

Energy Efficiency to Preserve Affordable Rental Housing in Minneapolis

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ABSTRACT

More so than ever, cities across the nation are grappling with the challenges of affordable housing, climate change, and environmental justice. Local governments are experimenting with programs aimed at addressing each issue but are only just beginning to recognize the connections between them. This was the motivation for the City of Minneapolis to create the 4d Green Cost Share Incentive and 4d Affordable Housing Incentive programs (together the 4d program). These programs are a unique pairing of housing and energy policy that leverages existing city, state, and utility initiatives to preserve affordable housing, lower utility bills, and cut greenhouse gas emissions. Program participants benefit from the combination of City of Minneapolis funds and existing utility programs targeting income qualified rental properties. Together, these programs provide free energy audits and cover a large proportion of the cost of energy efficiency upgrades — sometimes up to 90%.

Between 2018 and 2021, the 4d program has enrolled 403 multifamily properties in committing to offer affordable housing for ten years. Of the 403 properties, 70 have completed energy efficiency projects with an estimated combined annual bill savings of over \$71,790.

The program success can be attributed to progressive housing and energy policy coupled with utility incentive programs, which have resulted in a robust outreach process, a streamlined application process, and increased participation. In addition, property owners have cited the high cost match, general project management support, assistance reviewing bids, and help navigating utility programs as added benefits of the program.

Introduction

To simultaneously tackle the affordable housing crisis and climate crisis, the City of Minneapolis (the City) used a statewide property tax incentive to build a program that couples long-term commitment to rental housing affordability with energy efficiency funding. By combining housing policy initiatives with clean energy funding, the City developed a unique program aimed at small rental property owners to make significant energy improvements to their properties.

This innovative, cross-departmental, and layered incentive approach will be an important program model for other jurisdictions to achieve their climate goals while addressing one of the most under-invested housing segments — small, affordable rental properties.

Background

Healthy, stable, and affordable housing is a linchpin for the well-being, prosperity, and security of Minneapolis residents. Like many urban areas Minneapolis has an affordable housing shortage. According to recent data from the Federal Reserve Bank of Minneapolis (2022), the last decade's production of affordable units remained below what the local regional development authority determined was needed to meet affordability needs. Over that time the share of rental

units affordable to those making between 30% and 50% of Area Median Income (AMI) decreased after peaking in 2016. As a result, lower income renters have experienced increasing housing cost burden relative to their wealthier counterparts (Federal Reserve Bank of Minneapolis 2022).

At the same time, property owners and developers are facing increased materials costs and pressure to increase prices. In a 2021 survey of Twin Cities rental property owners and developers, 70% of respondents said higher input costs negatively affected profits with many passing on costs to customers (Federal Reserve Bank of Minneapolis 2021). This pressure is particularly hard for owners of unsubsidized affordable rental properties who face greater exposure to market forces than their subsidized counterparts; especially when considering many of the properties are small and owned by individuals and small landlords. Overtime these pressures erode the number of unsubsidized affordable housing units. The Twin Cities alone were losing about 1,300 of these units annually (Minnesota Housing Finance Agency 2018).

Often referred to as Naturally Occurring Affordable Housing (NOAH), these unsubsidized affordable properties represent about 3 in 4 affordable units in the Twin Cities (Federal Reserve Bank of Minneapolis 2022). These buildings often remain affordable due to their age and lack of amenities. Unsurprisingly older properties also have more maintenance needs and stand to benefit most from investing in energy efficiency improvements. However, NOAH properties, have no built-in or monitored restrictions on rent and have very limited access to capital for building improvements. Any program helping property owners lower the costs of energy efficiency improvements therefore also risks displacing tenants absent additional protections. In fact, Minnesota Housing Finance Agency (2018) found that in many cases the loss of NOAH units was due to properties being sold, rehabilitated, or improved.

Understanding the needs of NOAH property owners and the desire to preserve and improve these properties, the City created two programs (4d Affordable Housing Program and 4d Green Cost Share Program) collectively referred to as the 4d Program. Together these programs offer a robust package of incentives for rental property owners to reduce property tax liability, improve energy efficiency, and, if present, address health and safety concerns. The primary goal is to preserve affordability, reduce energy use, improve housing quality and health for tenants, and strengthen the bottom line for property owners.

4d Affordable Housing Program

The first component of Minneapolis' 4d program is the 4d Affordable Housing Program. The name "4d" comes from a special property tax classification in Minnesota's state legislation. This classification allows local governments to implement 4d programs that trade property tax breaks for affordability based restrictive covenants. Once a property qualifies for a local program it is enrolled in the state's Low-income Rental Classification Program (LIRC). Once accepted, property owners receive a 40% reduction on their property taxes only for the units that meet specific rent limits and income qualifications (Minnesota Statute 2021).

For a property to be eligible in Minneapolis, at least 20% of rental units in a building must be rented at or below 60% of AMI. Minneapolis then places a restrictive covenant on that property for 10 years. Table 1 below, contains the rent and household income limits for 2022–2023.

Table 1. 2022-2023 Minneapolis 4d Affordable Housing Program Maximum Rent & Household Income

Unit type	Rent limit	Household Size	Maximum Income
Studio/efficiency	\$1,232	1	\$49,320
1 bedroom	\$1,320	2	\$55,340
2 bedrooms	\$1,584	3	\$63,360
3 bedrooms	\$1,830	4	\$70,380
4 bedrooms	\$2,041	5+	\$76,020
5 bedrooms	\$2,253		
6 bedrooms	\$2,463		
Single Occupancy Room (SRO)	\$739/bedroom		

Minneapolis property owners are also required to be in good rental licensing status with no revocations or outstanding housing orders and are not allowed to increase rent by more than 6% annually for units in the program. Buildings can include units with owner occupants, but only rental units are eligible for the tax incentive. In addition to the property tax incentive, property owners receive a \$100 per unit grant and are enrolled by City staff in the State's LIRC program. Properties also become eligible for other funding sources like low-income utility programs and the City's 4d Green Cost Share funding.

Minneapolis began piloting its 4d program in 2018 by enrolling 10 properties. The program was initially limited to buildings with 10 or more units. In subsequent years, eligibility was expanded to include smaller properties. In 2019, enrollment opened to buildings with 2 or more units, with over 100 properties enrolled. In 2021, all rental units became eligible, opening the program up to single-family rentals. To date, more than 540 properties, with 2,044 total units, are enrolled in the City's 4d Affordable Housing program.

Utility Framework in Minneapolis

In Minneapolis, Xcel Energy provides electricity and CenterPoint Energy provides natural gas service. Both utilities offer energy efficiency incentives to residential properties including rental properties. However, existing utility programs often struggle to serve affordable rental properties at scale because of split-incentive issues, cost-effectiveness constraints, renter eligibility barriers, and access to property owner contact information.

To supplement utility energy efficiency programs, Minneapolis looked for funding mechanisms to add incentives—particularly for projects that advance equity and emission reductions. In 2014, the City's utility franchise agreements were under negotiation. Through franchise agreement flexibility and council and mayoral support, in 2017, Minneapolis negotiated a 0.5% franchise fee increase that goes directly to the City to fund a myriad of clean energy programs and projects (City of Minneapolis 2017). Overall, this increase brings in over \$2,800,000 annually for all Minneapolis climate change and energy initiatives.

Minneapolis Green Cost Share

One program funded by the franchise fee increase is the Green Cost Share program. Started in 2012 as a local air pollution reduction initiative, the program now provides matching

funds for energy efficiency, solar, and innovative air pollution reduction projects. Funds help offset the property owner investment and encourage action to reduce carbon dioxide emissions, lower utility bills, and improve properties. It is underneath this program that the City added 4d specific energy efficiency incentives in 2018.

The building sectors eligible for the Minneapolis Green Cost Share are nonprofit, commercial, industrial, and multifamily buildings. The program also prioritizes environmental justice projects with higher incentives and priority in application scoring. Environmental justice projects are those located in areas of the city where pollution, poverty, and racial injustice have historically persisted and income qualified housing properties like the 4d Affordable Housing properties.

Minneapolis Green Zones

A Minneapolis Green Zone (Figure 1) is a place-based policy initiative aimed at improving health and supporting economic development using environmentally conscious efforts in communities that face the cumulative effects of environmental pollution, as well as social, political, and economic vulnerability. Finalized in 2015 and 2016 as a part of the first Minneapolis Climate Action Plan, these environmental justice areas of the City help intentionally invest city climate funding to communities most impacted by current and future social and environmental injustices like traffic, stationary pollution sources, brownfield sites, blight, and substandard housing (Minneapolis Coordinator's Office 2013).

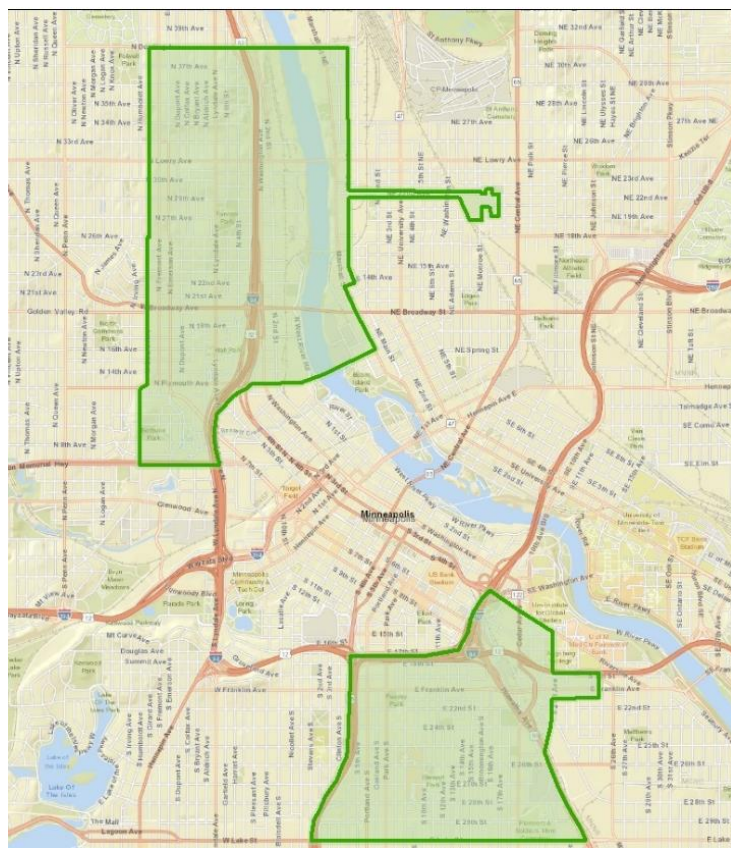


Figure 1. Minneapolis Green Zone boundaries. Source: City of Minneapolis Green Zones

4d Green Cost Share Program Design

The 4d Green Cost Share Program is designed to make energy efficiency projects easy and attractive to NOAH property owners. The cost share program builds upon enrollment in the 4d Affordable Housing Program to identify NOAH properties eligible for enhanced funding of energy efficiency projects. Two City departments—Community Planning and Economic Development and the Health Department—work together with the Center for Energy and Environment (CEE) to streamline and implement the program. Community Planning and Economic Development handles the enrollment and compliance involved in the tax classification, and the Health Department, along with subcontractor CEE, are responsible for ensuring successful energy efficiency project completion.

Property owners are offered technical assistance and navigation services administered by CEE to identify and complete eligible and appropriate energy efficiency projects, leveraging funds from utility programs. To identify qualifying energy efficiency projects, the City or utility provides low- or no-cost energy efficiency assessments. Based on these assessments, property owner goals, and City goals, CEE staff assemble a comprehensive scope of work for the 4d Green Cost Share application to the City. As the technical assistance and program navigation provider for this program, CEE works with the City and property owners to address any barriers to project completion, including work scope development, contractor bid solicitation and comparison, up-front financing, and utility rebate and green cost share application submission. In the process map below (Figure 2), the various steps to project completion are shown, which seek to maximize leverage and encourage cost-effective energy efficiency projects.

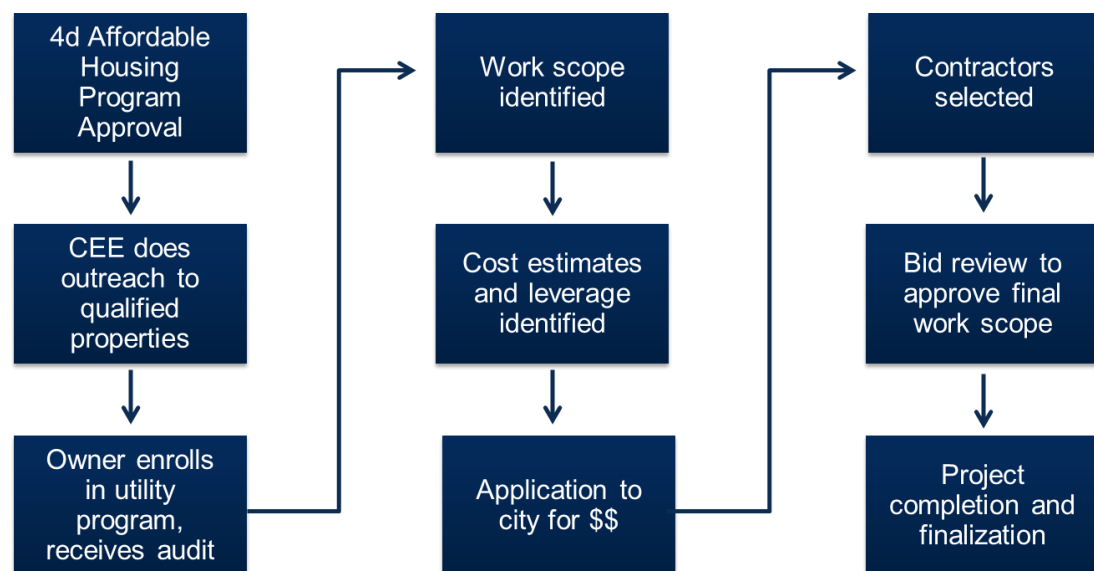


Figure 2. Process flow chart for 4d Green Cost Share Program.

Leveraged Utility Funding

The program was designed to maximize leverage of existing utility incentives but allow flexibility for projects that don't have that leverage available. Property owners know up-front what proportion of the project cost they can expect to pay, regardless of the sometimes-

unpredictable percentage of project cost covered by the utility. The program does this by having the utility incentive supplement the City's portion of the project cost rather than the property owner's portion.

For all eligible projects between 2018 and 2021, CEE worked with utility program implementers to identify leveraged dollars and compiled the combined City and utility funding to equal 90% of the total project costs (up to \$50,000 per building) with the owner's portion totaling only 10%. This combination of funding sources has sometimes been a complex process since not all Green Cost Share projects are eligible for utility incentives, such as electrification and pre-weatherization measures (although these are being considered for inclusion in income-qualified programs in Minnesota).

Utility program incentives also differ depending on the size of the property and utility-based income qualification status, which doesn't always align with 4d qualification status. For example, in CenterPoint Energy's income-qualified program for small rental properties (one to four units), the utility incentive is 50% of all cost-effective natural gas saving projects. In small rental properties that don't meet the utility income qualifications, the incentives are prescriptive rebates that tend to be much lower. In buildings with five or more units, the incentives from Xcel Energy and CenterPoint Energy are based on a bonus above standard commercial building rebates. The bonus rebates are increased if the property meets utility program income qualifications.

Income eligibility for these utility programs require 66% or more (50% in a duplex) of the units in a building be rented to households making less than 60% AMI. For the 4d Program, only 20% of the units in a building are required to meet the 60% AMI threshold. In cases where 4d properties don't meet utility income guidelines, the City covers a larger proportion of the project cost. This is an important factor in why the City built in flexibility with utility funding. The message to property owners is that all eligible projects only require the property owner to pay 10%.

Eligible Properties and Projects

Any rental property enrolled in the 4d Affordable Housing Program can apply for the 4d Green Cost Share incentives. Green Zone properties are prioritized, and outreach efforts are focused on those areas.

The City's priority is to fund projects that lower operating costs, contribute to climate change mitigation strategies, and maintain healthy affordable housing. For this reason, many of the measures eligible for this program are pre-vetted through Minnesota's regulated utility framework determining cost-effectiveness parameters for utility incentives. Using this framework ensures as much alignment with utility incentives as possible.

However, this program also considers projects that are not currently within the regulated utility framework to strategically address additional City priorities, including healthy homes and carbon reduction. Measures related to health and safety, particularly ones that enable energy efficiency measure completion, are considered more comprehensively than most utility programs. Since the City has aggressive equity and decarbonization goals, it has also considered electrification measures not currently allowed in Minnesota utility programs. The program takes into consideration the tenant utility bill impacts to determine appropriateness of the measure. The most commonly funded projects within the program include:

- Insulation/air sealing

- Heating system replacements including air source heat pumps
- Water heater replacements including heat pump water heaters
- Boiler controls
- Health and safety projects including electrical upgrades, asbestos remediation, combustion safety measures, and ventilation strategies

4d Green Cost Share Program Progress & Results

As mentioned above, the Minneapolis 4d program started as a pilot in 2018. In that year, three properties enrolled in the 4d Green Cost Share Program. It has grown to serve 22 properties on average per year. In the first four years of the program (including the pilot), property owners were only responsible for 10% of the total project cost. The other 90% was covered by both utility incentives and program funding, up to \$50,000 per property. The City budgets have ranged from \$65,000–\$450,000, leveraging between \$30,000 and \$100,000 of utility funding and \$10,000–\$60,000 of property owner investment.

Table 2 below, shows enrollment, costs, energy savings, bill reductions, leveraged utility dollars, and carbon reductions. During the four years of program implementation, utility programs have changed in different ways, and enrollment by building size has varied, explaining the difference in leveraged utility dollars.

Table 2. Yearly 4d Green Cost Share Program metrics

	2018 (Pilot year)	2019	2020	2021
Buildings	3	22	27	18
Units completed	37	80	97	83
Units in Minneapolis Green Zones	0	34	21	31
Estimated MMBtu savings	833	2474	2728	1494
Total project cost	\$106,817	\$384,529	\$607,829	\$421,785
Minneapolis funding amount	\$65,611	\$262,732	\$450,061	\$332,842
Utility incentives	\$30,524	\$83,344	\$96,985	\$55,032
Percent covered by Minneapolis funding	61%	68%	74%	79%
Estimated annual bill savings	\$6,138	\$25,891	\$28,000	\$11,761
Estimated CO ₂ reductions (lbs.)	85,805	238,849	320,796	187,703

Buildings Served

As mentioned above, the 4d program was only available for buildings with 10 or more units in the pilot year of 2018. This was opened to rental properties with two or more units in 2019 and all rental properties in 2021. Figure 3 below shows that participation is mostly made up of one-to-four-unit buildings past the pilot year. Additionally, the largest building funded by this program had 22 units.

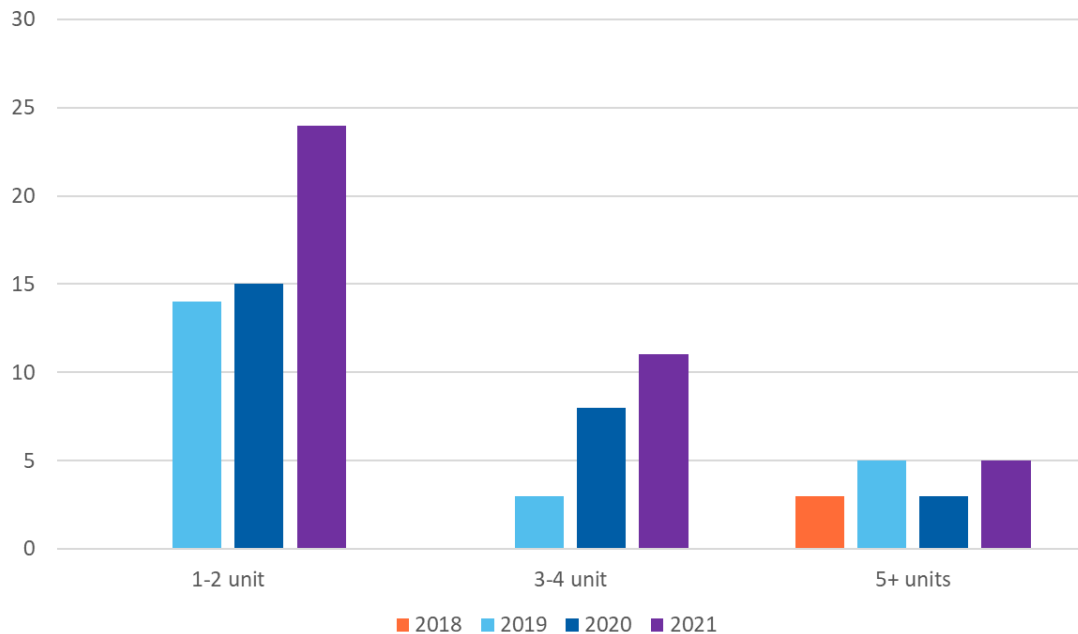


Figure 3. 4d Green Cost Share Program enrollment by year and unit number.

Utility Programs Leveraged

The most commonly leveraged program for one-to-four-unit buildings is the CenterPoint Energy Low-Income Rental Efficiency (LIRE) Program. This program offers a 50% cost match for natural gas saving projects approved in the utility program’s triennial plan. Unfortunately, not all 4d-eligible properties qualify for this program, leaving the utility leverage for those properties to be much lower. For buildings with five or more units, the combined electric and gas Multi-Family Building Efficiency (MFBE) Program is leveraged. This program’s incentive structure is based on bonus rebates above standard commercial electric and gas rebates with additional bonuses for income-qualified properties. The structure was changed significantly in 2020, leading to lower leverage opportunity for that building type.

For these reasons, we had our highest percentage of utility leverage in the pilot year of 2018. All buildings had 10 or more units and qualified for the income-based MFBE incentives, which covered a higher percentage of project costs than in later years.

Although utility leverage as a percentage of all project costs has reduced year over year, we have been working with the utilities to give feedback on ways to increase that in the future, including more aligned income qualifications and more comprehensive coverage of measures. With new legislation allowing utilities to include beneficial electrification and pre-weatherization health and safety measures in their programs, we see a better path forward. It will be important for more balance between City funding, utility funding, and property owner investment to ensure sustainable program funding and broad reach to more properties. In Figure 4, you can see the change in project cost share by funder each year.

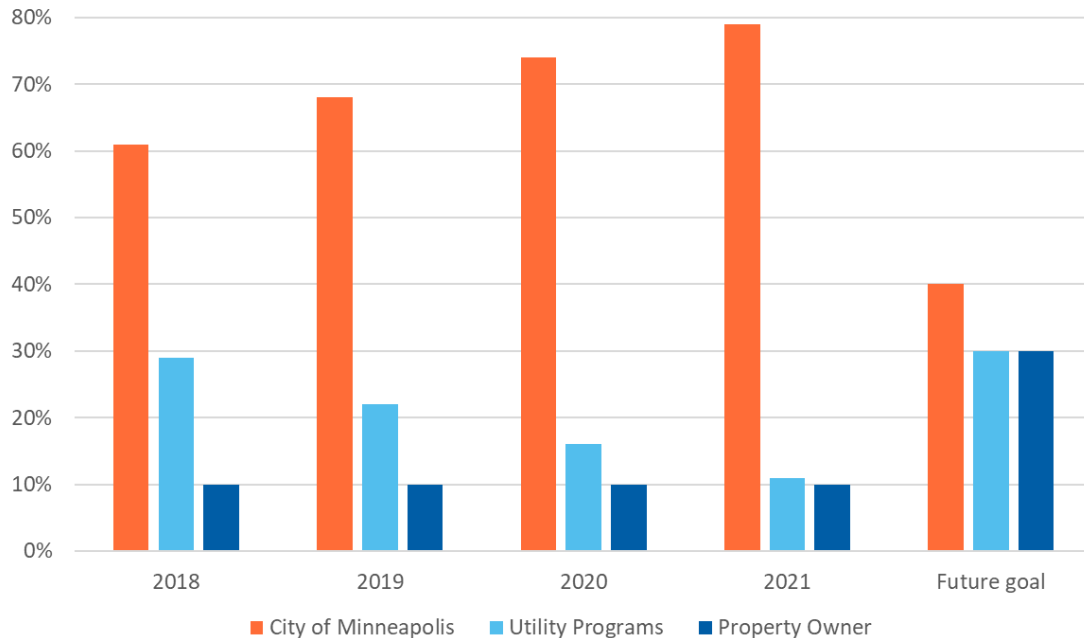


Figure 4. Percentage of project cost covered annually by funders.

Project Cost-Effectiveness

Generally, project costs between 2018 and 2021 have been similar. We expect project costs in 2022 to go up due to supply chain and workforce shortages. Figure 5 below shows that costs don't go up linearly based on unit, so one-to-two-unit properties cost the most per unit. There are some economies of scale gained when completing projects in larger buildings.

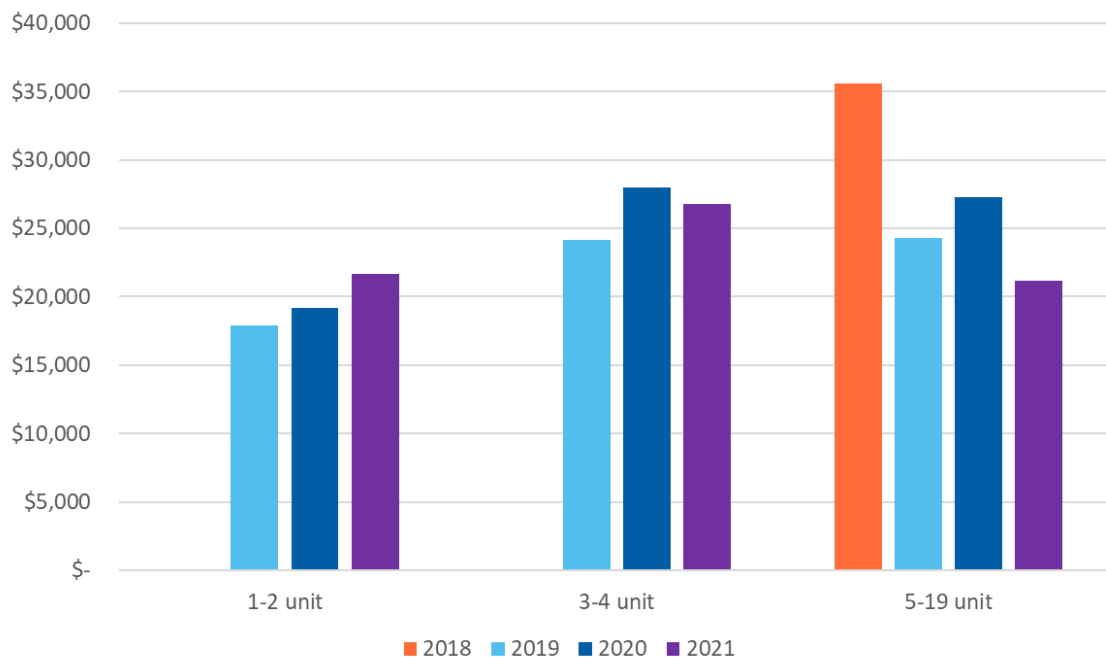


Figure 5. Average project cost by building type per year.

Property Owner Feedback

Over the length of the program, property owners have provided feedback on what is working well, what was critical for them to participate, and what the program could do to improve. Generally, feedback has been positive, and owners are appreciative of the program design, technical support, and generous incentives. Additionally, we see owners so satisfied that they enroll subsequent properties.

Support navigating various utility rebate programs has been particularly helpful. Property owners often do not know what utility programs they are eligible for, the requirements for each program, or how to sign up. Since applying for available utility incentives is a requirement of the program but can sometimes be complicated, owners have very much appreciated the support provided to navigate this system. This program navigation support serves a larger purpose of maximizing utility resources to extend 4d Green Cost Share program dollars to more properties.

Additionally, owners have said that help finding contractors and comparing bids was helpful. Most small portfolio property managers don't have a lot of time available, so doing research on quality contractors or spending time to understand the nuanced differences in bids would have made several property owners get stuck if the program didn't provide that help. It is also in the interest of the City to ensure that high-quality work with the most efficient equipment is being funded at reasonable prices.

Some owners found it difficult to come up with the capital required to complete the projects up-front to then wait one to three months for utility and City rebates to come. One method for tackling this was to use a short-term low-interest loan to cover the costs while waiting for the reimbursement to eventually pay off the loan. We only found this to be an issue for some owners, but certainly those property owners wouldn't have participated without access to low-interest financing.

Even when an owner does have access to capital to make the up-front payments, wait times to receive rebates can be an issue. The CenterPoint Energy LIRE program mentioned above, which covers 50% of the gas saving measure costs, partially tackles this issue by paying the program incentive directly to contractors.

To alleviate the financial burden of funding all their projects up-front, owners will sometimes opt to only complete a few projects per year. During the 10 years the property is enrolled in the 4d Affordable Housing Incentive, the 4d Green Cost Share is available to them for building upgrades. Owners appreciate the flexibility this provides as it allows them to spread the work across multiple years, decreasing their financial stress.

The most common critique owners convey about the program is about the complicated web of stakeholders they must navigate to complete projects through 4d. With multiple funding streams and contractors needed, the workflow process can be daunting. CEE's role in directing owners through the program has mitigated most of these issues, but some more independent owners have made missteps while completing paperwork, reviewing contractor quotes, and applying for utility incentives on their own leading to poor quality installation, lower efficient equipment and misalignment with utility incentive requirements.

Additionally, owners are sometimes left unsatisfied with the program after learning that some measures are not covered through 4d, like window replacement. The program weighs estimated energy savings with project cost to make cost-effective recommendations, which some projects do not meet, even if they do present an opportunity for a small amount of energy savings.

4d Green Cost Share Program Improvements

The City has made small adjustments to the 4d Green Cost Share program each year since the pilot year in 2018 and takes multiple factors into consideration when evaluating changes. Utility program incentives, property owner feedback, climate and equity goals, and City budgets all factor into program design decisions. So as these factors evolve, program changes are made with a goal of improvement and broader reach.

Utility Program Leverage

Since the inception of the program in 2018, utility rebate incentives have decreased each year. During the pilot year, the utility leverage covered 29% of total project costs, while in 2021 that dropped to 11%. To bring the cost share to a point where City funding doesn't heavily outweigh utility funds, we have made recommendations to the utilities to increase incentives and expand the array of projects for which incentives are available. For example, the MFBE program does not currently assess wall or attic insulation levels during audits, which in turn means that the program does not offer incentives beyond standard utility rebates for these projects. These were not originally factored into the program since larger (20+ unit) multifamily buildings don't typically have cost-effective recommendations for insulation improvements in Minnesota. Because 4d tends to attract much smaller (1–10 unit) buildings with cost-effective insulation recommendations, the City ultimately bears the majority of the cost. We continue to have discussions with the utilities surrounding expanding incentives and qualifying projects, and we hope to see changes instituted in coming years.

Some issues with leverage are based on state guidelines around utility program incentives including a restriction on fuel switching, lack of flexibility with income qualification, and lack of guidance around approved health and safety measures. These issues are being addressed in 2022 at the state level. The state has provided some guidance for utilities to adopt in the coming years. This could make a big difference in how much of the program costs come from the City versus the utility. CEE and the City are actively engaged in this process to help ensure better alignment and leverage for the program.

Match Percentage

In the first four years of the program, the City and utility combined cost share was for 90% of the project cost, leaving the owner to cover just 10%. Based on sustained interest in the program and more applications than the budget allowed in 2020 and 2021, the City has changed the property owner's proportion to 30% of total project cost in 2022. Because feedback from owners highlighted the value of the support services in addition to the cost share percentage, the project team has confidence that this change will allow the program to serve more properties, while remaining highly attractive to owners.

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