that are extremely low income, or earning less than 30 percent of area median income.

PERCENT OF COST-BURDENED RENTERS BY REGION



TEN COUNTIES WITH HIGHEST RENT INCREASE

Big Stone*	77%
Clay	39%
Cottonwood*	38%
Becker	36%
Marshall	36%
Lake of the Woods	36%
Clearwater	35%
Cass	35%
Jackson*	34%
Pennington	34%

*Southwest Region

Southwest Region: Homeownership

In the Southwest Region there are approximately 85,607 owner households which account for 75 percent of the region's total households. Big Stone, Lincoln, and Pipestone Counties have seen significant increases in owner income since 2000, increasing from 29 percent to 19 percent. These three counties mark three of the top 10 largest increases in the state. However, these three counties remain in the bottom quartile for current owner income, and median owner income in the Southwest region remains relatively low compared to other regions.

Overall, homes have a relatively low median value in the region, with five counties (Big Stone, Cottonwood, Lac qui Parle, Lincoln, and Pipestone) accounting for the lowest ranking values in the state. Additionally, Swift, Lac qui Parle, and Chippewa Counties have been in the bottom ten percent median home value increases since 2000, which may be indicative of needed rehabilitation in aging owner occupied homes.

In 2019, 16 percent — or 14,072 owner households — in the Southwest region pay more than 30 percent on housing, and 5,133 pay over half of their income on housing. In 2000, 10 percent of owners were cost burdened, indicating a six percent increase.

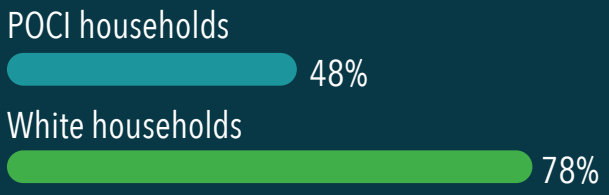
In the Southwest region, 78 percent of white households are homeowners while only 48 percent of households of color own their homes.

TEN COUNTIES WITH LOWEST HOME VALUES

Traverse	$81,400
Kittson	$84,200
Lac qui Parle*	$88,600
Faribault	$89,500
Cottonwood*	$94,200
Watonwan	$96,900
Pipestone*	$97,500
Big Stone*	$97,900
Norman	$100,700
Lincoln*	$103,100

*Southwest Region

HOMEOWNERSHIP GAP IN THE SOUTHWEST REGION



Southwest Region: Housing Stock

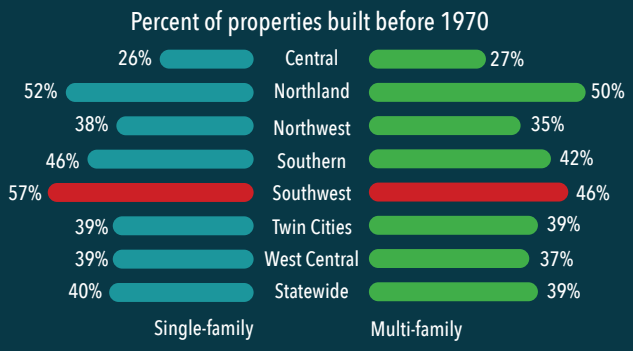
The Southwest region has the highest percentage of aging owner-occupied homes in the state, with over half — 57 percent — in the region built prior to 1970. Aging owner-occupied housing is particularly severe in Big Stone, Chippewa, Cottonwood, Jackson, Lac qui Parle, Pipestone and Renville counties, which rank in the top ten for the largest share of owner-occupied housing built before 1970 in the state. In these counties, over 66 percent of all owner homes were built prior to 1970.

In 2019, 350 new single family homes were permitted for construction in the Southwest Region, accounting for just 3 percent of single family home permits issued statewide that year.

In the region, 46 percent of rental units were built before 1970, meaning that the Southwest region has the second-highest proportion of rental housing built before 1970, after the Northland Region. Despite this, only 197 multi-family units were permitted for development in 2019, accounting for just 1 percent of all new multi-family permits issued in the state.

The Southwest region contained 4,682 subsidized units in 2019, the third lowest amount regionally in the state.

PERCENT OF PROPERTIES BUILT BEFORE 1970



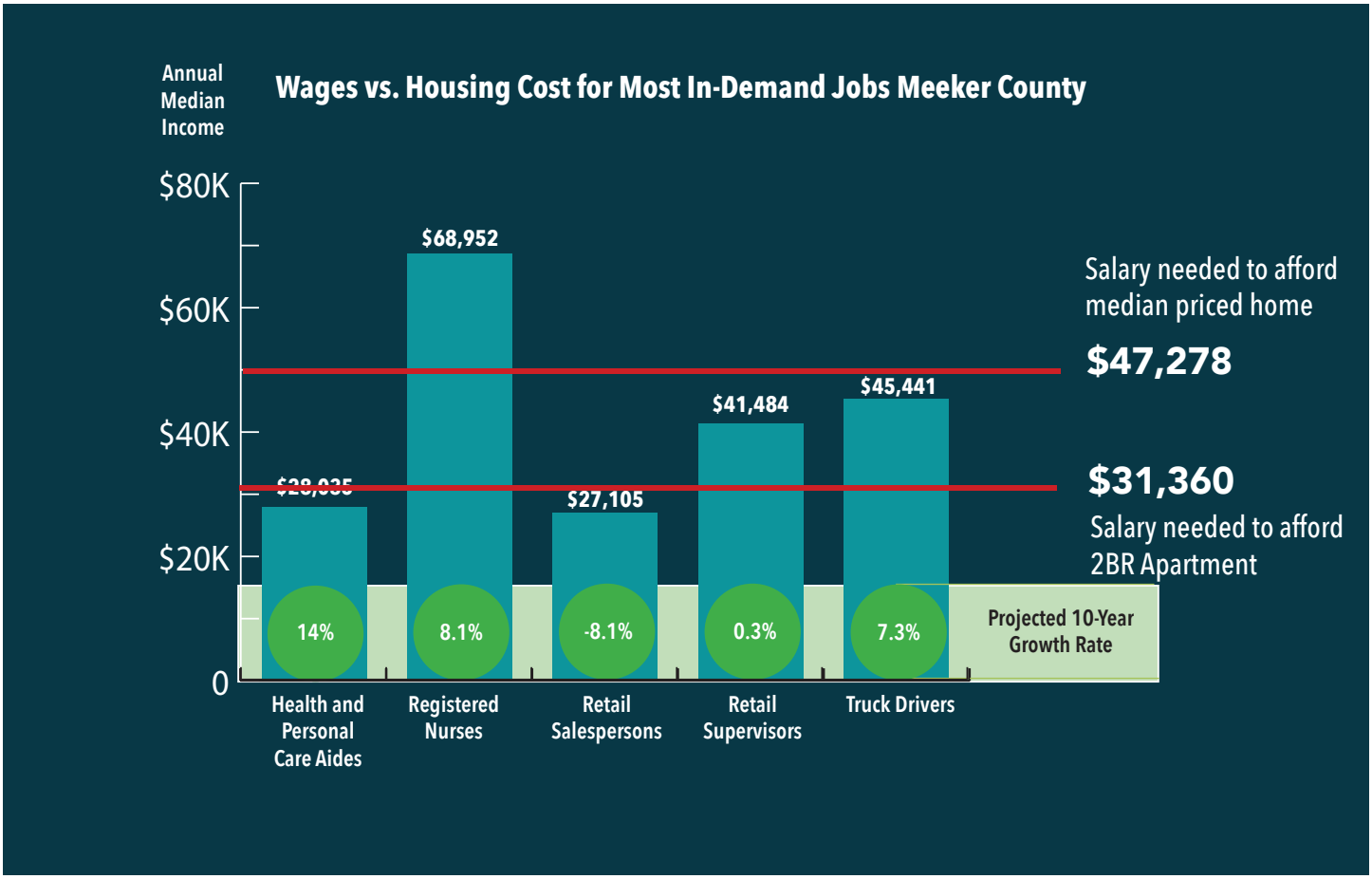
MULTI-FAMILY PERMITS BY REGION

Central	614
Northland	479
Northwest	116
Southern	954
Southwest	197
Twin Cities	12,342
West Central	175
State	14,877

Southwest Region: Housing Affordability

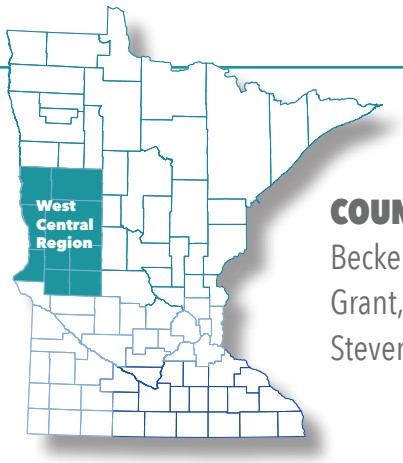
In the Southwest Region, the top five in-demand jobs are home health and personal care aides, registered nurses, retail salespersons, first-line supervisors of retail salespersons, and heavy and tractor-trailer truck drivers. The annual median income of these occupations ranges from $27,105 (retail salespersons) to $68,952 (registered nurses), leaving a range of $678 to $1724 for these positions to spend on housing each month without exceeding 30 percent of their income.

The income needed for homeownership exceeds the annual earning income for two (home health and personal care aides and retail salespersons) of the five top in-demand occupations in the majority of counties in the region. Of the five top in-demand occupations, only registered nurses are able to afford homeownership in all counties in the region.



West Central Region

The West Central region borders both North and South Dakota. It is comprised of nine counties including the Fargo-Moorhead Metropolitan Statistical Area (MSA) and the White Earth reservation. The region includes more than 94,970 total households, 74 percent of which are homeowners and 26 percent of which are renters. One of the most pressing housing issues in the West Central region is severe renter cost burden, which impacts the highest proportion of renters of any region in the state, at 23 percent.



COUNTIES:
Becker, Clay, Douglas, Grant, Otter Tail, Pope, Stevens, Traverse, Wilkin

Key Findings

Renter cost burden has increased the fastest in the West Central region compared to all others in the state, increasing by 37 percent since 2000.

The region has seen steady growth in owner income throughout almost all counties, with eight out of nine counties seeing a 15 to 20 percent increase. However, owner incomes remain moderate in comparison to other regions in the state.

Renter income has increased in the majority of counties in the region, growing as much as 28 percent in Clay and Traverse County and 30 percent in Douglas County since 2000. However, median renter income in the region, which ranges from $25,179 (Stevens County) to $36,319 (Douglas County) remains well below the state average of $39,637.

Photo: Lakehomes in Detroit Lakes licensed to MHP

West Central Region: Rental Housing

The West Central region is home to 24,289 renter households. Of these households, more than half (55 percent) live in either Clay County or Otter Tail County, which are a part of and adjacent to the Fargo-Moorhead MSA.

Forty-four percent, or 10,630 renter households, pay more than they can afford on housing. Clay County sees some of the most pervasive cost burden in the state with 55 percent of renters paying more than they can afford on rent, the second highest rate in the state. Stevens County and Wilkin County also rank in the top ten percent for cost burden, at 52 and 50 percent, respectively.

Additionally, the region has the highest percentage of severe renter cost burden in the state, or renters who are paying more than half of their income on housing. Stevens and Clay counties — which have the highest percentage of renters in the region — rank first and second in the state for the highest rates of severe renter cost burden. In Stevens and Clay counties, 33 percent and 28 percent of renter households pay over half of their income on housing.

Renter cost burden has increased the fastest in the West Central region compared to all others in the state, increasing by 37 percent since 2000.

Renter income has increased in the majority of counties in the region, growing as much as 28 percent in Clay and Traverse County and 30 percent in Douglas County since 2000. However, median renter income in the region, which ranges from $25,179 (Stevens County) to $36,319 (Douglas County), remains well below the state average of $39,637. Stevens County has the third lowest current median renter income in the state.

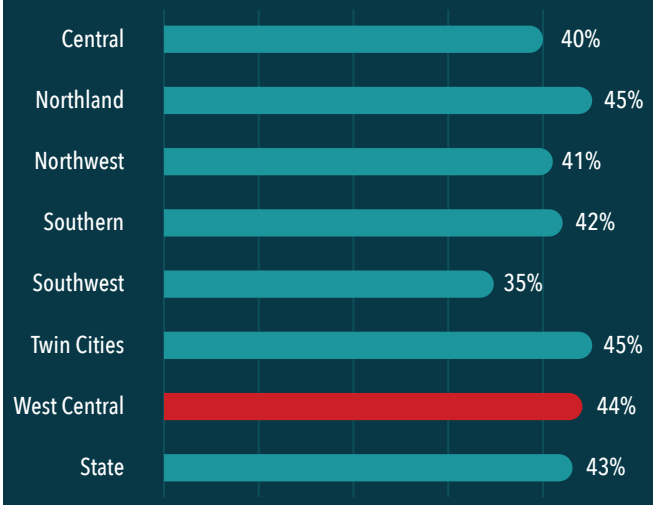
The West Central region contains 7,185 extremely low-income renter households that earn 30 percent of area median income or less, yet there are only 2,904 units that are affordable and available to renters of that income bracket.

TEN COUNTIES WITH THE HIGHEST RENTER COST BURDEN

Waseca	56%
Clay*	55%
Koochiching	55%
Itasca	52%
Beltrami	52%
Stevens*	52%
Blue Earth	52%
St. Louis	50%
Wilkin*	50%
Clearwater	50%

*West Central Region

PERCENT OF COST-BURDENED RENTERS BY REGION



West Central Region: Homeownership

There are 70,685 owner households in the West Central Region, accounting for 74 percent of all households. The region has seen steady growth in owner income throughout almost all counties, with eight out of nine counties seeing a 15 to 20 percent increase. However, owner incomes remain moderate in comparison to other regions in the state.

Owner cost burden varies across the region, with Stevens and Wilkin counties ranking among counties with the lowest owner cost burden in the state (13 and 14 percent, respectively). In contrast, Becker County has the eighth highest owner cost burden in the state at 22 percent.

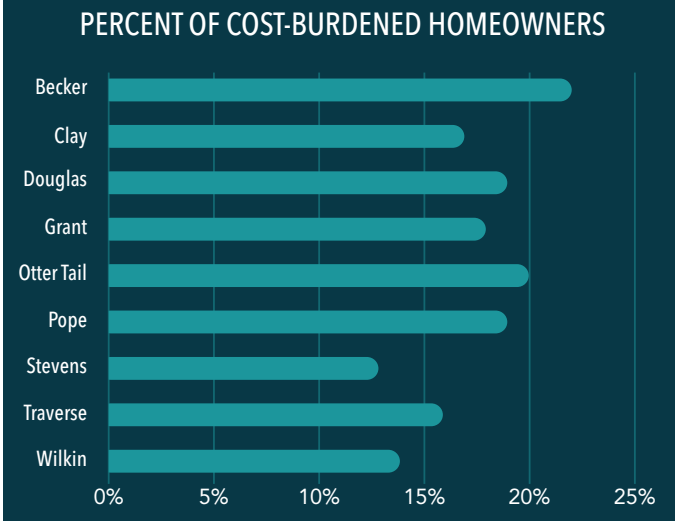


Photo: Alexandria licensed to MHP

Reducing Homelessness in Families with Children in West Central Minnesota

"How can we work together to try and identify an end to child and family homelessness in the region and put a strategy in place?" recalls Dara A. Lee, executive director of Clay County Housing and Redevelopment Authority.

In the West Central Region, that question helped spur the creation of a 45-member collaborative that is working to bring housing stability to children and families through a program called Homework Starts with Home. The collaboration spans churches, schools, and service organizations throughout West Central Minnesota.

"There's never enough funding to do what you need to do," Lee says.

"Housing is the foundation for everything we do. Without it, our kids and families don't have a strong foundation."

Fortunately, a successful pilot project got much needed funding and the collaboration was able to take off. The original partners were the Clay County HRA, Moorhead Public Schools, Lakes & Prairies Community Action Partnership, and Churches United for the Homeless. From those 4 it grew to 40 in 2018. In 2021, the collaborative has 45 entities.

The collaboration hopes to end child and family homelessness in the region by 2023 (The region has already had some success ending veterans homelessness).

The region has cut the number of homeless families with children in half. The area had about 200 homeless families with children. By January 2021, that number was down to 62 in Clay County with another 28 in the surrounding 9-county region.

"Housing is the foundation for everything we do. Without it, our kids and families don't have a strong foundation. It's traumatic when students see that their friend and their friend's family don't have a safe place to sleep. Housing benefits the entire community."

According to the Minnesota Department of Education, homelessness disproportionally impacts certain populations, such as African American students, American Indian students, students with disabilities, and lesbian, gay, bisexual, transgender, or questioning/queer (LGBTQ) young people.

There's a system of support set up through Homework Starts with Home. It is administered by Minnesota Housing and uses funding from two sources: the Family Homelessness Prevention and Assistance Program (FHPAP) and the Housing

Reducing Homelessness in Families with Children in West Central Minnesota

Trust Fund (HTF) rental assistance program.

Schools in the collaboration have liaisons that identify families that are homeless and they work with providers, mainly at Community Action Partnerships to get those families set up in the Coordinated Entry system.

The families get support for rent payments, usually they pay 30 percent of their income and the collaboration pays the rest. Health care, nutrition and other mainstream needs are assessed and met. Churches and other faith-based organizations address unique needs not covered by other support.

"People need help getting their kids enrolled in school. They need rent assistance, and help with employment and job search, but after that they like us to back off and get out of their lives," says Lee.

If the families need more support down the road, the collaborative is there to help.

Photo: Moorhead. Fargo-Moorhead CVB. Used under Creative Commons License Attribution 2.0 Generic.

West Central Region: Housing Stock

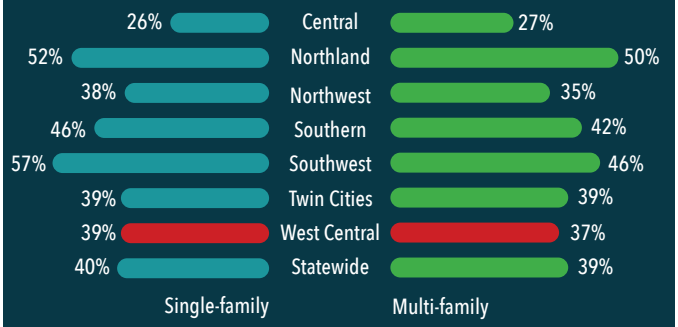
In the West Central Region, 37 percent of rental housing was built prior to 1970, slightly below the statewide average of 39 percent.

In 2019, just 175 permits were issued for multi-family housing development in the West Central Region, marking the lowest amount of multi-family issues permitted after the Northwest Region. In total, new multi-family permits in West Central accounted for 1 percent of the total multi-family permits issued in the state that year.

Meanwhile, 693 single-family permits were issued in 2019 — up slightly from 637 in 2017. The majority of these permits were issued for development in Becker (30 percent), Clay (27 percent), and Douglas (26 percent) counties. In the West Central Region, 39 percent of owner occupied housing was built prior to 1970.

In 2019, there were approximately 4,024 subsidized units in the region.

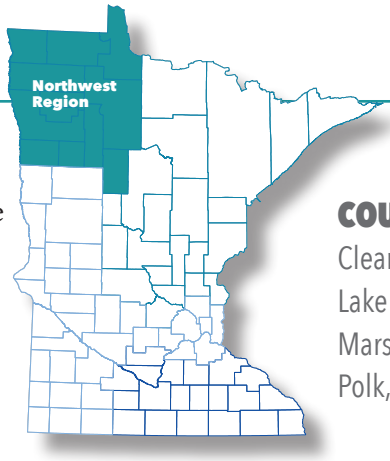
PERCENT OF PROPERTIES BUILT BEFORE 1970



MULTI-FAMILY PERMITS BY REGION

Central	614
Northland	479
Northwest	116
Southern	954
Southwest	197
Twin Cities	12,342
West Central	175
State	14,877

Northwest Region



The Northwest region includes 12 counties, and contains the metropolitan area of Grand Forks and the Red Lake, White Earth and Leech Lake reservations. The region includes roughly 67,680 households, making it the least populated region of the state by more than 27,280 households.

COUNTIES: Beltrami, Clearwater, Hubbard, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake, Roseau

Key Findings

The percentage of cost-burdened renters, or renters spending more than 30 percent of their income on housing, grew from 33 percent of households in 2000 to 41 percent in 2019.

Lake of the Woods and Pennington counties have seen the highest increases in home value in the state since 2000, at 74 and 73 percent respectively.

Just 204 new single family homes were permitted for construction in 2019 – the lowest amount of any region in the state.

Photo: Angle Islet neighborhood in Lake of the Woods County. I. Stephen Conn. Used under Creative Commons License Attribution 2.0 Generic.

Northwest Region Spotlight: Red River Valley Habitat for Humanity

Since 1987, the Red River Valley Habitat for Humanity has built dozens of homes in the Grand Forks and East Grand Forks regional area.

"We recently refurbished and sold a 5-bedroom home to a single mother with 4 kids who moved in on February 1st of this year," says Marisa Sauceda, Executive Director of the Red River Valley Habitat for Humanity. "No longer having to worry about unsafe or unaffordable housing, her confidence has noticeably improved from the time she applied for our program to one month after purchasing and moving into her new Habitat house."

The Red River Valley is home to some affordable homes, but those homes are too often dilapidated or unsafe. For example, in Norman County, 61 percent of single-family homes were built before 1970.

"Building or purchasing newly updated homes can be unaffordable for low-income households and present a challenge to those families looking to take the next step from renting to homeownership," Marisa notes.

The Northwest Minnesota affiliate of the international non-governmental organization is already getting a start on it's next project. It's for a single mother with two children and the project has already acquired full funding thanks to the Engelstad Foundation. While funding is secured, the chapter is always looking for volunteers to help build these homes.

"We build houses using donated materials and volunteer labor to keep construction costs low and are then able to sell the homes to selected partner families at an affordable price below market value," Marisa says. "We emphasize long-term homeownership as a way to build wealth and provide better economic opportunities for the family's children."

The organization has also refreshed its programming and have developed a new 5-year strategic plan (available at www.rrvhabitat.org).

The COVID-19 pandemic and economic fallout have made even assessing the short and long-term impacts on housing in the area difficult, Marisa says. But the area is in need of affordable housing options, and the will to create them.

"Community support for housing includes voting for policies that support access to affordable housing and voting against policies that may reduce the accessibility to housing for some groups," says Marisa. "And volunteering with non-profits and organizations that run housing programs, making monetary contributions to the same organizations, and advocating for affordable housing to other community members."

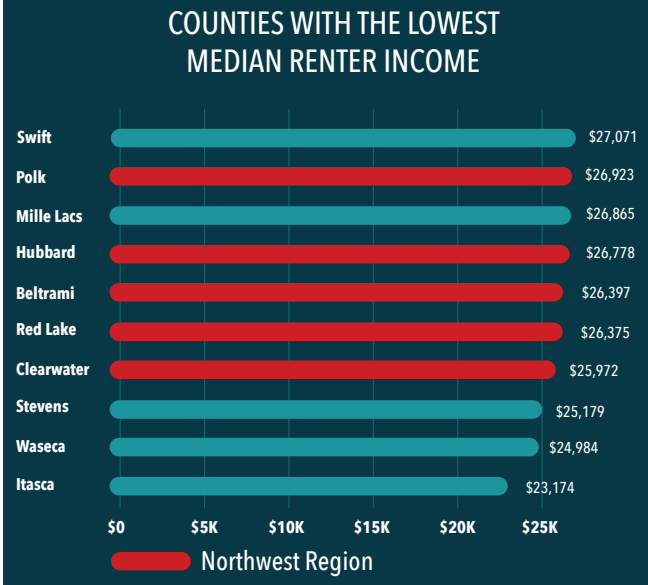
Northwest Region: Rental Housing

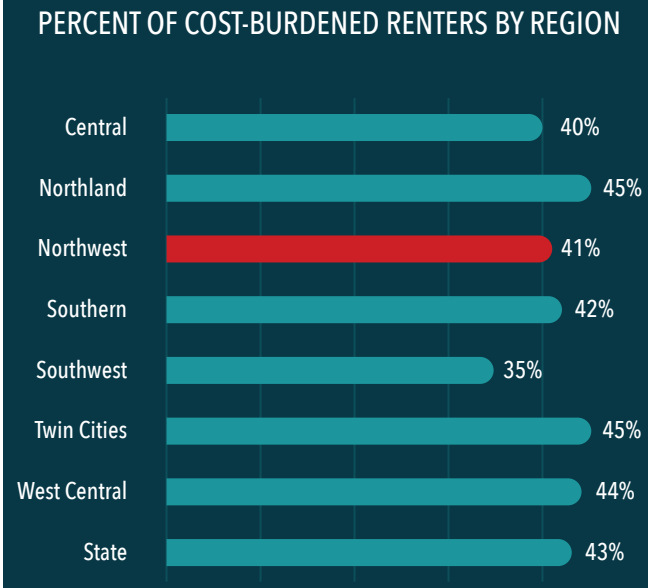
The Northwest region contains 16,856 renter households, constituting the smallest renter population of any region in the state. Renters make up a quarter of the total households, the majority of which reside in Beltrami County, where the city of Bemidji is located, or Polk County, which is included in the Grand Forks metro area. Beltrami and Mahnomen counties contain the highest percentage of renter households, at 33 and 32 percent respectively.

Trends in renter income have differed across the region. Five counties have among the lowest current renter incomes in the state; Clearwater, Red Lake, Beltrami, Hubbard and Polk counties have median renter incomes that range from $25,972 to $26,923. Renter income has fallen in six counties since 2000, with Norman and Roseau seeing some of the steepest declines in the state. Renter income fell by 12 and 11 percent in those counties. Conversely, Lake of the Woods and Marshall counties saw the second and fourth largest gains in renter income in the state, growing by 46 percent and 31 percent respectively. The majority of counties saw a decline in income.

Median rent remains modest in most counties in the region; three counties in the region (Mahnomen, Norman and Red Lake) are among the 10 counties with the lowest rent in the state. However, four counties have seen some of the highest increases in rent since 2000; Clearwater, Lake of the Woods, Marshall and Pennington have seen rent increases from 34 to 36 percent since 2000.

The percentage of cost-burdened renters, or renters spending more than 30 percent of their income on housing, grew from 33 percent of households in 2000 to 41 percent in 2019. In the region there are approximately 5,100 extremely low-income renter households that earn less than 30 percent of area median income, yet there are only 2,569 units that are affordable and available to renters in that income bracket.





Northwest Region: Homeownership

In the Northwest region, there are approximately 50,830 owner households in the region, accounting for 75 percent of all households.

While some counties in the region — Red Lake, Kittson, Marshall and Polk — have seen some of the highest increases in median owner income, overall owner income remains relatively low. These counties saw owner income increase from 19 to 28 percent. Meanwhile, five counties — Beltrami, Clearwater, Hubbard, Polk and Red Lake — rank in the lowest ten of counties for current median owner income in the state.

In the region, median value homes currently range from $84,200 in Kittson County to $193,600 in Hubbard County. Since 2000, the median home value has increased from 14 percent in Mahnomen County to 74 percent in Lake of the Woods County. Lake of the Woods and Pennington counties have seen the highest increases in home value in the state since 2000, at 74 and 73 percent respectively. Red Lake and Polk counties also saw increases of 61 and 53 percent, respectively, placing them in the top ten counties with the highest growth in home value.

COUNTIES WITH THE HIGHEST INCREASE IN HOME VALUES

Lake of the Woods*	74%
Pennington*	73%
Red Lake*	61%
Becker	59%
Clay	58%
Lake	56%
Polk*	53%
Stevens	52%
Cook	51%
Otter Tail	51%

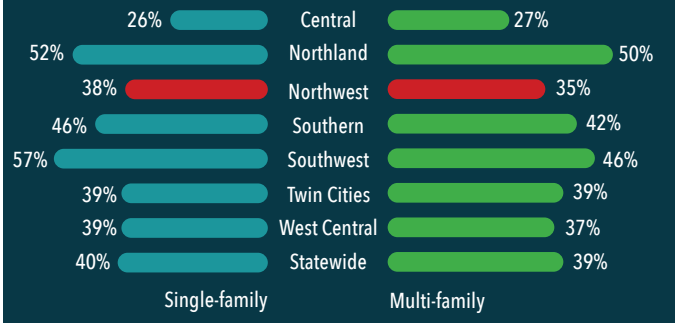
*Northwest Region

Northwest Region: Housing Stock

In the Northwest region, 38 percent of owner occupied housing was built prior to 1970, with the highest percentage of owner housing built before 1970 in Norman (61 percent) and Kittson (56 percent) counties. Just 204 new single-family homes were permitted for construction in 2019 — the lowest amount of any region in the state.

Thirty-five percent of rental units in the region were built prior to 1970. In 2019, only 116 new multi-family units were permitted for construction — the lowest amount of new multifamily permits issued in the state. Of these units, over half (53 percent) were in Beltrami County. Nine of the 12 counties in the Northwest Region saw no new permits issued for development of multi-family units. The region also contains the fewest units of subsidized housing of any region, with just 3,275 units in 2019.

PERCENT OF PROPERTIES BUILT BEFORE 1970



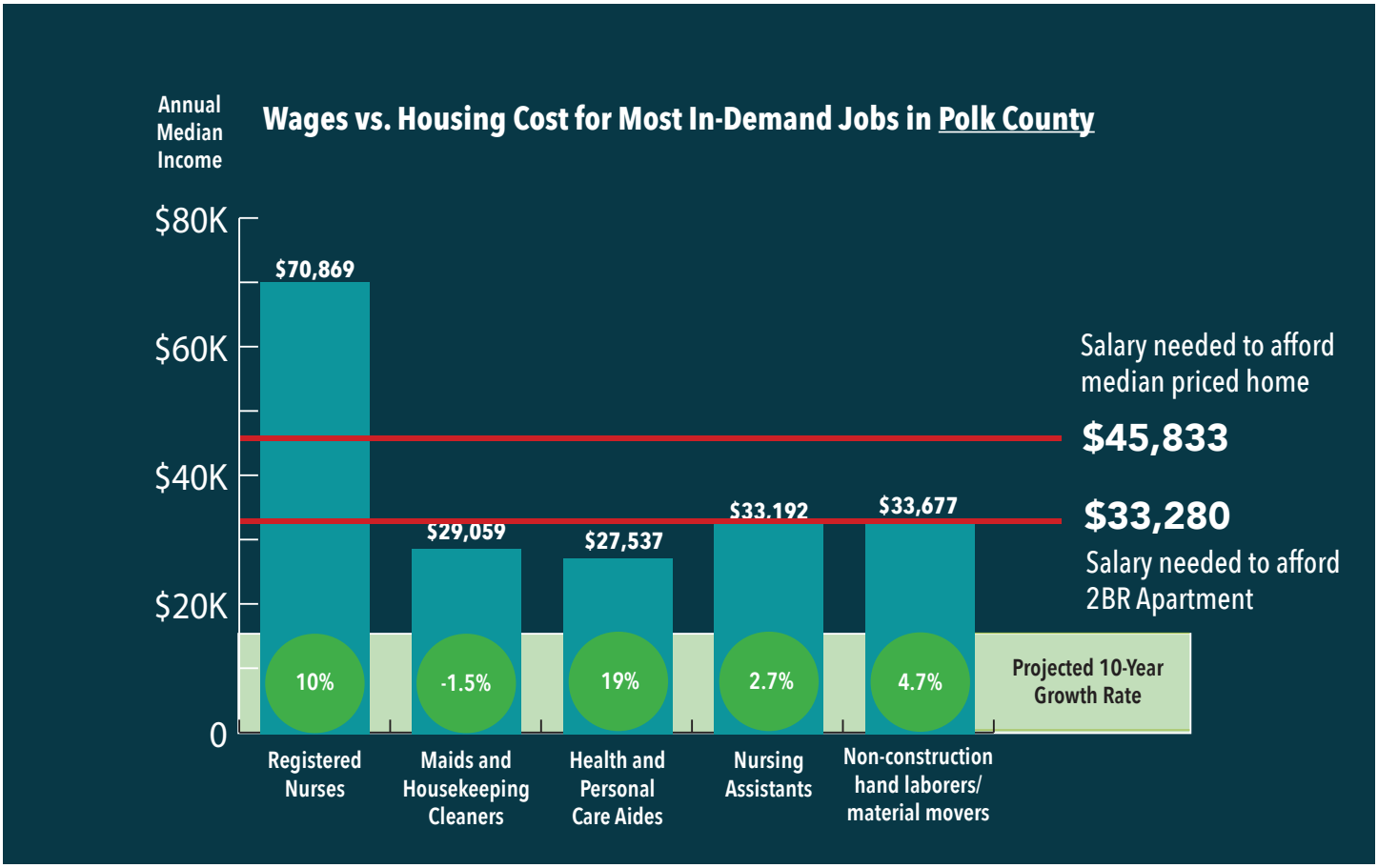
MULTI-FAMILY PERMITS BY REGION

Central	614
Northland	479
Northwest	116
Southern	954
Southwest	197
Twin Cities	12,342
West Central	175
State	14,877

Northwest Region: Housing Affordability

In the Northwest region, the median renter household earned a total monthly income of $2,164 in Clearwater County to $2,982 in Marshall County. With that income, households can spend just $649 to $895 per month on housing without exceeding 30 percent of their income.

In the Northwest region, the top five in-demand jobs in 2020 were registered nurses, maids and housekeeping cleaners, home health and personal care aides, nursing assistants and laborers, freight, stock and material movers. For four of the top in demand jobs — maids and housekeeping cleaners, home health and personal care aides, nursing assistants and laborers, freight, stock and material movers — median annual income ranges from $27,537 to $33,677, leaving these workers just $688 to $842 per month to spend on housing.



Northland Region

The Northland region is located in the northeast area of the state. It is comprised of seven counties, and includes the Duluth Metropolitan Statistical Area (MSA) and three Native American reservations (Bois Forte, Fond du Lac, and Grand Portage).

COUNTIES:
Aitkin, Carlton, Cook, Itasca, Koochiching, Lake, St. Louis

Key Findings

The Northland region contains the highest percentage of cost-burdened renters in the state, with 45 percent or 15,802 renter households spending more than 30 percent of their income on housing.

The region has one of the highest rates of renter households paying over half of their income on rent; an estimated 23 percent, 8,014 renter households, are severely cost burdened.

The Northland Region has some of the oldest housing stock in the state. By 2019, 52 percent of all owner occupied homes were built before 1970.

Photo: Hillside of Duluth licensed to MHP

Northland Region: Rental Housing

The Northland region contains 35,132 renter households, accounting for a quarter of total households in the region. Seventy percent of the region's renters reside in Saint Louis County where the city of Duluth is located.

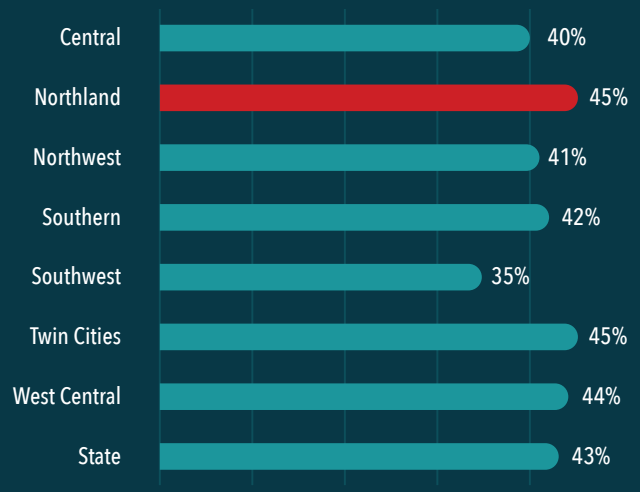
The Northland region contains the highest percentage of cost-burdened renters in the state, with 45 percent or 15,802 renter households spending more than 30 percent of their income on housing. The region has one of the highest rates of renter households paying over half of their income on rent; an estimated 23 percent, or 8,014 renter households, are severely cost burdened.

Three counties in the region see some of the highest rates of renter cost burden in the state: Itasca, Koochiching and St. Louis Counties rank 84, 85 and 80, respectively, for the highest rates of renter cost burden (52 percent, 55 percent and 50 percent of renters spend more than 30 percent of their income on housing, respectively). Additionally, four counties rank worst for severe renter cost burden (Aitkin, Itasca, Koochiching and St Louis) where at least a quarter of renters are paying over half of their income on housing. In Itasca County, 30 percent of renters are severely cost burdened.

Renter income has fallen in two counties — Cook and Itasca — since 2000, with Itasca County ranking lowest in the state for current renter median income. Conversely, Lake County has seen the most significant increase in renter income in the state, jumping by 51 percent, to rank in the top ten for median renter income. In the region, 32 percent of renter households earn less than $20,000 annually, meaning these families have no more than $500 per month to spend on housing without exceeding 30 percent of their annual income. There isn't a single county in the Northland region where $500 is enough to afford a modest one-bedroom apartment. Additionally, over half of all renters (54 percent) earn under $35,000 annually, and 72 percent of these renters are cost burdened.

The Northland Region is home to 10,610 renter households that are extremely low income or earn less than 30 percent of area median income, yet contains just 4,869 that were affordable and available to renters in this income bracket.

PERCENT OF COST-BURDENED RENTERS BY REGION



TEN COUNTIES WITH HIGHEST SEVERE COST BURDEN AMONG RENTERS

Stevens	13%
Clay	12%
Itasca*	11%
Waseca	10%
Beltrami	10%
Rice	10%
Koochiching*	9%
Roseau	9%
Winona	8%
Aitkin*	8%

*Northland Region

Northland Region: Homeownership

Owner income has increased minimally since 2000 in the region, even declining in Koochiching County by 1 percent. Atikin and Carlton saw the highest increases with 9 percent increases in owner income. However, Aitkin ranks at the very lowest in the state for owner income, which is presently at $53,789. In total, 19,492 households — or 19 percent of owners — in the Northland region pay more than 30 percent of their income on housing, and 6,939 pay over half of their income on housing. Cook and Aitkin counties rank in the top five percent for counties with the most owner cost burden; in these counties over a quarter of owners are cost burdened. In 2000, 10 percent of owners were cost burdened in the region, indicating a nine percent increase in cost burden overall.

The Northland region has seen significant increases in median home value since 2000, with 71 percent of counties seeing increases of more than 40 percent in home value. Cook and Lake counties rank in the top 10 for increase in median home value, seeing a 51 and 56 percent increase, respectively. These two counties saw median value homes increase, after adjusting for inflation, by $81,444 and $62,812 on average.

CHANGE IN OWNER INCOME IN THE NORTHLAND

Cook	4%
Lake	1%
Carlton	9%
Saint Louis	8%
Koochiching	-1%
Aitkin	9%
Itasca	6%
State	6%

Photo: Grand Marais. Licensed to MHP

Northland Region: Housing Stock

The Northland Region has some of the oldest housing stock in the state. By 2019, 52 percent of all owner occupied homes were built before 1970. Saint Louis County has the highest proportion of aging owner housing in the region, with 36,961, or 60 percent, of owner homes built prior to 1970. In 2019, 782 new permits were issued for single family homes in the region — down from 832 single family units permitted two years prior.

In the Northland region, half -- 50 percent-- of rental units were built before 1970, making the Northland the highest in the state with a proportion of rental housing built before 1970. In Saint Louis County, 13,411 or 54 percent of rental units were built prior to 1970. Despite this, only 479 multi-family units were permitted in the region for development in 2019, accounting for just 3 percent of all new multi-family permits issued in the state.

In the Northland, there are approximately 8,259 subsidized units, accounting for approximately 9 percent of subsidized units in the state.

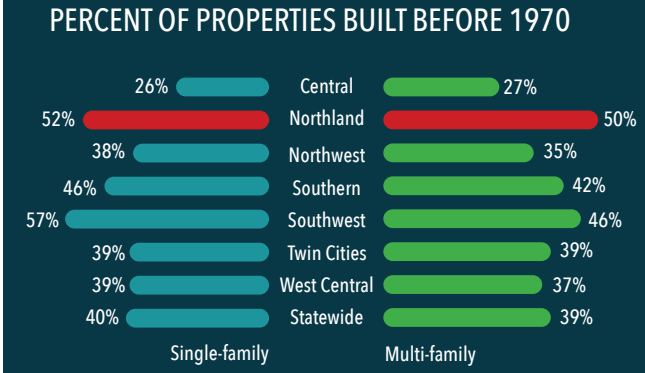


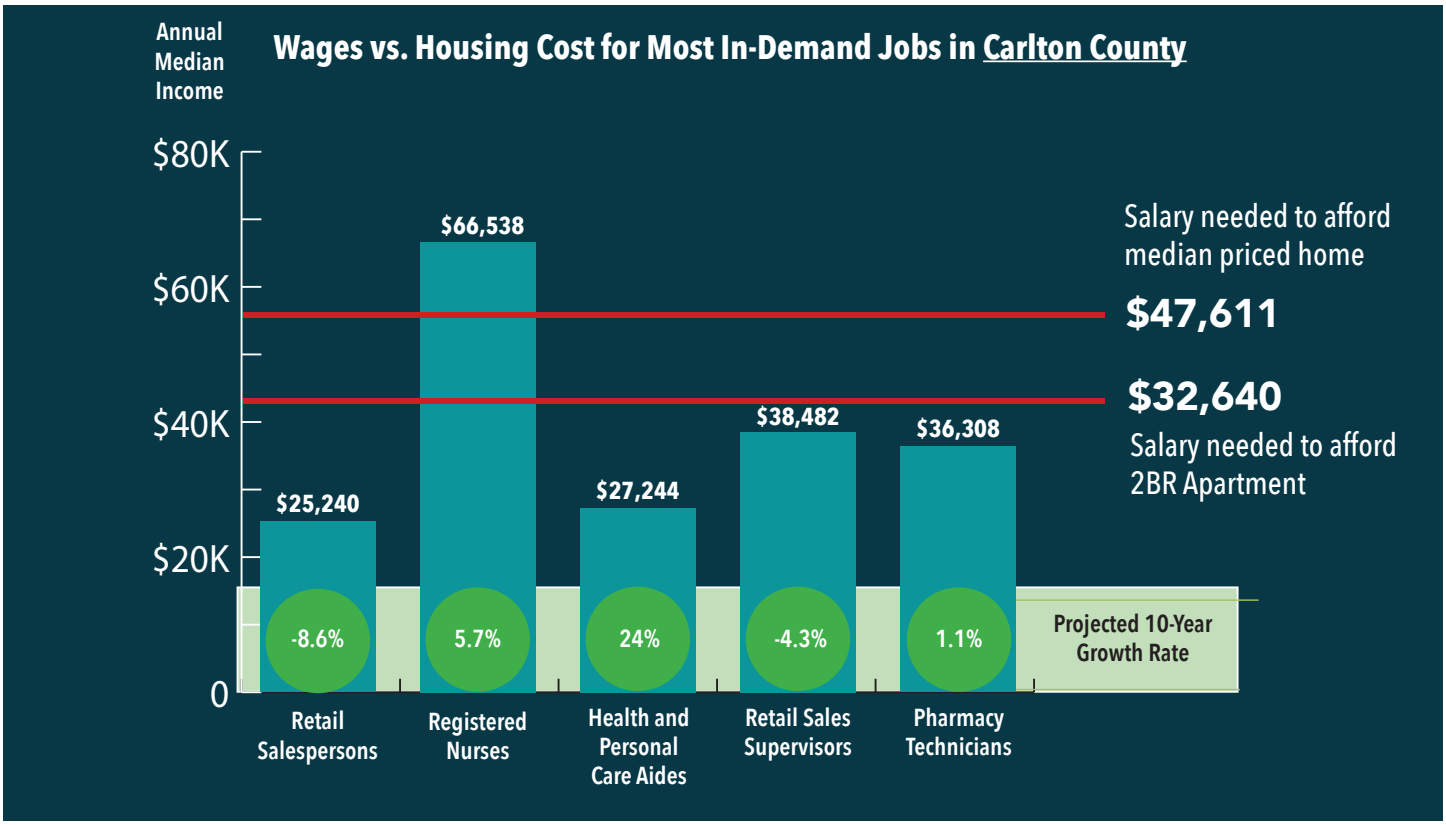
Photo: The heart of Iron Range city of Bovey. Licensed to MHP

Northland Region: Housing Affordability

In the Northland region, median gross rent ranges from $651 in Cook County to $776 in Carlton County. Yet, renters earning median income in the region are only able to afford from $579 in Itasca County to $1,059 in Cook County. In Aitkin, Itasca and St. Louis counties, the median income renter would need to earn $67 to $117 more per month to afford median rent.

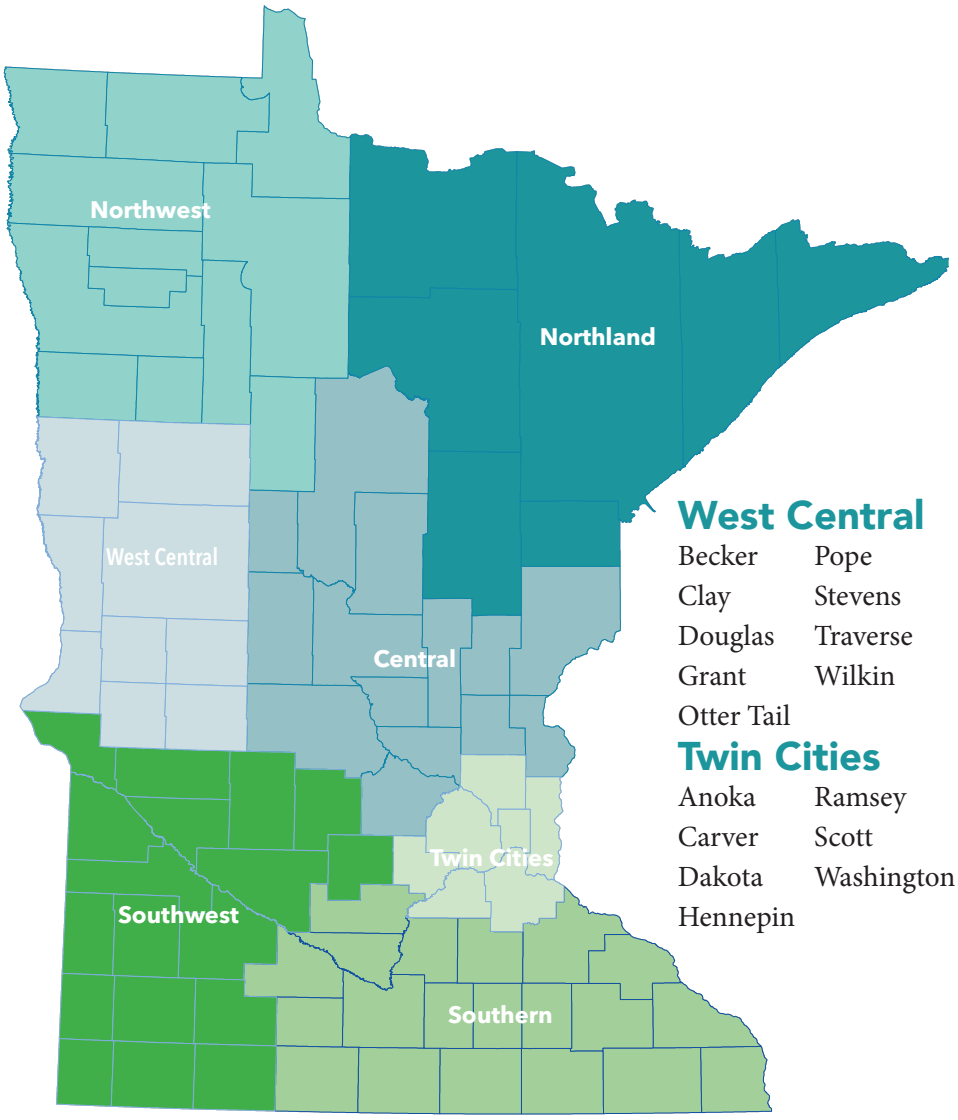
In 2020, the top five in-demand occupations in the Northland region included retail salespersons, registered nurses, home health and personal care aides, first-line supervisors of retail salespersons and pharmacy technicians. These in-demand occupations earn median annual salaries from $25,240 to $66,583 leaving these positions a range of $631 to $1,665 to spend on rent without exceeding 30% of their income. Of these top five jobs, significant growth is anticipated in the next ten years among home health and personal care aides (24 percent), and registered nurses (6 percent).

The salary needed for homeownership consistently exceeds the incomes of four of the five top in-demand occupations. To own a median-value home in the region, an income range from $30,111 (Koochiching County) to $66,694 (Cook County) is needed. Of the top occupations, only registered nurses are able to afford homeownership in all but one county in the region (Cook County).



Maps and Rankings

Regions based on the delineations used by the Minnesota Housing Finance Authority



Northland
Aitkin
Carlton
Cook
Itasca
Koochiching
Lake
St. Louis

Northwest
Beltrami
Clearwater
Hubbard
Kittson
Lake of the Woods
Mahnomen
Marshall
Norman
Pennington
Polk
Red Lake
Roseau

West Central
Becker
Clay
Douglas
Grant
Otter Tail
Pope
Stevens
Traverse
Wilkin

Central
Benton
Cass
Chisago
Crow Wing
Isanti
Kanabec
Mille Lacs
Morrison
Pine
Sherburne
Stearns
Todd
Wadena
Wright

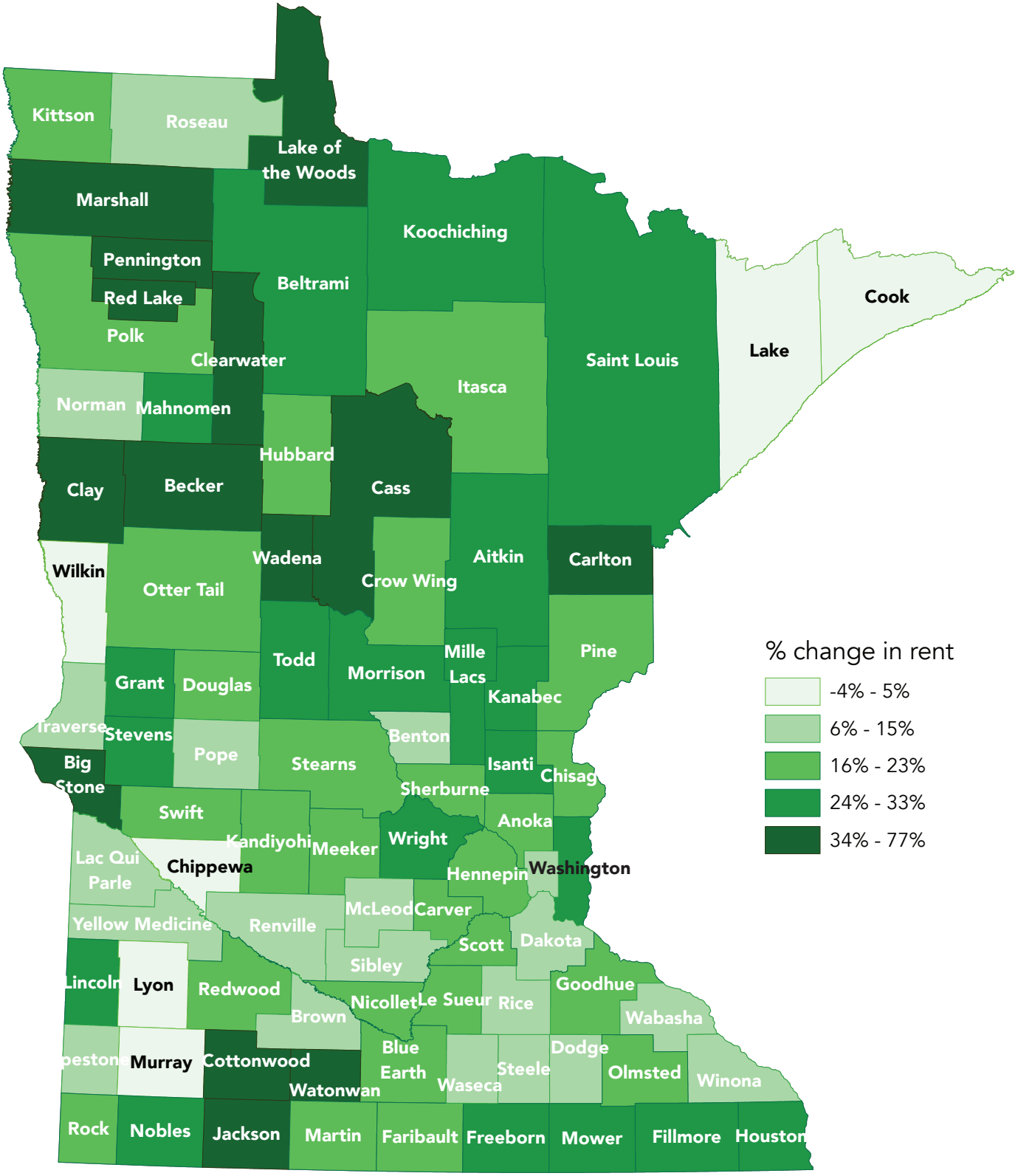
Twin Cities
Anoka
Carver
Dakota
Hennepin
Ramsey
Scott
Washington

Southwest
Big Stone
Chippewa
Cottonwood
Jackson
Kandiyohi
Lac qui Parle
Lincoln
Lyon
McLeod
Meeker
Murray
Nobles
Pipestone
Redwood
Renville
Rock
Swift
Yellow Medicine

Southern
Blue Earth
Brown
Dodge
Faribault
Fillmore
Freeborn
Goodhue
Houston
Le Sueur
Martin
Mower
Nicollet
Olmsted
Rice
Sibley
Steele
Wabasha
Waseca
Watonwan
Winona

Increase in Median Gross Rent* by County, 2000-2019

(*adjusted for inflation to 2019 dollars)



Increase in Median Gross Rent* by County, 2000-2019

(*adjusted for inflation to 2019 dollars)

Rank	County	Region	Change in rent	Median Gross Rent
1	Big Stone	Southwest	77%	$341.88
2	Clay	West Central	39%	$623.08
3	Cottonwood	Southwest	38%	$455.84
4	Becker	West Central	36%	$538.72
5	Marshall	Northwest	36%	$469.16
6	Lake of the Woods	Northwest	36%	$500.24
7	Clearwater	Northwest	35%	$503.20
8	Cass	Central	35%	$549.08
9	Jackson	Southwest	34%	$528.36
10	Pennington	Northwest	34%	$516.52
11	Wadena	Central	34%	$498.76
12	Watonwan	Southern	34%	$500.24
13	Carlton	Northland	33%	$584.60
14	Red Lake	Northwest	33%	$417.36
15	Stevens	West Central	32%	$569.80
16	Mahnomen	Northwest	31%	$446.96
17	Isanti	Central	31%	$779.96
18	Koochiching	Northland	30%	$515.04
19	Lincoln	Southwest	28%	$482.48
20	Mower	Southern	27%	$562.40
21	Fillmore	Southern	27%	$518.00
22	Aitkin	Northland	27%	$605.32
23	Todd	Central	27%	$512.08
24	Nobles	Southwest	26%	$574.24
25	Washington	Twin Cities	26%	$1,034.52
26	St. Louis	Northland	25%	$614.20
27	Freeborn	Southern	25%	$544.64
28	Mille Lacs	Central	25%	$605.32
29	Beltrami	Northwest	25%	$612.72
30	Wright	Central	24%	$778.48
31	Houston	Southern	24%	$580.16

Increase in Median Gross Rent* by County, 2000-2019

(*adjusted for inflation to 2019 dollars)

Rank	County	Region	Change in rent	Median Gross Rent
32	Morrison	Central	24%	$597.92
33	Grant	West Central	24%	$531.32
34	Kanabec	Central	24%	$660.08
35	Hubbard	Northwest	23%	$565.36
36	Blue Earth	Southern	23%	$720.76
37	Martin	Southern	22%	$506.16
38	Swift	Southwest	22%	$535.76
39	Pine	Central	22%	$637.88
40	Polk	Northwest	22%	$586.08
41	Goodhue	Southern	22%	$705.96
42	Carver	Twin Cities	22%	$942.76
43	Scott	Twin Cities	21%	$969.40
44	Le Sueur	Southern	21%	$640.84
45	Kandiyohi	Southwest	21%	$643.80
46	Douglas	West Central	21%	$608.28
47	Kittson	Northwest	20%	$513.56
48	Stearns	Central	19%	$700.04
49	Crow Wing	Central	19%	$677.84
50	Chisago	Central	18%	$748.88
51	Sherburne	Central	18%	$843.60
52	Olmsted	Southern	18%	$822.88
53	Hennepin	Twin Cities	17%	$967.92
54	Otter Tail	West Central	17%	$578.68
55	Redwood	Southwest	17%	$549.08
56	Anoka	Twin Cities	16%	$960.52
57	Rock	Southwest	16%	$583.12
58	Nicollet	Southern	16%	$722.24
59	Itasca	Northland	16%	$600.88
60	Meeker	Southwest	16%	$652.68
61	Faribault	Southern	15%	$513.56
62	Dodge	Southern	14%	$571.28

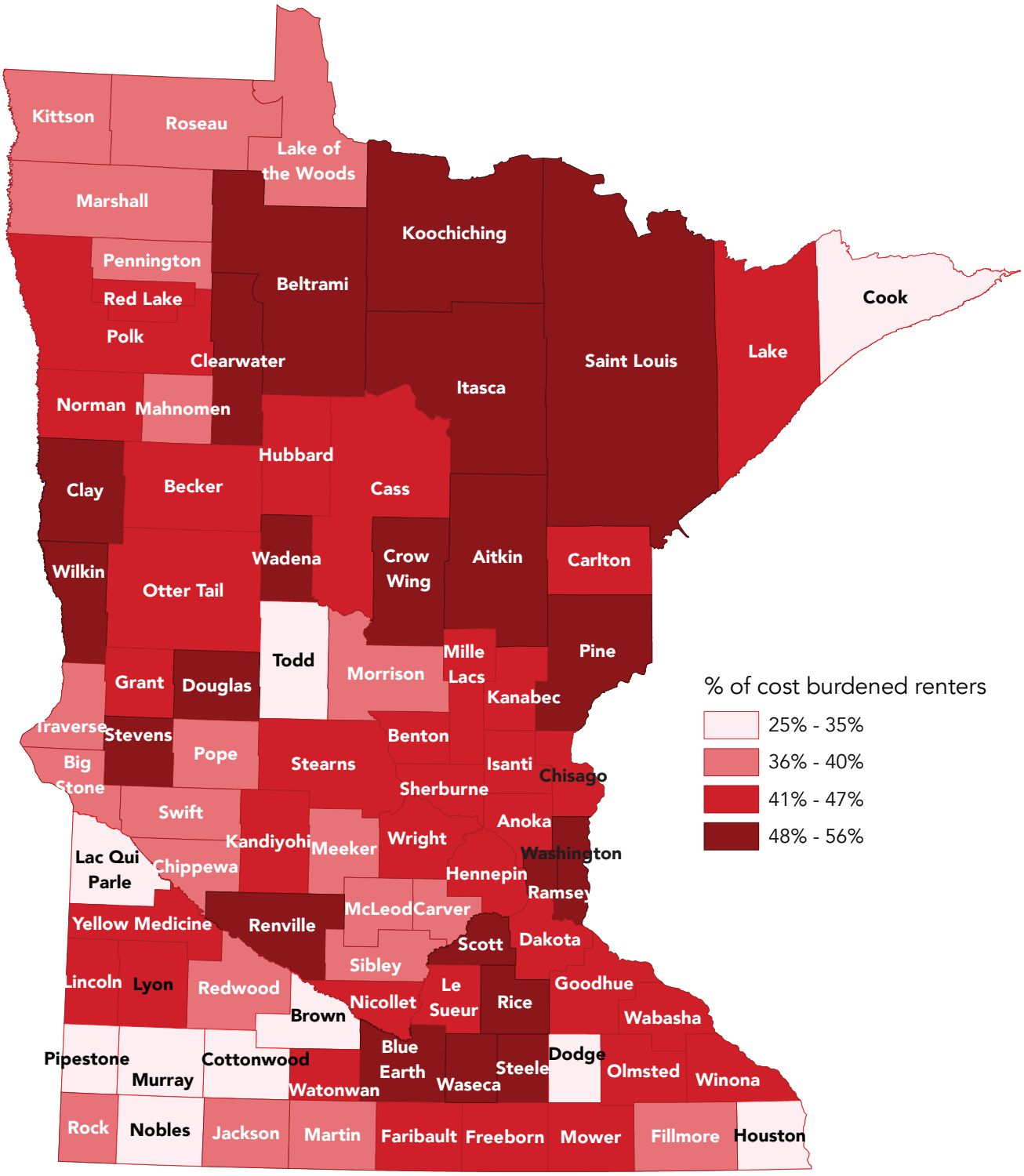
Increase in Median Gross Rent* by County, 2000-2019

(*adjusted for inflation to 2019 dollars)

Rank	County	Region	Change in rent	Median Gross Rent
63	Sibley	Southern	14%	$630.48
64	McLeod	Southwest	13%	$688.20
65	Pope	West Central	13%	$537.24
66	Waseca	Southern	12%	$594.96
67	Renville	Southwest	12%	$565.36
68	Ramsey	Twin Cities	12%	$896.88
69	Traverse	West Central	12%	$553.52
70	Winona	Southern	11%	$629.00
71	Yellow Medicine	Southwest	11%	$528.36
72	Roseau	Northwest	11%	$654.16
73	Steele	Southern	10%	$697.08
74	Dakota	Twin Cities	10%	$1,068.56
75	Rice	Southern	10%	$768.12
76	Pipestone	Southwest	9%	$540.20
77	Norman	Northwest	8%	$553.52
78	Wabasha	Southern	7%	$642.32
79	Benton	Central	7%	$710.40
80	Brown	Southern	7%	$590.52
81	Lac qui Parle	Southwest	5%	$515.04
82	Wilkin	West Central	4%	$501.72
83	Murray	Southwest	4%	$552.04
84	Chippewa	Southwest	3%	$593.48
85	Lake	Northland	3%	$643.80
86	Lyon	Southwest	1%	$658.60
87	Cook	Northland	-4%	$674.88

Renter Cost Burden

Percent of renter households paying more then 30% of income on rent



Renter Cost Burden

Percent of renter households paying more then 30% of income on rent

Rank	County	Region	Cost Burden	Severe Cost Burden
11	Aitkin	Northland	49%	26%
29	Anoka	Twin Cities	45%	21%
45	Becker	West Central	42%	22%
4	Beltrami	Northwest	52%	29%
23	Benton	Central	46%	19%
73	Big Stone	Southwest	37%	18%
5	Blue Earth	Southern	52%	25%
82	Brown	Southern	33%	12%
51	Carlton	Northland	41%	21%
60	Carver	Twin Cities	39%	19%
35	Cass	Central	44%	18%
76	Chippewa	Southwest	35%	16%
30	Chisago	Central	45%	19%
2	Clay	West Central	55%	31%
8	Clearwater	Northwest	50%	23%
87	Cook	Northland	25%	11%
84	Cottonwood	Southwest	31%	14%
12	Crow Wing	Central	49%	19%
31	Dakota	Twin Cities	45%	20%
79	Dodge	Southern	34%	15%
16	Douglas	West Central	48%	23%
40	Faribault	Southern	43%	17%
69	Fillmore	Southern	38%	17%
41	Freeborn	Southern	43%	17%
24	Goodhue	Southern	46%	24%
42	Grant	West Central	43%	25%
25	Hennepin	Twin Cities	46%	22%
83	Houston	Southern	33%	13%
46	Hubbard	Northwest	42%	16%
26	Isanti	Central	46%	19%
6	Itasca	Northland	52%	30%

Renter Cost Burden

Percent of renter households paying more then 30% of income on rent

Rank	County	Region	Cost Burden	Severe Cost Burden
74	Jackson	Southwest	37%	25%
22	Kanabec	Central	47%	12%
47	Kandiyohi	Southwest	42%	22%
70	Kittson	Northwest	38%	17%
3	Koochiching	Northland	55%	26%
86	Lac qui Parle	Southwest	27%	15%
43	Lake	Northland	43%	19%
61	Lake of the Woods	Northwest	39%	10%
32	Le Sueur	Southern	45%	15%
52	Lincoln	Southwest	41%	24%
33	Lyon	Southwest	45%	20%
62	Mahnomen	Northwest	39%	20%
57	Marshall	Northwest	40%	18%
63	Martin	Southern	39%	20%
64	McLeod	Southwest	39%	19%
65	Meeker	Southwest	39%	22%
36	Mille Lacs	Central	44%	20%
71	Morrison	Central	38%	17%
53	Mower	Southern	41%	15%
80	Murray	Southwest	34%	19%
54	Nicollet	Southern	41%	22%
81	Nobles	Southwest	34%	16%
27	Norman	Northwest	46%	22%
34	Olmsted	Southern	45%	24%
44	Otter Tail	West Central	43%	22%
66	Pennington	Northwest	39%	16%
17	Pine	Central	48%	19%
85	Pipestone	Southwest	31%	14%
37	Polk	Northwest	44%	25%
75	Pope	West Central	36%	20%
18	Ramsey	Twin Cities	48%	24%

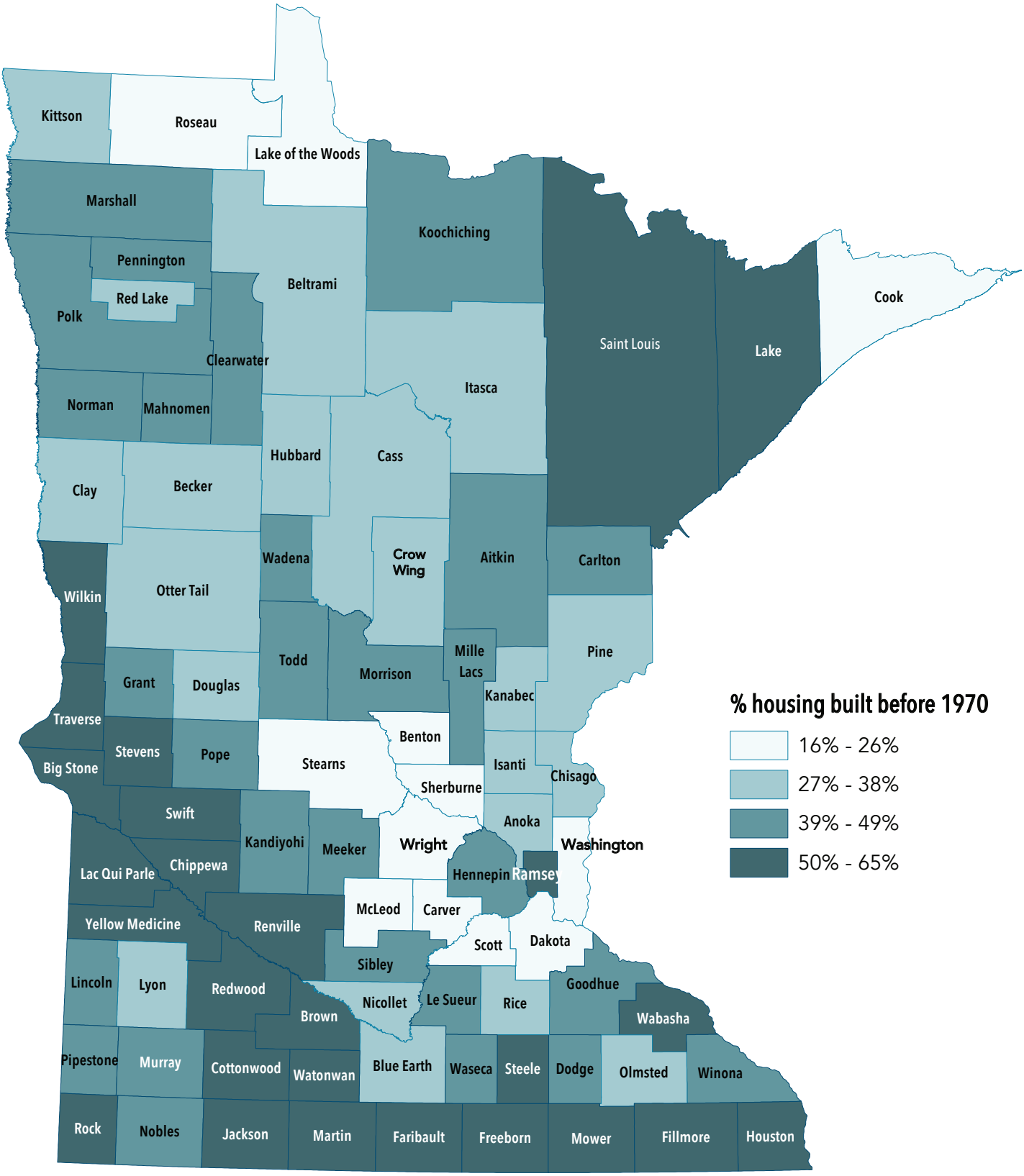
Renter Cost Burden

Percent of renter households paying more then 30% of income on rent

Rank	County	Region	Cost Burden	Severe Cost Burden
38	Red Lake	Northwest	44%	24%
58	Redwood	Southwest	40%	22%
19	Renville	Southwest	48%	24%
13	Rice	Southern	49%	27%
67	Rock	Southwest	39%	14%
59	Roseau	Northwest	40%	26%
20	Scott	Twin Cities	48%	20%
39	Sherburne	Central	44%	21%
77	Sibley	Southern	35%	19%
9	St. Louis	Northland	50%	25%
48	Stearns	Central	42%	20%
21	Steele	Southern	48%	23%
7	Stevens	West Central	52%	33%
68	Swift	Southwest	39%	19%
78	Todd	Central	35%	20%
72	Traverse	West Central	38%	16%
55	Wabasha	Southern	41%	19%
14	Wadena	Central	49%	18%
1	Waseca	Southern	56%	30%
15	Washington	Twin Cities	49%	23%
49	Watonwan	Southern	42%	23%
10	Wilkin	West Central	50%	9%
28	Winona	Southern	46%	26%
56	Wright	Central	41%	19%
50	Yellow Medicine	Southwest	42%	19%

Aging Housing Stock

Percentage of multi-family housing built before 1970



Aging Housing Stock

Percentage of multi-family and single family housing built before 1970

County	Region	Rank	Multi-family	Rank	Single Family
Aitkin	Northland	3	59%	1	74%
Anoka	Twin Cities	58	35%	57	39%
Becker	West Central	69	30%	76	27%
Beltrami	Northwest	70	30%	78	23%
Benton	Central	16	53%	53	41%
Big Stone	Southwest	49	42%	69	31%
Blue Earth	Southern	32	46%	37	50%
Brown	Southern	28	47%	50	43%
Carlton	Northland	75	27%	83	19%
Carver	Twin Cities	66	33%	31	55%
Cass	Central	26	49%	24	60%
Chippewa	Southwest	17	53%	26	58%
Chisago	Central	5	58%	3	70%
Clay	West Central	68	31%	77	25%
Clearwater	Northwest	55	37%	47	45%
Cook	Northland	20	52%	16	65%
Cottonwood	Southwest	56	37%	64	34%
Crow Wing	Central	53	39%	60	37%
Dakota	Twin Cities	10	55%	48	44%
Dodge	Southern	22	50%	21	62%
Douglas	West Central	76	26%	43	46%
Faribault	Southern	29	47%	38	49%
Fillmore	Southern	60	34%	70	31%
Freeborn	Southern	45	43%	34	51%
Goodhue	Southern	46	43%	17	64%
Grant	West Central	61	34%	65	34%
Hennepin	Twin Cities	33	46%	19	63%
Houston	Southern	62	34%	55	40%
Hubbard	Northwest	59	35%	29	56%
Isanti	Central	1	65%	7	67%
Itasca	Northland	27	48%	5	69%

Aging Housing Stock

Percentage of multi-family and single family housing built before 1970

County	Region	Rank	Multi-family	Rank	Single Family
Jackson	Southwest	51	41%	46	45%
Kanabec	Central	39	45%	49	44%
Kandiyohi	Southwest	2	61%	10	66%
Kittson	Northwest	34	46%	44	45%
Koochiching	Northland	67	32%	74	29%
Lac qui Parle	Southwest	41	44%	32	51%
Lake	Northland	30	47%	36	50%
Lake of the Woods	Northwest	23	50%	2	72%
Le Sueur	Southern	52	40%	39	49%
Lincoln	Southwest	84	19%	82	21%
Lyon	Southwest	81	20%	84	17%
Mahnomen	Northwest	82	20%	75	28%
Marshall	Northwest	86	17%	73	30%
Martin	Southern	4	59%	4	69%
McLeod	Southwest	6	58%	14	65%
Meeker	Southwest	42	44%	33	51%
Mille Lacs	Central	21	52%	40	48%
Morrison	Central	11	55%	8	67%
Mower	Southern	47	43%	59	37%
Murray	Southwest	12	54%	6	68%
Nicollet	Southern	63	34%	71	31%
Nobles	Southwest	7	58%	11	66%
Norman	Northwest	35	46%	51	43%
Olmsted	Southern	71	30%	56	40%
Otter Tail	West Central	43	44%	22	61%
Pennington	Northwest	79	21%	85	16%
Pine	Central	78	25%	58	38%
Pipestone	Southwest	13	54%	13	66%
Polk	Northwest	48	43%	54	41%
Pope	West Central	24	50%	9	67%
Ramsey	Twin Cities	87	16%	67	33%
Red Lake	Northwest	64	34%	62	37%

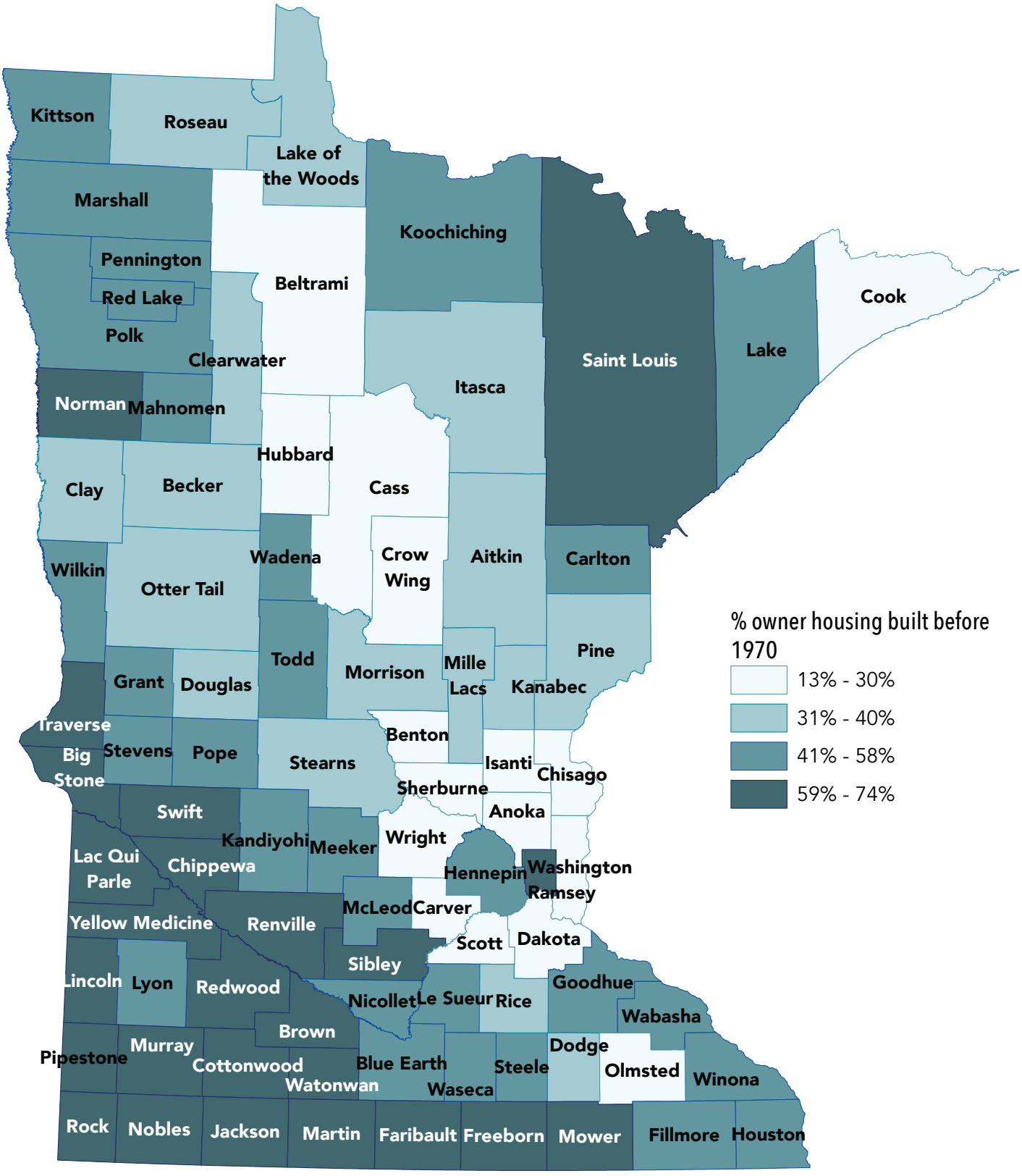
Aging Housing Stock

Percentage of multi-family and single family housing built before 1970

County	Region	Rank	Multi-family	Rank	Single Family
Redwood	Southwest	72	30%	72	30%
Renville	Southwest	8	56%	20	62%
Rice	Southern	25	50%	27	58%
Rock	Southwest	50	42%	41	48%
Roseau	Northwest	14	54%	23	60%
Scott	Twin Cities	54	39%	52	43%
Sherburne	Central	31	47%	18	63%
Sibley	Southern	65	34%	42	46%
St. Louis	Northland	36	46%	28	57%
Stearns	Central	44	44%	63	36%
Steele	Southern	77	26%	66	33%
Stevens	West Central	37	46%	68	32%
Swift	Southwest	18	53%	35	50%
Todd	Central	19	53%	30	55%
Traverse	West Central	80	21%	87	13%
Wabasha	Southern	15	54%	15	65%
Wadena	Central	74	28%	80	23%
Waseca	Southern	57	36%	61	37%
Washington	Twin Cities	38	46%	45	45%
Watonwan	Southern	9	56%	12	66%
Wilkin	West Central	83	20%	81	21%
Winona	Southern	85	18%	86	14%
Wright	Central	73	30%	79	23%
Yellow Medicine	Southwest	40	45%	25	60%

Aging Housing Stock

Percentage of single-family housing built before 1970



Growing Gap Between Rent and Income

Percentage gap between change in rent and income, 2000-2019

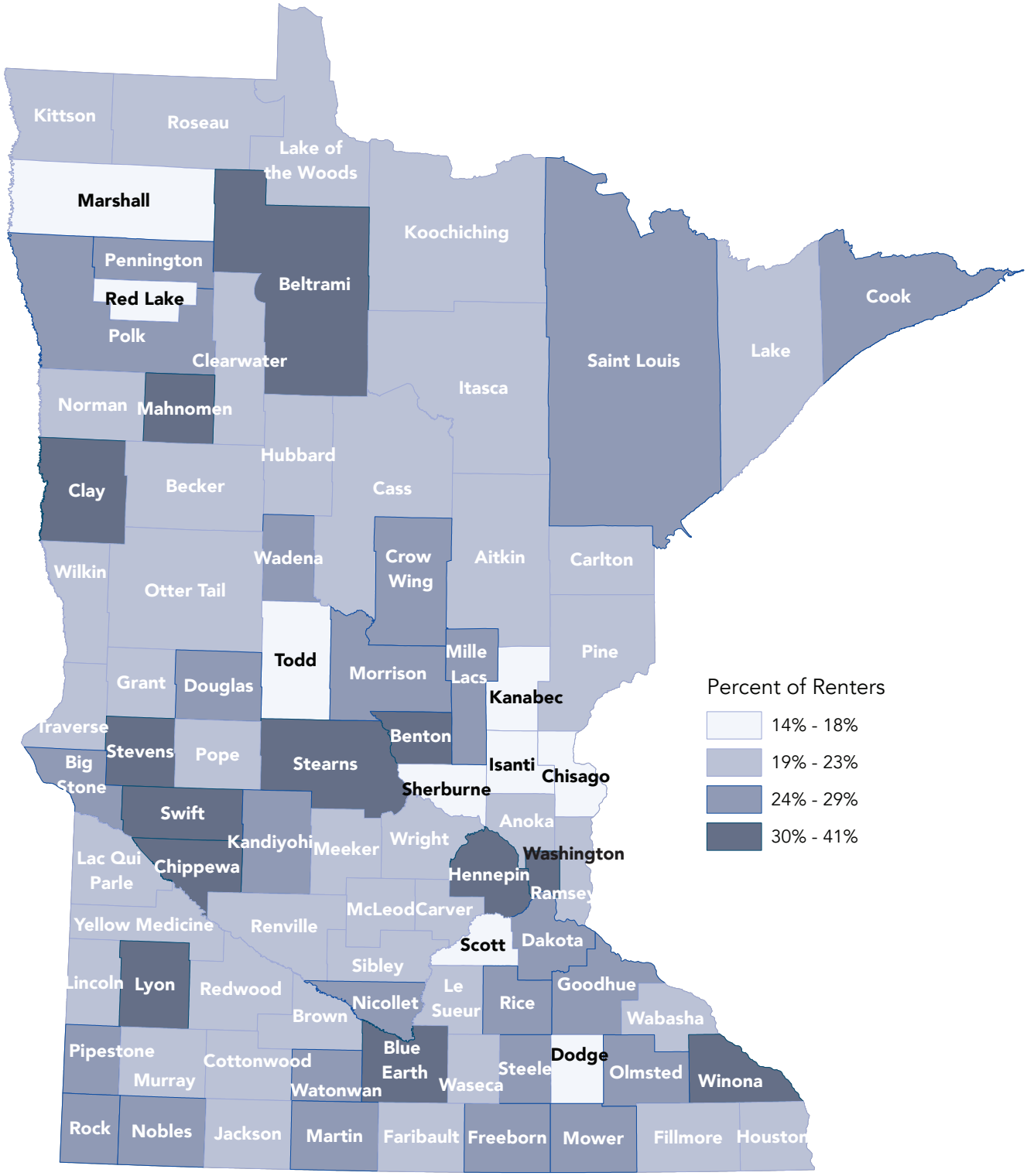
Rank	County	Region	Rent Change	Income Change	Gap
1	Big Stone	Southwest	77%	20%	57%
2	Jackson	Southwest	34%	-2%	32%
3	Watonwan	Southern	34%	-4%	30%
4	Mahnomen	Northwest	31%	2%	29%
5	Red Lake	Northwest	33%	-4%	29%
6	Clearwater	Northwest	35%	7%	28%
7	Mower	Southern	27%	0%	27%
8	Aitkin	Northland	27%	1%	26%
9	Cass	Central	35%	9%	26%
10	Stevens	West Central	32%	6%	26%
11	Lincoln	Southwest	28%	-4%	24%
12	Carlton	Northland	33%	10%	23%
13	Fillmore	Southern	27%	-5%	22%
14	Nobles	Southwest	26%	4%	22%
15	Polk	Northwest	22%	-1%	21%
16	Washington	Twin Cities	26%	5%	21%
17	Beltrami	Northwest	25%	-5%	20%
18	Hubbard	Northwest	23%	-3%	20%
19	Scott	Twin Cities	21%	-1%	20%
20	Mille Lacs	Central	25%	-6%	19%
21	Becker	West Central	36%	19%	17%
22	Blue Earth	Southern	23%	6%	17%
23	Pennington	Northwest	34%	17%	17%
24	St. Louis	Northland	25%	8%	17%
25	Stearns	Central	19%	2%	17%
26	Carver	Twin Cities	22%	6%	16%
27	Cottonwood	Southwest	38%	22%	16%
28	Grant	West Central	24%	-9%	15%
29	Isanti	Central	31%	16%	15%
30	Nicollet	Southern	16%	-1%	15%

Rank	County	Region	Rent Change	Income Change	Gap
31	Olmsted	Southern	18%	-3%	15%
32	Redwood	Southwest	17%	-2%	15%
33	Sherburne	Central	18%	3%	15%
34	Dodge	Southern	14%	0%	14%
35	Hennepin	Twin Cities	17%	3%	14%
36	Kanabec	Central	24%	-10%	14%
37	Kandiyohi	Southwest	21%	7%	14%
38	Pine	Central	22%	-8%	14%
39	Anoka	Twin Cities	16%	3%	13%
40	Crow Wing	Central	19%	6%	13%
41	Freeborn	Southern	25%	12%	13%
42	Meeker	Southwest	16%	3%	13%
43	Sibley	Southern	14%	1%	13%
44	Chisago	Central	18%	6%	12%
45	Morrison	Central	24%	12%	12%
46	Koochiching	Northland	30%	19%	11%
47	Le Sueur	Southern	21%	-10%	11%
48	Wright	Central	24%	13%	11%
49	Clay	West Central	39%	28%	11%
50	Houston	Southern	24%	15%	9%
51	McLeod	Southwest	13%	-4%	9%
52	Rock	Southwest	16%	7%	9%
53	Ramsey	Twin Cities	12%	-4%	8%
54	Goodhue	Southern	22%	-14%	8%
55	Martin	Southern	22%	14%	8%
56	Brown	Southern	7%	1%	6%
57	Swift	Southwest	22%	-16%	6%
58	Yellow Medicine	Southwest	11%	-5%	6%
59	Winona	Southern	11%	-7%	4%
60	Chippewa	Southwest	3%	0%	3%

Rank	County	Region	Rent Change	Income Change	Gap
61	Kittson	Northwest	20%	17%	3%
62	Marshall	Northwest	36%	33%	3%
63	Todd	Central	27%	24%	3%
64	Faribault	Southern	15%	-13%	2%
65	Steele	Southern	10%	-8%	2%
66	Benton	Central	7%	-6%	1%
67	Wabasha	Southern	7%	-6%	1%
68	Cook	Northland	-4%	-3%	1%
69	Pipestone	Southwest	9%	8%	1%
70	Dakota	Twin Cities	10%	-10%	0%
71	Otter Tail	West Central	17%	17%	0%
72	Pope	West Central	13%	13%	0%
73	Roseau	Northwest	11%	-11%	0%
74	Lac qui Parle	Southwest	5%	8%	-3%
75	Norman	Northwest	8%	-12%	-4%
76	Itasca	Northland	16%	-22%	-6%
77	Lyon	Southwest	1%	-9%	-8%
78	Douglas	West Central	21%	30%	-9%
79	Wadena	Central	34%	43%	-9%
80	Lake of the Woods	Northwest	36%	46%	-10%
81	Murray	Southwest	4%	15%	-11%
82	Renville	Southwest	12%	-23%	-11%
83	Wilkin	West Central	4%	17%	-13%
84	Rice	Southern	10%	-24%	-14%
85	Traverse	West Central	12%	28%	-16%
86	Waseca	Southern	12%	-33%	-21%
87	Lake	Northland	3%	51%	-48%

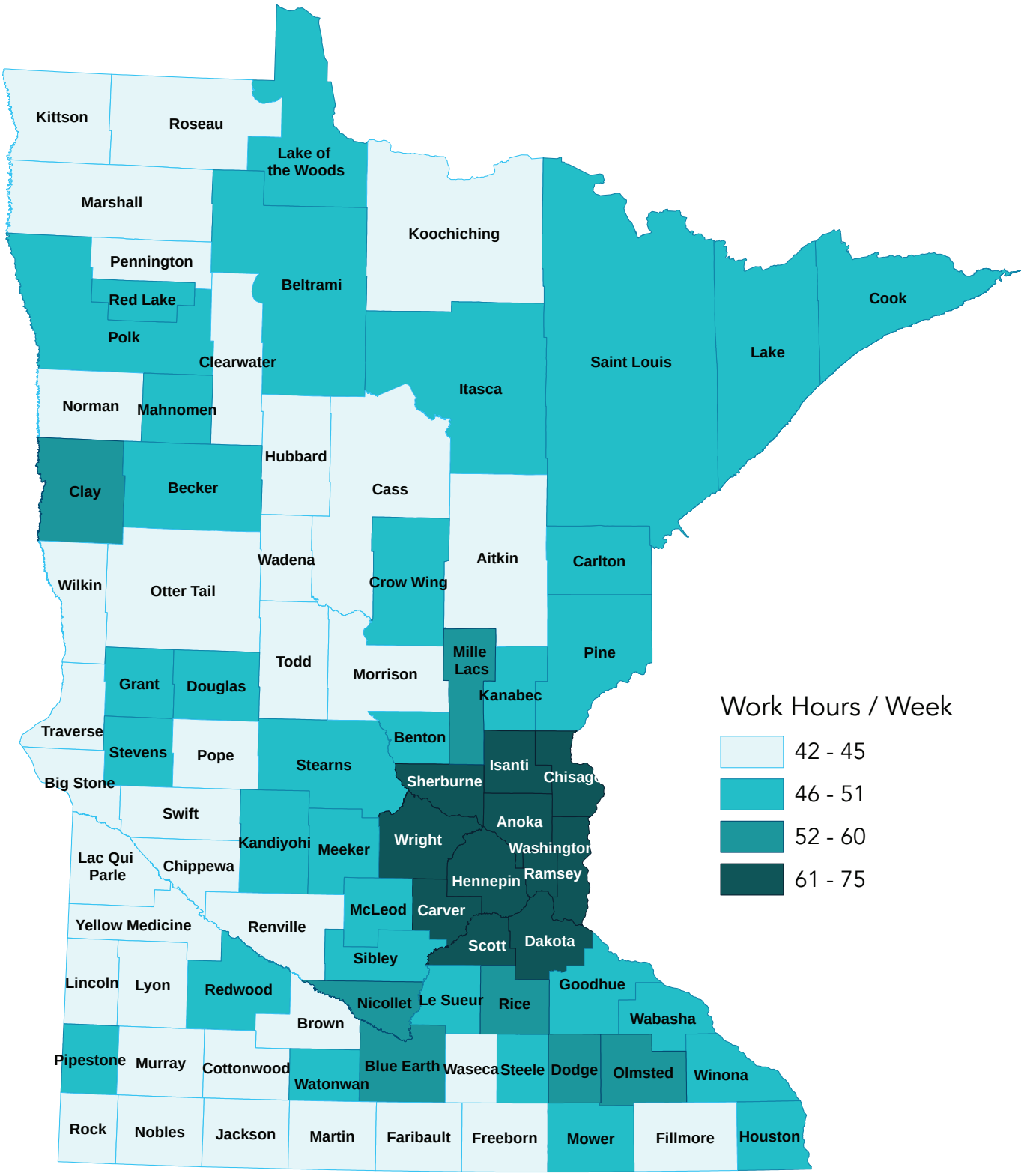
Rental Households

Percentage of households that are renting in 2019



Hours at Minimum Wage to Afford 1 Bedroom Apartment

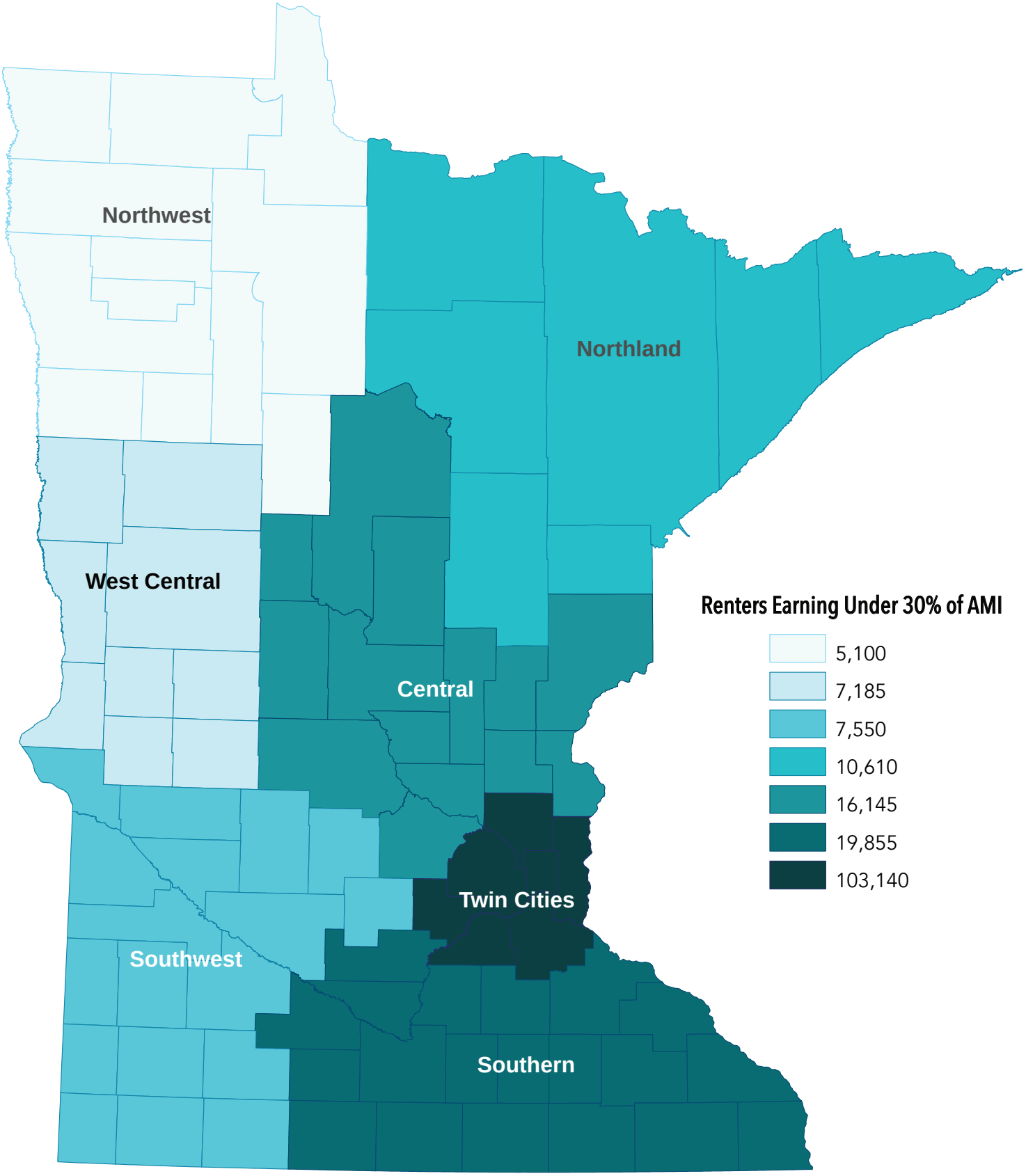
at fair market rent*



*Fair Market Rents are established at the 40th percentile rent by HUD, the top of the range that renters pay for 40% of the apartments being surveyed with the exception of some high-cost jurisdictions where it is set in the 50th percentile.

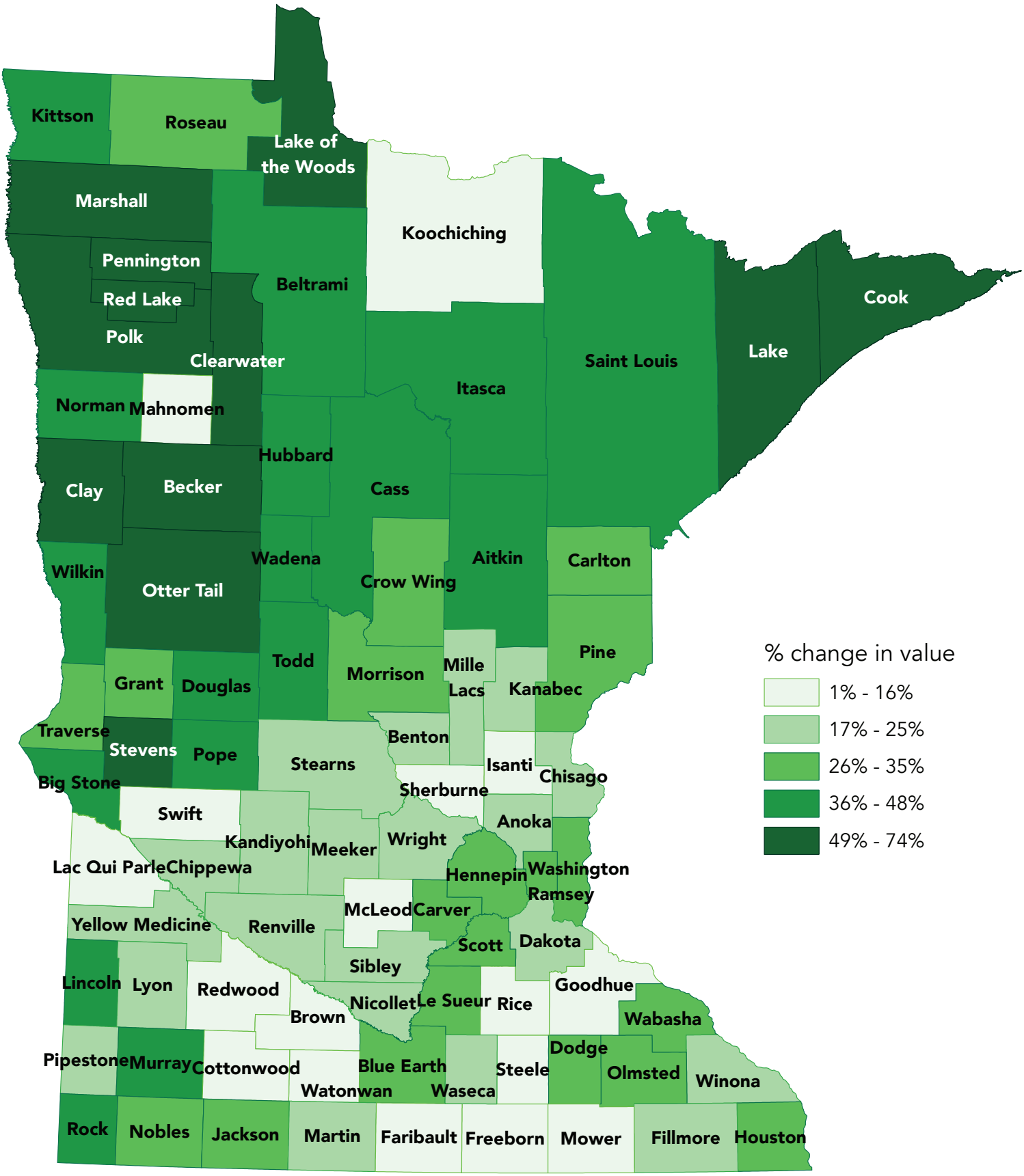
Extremely Low-Income Renters

Number of renters earning under 30 percent of AMI by region



Increase in Median Home Value, 2000-2019

Adjusted for inflation to 2019 dollars



Increase in Median Home Value, 2000-2019

Adjusted for inflation to 2019 dollars

Rank	County	Region	2019 Home Value	2000 Home Value	% Change
1	Lake of the Woods	Northwest	$161,900	$92,796	74%
2	Pennington	Northwest	$155,100	$89,836	73%
3	Red Lake	Northwest	$116,000	$72,076	61%
4	Becker	West Central	$198,400	$124,468	59%
5	Clay	West Central	$197,100	$124,764	58%
6	Lake	Northland	$174,700	$111,888	56%
7	Polk	Northwest	$165,000	$107,596	53%
8	Stevens	West Central	$160,100	$105,672	52%
9	Cook	Northland	$240,100	$158,656	51%
10	Otter Tail	West Central	$189,100	$124,912	51%
11	Clearwater	Northwest	$137,200	$91,464	50%
12	Marshall	Northwest	$117,000	$77,848	50%
13	Beltrami	Northwest	$162,600	$109,964	48%
14	Pope	West Central	$174,300	$118,252	47%
15	Todd	Central	$153,400	$104,192	47%
16	Wilkin	West Central	$140,000	$95,756	46%
17	Aitkin	Northland	$183,200	$127,576	44%
18	Douglas	West Central	$214,800	$150,220	43%
19	Hubbard	Northwest	$193,600	$135,272	43%
20	St. Louis	Northland	$157,900	$110,408	43%
21	Big Stone	Southwest	$97,900	$69,116	42%
22	Rock	Southwest	$153,000	$108,780	41%
23	Itasca	Northland	$164,100	$117,068	40%
24	Murray	Southwest	$120,100	$85,988	40%
25	Norman	Northwest	$100,700	$72,668	39%
26	Wadena	Central	$132,000	$95,608	38%
27	Kittson	Northwest	$84,200	$61,568	37%
28	Cass	Central	$194,200	$142,376	36%
29	Lincoln	Southwest	$103,100	$75,924	36%
30	Grant	West Central	$118,700	$87,912	35%

Increase in Median Home Value, 2000-2019

Adjusted for inflation to 2019 dollars

Rank	County	Region	2019 Home Value	2000 Home Value	% Change
31	Carlton	Northland	$171,400	$127,576	34%
32	Traverse	West Central	$81,400	$60,828	34%
33	Hennepin	Twin Cities	$276,900	$208,828	33%
34	Jackson	Southwest	$124,900	$93,832	33%
35	Morrison	Central	$170,100	$128,168	33%
36	Nobles	Southwest	$127,100	$95,460	33%
37	Blue Earth	Southern	$184,800	$141,192	31%
38	Roseau	Northwest	$132,800	$102,860	29%
39	Crow Wing	Central	$198,300	$155,104	28%
40	Le Sueur	Southern	$207,400	$162,208	28%
41	Wabasha	Southern	$183,900	$143,412	28%
42	Houston	Southern	$173,700	$137,048	27%
43	Pine	Central	$164,500	$129,352	27%
44	Olmsted	Southern	$214,600	$169,756	26%
45	Ramsey	Twin Cities	$229,600	$181,744	26%
46	Scott	Twin Cities	$299,700	$238,132	26%
47	Carver	Twin Cities	$313,200	$249,676	25%
48	Dodge	Southern	$183,900	$146,816	25%
49	Martin	Southern	$118,300	$95,016	25%
50	Washington	Twin Cities	$289,400	$231,176	25%
51	Kandiyohi	Southwest	$168,900	$135,716	24%
52	Fillmore	Southern	$153,800	$125,208	23%
53	Kanabec	Central	$163,900	$132,904	23%
54	Meeker	Southwest	$170,200	$138,676	23%
55	Pipestone	Southwest	$97,500	$79,328	23%
56	Anoka	Twin Cities	$232,400	$190,920	22%
57	Lyon	Southwest	$148,900	$121,952	22%
58	Sibley	Southern	$159,200	$130,240	22%
59	Stearns	Central	$184,900	$151,108	22%
60	Yellow Medicine	Southwest	$110,000	$90,132	22%

Rank	County	Region	2019 Home Value	2000 Home Value	% Change
61	Dakota	Twin Cities	$266,000	$219,780	21%
62	Chippewa	Southwest	$119,700	$99,900	20%
63	Waseca	Southern	$158,900	$132,608	20%
64	Wright	Central	$238,500	$199,060	20%
65	Benton	Central	$174,900	$146,964	19%
66	Chisago	Central	$231,500	$197,136	17%
67	Mille Lacs	Central	$163,300	$139,120	17%
68	Nicollet	Southern	$191,900	$163,836	17%
69	Winona	Southern	$167,300	$142,672	17%
70	Goodhue	Southern	$204,100	$176,564	16%
71	Renville	Southwest	$106,300	$91,464	16%
72	Cottonwood	Southwest	$94,200	$82,140	15%
73	Koochiching	Northland	$108,400	$94,276	15%
74	Redwood	Southwest	$106,300	$92,796	15%
75	Isanti	Central	$196,800	$172,864	14%
76	Mahnomen	Northwest	$104,800	$91,612	14%
77	Brown	Southern	$141,900	$126,096	13%
78	Lac qui Parle	Southwest	$88,600	$78,588	13%
79	Mower	Southern	$123,900	$110,112	13%
80	Rice	Southern	$208,600	$183,816	13%
81	Faribault	Southern	$89,500	$80,216	12%
82	Sherburne	Central	$230,500	$206,312	12%
83	Swift	Southwest	$104,100	$93,240	12%
84	Steele	Southern	$169,300	$153,032	11%
85	McLeod	Southwest	$164,700	$156,436	5%
86	Watonwan	Southern	$96,900	$92,056	5%
87	Freeborn	Southern	$113,800	$112,480	1%

Sources

Rental Housing: Rent and income adjusted for inflation to 2019 dollars. U.S. Census Bureau, American Community Survey 2019, 5 year estimates, Building Permits Survey, 2019; MHP staff analysis of CHAS data, 2013-2017, using National Low Income Housing Coalition methodology; Integrated Public Use Microdata Series from the U.S. Census Bureau, American Community Survey

Owner-occupied Housing: Home value and income adjusted for inflation to 2019 dollars. U.S. Census Bureau, American Community Survey 2019, 5 year estimates; Building Permits Survey, 2019; Integrated Public Use Microdata Series from the U.S. Census Bureau, American Community Survey and U.S. Census Bureau, Decennial Census

Cost burden: U.S. Census Bureau, American Community Survey 2019, 5 year estimates; Metropolitan Council; Integrated Public Use Microdata Series from the U.S. Census Bureau, American Community Survey and U.S. Census Bureau, Decennial Census

Housing Affordability by Occupation: Minnesota Department of Employment and Economic Development (MN DEED), Occupations in Demand, November 2020; Employment Outlook, MN DEED

Subsidized Housing Production: HUD Picture of Subsidized Housing 2019; Metropolitan Council Affordable Housing Production 2010-2018

Download individual County Profiles at www.mhponline.org

Out of Reach Minnesota 2019

THE STATEWIDE CRISIS IN WORKFORCE HOUSING

Minnesota Housing Partnership
in partnership with the National Low Income Housing Coalition

When families pay too much for rent, they're forced to sacrifice to make ends meet – cutting back at the grocery store or delaying a trip to the doctor. Building on the annual report produced by the National Low Income Housing Coalition, ***Out of Reach Minnesota 2019*** delves further into state, county and local trends to reveal that households in every corner of Minnesota are spending thousands of dollars more than they can afford each year just to pay the rent for a modest apartment.

Key findings in MHP's 2019 report include:

From 2018 to 2019, the amount a renter household needs to earn to afford a modest apartment (the state "housing wage") **increased by 3 percent** (adjusted for inflation) – a more significant rate of change compared to the 1 percent increase from 2017 to 2018.

Minnesota has maintained status as the **22nd most expensive state** in the nation for the 4th consecutive year since 2015, surpassing states like states like Pennsylvania and Arizona.

To afford a two-bedroom apartment, the median-income renter in Minnesota would need an **8 percent raise.**

A full-time minimum wage earner **can't afford even a one-bedroom apartment** in any of Minnesota's 87 counties.

The lowest income households – those earning 30 percent or less of area median income – can afford a modest one-bedroom apartment in **only eight** of Minnesota's 87 counties. Even efficiencies are not affordable in **33 counties**.

MINNESOTA RENTER INCOME

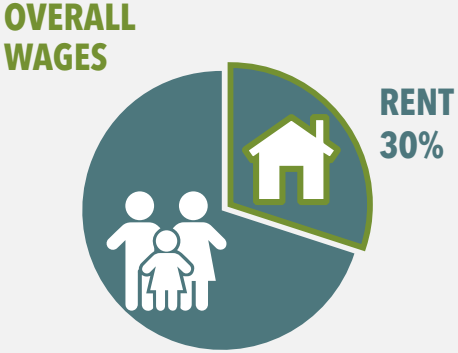
Housing wage: **$15.59 / hour** (to afford 1 bedroom) | **$19.74 / hour** (to afford 2br)
Renter median wage: **$18.32 / hour** | **$38,089 / year**
Renter average wage: **$15.53 / hour** | **$32,302 / year**
Minimum wage: **$9.86 / hour** | **$20,509 / year**

KEY TERMS

Fair Market Rent: The federal government standard for a "fairly" priced apartment. It is calculated as the 40th percentile of gross rents for typical, non-substandard rental units in a local housing market. In this report, we use the term "modest" one- or two-bedroom apartments to denote fair market rent.

Housing Wage: The hourly wage workers need to earn to afford rent without spending more than 30 percent of their income.

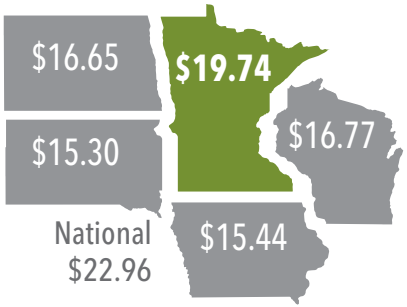
Affordability: Any household that spends more than 30 percent of their income on housing will likely have to sacrifice on daily necessities, like food and medicine.



All figures in this report are adjusted for inflation.

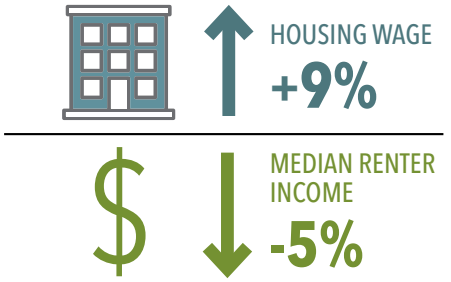
The number of renter households in Minnesota continues to grow, increasing by 1,500 households in over just one year.

From 2000 to 2017, the state gained more than 128,800 renter households, and the percentage of Minnesotans that are renters rose by 12 percent. The high cost of rental housing affects a growing number of Minnesotans throughout the state.



Minnesota has maintained status as the 22nd most expensive state in the nation for the 4th consecutive year since 2015.

The wage required to afford a modest two-bedroom apartment in Minnesota is more expensive than 29 other states – including $2.97 higher than Wisconsin, and $4.30 higher than Iowa.



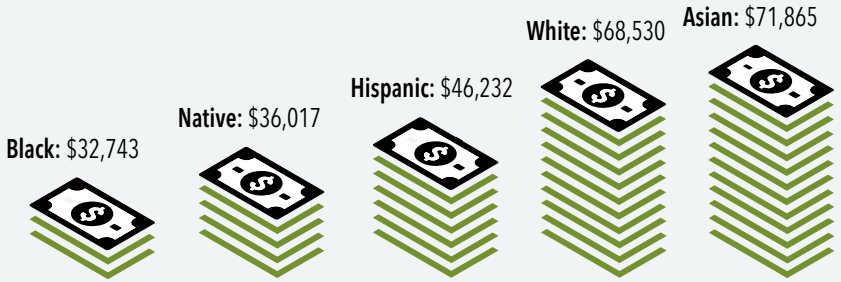
The housing wage continues to rise, while household earnings remained stagnant or declined.

Adjusting for inflation, Minnesota's housing wage – the wage necessary to afford a two-bedroom apartment – has jumped by 9 percent over the past decade alone. Meanwhile, as housing costs have climbed, median renter income declined by 5 percent from 2000 to 2017.

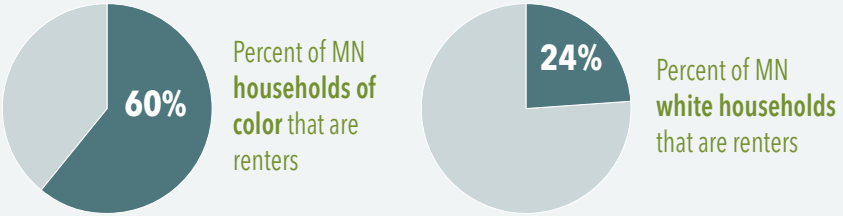
Communities of color are disproportionately impacted

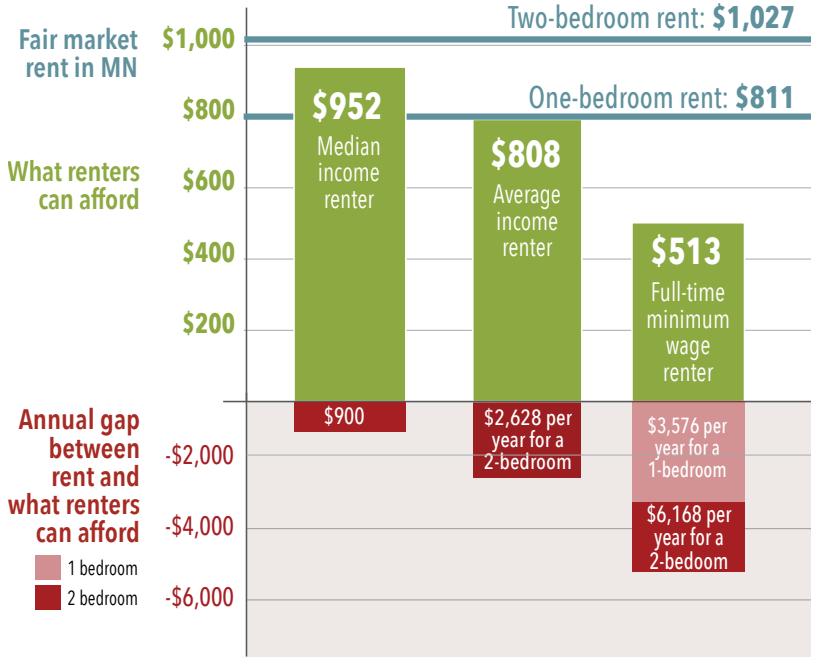
The growing gap between wages and rent has a disproportionate impact on communities of color. While only 24 percent of white households are renters, 60 percent of households of color are renters. Statewide, the median wages earned by Black and Native American workers are barely half that of white and Asian workers. **Furthermore, the gap in wages for Black, Native and Hispanic households has worsened since 2000; the gap has increased by 20 percent, 11 percent, and 9 percent respectively (after adjusting for inflation)**. (Source: American Community Survey 2017)

MINNESOTA MEDIAN INCOME BY RACE



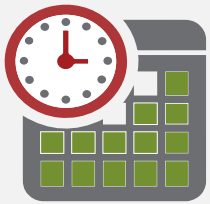
MINNESOTA RENTER HOUSEHOLDS BY RACE





Renter households don't earn enough to pay the rent – and make ends meet.

The average wage ($15.53) for a renter in Minnesota isn't enough to afford a modest two-bedroom apartment in any Minnesota county. It's enough to afford a one-bedroom apartment in only 24 Minnesota counties (less than one quarter of all counties). Statewide, the average Minnesota renter would have to pay $2,628 more than they can afford each year for a modest two-bedroom apartment.



63 hrs for 1-bedroom

80 hrs for 2-bedroom

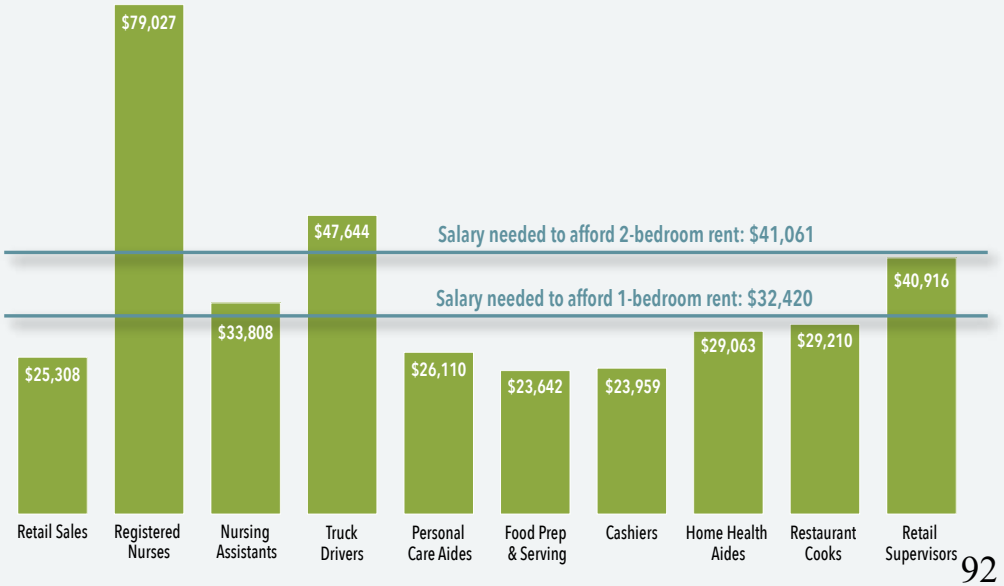
Minimum wage earners must work close to two full jobs

For those earning the state minimum wage ($9.86), even a one-bedroom apartment is out of reach in all Minnesota counties. To be able to afford a one-bedroom apartment, a minimum wage worker must work 63 hour per week. A two-bedroom would be even further out of reach, requiring 80 hours per week.

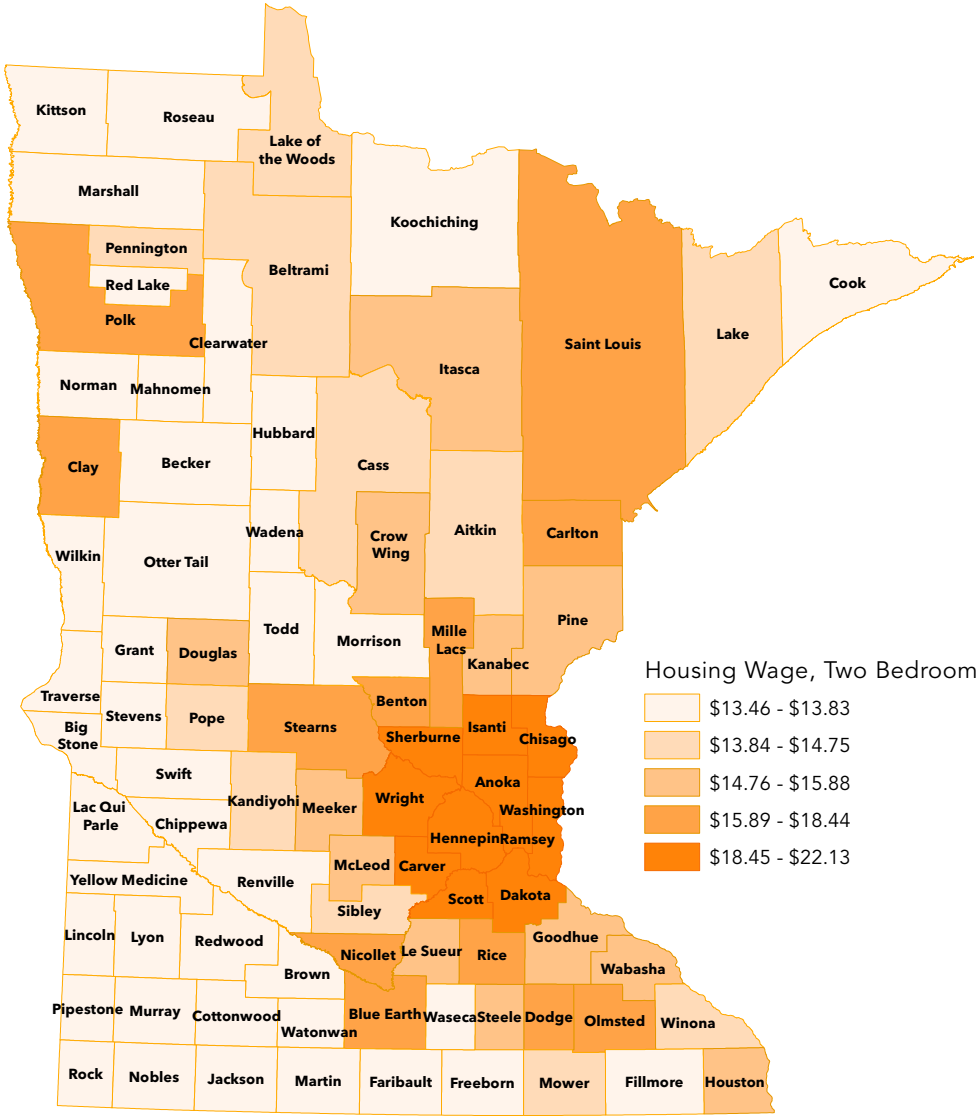
Occupations projected to grow can't afford even a one-bedroom apartment.

Currently, **only two** of the top 10 most in-demand jobs in Minnesota pay enough for a full-time worker to afford two-bedroom rent, while six of the top 10 jobs pay less than is needed to afford even a one-bedroom apartment. Over the next decade, the top five positions with the most projected job openings all earn median incomes less than $30,000 per year. Collectively, these positions are projected to gain nearly 135,000 employees. The top two growing jobs (Home Health Aides and Personal Care Aides) earn median incomes under $29,100 annually. (Source: MN DEED)

MEDIAN WAGES FOR THE STATE'S MOST IN-DEMAND JOBS



"HOUSING WAGE" – WAGE NECESSARY TO AFFORD A TWO-BEDROOM APARTMENT



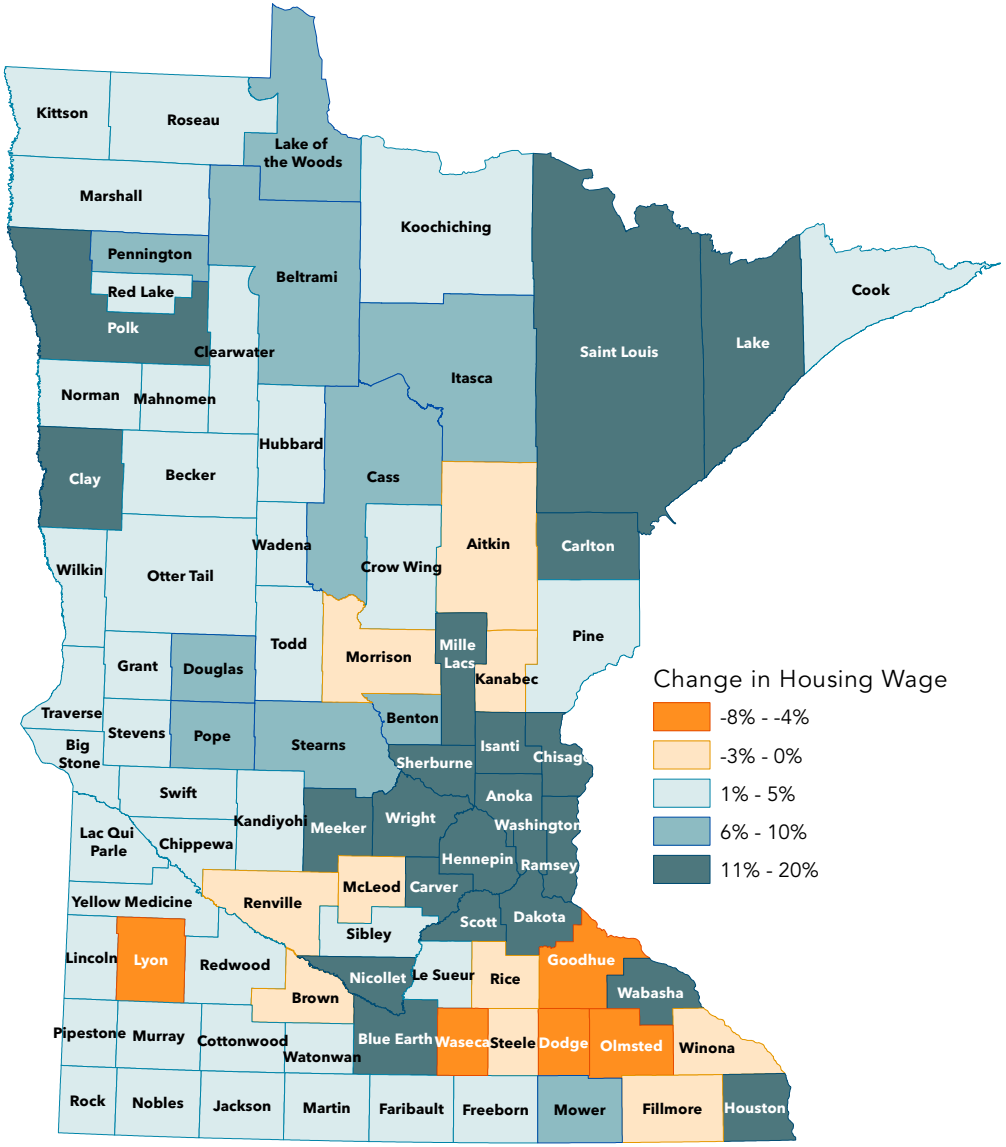
The housing wage represents what Minnesota workers need to earn to afford rent without paying more than 30 percent of their income on housing. In 2019, a Minnesotan would need to earn an annual income of $41,061 to afford a modest two-bedroom apartment. Yet, the median renter in Minnesota earns approximately $38,089 – or is short by about $3,000 annually. With the housing wage at $19.74 per hour for a modest two-bedroom apartment and $15.59 for a modest one-bedroom apartment, rent is out of reach for workers in the vast majority of Minnesota counties.

From 2018 to 2019, the state housing wage **increased by 3 percent** (adjusted for inflation) – a more significant rate of change compared to the 1 percent increase from 2017 to 2018.

Compared to the state average of $19.74, the gap between the **non-metro housing wage** and average state housing wage is $5 or more per hour ($14.36 for a two-bedroom apartment).

The **highest housing wage** in the state is located in the counties within the greater Minneapolis / St. Paul metro area, at $22.13 per hour – or $46,040 annually – to afford a modest two-bedroom apartment.

INCREASE IN HOUSING WAGE FROM 2009 TO 2019



Across the state, the housing wage has increased significantly over the past decade putting rent out of reach for more and more Minnesotans. In 2009, the housing wage for a modest two-bedroom apartment in Minnesota was $15.12. Ten years later, the wage has risen 30 percent to $19.74. Even adjusted for inflation, that's an increase of 9.3 percent.

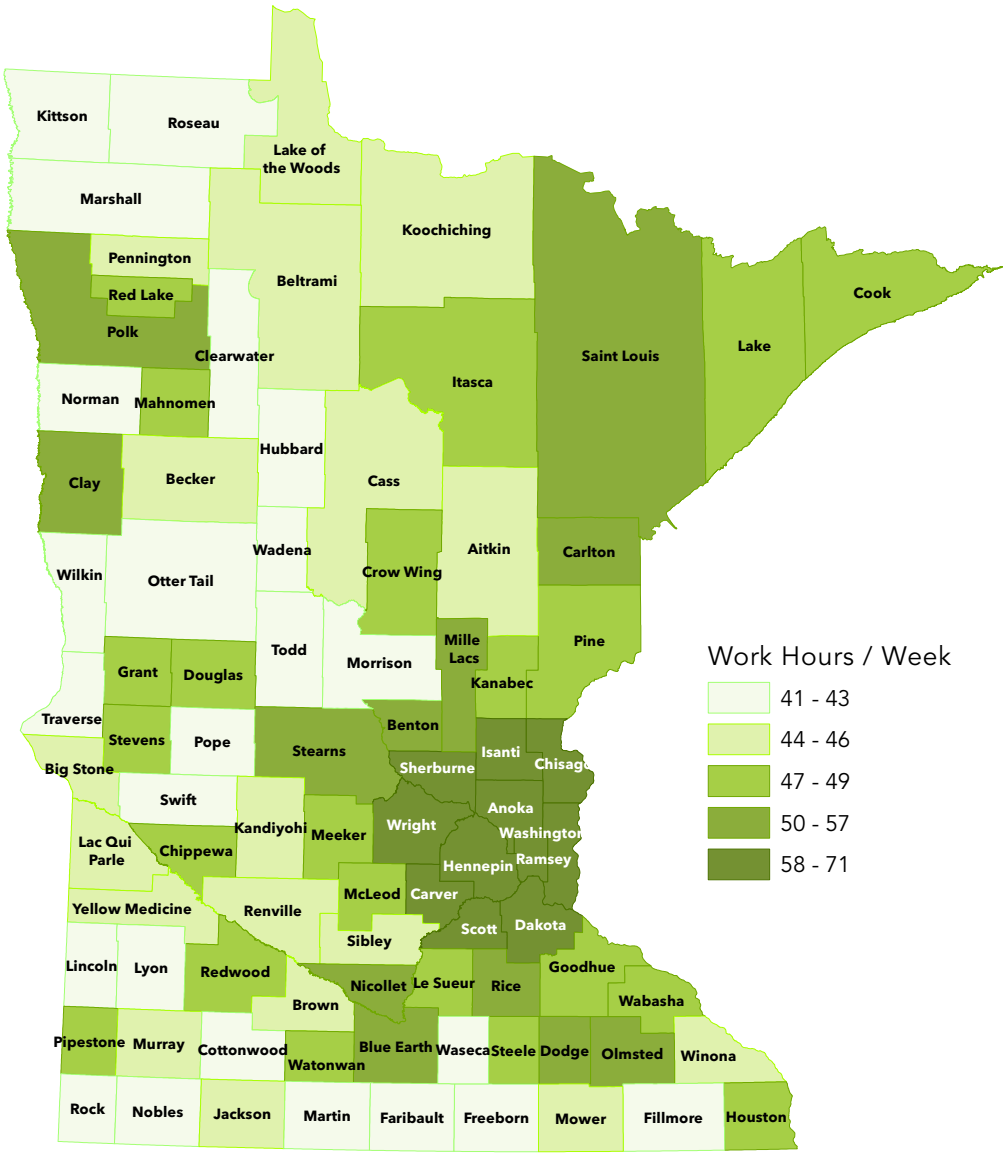
Of Minnesota's **major metro areas** – Duluth, Fargo, Grand Forks, La Crosse, Minneapolis/St. Paul, Rochester, and St Cloud – Grand Forks continues to see the steepest increase in the housing wage for a two-bedroom apartment, rising by 19 percent after adjusting for inflation since 2009. The Duluth metro area trails just after Grand Forks, with an 18 percent increase over the past ten years.

Non-metro areas in Minnesota have seen a much smaller increase of just one percent (adjusted for inflation) for the housing wage over the past 10 years.

At the **county level**, Nicollet County has experienced the steepest increase in two-bedroom housing wage, jumping 20 percent since 2009 (adjusted for inflation). In this county, the hourly housing wage has risen from $12.48 to $17.77.

After adjusting for inflation, the housing wage for a two-bedroom apartment declined in fourteen southern and central counties – Waseca, Goodhue, Dodge, Olmsted, Lyon, Rice, Steele, Winona, Aitkin, McLeod, Kanabec, Fillmore, Renville and Morrison.

HOURS AT MINIMUM WAGE TO AFFORD 1 BEDROOM APARTMENT



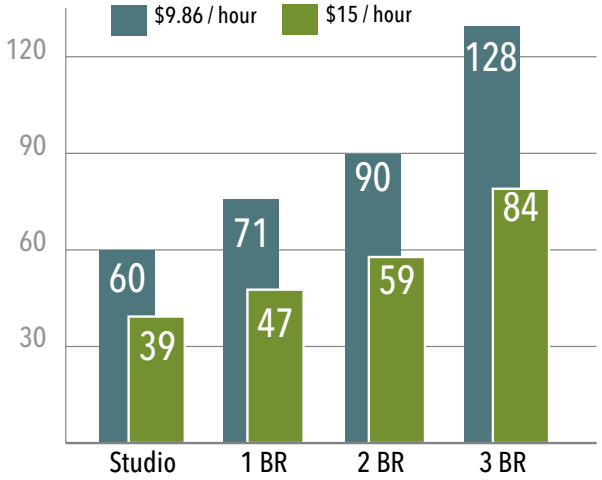
A minimum wage earner in Minnesota must work more than one full-time job in every county in the state to be able to afford rent for a one-bedroom apartment. Statewide, a one-bedroom apartment costs $141 more per month, or $1,692 annually, than a minimum wage earner can afford.

Ten years ago, when the minimum wage in Minnesota was $6.55, it would have taken 75 hours per week to afford a one-bedroom apartment. Since then, Minnesota has increased its minimum wage above the federal minimum wage to $9.86, resulting in a drop to 63 hours per week.

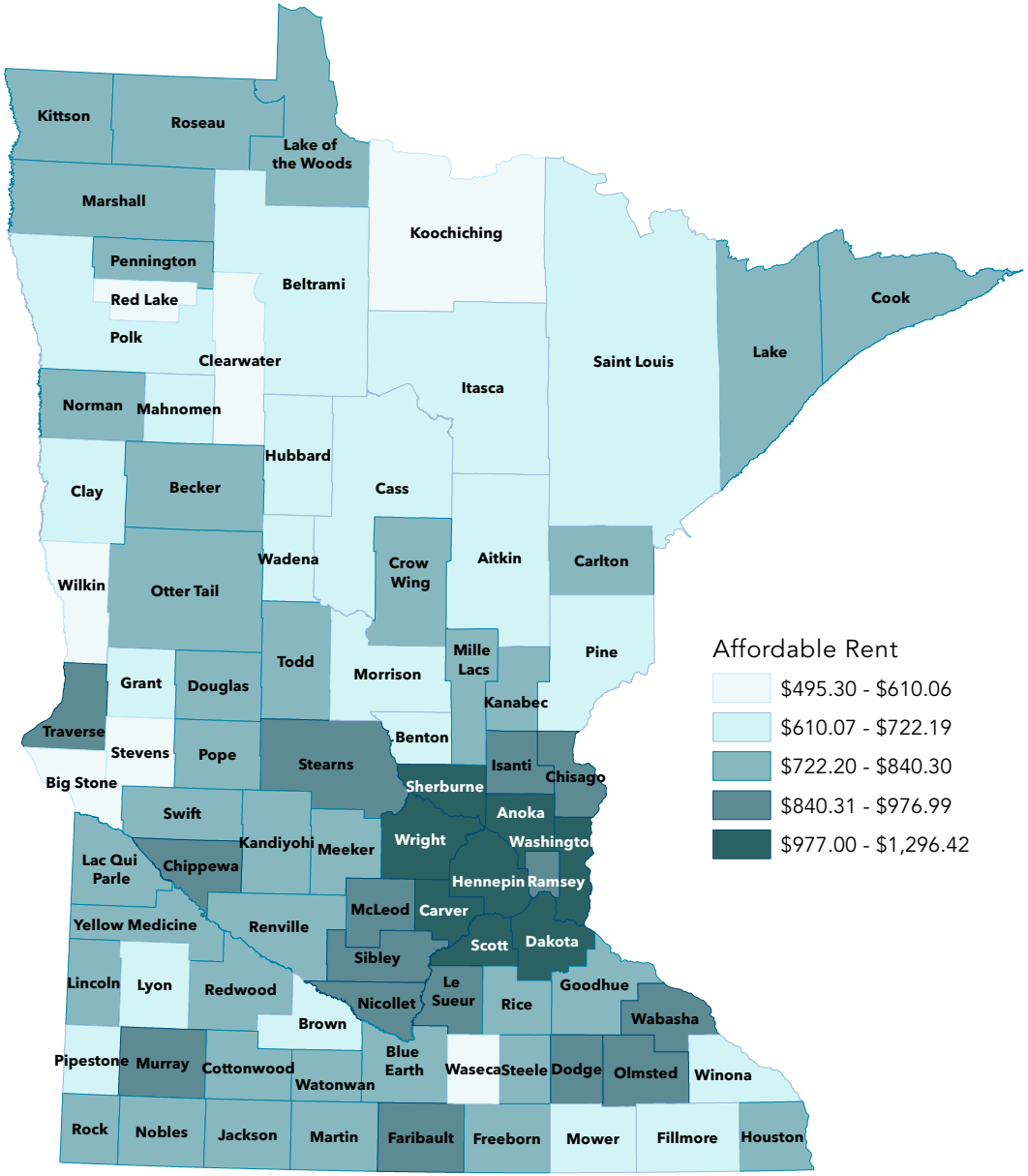
In non-metro areas, minimum wage workers must work **45 hours per week** to afford a modest one-bedroom apartment, and **58 hours per week** for a two-bedroom.

Minimum wage workers in the Twin Cities metropolitan area must work **71 hours per week** to afford a modest one-bedroom apartment and **90 hours per week** for a two-bedroom – the highest number of hours for a major metropolitan area in the state. Compares to last year, workers must work 2-3 hours more per week to afford their apartment.

Hours of work at minimum wage to afford rent in the Twin Cities



RENT AFFORDABLE TO MEDIAN-INCOME RENTER



In 49 percent of Minnesota counties, the median-income renter can't afford rent for a two-bedroom apartment.

For the median-income renter household in Minnesota, an affordable rent – one that does not exceed 30 percent of a household's monthly income – is $952 per month. To afford a modest two-bedroom apartment, the median-income renter must pay $75 more each month than they can afford. At the state level, Minnesota median-income renter households would need an eight percent raise to afford rent for a modest two-bedroom apartment.

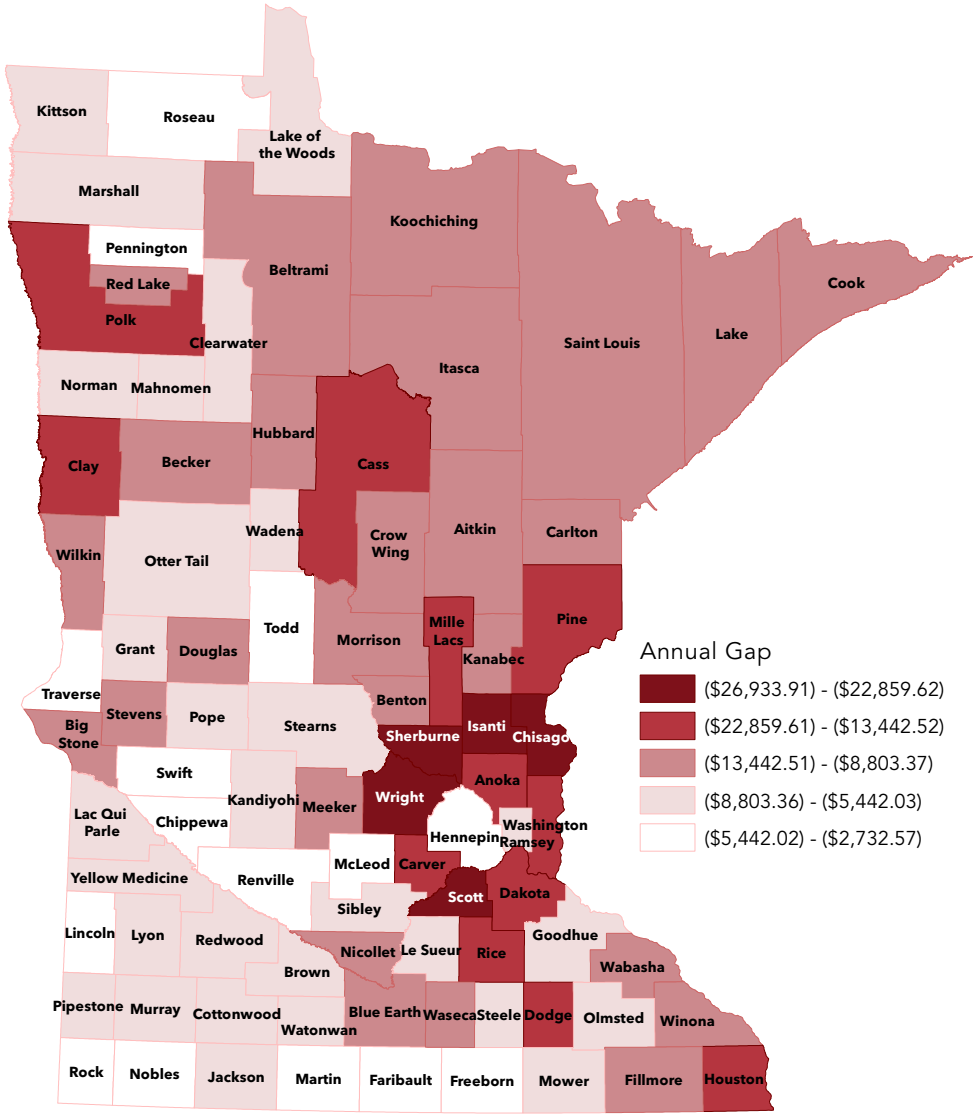
In contrast to the $952 affordable to the median-income renter at the statewide level, the median-income renter household in **non-metro Minnesota** can afford far less – just $743 per month.

Chisago and Ramsey Counties currently have the largest gap in the state between renter median income and rent for a two-bedroom apartment, adding up annually to a shortage of $2,916 to $3,552. In total, there are 23 counties where, to afford a modest two-bedroom, **the median income renter must pay over $1000 more annually than they can afford.**

Compared to median-income renters statewide, median-income renters in Washington County can afford the **highest rent in the state.**

Median-income renters in Koochiching County can only afford to pay $495 per month for rent, the **lowest level in the state.**

DIFFERENCE BETWEEN THE AVERAGE WORKER INCOME AND INCOME NEEDED TO AFFORD A 2-BEDROOM APARTMENT

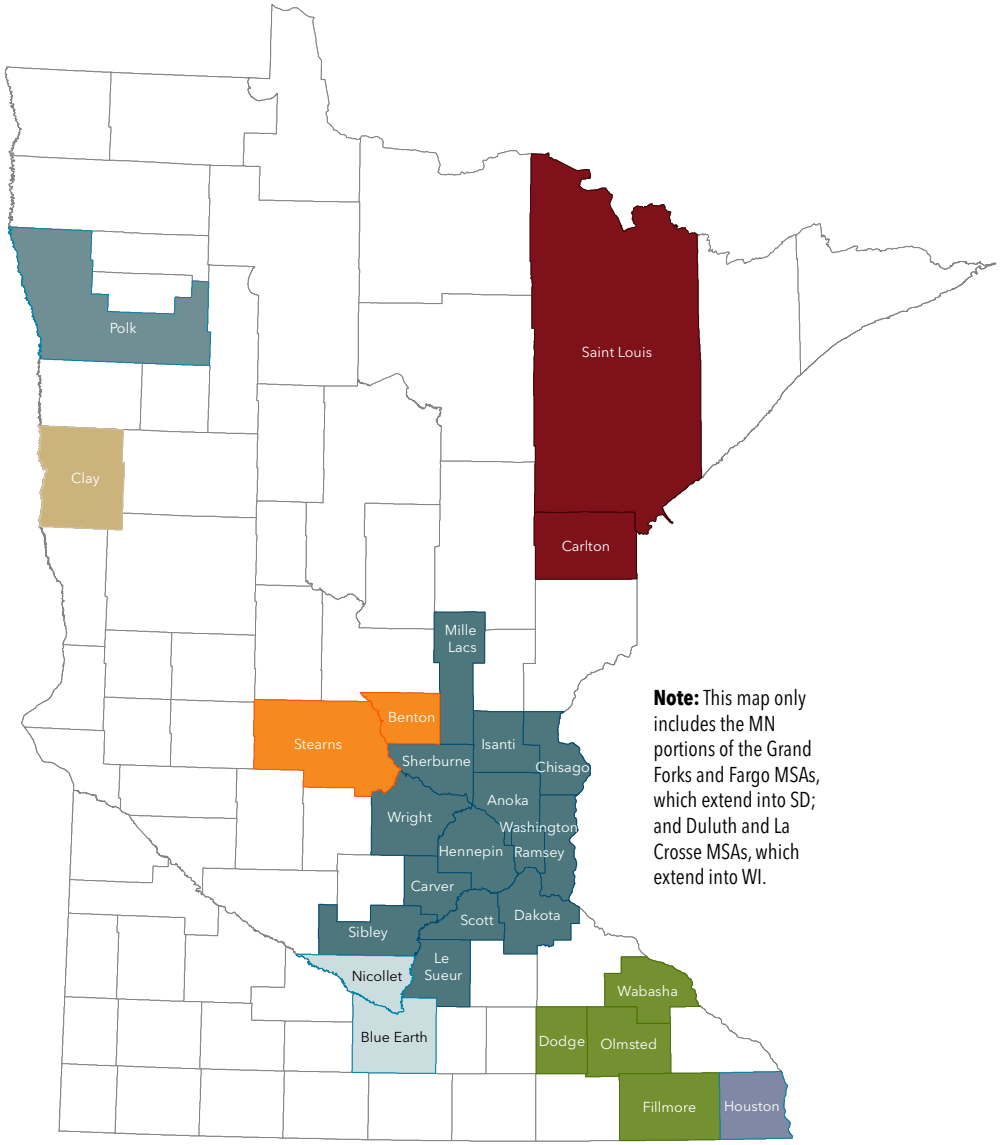


In every county in the state, the average worker would need to earn at least $2,733 – and as much as $26,934 – more per year to afford a two-bedroom apartment. And, while two-bedroom apartments are out of reach in every county, even one-bedroom apartments are out of reach to the average worker income in 72 percent of counties.

In 87 percent of all counties, the annual gap between incomes and affordable rent exceeds $5,000.

In the counties with the most extreme gaps, renters would need to earn an additional $22,000 to nearly $27,000 annually to afford a two-bedroom apartment. The counties with the largest gaps include Chisago, Sherburne, Wright, Isanti, Scott and Washington counties. The gap is particularly stark in Chisago County, where an average worker income is short by $17,494 for the income needed to afford a modest one-bedroom.

MOST METRO AREAS UNAFFORDABLE TO AVERAGE INCOME RENTERS AND MINIMUM WAGE WORKERS

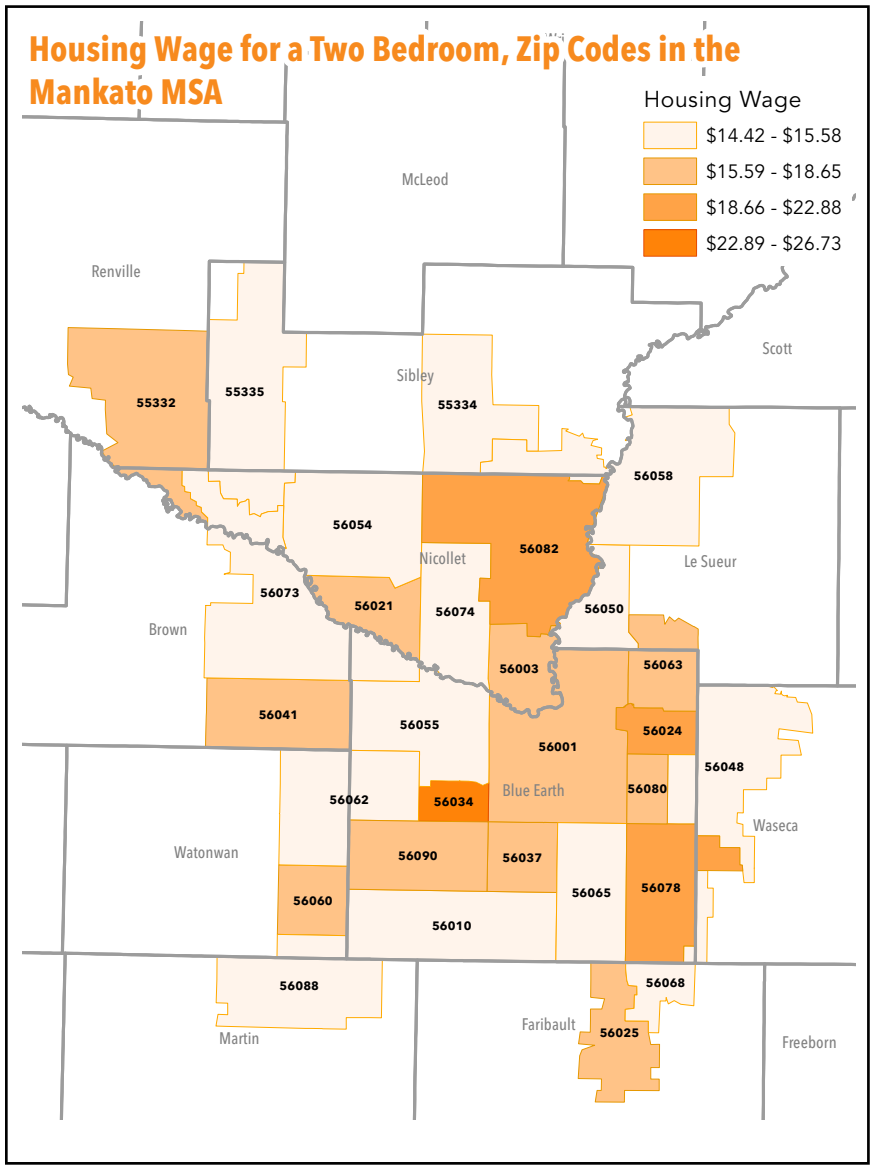


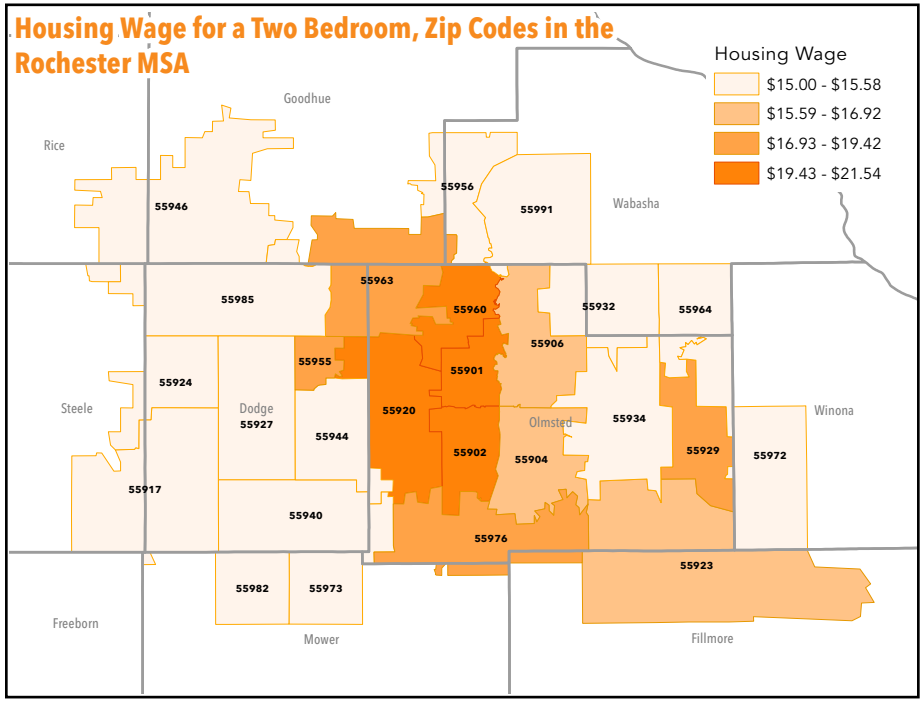
Note: This map only includes the MN portions of the Grand Forks and Fargo MSAs, which extend into SD; and Duluth and La Crosse MSAs, which extend into WI.

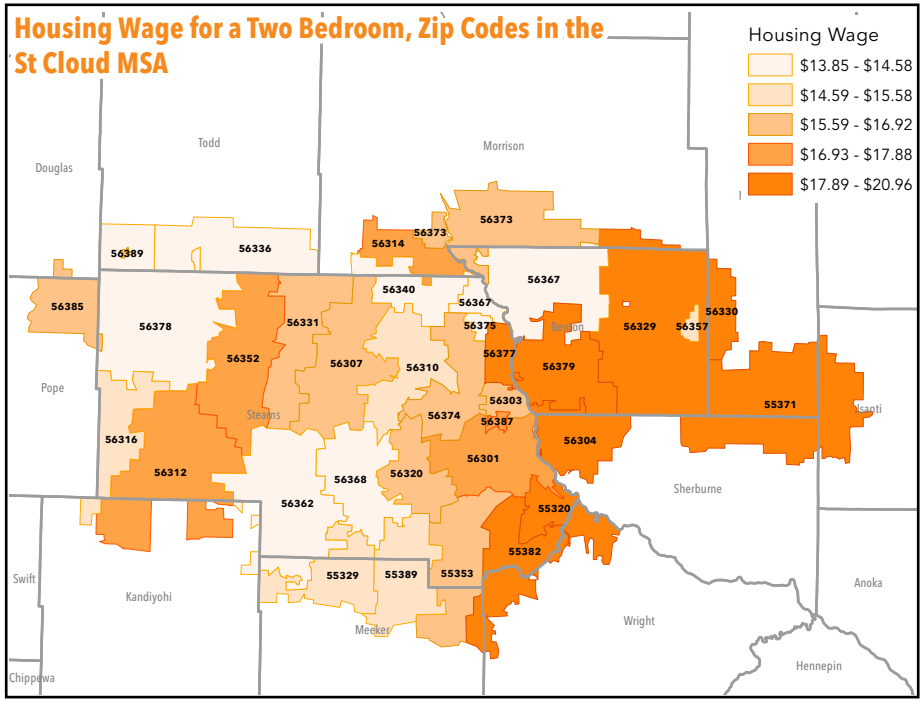
In many metro areas, the gap between wages and rent is particularly pronounced.

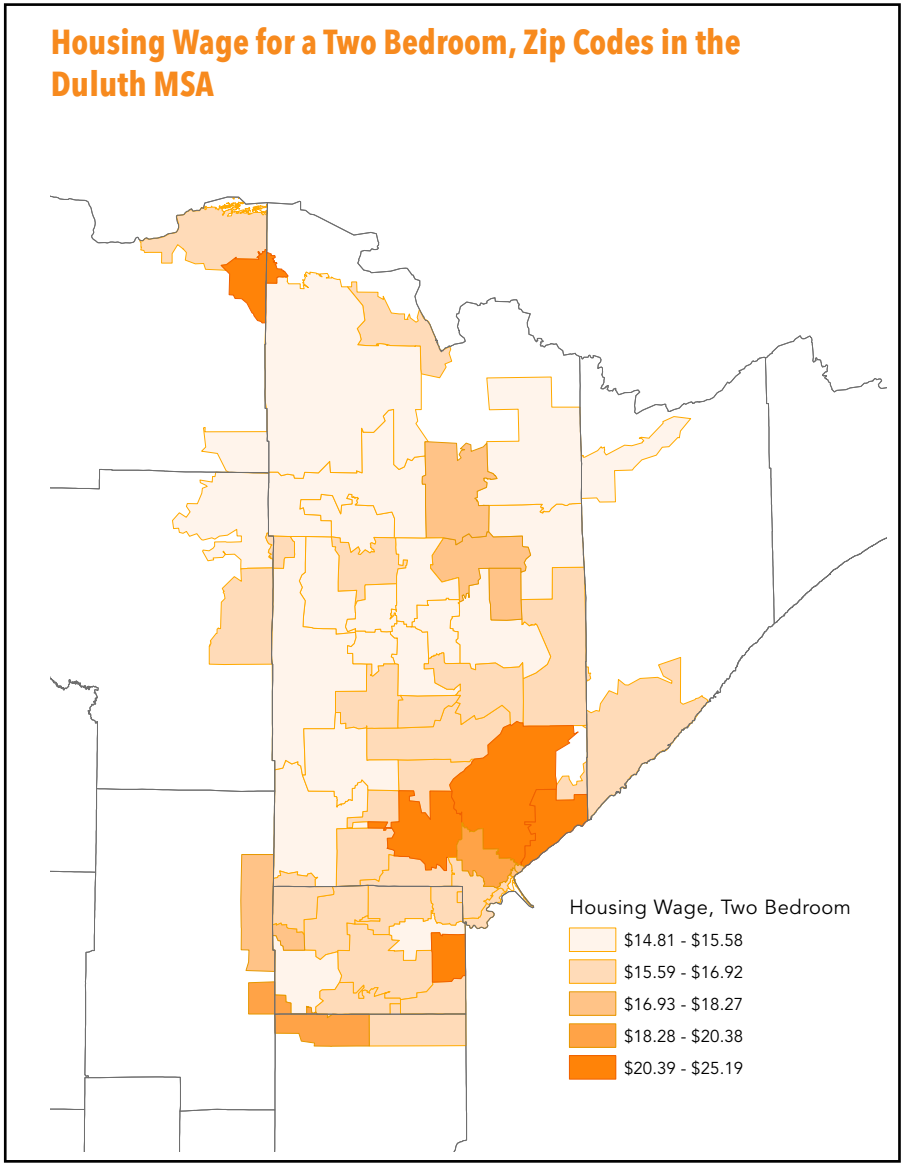
Since just last year, the housing wage in **Rochester** has increased by 12 percent, marking the highest rate of change of all the metro areas. **Fargo** has the starkest gap between what the average renter earns and income needed to afford a one-bedroom, at an annual deficiency of $10,865. **Minneapolis-Saint Paul** contains the highest housing wage in the state, with a full-time worker needing to earn at least $17.60/hour for a modest one-bedroom, and $22.13/hour for a two-bedroom.

METRO AREA	1-bedroom rent	2-bedroom rent	Min wage can afford
Duluth	$670	$871	$513
Fargo	$691	$859	$513
Grand Forks	$671	$870	$513
La Crosse-Onalaska	$624	$826	$513
Mankato	$715	$924	$513
Minneapolis-St Paul	$915	$1,151	$513
Rochester	$734	$959	$513
St. Cloud	$698	$855	$513

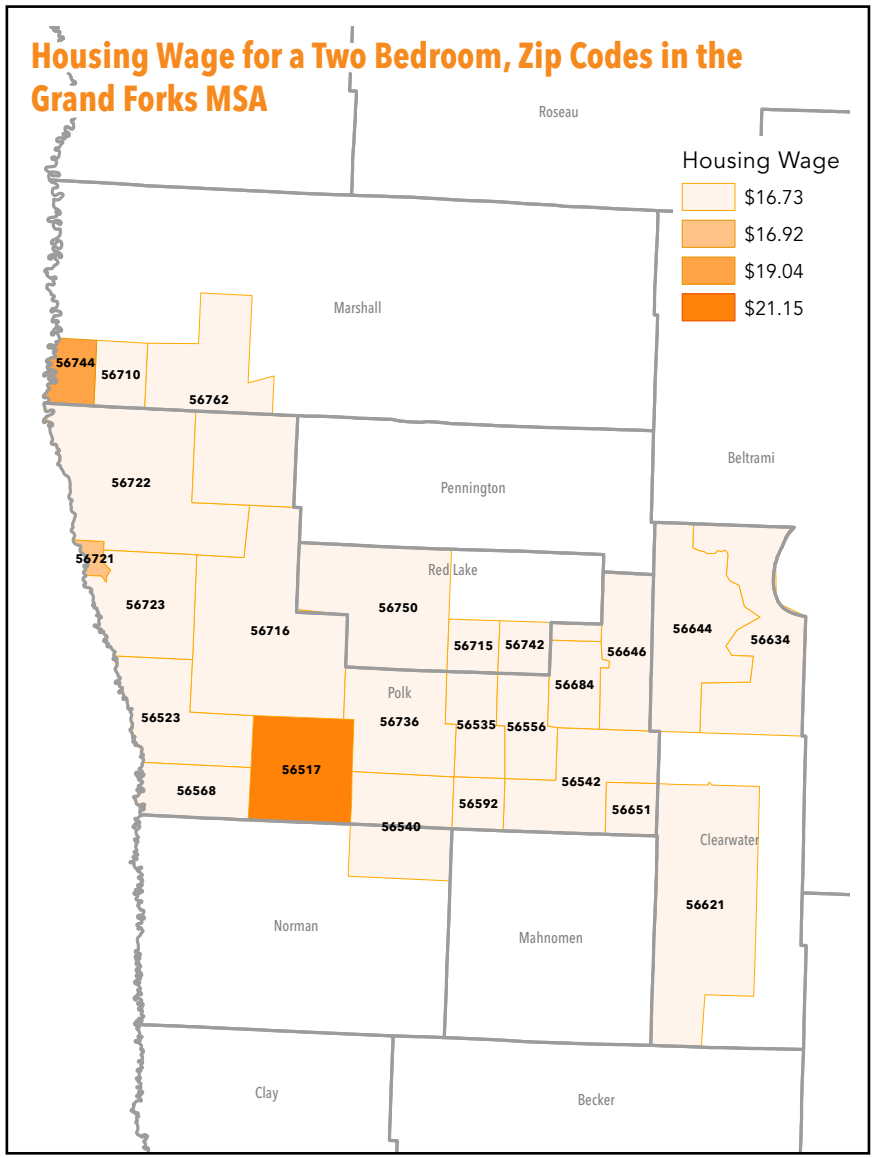

Housing Wage for a Two Bedroom, Zip Codes in the Mankato MSA
Housing Wage
$14.42 - $15.58
$15.59 - $18.65
$18.66 - $22.88
$22.89 - $26.73
McLeod
Renville
Scott
Sibley
Nicollet
Le Sueur
Brown
Blue Earth
Waseca
Watonwan
Martin
Faribault
Freeborn
55332
55335
55334
56058
56054
56082
56073
56021
56074
56050
56003
56063
56041
56055
56001
56024
56048
56062
56034
56080
56090
56037
56065
56078
56060
56010
56088
56068
56025


Housing Wage for a Two Bedroom, Zip Codes in the Rochester MSA
Housing Wage
$15.00 - $15.58
$15.59 - $16.92
$16.93 - $19.42
$19.43 - $21.54
Goodhue
Rice
Wabasha
Steele
Dodge
Olmsted
Winona
Freeborn
Mower
Fillmore
55946
55956
55991
55985
55963
55960
55932
55964
55906
55924
55955
55901
55927
55944
55920
55934
55902
55904
55929
55972
55917
55940
55976
55982
55973
55923

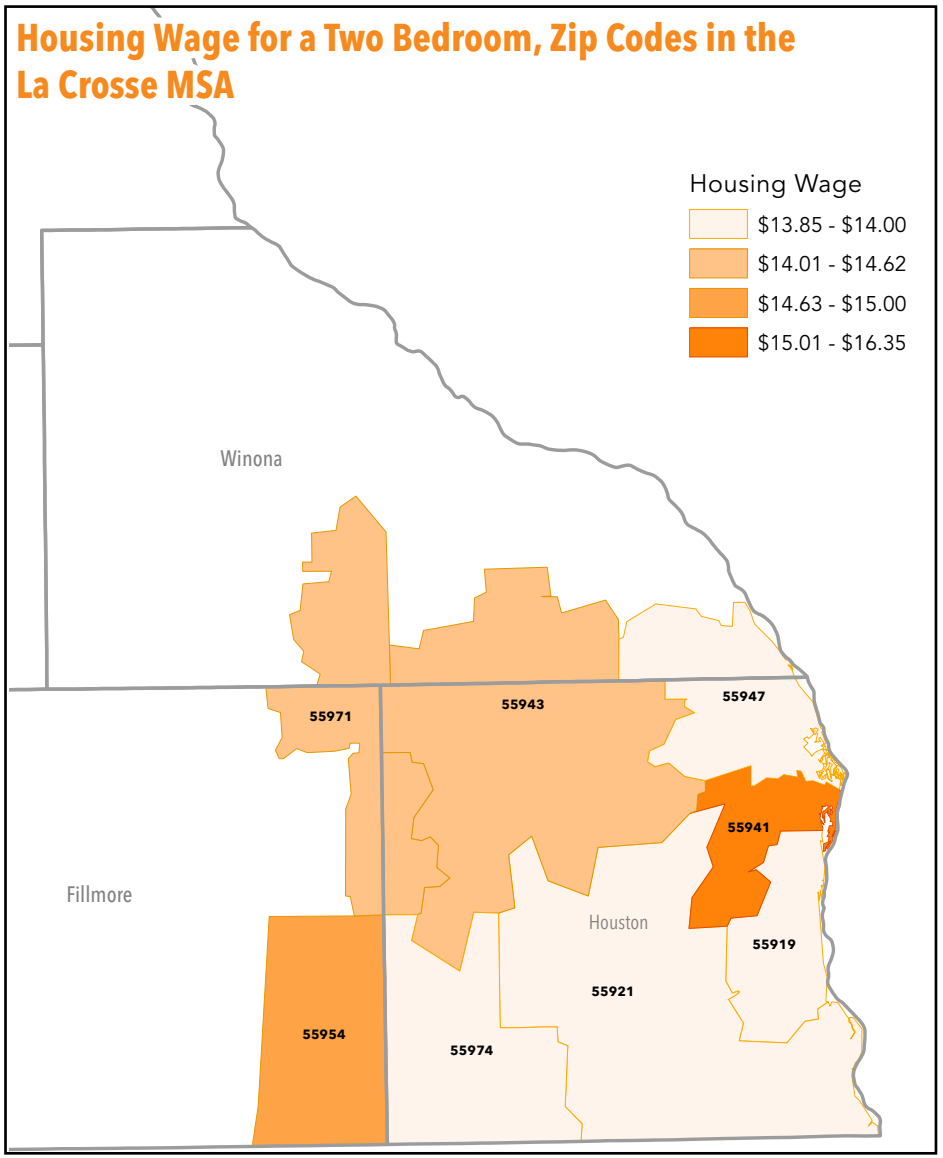

Housing Wage for a Two Bedroom, Zip Codes in the St Cloud MSA
Housing Wage
$13.85 - $14.58
$14.59 - $15.58
$15.59 - $16.92
$16.93 - $17.88
$17.89 - $20.96
Todd
Morrison
Douglas
Pope
Stearns
Sherburne
Swift
Kandiyohi
Meeker
Wright
Anoka
Hennepin
Chippewa
56389
56336
56373
56314
56340
56367
56385
56378
56331
56375
56329
56357
56330
56352
56307
56310
56377
56379
56303
56374
56387
56371
56316
56304
56312
56301
56368
56320
56362
55320
55382
55329
55389
55353

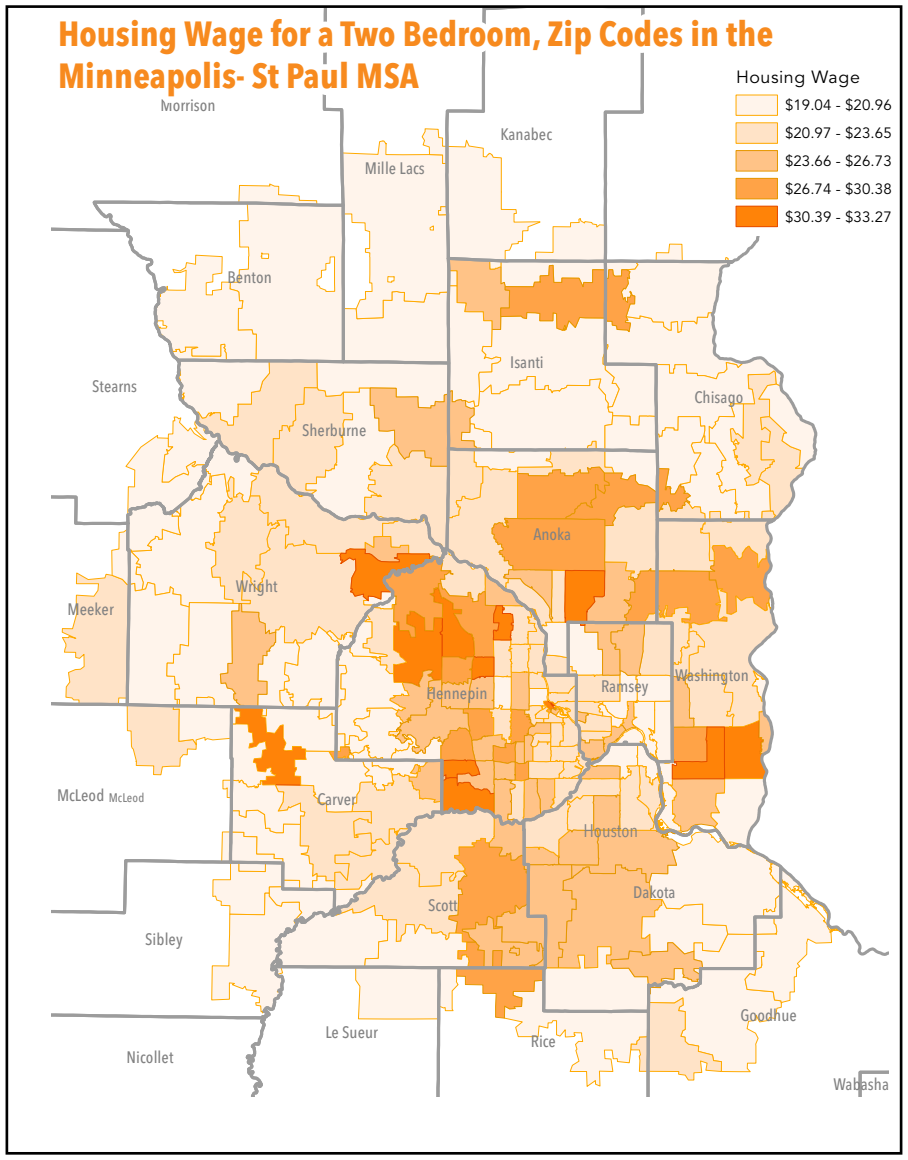

Housing Wage for a Two Bedroom, Zip Codes in the Duluth MSA
Housing Wage, Two Bedroom
$14.81 - $15.58
$15.59 - $16.92
$16.93 - $18.27
$18.28 - $20.38
$20.39 - $25.19

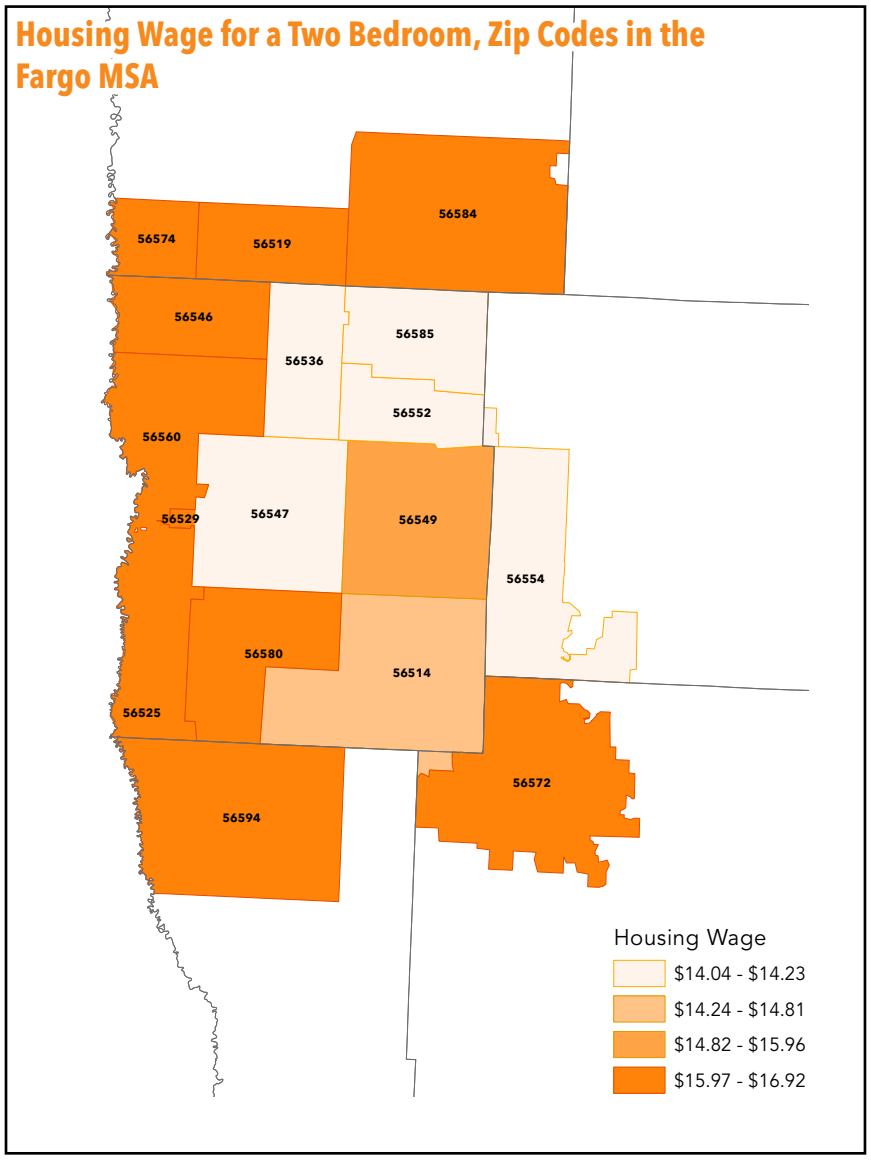
Housing Wage for a Two Bedroom, Zip Codes in the Grand Forks MSA



Housing Wage for a Two Bedroom, Zip Codes in the La Crosse MSA




Housing Wage for a Two Bedroom, Zip Codes in the Minneapolis- St Paul MSA
Housing Wage
$19.04 - $20.96
$20.97 - $23.65
$23.66 - $26.73
$26.74 - $30.38
$30.39 - $33.27
Morrison
Kanabec
Mille Lacs
Benton
Stearns
Isanti
Chisago
Sherburne
Anoka
Wright
Meeker
Hennepin
Ramsey
Washington
McLeod
Carver
Houston
Scott
Dakota
Sibley
Le Sueur
Rice
Goodhue
Nicollet
Wabasha


Housing Wage for a Two Bedroom, Zip Codes in the Fargo MSA
56574
56519
56584
56546
56585
56536
56552
56560
56529
56547
56549
56554
56580
56514
56525
56572
56594
Housing Wage
$14.04 - $14.23
$14.24 - $14.81
$14.82 - $15.96
$15.97 - $16.92

County	Hourly Wage needed to afford 2 BR[1] FMR[2]	2 BR FMR	Annual income needed to afford 2 BR FMR	Full-time jobs at minimum wage needed to afford 2 BR FMR[3]	Annual AMI[4]	Monthly rent affordable at AMI[5]	30% of AMI	Monthly rent affordable at 30% of AMI	Renter households (2013-2017)	% of households (2013-2017)	Estimated hourly mean renter wage (2019)	Monthly rent affordable at mean renter wage	Full-time jobs at mean renter wage needed to afford 2 BR FMR
Minnesota	$19.74	$1,027	$41,061	2	$89,318	$2,233	$26,795	$670	611,161	28	$15.53	$808	1.275
Minnesota Non-Metro	$14.36	$746	$29,860	1.45	$69,885	$1,747	$20,965	$524	119,095	24	$10.46	$544	1.375
Metro Areas													
Duluth MSA	$16.75	$871	$34,840	1.7	$71,900	$1,798	$21,570	$539	27,650	28	$10.84	$563	1.55
Fargo MSA	$16.52	$859	$34,360	1.7	$84,100	$2,103	$25,230	$631	7,339	31	$8.07	$420	2.05
Fillmore County HMFA	$13.46	$700	$28,000	1.4	$73,500	$1,838	$22,050	$551	1,741	20	$7.62	$396	1.775
Grand Forks MSA	$16.73	$870	$34,800	1.7	$78,500	$1,963	$23,550	$589	3,366	27	$8.67	$451	1.925
La Crosse-Onalaska MSA	$15.88	$826	$33,040	1.6	$78,600	$1,965	$23,580	$590	1,600	20	$8.48	$441	1.875
Le Sueur County HMFA	$15.23	$792	$31,680	1.55	$80,700	$2,018	$24,210	$605	1,966	18	$11.78	$612	1.3
Mankato-North Mankato MSA	$17.77	$924	$36,960	1.8	$78,500	$1,963	$23,550	$589	13,154	34	$11.52	$599	1.55
Mille Lacs County HMFA	$16.88	$878	$35,120	1.7	$64,000	$1,600	$19,200	$480	2,642	26	$9.57	$497	1.775
MSP-Bloomington HMFA	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	389,254	30	$17.65	$918	1.25
Rochester HMFA	$18.44	$959	$38,360	1.875	$93,800	$2,345	$28,140	$704	16,988	25	$14.86	$773	1.25
Sibley County HMFA	$14.17	$737	$29,480	1.425	$73,800	$1,845	$22,140	$554	1,305	22	$11.46	$596	1.225
St. Cloud MSA	$16.44	$855	$34,200	1.675	$76,300	$1,908	$22,890	$572	23,371	31	$12.72	$662	1.3

1: BR = Bedroom
2: FMR = Fiscal Year 2019 Fair Market Rate
3: This calculation uses the higher of the state or federal minimum wage. Local minimum wages are not used.
4: AMI = Fiscal Year 2019 Area Median Income
5: "Affordable" rents represent the generally accepted standard of spending not more than 30% of gross income on gross housing costs

County	Hourly Wage needed to afford 2 BR[1] FMR[2]	2 BR FMR	Annual income needed to afford 2 BR FMR	Full-time jobs at minimum wage needed to afford 2 BR FMR[3]	Annual AMI[4]	Monthly rent affordable at AMI[5]	30% of AMI	Monthly rent affordable at 30% of AMI	Renter households (2013-2017)	% of households (2013-2017)	Estimated hourly mean renter wage (2019)	Monthly rent affordable at mean renter wage	Full-time jobs at mean renter wage needed to afford 2 BR FMR
Aitkin	$14.37	$747	$29,880	1.45	$57,800	$1,445	$17,340	$434	1,345	17	$9.24	$480	1.55
Anoka	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	25,113	20	$14.07	$732	1.575
Becker	$13.79	$717	$28,680	1.4	$69,500	$1,738	$20,850	$521	2,951	22	$9.40	$489	1.475
Beltrami	$14.75	$767	$30,680	1.5	$58,300	$1,458	$17,490	$437	5,428	32	$10.39	$540	1.425
Benton	$16.44	$855	$34,200	1.675	$76,300	$1,908	$22,890	$572	5,007	31	$10.31	$536	1.6
Big Stone	$13.46	$700	$28,000	1.375	$67,200	$1,680	$20,160	$504	517	23	$7.71	$401	1.75
Blue Earth	$17.77	$924	$36,960	1.8	$78,500	$1,963	$23,550	$589	9,710	38	$11.58	$602	1.525
Brown	$13.46	$700	$28,000	1.375	$74,800	$1,870	$22,440	$561	2,364	22	$9.86	$513	1.375
Carlton	$16.75	$871	$34,840	1.7	$71,900	$1,798	$21,570	$539	2,726	20	$11.03	$573	1.525
Carver	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	6,647	19	$13.83	$719	1.6
Cass	$14.48	$753	$30,120	1.475	$59,000	$1,475	$17,700	$443	2,501	19	$7.56	$393	1.925
Chippewa	$13.46	$700	$28,000	1.375	$73,500	$1,838	$22,050	$551	1,493	30	$11.06	$575	1.225
Chisago	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	2,896	15	$9.19	$478	2.4
Clay County	$16.52	$859	$34,360	1.675	$84,100	$2,103	$25,230	$631	7,339	31	$8.07	$420	2.05
Clearwater	$13.46	$700	$28,000	1.375	$59,300	$1,483	$17,790	$445	701	20	$9.85	$512	1.375
Cook	$13.77	$716	$28,640	1.4	$67,800	$1,695	$20,340	$509	675	25	$7.71	$401	1.775
Cottonwood	$13.46	$700	$28,000	1.375	$62,600	$1,565	$18,780	$470	1,094	23	$10.22	$531	1.325
Crow Wing	$15.56	$809	$32,360	1.575	$67,300	$1,683	$20,190	$505	6,394	24	$10.34	$538	1.5
Dakota	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	40,719	26	$14.75	$767	1.5
Dodge	$18.44	$959	$38,360	1.875	$93,800	$2,345	$28,140	$704	1,348	18	$11.73	$610	1.575
Douglas	$15.23	$792	$31,680	1.55	$76,300	$1,908	$22,890	$572	4,026	25	$10.68	$555	1.425
Faribault	$13.46	$700	$28,000	1.375	$63,800	$1,595	$19,140	$479	1,502	24	$12.14	$631	1.1
Fillmore	$13.46	$700	$28,000	1.375	$73,500	$1,838	$22,050	$551	1,741	20	$7.62	$396	1.775
Freeborn	$13.46	$700	$28,000	1.375	$64,600	$1,615	$19,380	$485	3,000	23	$12.15	$632	1.1
Goodhue	$15.13	$787	$31,480	1.525	$82,100	$2,053	$24,630	$616	4,910	25	$11.79	$613	1.275

County	Hourly Wage needed to afford 2 BR[1] FMR[2]	2 BR FMR	Annual income needed to afford 2 BR FMR	Full-time jobs at minimum wage needed to afford 2 BR FMR[3]	Annual AMI[4]	Monthly rent affordable at AMI[5]	30% of AMI	Monthly rent affordable at 30% of AMI	Renter households (2013-2017)	% of households (2013-2017)	Estimated hourly mean renter wage (2019)	Monthly rent affordable at mean renter wage	Full-time jobs at mean renter wage needed to afford 2 BR FMR
Grant	$13.46	$700	$28,000	1.375	$66,400	$1,660	$19,920	$498	525	21	$9.50	$494	1.425
Hennepin	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	187,587	38	$20.16	$1,048	1.1
Houston	$15.88	$826	$33,040	1.6	$78,600	$1,965	$23,580	$590	1,600	20	$8.48	$441	1.875
Hubbard	$13.46	$700	$28,000	1.375	$65,500	$1,638	$19,650	$491	1,546	18	$8.84	$459	1.525
Isanti	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	2,682	18	$10.98	$571	2.025
Itasca	$14.92	$776	$31,040	1.525	$61,600	$1,540	$18,480	$462	3,797	20	$9.85	$512	1.525
Jackson	$13.46	$700	$28,000	1.375	$74,000	$1,850	$22,200	$555	924	21	$10.49	$545	1.275
Kanabec	$15.38	$800	$32,000	1.55	$61,100	$1,528	$18,330	$458	1,176	19	$10.68	$555	1.45
Kandiyohi	$14.17	$737	$29,480	1.425	$71,600	$1,790	$21,480	$537	4,384	26	$10.36	$539	1.375
Kittson	$13.46	$700	$28,000	1.375	$71,600	$1,790	$21,480	$537	371	20	$9.82	$511	1.375
Koochiching	$13.46	$700	$28,000	1.375	$66,900	$1,673	$20,070	$502	1,200	21	$7.86	$409	1.725
Lac qui Parle	$13.46	$700	$28,000	1.375	$68,600	$1,715	$20,580	$515	619	20	$9.40	$489	1.425
Lake	$14.71	$765	$30,600	1.5	$69,800	$1,745	$20,940	$524	823	16	$10.39	$540	1.425
Lake of the Woods	$14.40	$749	$29,960	1.45	$67,100	$1,678	$20,130	$503	282	18	$10.28	$535	1.4
Le Sueur	$15.23	$792	$31,680	1.55	$80,700	$2,018	$24,210	$605	1,966	18	$11.78	$612	1.3
Lincoln	$13.46	$700	$28,000	1.375	$68,600	$1,715	$20,580	$515	525	21	$10.87	$565	1.25
Lyon	$13.46	$700	$28,000	1.375	$75,700	$1,893	$22,710	$568	3,198	32	$10.05	$523	1.35
Mahnomen	$13.46	$700	$28,000	1.375	$55,500	$1,388	$16,650	$416	592	30	$10.48	$545	1.275
Marshall	$13.46	$700	$28,000	1.375	$72,900	$1,823	$21,870	$547	749	19	$10.84	$564	1.25
Martin	$13.46	$700	$28,000	1.375	$66,600	$1,665	$19,980	$500	2,207	25	$11.45	$595	1.175
McLeod	$15.00	$780	$31,200	1.525	$74,200	$1,855	$22,260	$557	3,202	22	$12.46	$648	1.2
Meeker	$15.25	$793	$31,720	1.55	$74,100	$1,853	$22,230	$556	1,953	21	$9.63	$501	1.575
Mille Lacs	$16.88	$878	$35,120	1.7	$64,000	$1,600	$19,200	$480	2,642	26	$9.57	$497	1.775
Morrison	$13.46	$700	$28,000	1.375	$69,000	$1,725	$20,700	$518	2,756	21	$7.94	$413	1.7

County	Hourly Wage needed to afford 2 BR[1] FMR[2]	2 BR FMR	Annual income needed to afford 2 BR FMR	Full-time jobs at minimum wage needed to afford 2 BR FMR[3]	Annual AMI[4]	Monthly rent affordable at AMI[5]	30% of AMI	Monthly rent affordable at 30% of AMI	Renter households (2013-2017)	% of households (2013-2017)	Estimated hourly mean renter wage (2019)	Monthly rent affordable at mean renter wage	Full-time jobs at mean renter wage needed to afford 2 BR FMR
Mower	$14.56	$757	$30,280	1.475	$72,400	$1,810	$21,720	$543	4,150	27	$11.24	$585	1.3
Murray	$13.46	$700	$28,000	1.375	$72,800	$1,820	$21,840	$546	693	19	$10.79	$561	1.25
Nicollet	$17.77	$924	$36,960	1.8	$78,500	$1,963	$23,550	$589	3,444	27	$11.34	$590	1.575
Nobles	$13.83	$719	$28,760	1.4	$65,000	$1,625	$19,500	$488	2,285	29	$12.00	$624	1.15
Norman	$13.46	$700	$28,000	1.375	$66,400	$1,660	$19,920	$498	521	19	$10.26	$534	1.3
Olmsted	$18.44	$959	$38,360	1.875	$93,800	$2,345	$28,140	$704	15,640	26	$15.02	$781	1.225
Otter Tail	$13.56	$705	$28,200	1.375	$70,500	$1,763	$21,150	$529	5,148	21	$9.94	$517	1.375
Pennington	$14.23	$740	$29,600	1.45	$70,800	$1,770	$21,240	$531	1,553	26	$12.57	$654	1.125
Pine	$15.08	$784	$31,360	1.525	$59,800	$1,495	$17,940	$449	2,318	22	$7.16	$372	2.1
Pipestone	$13.46	$700	$28,000	1.375	$63,800	$1,595	$19,140	$479	1,010	25	$10.15	$528	1.325
Polk	$16.73	$870	$34,800	1.7	$78,500	$1,963	$23,550	$589	3,366	27	$8.67	$451	1.925
Pope	$13.96	$726	$29,040	1.425	$73,800	$1,845	$22,140	$554	1,017	21	$10.66	$555	1.3
Ramsey	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	84,782	41	$18.11	$942	1.225
Red Lake	$13.46	$700	$28,000	1.375	$73,900	$1,848	$22,170	$554	309	18	$7.59	$395	1.775
Redwood	$13.46	$700	$28,000	1.375	$68,500	$1,713	$20,550	$514	1,439	23	$10.83	$563	1.25
Renville	$13.46	$700	$28,000	1.375	$72,400	$1,810	$21,720	$543	1,275	21	$10.96	$570	1.225
Rice	$17.13	$891	$35,640	1.75	$88,000	$2,200	$26,400	$660	5,887	26	$10.48	$545	1.625
Rock	$13.46	$700	$28,000	1.375	$68,200	$1,705	$20,460	$512	1,018	26	$11.10	$577	1.2
Roseau	$13.63	$709	$28,360	1.375	$70,900	$1,773	$21,270	$532	1,306	21	$12.11	$630	1.125
Scott	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	8,145	17	$11.14	$580	1.975
Sherburne	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	5,261	17	$10.51	$547	2.1
Sibley	$14.17	$737	$29,480	1.425	$73,800	$1,845	$22,140	$554	1,305	22	$11.46	$596	1.225
St. Louis	$16.75	$871	$34,840	1.7	$71,900	$1,798	$21,570	$539	24,924	29	$10.82	$562	1.55
Stearns	$16.44	$855	$34,200	1.675	$76,300	$1,908	$22,890	$572	18,364	31	$13.22	$688	1.25

County	Hourly Wage needed to afford 2 BR[1] FMR[2]	2 BR FMR	Annual income needed to afford 2 BR FMR	Full-time jobs at minimum wage needed to afford 2 BR FMR[3]	Annual AMI[4]	Monthly rent affordable at AMI[5]	30% of AMI	Monthly rent affordable at 30% of AMI	Renter households (2013-2017)	% of households (2013-2017)	Estimated hourly mean renter wage (2019)	Monthly rent affordable at mean renter wage	Full-time jobs at mean renter wage needed to afford 2 BR FMR
Steele	$15.33	$797	$31,880	1.55	$78,500	$1,963	$23,550	$589	3,400	24	$11.58	$602	1.325
Stevens	$13.46	$700	$28,000	1.375	$77,500	$1,938	$23,250	$581	1,217	34	$8.42	$438	1.6
Swift	$13.46	$700	$28,000	1.375	$65,300	$1,633	$19,590	$490	1,300	31	$11.65	$606	1.15
Todd	$13.46	$700	$28,000	1.375	$61,500	$1,538	$18,450	$461	1,781	18	$11.49	$598	1.175
Traverse	$13.46	$700	$28,000	1.375	$67,200	$1,680	$20,160	$504	309	20	$11.64	$605	1.15
Wabasha	$14.98	$779	$31,160	1.525	$75,900	$1,898	$22,770	$569	1,690	19	$10.34	$537	1.45
Wadena	$13.46	$700	$28,000	1.375	$55,500	$1,388	$16,650	$416	1,277	22	$10.67	$555	1.25
Waseca	$13.46	$700	$28,000	1.375	$74,900	$1,873	$22,470	$562	1,637	22	$8.48	$441	1.6
Washington	$22.13	$1,151	$46,040	2.25	$100,000	$2,500	$30,000	$750	17,241	19	$12.88	$670	1.725
Watonwan	$13.46	$700	$28,000	1.375	$65,700	$1,643	$19,710	$493	1,146	26	$10.59	$551	1.275
Wilkin	$13.46	$700	$28,000	1.375	$69,600	$1,740	$20,880	$522	684	24	$7.93	$413	1.7
Winona	$14.44	$751	$30,040	1.475	$75,600	$1,890	$22,680	$567	5,766	30	$9.90	$515	1.45

* A note on average vs median income: Average income calculations reflect the entire range of incomes within a certain area, which can skew these calculations toward outliers. Median income calculations reflect the middle-point of a range of incomes for a certain area, and are less likely to be skewed by outliers. Because there is significant income variation in most communities, with clusters of extremely high- and low-income households at either end of the spectrum, median income calculations represent a more conservative estimate of a typical household's income. In this report, "average renter wage" is derived from the average weekly wages from the 2017 Quarterly Census of Employment and Wages divided by 40 (hours per work week). This overall wage is adjusted by the national ratio of renter household income to total household income reported in ACS 2013-2017.

CREDITS AND ACKNOWLEDGMENTS

Writing, data analysis and mapping by Gabriela Norton, MHP Research Officer

Editing, design and layout by Andy Birkey, MHP Director of Communications and Research

Out of Reach Minnesota is released jointly by the Minnesota Housing Partnership and the National Low Income Housing Coalition (NLIHC), a Washington, D.C.-based organization dedicated solely to achieving socially just public policy that assures people with the lowest incomes in the United States have affordable and decent homes. Contact Gabriela Norton at gabriela.norton@mhponline.org for assistance in accessing or analyzing Out of Reach data for any county or metro area of Minnesota – select metro zip codes.

Uniform Dwelling Code (UDC) vs. International Residential Code (IRC) Analysis

By

Michael D. McNally Jr., Section Chief

Division of Industry Services

Wisconsin Department of Safety and Professional Services

November 25, 2022

Table of Contents

Abstract

The aim of this paper is to provide the Wisconsin Department of Safety and Professional Services (Department) an analysis performed by the Uniform Dwelling Code (UDC) program staff, who analyzed the elimination of the current Uniform Dwelling Code and adoption of the International Code Council (ICC) International Residential Code (IRC) in the State of Wisconsin for all one- and two-family dwellings.

Current UDC Code

The current UDC is covered by five Wis. Admin. Code sections and three appendices. These sections are as follows:

- SPS 320 Administration and enforcement
- SPS 321 Construction standards
- SPS 322 Energy conservation
- SPS 323 Heating, ventilating and air conditioning
- SPS 325 Plumbing
- SPS 320-325 Appendix A
- SPS 320-325 Appendix B
- SPS 320-325 Appendix C

The UDC was last updated through Clearinghouse Rule CR 15-041 with an effective date of January 1, 2016.

Proposed IRC Code

The proposed *2021 International Residential Code* (IRC) is a comprehensive code which comprises all building, plumbing, mechanical, fuel gas and electrical requirements for one- and two-family dwellings and townhouses up to three stories. The IRC is divided into nine main parts, specifically: Part I – Administrative, Part II – Definitions, Part III – Building Planning and Construction, Part IV – Energy Conservation, Part V – Mechanical, Part VI – Fuel Gas, Part VII – Plumbing, Part VIII – Electrical and Part IX – Reference Standards.

Digital format of the *2021 International Residential Code* can be found here:

https://codes.iccsafe.org/content/IRC2021P1

Qualifications of Abstract

The analysis was conducted by one part-time UDC staff member, two full-time UDC staff members and one commercial/HVAC plan reviewer. The staff performing this analysis had little to no knowledge of the IRC standards or requirements. The staff conducted this analysis on a high-level overall cursory review. None of the staff have been trained or have any formal educational training on the contents of the IRC.

This analysis performed by staff is not a Statement of Scope under Wis. Stat. § 227.135(2).

The analysis did not take into consideration any of the following:

- The determination of how to address the continuation or adoption of the current UDC inspection credentials.

- The determination of how to address the continuation or adoption of the dwelling contractor and dwelling contractor qualifier credentials.
- The overall impact of the residential construction and inspection workforce on the State of Wisconsin.
- Any proposed increase or decrease in construction material or labor costs associated with moving to the IRC.
- An analysis of any rules affecting housing per Wis. Stat. § 227.115(2).
- An analysis of any rules affecting economic impact per Wis. Stat. § 227.137.
- Training, communication, and outreach of switching to a different residential code in the State of Wisconsin. or,
- The overall determination of how many additional staff would be needed to switch from the UDC to the IRC.

Analysis of IRC vs UDC

Overall Code Format Layout

The current chapters in the IRC, for the most part, lend themselves to fitting within the current structural framework of how the UDC is laid out in the Wisconsin Administrative Code format. The format would be something like the following:

IRC Chapter	Estimated Location in Wis. Admin. Code
Chapter 1 Scope and Administration	Wis. Admin. Code § SPS 320
Chapter 2 Definitions	Wis. Admin. Code § SPS 320
Chapter 3 Building Planning	Wis. Admin. Code § SPS 320
Chapter 4 Foundations	Wis. Admin. Code § SPS 321
Chapter 5 Floors	Wis. Admin. Code § SPS 321
Chapter 6 Wall Construction	Wis. Admin. Code § SPS 321
Chapter 7 Wall Coverings	Wis. Admin. Code § SPS 321
Chapter 8 Roof-Ceiling Construction	Wis. Admin. Code § SPS 321
Chapter 9 Roof Assemblies	Wis. Admin. Code § SPS 321
Chapter 10 Chimneys and Fireplaces	Wis. Admin. Code § SPS 323
Chapter 11 Energy Efficiency	Wis. Admin. Code § SPS 322
Chapter 12 Mechanical Administration	Wis. Admin. Code § SPS 323
Chapter 13 General Mechanical System Requirements	Wis. Admin. Code § SPS 323
Chapter 14 Heating and Cooling Equipment and Appliances	Wis. Admin. Code § SPS 323
Chapter 15 Exhaust Systems	Wis. Admin. Code § SPS 323
Chapter 16 Duct Systems	Wis. Admin. Code § SPS 323
Chapter 17 Combustion Air	Wis. Admin. Code § SPS 323
Chapter 18 Chimneys and Vents	Wis. Admin. Code § SPS 323
Chapter 19 Special Appliances, Equipment and Systems	Wis. Admin. Code § SPS 323

Chapter 20 Boilers and Water Heaters	Wis. Admin. Code § SPS 323
Chapter 21 Hydronic Piping	Wis. Admin. Code § SPS 323
Chapter 22 Special Piping and Storage Systems	Wis. Admin. Code § SPS 323
Chapter 23 Solar Thermal Energy Systems	Wis. Admin. Code § SPS 323
Chapter 24 Fuel Gas	Wis. Admin. Code § SPS 323
Chapter 25 Plumbing Administration	Wis. Admin. Code § SPS 325
Chapter 26 General Plumbing Requirements	Wis. Admin. Code § SPS 325
Chapter 27 Plumbing Fixtures	Wis. Admin. Code § SPS 325
Chapter 28 Water Heaters	Wis. Admin. Code § SPS 325
Chapter 29 Water Supply and Distribution	Wis. Admin. Code § SPS 325
Chapter 30 Sanitary Drainage	Wis. Admin. Code § SPS 325
Chapter 31 Vents	Wis. Admin. Code § SPS 325
Chapter 32 Traps	Wis. Admin. Code § SPS 325
Chapter 33 Storm Drainage	Wis. Admin. Code § SPS 325
Chapter 34 General Requirements	Wis. Admin. Code § SPS 324
Chapter 35 Definitions	Wis. Admin. Code § SPS 324
Chapter 36 Services	Wis. Admin. Code § SPS 324
Chapter 37 Branch Circuits and Feeder Requirements	Wis. Admin. Code § SPS 324
Chapter 38 Wiring Methods	Wis. Admin. Code § SPS 324
Chapter 39 Power and Lighting Distribution	Wis. Admin. Code § SPS 324
Chapter 40 Devices and Luminaires	Wis. Admin. Code § SPS 324
Chapter 41 Appliance Installation	Wis. Admin. Code § SPS 324
Chapter 42 Swimming Pools	Wis. Admin. Code § SPS 324
Chapter 43 Class 2 Remote-Control, Signaling and Power Limited Circuits	Wis. Admin. Code § SPS 324
Chapter 44 Reference Standards	Wis. Admin. Code § SPS 320
Appendix AA Sizing and Capacities of Gas Piping	Wis. Admin. Code § SPS 320
Appendix AB Sizing of Venting Systems Serving Appliances Equipped with Draft Hoods, Category I Appliances and Appliances Listed for Use with Type B Vents	Wis. Admin. Code § SPS 320
Appendix AC Exit Terminals of Mechanical Draft and Direct-Vent Venting Systems	Wis. Admin. Code § SPS 320
Appendix AD Recommended Procedure for Safety Inspection of an Existing Appliance Installation	Wis. Admin. Code § SPS 320
Appendix AE Manufactured Housing Used as Dwelling	Wis. Admin. Code § SPS 320
Appendix AF Radon Control Methods	Wis. Admin. Code § SPS 320
Appendix AG Piping Standards for Various Applications	Wis. Admin. Code § SPS 320
Appendix AH Patio Covers	Wis. Admin. Code § SPS 320
Appendix AI Private Sewage Disposal	Wis. Admin. Code § SPS 320
Appendix AJ Existing Buildings and Structures	Wis. Admin. Code § SPS 320

Appendix AK Sound Transmission	Wis. Admin. Code § SPS 320
Appendix AL Permit Fees	Wis. Admin. Code § SPS 320
Appendix AM Home Day Care - R-3 Occupancy	Wis. Admin. Code § SPS 320
Appendix AN Venting Methods	Wis. Admin. Code § SPS 320
Appendix AO Automatic Vehiclar Gates	Wis. Admin. Code § SPS 320
Appendix AP Sizing of Water Piping System	Wis. Admin. Code § SPS 320
Appendix AQ Tiny Houses	Wis. Admin. Code § SPS 320
Appendix AR Light Straw-Clay Construction	Wis. Admin. Code § SPS 320
Appendix AS Strawable Construction	Wis. Admin. Code § SPS 320
Appendix AT [RE] Solar-Ready Provisions - Detached One-and Two-Family Dwellings and Townhouses	Wis. Admin. Code § SPS 320
Appendix AU COB Construction (Monolithic Adobe)	Wis. Admin. Code § SPS 320
Appendix AV Board of Appeals	Wis. Admin. Code § SPS 320
Appendix AW 3D-Printed Building Construction	Wis. Admin. Code § SPS 320

High Level Concerns with the Adoption of the IRC

The following are a list of areas of high-level concern if the State of Wisconsin were to adopt the IRC:

IRC Code	Code Summary	Analysis
R101.2 & R102.7.1	SCOPE: The code applies to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plan in height with a separate means of egress and their accessory structures not more than three stories.	The current UDC code does not apply to repairs, location, removal, or demolition of one- or two-family dwellings. The current UDC code does not apply to detached dwellings or townhouses. This section of the IRC will need to be thoroughly looked at as it pertains to specifically the authority the Department has under Wis. Stat. § 101.
R102.7	Existing structures adopts the International Property Maintenance Code or the International Fire Code. In addition, the building	This provision will need input from the Uniform Dwelling Code Council.

	official has the authority to update an existing structure to the IRC.	
R104, R105, & R108	These code sections outline the duties and powers of the local building official. In addition, permits and fees are covered for multiple areas of work (i.e. plumbing, HVAC, electrical, etc.)	Most if not all these areas are already covered in the UDC. It may be in the best interest to keep most of SPS 320 in tack in lieu of adopting these sections. However, some areas may be addressed by the Uniform Dwelling Code Council such as the addition of repairs, permit work exemptions, removal of demolish from permitting, expiration of permit timeline, or conducting preliminary inspections. Currently, municipalities create their own schedule of fees, payment of fees and refund process. In addition, the IRC allows the local building official to make modification decisions, which is a petition for variance, which is unlawful.
R106	Submittal of construction documents	The IRC requires all construction documents be prepared by a registered design professional. The State of Wisconsin does not require a registered design professional stamp or seal UDC plans, except for dwellings in a floodplain.
R107	Temporary structures and uses	The UDC does not have a provision for temporary dwellings. Wis. Stat. § 101 does not have any provision for temporary dwellings. Therefore, this IRC section may need to be excluded.
R110	Certificate of occupancy	This provision may be excluded since the UDC does not address certificates of occupancy. The issuance of a certificate of occupancy only occurs at the local municipal level.
R202	Definitions	Most of the definitions could be encompassed into SPS 320; however, there are some definitions that may need to be excluded that are specifically outlined in Wis. Stat. § 101 such as 'dwelling', 'dwelling unit', 'owner', etc. In addition, some of the definitions that are in other areas of the code would need to be excluded such as, but not limited to: 'branch circuit', 'building drain', etc. since these definitions already exist in the appropriate State of Wisconsin codes (i.e. SPS 316, SPS 381, etc.).
R301.2	Wind loading	Dwellings, in the UDC, shall be designed and constructed to withstand either a horizontal and uplift pressure of 20 pounds per square foot acting over the surface area or the wind loads determined in accordance with ASCE 7–05, Minimum Design Loads for Buildings and Other Structures. The IRC has a significance increase in wind loading for the State of Wisconsin. It should be noted the IRC does allow the use of the ASCE 7 manual for wind design; however, the IRC adopts the 2016 version.
R301.2	Snow loading	Currently, the UDC, has two snow zones. Zone 1, upper part of the State, has a 40 pound per square foot loading. Zone 2, lower part of the State, has a 30 pound per square foot

		loading. The IRC has six different snow load zones ranging from 60 pounds per square foot in the northern part of the State to 25 pounds per square foot in the southern part of the State. It is anticipated that the type, size and species of materials will increase specifically for dwellings in the northern part of the State due to the increase in snow loading.
R301.2.2	Seismic provisions	The UDC does not adopt seismic loading in the design of dwellings. However, this provision may be negligible due to the State of Wisconsin has little or no impact on seismic loading per the IRC.
R302.1, R313, & P2904	Fire-resistant construction and automatic sprinkler system	The IRC requires an automatic sprinkler system for all new one- or two-family dwellings. This will be an issue that will need to be addressed by the Uniform Dwelling Code Council since the UDC does not require an automatic sprinkler system.
R320	Accessibility	The IRC references R-3 occupancies for accessibility requirements meeting Chapter 11 of the IBC. Currently, the IBC is adopted in SPS 361-366. The reference to any part of the IRC associated with R-3 occupancies should be excluded from adoption of this code.
R321	Elevators	The IRC references elevators and platforms meet ASME requirements. This code should reference SPS 318.
R322	Flood zone construction	SPS 321.33 & 321.34. Much more involved than UDC. More extensive requirements.
R327	Swimming pools, spas, and hot tubs	The IRC references swimming pools, spas, and hot tubs should reference the International Swimming Pool and Spa Code. The State of Wisconsin does not have a swimming pool or spa code associated with one- or two-family dwellings.
R401.4	Soil Tests	Soil Tests are not explicitly required in the UDC. UDC does not explicitly require consideration of expansive or compressive soils. The need for consideration is only implied. Provides inspectors with a clearer mandate to call for soil test when they determine it to be necessary. Proper soil classification can be critical to proper design of foundations, including the need for vertical reinforcement. The UDC implicitly requires that soil conditions be considered as a dwelling must be designed to carry the loads it will be subjected to. The IRC language makes this explicit and assigns specific parameters to address various soil conditions.
Chapter 24	Fuel gas	The IRC references the adoption of the International Fuel Gas Code (IFGC), which applies to all occupancies including one- and two-family dwellings and townhouses. The IRC is referenced for coverage of one- and two-family dwellings and townhouses. Currently the IFGC does not adopt NFPA 54, which is adopted by the UDC. The Uniform Dwelling Code Council will have to determine if the State of Wisconsin

		should adopt NFPA 54 or the IFGC to apply to one- or two-family dwellings.
Part IV	Energy conservation	The IRC adopts the 2021 International Energy Conservation Code (IECC). The UDC currently adopts the 2009 IECC for thermal envelope requirements. A more in-depth analysis should be explored by the Uniform Dwelling Code Council for the overall impact to homeowners and dwelling contractors. There may be increases in the R-values on specific wall, roof, and floor assemblies that would inherently increase the overall cost of a one- or two-family dwelling; however, these initial costs may have long term life cycle and energy cost savings.

Low Level Concerns with the Adoption of the IRC

The following are a list of areas of low-level concern if the State of Wisconsin were to adopt the IRC:

IRC Code	Code Summary	Analysis
R102.5	Appendices	Several of the appendices may be adopted; however, there may be some appendices the State of Wisconsin may not need such as, but not limited to: radon control, private sewage disposal, existing buildings and structures, permit fees, home day care (R-3) occupancy, sizing of water piping, straw-clay construction, strawbale construction, monolithic adobe construction, and 3-D printed building construction.
R314	Smoke alarms	The IRC requires smoke alarms comply with the National Fire Protection Association (NFPA) 72. The current UDC does not adopt NFPA 72. The Uniform Dwelling Code Council would have to determine if NFPA 72 should apply to the one- or two-family dwellings.
Part VII – Plumbing (Chapters 25 to 33)	Plumbing	The State of Wisconsin already adopts its own plumbing code through SPS 325, which adopts SPS 381-387. A provision within SPS 325 would include the exclusion of Chapters 25 to 33 of the IRC.
Part VIII – Plumbing (Chapters 34 to 43)	Electrical	The State of Wisconsin already adopts its own electrical code through SPS 324, which adopts SPS 316. A provision within SPS 324 would include the exclusion of Chapters 34 to 43 of the IRC. As a side note, the IRC adopts the National Electrical Code (NEC) 2020 version. The current SPS 316 adopts the NEC 2017 version. In addition, the State of Wisconsin may propose to adopt the NEC 2023 version in the future, which would negate adopting Chapters 34 to 43 of the IRC.
R404.4	Retaining Walls: Shall be designed in accordance with accepted engineering practice.	This topic falls outside the scope of the UDC
R304	Minimum room sizes	UDC is silent on this provision.

R328, R329, or R330	Energy storage, generators, and fuel cell power systems	Not addressed in UDC.
N1106	Energy Rating Index Compliance Alternative	IRC establishes criteria for compliance using an ERI analysis. Not addressed in the UDC. A more in-depth analysis should be explored by the Uniform Dwelling Code Council for the overall impact to homeowners and dwelling contractors.
N1108	Additional Efficiency Package Options	IRC establishes additional efficiency package options to achieve additional energy efficiency. Not addressed in the UDC. A more in-depth analysis should be explored by the Uniform Dwelling Code Council for the overall impact to homeowners and dwelling contractors.
N1109	Existing Buildings - General	Not addressed in the UDC. UDC Code Reference:
N1110	Additions	Not addressed in the UDC. UDC Code Reference: 320.04 Applications
N1111	Alterations	Not addressed in the UDC. UDC Code Reference: 320.04 Applications
N1112	Repairs	Not addressed in the UDC.
N1113	Change of use or occupancy or use	Not addressed in the UDC.
M2301	Solar Thermal Energy Systems	IRC includes requirements for design, construction, installation, alteration and repair of equipment and systems using solar thermal energy to provide space heating or cooling, hot water heating and swimming pool heating. Not in UDC. UDC Code Reference: 371 Solar Systems (Truth in Sales).
Ch. 19	Special Appliances, Equipment, and Systems.	IRC is specific to appliances and systems that are not related to HVAC, including cooking appliances, sauna heaters, fuel cells and hydrogen systems. Not in UDC.

Appendix 1 – Additional IRC vs. UDC Analysis

Appendix 1 is additional information captured by the staff for specific IRC chapters, which may have added benefit to adopting the IRC or provide additional information necessary for the Department or Uniform Dwelling Code Council.

IRC Code	Code Summary	Analysis
R401.1	Application: Limits its use for wood foundations to buildings with maximum 2 floors, and interior and basement walls at maximum 50 ft. intervals.	UDC adopts AWC code for Preserved Wood Foundations - Separate Code Keeps the code language all in one document - IRC 2021. A single code document simplifies and clarifies requirements for designers, builders, and inspectors.
R402.1	Wood Foundations: Establishes criteria for design and installation of wood foundation systems.	The UDC adopts the ANSI/AWC - PWF 2007 for Permanent Wood Foundations Provides design parameters for wood foundations directly in the body of the code. Much of the parameters from ANSI/AWC PWF std. are incorporated in the body of the IRC 2021. Provides clearer guidance for designers, builders, and inspectors by having it in one place.
R402.2	Concrete: Establishes minimum specified compressive strengths for concrete under various uses and conditions. References ACI 318 and 332 for concrete materials and testing procedures.	UDC adopts ACI 332-14 and 318 for concrete material specifications as well as design parameters for footings and foundations. Establishes criteria for min. specified compressive strengths in the body of the code.
R402.3	Precast Concrete: Establishes specific criteria for precast concrete materials and masonry.	Establishes this criterion in the body of the code rather than per structural analysis and the manufacturer's load tables. Greater clarity for inspectors and designers
R403.1	General: Establishes the basic parameters and requirements for footings. Allows for footings to be designed per R403 or in accordance with ACI 332.	SPS 321.15 has specific criteria for footings that are required in conjunction with ACI 332. Points to provisions in R403 for footings or ACI 332. Incorporates ASCE-32 parameters for Frost Protected Shallow Foundations that's adopted in SPS 320.24. Includes seismic restrictions which only apply in Kenosha County.
R403.1.7	Establishes criteria for requiring minimum setbacks from footings	Distance of footings to slopes is not a topic directly addressed in the UDC. Provides succinct prescriptive criteria on a critical topic that can cause failure of a dwelling's footing and foundation.

	to ascending and descending slopes	
R403.3	Frost Protected Shallow Foundations: Establishes specific criteria for foundations adjoining frost protected shallow foundations under various circumstances.	SPS 321.15(1)(e) contains applicable language, but it only describes general conditions without specifying different criteria for different scenarios. Ex. heated slab-on-grade, unheated slab-on-grade, heated structure, etc. Provides greater detail specific to different applications that are commonly encountered. This is a much-needed feature; to have greater detail spelled out for the various scenarios.
R403.2	Footings for Wood Foundations: Provides PWF basement wall sections for footings and walls.	UDC adopts the ANSI/AWC PWF standard in its entirety. There are no specific standards in the body of the UDC for such footings. Provides a simplified design distilled from the ANSI/AWC PWF 2007 code. Simpler to use for purposes of design and inspection.
R403.3	Frost Protected Shallow Foundations:	The UDC references ASCE-32 in SPS 321.16(2), the most relevant criteria and parameters are found in Appendix A of the UDC. Incorporates ASCE-32 directly into the body of the code. Contains the same tables as are found in Appendix A.
R404.1	Concrete and Masonry Foundation Walls: Establishes specific criteria for horizontal and vertical reinforcement for concrete and masonry foundation walls in relation to soil classifications, wall height, and max height of unbalanced backfill. Contains tables applicable to various wall types. References ACI 318, 332, and PCA 100. Contains language specific to Insulated Concrete forms (ICFs), above-grade stem walls, material specs. and preparation methods, pier and curtain wall foundations, and masonry piers.	UDC adopts the following ACI codes in SPS 320.24: 318, 332, 530, 530.1 Allows 6-inch-thick walls under specific conditions. Incorporates tables for reinforcement from the ACI 332 into the body of the code, eliminating confusion and ignorance that often surround other standards adopted in full by the UDC. This would greatly clarify these specifications, the majority of which are already present in the UDC.

R404.2	Wood Foundation Walls Provides PWF basement wall sections for footings and walls. Other specific criteria are provided in the body of the code; stud size, height of backfill, drainage and damp proofing, fastening.	UDC adopts the ANSI/AWC PWF standard in its entirety. There are no specific standards in the body of the UDC for such foundations. Provides a simplified design distilled from the ANSI/AWC PWF 2007 code. Simpler to use for purposes of design and inspection.
R404.3	Wood Sill Plates: Establishes the minimum size of wood sill plates at 2" x 4" nominal. Anchorage in accordance with R403.1.6 and R602.11. IRC establishes max. 72-inch span with min. 12 inches from the ends of each plate. Establishes a max. span of 48 inches for buildings with a height over two stories.	UDC has maximum spacing at 6 ft from each other and within 18 inches from the corners. Additional specification requiring bolts within 12 inches from the end of the plate, assuring full anchoring of each sill plate member.
R404.5	Precast Concrete Foundation Walls: Shall be designed in accordance with accepted engineering practice. The design and manufacture of such products shall comply with the requirements of R402.3 or ACI 318. Panel design drawings shall be prepared by a registered design professionals where required by state statutes. Establishes specific criteria to be shown on plan submittal.	UDC requires manufacture per ACI 318. No specific plan submittal requirements. Establishing specific plan submittal requirements clarifies what's needed to be shown on the plan. Assists the inspector in carrying out their job in a consistent manner.
R405	Foundation drainage	Establishes clearly defined requirements for the installation of drain tile.

R405.1	Concrete and Masonry Foundations: Drainage tile required around foundations except for those installed on well drained soils per Group I soils of the Unified Soil Classification System	UDC requires drain tile only in the presence of seasonally high groundwater, based on the judgement of the inspector for the AHJ.
R406.1	Concrete and Masonry Foundation Damp proofing: Establishes specific requirements for damp proofing of concrete foundation walls and specifies the acceptable materials. Establishes specific requirements for damp proofing of masonry foundation walls and specifies the acceptable materials.	The UDC has no specific requirements for damp proofing or waterproofing concrete foundation walls. UDC contains similar standards for damp proofing of masonry foundation walls. The IRC provides a clearer and more robust requirement with specific accepted materials.
R406.2	Concrete and Masonry Foundation Waterproofing: Waterproofing of masonry and concrete foundation walls shall be required where a high-water table or other sever water conditions are known to exist.	No standard for waterproofing concrete walls in the UDC. UDC calls for waterproofing of masonry walls per manufacturer's requirements. The IRC provides a clearer and more robust requirement with specific accepted materials.
R406.3	Damp proofing for Wood Foundations: Specific requirements for damp proofing of wood foundation walls located below grade.	Establishes requirements for damp proofing of permanent wood foundation like AWC PWF 2007 standard adopted in SPS 320.20 of the UDC. The IRC provides these provisions in the body of the code rather than an adopted outside standard.
R406.4	Precast Concrete Foundation System Damp proofing: Except where waterproofing is required per R406.2 requires damp proofing of below	UDC has no language specific to precast walls regarding damp proofing or waterproofing.

	grade precast walls in accordance with R406.1. Requires specific sealing of panel joints with specified materials	
R407	Columns	UDC requirements appear to be more robust and specific per SPS 321.25
R408.2	Openings for Under-Floor Ventilation: Establishes specs. for ventilation of crawl spaces, including dimensions and materials that can be used. Contains different specs for spaces where an approved Class I vapor retarder covers the ground surface.	UDC has no specific language for vented crawl spaces. Language in SPS 322 Energy Conservation make it difficult to vent a crawl space and achieve compliance with SPS 322. The floor must be considered as exterior perimeter. UDC requires a Class I vapor retarder on the ground surface in all cases.
R408.3	Unvented Crawl Space: Class I vapor retarder required. Requires an air pathway to the "common area" of the dwelling. OR 2) A conditioned air supply at a prescribed rate, including a return air pathway to the common area of the dwelling. Exterior walls must be insulated per Chapter N1100 of this code. Also has requirement for dehumidification.	Vapor retarder requirements same as UDC. Requires two options for air circulation. 1) continuously operated mechanical exhaust ventilation at a prescribed rate. Would require additional mechanical ventilation and duct work installation not currently required in the UDC. A significant change from current code. Vapor retarder requirements same as UDC
R408.4	Access: Requires a minimum floor opening of 18" by 24". Exterior opening of 16" by 24" must be provided. Through wall openings are prohibited beneath a door opening of the residence. References	UDC has no specific language for installation of mechanicals (ex. hot water heater, furnaces), no specifications of where or where not an access opening shall be installed. Provides greater guidance for installation of heat producing mechanicals. An increase in safety measures for the homeowner.

	M1305.1.3 for mechanical equipment installed in a crawl space.	
R408.5	Removal of Debris: Requires the under-floor grade be cleaned of all vegetation, roots and debris, and other organic material.	UDC does not contain this as a specific requirement though most would consider this standard practice. This language clarifies what should be standard practice. An explicit requirement as this eliminates conflicts, clarifies what are the rules.
R408.6	Finished Grade: Calls for the finish grade of the under-floor surface to be located at the bottom of the footings unless there is evidence of seasonal high groundwater. Where such high groundwater (6 inches from the elev of the "finished floor") is present, code requires grade of the under-floor space to be at the level of the outside finished grade, "unless an approved drainage system is installed".	UDC does not contain specific requirements to this effect in the related code section. The IRC guarantees proper drainage beneath crawl spaces.
R408.7	Flood Resistance: Provides criteria for buildings located in flood hazard areas per Table R301.2.	UDC does not address this issue for buildings built in flood hazard areas. Provides greater protection for homes built with crawl spaces in defined flood hazard areas.
R408.8	Under-Floor Vapor Retarder: Requires a vapor retarder (Class I or II) on the exposed face of air permeable insulation installed between floor joists. Not applicable in the Wisconsin climate zones.	UDC requires a Class I vapor retarder over unfinished crawl space floors, must extend min. 6 inches up the walls, and taped and overlapped min. 6 inches where lapped. Max perm rating of 1.0. Not applicable in Wisconsin per the climate zones prescribed
R802.1.1	Establishes standards for grade marking on sawn lumber by an	UDC has some reference to this per NDS. Statutory language requires lumber be graded by an accredited

	accredited grading agency.	person or agency Clarifies this requirement in the body of the code
R802.1.4	Structural Composite Lumber: per ASTM D546	Not established in the UDC.
R802.1.5.5	Strength Adjustments: Contains design value adjustments for fire-retardant wood and wood structural panels.	No such adjustments directly in the UDC .
R802.2	Design and Construction: Incorporates specific Figures in Chapter R606.11 to demonstrate required attachment criteria. Provides an alternative to design and attach per the AWC NDS.	While the UDC adopts the NDS in its entirety, not all inspectors and builders have ready access to it. Figures in R606.11 provide easily accessible specifications for attachment of roof and ceiling assemblies to walls, etc. Found directly in the body of the IRC code.
R802.4	Rafters and Ceiling Joists:	Span tables in the UDC (except for those for Southern Pine) have not been updated for almost 20 years. Use of updated span tables will result in better designs, safer structures as they will be based on the material strengths of common wood species currently produced and in use. While the span tables for draw from the AWC, the same source as used by the UDC, these tables are updated to reflect the typical strengths of the various wood species in use in present time. The strength of commonly used wood species diminishes with the decrease in old growth lumber and the increase in genetically modified species used in industrial forest production.
R803	Roof Sheathing:	Allowable loads shall be in accordance with the grade stamp on the panel. SPS 321.27(9) Also provides allowance and specifications for use of boards and planks
R803.1	Table provides minimum thickness of lumber roof sheathing in relation to rafter or beam spacing	No specific specs. stated in the UDC for sheathing greater prescriptive specs provide simplified design parameters. No language relating to the use of planks and boards.
R803.2	Wood Structural Panels: Provides prescriptive specifications for	UDC is silent on this matter. The IRC provides prescriptive specifications for wood structural panels where none currently exists in the UDC.

	exposure durability, and fire-retardant treated plywood	
R804	Cold Formed Steel Roof Framing: Subchapter includes 18 pages of detailed prescriptive standards for steel roof framed construction. Topics include fastening schedules, ceiling joist spans and sizing, bracing, joist splicing, roof rafter spans gable end-wall overhangs, joist and ridge member connections, headers and trimmers, ceiling roof diaphragms, tie-downs, blocking.	UDC is silent on steel roof framing. IRC provides prescriptive specifications for steel roof framing where none currently exists in the UDC. Clarifies consistent code requirements rather than relying on structural analysis and individual manufacturer's installation requirements.
R805	Ceiling Finishes: References interior wall finishes in Sections R702.1 through R702.6	UDC is silent on interior wall finishes for this purpose Specifications not found in the UDC.
R806.2	Minimum required net free ventilation area of 1/150 of the vented space. Vapor retarder required on the warm in winter side of insulation. Sets a minimum proportion of attic-roof area that can be vented mechanically	Minimum required net free ventilation area of 1/150 of the vented space in UDC. Vapor retarder required on warm in winter side. Same as UDC requirements except for the limits on mechanical ventilation.
R806.3	Vent and Insulation clearance: Sets specific criteria of a minimum 1-inch gap to maintain between sheathing and at vent location.	UDC SPS 322.39(4) allows cathedral ceiling assemblies to fill entire cavity space with insulation. Air gap helps facilitate better ventilation and reduces moisture build-up.
R806.5	Unvented Attic and Unvented Enclosed Rafter Assemblies:	UDC provides vague language stating that the design and construction shall prevent deterioration from moisture

	Provides several exceptions that vary by geographical location (Climate Zone) and framing-construction and insulation installation methods used.	and ice damning. Only allows for unvented attic in specific circumstances such as the cathedral ceilings.
R807	Attic Access: Requires attics with a vertical height of at least 30 inches to have and access panel of a minimum 22 inches by 30 inches location If located in a wall, access shall not be less than 22" wide by 30 " high/ ed in a hallway or other area with easy access.	UDC SPS 321.07 calls for a minimum size panel of 14 inches by 24 inches "accessible from inside the structure". IRC language calls for a larger size access panel. Greater ease of access.
R1001.2	Footings and Foundations:	IRC provides more detailed requirements for footing and foundation. UDC has no depth requirement for the footings. IRC calls for 12-inch min. IRC requires the footing placed below frost depth at least 12 inches below grade.
R1001.5	Firebox Walls	Similar dimensional requirements in the UDC. Establishes material characteristics per ASTM standards, which the UDC does not.
Table R1001.1	Requirements for masonry fireplaces and chimneys	IRC provides clear prescriptive requirements.
Figure R1001.1	Fireplace and chimney details	SPS 321.29 Commentary contains multiple drawings with recommended specifications. Should rather than shall criteria to follow. No actual code requirements. IRC provides clear prescriptive requirements, rather than the recommendations found in the code commentary on this topic
R1001.7	Lintel and Throat	IRC provides clear prescriptive requirements.
R1001.8	Smoke Damper	IRC provides clear prescriptive requirements.
R1001.10	Hearth Extension dimensions	Same as UDC dimension requirements
R1001.11	Fireplace Clearance	SPS 321.30(11). The IRC requires greater distance from combustibles than UDC.
R1001.13	Fireplace Accessories	UDC requires similar installation, plus per the listing's conditions of use.

R1002	Masonry Heaters, installation, footings, and clearances.	Heaters not addressed in the UDC.
R1003	Masonry Chimneys	IRC provides a more specific definition, including specifics for masonry defined.
R1003.2	Footings and Foundations	IRC calls for min. 12-inch-deep footing extended at least 6 inches. Depth of footing at least 12 inches below grade
R1003.6	Changes in Dimension	Restricts a change in flue size above in and around floor, ceiling, and roof components
R1003.7	Offsets	Application differs somewhat from that of the UDC
R1003.8	Additional Load	No specific language in SPS 321.29 or 321.30. Topic is covered in general language found in SPS 321.02. Like the criteria in the UDC, calls for structural analysis, shall support the loads it will be subjected to.
R1003.9	Termination	From SPS 321.29 Termination language is the same as the UDC. UDC does not address topic of "spark arrestors".
R1003.10	Wall Thickness	UDC contains additional specification.
R1003.11	Flue Lining (material)	IRC has updated language to address newer appliances such as pellet stoves. Calls out references to product listing.
R1003.12	Clay flue lining Installation	From SPS 321.29. IRC provides greater prescriptive criteria for installation.
R1003.13	Multiple Flues	UDC has the additional criteria of staggering joints of adjacent flues by 7 inches.
R1003.16	Inlet	Similar codes. UDC has more specific criteria for thimble material and installation
R1003.17	Masonry Chimney Cleanouts:	IRC provides more detailed requirements for installation of cleanouts
R1004.2	Hearth Extensions	UDC applies additional criteria in SPS 321.29(6).
R1004.4	Unvented Gas log heaters	SPS 323.04(2)(b). Unvented gas fired heaters are prohibited in the UDC
R1004.5	Gasketed fireplace doors	IRC is effectively the same as UDC. IRC specifies the listing criteria specific.
R1006.1	Exterior Air	IRC explicitly requires exterior air source
R1006.2	Exterior Air Intake	Not directly addressed in SPS 321 or 323 for this purpose, but addressed for general purpose in 323.06(4). IRC explicitly requires exterior air source, and provides prescriptive criteria for installation
R1006.3	Clearance	Addressed in SPS 323.045.
R1006.4	Passageway	Not directly addressed in SPS 321 or 323 for this purpose, but addressed for general purpose in SPS 323.06(4).
R1006.5	Outlet	Not directly addressed in SPS 321 or 323 for this purpose.

R301.1.4	Intermodal shipping containers.	SPS 321.02 - structural requirements. UDC does not address shipping containers, but UDC requires compliance. not much variance from UDC.
R301.1.2.1.1	Sunrooms construction requirements.	UDC addresses only thermal isolation, which is negligible.
R302	Fire resistant construction requirements much more extensive than UDC	Requirements much more extensive than UDC. Clearer guidelines and requirements. Full hourly ratings required. Parapets required. Penetration protection and fire stops like UDC.
R303	Light and Ventilation requirements same as UDC for habitable rooms. Mech Vent. Allowed. Borrowed light allowed.	UDC SPS 321.05 some added requirements like exterior stair lighting, sunroom heating, location of exhaust and intake openings, etc.
R308	Glazing requirements.	SPS 321.05(3). Many requirements similar, simply more well defined and more situation addressed.
R312	Guard requirements trigger at 30" rather than 24".	SPS 321.04. Guard materials more defined. Other features appear like UDC.
R324	Solar systems - structural requirements, location requirements, wind resistance, etc.	Not addressed in UDC, as UDC does not address.
R325	Mezzanines - size, exiting, openness, (loft areas?)	Not addressed in UDC (lofts) treat similar to lofts.
R326	Habitable attics - another floor level within the building	Not addressed in UDC negligible (floors above 2nd story)
R602	Wood wall framing.	SPS 321.25(1) Wood frame walls. Only refers to Tables 321.25-A On stud Placement. SPS 321.25 Appendix and 321.10 Treatment. The IRC is complete with charts and all within a few pages. No looking back and forth.
R602.3.2	Top plates.	SPS321.25(2) Top plates. About the same no real change. Notching and boring covered in other areas.
R301.5	Minimum Floor loads for all useable floor areas. Multiple live loads per different floors	SPS 321.23 Wall design
R502.3.1	Requirements for attics served by fixed stairs and bedrooms.	Change, but probably not significant. Joist Tables very similar to the UDC.

R504	Wood floors on ground.	New, but minimal change. Not covered in UDC, but not much change. SPS 321.10 - Treated lumber similar
R505	Steel Frame Floors.	Just new and more extensive. Not seen much in UDC at this time.
R506	Concrete floors	Minor change. Similar to UDC, minimum 3 1/2" thickness, UDC mini. 3".
R507	Exterior decks	Change, but too drastic. More extensive than UDC. Much more in line with Appendix "B". Addresses Plastic composite materials, while UDC is silent there. Footing depths vary from WI, and ledger connections are much more well defined.
R601.1	Wall Construction. Application. Provisions of this chapter shall control the design and construction. 601.2 Requirements. Wall construction shall be capable of Accommodating all loads. Section R301	SPS 321.23 Wall Design. (1)Walls shall support all live and dead loads from walls and roofs.
N1101.7	Climate Zones	IRC climate zone boundaries positioned similarly as UDC. UDC Zone-1 is equivalent to IRC Zone-6, UDC Zone-2 is equivalent to Zone-7 UDC Code Reference: 322.31(1)(b) Prescriptive Insulation and fenestration criteria.
Table N1102.1.3	Insulation minimum R-values and fenestration requirements by component.	Fenestration, skylight, ceiling, wood frame wall, floor R & U factors more restrictive in IRC. UDC Code Reference: Table 322.31-1 Insulation and fenestration requirements by component.
Table N1102.1.3	Insulation minimum R-values and fenestration requirements by component.	Footnote f. in UDC table permits compression in wall cavity, IRC has R-30 for wood frame vs UDC of R-20. UDC Code Reference: Table 322.31-1 Insulation and fenestration requirements by component.
Table N1102.1.3	Insulation minimum R-values and fenestration requirements by component.	UDC has more restrictive heated slab insulation 10/15 vs 5/10 in IRC. UDC Code Reference: Table 322.31-1 Insulation and fenestration requirements by component.
Table N1102.1.2	Maximum assembly U-factors and fenestration requirements.	IRC U-value is more restrictive for Fenestration, Skylight, Ceiling, Wood framed wall, and crawl space. UDC Code Reference: Table 322.31-2 Equivalent U-factors.

N/A	Thermal Envelope	As a part of the U-factor tables, UDC has a lower equipment efficiency table (where must install a higher level of insulation more in line with the standard IRC requirement) which is not in the IRC. UDC Code Reference: Table 322.31-4 Component dwelling thermal envelope requirements for dwellings using lower efficiency appliances.
Table N1102.1.2	Maximum assembly U-factors and fenestration requirements.	UDC has default values to use when a manufacturer has not determined product U-factor in accordance with NFRC 100. Not specifically mentioned in the IRC. UDC Code Reference: Table 322.36-1 U-Factor Default Table for windows, glazed doors, and skylights, single and double glazed.
Table N1102.1.2	Maximum assembly U-factors and fenestration requirements.	UDC has default values for exterior doors with or without storm doors. Not specifically mentioned in the IRC. UDC Code Reference: Table 322.36-2 U-Factor Default Table for non-glazed doors.
N1102.2.4	Access hatches and doors.	Attic-access panel insulation addressed in both IRC and UDC. UDC Code Reference: 322.32 Specific Insulation Requirements.
N1102.2.4.1	Access hatch and door insulation installation and retention.	UDC & IRC both require weatherstripping of access hatches and doors between conditioned and unconditioned spaces. UDC Code Reference: 322.37(3)(a) Air Leakage.
N1102.2.11	Masonry Veneer	IRC spells out that insulation is not required on the horizontal portion of a foundation that supports a masonry veneer. Not specifically mentioned in the UDC. UDC Code Reference: 322.32 Specific Insulation Requirements.
N1102.4.1.2	Testing	IRC references building or dwelling unit shall be tested for air leakage, leakage rate shall not exceed 5.0 ACH of dwelling unit enclosure area. Includes exception for individual dwelling units. UDC references building envelope for testing, leakage rate shall not exceed 7.0 ACH. IRC testing requirements slightly more restrictive. UDC Code Reference: 322.37 Air Leakage.
N1102.1.1	Vapor Retarder/Table R702.7(3) Class III Vapor Retarders	IRC requires vented cladding over fiberboard and gypsum and continuous insulation with minimum R-values over framed walls for zone 6 and 7. IRC requirements more restrictive. UDC Code Reference: 322.38 Vapor Retarders.
N1102.1.1	Vapor Retarder/Table R702.7(4) Class II Vapor Retarders	IRC requires continuous insulation with Class II vapor retarders. IRC requirements more restrictive. UDC Code Reference: 322.38 Vapor Retarders
N1102.4.2	Fireplaces	IRC requires tight-fitting flue dampers or doors. UDC requires doors to be installed per manufacturer's recommendations when installed on factory-built

		fireplaces. UDC Code Reference: 321.32(1)(b) Factory-built Fireplaces.
N1102.4.6	Electrical and communication outlet boxes (air-sealed) boxes	IRC requires sealed and shall have an air leakage rate of not greater than 2.0 cubic feet per minute at a pressure of 1.57psf. Not specifically mentioned in the UDC. UDC Code Reference: 322.37 Air Leakage.
N1102.5	Maximum fenestration U-factor and SHGC.	IRC requires max SHGC for zone 0-3 shall be 0.4. UDC doesn't address zones not applicable. UDC Code Reference: 322.36 Fenestration.
N1103.1.1	Controls	IRC requires programmable thermostat. UDC prohibits use of mercury but does not require programmable. UDC Code Reference: 322.41(3) Temperature Control.
N1103.2	Hot water boiler outdoor temperature reset.	IRC requires automatic means of adjusting the water temperature supplied by the boiler. UDC requires circulating hot water systems to include an automatic or readily accessible manual switch to turn off the circulating pump when the system is not in use. Less restrictive than the IRC. UDC Code Reference: 322.41(2) Temperature Control.
N1103.3.1	Ducts located outside the conditioned space.	IRC allows R-6 for ducts 3" in diameter or less. UDC does not have this exception. UDC more restrictive. UDC Code Reference: 322.42 Duct systems.
N1103.3.6	Duct leakage	IRC requires tests for ducts within thermal envelope, total leakage shall be less than or equal to 8.0 CFM per minute per 100 ft2 of conditioned floor space. UDC less restrictive, does not require test for ducts within the thermal envelope. UDC Code Reference: 322.43(8) Duct and plenum sealing.
N1103.5.2	Hot water pipe insulation	IRC requires R-3 UDC requires R-2 for service hot water piping. UDC less restrictive insulation requirement for plumbing piping insulation. UDC Code Reference: 322.44 Pipe insulation.
N1103.5.1.1	Circulation systems	Heated water circulation systems shall be provided with a circulation pump. Not addressed in the UDC.
N1103.5.1.2	Heat trace systems	Heat trace systems shall be provided with a circulation system. Not addressed in the UDC.
N1103.5.3	Drain water heat recovery units	Drain water heat recovery units not addressed in the UDC or plumbing code.
N1103.61	Whole-dwelling mechanical ventilation system fan efficacy	IRC requires fans used to provide whole-dwelling mechanical ventilation shall meet the efficacy requirements of Table N1103.6.2. Not addressed in UDC.
N1103.7	Equipment sizing and efficiency rating	IRC requires efficiency rating equal to or greater than minimum required by federal law for geographic location where equipment is installed UDC references Table 322.45. Equivalent requirements. UDC Code Reference: 322.45 Air conditioner and heat pump efficiencies.

N1103.10.3	Covers (Pool)	Outdoor heated pools and out permanent spas shall be provided with vapor retardant cover. Not addressed in UDC.
N1103.11	Portable spas	IRC The electrical consumption of electric-powered portable spas shall be controlled by the requirements of APSP. Not addressed in UDC.
N1103.12	Residential pools and permanent residential spas	IRC addresses pool heater efficiencies. Not addressed in UDC.
N1104.1	Lighting equipment	IRC all permanently installed lighting fixtures shall contain only high efficacy lighting sources. UDC less restrictive a minimum of 50 percent of in permanently installed lighting fixtures shall be high efficacy lamps. UDC Code Reference: 322.49 Lighting equipment.
N1104.1.2	Fuel gas lighting equipment	IRC fuel gas lighting shall not have continuously burning pilot lights. Not addressed in the UDC.
N1104.2	Interior lighting controls	IRC addresses interior lighting controls. Not addressed in the UDC. This section of the code shall be analyzed with the adoption of any updated National Electrical Code.
N1104.3	Exterior lighting controls	IRC addresses exterior lighting controls. Not addressed in the UDC. This section of the code shall be analyzed with the adoption of any updated National Electrical Code.
N1107.1	Tropical Climate Region Compliance Path	Not addressed in the UDC. Not applicable.
Chapter 12	IRC Mechanical Administration.	This is administration chapter that would be amended.
M1305.1.2 & .3	Appliances in attics. Appliances under floor.	IRC requires the attic and underfloor space openings be provided with a clear and unobstructed passageway large enough to allow removal of the largest appliance, but not less than 30 inches high and 22 inches wide and not more than 20 feet long measured along the centerline of the passageway from the opening to the appliance. Not addressed in the UDC. UDC Code Reference: 323.04(6) Location
M1307.4	Hydrogen-generating and refueling operations	IRC addresses ventilation requirements. Not addressed in the UDC.
M1406	Radiant Heating Systems	IRC addresses the installation of electric radiant heating panels specifically. Generally addressed by listing in UDC.
M1407	Duct Heaters	IRC addresses electric duct heaters specifically. Generally addressed by listing in UDC.
M1408	Vented Floor Furnaces	IRC addresses oil-fired vented floor furnaces specifically. Generally addressed by listing in UDC.
M1410	Vented Room Heaters	IRC addresses vented room heaters specifically. Generally addressed by listing in UDC.

P501.2	Water Heaters as Space heaters	Not addressed in the IRC. IPC where a combination of potable water heating and space heating systems requires water for space heating at temperatures greater than 140°F, a temperature -actuated mixing valve complying with ASSE1017 shall be provided to limit the water supplied to the potable hot water distribution system to a temperature of 140°F or less. The potability of the water shall be maintained throughout the system. Requirements for combination potable water heating and space heating systems shall be in accordance with the International Mechanical Code. UDC Code Reference: 323.04(5) Water Heaters used for space heating.
M1411.3	Condensate disposal	IRC addresses cooling coil condensate but does not address condensate from condensing heating equipment. UDC addresses condensing heating equipment condensate but not cooling condensate. UDC Code Reference: 323.156 Condensate drains.
M1411.3.1	Condensate disposal	IRC requires secondary drain pan for cooling coils and evaporators where overflow could damage bldg. components. Not addressed in UDC.
M114.6	Insulation of refrigerant piping	IRC requires not less than R3 on the suction line and having external surface permeance not exceeding 0.05 perm. Not addressed in UDC 323. 322.44(1) Pipe insulation. Mechanical system piping of carrying fluids above 105°F or below 55°F shall be insulated to a minimum of R-3. Doesn't address perm. Should be Armaflex type. UDC Code Reference: 322.44 Pipe insulation.
M1412	Absorption cooling equipment	IRC addresses absorption cooling equipment. Not addressed in UDC.
M1413	Evaporative Cooling equipment	IRC addresses evaporative cooling equipment. Not addressed in UDC.
M1502	Clothes dryer exhaust	IRC more comprehensive. UDC addresses allows plastic venting for electric dryer's gas requires metal venting. UDC Code Reference: 323.14(2) Dryer venting.
M1502.4.8	Exhaust duct required	IRC requires in a space provided for a dryer; the exhaust duct system shall be installed. Where the exhaust duct shall be capped or plugged in the space in which it originates and identified and marked "future use." Not addressed in UDC. UDC Code Reference: 323.14(2) Dryer venting.
M1502.5	Protection shields required	IRC requires protective shield plates to be placed where nails or screws from finish or other work are likely to penetrate the clothes dryer exhaust duct. Not addressed in UDC. UDC Code Reference: 323.14(2) Dryer venting.

M1503.6	Make-up air required	IRC requires makeup air if a provided exhaust system is greater than 400 CFM. UDC Code Reference: 323.02(3)3. Kitchen range hoods.
M1505.4.4	Local exhaust rates	IRC requires Kitchens and toilet rooms to be exhausted. Table 1505.4.4 Minimum required local exhaust rates for one- and two-family dwellings. UDC requires toilet exhaust but not kitchen. UDC Code Reference: 323.02(3)(b)3.
M1601.1.1.7.7.3	Above wall duct systems	IRC prohibits stud spaces as return air for more than one level. Permitted in UDC. UDC Code Reference: 323.08(2)(a)3. Supply and return ducts.
M1601.4.1	Joints seams and connections	IRC requires all air ducts to be sealed. UDC only requires all ducts outside the thermal envelope to be sealed. UDC Code Reference: 323.08(8), 322.43(8) Joints and seams.
M1601.5	Under-floor plenums	IRC prohibits underfloor plenums in new structures. Permitted in UDC. UDC Code Reference: 323.08(2)(b) Underfloor plenums.
M1602	Return Air	IRC lists permitted locations of outside air inlets. Also lists specific areas where return air may not be taken from. UDC does not specifically mention. UDC Code Reference: 323.08(2)(a) Supply and return ducts.
M1701.1	Scope	IRC references NFPA 31 and Chapter 24 Fuel Gas. UDC lists specific requirements. UDC Code Reference: 323.06 Combustion Air.
M1804.1	Type of vent required	IRC addresses pellet fuel burning appliance vents directly. Indirectly addressed in the UDC.
M1804.2.2	Decorative Shrouds	IRC requires decorative shrouds to be listed. UDC does not specifically mention decorative shrouds. UDC Code Reference: 323.11(2) Termination.
M1804.2.6.6	Mechanical Draft systems	IRC requires power exhauster terminations to be not less than 10ft from property line or adjacent building. UDC does not address location to property line. UDC Code Reference: 323.062 Mechanical Draft Systems.
M2002.5	Boiler low water cut off	Internal low water cut off required in IRC. Internal low water cut off not directly addressed in the UDC refers to SPS 341 Boilers and Pressure vessels. UDC Code Reference: 323.04(4) Boilers.
M2005.2	Prohibited locations	Regardless of the listing. The IRC prohibits installing a water heater in any room used as a storage closet. Permitted in UDC per listing. UDC Code Reference: 323.04(6)2. Location.
M2006	Pool Heaters	IRC addresses pool heaters. UDC addresses indoor pools. UDC Code Reference: 322.48.
Ch. 21	Hydronic Piping	IRC contains a lot more information on the installation of hydronic piping than the UDC. UDC Code Reference: 323.1 Piping.

M2101.7	Prohibited tee applications	Prohibits tee application from branch piping. Not in UDC.
M2103.1	Thermal Barrier	IRC requires a thermal break at slab edge for radiant floor heating systems. Not in UDC.
M2103.4	Testing	IRC requires testing at 100 psi for hydronic heating system. UDC references ASHRAE Standards.
M2201	Oil Tanks	IRC contains more information and requirements on the installation of oil tanks, pumps valves and piping than the UDC. UDC Code Reference: 323.16 Oil Storage Tanks.

Appendix 2 – Reference Information

This Appendix is only for reference information.

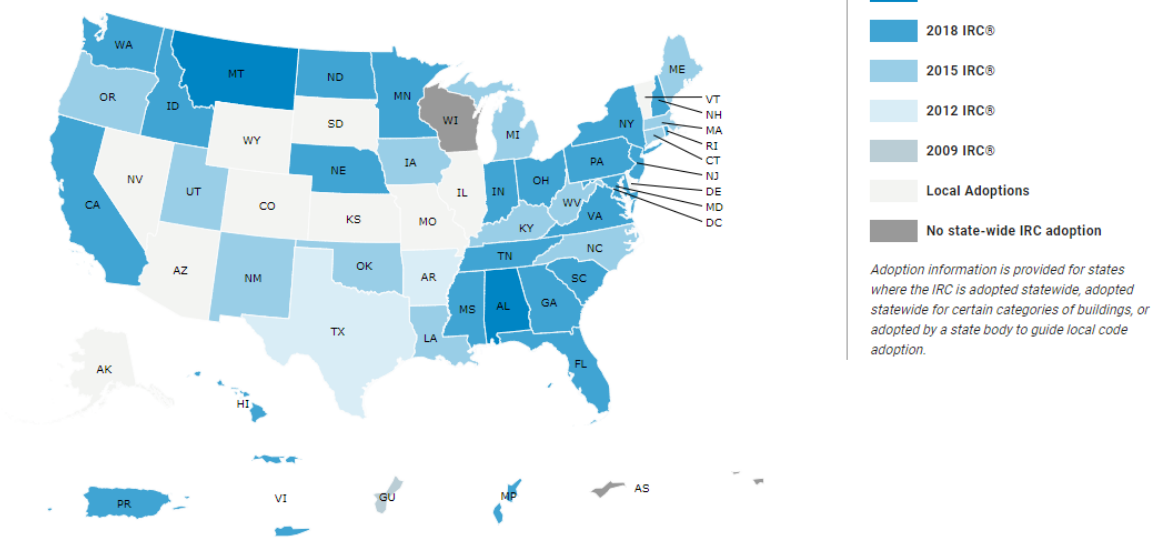
IRC Adopted by Individual States

The following snapshot shows the ICC codes currently adopted by the State of Wisconsin.

Source: https://www.iccsafe.org/adoptions/code-adoption-map/IRC

INTERNATIONAL RESIDENTIAL CODE® (IRC®)

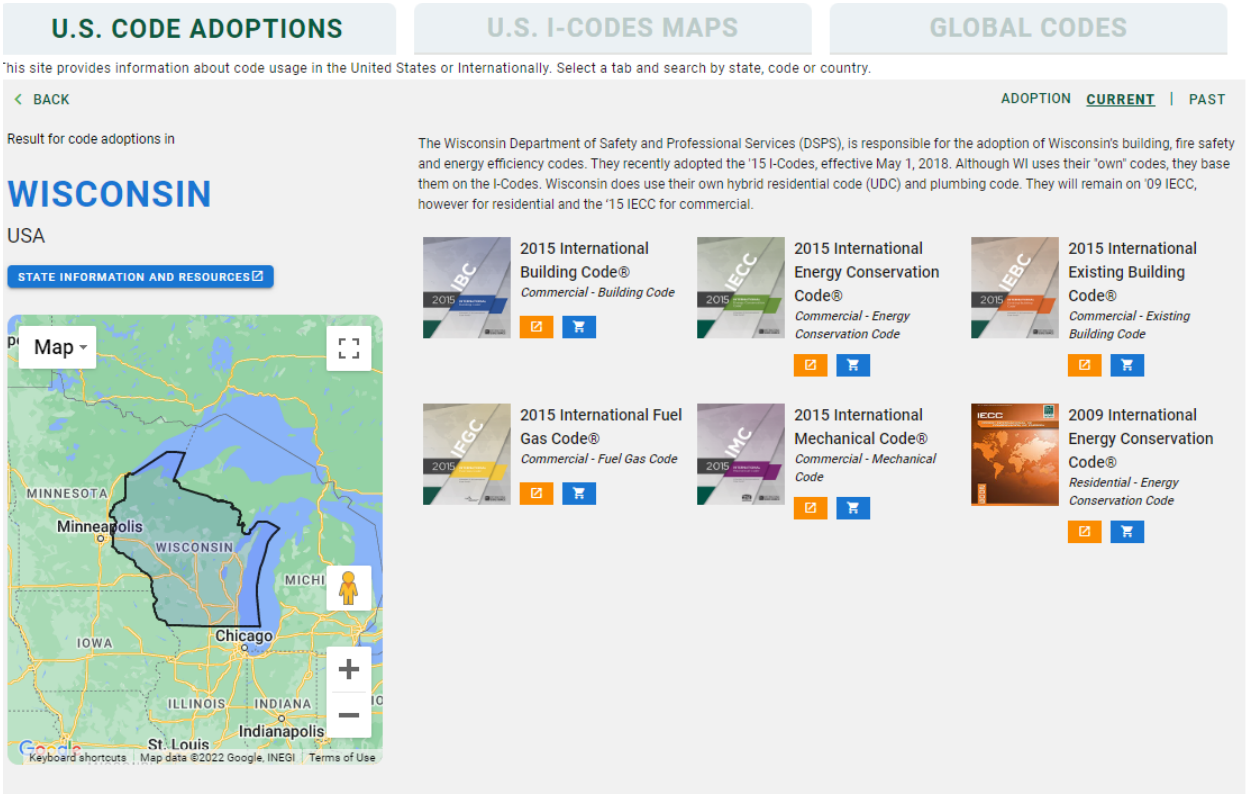
ADOPTION MAP



Current ICC Codes Adopted by the State of Wisconsin

The following snapshot shows the ICC codes currently adopted by the State of Wisconsin.

Source: https://www.iccsafe.org/adoptions/country/usa/state/wisconsin



Wisconsin Department of Safety and Professional Services
Division of Policy Development
4822 Madison Yards Way, 2nd Floor
PO Box 8366
Madison WI 53708-8366

Phone: 608-266-2112
Web: http://dsps.wi.gov
Email: dsps@wisconsin.gov

PUBLIC AGENDA REQUEST FORM

Instructions:

1. Fill out this form, and then save to your device.
2. Return to the "Suggest an Agenda Item" page and select the appropriate Board or Council from the Board/Council list.
3. Attach your completed "Public Agenda Request" form and send.

First Name: Daniel

Last Name: Wald

Association/Organization: UDC Council

Subject: UDC-IRC/ICC Code Comparison 5-23-2025 meeting

Issue to Address:

General comparison between UDC and IRC for Council review. Exact comparison depends upon which IRC/ICC code version is compared. This is not a comprehensive list of the differences, but is intended to point out many differences and become a beginning point of conversation for comparison.

I have also included different versions of Rescheck (IECC) comparing current UDC 2009 IECC versus newer versions of the IECC.

Note: every state that has adopted the IRC has various amendments, so not one state has the same IRC version as another state. Although they are very similar, there are differences from state to state.

GENERAL COMPARISON OF UDC TO IRC (comparisons vary depending upon IRC/ICC code version		
Some differences will increase costs, while others will require changes in design/floor plans from what is currently required in the UDC. This is not a comprehensive list, but is intended to highlight many of the differences.		
5/4/2025		
ITEM	UDC	IRC-ICC
Wind Load	20psf, ASCE-7 (90 mph doesn't equal the 20psf)	115mph factored to 90mph, ASCE-7
Roof/Snow	40-30 psf	Goes by ground snow load-jumps northern half of Wisconsin up to 42psf
Fastening	Schedule noted in UDC	IRC is more comprehensive/alternatives for fastening
Floor-Load		Stairway 40 live (affects stringer material/design)
Exits		
Basement Windows	Not required based on circumstance	Min. one egress window required
Windows	UDC, 46"-60" sill height with steps	Sill height requirements when 6' or more above grade, basements-44"
Window Limited Device	Not required	Required when more than 6' above grade (unless on a deck)
Exits to grade	UDC requirements	IRC has different requirements including exit path
Egress Window Size	20"x24"	5.7 sq ft, min 24" high, 20" wide
Stairway headroom	76"	80"
Tread/riser/nose	9" nose to nose, 8" rise, nosing size not defined	10" nose to nose, 7 3/4" rise, 1" nose, nosings are defined
Winders	UDC requirements	IRC has different requirements due to tread depths
Stairway Flights	No max. height between flights	Max. 147" between landings/floor
Continuous handrails	UDC exceptions	IRC exceptions are a bit different
Others		
Smoke/CO alarms	UDC requirements	IRC has different requirements for locations, distances from appliances, etc
Light/Vent	8%, 3.5%	8%, 4%, plus other requirements in baths, kitchens that have no operable windows
Min. Room Sizes	No definition of size	Min one habitable room 70 sq ft & 7' in one direction
Ceiling Heights	UDC requirements other than ceiling ht. for light/vent	IRC has slightly different requirements
Fire separation/protection	UDC requirements	IRC has different requirements, building separation, garages, dwelling units, floors
Bathroom Clearances		UDC has listed requirements different than UDC
Safety Glazing	UDC requirements	IRC has different requirements-requires more safety glazing than UDC
Wall Bracing	UDC requirements, also borrowed from IRC (2009 edition?)	IRC has different requirements, wall bracing calculators are available
Attic access	14"x24"	22"x30"
Energy	2009 IECC	IECC latest version-greater insulation requirements-see Rescheck comparisons (1680 sq ft home with basement)
		2021 IECC requires outside lighting packages
		Inspections are spelled out in IECC
		May require blower door test
		May require R49 over wall plates in attic (prescriptive) or use Total UA alternative-Rescheck Compliance
		Ducts shall be sealed
		Provisions for existing buildings
		Duct requirements in unconditioned spaces or attics have specific requirements
		IRC chapter requirements, refer to IECC requirements
Mechanical		IMC & IRC Chapter 16, hydronic, clothes dryer vent termination from openings
		Duct lengths
Plumbing		IPC, IRC Chapters 25-33, venting requirments different than UDC, no mechanical plumbing vents, duct materials
Electrical		NEC plus 2021 IECC lighting packages, IRC Chapters 34-43
Sprinklers	none	IRC Chapter 3
Radon	none	Passive radon requirements in Appendix F
Existing structures	none	Appendix J
Codes		Full suite of ICC codes
Townhouses		Covered under IRC
Dwelling separation		STC & IIC ratings
Foundations		Needs an assessment

Impacts	Homeowners	Costs
	Builders	Processes
	HVAC	Design
	Plumbers	Material Components
	Electricians	
	Inspectors	
	Energy Auditors	
	Concrete/Basement	
	Others?	

REScheck Software Version 4.7.2

Compliance Certificate

Project 17400

Energy Code:	**2009 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Passes using UA trade-off

Compliance: **5.5% Better Than Code** Maximum UA: **275** Your UA: **260**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

NOTE: Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.057	71	65
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.350	5	6
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.350	13	15
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.350	5	6
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.350	5	6
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.350	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.350	5	6
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.350	5	6
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.350	5	6
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.350	12	14
Ext. Door Full Glass: Glass	22			0.390	0.350	9	8
Exterior Door: Solid	22			0.170	0.350	4	8
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.057	9	8

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	5.0	0.044	0.050	60	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.350	5	6

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2009 IECC requirements in RES*check* Version 4.7.2 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title

Signature

Date

Project Notes:

SIZING OF FURNACE IS ON-SITE BY OTHERS

REScheck Software Version 4.7.2

Compliance Certificate

Project 17400

Energy Code:	**2012 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Fails using UA trade-off

Compliance: **2.0% Worse Than Code** Maximum UA: **255** Your UA: **260**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

NOTE: Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.048	71	55
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.320	13	14
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.320	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.320	12	13
Ext. Door Full Glass: Glass	22			0.390	0.320	9	7
Exterior Door: Solid	22			0.170	0.320	4	7
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.048	9	7

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	5.0	0.044	0.050	60	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.320	5	5

Project Notes:
SIZING OF FURNACE IS ON-SITE BY OTHERS

REScheck Software Version 4.7.2

Compliance Certificate

Project 17400

Energy Code:	**2012 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Passes using UA trade-off

Compliance: **0.4% Better Than Code** Maximum UA: **255** Your UA: **254**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

NOTE: Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.048	71	55
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.320	13	14
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.320	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.320	12	13
Ext. Door Full Glass: Glass	22			0.390	0.320	9	7
Exterior Door: Solid	22			0.170	0.320	4	7
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.048	9	7

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	7.5	0.040	0.050	54	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.320	5	5

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2012 IECC requirements in RES*check* Version 4.7.2 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title

Signature

Date

Project Notes:

SIZING OF FURNACE IS ON-SITE BY OTHERS

REScheck Software Version 4.7.2

Compliance Certificate

Project 17400

Energy Code:	**2015 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Fails using UA trade-off

Compliance: **3.2% Worse Than Code** Maximum UA: **252** Your UA: **260**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

NOTE: Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.320	13	14
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.320	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.320	12	13
Ext. Door Full Glass: Glass	22			0.390	0.320	9	7
Exterior Door: Solid	22			0.170	0.320	4	7
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.045	9	7

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	5.0	0.044	0.050	60	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.320	5	5

Project Notes:
SIZING OF FURNACE IS ON-SITE BY OTHERS

REScheck Software Version 4.7.2

Compliance Certificate

Project 17400

Energy Code:	**2015 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Passes using UA trade-off

Compliance: **0.8% Better Than Code** Maximum UA: **252** Your UA: **250**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

NOTE: Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.320	13	14
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.320	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.320	5	6
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.320	5	5
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.320	12	13
Ext. Door Full Glass: Glass	22			0.390	0.320	9	7
Exterior Door: Solid	22			0.170	0.320	4	7
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.045	9	7

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	9.0	0.037	0.050	50	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.320	5	5

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2015 IECC requirements in RES*check* Version 4.7.2 and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title

Signature

Date

Project Notes:

SIZING OF FURNACE IS ON-SITE BY OTHERS

Generated by RES*check-Web* Software

Compliance Certificate

Project 17400

Energy Code:	**2018 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Project SubType:	**None**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Fails using UA trade-off

Compliance: **4.8% Worse Than Code** Maximum UA: **248** Your UA: **260**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
Exterior Door: Solid	22			0.170	0.300	4	7
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.300	12	12
Ext. Door Full Glass: Glass	22			0.390	0.300	9	7
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.300	13	13
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.300	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.045	9	7
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	5.0	0.044	0.050	60	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.300	5	5

Project Notes:

SIZING OF FURNACE IS ON-SITE BY OTHERS

Generated by RES*check-Web* Software

Compliance Certificate

Project 17400

Energy Code:	**2018 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Project SubType:	**None**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Passes using UA trade-off

Compliance: **0.8% Better Than Code** Maximum UA: **248** Your UA: **246**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
Exterior Door: Solid	22			0.170	0.300	4	7
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.300	12	12
Ext. Door Full Glass: Glass	22			0.390	0.300	9	7
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.300	13	13
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.300	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.045	9	7
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	18.0	7.5	0.034	0.050	46	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.300	5	5

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2018 IECC requirements in RES*check* Version : REScheck-Web and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title | Signature | Date

Project Notes:

SIZING OF FURNACE IS ON-SITE BY OTHERS

Generated by RES*check-Web* Software

Compliance Certificate

Project 17400

Energy Code:	**2021 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Project SubType:	**None**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Fails using UA trade-off

Compliance: **6.6% Worse Than Code** Maximum UA: **244** Your UA: **260**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.024	25	23
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.024	19	17
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
Exterior Door: Solid	22			0.170	0.300	4	7
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.300	12	12
Ext. Door Full Glass: Glass	22			0.390	0.300	9	7
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.300	13	13
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.300	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.045	9	7
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	5.0	0.044	0.050	60	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.300	5	5

Energy Credits

Description	Credits
More Efficient HVAC Equipment Option - R408.2.2	1.0

Required: 1 Proposed: 1

Project Notes:
SIZING OF FURNACE IS ON-SITE BY OTHERS

Generated by RES*check-Web* Software

Compliance Certificate

Project 17400

Energy Code:	**2021 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Project SubType:	**None**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Passes using UA trade-off

Compliance: **0.8% Better Than Code** Maximum UA: **244** Your UA: **242**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Slab-on-grade tradeoffs are no longer considered in the UA or performance compliance path in REScheck. Each slab-on-grade assembly in the specified climate zone must meet the minimum energy code insulation R-value and depth requirements.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.024	25	23
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.024	19	17
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
Exterior Door: Solid	22			0.170	0.300	4	7
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.300	12	12
Ext. Door Full Glass: Glass	22			0.390	0.300	9	7
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.300	13	13
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.300	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.300	5	5
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.045	9	7
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	18.0	10.0	0.031	0.050	42	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.300	5	5

Energy Credits

Description	Credits
More Efficient HVAC Equipment Option - R408.2.2	1.0

Required: 1 Proposed: 1

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2021 IECC requirements in RES*check* Version : REScheck-Web and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Project Notes:

SIZING OF FURNACE IS ON-SITE BY OTHERS

Generated by RES*check-Web* Software

Compliance Certificate

Project 17400

Energy Code:	**2024 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Project SubType:	**None**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Fails using UA trade-off

Compliance: **8.3% Worse Than Code** Maximum UA: **240** Your UA: **260**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
Exterior Door: Solid	22			0.170	0.280	4	6
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.280	12	11
Ext. Door Full Glass: Glass	22			0.390	0.280	9	6
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.280	5	5
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.280	13	12
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.280	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.280	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	19.0	0.0	0.060	0.045	9	7
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	13.0	5.0	0.044	0.050	60	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.280	5	5

Energy Credits

Description	Credits
R408.2.2(2): High Performance Cooling (Option 1)	1.0
R408.2.2(4): High Performance Gas furnace (Option 1)	7.0
R408.2.3(1)(a): Gas-fired storage water heaters (Option 1)	4.0

Required: 10 Proposed: 12

Project Notes:

SIZING OF FURNACE IS ON-SITE BY OTHERS

Generated by RES*check-Web* Software

Compliance Certificate

Project 17400

Energy Code:	**2024 IECC**
Location:	**Wausau, Wisconsin**
Construction Type:	**Single-family**
Project Type:	**New Construction**
Project SubType:	**None**
Conditioned Floor Area:	**3,360 ft2**
Glazing Area	**15%**
Climate Zone:	**6 (8427 HDD)**
Permit Date:	
Permit Number:	
All Electric	**false**
Is Renewable	**false**
Has Charger	**false**
Has Battery:	**false**
Has Heat Pump:	**false**

Construction Site:
Wausau, WI

Owner/Agent:

Designer/Contractor:
WI

Compliance: Passes using UA trade-off

Compliance: **0.0% Better Than Code** Maximum UA: **240** Your UA: **240**

The % Better or Worse Than Code Index reflects how close to compliance the house is based on code trade-off rules.
It DOES NOT provide an estimate of energy use or cost relative to a minimum-code home.

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
FLAT Ceiling: Flat Ceiling or Scissor Truss	976	50.0	0.0	0.026	0.026	25	25
2.0/12 Cathedral Ceiling: Flat Ceiling or Scissor Truss	714	44.0	0.0	0.027	0.026	19	19
Exterior Walls: Wood Frame, 16" o.c.	1,383	18.0	0.0	0.062	0.045	71	52
Exterior Door: Solid	22			0.170	0.280	4	6
GKDR7280: Sliding Vinyl Patio Door	40			0.290	0.280	12	11
Ext. Door Full Glass: Glass	22			0.390	0.280	9	6
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.280	5	5
GKDH3062/FL4262/DH3062: Vinyl Frame:Double Pane with Low-E	44			0.300	0.280	13	12
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Prop. U-Factor	Req. U-Factor	Prop. UA	Req. UA
GKDH3636: Vinyl Frame:Double Pane with Low-E	9			0.300	0.280	3	3
GKDH4262: Vinyl Frame:Double Pane with Low-E	18			0.300	0.280	5	5
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4
GKDH3662: Vinyl Frame:Double Pane with Low-E	16			0.300	0.280	5	4
Box Sill (Assumed R-Value): Wood Frame, 16" o.c.	148	21.0	0.0	0.057	0.045	8	7
Basement Wall: Solid Concrete or Masonry Wall height: 7.8' Depth below grade: 7.1' Insulation depth: 7.8'	1,371	21.0	10.0	0.030	0.050	41	68
VDS4040(AssumedEmergency Escape): Vinyl Frame:Double Pane with Low-E	17			0.310	0.280	5	5

Energy Credits

Description	Credits
R408.2.2(2): High Performance Cooling (Option 1)	1.0
R408.2.2(4): High Performance Gas furnace (Option 1)	7.0
R408.2.3(1)(a): Gas-fired storage water heaters (Option 1)	4.0

Required: 10 Proposed: 12

Compliance Statement: The proposed building design described here is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the 2024 IECC requirements in RES*check* Version : REScheck-Web and to comply with the mandatory requirements listed in the RES*check* Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Project Notes:
SIZING OF FURNACE IS ON-SITE BY OTHERS

PROJECT PARTNERS

Cost-Effectiveness Analysis of the 2021 and 2024 IECC for the State of Wisconsin

Presentation to the Wisconsin Uniform Dwelling Code Council

May 23, 2025

THIS PROJECT is supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Building Technologies Office—DE-FOA-0002813—Bipartisan Infrastructure Law Resilient and Efficient Codes Implementation.

Disclaimer:

The following presentation is intended for informational purposes only.

The information contained herein does not constitute a policy or program recommendation by the State of Wisconsin, the Department of Safety and Professional Services (DSPS), the Wisconsin Advisory Council on Building Sustainability (CBS), or any other Wisconsin State Department, Agency, or Authority.

Any opinions expressed are those of the author and Slipstream Inc.

Agenda

- Intro Slipstream
- Intro Darren Port
- Overview RECI
- Overview/Update Projects
  - WI CC
  - Field Studies
  - Tech Advisor
  - WI Code Website
- Code Development
- National Regional Adoption
- Energy Savings
- Cost Analysis 2021/2024/UDC
- Costs and Payback
- Wisconsin Code Resources

slipstream

Climate + Clean Energy Solutions for everyone.

The knowledge, people, and resources to solve our biggest energy challenges.

Darren Port

Slipstream - Building Code Policy Advisor

Pacific Northwest National Laboratory (PNNL) – Senior Buildings Advisor, Energy Code Team

Northeast Energy Efficiency Partnerships (NEEP) – Senior Manager, Codes and Standards

State of New Jersey – Code Specialist/ Green Building Administrator/ Director NJ Green Home

Committee

ICC IECC 2027 IECC Envelope and Embodied Energy Sub Committee
2024 IECC Commercial Consensus Committee/E4C Sub Committee
2012 and 2015 IGCC Consensus Committee.
2012 and 2015 NAHB/ICC-700 Development Committee.
2011 and 2014 ASHRAE Standard 189.1 Development Committee.
2012-2013 ICC Evaluation Service Sustainability Committee.
2011-2014 Board Member, ICC Sustainability Membership Committee

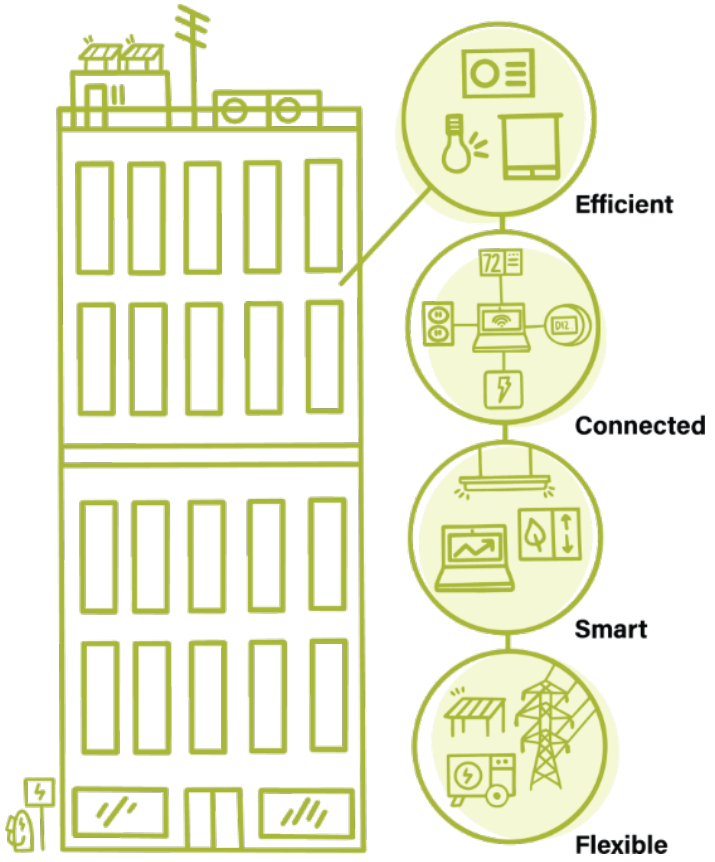
Wisconsin RECI Projects

Department of Energy Grant

Resilient and Efficient Codes Implementation (RECI) Federal Funding 2024 – 2026

Background

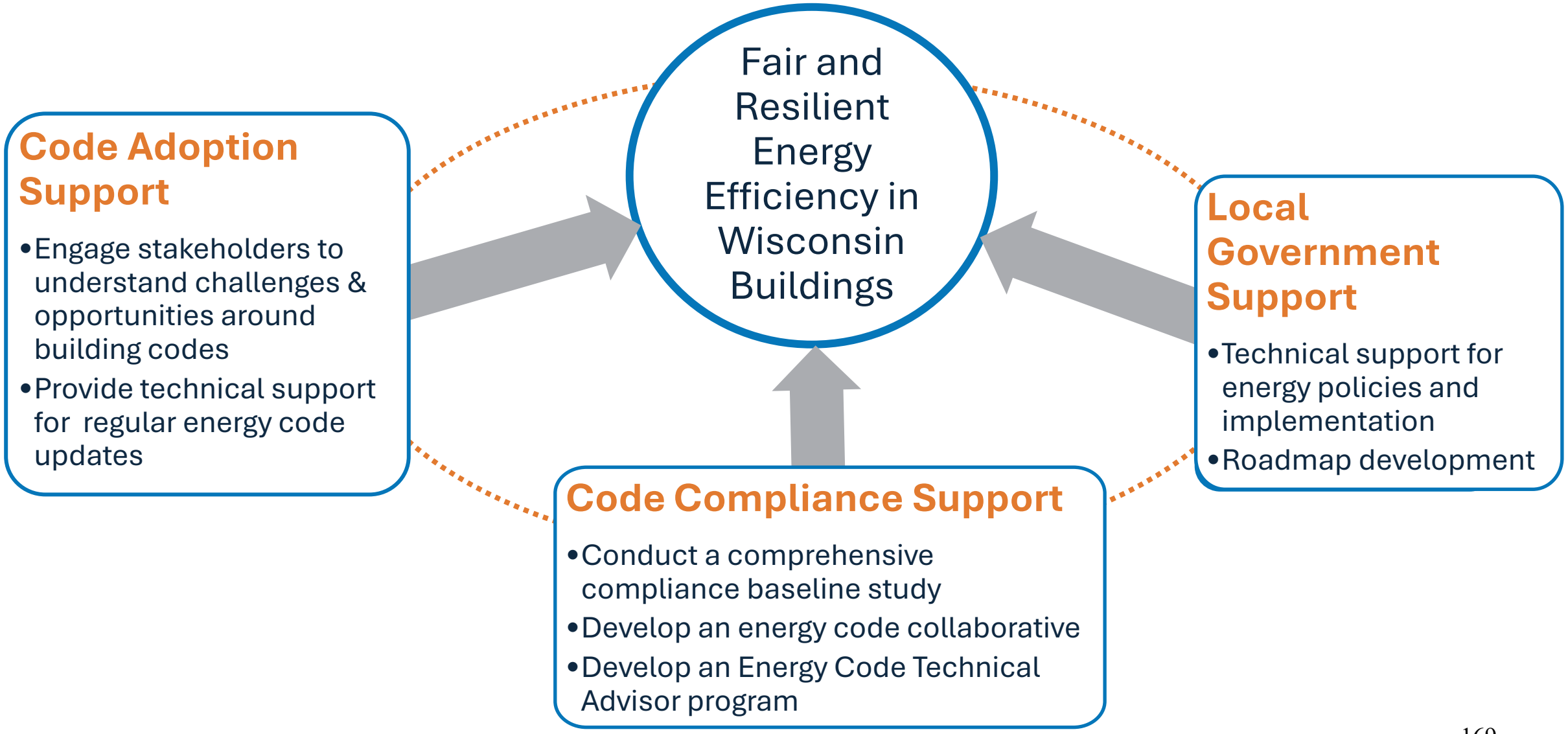
Through Infrastructure Investment and Jobs Act (IIJA), $225M in funding has been appropriated to eligible entities to enable sustained cost-effective implementation of updated building energy codes



Project Partners

- Slipstream
- Clean Wisconsin
- Midwest Energy Efficiency Alliance
- Wisconsin Local Government Climate Coalition
- New Buildings Institute
- Wisconsin Department of Safety and Professional Services

Building a strong foundation for energy codes in Wisconsin



New Construction Baseline Study (Residential, Commercial, and Multifamily)

Data Collection Updates

- Goal of study is to provide a comprehensive assessment of new construction practices and performance across Wisconsin
- The study will identify building market trends and construction opportunities for improvement
- Gain a better understanding of ways Wisconsin builders are already meeting more recent energy code versions

Wisconsin Energy Codes Collaborative

Purpose: An energy code collaborative is a forum for experts from diverse stakeholder groups impacted by energy codes to work together toward common interests and goals related to energy code adoption and compliance.

Key goals:

- Align stakeholder interests (builders, designers, code officials, governments, building occupants, the public) around shared goals and foster collaboration to improve buildings through energy codes.
- Identify challenges to energy code compliance and address by proposing policies, training, and support
- Be a trusted source for best practices and compliance guidance

Codes Collaborative Meeting Overview

Meeting 1: December 2024
Meeting 2: March 2025
Meeting 3: Planning for mid-June 2025

- Planning to split into subcommittee groups
- Begin to plan for development of actions/tools/resources that can address these issues

Wisconsin Energy Code Technical Advisor Program

The program assists code officials, builders and associations, contractors, design professionals, and other industry organizations in understanding the implementation and requirements of the Wisconsin residential and commercial energy codes.

Program Services Include:

- Virtual, In-Office, or Job Site Visits
- One-on-One and small group consultations
- In-Person Trainings and Live Webinars - including sessions on code basics, building science, air sealing, blower door testing, and more
- Help with energy code related questions
- All program services are provided at no cost to the participant
- 1539 participants have attended training since December 2024!

Upcoming Virtual Training

May 13 - Residential Air Sealing and Insulation, 10:30 a.m. to 12:00 p.m.

May 28 - WI UDC SPS 322 Residential Energy Code, 9:00 a.m. to 12:00 p.m.

June 11- Residential Heat and Insulation, 9:00 a.m. to 10:00 a.m.

June 18 - Residential HVAC Equip Sizing Man J, S & D, 9:00 to 10:30 a.m.

June 25 - Multi-family construction and the Energy Code, 9:00 to 10:00 a.m.

Registration links can be found at: www.wienergycodes.org

In-Person Demonstrations

Residential Building Envelope tightness (Blower Door) and Duct tightness (Duct Blaster) testing demonstrations will be offered at four locations in Wisconsin:

5/20 8:45AM & 10:15AM 2002 Whistling Straits Dr, Altoona, 54720
5/22 8:45AM & 10:15AM 9282 S Overlook Way, Franklin, 53132
5/27 8:45AM & 10:15AM Fox Valley Area (Site address to be determined)
5/29 8:45AM & 10:15AM 2887 Mizuna Dr, Fitchburg, 53711

Please see **www.wienergycodes.org** for registration and additional information.

For Information on Technical Advisor and Trainings

Robert Oakley
Wisconsin in-state contact
Senior Technical Specialist
roakley@psdconsulting.com

Bill Deters
Senior Technical Specialist
wdeters@psdconsulting.com

www.wienergycodes.org

Code Development Overview

National Regional Adoption

Code Development

Code Adoption Principles

- Fair and Equitable
- Open Public Forums
- Decision Transparency
- Representation of Interests
- Due Process
- Majority Consensus
- Appeals Process

Code Adoption Participation

- National Experts
  - Engineers
  - Building Scientists
  - Molders
  - Policy Makers
- Code Officials
- Industry/Manufacturers
- Government
- Users
- Builders
- Standards

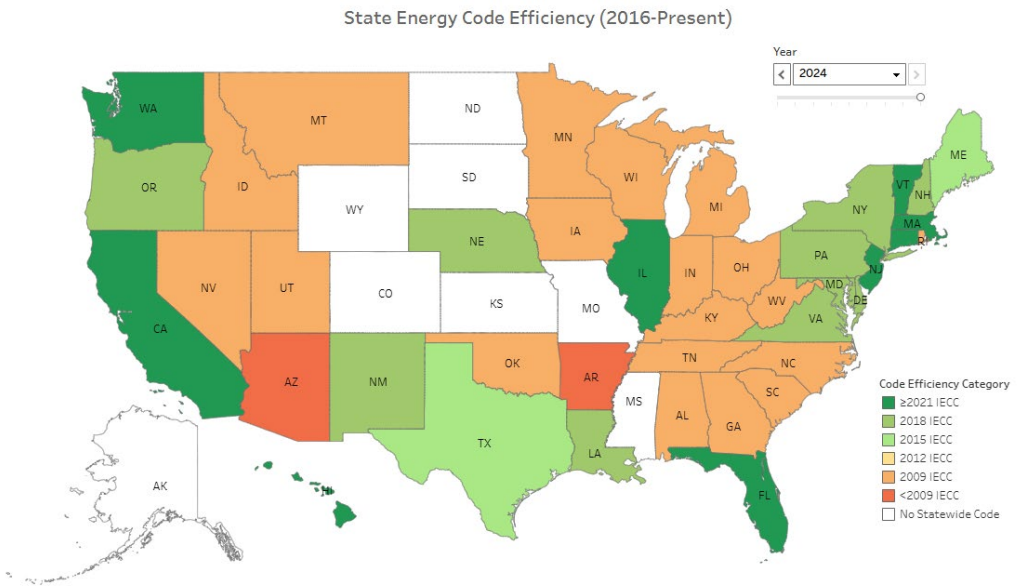
Code Changes Incorporate

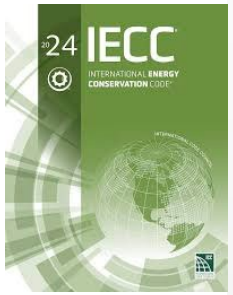
- Engineering Data/Specs
- Fire Safety Data/Protocols
- Latest Products
- New Construction Methods
- Reference Standards
  - ASTM, RESNET

Code Adoption Process

- Continuous Maintenance
- Three-Year Cycles
- Addenda in Interim Years
- Code Change Proposals
- Proposals Posted
- Hearings / Consensus Committee (Energy)
- Hearing/Committee Results Published
- Public Comment
- First Publication
- Final Action Hearing/Meetings
- Member Voting (Except Energy)
- New Edition Published

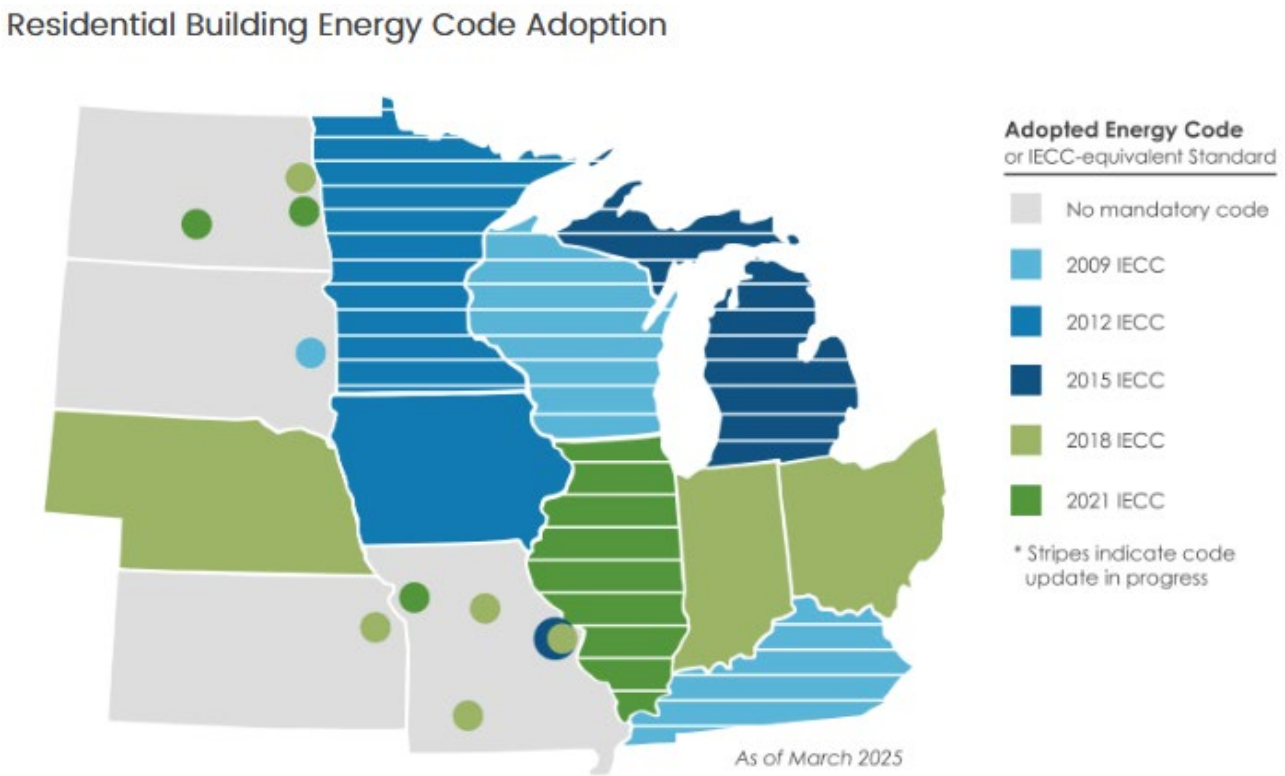
National Code Adoption Status





States in the process of reviewing and adopting the 2024 IECC:
NH, DE, NY, NJ, IL, OH, WA, OR, ID, AZ (Pima, Tucson), OK, Various TX Cities

Regional Code Adoption



STATE	RESIDENTIAL (IECC)	COMMERCAIL (IECC/ASHRAE)
IL	2021*	2021*
IN	2018*	90.1-2007*
IW	2012*	2012
KN	None Statewide	2006 Voluntary
MI	2021*	2021*
MN	2012*	90.1-2019
MO	None Statewide	None Statewide
NE	2018	2018
ND	None / 2015	None / 2015
OH	2018*	2021
SD	None / 2009	None / 2015 IBC
WI	2009*	2015*

Residential Cost-Effectiveness Analysis of the 2021 and 2024 International Energy Construction Code (IECC) Compared to the Wisconsin UDC (2009 IECC Amended)

PROJECT PARTNERS Clean Wisconsin • Wisconsin Local Government Climate Coalition • Midwest Energy Efficiency Alliance • New Buildings Institute • Slipstream

Introduction and Overview

Wisconsin Energy Code Analysis

In July 2021, PNNL published a cost-effectiveness analysis of the 2021 IECC for residential buildings in Wisconsin.

In September 2024, Slipstream requested an updated cost-effectiveness analysis that considers:

- Comparison to current UDC,
- Current parameters,
- First-time and average homebuyer data,
- Additional comparison to the 2024 IECC

MEMORANDUM

Pacific Northwest NATIONAL LABORATORY

Date:	**December 3, 2024**		
To:	**Darren Port, Slipstream, Inc.**		
From:	**Turns, Michael A, Rob Salcido, Claire McKenna, PNNL**	Information Release #:	PNNL-37079
Subject:	**Cost-Effectiveness Analysis of the 2021 and 2024 IECC-Residential for the State of Wisconsin**		

The State of Wisconsin is in the process of updating its current state residential energy code, which is an amended version of the 2009 International Energy Conservation Code (IECC), to either the 2021 or 2024 IECC. In July 2021, PNNL published a cost-effectiveness analysis of the 2021 IECC for residential buildings in Wisconsin.[1] In September 2024, the Wisconsin Council on Building Sustainably (CBS) requested an updated cost-effectiveness analysis that considers more recent mortgage interest rates, different downpayment amounts for first-time and average homebuyers, and an additional comparison to the 2024 IECC.

Summary of Cost-Effectiveness of Adopting the 2021 IECC
The resulting analysis shows that a home designed to comply with the residential provisions of the 2021 IECC would yield short-term and long-term consumer benefits compared to a home built to the Wisconsin-amended 2009 IECC. When building to the 2021 IECC, Wisconsin first-time homebuyers (8% down payment) and average homebuyers (15% down payment) can expect to save 21% in energy costs, equating to $817 of annual utility bill savings. When amortizing over a typical 30-year mortgage, first-time homebuyers will see a positive cumulative cash flow in the first four years and average homebuyers will see a positive cumulative cash flow in the first six years. Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately $10,600 in life-cycle cost savings. During the first year alone, collectively, Wisconsin residents could expect to save over $12,210,000 in energy costs and 56,100 metric tons in avoided CO2 emissions.

Summary of Cost-Effectiveness of Adopting the 2024 IECC
A home designed to comply with the residential provisions of the 2024 IECC would also yield short-term and long-term consumer benefits compared to a home built to the Wisconsin-amended 2009 IECC. When building to the 2024 IECC, Wisconsin first-time homebuyers and average homebuyers can expect to save 24% in energy costs, equating to $993 of annual utility bill savings. When amortizing costs over a typical 30-year mortgage, first-time homebuyers will see a positive cumulative cash flow in the first three years, and average homebuyers will see a positive cumulative cash flow in the first five years. Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately $11,800 in life-cycle cost

First Time and Average Home Buyer

First-time Home Buyer

- Less equity or the ability to put down a substantial downpayment.
- Not owned a home in three years.
- 97% of first-time buyers financed their home purchase, with a typical downpayment of six percent.
- This analysis assumed an 8% down payment and a recent average interest rate of 5%

Average Home Buyer

- Annual household income is two-thirds to double the national median income possess the means or have the equity to pay a higher down payment.
- This analysis uses a 15% down payment
- Five percent interest rate
- 30 year mortgage (90 percent of mortgages per Freddie Mac)

Wisconsin Realtors Association
2022 National Association of Realtors (NAR)
Pew Research Center

2021 IECC Residential Savings for Homeowners Compared to Wisconsin UDC (2009 IECC Amended)

2021 IECC Savings	Cash Flow Year One	Cash Flow 30 Year
Average annual savings of 21% compared to the Wisconsin UDC. $817 Annual (year 0) energy cost savings of the 2021 IECC $183 net annual consumer cash flow in year 1	Amortized costs and benefits over a typical 30-year mortgage First-time homebuyers positive cumulative cash flow in the *first four* years. Average homebuyers positive cumulative cash flow in the *first six* years.	Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately $10,630 in life-cycle cost savings.

2021 IECC Residential Wisconsin Statewide Impact

Wisconsin Year One

Wisconsin residents could expect to save:

Over $12,210,000 in energy costs

56,100 metric tons in avoided CO2 emissions.

Wisconsin Over 30 Years

Wisconsin would save 3.26 billion dollars in energy savings

reduce CO2 emissions by 25.8 MMT.

2024 IECC Residential Savings for Homeowners Compared to Wisconsin UDC (2009 IECC Amended)

2021 IECC Savings	Cash Flow Year One	Cash Flow 30 Year
Average annual savings of 24% compared to the Wisconsin UDC. $968 Annual (year 0) energy cost savings of the 2021 IECC $269 net annual consumer cash flow year one.	Amortized costs and benefits over a typical 30-year mortgage First-time homebuyers positive cash flow in the *first three* years. Average homebuyers positive cumulative cash flow in the *first five* years.	Over the course of 30 years, both a first-time homebuyer and an average-income homebuyer will net approximately $11,800 in life-cycle cost savings.

2024 IECC Residential Wisconsin Statewide Impact

Wisconsin Year One

Wisconsin residents could expect to save:

$13,650,000 in energy costs

62,700 metric tons in avoided CO2 emissions.

Wisconsin Over 30 Years

Wisconsin would save $3.62 billion in energy savings

Reduce CO2 emissions by 28.8 MMT.

2024 IECC NATIONAL SAVINGS

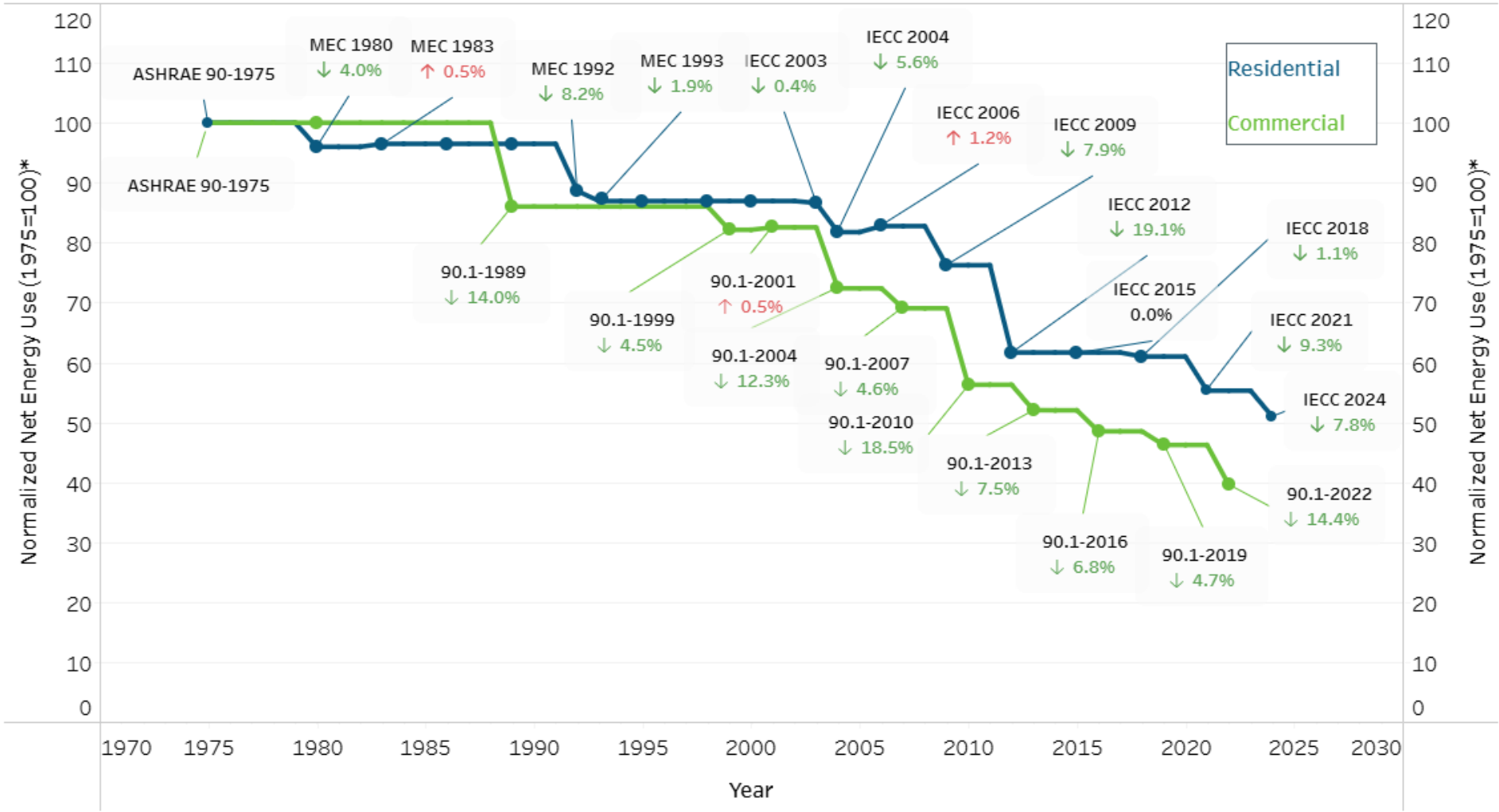
The Department of Energy issued a 2024 IECC Residential code analysis, the results of which indicate that residential buildings meeting the 2024 IECC incur the following savings compared to the 2021 IECC on a weighted national average basis:

- 7.80 percent annual reduction in site energy use intensity (EUI);
- 6.80 percent annual reduction source EUI;
- 6.60 percent annual savings in energy cost; and
- 6.51 percent carbon emissions reduction.

From DOE Determination published December 30, 2024
https://www.energycodes.gov/determinations

ENERGY Estimated Improvement in Residential & Commercial Energy Codes (1975 - 2024)

Pacific Northwest NATIONAL LABORATORY



*Net energy use includes the contribution of renewable energy generation

Wisconsin Cost-Effectiveness Analysis:

The Data

Parameters

PARAMETER	First-Time Homebuyer	Average Home Buyer
Mortgage Interest Rate	5.0%	5.0%
Loan fees	0.9%	0.9%
Loan Terms	30 years	30 years
Down Payment	8.0%	15%
Nominal Discount Rate (equal to mortgage rate)	5.0%	5.0%
Inflation Rate	2.2%	2.2%
Marginal Federal income Tax	22%	22%
Marginal State Income Tax	5.3%	5.3%
Property Tax	1.61%	1.61%

Parameter Data Sources

The financial and economic parameters used in calculating **Life Cycle Cost (LCC)** and annual consumer cash flow are based on the latest **DOE-established methodology** with Wisconsin-specific economic scenarios.

Construction Cost Data

Climate-zone-specific cost data sources consulted by PNNL include:

- NREL National Residential Efficiency Measures Database
- 2024 RSMeans Residential Cost Data
- 2018 ENERGY STAR Cost & Savings Estimates
- Price data from nationally recognized home supply stores

The costs have been adjusted using a construction cost multiplier of 0.989 to reflect local Wisconsin construction costs based on location factors provided by 2024 RS Means and converted to 2024 dollars.

Methodology

Table 3. Residential Prototypes for 2021 IECC and 2024 IECC Simulated Models

HVAC SYSTEM		Natural Gas with forced air furnace	Liquefied petroleum gas/propane with a forced air furnace	Electric resistance with a forced air furnace	Electric heat pump with forced air distribution
		FOUNDATION TYPE			
RESIDENTIAL PROTOTYPE	Single Family	Crawl Space	Crawl Space	Crawl Space	Crawl Space
		Slab on Grade	Slab on Grade	Slab on Grade	Slab on Grade
		Heated Basement	Heated Basement	Heated Basement	Heated Basement
		Unheated Basement	Unheated Basement	Unheated Basement	Unheated Basement
	Multifamily	Crawl Space	Crawl Space	Crawl Space	Crawl Space
		Slab on Grade	Slab on Grade	Slab on Grade	Slab on Grade
		Heated Basement	Heated Basement	Heated Basement	Heated Basement
		Unheated Basement	Unheated Basement	Unheated Basement	Unheated Basement

Single Family Prototype Assumptions

Parameter	Assumption
Conditioned floor area	**2,376 ft^2 (plus 1,188 ft^2 of conditioned basement, where applicable)** **3,564ft^2 for heated basement**
Footprint and height	39.8-ft-by-29.8 ft, two-story, 8.5-ft-high ceilings
Area above unconditioned space	1,188 ft^2
Area below roof/ceilings	1,188 ft^2
Perimeter length	139.2 ft
Gross exterior wall area	2,366.4 ft^2
Window area (relative to conditioned floor area)	Fifteen percent equally distributed to the four cardinal directions (or as required to evaluate glazing-specific code changes)
Door area	42 ft^2
Internal gains	86,761 Btu/day 115,035 Btu/day (heated basement)

Multifamily Prototype Assumptions

Parameter	Assumption
Conditioned floor area	**1,200 ft^2 per unit, or 21,600 ft^2 total (plus 1,200 ft^2 of conditioned basement on ground-floor units, where applicable)**
Footprint and height	Each unit is 40 ft wide by 30 ft deep, with 8.5-ft-high ceilings. The building footprint is 120 ft by 65 ft.
Area above unconditioned space	1,200 ft^2 on ground-floor units
Wall area adjacent to unconditioned space	None
Area below roof/ceilings	1,200 ft^2 on top-floor units
Perimeter length	370 ft (total for the building), 10 ft of which borders the open breezeway
Gross wall area	5,100 ft^2 per story, 2,040 ft^2 of which faces the open breezeway (15,300 ft^2 total)
Window area (relative to gross wall area)	Twenty-three percent of gross exterior wall area, excluding walls facing the interior breezeway (or as required to evaluate glazing-specific code changes)
Door area	21 ft^2 per unit (378 ft^2 total)
Internal gains	54,668 Btu/day per unit (984,024 Btu/day total)

Wisconsin Construction, Heating, Foundation Shares

Share of New Homes (Percent)		
Heating System	**Single-Family**	**Multifamily**
Natural Gas	88.6	88.6
Heat Pump	7.3	7.3
Electric Resistance	4.1	4.1
Oil	0.0	0.0

Foundation Type Shares				
Foundation Type	**Slab-on-grade**	**Heated Basement**	**Unheated Basement**	**Crawl Space**
Share of New Homes (%)	9.4	72.1	18.4	0

Construction Shares by Climate Zone		
Climate Zone	**Share of New Homes (Percent)**	
	Single-Family	Multifamily
5A	74.2	25.8
6A	88.7	11.3

Fuel Prices

Fuel Prices for Wisconsin		
Electricity ($/kWh)	**Gas (S/Therm)**	**Fuel Oil ($/gal)**
0.1688	1.047	3.882

Fuel cost data from U.S. Energy Information Administration (EIA)

2021 Construction Cost Increase

Total Single-Family Construction Cost Increase for the 2024 IECC Compared to the Wisconsin-amended 2009 IECC			
Single-family Prototype House			
Climate Zone	**Unheated Basement**	**Heated Basement**	**Slab**
5A	$11,827	$12,005	$11,827
6A	$9,893	$9,893	$9,893
Average	$10,993	$11,094	$10,933

Multifamily Construction Cost Increase for the 2021 IECC Compared to the Wisconsin-amended 2009 IECC			
Multifamily Prototype Apartment/Condo			
Climate Zone	**Unheated Basement**	**Heated Basement**	**Slab**
5A	$4,130	$4,156	$4,266
6A	$4,016	$4,016	$4,016
Average	$4,105	$4,126	$4,212

2024 Construction Cost Increase

Total Single-Family Construction Cost Increase for the 2024 IECC Compared to the Wisconsin-amended 2009 IECC			
Single-family Prototype House			
Climate Zone	**Unheated Basement**	**Heated Basement**	**Slab**
5A	$11,282	$11,549	$11,282
6A	$11,730	$11,601	$11,730
Average	$11,475	$11,521	$11,475

Multifamily Construction Cost Increase for the 2024 IECC Compared to the Wisconsin-amended 2009 IECC			
Multifamily Prototype Apartment/Condo			
Climate Zone	**Unheated Basement**	**Heated Basement**	**Slab**
5A	$4,583	$4,609	$4,719
6A	$5,702	$5,702	$5,702
Average	$4,825	$4,846	$4,932

Terminology

A **weighted average** is calculated across building configurations and climate zones.

The **annual cash flow** is the net difference between annual energy savings and annual cash outlays (mortgage payments, etc.), including all tax effects but excluding up-front costs (mortgage down payment, loan fees, etc.).

First-year net cash flow is reported; subsequent years' cash flow will differ due to inflation and fuel price escalation, changing income tax effects as the mortgage interest payments decline, etc.

Annual energy savings is reported at time zero, before any inflation or price escalations are considered.

Annual energy savings is reported as a percentage of whole building energy use.

Life-cycle Cost Savings 2021 IECC Compared to the Wisconsin-amended 2009 IECC

Metric	First-time Homebuyer	Average Homebuyer
LCC Savings of 2021 (Year 30)	$10,601	$10,630
LCC Savings of 2021 (Year 10)	$1,618	$1,351
LCC Savings of 2021 (Year 7)	$677	$341
LCC Savings of 2021 (Year 5)	$172	$292
Net Annual Consumer Cash Flow Year 1 of the 2021 IECC	$183	$222
Years to positive cumulative cash flow	4	6
Annual (year 0) energy cost savings of the 2021 IECC	$817	$817
Annual energy cost savings of the 2021 IECC	21%	21%
Simple payback period (years)	11.8	11.8

Life-cycle Cost Savings 2024 IECC Compared to the Wisconsin-amended 2009 IECC

Metric	First-time Homebuyer	Average Homebuyer
LCC Savings of 2021 (Year 30)	$11,812	$11,843
LCC Savings of 2021 (Year 10)	$2,396	$2,116
LCC Savings of 2021 (Year 7)	$1,206	$854
LCC Savings of 2021 (Year 5)	$538	$50???
Net Annual Consumer Cash Flow Year 1 of the 2024 IECC	$269	$310
Years to positive cumulative cash flow	3	5
Annual (year 0) energy cost savings of the 2024 IECC	$968	$933
Annual energy cost savings of the 2024 IECC	24%	24%
Simple payback period (years)	10.9	10.9

2024 IECC energy Credits Included in Analysis

Table 7. Energy Credits Included in 2024 IECC Analysis for Fossil Fuel Prototypes

Measure Number	Measure Description	Included in Analysis	
		CZ 5	CZ 6
R408.2.1.2(1)	U-factor and SHGC for windows per Table R408.2.1	Yes	No
R408.2.2(5)	High Performance Gas Furnace (Option 2) 95 AFUE	No	Yes
R408.2.3(2)(b)	Gas-Fired Instantaneous Water Heater (Option 2) UEF = 0.95	Yes	No
R408.2.3(8)	Compact Hot Water Distribution	Yes	Yes
R408.2.5(1)	ERV or HRV installed – 75% SRE	No	Yes
R408.2.6	Energy Efficient Appliances	Yes	No

Table 8. Energy Credits Included in 2024 IECC Analysis for Electric Prototypes

Measure Number	Measure Description	Included in Analysis	
		CZ 5	CZ 6
R408.2.1.2(1)	U-factor and SHGC for windows per Table R408.2.1	Yes	No
R408.2.3(3)	Electric Water Heaters (Option 1) - Integrated HPWH: UEF = 3.30	Yes	Yes
R408.2.3(8)	Compact Hot Water Distribution	Yes	No
R408.2.4(3)	>= 80% of ductwork inside conditioned space	No	Yes
R408.2.5(1)	ERV or HRV installed – 75% SRE	Yes	No

Table 16. First Time Home Buyer Consumer Cash Flow from Compliance with the 2021 IECC Compared to the Wisconsin-amended 2009 IECC

	Cost/Benefit	5A	6A	Average
A	Incremental down payment and other first costs	$878	$815	$853
B	Annual energy savings (year one)[31]	$817	$897	$848
C	Annual mortgage increase	$95	$88	$92
D	Net annual cost of mortgage interest deductions, mortgage insurance, and property taxes (year one)	$589	$547	$573
E = [B-(C+D)]	Net annual cash flow savings (year one)	$133	$262	$183
F = [A/E]	Years to positive savings, including up-front cost impacts	5	3	4

Table 17. Average Home Buyer Consumer Cash Flow from Compliance with the 2021 IECC Compared to the Wisconsin-amended 2009 IECC

	Cost/Benefit	5A	6A	Average
A	Incremental down payment and other first costs	$1,567	$1,455	$1,524
B	Annual energy savings (year one)[32]	$817	$897	$848
C	Annual mortgage increase	$100	$93	$97
D	Net annual cost of mortgage interest deductions, mortgage	$544	$505	$529

able 19. First Time Home Buyer Consumer Cash Flow from Compliance with the 2024 IECC Compared to the Wisconsin-amended 2009 IECC

	Cost/Benefit	5A	6A	Average
A	Incremental down payment and other first costs	$852	$968	$897
B	Annual energy savings (year one)[23]	$966	$973	$933
C	Annual mortgage increase	$92	$105	$97
D	Net annual cost of mortgage interest deductions, mortgage insurance, and property taxes (year one)	$572	$650	$602
E = [B-(C+D)]	Net annual cash flow savings (year one)	$301	$218	$269
F = [A/E]	Years to positive savings, including up-front cost impacts	3	4	3

able 20. Average Home Buyer Consumer Cash Flow from Compliance with the 2024 IECC Compared to the Wisconsin-amended 2009 IECC

	Cost/Benefit	5A	6A	Average
A	Incremental down payment and other first costs	$1,522	$1,729	$1,602
B	Annual energy savings (year one)[23]	$966	$973	$933
C	Annual mortgage increase	$97	$110	$102
D	Net annual cost of mortgage			

Individual Consumer Impact of Moving from the Wisconsin Amended 2009 IECC to the 2021 IECC and 2024 IECC

	2021 IECC		2024 IECC	
Metric	First-time Homebuyer	Average Homebuyer	First-time Homebuyer	Average Homebuyer
LCC Savings of 2021 (Year 30)	$10,601	$10,630	$11,812	$11,843
LCC Savings of 2021 (Year 10)	$1,618	$1,351	$2,396	$2,116
LCC Savings of 2021 (Year 7)	$677	$341	$1,206	$854
LCC Savings of 2021 (Year 5)	$172	$292	$538	$50??
Net Annual Consumer Cash Flow Year 1 of the 2021 IECC	$183	$222	$269	$310
Years to positive cumulative cash flow	4	6	3	5
Annual (year 0) energy cost savings of the 2021 IECC	$817	$817	$968	$933
Annual energy cost savings of the 2021 IECC	21%	21%	24%	24%
Simple payback period (years)	11.8	11.8	10.9	10.9

Simple Pay Back

Simple Payback Period for the 2021 IECC Compared to Wisconsin-amended 2009 IECC	
Climate Zone	**Simple Payback (Years)**
5A	12.6
6A	10.7
Average	11.8

Simple Payback Period for the 2024 IECC Compared to Wisconsin-amended 2009 IECC	
Climate Zone	**Simple Payback (Years)**
5A	10.4
6A	11.7
Average	10.9

Simple payback may oversimplify financial evaluations.
LCC is the primary metric DOE uses to determine the cost-effectiveness.

2021 and 2024 IECC (At-a-Glance) Overview

2021
Single Family, Heated Basement, Natural Gas

Cost: *5A* $12,005 *6A* $9,893 (4 Cycles)

Savings: First-time Homebuyer $10,601;
Positive cash flow in 4 years

Average Homebuyer $10,630;
Positive cash flow in 6 years

Overall Savings: 21%*

WI Societal Benefit (30 years):
$3.26 billion in energy savings
Reduction in CO2 emissions by 25.8 MMT.

2024
Single Family, Heated Basement, Natural Gas

Cost: *5A* $11,549 *6A* $11,601 (5 Cycles)

Savings: First-time Homebuyer $11,812;
Positive cash flow in 3 years

Average Homebuyer $11,843;
Positive cash flow in 5 years

Overall Savings: 24%*

WI Societal Benefit (30 years):
$3.62 billion in energy savings
Reduction in CO2 emissions by 28.8 MMT.

*Compared to the Wisconsin UDC (2009 IECC)

Wisconsin Cost-Effectiveness Analysis:

Appendix A

30 Year Cash Flow

	Down Payment	Loan Fees	Electric Savings	Gas Savings	Oil Savings	Loan Payment	Tax Deductions	Mortgage Insurance Payment	Property Tax Payment	Replacement Costs	Residual Value	Total Energy Savings	Net Cashflow	Cumulative Cashflow
time.0	-$773	-$80	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$853	-$853
year.1	$0	$0	$343	$465	$0	-$546	$114	-$51	-$151	$0	$0	$808	$174	-$679
year.2	$0	$0	$339	$460	$0	-$520	$107	-$48	-$147	$0	$0	$799	$191	-$488
year.3	$0	$0	$335	$454	$0	-$495	$101	-$46	-$143	$0	$0	$790	$206	-$282
year.4	$0	$0	$332	$449	$0	-$471	$94	-$44	-$140	$0	$0	$781	$220	-$62
year.5	$0	$0	$328	$444	$0	-$449	$88	-$42	-$136	$0	$0	$772	$234	$172
year.6	$0	$0	$324	$439	$0	-$427	$82	-$40	-$132	$0	$0	$764	$246	$419
year.7	$0	$0	$321	$435	$0	-$407	$77	-$38	-$129	$0	$0	$755	$258	$677
year.8	$0	$0	$317	$430	$0	-$388	$71	$0	-$125	$0	$0	$747	$305	$982
year.9	$0	$0	$314	$425	$0	-$369	$66	$0	-$122	$0	$0	$739	$314	$1,296
year.10	$0	$0	$310	$420	$0	-$352	$62	$0	-$119	$0	$0	$731	$322	$1,618
year.11	$0	$0	$307	$416	$0	-$335	$57	$0	-$116	$0	$0	$722	$329	$1,946
year.12	$0	$0	$303	$411	$0	-$319	$53	$0	-$113	-$291	$0	$714	$45	$1,991
year.13	$0	$0	$300	$406	$0	-$304	$48	$0	-$110	$0	$0	$706	$342	$2,333
year.14	$0	$0	$297	$402	$0	-$289	$45	$0	-$107	$0	$0	$699	$347	$2,680
year.15	$0	$0	$293	$397	$0	-$276	$41	$0	-$104	$0	$0	$691	$352	$3,032
year.16	$0	$0	$290	$393	$0	-$262	$37	$0	-$101	$0	$0	$683	$357	$3,389
year.17	$0	$0	$287	$389	$0	-$250	$34	$0	-$98	$0	$0	$676	$361	$3,751
year.18	$0	$0	$284	$384	$0	-$238	$31	$0	-$96	$0	$0	$668	$365	$4,116
year.19	$0	$0	$281	$380	$0	-$227	$27	$0	-$93	$0	$0	$661	$368	$4,484
year.20	$0	$0	$277	$376	$0	-$216	$24	$0	-$91	$0	$0	$653	$371	$4,855
year.21	$0	$0	$274	$372	$0	-$206	$22	$0	-$88	$0	$0	$646	$374	$5,229
year.22	$0	$0	$271	$368	$0	-$196	$19	$0	-$86	$0	$0	$639	$376	$5,606
year.23	$0	$0	$268	$364	$0	-$186	$16	$0	-$84	$0	$0	$632	$378	$5,984
year.24	$0	$0	$265	$360	$0	-$178	$14	$0	-$81	-$210	$0	$625	$170	$6,154
year.25	$0	$0	$262	$356	$0	-$169	$12	$0	-$79	$0	$0	$618	$381	$6,535
year.26	$0	$0	$260	$352	$0	-$161	$10	$0	-$77	$0	$0	$611	$382	$6,917
year.27	$0	$0	$257	$348	$0	-$153	$7	$0	-$75	$0	$0	$604	$383	$7,301
year.28	$0	$0	$254	$344	$0	-$146	$5	$0	-$73	$0	$0	$598	$384	$7,685
year.29	$0	$0	$251	$340	$0	-$139	$4	$0	-$71	$0	$0	$591	$384	$8,069
year.30	$0	$0	$248	$336	$0	-$133	$2	$0	-$69	$0	$2,148	$584	$2,532	$10,601

Cashflow Analysis of homes built to the 2021 and 2024 IECC compared to the Wisconsin-amended 2009 IECC for:

First-time home buyers
Average home buyer

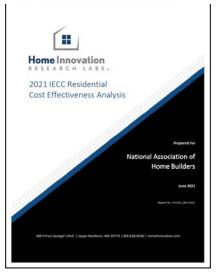
	Down Payment	Loan Fees	Electric Savings	Gas Savings	Oil Savings	Loan Payment	Tax Deductions	Mortgage Insurance Payment	Property Tax Payment	Replacement Costs	Residual Value	Total Energy Savings	Net Cashflow	Cumulative Cashflow
time.0	-$773	-$80	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$853	-$853
year.1	$0	$0	$343	$465	$0	-$546	$114	-$51	-$151	$0	$0	$808	$174	-$679
year.2	$0	$0	$339	$460	$0	-$520	$107	-$48	-$147	$0	$0	$799	$191	-$488
year.3	$0	$0	$335	$454	$0	-$495	$101	-$46	-$143	$0	$0	$790	$206	-$282
year.4	$0	$0	$332	$449	$0	-$471	$94	-$44	-$140	$0	$0	$781	$220	-$62
year.5	$0	$0	$328	$444	$0	-$449	$88	-$42	-$136	$0	$0	$772	$234	$172
year.6	$0	$0	$324	$439	$0	-$427	$82	-$40	-$132	$0	$0	$764	$246	$419
year.7	$0	$0	$321	$435	$0	-$407	$77	-$38	-$129	$0	$0	$755	$258	$677
year.8	$0	$0	$317	$430	$0	-$388	$71	$0	-$125	$0	$0	$747	$305	$982
year.9	$0	$0	$314	$425	$0	-$369	$66	$0	-$122	$0	$0	$739	$314	$1,296
year.10	$0	$0	$310	$420	$0	-$352	$62	$0	-$119	$0	$0	$731	$322	$1,618
year.11	$0	$0	$307	$416	$0	-$335	$57	$0	-$116	$0	$0	$722	$329	$1,946
year.12	$0	$0	$303	$411	$0	-$319	$53	$0	-$113	-$291	$0	$714	$45	$1,991
year.13	$0	$0	$300	$406	$0	-$304	$48	$0	-$110	$0	$0	$706	$342	$2,333
year.14	$0	$0	$297	$402	$0	-$289	$45	$0	-$107	$0	$0	$699	$347	$2,680
year.15	$0	$0	$293	$397	$0	-$276	$41	$0	-$104	$0	$0	$691	$352	$3,032
year.16	$0	$0	$290	$393	$0	-$262	$37	$0	-$101	$0	$0	$683	$357	$3,389
year.17	$0	$0	$287	$389	$0	-$250	$34	$0	-$98	$0	$0	$676	$361	$3,751
year.18	$0	$0	$284	$384	$0	-$238	$31	$0	-$96	$0	$0	$668	$365	$4,116
year.19	$0	$0	$281	$380	$0	-$227	$27	$0	-$93	$0	$0	$661	$368	$4,484
year.20	$0	$0	$277	$376	$0	-$216	$24	$0	-$91	$0	$0	$653	$371	$4,855
year.21	$0	$0	$274	$372	$0	-$206	$22	$0	-$88	$0	$0	$646	$374	$5,229
year.22	$0	$0	$271	$368	$0	-$196	$19	$0	-$86	$0	$0	$639	$376	$5,606
year.23	$0	$0	$268	$364	$0	-$186	$16	$0	-$84	$0	$0	$632	$378	$5,984
year.24	$0	$0	$265	$360	$0	-$178	$14	$0	-$81	-$210	$0	$625	$170	$6,154
year.25	$0	$0	$262	$356	$0	-$169	$12	$0	-$79	$0	$0	$618	$381	$6,535
year.26	$0	$0	$260	$352	$0	-$161	$10	$0	-$77	$0	$0	$611	$382	$6,917
year.27	$0	$0	$257	$348	$0	-$153	$7	$0	-$75	$0	$0	$604	$383	$7,301
year.28	$0	$0	$254	$344	$0	-$146	$5	$0	-$73	$0	$0	$598	$384	$7,685
year.29	$0	$0	$251	$340	$0	-$139	$4	$0	-$71	$0	$0	$591	$384	$8,069
year.30	$0	$0	$248	$336	$0	-$133	$2	$0	-$69	$0	$2,148	$584	$2,532	$10,601

Costs and Savings

Code Cost Data

NAHB HIRL

2018 IECC to 2021IECC **[One Code Cycle]**



Cost: $6548-$9301, possibly $11,900

Cost Percentage: 6.4 – 11.6%

Simple Payback National Average: 32-67, possibly 79 years

Simple Payback Climate Zone: CZ5 32 years; CZ 6 19years

Savings: $2129 Average

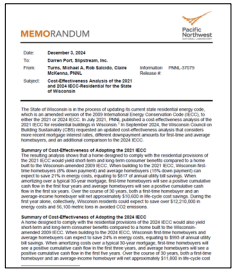
Savings Percent: 5.3%

NAHB Report: https://www.nahb.org/-/media/NAHB/advocacy/docs/top-priorities/codes/code-adoption/2021-iecc-cost-effectiveness-analysis-hirl.pdf

IMT/ICF Report: https://imt.org/resources/cost-effectiveness-of-the-residential-provisions-of-the-2021-iecc-2/#:~:text=The%20report%2C%202021%20IECC%20Residential,years%2C%20depending%20on%20climate%20zone.

PNNL

WI UDC* to 2021 **[Four Code Cycles]**


MEMORANDUM

Cost: CZ 5 $12005; CZ 6 $9893

Cost Percentage: 1.4%

Simple Payback Average: 11.8 years

Simple Payback Climate Zone: CZ5 12.6; CZ6 11.8

Savings: First-time Homebuyer $10,601;
Positive cash flow in 4 years

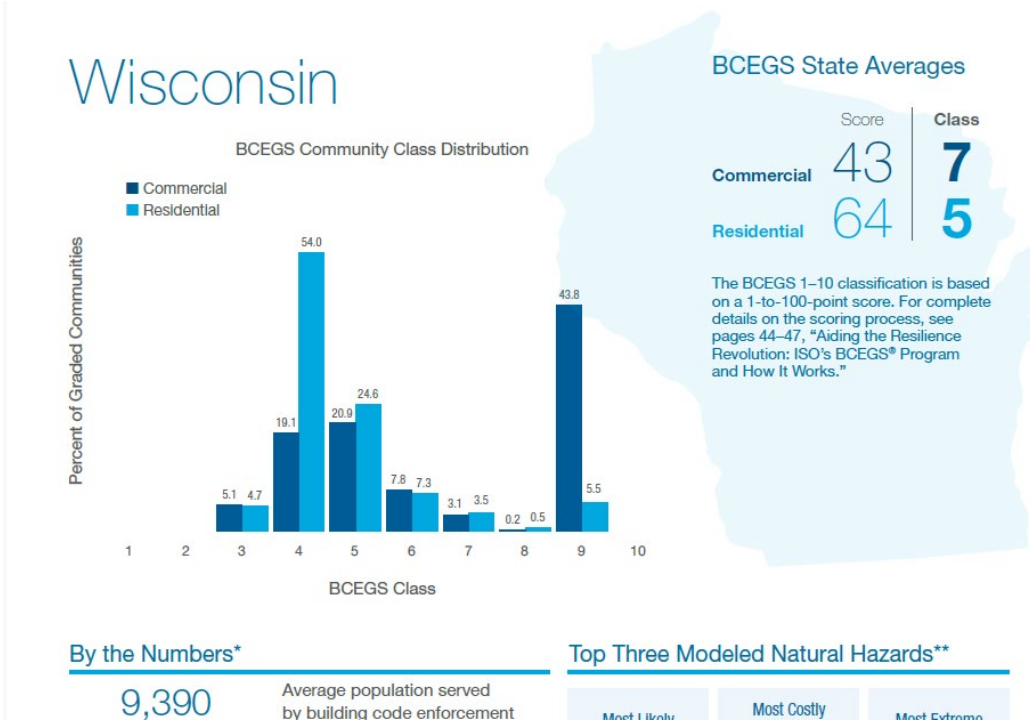
Average Homebuyer $10,630;
Positive cash flow in 6 years

Savings Percent: 21%

* Based on 2009 IECC Amended

Construction Cost Factors

- Home prices exceed affordability
- Lack of homes/demand for homes drives costs upward
- High mortgage interest rates contribute to a lack of affordability
- Size / Location
- Construction costs are highly variable regionally and within a state
    - Material costs are highly variable
    - Trades experience and cost variable
- Insurance underwriting is higher for new construction built to older codes (risk!)



https://www.isomitigation.com/siteassets/downloads/iso-bcegs-state-report_web.pdf

2016 – Milwaukee

Median-priced home, June 2016: $219,900
Minimum required income, June 2016: $44,472
Median household income, June 2016: $58,029

2024 - Milwaukee

Median-priced home, June 2024: $400,000
Minimum required income, June 2024: $107,381
Median household income, June 2024: $77,439

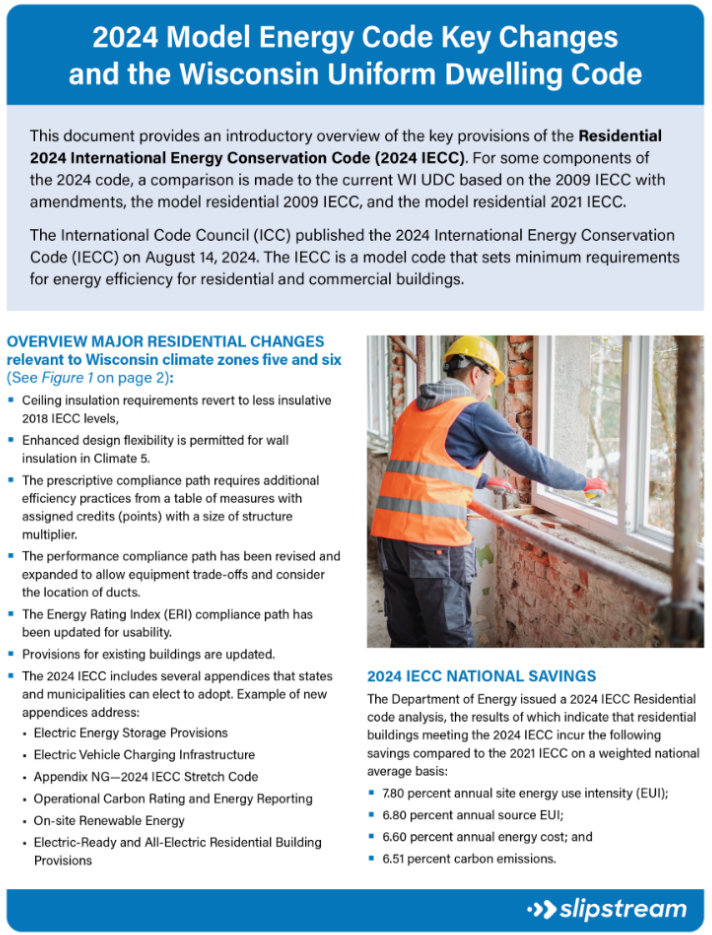
Wisconsin Resources

Wisconsin Code Resources

Factsheets/Resources:

- Wisconsin Rule-Making/Code Adoption Process
- Wisconsin Stakeholder Priorities and Preferences for Building Energy Code Adoption
- 2021 Model Energy Code Key Changes
- 2024 Model Energy Code Key Changes

All resources can be found at:
https://www.wienergycodes.org/resources/



2024 Model Energy Code Key Changes and the Wisconsin Uniform Dwelling Code

This document provides an introductory overview of the key provisions of the **Residential 2024 International Energy Conservation Code (2024 IECC)**. For some components of the 2024 code, a comparison is made to the current WI UDC based on the 2009 IECC with amendments, the model residential 2009 IECC, and the model residential 2021 IECC.

The International Code Council (ICC) published the 2024 International Energy Conservation Code (IECC) on August 14, 2024. The IECC is a model code that sets minimum requirements for energy efficiency for residential and commercial buildings.

OVERVIEW MAJOR RESIDENTIAL CHANGES relevant to Wisconsin climate zones five and six (See *Figure 1* on page 2):

- Ceiling insulation requirements revert to less insulative 2018 IECC levels,
- Enhanced design flexibility is permitted for wall insulation in Climate 5.
- The prescriptive compliance path requires additional efficiency practices from a table of measures with assigned credits (points) with a size of structure multiplier.
- The performance compliance path has been revised and expanded to allow equipment trade-offs and consider the location of ducts.
- The Energy Rating Index (ERI) compliance path has been updated for usability.
- Provisions for existing buildings are updated.
- The 2024 IECC includes several appendices that states and municipalities can elect to adopt. Example of new appendices address:
  - Electric Energy Storage Provisions
  - Electric Vehicle Charging Infrastructure
  - Appendix NG—2024 IECC Stretch Code
  - Operational Carbon Rating and Energy Reporting
  - On-site Renewable Energy
  - Electric-Ready and All-Electric Residential Building Provisions

2024 IECC NATIONAL SAVINGS

The Department of Energy issued a 2024 IECC Residential code analysis, the results of which indicate that residential buildings meeting the 2024 IECC incur the following savings compared to the 2021 IECC on a weighted national average basis:

- 7.80 percent annual site energy use intensity (EUI);
- 6.80 percent annual source EUI;
- 6.60 percent annual energy cost; and
- 6.51 percent carbon emissions.

slipstream

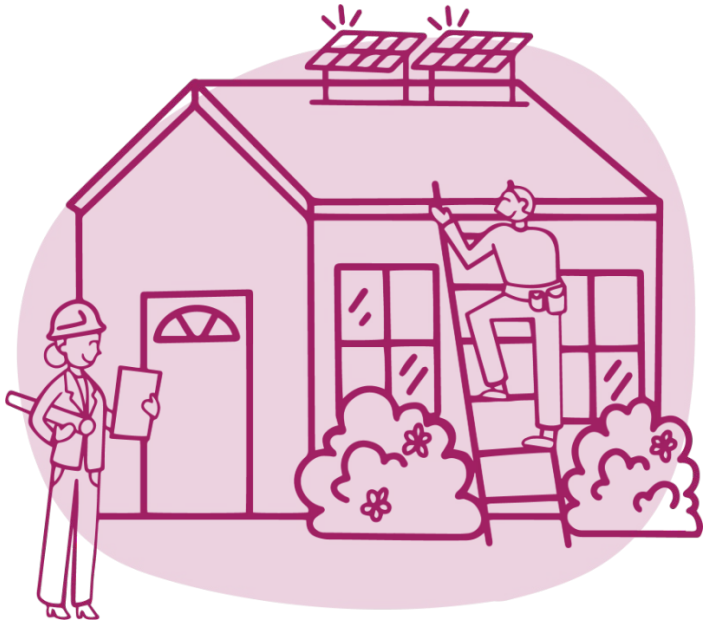
Thank You!

Jeannette LeZaks
Director of Research & Innovation
608.210.7156
jlezaks@slipstreaminc.org

Sarah Wells
Community Decarbonization Researcher
608.210.7161
swells@slipstreaminc.org

Darren S. Port
Slipstream
Building Codes Policy Advisor
dport@slipstreaminc.org
608.210.7145

John Kroll
Research and Innovation
608-286-3786
jkroll@slipstreaminc.org



PROJECT PARTNERS Clean Wisconsin • Wisconsin Local Government Climate Coalition • Midwest Energy Efficiency Alliance • New Buildings Institute • Slipstream