Maplewood MINNESOTA

# City of Maplewood
# **Clean Energy For All**

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CERTs SEED GRANTS

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CERTs CLEAN ENERGY RESOURCE TEAMS

Section 01

# Background and Goals

The Maplewood Clean Energy For All project seeks to build on the success of the RE-Energize Maplewood energy savings campaign, advances the City's 2040 Comprehensive Plan Renewable Energy goals, and initiates actions addressing energy efficiency, renewable energy, and energy poverty in the City's 2021 Climate Adaptation Plan. The project focuses on improved energy efficiency, renewable energy, and energy cost savings opportunities for historically underserved residents within Maplewood. This report explores program examples and ideas to support reduced energy use, reduced energy poverty, and increased solar benefits for historically underserved populations and low and moderate income (LMI) households. The report includes a next-step action plan with suggestions for potential new City of Maplewood programs.

## Why Develop Programs for LMI?

As of 2019, over 24% of the population in Maplewood live in households with incomes at or below 2 times the federal poverty line – defined by the US Census Bureau as "Poor or Struggling." Research indicates that low-income, Black, Hispanic, Native American, households with older adults and renting households pay up to three times more of their household income on home energy costs as compared to the average household (*How High Are Household Energy Burdens?* ACEEE). Over 6% of all households in Maplewood have high energy burdens (where annual energy expenses total 6% or more of total household income). High energy burdens make it much more difficult for families to afford other basic necessities, such as food, medicine, child care, and housing.

Low-income community members, older adults, and communities of color face many disadvantages in energy affordability. These community members typically have older and less-efficient appliances and are more likely to have older less efficient heating and cooling equipment. Energy efficiency and renewable energy, particularly solar photovoltaics (PV) provides a significant opportunity to address some of the greatest challenges faced by lower-income communities: the high cost of housing, energy poverty, pollution, and under/unemployment. Solar can provide long-term financial relief to families struggling with high and unpredictable energy costs, living-wage employment opportunities in an industry that has increased job counts by 167% since 2010 (https://www.thesolarfoundation.org/national/). Solar also represents an opportunity for clean, local energy sited in communities that have been disproportionately affected by the impacts of traditional power generation such as low air quality.

The opportunity for energy efficiency and renewable energy among low income households is significant. There are over 9,800 people living in LMI households in the City of Maplewood. Based on the City's most recent greenhouse gas (GHG) inventory, the emissions share of this portion of all Maplewood households is estimated to be over 75,000 metric tons annually. Targeted energy efficiency and solar policies and programs can help open up access to solar for these households on a large scale having meaningful impact on citywide GHG emissions reductions as well as providing benefit for these households.

Reasons to develop a low-income energy efficiency and solar program include:

- **Equitable Access**. Energy efficiency and solar programs and advancements are funded by all ratepayers/taxpayers, including low-income households. Ensuring equitable access reflects that reality.
- **Participation**. Low-income energy efficiency and solar programs ensure all communities have the opportunity to participate early in the national transition to clean energy.
- **Economic Benefit**. Because low-income families spend a disproportionate amount of their income on utility bills, they receive a proportionally greater economic benefit from solar power – making investments in this community an even higher return on investment.
- **Job Creation**. A low-income energy efficiency and solar program can provide access to employment opportunities.
- **Widespread Adoption**. As noted, the magnitude of the LMI community as a share of the total residential sector is significant and advancing energy efficiency and solar for that community can have a significant impact on meeting community energy goals.

Low-income community members, however, face additional barriers to participation in programs. This makes well-designed, specifically targeted programs for low-income customers an important consideration for utility portfolios in order to achieve more equitable outcomes and affordable energy bills for all customers.

SECTION 02

# LMI Programs

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There are a number of energy efficiency and solar assistance programs aimed at advancing benefits for LMI communities. Example programs include efforts by municipalities, States, non-profit entities, and utilities. Reviewing examples from each of these types of groups is helpful in identifying the range of potential—even though each of these types of groups may have different capacities, funding streams, and perhaps even motivations.

## Existing Programs Available to Maplewood Residents—Energy Efficiency

**Department of Energy Weatherization Assistance Program (WAP)**
The Weatherization Assistance Program (WAP) implements long-term energy efficiency upgrades to the homes of income-qualified households to reduce the energy burdens of the occupants. A primary priority for WAP projects is to also correct health and safety hazards and address potentially life-threatening conditions.

All homeowners and renters who are income eligible for Low Income Energy Assistance Program (LIEAP) are income eligible for WAP. Priority is given to households with at least one elderly or disabled member, or with children, and to customers with the highest heating costs or energy burden. The Minnesota Weatherization Assistance Program (WAP) receives funding from the Federal Government through the Department of Energy. The State of Minnesota distributes funding to sub-grantees from the Dept. of Commerce. Assistance is Based on 50% of State Median Income or 110% of Poverty, whichever is greater.

In Maplewood, WAP is provided by Community Action Partnership of Ramsey & Washington Counties: https://caprw.org/services/energy-food-housing/energy-assistance.html

**State of Minnesota—Energy Assistance Program (EAP)**
The Energy Assistance Program pays towards heat, electricity, and past due water costs. Energy Assistance is free for all eligible households. The initial grant ranges from $200 to $1,400 per household, with an average of about $500. The maximum additional grant for energy emergencies (crisis) is $1,500. Water Assistance benefits may cover the entire past due amount. The assistance is not available for energy efficiency upgrades. Income eligibility is 50% of state median income. https://mn.gov/commerce/energy/consumer-assistance/energy-assistance-program/

**State of Minnesota - Rehabilitation Loan/Emergency and Accessibility Loan Programs (RLP/ELP)**
The Rehabilitation Loan Program (RLP) provides deferred loan financing to eligible low-income homeowners statewide who are unable to secure home improvement financing in the private sector. Funds may be used for basic home improvements that directly affect the home's safety, habitability or energy efficiency.

The Emergency and Accessibility Loan Program (ELP) assists homeowners needing emergency assistance or essential accessibility improvements. The maximum loan amount is $37,500 with a maximum loan term of 15 years for properties taxed as real property and 10 years for manufactured homes taxed as personal property located in manufactured home parks Loans are forgiven if the borrower does not sell, transfer title, or ceases to occupy the property during the loan term. Income limits for RLP/ELP are 30% of the Minneapolis/St. Paul area median income and are applicable in all Rehabilitation Program areas of the state.

## Existing Programs Available to Maplewood Residents—Energy Efficiency

**Xcel Energy—Income-Qualified Home Energy Savings Program (HESP)**
The Income-Qualified Home Energy Savings Program is a customizable program for income qualified homeowners that offers services such as free advice from energy experts and free energy-saving improvements. These energy-saving improvements include weatherization and replacement of your older appliances for newer models. If the household's income qualifies, customers can use these free services to save money and energy.

**Xcel Energy—Home Energy Squad**
The Home Energy Squad is Xcel Energy and CenterPoint Energy's program to help people save energy by performing home energy audits for customers in their service territory. The program offers in-person visits, as well as virtual consultations. The virtual consultations can be done by phone, mobile device, or computer. These one-on-one conversations offer the customer energy saving advice from an energy expert, and give them the chance to ask specific questions about their home. The consultation can also help determine if the home would benefit from an in-person visit from the Home Energy Squad.

There are two types of in-person visits; the Energy Planner, and the Energy Saver. The main focus of the Energy Saver visit is installing products such as LED light bulbs, door weather stripping, efficient shower heads, faucet aerators, and a programmable thermostat. The Energy Planner visit installs the same products, however, energy efficiency tests will also be conducted. Based on the testing conducted, recommendations for energy efficiency upgrades such as insulation improvements will be given along with pre-qualified competitive quotes from contractors. The Energy Saver visit costs participants $70, while the Energy Planner costs $100. The services are free for income-qualified homeowners.

**Ramsey County Zero Interest Loan**
Center for Energy and Environment partners with Ramsey County to offer the Energy Conservation Deferred Loan to residents who have completed a home energy audit. The loan features a deferred payment with zero percent interest. Loans of up to $10,000 are available for 1-4 unit owner-occupied residential properties located in Ramsey County (outside of Saint Paul). Loan funds are subject to availability and approval is subject to credit and program guidelines.

## Example LMI Programs—Energy Efficiency

### Minnesota Examples

**Leech Lake Band of Ojibwe Energy Assistance Program**
The Energy Assistance Program (EAP) helps pay home heating costs. Households with the lowest incomes and highest energy costs receive the greatest benefit. Under this program, rather than energy assistance dollars flowing to community action agencies to be re-distributed to utilities on behalf of low-income families, the community action agency generates its own electricity on behalf of its low-income clients. The community solar array sells power to tribal government buildings and utilities and uses the revenue generated to fund energy payments for low-income community members. Monetary savings from community-owned solar arrays are then integrated into the local energy assistance program which is then distributed through the Energy Assistance Program recipients. Recipients are not directly subscribed to the Community Solar project but instead are enrolled through the local energy assistance program, with participation varying annually based on the following criteria:

- Size of grant is based on household size, income, fuel type and energy usage
- Households with the lowest income and highest fuel costs receive the highest grants
- Federally funded through US Department of Human Services
- Funds are available for renters or homeowners
- Educate consumers to use home heating energy efficiently and safely
- Advocate with energy suppliers and human service providers on behalf of consumers
- Crisis help for utility disconnections or necessary fuel deliveries
- Emergency heating system repair or replacement

The installation provides a unique capacity-building occasion to support training and renewable employment opportunities for Leech Lake Band members. Select construction trades trainees obtain their Registered Unlicensed Electrician license and receive hands-on training in solar installations, positioning them for a growing number of clean energy job opportunities across the state and beyond.
https://www.llojibwe.org/tribalassistance/energyassist.html

## Example LMI Programs—Energy Efficiency

**Edina Energy Efficiency Cost Share and Coon Rapids Energy Efficiency Rebates**

These municipal programs partner with the Xcel Energy Home Energy Squad program. The Home Energy Squad may determine that a larger project could improve the energy efficiency of a home. These municipalities offer cost sharing for a range of projects. This cost sharing helps to bring down the cost of big ticket projects that have a positive impact on the efficiency of a participant's home. Residents who've had a Home Energy Squad visit in the past 36 months can apply for a cost share for eligible energy efficiency upgrades. For the City of Edina, the cost share is up to $1,000. For the City of Coon Rapids, maximum rebates are $250 for an appliance upgrade and $550 for an air sealing and insulation project. Projects covered include:

- Buying an energy efficient air conditioner or air source heat pump.
- Buying an energy efficient water heater.
- Air sealing your house.
- Insulating your house.

**Fridley Insulation Rebates**

To encourage residents to save energy and enjoy a more comfortable home, the Fridley HRA matches CenterPoint Energy's air sealing and insulation rebates and offering up to $500 in bonus rebates while funds last. The bonus rebates are for 1-4 unit homes and cannot exceed $500 in a calendar year. Participants must have had a Home Energy Squad visit within the last three years. Recipients may also qualify to receive air sealing and/or insulation rebate from CenterPoint Energy

**Moorhead Community Development Block Grant (CDBG) Home Rehabilitation Loan Program**

The City of Moorhead offers no-interest home rehabilitation loans available to income-qualified homeowners through federal Community Development Block Grant (CDBG) funds. The loan can total up to $20,000 with zero interest. Loans are repayable upon sale or non-occupancy by owner.

### National Municipal Examples

**Longmont, Colorado—Community Housing Program.**

Longmont's Community Housing Program offers a fee reduction for projects that incorporate certain building features, including energy efficiency and energy conservation measures. Approved projects that provide more than the minimum requirement are eligible for additional incentives, subject to available funding, including:

- Fee Waivers: A percentage of certain development fees may be waived for qualifying projects. Reductions can range from 50% to 75% for for-sale units and from 20% to 50% for rental units.
- Fee Deferral: As part of the Impact Fee Deferral Program, new residential developments in the City of Longmont are eligible to defer payment for several City-related fees.
- Subsidy for Water/Sewer System Developments Fees: Projects that provide more than the minimum required affordability may qualify for a percentage of the fees to be subsidized.
- Offsets for Cash-in-Lieu of Raw Water Deficits: A project that provides a minimum of 25% of total units in a development as affordable may be eligible to receive an offset for a percentage of the raw water deficit cash-in-lieu owed to the City. This incentive is only available to projects that are being platted; redevelopment projects are ineligible.

https://www.longmontcolorado.gov/departments/departments-e-m/housing-and-community-investment/housing-programs/affordable-housing-incentives

**Bridgeport, Connecticut - Energy Improvement District**

The City of Bridgeport has established an Energy Improvement District to promote the planning, development, and funding of energy-related activities. The Board seeks to promote the BGreen 2020 plan to increase the efficiency of energy use in the City of Bridgeport, and attract commerce and industry.

The EID Board has begun examining the following projects on behalf of City. The EID allows Bridgeport to generate and sell local renewable power and buy power in bulk to reduce costs. The Board has solicited proposals from Energy Suppliers licensed in the State of Connecticut to provide a service contract package for City residents and businesses to help reduce energy costs on their monthly utility bills.
https://www.bridgeportct.gov/content/341307/347097/347109.aspx

## Example LMI Programs—Energy Efficiency

**City of Chicago, Illinois —Retrofit Chicago Residential Partnership**
Led by the Mayor's Office, the Retrofit Chicago Residential Partnership brings together organizations seeking to advance residential energy efficiency for Chicago residents. Partners include ComEd, Peoples Gas, Community Investment Corporation, Elevate Energy, and the Chicago Bungalow Association. As of 2014, the Partnership members have saved Chicago residents over $4 million annually with over 100,000 installations of energy saving products in residences and over 20,000 deeper retrofit improvements.

Customer benefits include:

- Free energy assessments with free energy-saving products and installation
- Rebates for energy efficient appliances and other products
- Financing tools such as income qualifying grants for bungalow & vintage homeowners, energy savers loans, and on-bill financing
- Connect to qualified contractors
- Learn more about how you can manage your energy use through online tools and leverage a smart meter to save more on electricity bills (https://www.chicago.gov/city/en/progs/env/smart-grid-for-a-smart-chicago.html )
- Visit the FAQ page to learn more about available offerings residents can take advantage of as a Chicago resident (https://www.chicago.gov/city/en/progs/env/retrofit-chicago-faqs.html )

## Example LMI Programs—Energy Efficiency

**City of Chicago, Illinois - Bungalow Association Energy Savers Grant**
The Historic Chicago Bungalow Association (HCBA) offers grants for certified Chicago Bungalow owners to make their homes more energy-efficient, which benefits families and neighborhoods alike. Each grant, valued at $3,600, goes towards weatherization services such as attic insulation and wind sealing along walls, windows, foundations, and other weak spots that typically lend themselves to heat loss in older brick homes. Applicants must live in an HCBA-certifiable Historic Chicago Bungalow and be a member of HCBA. Household income must be at or below 80% Area Median.

**City of Portland, Oregon – Green Investment Fund**
Portland, Oregon established its Green Investment Fund (GIF) in 2005 to provide financial incentives for the adoption of innovative technologies in energy efficiency, renewable energy, water conservation, stormwater management, and green building materials. The GIF was intended to demonstrate green building in an array of project types; to highlight the most innovative, regionally appropriate practices and technologies; and to support publicly valuable green building projects. The $2.5 million Green Investment Fund provide grants for demonstration of affordable housing units that incorporated energy efficiency and environmental features.

**Multiple Municipalities, Long Island, New York - Long Island Green Homes**
Long Island Green Homes is a non-profit collaborative partnership of Long Island Towns, community-based organizations and Molloy College funded primarily with a community outreach grant awarded by the New York State Energy Research and Development Authority (NYSERDA) in order to help Long Islanders improve their homes and use energy more wisely in their everyday lives.

Via one-on-one support from the program's Energy Navigators, Long Island homeowners are connected with government funds and local, certified contractors to receive a free home energy audit, and money saving and energy efficient improvements to their homes. In addition to reducing participant home's carbon footprint and saving residents money, the Long Island Green Homes Initiative stimulates job growth and business opportunities in the community.

### County Government Examples

**Montgomery County, Maryland— Greenbank**
Green banks are financial institutions that can leverage public funding to attract private capital for clean energy projects (including energy efficiency, renewable energy, and other distributed energy resources), as well as other "green" investments. They can assist states and communities in partnering with private lenders and investors to mobilize capital, alleviate perceived risks, and design attractive financial instruments to support these investments.

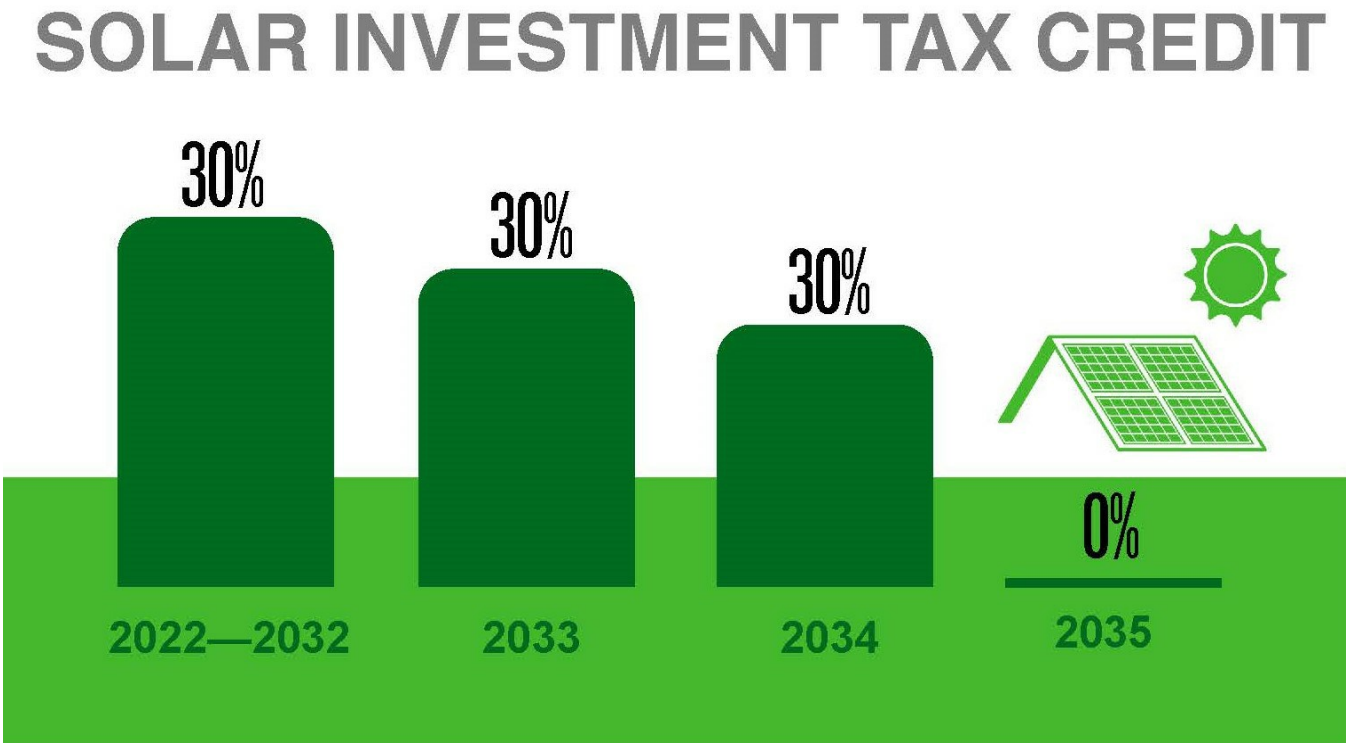
The Montgomery County Green Bank has partnered with lender to offer community members preferred terms and interest rates not generally offered to the public. These reduced terms can help low-income community members afford energy efficiency upgrades.

Note, the 2022 Inflation Reduction Act (IRA) authorized the Greenhouse Gas Reduction Fund (GGRF), a $27 billion clean energy deployment bank housed at the Environmental Protection Agency (EPA). The legislation for this fund includes moneys for supporting the development of local and state green banks.

## Example LMI Programs—Solar

## Existing Programs Available to Maplewood Residents—Solar

**Investment Tax Credit (ITC)**
The Incentive Tax Credit will provide a Federal tax credit for a portion of the solar pv installation costs. The ITC credit is equal to 30% of the project costs for years 2023 - 2032 and will be stepping down to 26% in 2033, 22% in 2024 and 0% for years 3035 and beyond.




**Solar Rewards Income-Quali ied Systems**
Xcel Energy's Solar Rewards program provides participants renewable energy credit (REC) incentives in addition to typical net metering benefits. Through the program, Xcel customers have the option to install a solar PV system up to 120% of their annual electricity consumption. Xcel then pays the owner of the solar system for the rights to the systems' RECs in cents per kilowatt hour generated by the solar PV system. Income-qualified customers also receive a one-time incentive payment to support the costs of initial installation. Income qualifications are similar to LIHEAP participation qualifications and are based on 50% of State Median income, or 110% poverty. Currently, Solar Rewards Income-Qualified System benefits are:

- Performance Incentive per kWh: $0.02
- Up-front Incentive $/Watt: $2.00

## Example LMI Programs—Solar

### Minnesota Municipal Examples

**City of St Louis Park Solar Sundown Rebate**

The City's Solar Sundown rebate program is a cost share to support reducing the solar installation expenses. The program provides a 4% cost share for city residents and increases the total cost share to 6% for income-qualified residents.

Brian Hoffman, City of St. Louis Park Director of Building and Energy, said, "This program clearly demonstrates that city incentives are a powerful tool to help achieve Climate Action Plan goals. The $115,000 for funding the program successfully leveraged $2.7 million in private investment in renewable energy in St. Louis Park, which will result in thousands of dollars of savings for those property owners over the life of those panels."

**Edina Solar Cost Share**

The City of Edina offers a solar installation cost share program. The total available funding is 4% of the total solar PV cost with property owner participation in the Federal Investment Tax Credit.

**City of Chaska Solar Panel Rebate**

The Chaska Solar Rebate Program offers a rebate of $250 per kW AC installed. The total rebate is capped at $2,500. Rebate requests are processed on a "first-come first-served" basis. Annual rebate funds are limited and payouts could be paid over several years.

### National Municipal Examples

**City of Houston - Sunnyside Landfill Solar Farm**

The City of Houston competitively bid the opportunity to develop a solar installation on their Sunnyside Landfill. In the final proposal, the City retains ownership of property and liability of the subsurface landfill material. The tenant (solar developer) will complete permitting for and restoration of the landfill cover, be responsible for maintaining the restored cover within the leased space, including all landscaping, mowing, reseeding, etc. The project will develop a 50 MW utility solar array which will produce enough electricity to power 5,000 homes annually (power sold to electric utility) as well as a community owned 2MW solar array which will produce enough electricity to power 200 homes and which will provide power discounts for low-income residents in the neighborhood. The project is expected to include opportunities to train and employ local labor.
https://www.houstontx.gov/mayor/press/sunnyside-solar-farm.html

**City of San Antonio—SolarHost**

In 2015, San Antonio's municipally-owned utility, CPS Energy, launched a pilot program called SolarHost in San Antonio, TX. SolarHost provides participating homeowners with a 3-cent per kilowatt/hour utility bill credit for hosting a solar PV project on their rooftop for 20 years. The solar installations are designed not to hinder the property and if any roof repairs are required, CPS pays the cost for removal and reinstallation. SolarHost has been a success, reaching its goal of 5 MW installed by February 2017. To date, 8,000 applications were received with over 600 systems installed across San Antonio. Without income or credit score requirements, SolarHost can be categorized as an Inclusive Solar Finance product by increasing access to solar for low income and/or low credit score customers by establishing a long-term arrangement that creates economic value derived from the installation of solar PV.
https://www.solarhostsa.com/

**City of Charlottesville—Solar Property Tax Credit**

The City of Charlottesville offers a tax credit for certified solar energy equipment, facilities or devices that are attached to real estate within the City of Charlottesville. The tax credit applies a portion of the total cost of the solar equipment, facilities, or devices as a credit on the real estate tax bill for 5 years. A successful application must be made to receive this tax credit.

**City of Austin—Solar Rebate Program**

Residents in Austin can earn a $2,500 rebate by completing the City's solar education course and installing a qualifying solar photovoltaic (PV) system on their home. https://austinenergy.com/green-power/solar-solutions/for-your-home/solar-photovoltaic-rebates-incentives

## Example LMI Programs—Solar

**City of Denver— Climate Action Rebate**
The City of Denver Climate Action Rebate program provides up to $4,000 cost sharing for solar PV installations on residential properties.

**City of Denver—CARE**
The Housing Authority of the City and County of Denver's (DHA's) Clean Affordable Renewable Energy (CARE) project provides solar benefits to affordable housing properties in the Denver Metro area through a 2 MW ground-mounted shared solar array. DHA manages the project and apportions the credits for the electricity produced by the array across several multifamily affordable housing facilities as well as and individual LMI households. The project is reported to generate a 15-20% electricity bill savings for the 500-plus households participating. DHA partnered with GRID Alternatives to develop and provide work force training and job opportunities. The project provided over 50 Denver residents from under-served communities with hands-on solar job training.
https://www.usgbc.org/sites/default/files/2020-02/DHA%20Case%20Study%20October2019_1.pdf

### State Examples

**State of Colorado**
The Colorado Energy Office (CEO) has implemented two cost-effective low-income solar energy offerings as part of an effort to comprehensively address household energy burden - community solar (as a demonstration project) and rooftop solar. Both demonstrate the feasibility of combining energy efficiency and solar offerings to help reduce utility bills for residents most in need - those paying more than 4% of household income on energy costs.

Community Solar:
In 2015, the Colorado Energy Office (CEO) launched a low-income community solar demonstration project. The purpose of the project is to demonstrate the feasibility of building 100% low-income community solar models and to reduce household energy burden. GRID Alternatives was awarded a $1.2 million grant from CEO to implement the project. In this capacity, GRID is responsible for securing utility partners, developing program terms, building each project, and leveraging CEO dollars with a 2:1 partner match. Multiple utility partners have been engaged and six community solar models have been built. All utility providers have agreed to offer solar credits to low-income subscribers to ensure that the solar energy provided is affordable. Subscribers are connected to each system for a set period of time and must reapply at the end of the contract term. Targeted subscribers are eligible for weatherization.

Community solar projects in this program offset either a pre-determined KW cap, or up to 100% of a subscriber's usage, resulting in a cost savings of approximately 50%. Subscribers were solicited through traditional outreach and marketing methods. These methods included flyers, brochures, direct calls, and in-person workshops. Households that had previously received weatherization services were targeted for outreach to ensure those subscribed maximized energy cost savings.
https://energyoffice.colorado.gov/community-solar-0

Colorado Rooftop Solar
The CEO Weatherization Assistance Program (WAP) offers rooftop solar photovoltaics (rooftop PV) to its clients on a limited basis. Colorado is the first state in the nation to receive approval from the U.S. Department of Energy (DOE) to integrate rooftop PV into WAP. The CEO WAP includes rooftop PV as a measure to specifically target expensive residential electricity expenditures. WAP anticipates being able to save each of its rooftop PV clients more than $400 annually by reducing electricity costs. Rooftop PV will be installed on a limited number of homes that meet certain criteria to ensure they will provide a high return on investment.
https://energyoffice.colorado.gov/rooftop-solar-pv

## Example LMI Programs—Solar

### Non-Profit Examples

**RE-volv Revolving Fund**

RE-volv, a small nonprofit organization headquartered in San Francisco, provides solar financing assistance for small and medium sized nonprofits, which often do not have the funds to cover the upfront cost of a PV system. The RE-volv model uses crowdfunding to help raise the upfront solar array costs and RE-volv leverages student volunteers who assist with its crowdfunding and solar education campaigns.

The nonprofit beneficiary pays RE-volv for its solar installation over time through a lease or power purchase agreement (PPA) financing arrangement. As the nonprofit makes its financing payments, RE-volv reinvests money into a fund that helps offset the cost of additional solar projects for other nonprofits. This revolving fund, called the Solar Feed Fund, is a pay-it-forward model for solar energy that is designed to continually perpetuate itself to help pay for new solar projects.

Crowdfunding is the practice of raising money from many people, typically in small amounts, through online donations. RE-volv offers a nonprofit beneficiary a crowdfunding platform for raising funds to cover the cost of adopting solar. The crowdfunding platform gives prospective donors a two-fold basis for contributing to a campaign: to support the nonprofit beneficiary organization and to support the clean energy economy through a solar investment. Since solar can provide electricity bill savings, it can enable more of a nonprofit's funds to be directed toward its mission-related work. By contributing to a solar crowdfunding campaign, donors committed to an organization can help advance the nonprofit's core mission.

SECTION 03

# Review of Project Financing Mechanisms*

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There are perhaps countless approaches to financing energy efficiency and solar projects in general as well as a number of mechanisms that can help support solar for LMI communities. Reviewing these mechanisms offers an opportunity to identify potential approaches for an initial LMI Assistance Program for the City of Maplewood as well as avenues which might be explored in future program iterations. We've divided these into two categories: financing approaches typically resulting in immediate participant cost saving, and, financing approaches which may not result in immediate participant cost savings. For this second category, however, it may be possible to establish a modified approach within the program design to improve the potential for immediate cost savings for participants.

For each of these approaches we've noted what participants the approach is typically available to

Homeowners

Multi-family building owners,

or renters.

The potential Barrier Considerations have been noted for each approach while Opportunities for addressing barriers have been noted for some of these approaches.

## Financing Approaches Typically Resulting in Immediate Participant Cost Savings—Energy Efficiency + Solar

**Property Accessed Clean Energy ("PACE") Loans**: Customers receive a PACE loan secured by their property and utilize the proceeds to pay for the upfront costs of energy efficiency upgrades or solar systems. The PACE loan is usually added to the customer's property tax bill and is secured by the property, not the personal credit of the customer; thus, a PACE loan remains attached to the property through any change in ownership. In the instance of solar PV systems, the owner of the property retains ownership of the system, receiving all the federal tax credits and benefits. PACE loan structures vary, however, if established properly the terms and conditions of a PACE loan program can be established in order to save monthly costs for participating customers.

Available to: Homeowners, Multi-family building owners

Barrier Consideration: The customer's borrowing capacity is often constrained by the value of the home, typically limited to 20% of the assessed value of the property. In addition, Minnesota currently has only commercial PACE enabling legislation meaning homeowners cannot qualify, however, multi-family buildings typically qualify for commercial PACE programs.

Opportunity: c-PACE costs could be further incentivized for building owners of multi-family buildings with a single electric account structure (single building meter) in exchange for guaranteed cost savings with income qualified tenants.

*Financing mechanisms listed are modified from "Inclusive Solar Finance Framework" by Vote Solar

## Review of Financing Mechanisms

**Grants:** Customers are provided partial or full support for energy efficiency upgrades or solar PV systems. Grants are free typically funded by a government, a nonprofit or a philanthropic source. In the instance of solar PV, under this scenario, the customer is the owner of the system immediately and responsible for all upkeep and maintenance of the solar PV system. In addition, as owner, the customer is responsible for monetizing the ITC.

 Available to: Homeowners, Multi-family building owners

Barrier Consideration: The financial resources of governments and nonprofits to provide access to heavily subsidized or free energy efficiency upgrades or solar systems for target customers is likely insufficient as a long-term sustainable solution for increasing access.

**Tariff On-Bill Financing (TOB):** Customers receive a loan secured by a utility tariff on the meter and utilize the proceeds to pay upfront costs of energy efficiency upgrades or solar installations. The tariff is repaid through a cost recovery charge for a period of time (typically up to 15 years). Since the tariff is tied to the meter, not the property or the customer, TOB provides an opportunity for our target customers to access funding not based on the customer's capacity and ability to pay. In the instance of solar PV systems, under a TOB structure, the customer remains the owner of the project, retaining the ability to monetize the ITC while being responsible for the maintenance of the system. In addition, if the customer sells the property, the new owner will continue making payments for the solar system while also benefitting from the energy generated. The tariff structure allows for the long-term alignment of the cost of system with its benefit.

 Available to: Homeowners, Multi-family building owners

Barrier Consideration: The customer may have income and/or credit score data below traditionally acceptable loan underwriting criteria. In the instance of solar PV, TOB financing also is not available to customers who will not own the array.

Opportunity: Income and/or credit score barriers could be reduced or eliminated through the establishment of a loan loss reserve fund which provides credit guarantees for income eligible subscribers, providing solar array developers with back-up for defaulting subscribers in exchange for the elimination or reduction of income or credit requirements.

### Financing Approaches Typically Resulting in Immediate Participant Cost Savings— Solar

**Leases:** Customers enter into a leasing arrangement and agree to a fixed payment schedule over a specified term to pay for use of the system. In a typical solar lease structure, the customer leases a solar system from the lessor (capital provider) for the rights to the electricity output from the solar assets in exchange for a fixed payment schedule. The typical lease is a long-term agreement lasting up to 20 years. Unlike a loan and PACE, under a lease the customer does not own the system and is not responsible for maintenance or upkeep of the system. The lessor (capital provider) receives the available tax benefits and is responsible for efficiently monetizing their value.

 Available to: Homeowners, Multi-family building owners

Barrier Consideration: Under this scenario, even though the tax credit monetization barrier has been eliminated, customers may still have income and/or credit score data below traditionally acceptable loan underwriting criteria.

Opportunity: Income and/or credit score barriers could be reduced or eliminated through the establishment of a loan loss reserve fund which provides credit guarantees for income eligible subscribers, providing solar array developers with back-up for defaulting subscribers in exchange for the elimination or reduction of income or credit requirements.

## Review of Financing Mechanisms

**Power Purchase Agreements ("PPA"):** Similar to leases, the PPA provides the customer with solar electricity in exchange for regular payments, usually under a long-term contract and usually with no down payment. In many cases, the PPA payment is based on the system production multiplied by the kilowatt-hour ("kWh") pricing that is outlined in the agreement and likely structured as a fixed rate schedule. In this structure, the PPA provider owns the system, monetizes the tax benefit and provides all the operations, maintenance and replacements required over the life of the contract. At the end of the agreement, the customer can elect to renew the agreement, purchase the system, or request removal of the solar system.


Available to: Homeowners, Multi-family building owners


Barrier Consideration: Like loans or leases, PPA's typically require income and/or credit score data to qualify and customers may be below traditionally acceptable criteria.


Opportunity: Income and/or credit score barriers could be reduced or eliminated through the establishment of a loan loss reserve fund which provides credit guarantees for income eligible subscribers, providing solar array developers with back-up for defaulting subscribers in exchange for the elimination or reduction of income or credit requirements.

**Community Solar – Ownership**: Customers jointly own a portion of a locally sited PV system. Individual subscribers can utilize cash, loans, or other sources to finance upfront system costs. The customer receives all the benefits of ownership, including ITC, maintenance requirements, and utility bill credits from the utility for the customer's share in the facility.


Available to: Homeowners, Multi-family building owners, Renters


Barrier Consideration: The customer may have income and/or credit score data below traditionally acceptable loan underwriting criteria and may also be unable to monetize the tax benefits associated with ownership of a solar system.


Opportunity: Income and/or credit score barriers could be reduced or eliminated through the establishment of a loan loss reserve fund which provides credit guarantees for income eligible subscribers, providing solar array developers with back-up for defaulting subscribers in exchange for the elimination or reduction of income or credit requirements.

**Community Solar – Subscriber:** Customers subscribe to a portion of the energy generated by a remotely sited PV system. Under this model the customer does not own the system nor have a capital/financing requirement to participate but instead subscribes to the project for an allocated portion of the system's energy output, which is credited to the customer's bill by the utility in the form of bill credits. Depending on the solar project developer's subscriber model, contract terms can vary from monthly up to 20 years. The community solar project sponsor, whether community- or privately-owned, absorbs the risks of acquisition, installation, operation and maintenance.


Available to: Homeowners, Multi-family building owners, Renters


Barrier Consideration: Many subscriber models require income and/or credit score data to qualify and customers may be below traditionally acceptable criteria.


Opportunity: Income and/or credit score barriers could be reduced or eliminated through the establishment of a loan loss reserve fund which provides credit guarantees for income eligible subscribers, providing solar array developers with back-up for defaulting subscribers in exchange for the elimination or reduction of income or credit requirements.

## Review of Financing Mechanisms

### Financing Approaches Which May Not Result in Immediate Participant Cost Savings—Energy Efficiency + Solar

**Cash**: Customers utilize their own cash (non-loan) proceeds to pay for the upfront costs of energy efficiency upgrades or solar PV systems. The customer utilizes his or her own cash resources to pay for costs upfront without financing.

 Available to: Homeowners, Multi-family building owners

 Barrier Consideration: The inability to fully monetize benefits available to higher-income solar buyers, such as the Federal Incentive Tax Credit (ITC) or other tax benefits associated with ownership of a solar system significantly reduces the economic benefit to low-income customers.

**Loans**: Customers receive a loan from the installer, bank or other entity and pay costs over a period of time. The customer and capital provider establish a fixed repayment schedule that will likely be repaid over an established timeframe (typically 6 to 20-years). In the instance of a solar PV system, during this period, the customer owns the system, receiving all available tax incentives while maintaining full responsibility for the system's upkeep.

 Available to: Homeowners, Multi-family building owners

 Barrier Considerations: Similar to cash financing, the customer may lack the ability to monetize ITC or other tax benefits, in addition, the customer may have income and/or credit score data below traditionally acceptable loan underwriting criteria.

 Opportunity: For multi-family properties with electric utility under a single property-owner account, incentivization may increase building owner interest in participation and may offer potential for energy cost savings for both the building owner and renter.

## Review of Financing Mechanisms

### Financing Approaches Which May Not Result in Immediate Participant Cost Savings—Solar

**Building Owners:** Customers receive access by virtue of residing in a property in which the building owner has implemented either an onsite or community solar project. In this case, the customer does not pay the electric utility directly as it is included as part of the overall lease or rental payment. The financial benefits of the solar installations accrue primarily to the building owner, who can choose if and how to distribute any electricity savings to residents, including reductions in lease/rental payments, property assessment fees or other arrangements required by the US Department of Housing and Urban Development ("HUD").

 Available to: Homeowners, Multi-family building owners, Renters

 Barrier Consideration: Customer's ability to passively participate in, or receive financial benefit from solar PV installations is directly related to the level of interest by participating building properties. Furthermore, this strategy is complicated if not impossible to implement in multi-family properties where units are under individual electric utility accounts.

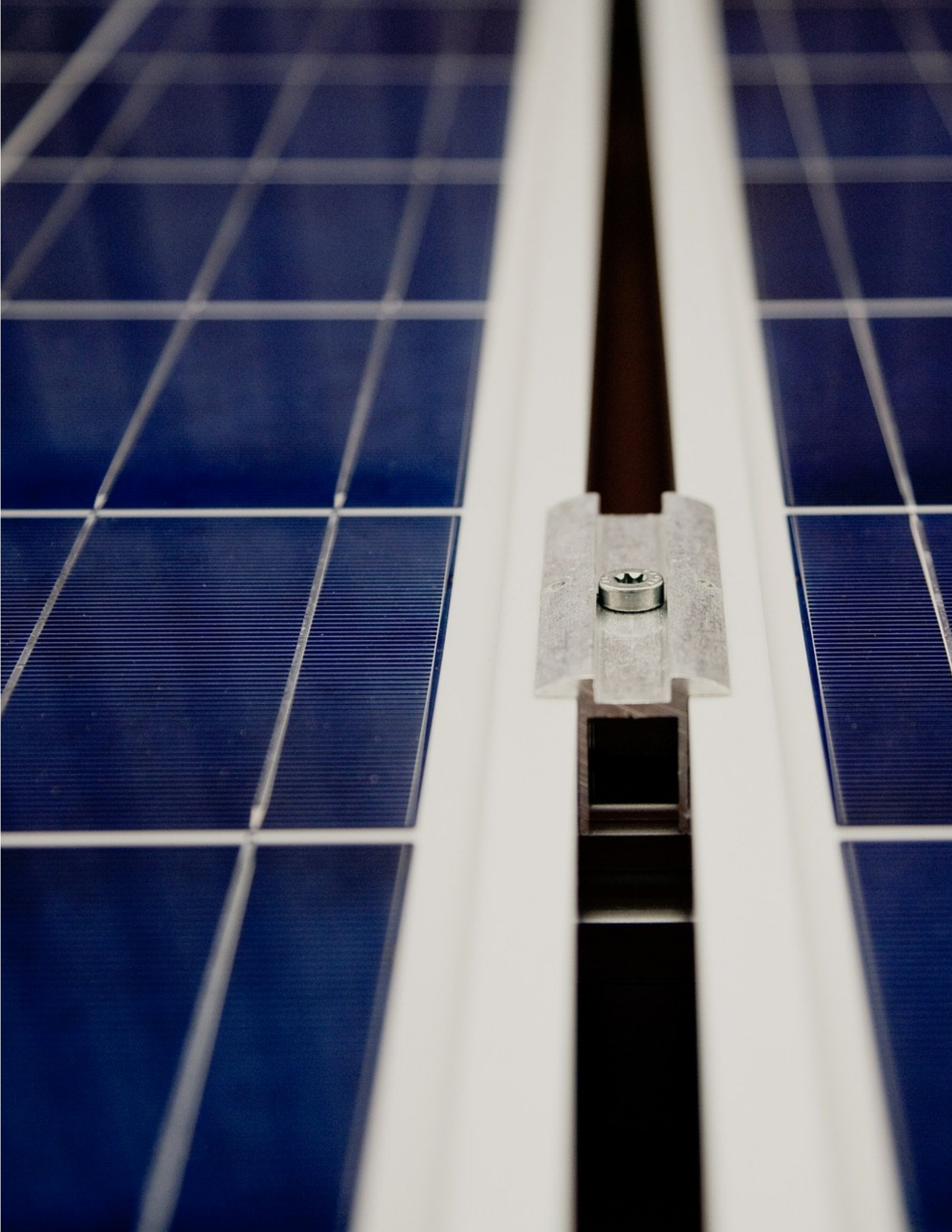
 Opportunity: For multi-family properties with electric utility under a single property-owner account, incentivization may increase building owner interest in participation and may offer potential for energy cost savings for both the building owner and renter.

**Utility:** Customers pay for electricity provided by their utility, who is responsible for procuring solar resources. Many utilities (municipal, rural electric cooperative and investor-owned) have developed, acquired and implemented solar projects. As a utility investment, the solar project costs are spread across the entire rate base without regard to customer income or credit score. In some cases, the "green" energy is a premium product and part of a special customer tariff, typically referred to as a "green pricing program" or "green tariff."

 Available to: Homeowners, Multi-family building owners, Renters

 Barrier Consideration: Most utility provided solar products are premium products which increase the cost per kWh consumed, increasing the energy burden on the customer.

 Opportunity: Incentivization of utility provided solar options for LMI customers can help convert a "premium" product to a vehicle for participant cost savings. In that case, this method can be effective in increasing the percentage of solar generation per customer while potentially providing some level of economic benefit.



SECTION 04

# Maplewood LMI Community and Potential

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## The Need to Focus on Low and Moderate Income Potential

**Energy Efficiency:**

And as a percentage of income, low- and moderate-income families pay up to *three times* more than average on utility bills. For low-income families, this energy burden and health outcomes are often intertwined. Low-income families may sacrifice nutrition, healthcare, and other necessities to avoid utility shutoffs. Energy efficiency is an important component in reducing this energy burden among households that need it the most – reducing burdens by as much as 30 percent. However, even the best-intentioned efficiency programs often fail to reach low- and moderate-income households. These households may not be able to take advantage of incentives because they lack the upfront capital to invest in efficiency upgrades, for example. They may also lose out on tax incentives because they don't live in high-efficiency housing or can't afford to purchase newer fuel-efficient vehicles.

**Solar PV:**

Solar PV systems provide a wide range of potential benefits, including long-term energy cost savings, energy resilience, and reductions in air pollution including particulate matter and greenhouse gas (GHG) emissions – with positive implications for environmental and human health. Currently, most of the solar customers in the United States are in the same demographic -middle to upper class, middle-aged, and usually male. "Rooftop Solar Technical Potential for Low-to-Moderate Income Households in the United States", a recent study by NREL, found that the median income of households that install solar panels in some states was roughly $32,000 higher than the median household income in those states.

The growth of solar in the United States provides a tremendous opportunity to address some of the greatest challenges faced by lower-income communities: the high cost of housing, unemployment, and pollution. Solar can provide long-term financial relief to families struggling with high and unpredictable energy costs, living-wage jobs in an industry where the workforce has increased 168% over the past eight years, and a source of clean, local energy sited in communities that have been disproportionately impacted by traditional power generation. Yet, access to distributed solar power remains elusive for a significant slice of the U.S. population, particularly low- and moderate-income (LMI) communities—households whose income is 80% or less of the area's median.

Although solar PV costs have dropped significantly in recent years, upfront installation costs are still persistently out of reach for most LMI populations, which, by definition, have less disposable income. Beyond having limited cash-on-hand for solar power purchases, LMI populations face other obstacles in pursuing distributed solar systems, including:

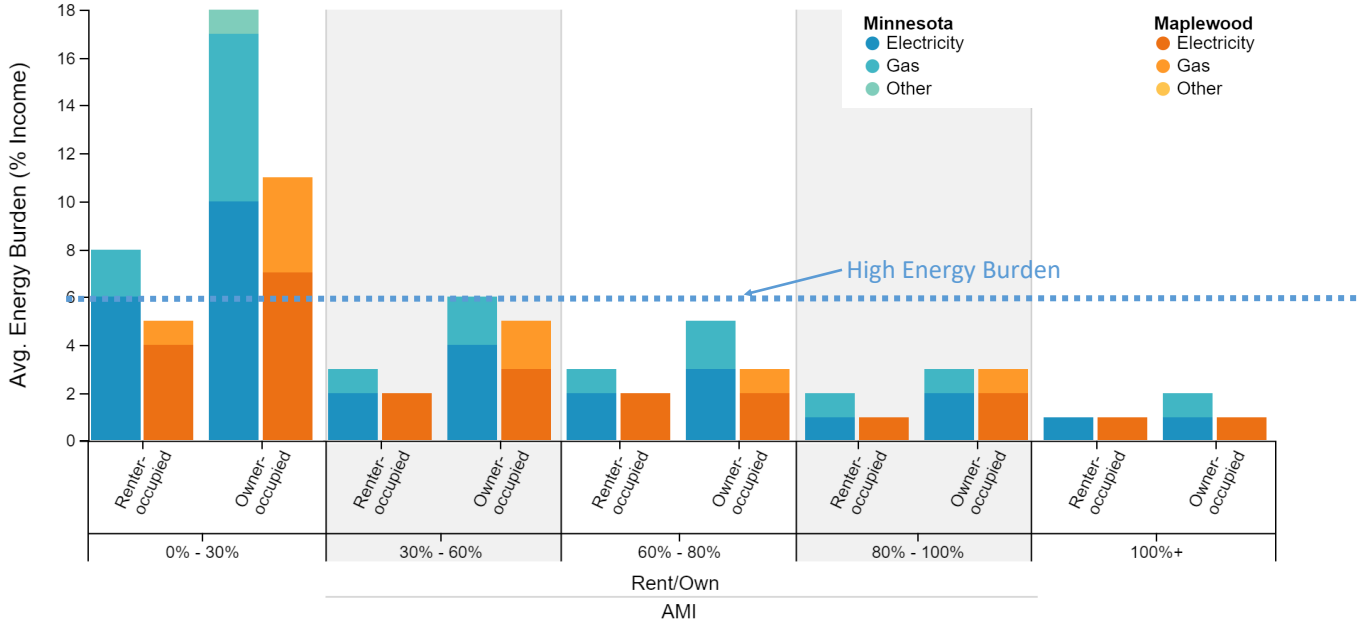
- frequently lower credit scores, making it difficult to attain a loan for solar investments;
- insufficient tax burden to benefit from state and federal solar tax incentives; and
- lower rates of homeownership and higher likelihood of living in multifamily housing units—making for limited control over decisions about utilities, especially rooftop solar.

## Energy Burden In Maplewood

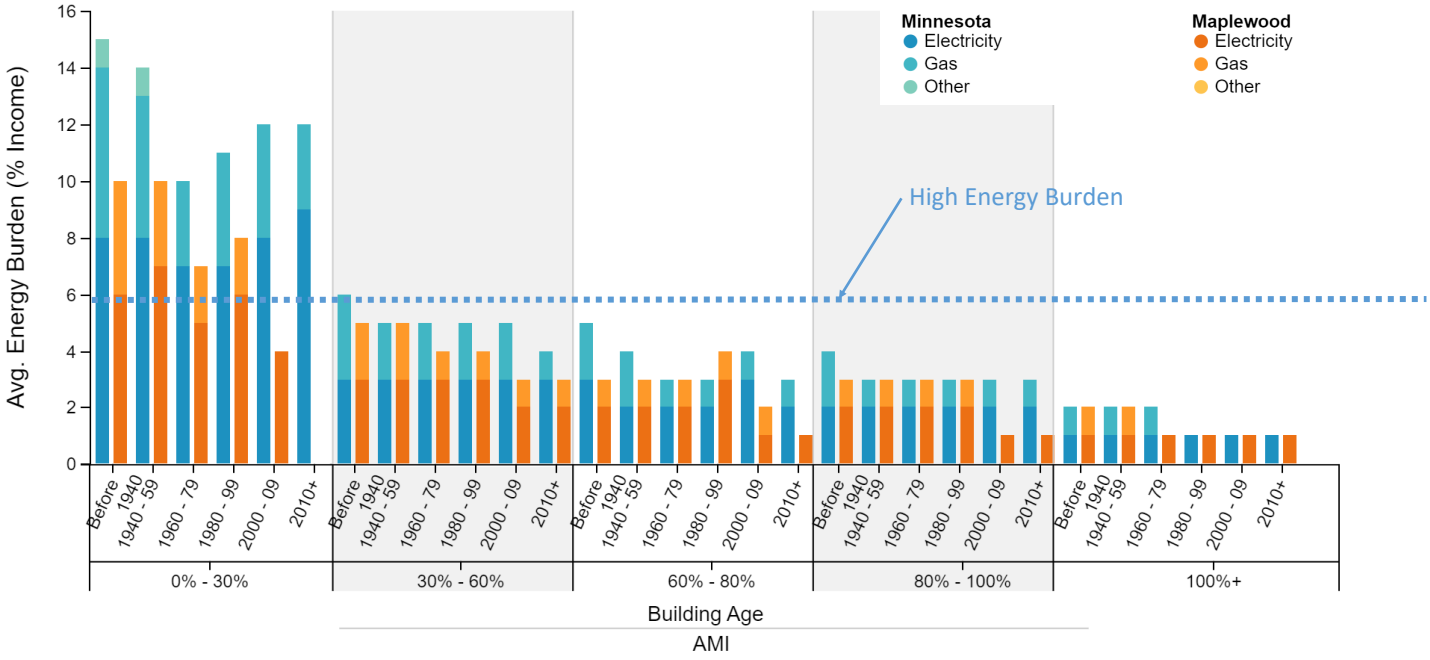
A household's energy burden—the percentage of household income spent on energy bills—provides an indication of energy affordability. Researchers define households with a 6% energy burden or higher to experience a high burden. Factors that may increase energy burdens include the physical condition of a home, a household's ability to invest in energy-efficient upgrades, and the availability of energy efficiency programs and incentives. See the charts on the following page for a breakdown of households with high energy burden.

# Maplewood LMI Community and Solar Potential

## Energy Burden in Maplewood—Renter vs Homeowner by Income Level




## Energy Burden In Maplewood— LMI Energy Burden by Income and Housing Age




**Findings:**

Based on the data above, the households with the highest energy burden in the City of Maplewood tend to have household incomes at 60% of area median income (AMI), live in owner occupied homes built before 2000.

# Maplewood LMI Community and Solar Potential

## Energy Burden In Maplewood (continued)

As illustrated in the charts on the previous page, the households with the most significant housing burden over 6% across all income levels in Maplewood tend to be homeowners rather than renters. Over 15% of LMI households in the community have high energy burden, comprising 6.7% of all households in Maplewood. The LMI households, by income as a percentage of Area Median Income (AMI) and housing type, which are effected by high (over 6%) energy burden are:

### Share of Total LMI Households with High Energy Burden

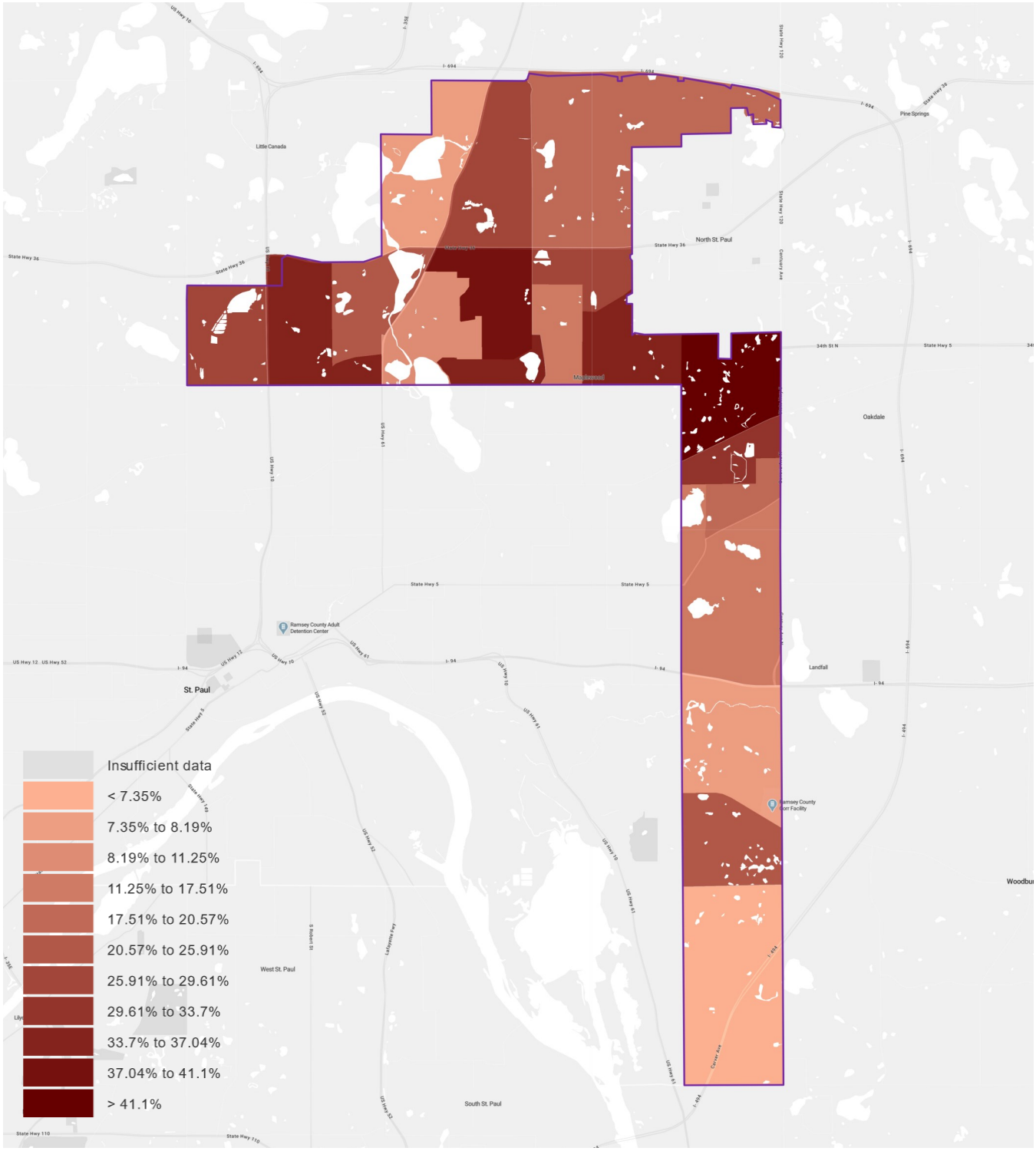
| Housing Type By Income Level | Total in Maplewood with High Energy Burden | Share of Income Category Total | Share of Total LMI Households with High Energy Burden |
|---|---|---|---|
| **Income 0-30% AMI:** | **886** | | **88.33%** |
| Single Family Household detached | 705 | 79.6% | 70.29% |
| Single Family Household Attached | 104 | 11.7% | 10.37% |
| 2 Unit Buildings | 20 | 2.3% | 1.99% |
| 3-4 Unit Buildings | 28 | 3.2% | 2.79% |
| 5-9 Unit Buildings | - | | |
| 10-19 Unit Buildings | - | | |
| 20-49 Unit Buildings | - | | |
| 50+ Unit Buildings | - | | |
| Mobile Home/Trailer | 29 | 3.3% | 2.89% |
| **Income 30-60% AMI:** | **0** | | **0.00%** |
| Single Family Household detached | - | | |
| Single Family Household Attached | - | | |
| 2 Unit Buildings | - | | |
| 3-4 Unit Buildings | - | | |
| 5-9 Unit Buildings | - | | |
| 10-19 Unit Buildings | - | | |
| 20-49 Unit Buildings | - | | |
| 50+ Unit Buildings | - | | |
| Mobile Home/Trailer | - | | |
| **Income 60-80% AMI:** | **117** | | **11.67%** |
| Single Family Household detached | - | | |
| Single Family Household Attached | - | | |
| 2 Unit Buildings | - | | |
| 3-4 Unit Buildings | - | | |
| 5-9 Unit Buildings | - | | |
| 10-19 Unit Buildings | - | | |
| 20-49 Unit Buildings | - | | |
| 50+ Unit Buildings | - | | |
| Mobile Home/Trailer | 117 | 13.2% | 11.67% |
| **Total LMI Households With High Energy Burden:** | **1,003** | | |

| | | | |
|---|---|---|---|
| Total LMI Households in Community: | 6,420 | **% of LMI Households in Community with High Energy Burden:** | **15.6%** |
| Total Households in Community: | 15,067 | **Total LMI Households in Community:** | **6.7%** |

# Maplewood LMI Community and Solar Potential

## Low Income Share of Population by Census Tract

Below is an estimation of the "struggling to poor" share of the total population by census tract. "Struggling to poor" is defined as under 2 times poverty rate.




SECTION 05

# Program Options

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## Program Options —Energy Efficiency

**Option E1: Energy Efficiency Cost Share**

Partner with the Xcel Energy Home Energy Squad program to establish an income-qualified energy efficiency upgrade cost share. The grant can be made available for income-qualified households for which the Home Energy Squad assessment has determined that a larger project could improve the energy efficiency of the home. The cost share grant or rebate offered by the City will help to bring down the cost of larger projects that have a positive impact on the efficiency of a participant's home. Program should require participants to have had a Home Energy Squad visit within a set period of time (i.e within the past 36 months). Cost share values might range from $250 to $1,500 for qualifying projects of varying anticipated energy reduction potential.

**Option E2: Pilot Project - Income-based Residential Energy Retrofit Program and Job Training Program**

Establish a Residential Energy Retrofit Program to help income qualified households save energy and money by executing energy efficiency upgrades for homes for which Home Energy Squad assessments have determined that a larger project could improve the energy efficiency of the home. Program design to include energy efficiency contracting and training partners with minimum requirements for Maplewood community member participation in training programs and share of project labor efforts. Program to offset cost of trainee expenses through grants such as the Minnesota DEED Jobs Skills Partnership (MJSP) grant. Cost savings achieved through trainee labor to be passed on directly reduced project costs for qualifying households participating in the efficiency upgrade program. Program service to include homeowner consultation on other available utility, state, and federal rebates, and incentives (such as the federal $1,200 annual Energy Efficient Home Improvement Credit). Balance of efficiency upgrade project costs may be bundled with Ramsey County's 0% interest Energy Conservation Deferred Loan.

**Option E3: Pilot Project - Efficient Fuel-Switching and Electrification Program**

Establish a program designed to leverage and maximize the benefits of the Inflation Reduction Act's low-income energy efficiency measures for the City of Maplewood. Program design to first focus on coordinating qualified contractors with competitive pre-selection based on best cost offerings for fuel switching and electrification based energy efficiency measures (heat pump systems, etc). Program to include coordination and information support for participating households on current and upcoming applicable state and federal incentives such as those driven by the Inflation Reduction Act (IRA) such as:

- The High Efficiency Electric Home Rebate Act (HEEHRA) includes $4.5 billion in direct rebates for low- and moderate-income households to cover costs to electrify homes in low- to moderate-income households, with qualifying households saving up to $14,000 on electrification measures.
- The Energy Efficient Home Improvement credit, which allows households to deduct from their taxes up to 30% of the cost of upgrades to their homes, including installing heat pumps, insulation and necessary electrical upgrades. Deductions are available up to $1,200 per household per year for a range of energy efficiency upgrades and up to $2,000 per household per year for installing a heat pump water heater or heat pump space heating.

City may offer additional grants for income-qualified households to deepen the energy efficiency cost effectiveness projects.

## Program Options

**Option E4: LMI Utility Bill and Renewable Energy Clinic**

City of Maplewood to issue an RFP for qualified non-profit energy efficiency service providers, LMI advocate agencies, and community action agencies, to establish a Utility Bill Clinic program. The program design shall focus on proactive outreach to targeted LMI community members with a minimum annual participation target. The clinic to review participant's utility bills, explain charges, identify compatible retail electric provider offerings with more favorable rates and total annual costs based on participant's use case with a particular focus on identifying renewable energy options, recommend energy efficiency strategies, and identify energy efficiency programs or incentives the participant may qualify for. Program offering should include consultation on available grants, rebates, and incentives for which participating households qualify. The successful program proposal shall be selected based upon qualifications, capabilities, the greatest number of targeted LMI households served beyond the minimum requirement. The project shall have a minimum requirement for targeted LMI households served as well as a targeted minimum annual savings per household and a minimum number of households switching to a renewable energy offering.

### Program Options —Solar

**Option S1: LMI Consumer Choice Grant**

City of Maplewood to issue a competitive RFP to community solar developers capable of operating in the Maplewood market. The competitive RFP to request solar developers to submit community solar program offerings designed to serve LMI community members. The program offering which maximizes the total number and savings per LMI participants (meeting or surpassing minimum thresholds) to be awarded a project initiation grant to the community solar developer at the completion of a successfully executed agreement and a project success grant to be awarded after achieving the LMI subscription target. The community solar subscriptions offered may originate from sources inside or outside of the City of Maplewood, however, proposals which utilize renewable energy power sources located inside of the City shall receive bonus points in the selection process. The community solar developer shall be responsible for marketing and obtaining LMI subscribers, however, the City will assist in communicating the program offering and benefits to targeted LMI communities.

**Option S2: City Sponsored Community Solar Development**

City of Maplewood to issue an RFP for a community solar array on a City controlled site such as an underutilized City property, or a single or multiple large roofspace. Terms of the RFP include leasing the required land or roofspace to the solar developer for $1 as a strategy to reduce new community solar development costs required to be passed on to LMI subscribers. The City shall also provide a project initiation grant to be provided to the solar developer at the completion of a successfully executed solar development agreement, and a project success grant to be provided to the solar developer after achieving a defined Maplewood household LMI subscription target.

In addition to the grant incentives, the City of Maplewood may help mitigate the developer's risk of loss due to defaulting subscribers by entering into an anchor subscriber agreement. The anchor subscriber agreement will have a minimum off-take array's annual energy generation to be applied to City facilities, but may be flexibly adjusted to temporarily cover payment defaults by qualifying LMI subscribers.

In exchange, the solar developer shall construct, market, and manage the community solar array with a minimum targeted LMI household requirement of array offtake. Solar developer shall be responsible to replace subscribers which default out of the program with other targeted LMI subscribers. The successful solar developer will be selected based upon qualifications, capabilities, the proposed LMI subscriber rate and annual savings (meeting or surpassing minimum thresholds), and the greatest of proposed targeted LMI subscribers served beyond the minimum requirement. Development proposals to receive bonus selection review points based on proposed training and job creation for targeted LMI community members, if any.

**Option S3: Community Action Solar Development**
City of Maplewood to issue an RFP for a solar Power Purchase Agreement serving select City of Maplewood facilities. The solar development may occur on City facility rooftops/site or in a centralized location. The successful solar developer will be selected based upon qualifications, capabilities, and the proposed PPA rate and annual savings (meeting or surpassing minimum thresholds). Development proposals to receive bonus selection review points based on proposed training and job creation for targeted LMI community members, if any.

In conjunction with the execution of the project agreement, the City of Maplewood to establish a policy to track all electric power cost savings generated through the PPA agreement and allocate the savings in an Energy Burden Relief Fund. Funds allocated to be used to cover program costs of other City energy efficiency or solar programs. Alternatively, funds may be distributed directly to targeted LMI households on a sliding scale designed to reduce each recipient's household annual energy costs to below 6% of household income.

**Option S4: Multi-Family Building Owner Solar Loan Program**
City of Maplewood to collaborate with a qualified community development financial institution (CDFI) to establish a suite of solar financial tools to support qualifying multi-family building owners with single payer electric accounts (all housing units on a single electric service account) interested in installing solar systems to serve tenants. Financial tools to be designed to leverage new incentive tax credits established by the Inflation Reduction Act. To qualify, properties served through the program must serve a minimum requirement for targeted LMI households. Additionally, a minimum requirement for solar infrastructure installed is required through the loan program to serve tenant LMI households directly, providing each with a minimum savings for each kWh delivered.

The program offering to include three components: 1) an interest rate buy-down, which reduces the interest rate paid by property owners as compared to a traditional market-rate loan; 2) a loan loss reserve, which serves as a guarantee against default and encourages lenders to issue loans to less creditworthy customers; and 3) an additional LMI Tenant Energy Burden Reduction incentive to further reduce the property owner's overall repayment obligation based on the level of achieved energy burden reduction beyond program minimums for LMI households served by the solar infrastructure. Repayment of principal will be re-invested into the program as a revolving loan.

**Option S5: Virtual Residential PACE Pilot Program**
City of Maplewood to establish a loan fund for qualifying targeted LMI homeowners for installation of solar arrays. The loan shall have repayment terms based on the homeowner's income and energy burden levels, with length of loan repayment and interest rates applied on a sliding scale adjusting with the intent to create a minimum anticipated annual energy cost savings necessary to reduce the participant household's energy burden at or below 6%. Loans, and energy savings benefits, shall be transferable with property ownership. Loan repayment shall be re-invested into the program as a revolving loan fund.


SECTION 06

# Recommendations and Next Step Action Plan

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We recommend the City of Maplewood consider implementing two or three pilot project efforts. By executing more than one pilot project, the intent is to test project options which have different target project development pathways and LMI household participant acquisition. The City may then choose to continue one or more of the programs, or create a hybrid program based on the Maplewood market specific results of the pilot project implementations.

## Suggested Pilot Projects—Energy Efficiency

**Option E1: Energy Efficiency Cost Share**

**Option E3: Pilot Project - Efficient Fuel-Switching and Electrification Program**

## Suggested Pilot Projects—Solar

**Option S2: City Sponsored Community Solar Development**

**Option S3: Community Action Solar Development**

## Next Step Action Plan

We recommend the following next steps:

A: Explore and identify funding strategies to support selected pilot project concepts. Current and anticipated federal and state grants driven by the Infrastructure Investment and Jobs Act ((IIJA) and the Inflation Reduction Act (IRA) should be closely reviewed for opportunities for the City.

B: Explore and identify pilot project partners, advocates, and resources to support project design and implementation.

C: Finalize decision to proceed with recommended pilot project(s). For each of the recommended options, the following actions are suggested:

**Option E1: Energy Efficiency Cost Share**

1. Review similar programs by other Minnesota communities to identify program strengths and challenges.
2. Collaborate with identified project partners to design and refine program concept.
3. Establish a prioritized list of eligible energy efficiency projects.
4. Identify and finalize project budget and cost share rebate values.
5. Create program communication campaign.
6. Launch program with partners.

**Option E2: Pilot Project - Efficient Fuel-Switching and Electrification Program**

1. Review similar programs by other communities to identify program strengths and challenges.
2. Collaborate with identified project partners to design and refine program concept.
3. City may issue a Request for Information to identified potential respondents to collect initial feedback on pilot project concept and to validate sufficient interest by qualified contractors in the market.
4. Research and assemble related utility, state, and federal incentive resources.
5. Establish a prioritized list of eligible energy efficiency projects.
6. Identify and finalize project budget and cost share rebate values.
7. Create a competitive Request for Proposals (RFP) for program pre-qualified contractors. RFP to include pre-defined competitive cost offerings by contractors similar to solar group purchase program designs.
8. Issue RFP and select contractor(s).
9. Create program communication campaign.
10. Launch program with partners.

**Option S3: City-Sponsored Community Solar Development**

1. City may issue a Request for Information to identified potential respondents to collect initial feedback on pilot project concept and to validate sufficient interest by developers experienced in delivering projects in the market.
2. Identify potential solar array sites under the control of the City or an appropriate project partner.
3. Conduct a site feasibility assessment of selected sites to determine sites which meet project criteria.
4. Select preferred site(s).
5. Confirm / establish targeted LMI household definition, minimum participation, and eligibility thresholds.
6. Confirm / establish targeted minimum LMI household benefit threshold.
7. Identify pathways for communications with targeted LMI community members, including “trusted partners” who can assist with communicating the program opportunities and benefits.
8. Develop the Request for Proposals.
9. Review and select successful respondent.
10. Develop communications and educational materials to support effective engagement with targeted LMI households.

**Option S4: Community Action Solar Development**

1. Collect site electricity use data of key City of Maplewood sites (including total annual kWh consumed, rate tariff, demand charges, and total monthly/annual electric utility cost).
2. Establish a preliminary “short list” of facilities based on sites most likely to have highest economic benefit from a PPA (typically sites with low or no Demand Charges and higher energy consumption tariff structures).
3. Conduct a site feasibility assessment of key City of Maplewood sites.
4. Select sites to be included in pilot program.
5. Confirm / establish targeted LMI household definition, minimum participation, and eligibility thresholds.
6. Confirm / establish targeted minimum LMI household benefit threshold.
7. Engage local community partners to establish appropriate fund distribution mechanism.
8. Develop the Request for Proposals.
9. Review and select successful respondent.
10. Establish internal City of Maplewood policy regarding tracking and utilization of energy cost savings for the Energy Burden Relief Fund.
11. Implement appropriate energy savings tracking mechanisms and fund development.

# Appendix A Potential Strategies for Funding City of Maplewood Programs

## Grants

There are a number of state and federal funding opportunities that support sustainability, resilience, and climate initiatives for local governments. Many of the grant opportunities seek to directly fund relative strategies like improved energy efficiency, renewable energy, low/no emission vehicle adoption and infrastructure, and climate resilience. In addition, a number of long-standing grants—like those from the US Department of Transportation, or the US EPA Brownfields Grant—do not fund sustainability and climate initiatives directly but can indirectly support these projects as the grant's goals are well aligned.

Grant funding can often be used to support the establishment of a municipal program, resource, or even staffing position. Unlike municipal tax or fee structure strategies, however, grants do not provide a long-term or permanent funding solution.

Consequently, grants may best be viewed as a project-specific funding source, or in conjunction with other funding strategies when supporting long-term initiatives.

This review is intended to illustrate a few high profile and important recent funding laws that have or will be resulting in significant grant opportunities of which municipalities with sustainability and climate plans can take advantage. The grant examples illustrated here are far from exhaustive. We recommend the municipality subscribe to new grant opportunities through Grants.gov and review availability on a regular basis:
https://www.grants.gov/help/html/help/Connect/SubscribeToAllNewOpportunities.htm

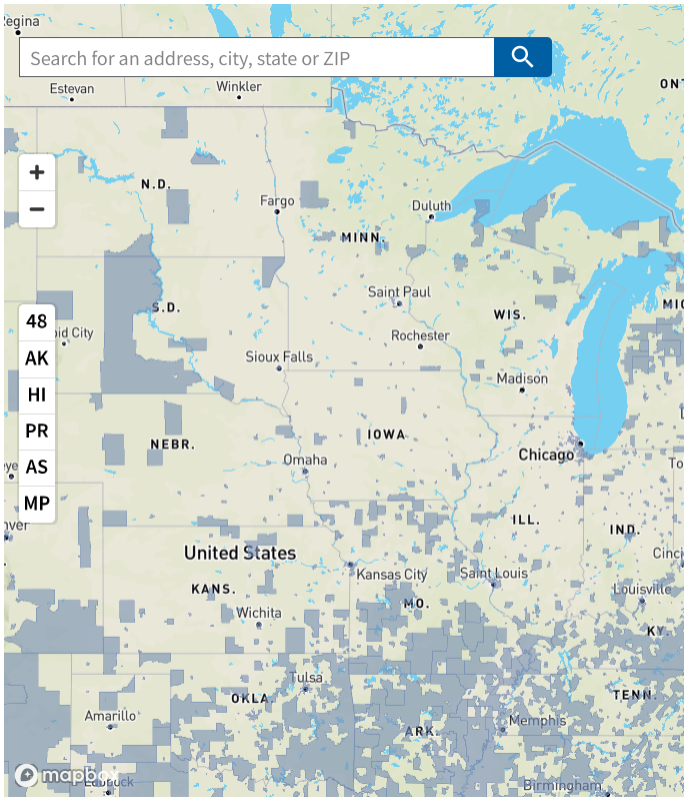
## Federal Grants

### Federal Government Justice40 Initiative

In January 2021, President Biden signed Executive Order 14008 – Tackling the Climate Crisis at Home and Abroad. The executive order established Justice40 as a whole-of-government approach to grant funding. Through this initiative, grants from the Federal government are guided to ensure 40% of benefits flow to disadvantaged communities. For communities with one or more area designated as qualifying for Justice40 consideration are likely to have improved competitiveness for grant awards.

Municipalities can use the Climate and Economic Justice Screening Tool, created by the White House Council on Environmental Quality, to see portions of their communities that may be identified as disadvantaged. The map uses publicly-available, nationally-consistent datasets to identify disadvantaged communities. For a detailed description of the methodology used go here:
https://screeningtool.geoplatform.gov/en/methodology#4.22/42.84/-88.95

Access the Justice40 Screening Tool here:
https://screeningtool.geoplatform.gov/en/

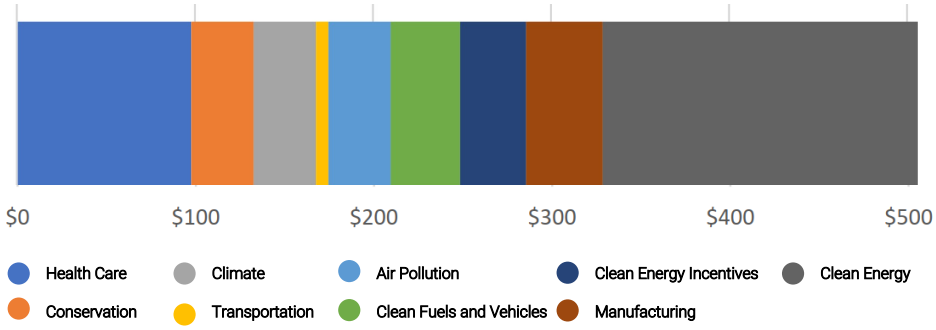


# Appendix A Potential Strategies for Funding City of Maplewood Programs

## Federal Grants

The Inflation Reduction Act (IRA) was signed into law by President Joe Biden on August 16, 2022. The law, as passed, authorizes $391 billion in spending on energy and climate change. The funding priorities include investment in climate change mitigation and adaptation, incentives for renewable energy installations and manufacturing, electric vehicle infrastructure, and home energy efficiency.

The law represents the largest investment into addressing climate change in United States history. According to several independent analyses, the law is projected to reduce 2030 U.S. greenhouse gas emissions to 40% below 2005 levels. The chart below shows the breakdown of the IRA spending budget (in $ billions):




### IRA Funding For Municipalities

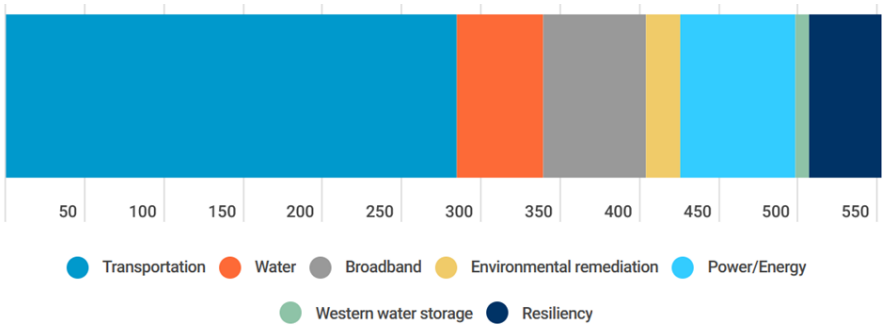
IRA funds that will support municipal sustainability and climate action includes:

- $27 billion to fund the Greenhouse Gas Reduction Fund, a national green bank to fund GHG reduction projects and to help municipalities start their own green banks.
- $250 million in grants and technical assistance to support municipalities in implementing their sustainable procurement initiatives.
- $5 billion for greenhouse gas air pollution reduction planning and implementation grants.
- $4.75 billion in competitive implementation grants awarded to states, air pollution control agencies, municipalities, or tribes to reduce overall air pollution .
- $3 billion in environmental and climate justice block grants for community-led air pollution remediation initiatives such as health risks from urban heat islands, extreme heat, wood heating system emissions, wildfire, and other climate resiliency and adaptation initiatives.
- $330 million in grants to assist states and municipalities to support the adoption of latest building energy codes.
- $1.8 billion in grants for construction projects to improve walkability, safety, and affordable transportation access.
- $1 billion in rural energy grants supporting infrastructure and providing technical assistance.
- $500 million in biofuel infrastructure and agriculture product market expansion grants.

# Appendix A Potential Strategies for Funding City of Maplewood Programs

## Federal Grants

The Infrastructure Investment and Jobs Act (IIJA), aka Bipartisan Infrastructure Law (BIL), was signed into law by President Biden on November 15, 2021. The law authorizes $1.2 trillion for transportation and infrastructure spending with $550 billion of that figure going toward "new" investments and programs. Funding from the IIJA is expansive in its reach, addressing energy and power infrastructure, all modes of transportation, water, environmental remediation, public lands, broadband and resilience. Some of the new programs funded by the bill could provide the resources needed to address a variety of infrastructure needs at the local level. The chart below shows the breakdown of the $550 billion budgeted in the IIJA for new investments (in $billions):




## Current Federal Grant Programs Supporting Municipal Action (partial list)

### US Department of Energy

#### Energy Efficiency & Conservation Block Grant Program

Cities, towns and villages with a population of at least 35,000 are eligible to apply to and receive grants directly from the U.S. Department of Energy (DOE). Funding is also available from this grant through state managed programs. Municipal efforts this grant can support include:

- Developing and implementing an energy efficiency and conservation strategy
- Conducting residential and commercial building energy audits
- Establishing financial incentive programs for energy efficiency improvements
- Developing and implementing energy efficiency and conservation programs for buildings and facilities
- Developing and implementing programs to conserve energy used in transportation (e.g. flex time for employees; satellite work centers; zoning guidelines or requirements that promote energy efficient development; infrastructure, such as bike lanes, pathways and pedestrian walkways; and synchronized of traffic signals)
- Developing and implementing building codes and inspection services to promote building energy efficiency
- Developing, implementing and installing on or in any government building onsite renewable energy technology that generates electricity from renewable resources, such as solar and wind energy, fuel cells and biomass

### US Department of Transportation

#### Raise Discretionary Grants

The Rebuilding American Infrastructure with Sustainability and Equity, or RAISE Discretionary Grant program, is one of several ways communities can secure funding for projects under the Bipartisan Infrastructure Law's competitive grant programs. The grant is available for planning and capital investments that support roads, bridges, transit, rail, ports, or intermodal transportation.

#### Strengthening Mobility and Revolutionizing Transportation (SMART) grant program

The SMART Grants Program funds purpose-driven innovation to build data and technology capacity and expertise for state, local, and tribal governments. The focus of the grant is to support demonstration projects focused on advanced smart community technologies and systems in order to improve transportation efficiency and safety. Eligible projects fall into a broad range of categories including Safety and reliability; equity and access; climate and resiliency; and technology integration. The grant has $100 million appropriated annually for fiscal years (FY) 2022-2026.

example grant uses:
https://www.transportation.gov/grants/smart/smart-illustrative-use-cases

# Appendix A Potential Strategies for Funding City of Maplewood Programs

## Federal Grants

### Surface Transportation Block Grant

The Surface Transportation Block Grant program (STBG) provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals.

### Charging and Refueling Infrastructure Grant Program

The IIJA provides $2.5 billion for competitive grants. The U.S. Department of Transportation will administer the competitive grants for installation of electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure, or natural gas fueling infrastructure that is directly related to the charging or fueling of a vehicle. The competitive grants are divided into two categories, Community Charging and Corridor Charging. Eligible entities include state or political subdivision of a state, metropolitan planning organization, local government, special purpose district or public authority with a transportation function, Indian tribe, and territory. Grants available under this program include:

**Community Grants** providing $1.25 billion to install electric vehicle charging and alternative fuel in locations on public roads, schools, parks, and in publicly accessible parking facilities. These grants will prioritize rural areas, low-and moderate-income neighborhoods, and communities with low ratios of private parking, or high ratios of multiunit dwellings.

### Corridor Charging

Corridor Grants providing $1.25 billion to deploy publicly available electric vehicle charging and hydrogen/propane/natural gas fueling infrastructure along designated alternative fuel corridors.

In the City of Maplewood, I-94 and I-35e are designated corridors.

### Alternative Fuel Corridors

To be eligible for funding, EV infrastructure under the NEVI Program and the competitive Corridor Charging Grant Program must be located on a designated Alternative Fuel Corridor.

In the City of Maplewood, I-94 and I-35e are designated corridors.

# Appendix B Maplewood Clean Energy for All Manufactured Home Park Energy Outreach Report Updated 1-17-23

**Maplewood Clean Energy for All Manufactured Home Park Energy Outreach Report**
**Updated 1-17-23**

**Town and Country Manufactured Home Park (122 Homes)**

2557 Maplewood Drive
Maplewood, MN 55109

- Events
  - Community Room Open House Thursday, August 11, 3 to 6 p.m. (free ice cream)
    - Residents notified of open house and energy resources via the neighborhood's Facebook post
    - Park offered ice cream and tours of their new facility
    - Energy partners offered signups for free Home Energy Squad visits and utility bill clinics
  - On-Site Utility Bill Clinic Tuesday, September 20, 4 to 7 p.m.
    - Residents notified of utility bill clinic via the open house and a mailing.
  - Results
    - Home Energy Squad Sign Ups:
      - Via Telephone: 1
      - Via On-Site: 14
    - Home Energy Squad Completed Visits: 3
    - Utility Bill Clinic Sign Ups:
      - Via Virtual: 0
      - Via On-Site: 4
    - Utility Bill Clinic Completed Visits:
      - On-Site: 2
      - Virtual: 1

**Beaver Lake Estates (255 Households)**

2425 East Maryland Avenue
Maplewood, MN 55119

- Event
  - Energy Party Wednesday, September 21, 4 to 7 p.m. (free pizza/food)
    - Residents notified of party and energy resources in the neighborhood newsletter and mailing.
    - City offered pizza, Xcel Energy Partners in Energy covered the cost of cookies, and the park covered remaining food/beverages.

- Results
  - Home Energy Squad Sign Ups: 10
    - Via Telephone: 2
    - Via On-Site: 8
  - Home Energy Squad Completed Visits: 7
  - Utility Bill Clinic Sign Ups:
    - Via Virtual: 0
    - Via On-Site: 1
  - Utility Bill Clinic Completed Visits:
    - On-Site: 8
    - Virtual: 1

**Rolling Hills Manufactured Home Park**

1316 Pearson Drive
Maplewood, MN 55119

- Event
  - Energy Party Tuesday, January 10, 2023, 5 to 7 p.m. (free pizza/food)
    - Residents notified of party and energy resources via a postcard mailed to their home.
    - Xcel Energy Partners in Energy covered the cost of pizza, salad, desert, beverages.
  - Results
    - Home Energy Squad Sign Ups: 6
      - Via Telephone: 0
      - Via On-Site: 6
    - Home Energy Squad Completed Visits: Unknown
    - Utility Bill Clinic Sign Ups: 1
      - Via Virtual: 0
      - Via On-Site: 1
    - Utility Bill Clinic Completed Visits:
      - On-Site: 1
      - Virtual: 1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