



Missoula
COUNTY

Building(s) for the Future Summit
Breakout Group: Developer Incentives
January 15, 2020, 12:30 - 3:00pm

Welcome to Building(s) for the Future and the “Developer Incentives” breakout group. Missoula has worked to advance climate mitigation and adaptation efforts in recent years (adoption of the 100% Clean Electricity Resolution, Climate Ready Missoula plan, Zero by Fifty plan, etc). Buildings play a role in each of these efforts as **they comprise 52% of our community’s carbon emissions, according to 2014 data.**¹ They are increasingly important as pressures mount for development to keep pace with community growth, and in order to meet our carbon neutrality and 100% clean electricity goals, we estimate that Missoula must **reduce total building emissions 15% by 2030.**



In 2019, the City of Missoula issued 197 permits for new multifamily developments and 256 single homes were constructed within city limits, and development pressure persists.² Missoula (city and county) can work with developers to create incentive programs that increase adoption of green building practices. These incentives can work in concert with growth policy goals and take into consideration a variety of climate-oriented environmental metrics, such as energy use intensity, embodied carbon of building materials, or water consumption.

Generally speaking, an incentive is offered through the zoning code, allowing developers to build higher or provide less parking (for example) in exchange for meeting a building performance standard, such as LEED Gold (again, for example - these details would be determined at a later date and are only meant to be illustrative.) The purpose of this group is to discuss and begin to evaluate the potential incentives that could increase the number of new, low-carbon buildings in the Missoula area.

¹ Climate Smart Missoula and City of Missoula. [“Missoula Community Greenhouse Gas Emissions Inventory,”](#) March 2017.

² [“Missoula Housing Report”](#) (Missoula, MT: Missoula Organization of Realtors, 2020).

A Note on Performance Standards

A key component of any incentive program will be identifying the higher performance standard that participating projects will need to achieve in order to earn the incentive. LEED has been a popular standard in other localities, as have energy use intensity (EUI) benchmarks. Energy Use Intensity is a measure of the energy used per square foot of a building, typically reported in units of thousands of British thermal units per square foot per year (kBtu/ft²/yr). Incentives would be given to projects that achieve a specified reduction in EUI relative to a baseline defined as a typical building of the same type normalized by climate zone.

Oftentimes, the performance standard and incentive are both tiered, allowing for projects that meet higher standards to gain bigger benefits. For example, a LEED Silver project would receive a smaller benefit than a LEED Platinum project. The desired performance standard should be decided upon through stakeholder engagement, and they can take into account energy use, embodied carbon, and material and water use. Ultimately, the performance standard and incentive will need to be developed in tandem so that the value of the incentive matches the additional cost of achieving the higher standard.

Primary Strategies to Consider

With technical assistance from the American Council for an Energy-Efficient Economy (ACEEE), the National League of Cities, and community members, we have identified several incentives that may be appealing to local developers. This list is not meant to be exhaustive (we hope you will provide additional ideas!), and we provide brief descriptions rather than comprehensive explanations of how such an incentive would be structured. Our hope is that the following will jumpstart the group's conversation and help all participants begin from a place of shared understanding. As you read, consider the pros and cons of each, as well as what you believe Missoula should prioritize pursuing in the next year, 5 years, and 10 years. Possible incentives include:

- Density bonus
- Reduced parking requirements
- Impact and/or permit fees reduced
- Permit process expedited
- Property tax abatement
- TIF funding made available

For an overview of all the strategies being discussed today, including the ones in this background brief, please reference Appendix A.

Density bonus

A density bonus provides the opportunity to build more units per acre in exchange for developers meeting the higher-than-code performance standard. Greater density offers co-

benefits as well, such as reduction of urban sprawl and vehicle miles traveled. Challenges could include neighborhood resistance to larger development projects or tension with other community objectives that may be interested in leveraging density.³ Successful implementation would need to consider the size and type of density bonus to offset the higher costs of green-certified construction and ensure that the value of the incentive matched the cost of achieving the higher performance standard.⁴ Austin, TX and Seattle, WA both offer density bonuses for green building projects.

Reduced Parking Requirements

Minimum parking requirements incur a myriad of direct and indirect environmental detriments, while also increasing the cost of development. By requiring a number of parking spaces attached to both residential and nonresidential developments, cities artificially reduce their density, increase development costs and make their spaces more auto-centric and less pedestrian friendly.⁵ On a per-unit basis, parking requirements can add up to \$50,000 to development costs and could be a viable incentive for green building projects.⁶

This type of incentive can most readily be applied to multifamily dwelling units, which require between 0.75 and 2.0 parking spaces per dwelling units.⁷ Detached single family homes and commercial properties may also be able to be included in such an incentive program. Policy design and training of city zoning officials would represent the sole cost of implementation of such a policy. Co-benefits include an increase in walkability (with its associated environmental and health benefits),⁸ and potential challenges may be citizen demand for ample parking spaces. Flagstaff, AZ and Denver, CO both offer this incentive to green building projects.

Impact and/or Permit Fees Reduced

Impact and permitting fees can be offered as a financial incentive for developers to use green building practices. Missoula requires developers to pay for impact and permit fees for both residential and non-residential development.⁹ This incentive for meeting green building criteria would have low barriers to program development, and it is currently in place in San Diego, CA and St. Petersburg, FL.

³ The City of Missoula's *A Place to Call Home* report identifies density bonuses as a potential strategy.

⁴ ["Green Building Incentive Trends."](#) American Institute of Architects, n.d.

⁵ Michael Lewyn and Kristoffer Jackson. ["How Often Do Cities Mandate Smart Growth or Green Building?"](#) Arlington, VA: George Mason University, October 2014.

⁶ Hannah Hoyt and Jenny Schuetz. ["Parking Requirements and Foundations Are Driving up the Cost of Multifamily Housing."](#) Brookings Institute, June 2, 2020.

⁷ [Title 20. Table 20.60—1 Off-Street Parking Schedule](#) (n.d.).

⁸ ["Encouraging Green Building Practices."](#) American Planning Association - Washington Chapter, November 2015.

⁹ City of Missoula, MT. ["Impact Fees,"](#) n.d.

Permit Process Expedited

Review and permitting processes can often be lengthy, in some municipalities these processes can take up to 18 months. Reducing the duration of the review and permitting process, in exchange for committing to specific green building standards, can result in significant cost savings for the developer. This allows a municipality to offer a significant incentive with little or no financial investment, since it only requires a shift in permitting priority.¹⁰ San Diego, CA currently has a successful expedited permit process program to encourage green building.

Property Tax Abatement

Missoula could offer developers a period of tax abatement on properties that meet green building criteria. These abatements have the benefit of being flexible on the time period allotted by the city (taxes could be abated for 3, 5, 10 years, etc. depending on program design). This type of green building development incentive is becoming increasingly popular with other municipalities - Cincinnati, OH, Cleveland, OH, Baltimore, MD, and Virginia Beach, VA have successful property tax abatement programs.¹¹

TIF Funding Availability

Tax Increment Financing (TIF) is a method of financing a project or development in a designated geographic area based on the anticipated increase in property tax that will be generated by the project.¹² TIF funding is used to leverage public investment into additional private capital, and could be made available in “zones” to projects that reach certain energy use or emissions criteria. A local government could issue municipal or private bonds to raise capital for a large-scale project that meets these criteria, and use the TIF revenue to service bond payments. Alternatively, a local government could use TIF revenue incrementally—as the revenue is collected—to pay for smaller-scale green infrastructure projects. TIF programs and districts are allowed for certain uses in Montana, and the state identifies several types of projects for infrastructure development, like bike racks and tree planting, that TIF funding may be used for when procured.¹³

Foundational Strategies

Achieving green building goals will be more feasible with acceleration of one or more of the foundational strategies below. As you evaluate the incentives above, consider these

¹⁰ [“Financing and Encouraging Green Building in Your Community.”](#) United States Green Building Council, n.d.

¹¹ Stuart Kaplow. [“Residential Green Building Increasingly Incentivized with Property Tax Credits.”](#) Green Building Law Update, April 19, 2015.

John O’Neill and Stefen Samarripas, “Missoula Residential Climate Action Strategies,” October 2, 2020.

¹² Georgetown Climate Center. [“How to Pay for Green Infrastructure: Funding and Financing,”](#) n.d.

¹³ Montana Transportation and Land Use. [“Financing Districts - Tax Increment Financing Districts,”](#) n.d.

foundational strategies and what they would need to look like or include in order for Missoula to be successful.

Expand available financing options (can take a variety of forms)

- **Private financial institutions** can offer (or expand their offerings) of financial products for energy efficiency, renewable energy, and electrification efforts.
- **Utilities** can offer on-bill financing or on-bill repayment. In on-bill financing, the utility incurs the cost of the upgrade and it is repaid in monthly installments on the bill. On-bill repayment is the same except that a third-party provides the up-front capital for the improvement.
- **The City of Missoula**, as a charter city, can establish PACE financing where a clean energy improvement is paid for via property taxes. The repayment is attached to the property rather than the individual. **Missoula County** may also be able to establish a similar program tied to property taxes.

1-stop energy shop for residential and commercial properties

Technical assistance will be central to this work. A 1-stop energy shop would centralize incentives and technical assistance to make it as easy as possible to implement energy efficiency measures. 1-stop shops are typically pursued in partnership with the local utility, though Missoula may be able to create a 1-stop shop independently with appropriate funding.

Workforce development

The policies, if adopted, will likely increase demand for a skilled workforce of energy service companies and contractors who can perform quality building retrofits. Missoula will need to pursue partnerships between local energy efficiency businesses, Missoula College, and other relevant stakeholders to develop a robust clean energy workforce, as well as provide training opportunities for those already in the industry. Workforce development programs can and should diversify the clean energy workforce and support the hiring and training of those typically not employed in these jobs.

Expand access to low carbon and high efficiency materials

Building materials are constantly evolving. As low-carbon, high efficiency materials (cross laminated timber, high efficiency windows, etc.) become more cost effective, it will be easier to incorporate them into retrofit projects. Additionally, this is a potential opportunity for supporting local entrepreneurs that focus on the manufacturing and distribution of these materials.

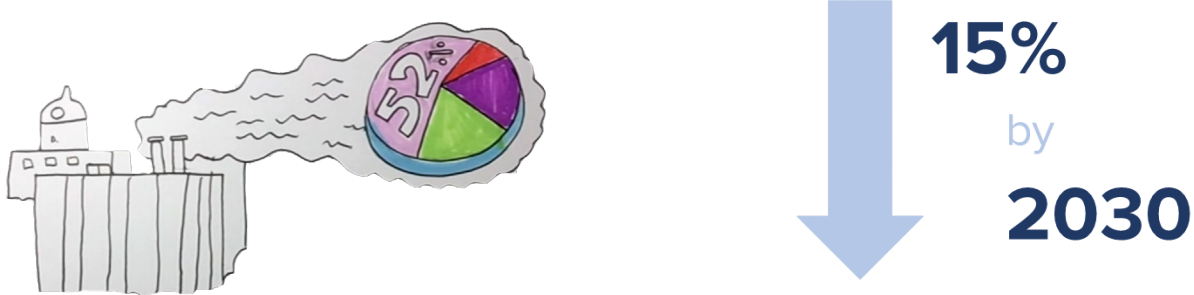
This work was funded by the National League of Cities' Leadership in Community Resilience grant. For more information, visit www.missoulaclimate.org/buildings.



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Building(s) for the Future Summit
Breakout Group: Large Residential and Commercial Buildings
January 15, 2020, 12:30 - 3:00pm

Welcome to Building(s) for the Future and the “Large Residential and Commercial Buildings” breakout group. Missoula has worked to advance climate mitigation and adaptation efforts in recent years (adoption of the 100% Clean Electricity Resolution, Climate Ready Missoula plan, Zero by Fifty plan, etc). Buildings play a role in each of these efforts as **they comprise 52% of our community’s carbon emissions, according to 2014 data.**¹ They are increasingly important as pressures mount for development to keep pace with community growth, and in order to meet our carbon neutrality and 100% clean electricity goals, we estimate that Missoula must **reduce total building emissions 15% by 2030.**



To “build for the future,” we need to consider ways to decarbonize the design, construction, operation, and deconstruction of our building stock. Over the past several months, we’ve done extensive research and received technical support from the American Council for an Energy-Efficient Economy (ACEEE) and National League of Cities on building policy and program precedents and best practices to inform our conversation. Panelists from across the country will share inspiring and innovative approaches, and our breakout group will build on their presentations to chart the path forward for how Missoula can build a more equitable, low-carbon future by focusing on ways to reduce the energy use intensity of large residential and commercial buildings.

A Note on Size: While this group is called “large” residential and commercial buildings, we haven’t determined the size threshold that determines whether a building is large or not.

Primary Strategies to Consider

With technical assistance from the American Council for an Energy-Efficient Economy, the National League of Cities, and community members, we have identified several strategies

¹ Climate Smart Missoula and City of Missoula. “[Missoula Community Greenhouse Gas Emissions Inventory](#),” March 2017.

that Missoula should consider implementing. This list is not meant to be exhaustive (we hope you will provide additional ideas!), and they are brief descriptions rather than comprehensive explanations of how such a program or policy would be designed or implemented. Where possible, we have included an estimate of the \$/MT of CO₂ reduced to help evaluate their impact and cost. Our hope is that the following will jumpstart the group's conversation and help all participants begin from a place of shared understanding. As you read, consider the pros and cons of each, as well as what you believe Missoula should prioritize pursuing in the next year, 5 years, and 10 years. Strategies include:

- Energy use disclosure ordinance (benchmarking and transparency)
- Building energy (or emissions) performance standards (BEPS)
- High performance standards for new buildings via zoning
- Mandatory retro-commissioning and/or tune-ups of commercial and/or multifamily buildings
- Voluntary stretch code
- Energy savings competition
- Energy efficiency “bulk buy”

For an overview of all the strategies being discussed today, including the ones in this background brief, please reference Appendix A.

Energy use disclosure ordinance (benchmarking and transparency)

An energy use disclosure ordinance, or benchmarking and transparency policies, require commercial and/or residential building owners to disclose their building's energy consumption (typically via Energy Star Portfolio Manager) on an annual basis to local government. The data is then compared to buildings of a similar type and size and then made publicly available. Over the past decade, disclosure ordinances have emerged across the United States as an effective tool to boost energy efficiency in buildings and are seen as a critical first step for data-driven decision making and the creation of stronger market signals.² They do not mandate energy efficiency or a certain building performance standard.³ For more on mandating a performance standard, see “Building energy (or emissions) performance standard” below.

Energy use disclosure ordinances are typically implemented via the passage of a local ordinance and target buildings by size and type. The size cutoff ranges across jurisdictions, though most of Missoula's peer communities apply benchmarking to buildings 25,000 sf and larger. The first step of the ordinance process is a building inventory to understand the size and use of buildings within the jurisdiction, which will help determine the appropriate building size that the program will address. For reference, the Missoula County Courthouse and Annex is 85,000 sf. Disclosure ordinances are often phased over time, and it's possible to phase them so

² Natalie Mims et al., “[Evaluation of U.S. Building Energy Benchmarking and Transparency Programs: Attributes, Impacts, and Best Practices](#),” (Berkeley, CA: Lawrence Berkeley National Library, April 2017).

³ Ibid.

smaller buildings are required to disclose later in the process, increasing the total number of buildings that fall under the policy.

~\$17 - \$46/ MT of CO₂ reduced

Disclosure ordinances are most effective when paired with an additional policy, such as mandatory retro-commissioning or building energy performance standards (see below).

Building energy (or emissions) performance standards (BEPS)

A building energy (or emissions) performance standard sets energy or emissions standards that larger multifamily and commercial buildings must meet by a certain date. In addition to a long term policy goal, such as 80% energy use intensity reduction by 2035, BEPS include interim goals that must be met along the way (e.g., 38 EUI by 2025, 34 EUI by 2030, 31 by 2035, etc.).⁴ Rather than increase education about a building’s energy (via disclosure) or encourage energy efficiency (via an engagement campaign), BEPS *require* a standard to be met.

BEPS are implemented via local ordinance, applying to buildings of certain sizes and types, and they phase in over time, beginning with extensive stakeholder engagement and benchmarking to define appropriate targets. These preliminary steps ensure a performance standard is not unreasonable or unrealistic. Program design should also be paired with resources such as financial incentives, financing, and technical assistance, which will be especially important for affordable housing projects that are required to comply.

Greenhouse gas reductions are a direct reflection of the specific performance standard, so the exact GHG potential for a BEPS in Missoula cannot be determined at this time. However, ACEEE projects that an average BEPS applies to 2/3 of buildings and that 30% energy savings are possible in participating buildings that must comply with these standards.⁵

A note on legality: The legal relationship between state building codes and a building energy performance standard is murky - while local governments are not explicitly prohibited from establishing a BEPS, Governor Bullock’s Climate Solutions Plan identifies BEPS in mitigation action 2K: *the State, through legislation, should explicitly allow Montana local governments to adopt building performance standards and Montana cities should adopt such standards tailored for their individual circumstances.*⁶ This strategy suggests it may be legally contested if Missoula pursued it prior to the state legislature taking action to explicitly allow BEPS.

⁴ Kimberly Cheslak, [“Implementing Building Performance Standards: Consistency Is Key,”](#) *New Buildings Institute Codes and Policy*, September 29, 2020.

⁵ Steven Nadel and Adam Hinge, [“Mandatory Building Performance Standards: A Key Policy for Achieving Climate Goals”](#) (Washington D.C.: American Council for an Energy-Efficient Economy, June 2020).

⁶ State of Montana. (2020). [Montana Climate Solutions Plan](#). Helena, MT.

~\$8/MT of CO₂ reduced if 2/3 buildings participate and 30% reduction in each building

High performance standards for new buildings via zoning

While a BEPS applies to existing buildings, there is also an opportunity to mandate higher performance standards for new buildings via zoning. The City or County could mandate buildings over a certain size adhere to higher performance standards (such as LEED certification or Energy Use Intensity) through amending the zoning code. Currently, the City of Cambridge, MA and Boston, MA mandate efficiency requirements for buildings over 25,000 sf and 50,000 sf, respectively.⁷

Mandatory retro-commissioning and/or tune-ups of commercial and/or multifamily buildings

Mandatory retro-commissioning (RCx) requires large buildings to perform a prescribed set of operations and maintenance improvements designed to reduce building energy use every 5 years. Rather than require a certain standard be met (like BEPS), retro-commissioning requires *a set of actions be taken*. RCx programs are also implemented via local ordinance, applying to buildings of certain sizes and types, and they too phase in over time, beginning with union and trade group engagement and cost studies of retro-commissioning in publicly owned buildings. These steps help ensure that the required actions are not too costly to property owners. Program design should also be paired with a suite of financial incentives and technical support. Studies estimate that mandatory retro-commissioning can achieve whole-building energy savings of ~15%.⁸

~\$27/MT of CO₂ reduced if 2/3 buildings participate and 15% reduction in each building

Voluntary stretch code⁹

A stretch code is a code or alternative compliance path that is more aggressive than base code, resulting in buildings that achieve higher energy savings.¹⁰ The state of Montana allows localities to adopt voluntary stretch energy building codes, but they cannot require projects to adhere to this higher performance code.¹¹ While it is not legal to require adherence to a stretch code at this time, the Montana Climate Solutions Plan identifies this as a key mitigation strategy.

⁷Cambridge Community Development Program. "[Article 22 Green Building Requirements & Dashboard](#)," n.d. and [Green Buildings](#), Pub. L. No. Article 37 (n.d.).

⁸ Dan York et al., "[Frontiers of Energy Efficiency: Next Generation Programs Reach for High Energy Savings](#)" (Washington, D.C.: American Council for an Energy-Efficient Economy, January 2013).

⁹ In 2018, the Missoula City Council passed [Resolution 8250](#) to instruct staff to investigate the feasibility of a stretch code and if practical, develop a voluntary, incentive based stretch code for Missoula.

¹⁰ "[Stretch Codes](#)," *New Buildings Institute*, n.d..

¹¹ In some states, such as Massachusetts, the state allows local jurisdictions to vote on whether or not they would like to require the stretch code instead of the base code. For more information, see: State of

Regardless of whether they are mandatory or voluntary, stretch codes provide an opportunity to train the building and development communities in advanced practices before the underlying energy code is improved and help accelerate market acceptance and adoption of more stringent energy efficiency codes in the future.¹² Depending on the stretch code itself, buildings that adhere to the stretch code could perform 20% - 40% better than the base code. Stretch codes are most effective when paired with incentives.

Energy savings competition

An energy savings competition could encourage local businesses, homeowners, and renters to reduce their energy consumption. Program design of such competitions varies greatly, and Missoula would need to engage all relevant stakeholders when identifying the details of a Missoula based competition. Generally speaking, competitions measure the change in participants' energy use from before the competition to during the competition and provide prizes to winners, utilizing online software to engage participants and track results via a public leaderboard or dashboard.¹³ Missoula would not be the first Montana community to design an energy savings competition: Bozeman, MT hosted the "Energy Smackdown" competition in 2015.¹⁴

In a review of energy savings competitions, they were found to achieve, on average, a 5% reduction in electricity usage.¹⁵ If paired with other incentives that could make whole home retrofits possible, energy savings could be much more substantial. Rutland NeighborWorks in Vermont spearheaded a program that allowed 5% of residences to undergo a comprehensive retrofit, which led to 30% savings in each household.¹⁶ For an energy savings competition to be most effective, it needs to be paired with other resources, such as robust customer service: a recent study by Vine and Jones found that competition alone was not sufficient to achieve energy usage reductions.¹⁷

Energy efficiency "bulk buy"

A bulk buy program is when a local government makes a bulk purchase of high efficiency products (heat pumps, LED light bulbs, etc.) and then provides them to citizens at a below market cost to fill gaps in existing rebate and incentive programs.¹⁸ This could reduce the

Massachusetts, "Building Energy Code: Summary of State Building Energy Codes Including the Stretch Code."

¹² "[Stretch Codes](#)," *New Buildings Institute*, n.d..

¹³ Ariel Dreihobl, Maxine Chikumbo, and Kate Tanabe. "[Reducing Energy Waste through Municipally Led Behavior Change Programs](#)." Washington, D. C.: American Council for an Energy-Efficient Economy, November 2018.

¹⁴ Montana Right Now. "[City Launches Bozeman Energy Smackdown](#)," May 29, 2015.

¹⁵ Edward Vine and Christopher Jones, "[A Review of Energy Reduction Competitions: What Have We Learned?](#)" (Berkeley, CA: California Institute for Energy and Environment, May 2015), p. v.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ "[A2Zero: Ann Arbor's Living Carbon Neutrality Plan](#)," April 2020.

upfront cost of high efficiency heating and lighting systems for property owners interested in improving the energy efficiency and property value of their assets. Such a purchase could be made in collaboration with other Montana cities to drive down cost and amplify benefits.¹⁹ Ann Arbor, MI recently identified it as a top strategy to meeting their city’s carbon neutrality goal, with an estimated cost of \$3.92/MT of CO₂ reduced and strong health, economic, and equity co-benefits.²⁰

~\$4/ MT of CO₂ reduced²¹

Foundational Strategies to Consider

Each of the primary strategies are more feasible when paired with one or more of the foundational strategies below. As you evaluate the primary strategies above, consider these foundational strategies and what they would need to look like or include in order for Missoula to be successful. Foundational strategies include:

- Expand available financing options (variety of forms)
- 1-stop energy shop for residential and commercial properties
- Workforce development
- Expand access to low carbon and high efficiency materials

Expand available financing options (can take a variety of forms)

- **Private financial institutions** can offer (or expand their offerings) of financial products for energy efficiency, renewable energy, and electrification efforts.
- **Utilities** can offer on-bill financing or on-bill repayment. In on-bill financing, the utility incurs the cost of the upgrade and it is repaid in monthly installments on the bill. On-bill repayment is the same except that a third-party provides the up-front capital for the improvement.
- **The City of Missoula**, as a charter city, can establish PACE financing where a clean energy improvement is paid for via property taxes. The repayment is attached to the property rather than the individual. **Missoula County** may also be able to establish a similar program tied to property taxes.

1-stop energy shop for residential and commercial properties

Technical assistance will be central to high compliance rates for any of the above policies. A 1-stop energy shop would centralize incentives and technical assistance to make it as easy as

¹⁹ Bozeman has identified “Increase energy efficiency in existing buildings” as a top strategy in their recent climate plan. For more information, see: City of Bozeman, MT, “[Bozeman Climate Plan](#)” (City of Bozeman, MT, 2020).

²⁰ “[A2Zero: Ann Arbor’s Living Carbon Neutrality Plan](#),” April 2020.

²¹ Ibid.

possible to implement energy efficiency measures. The 1-stop shop could serve both large building owners and also be a resource to households and renters as it evolved. 1-stop shops are typically pursued in partnership with the local utility, though Missoula may be able to create a 1-stop shop independently with appropriate funding.

Workforce development

The policies and programs, if pursued, will likely increase demand for a skilled workforce of energy service companies and contractors who can perform quality building retrofits, retro-commissioning services, and/or tune-ups. Missoula will need to pursue partnerships between local energy efficiency businesses, Missoula College, and other relevant stakeholders to develop a robust clean energy workforce. Workforce development programs can and should diversify the clean energy workforce and support the hiring and training of those typically not employed in these jobs.

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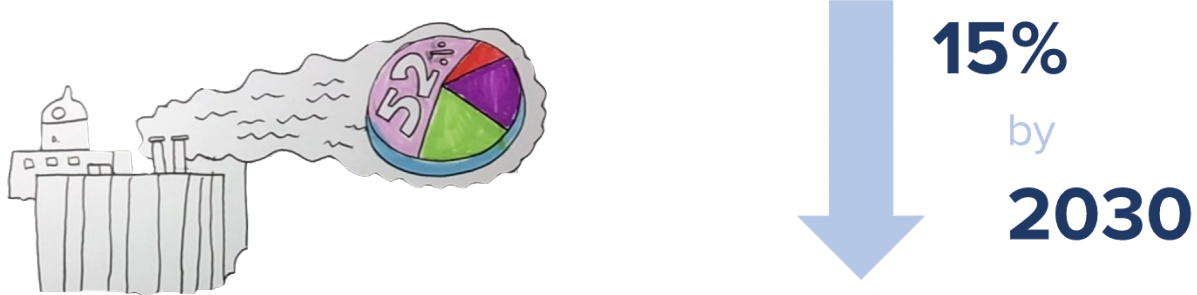
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In interviews and conversations leading up to the summit, we learned that there was an interest in identifying and showcasing exemplary projects in Missoula. These early conversations suggested finding a unique, Missoula way to promote projects, rather than relying on LEED or other international and national certifications, which some projects might not be interested in pursuing. This breakout group will discuss ways in which we can identify projects that went beyond what was required, celebrate them, and spark a community conversation and increase collective knowledge so more projects will feel inspired and encouraged to try similar techniques or approaches. There is not a one-size fits all answer when “building for the future,”

¹ Climate Smart Missoula and City of Missoula. [“Missoula Community Greenhouse Gas Emissions Inventory,”](#) March 2017.

but we can increase our awareness of what's possible and spur creative solutions through community engagement and storytelling.

Primary Strategies to Consider

With technical assistance from the American Council for an Energy-Efficient Economy, the National League of Cities, and community members, we have identified several strategies that Missoula should consider implementing to encourage local innovation. This list is not meant to be exhaustive (we hope you will provide additional ideas!), and they are brief descriptions rather than comprehensive explanations of how such a program or policy would be designed or implemented. Our hope is that the following will jumpstart the group's conversation and help all participants begin from a place of shared understanding. As you read, consider the pros and cons of each, as well as what you believe Missoula should prioritize pursuing in the next year, 5 years, and 10 years. Strategies include:

- Eco-District
- Flagship projects
- Energy savings competition

For an overview of all the strategies being discussed today, including the ones in this background brief, please reference Appendix A.

Eco-District

Eco-Districts are district-level projects that bring together an area or neighborhood's stakeholders to design and implement ambitious projects with outcomes in equity, resilience, and climate mitigation. There are currently 11 certified Eco-Districts (Atlanta, Austin, Boston, Denver, Pittsburgh, Portland, Rochester, Santa Monica, Seattle, and Toronto), and they have been shown to lead market transformation by showcasing innovative development projects. The Eco-District certification provides a unique branding opportunity that would earn recognition across the county. Project level details would be determined by involved stakeholders; if Missoula were to pursue establishing an Eco-District, it would first need to identify an area where substantial new development is occurring and gauge the interest of local property owners. The 2019 Downtown Missoula Master Plan identified establishing an Eco-District as a strategy to consider.²

Flagship projects

In contrast to establishing an Eco-District, flagship projects could be built city and county-wide. Flagship projects may represent a range of "going beyond what's expected," such as including a deconstruction plan, going all-electric, reducing embodied carbon, or lowering energy use intensity from a business as usual building. Ideally, these projects would coincide with buildings

² "[Downtown Missoula Master Plan](#)." Missoula, MT: City of Missoula, November 4, 2019.

that are already high profile in Missoula, such as the renovation of the old public library or the federal building. A recognition process would be critical to supporting flagship projects and could be recognized through a variety of methods, such as an online “story map”, recognition placards, or a building tour (online or in person).³ The marketing campaign can serve multiple purposes, including community education, virtue signaling that this is a priority for Missoula, and recognition of project partners.

Energy savings competition

An energy savings competition could encourage local businesses, homeowners, and renters to reduce their energy consumption. Program design of such competitions varies greatly, and Missoula would need to engage all relevant stakeholders when identifying the details of a Missoula based competition. Generally speaking, competitions measure the change in participants’ energy use from before the competition to during the competition and provide prizes to winners, utilizing online software to engage participants and track results via a public leaderboard or dashboard.⁴ Missoula would not be the first Montana community to design an energy savings competition: Bozeman, MT hosted the “Energy Smackdown” competition in 2015.⁵

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Foundational Strategies to Consider

Each of the primary strategies are more feasible when paired with one or more of the foundational strategies below. As you evaluate the primary strategies above, consider these foundational strategies and what they would need to look like or include in order for Missoula to be successful. Foundational strategies include:

- Expand available financing options (variety of forms)

³ For an example of an online story map, see [Climate Smart Missoula’s Energy Stories](#).

⁴ Ariel Drehobl, Maxine Chikumbo, and Kate Tanabe. “[Reducing Energy Waste through Municipally Led Behavior Change Programs](#).” Washington, D. C.: American Council for an Energy-Efficient Economy, November 2018.

⁵ Montana Right Now. “[City Launches Bozeman Energy Smackdown](#),” May 29, 2015.

⁶ Edward Vine and Christopher Jones, “[A Review of Energy Reduction Competitions: What Have We Learned?](#)” (Berkeley, CA: California Institute for Energy and Environment, May 2015), p. v.

⁷ Ibid.

⁸ Ibid.

- 1-stop energy shop for residential and commercial properties
- Workforce development
- Expand access to low carbon and high efficiency materials

Expand available financing options (can take a variety of forms)

- **Private financial institutions** can offer (or expand their offerings) of financial products for energy efficiency, renewable energy, and electrification efforts.
- **Utilities** can offer on-bill financing or on-bill repayment. In on-bill financing, the utility incurs the cost of the upgrade and it is repaid in monthly installments on the bill. On-bill repayment is the same except that a third-party provides the up-front capital for the improvement.
- **The City of Missoula**, as a charter city, can establish PACE financing where a clean energy improvement is paid for via property taxes. The repayment is attached to the property rather than the individual. **Missoula County** may also be able to establish a similar program tied to property taxes.

1-stop energy shop for residential and commercial properties

Technical assistance will be central to this work. A 1-stop energy shop would centralize incentives and technical assistance to make it as easy as possible to implement energy efficiency measures, and it could also serve as a clearinghouse for lessons learned from flagship projects. 1-stop shops are typically pursued in partnership with the local utility, though Missoula may be able to create a 1-stop shop independently with appropriate funding.

Workforce development

Low carbon subdivisions and new development will likely increase demand for a skilled workforce of energy service companies and contractors who can perform high-quality building audits and retrofits. Missoula will need to pursue partnerships between local energy efficiency businesses, Missoula College, and other relevant stakeholders to develop a robust clean energy workforce, as well as provide training opportunities for those already in the industry. Workforce development programs can and should diversify the clean energy workforce and support the hiring and training of those typically not employed in these jobs.

Expand access to low carbon and high efficiency materials

Building materials are constantly evolving. Flagship projects could be key to promoting new materials and increasing community knowledge of them. This is also an opportunity for supporting local entrepreneurs that focus on the manufacturing and distribution of these materials.

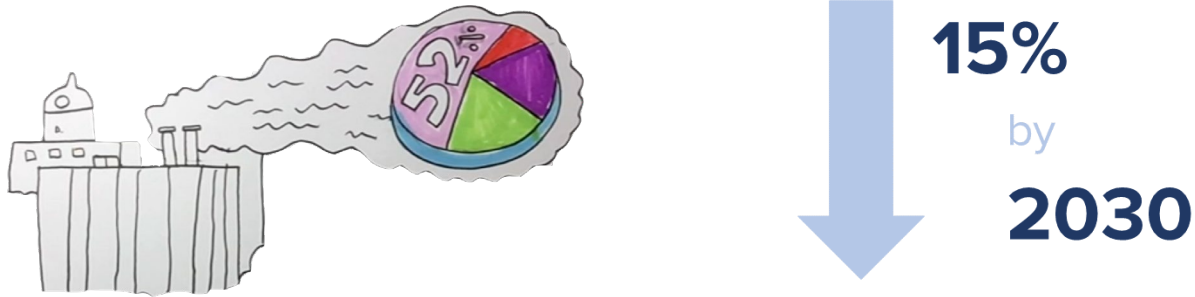
This work was funded by the National League of Cities' Leadership in Community Resilience grant. For more information, visit www.missoulaclimate.org/buildings.



Missoula
COUNTY

Building(s) for the Future Summit
Breakout Group: Low Carbon Subdivisions and New Development
January 15, 2020, 12:30 - 3:00pm

Welcome to Building(s) for the Future and the “Low Carbon Subdivisions and New Development” breakout group. Missoula has worked to advance climate mitigation and adaptation efforts in recent years (adoption of the 100% Clean Electricity Resolution, Climate Ready Missoula plan, Zero by Fifty plan, etc). Buildings play a role in each of these efforts as **they comprise 52% of our community’s carbon emissions, according to 2014 data.**¹ They are increasingly important as pressures mount for development to keep pace with community growth, and in order to meet our carbon neutrality and 100% clean electricity goals, we estimate that Missoula must **reduce total building emissions 15% by 2030.**



To “build for the future,” we need to consider ways to decarbonize the design, construction, operation, and deconstruction of our building stock. Over the past several months, we’ve done extensive research and received technical support from the American Council for an Energy-Efficient Economy (ACEEE) and National League of Cities on building policy and program precedents and best practices to inform our conversation. Panelists from across the country will share inspiring and innovative approaches, and our breakout group will build on their presentations to chart the path forward for how Missoula can build a more equitable, low-carbon future.

There are many components to low carbon subdivisions and new development. Land use, transportation, and stormwater (to name just a few) are all important factors in low carbon subdivisions and new development. However, given today’s time limitations, this group will focus on the physical buildings that are designed and built in subdivisions and new development projects.² Many of these buildings fall outside of the scope of the policy levers that other groups will cover today. These buildings are built to code, yet we know this often falls short in key

¹ Climate Smart Missoula and City of Missoula. [“Missoula Community Greenhouse Gas Emissions Inventory,”](#) March 2017.

² Please note that our community is simultaneously engaged in different and extensive conversations about land use and transportation.

ways.³ How can we push beyond the status quo so that we're building for the future, with all-electric, solar ready, "pretty good" houses?

Below are topics to jumpstart the conversation, as well as some strategies to consider, to increase the number of low carbon subdivisions and new developments in Missoula.

Affordability and Energy Case Study: Whisper Valley

During the event, we will hear from the Whisper Valley development team, who built a net zero ready housing development in Austin, Texas. Whisper Valley is an environmentally-friendly, 2,000-acre master-planned development committed to sustainability, affordability and cutting-edge technology. Homes are zero-energy capable and at an affordable price point: a 3 bed, 2 bath, ~1300sf home starts in the mid-\$200,000s. As we consider the implementation of the Sxwtpqyen plan (formerly the Mullan Area Master Plan) or other area developments, how do we build homes there that are similarly going beyond code while maintaining affordability?

"Pretty Good House"

We will also hear from Mike Maines from the "Pretty Good House" group in southern Maine, which provides a framework and guidelines to focus on the core issues that should be front and center when designing and building a high quality home or renovation. The builders created this framework after frustrating experiences with building to the status quo and building to rating systems (e.g., LEED), the latter of which had them jump through hoops, some of which they felt did little to advance the project.⁴ If a house built to code is the "worst house you can legally build," the Pretty Good House goes above code to improve energy and sustainability measures and until it stops making financial sense -- this becomes the "sensible building standard." While we can't delve into every aspect of what makes a Pretty Good House, we *do* want this group to consider if and how we might make the Pretty Good House the standard new home that's built in the Missoula area.

Electrification

Achieving our community's carbon neutrality goal will require a shift away from the use of natural gas and propane in buildings. As such, new buildings need to be designed with electric heating, water heating, and cooking systems, and with no natural gas or propane infrastructure. Currently, gas stoves are immensely popular. Recent research, however, has shown there are serious indoor air quality and health impacts associated with cooking with a gas stove.⁵ Additionally, climate science underscores the importance of moving away from gas and propane infrastructure and towards all-electric systems for cooking, heating, and cooling. Gas and propane infrastructure is still allowed in the building code, but we know we have to move to all

³ Under Montana state law, Missoula cannot legally mandate more than what the building code requires.

⁴ "[Pretty Good House](#)," n.d.

⁵ Sabrina Imbler, "[Kill Your Gas Stove](#)," *The Atlantic*, October 15, 2020.

electric systems in order to meet our climate goals.⁶ How, without the ability to require it, can we shift the culture and practices to electrifying our new homes?

Solar Ready

In order to meet our 100% Clean Electricity goals, we will need to increase the amount of on-site energy we generate. Where feasible, we must encourage as many building teams as possible to build homes that incorporate solar, or that are, at a minimum, solar ready. In 2017, the City and County were designated *Sol Smart Silver* communities in recognition of their work to make solar energy more feasible in Missoula; as part of this effort, the zoning code removed barriers for solar energy. The City and County are already thinking about this in specific development areas: the Sxwtpqyen plan, for example, includes a recommended implementation step of requiring new development to be solar ready. How can we make homes in new subdivisions and developments at least solar ready?

Strategies to Consider

With technical assistance from the American Council for an Energy-Efficient Economy, the National League of Cities, and community members, we have identified several strategies that Missoula should consider implementing to increase the number of low carbon subdivisions and new development. This list is not meant to be exhaustive (we hope you will provide additional ideas!), and they are brief descriptions rather than comprehensive explanations of how such a program or policy would be designed or implemented. Our hope is that the following will jumpstart the group's conversation and help all participants begin from a place of shared understanding. As you read, consider the pros and cons of each, as well as what you believe Missoula should prioritize pursuing in the next year, 5 years, and 10 years. Strategies include:

- Expand available financing options (variety of forms)
- 1-stop energy shop for residential and commercial properties
- Home energy disclosure at time of purchase or rent (energy use label)
- Workforce development
- Energy efficiency "bulk buy"
- Expand access to low carbon and high efficiency materials

For an overview of all the strategies being discussed today, including the ones in this background brief, please reference Appendix A.

⁶ Because gas infrastructure is still allowed in the building code, Missoula does not have the authority to ban it at the local level through an electrification ordinance. Electrification ordinances have been popular in California, where 40 communities have voted to require all electric new construction. For more information, see Matt Gough's "[California's Cities Lead the Way to a Gas-Free Future.](#)"

Expand available financing options (can take a variety of forms)

- **Private financial institutions** can offer (or expand their offerings) of financial products for energy efficiency, renewable energy, and electrification efforts.
- **Utilities** can offer on-bill financing or on-bill repayment. In on-bill financing, the utility incurs the cost of the upgrade and it is repaid in monthly installments on the bill. On-bill repayment is the same except that a third-party provides the up-front capital for the improvement.
- **The City of Missoula**, as a charter city, can establish PACE financing where a clean energy improvement is paid for via property taxes. The repayment is attached to the property rather than the individual. **Missoula County** may also be able to establish a similar program tied to property taxes.

1-stop energy shop for residential and commercial properties

Technical assistance will be central to high compliance rates for any of this work. A 1-stop energy shop would centralize incentives and technical assistance to make it as easy as possible to implement energy efficiency measures, and it could also serve as a clearinghouse for lessons learned from flagship projects. 1-stop shops are typically pursued in partnership with the local utility, though Missoula may be able to create a 1-stop shop independently with appropriate funding.

Home energy disclosure at time of purchase or rent (energy use label)

Energy bills are a significant household expense, and yet prospective homebuyers or renters are typically unable to factor this information into their decision making. Unless a prospective buyer or renter specifically requests utility data, it is rarely provided.⁷ Requiring all units to include an energy use label at time of sale would allow homebuyers and renters to make better informed decisions. A home energy label provides information about a property's energy consumption and costs, plus recommendations for cost-effective energy saving improvements. While there are several rating systems available, the Department of Energy's Home Energy Score has become popular because of its simplified approach that makes it easy for home buyers and sellers to make comparisons across properties.⁸ Bozeman has identified this as a strategy in their most recent climate action plan, and they cite the Department of Energy's Better Buildings Initiative's statistic that energy efficient certified homes sell faster and for 4 to 6% more.⁹ While initial results from home energy disclosure policies in Portland, OR, Berkeley, CA,

⁷ City of Bozeman, MT, "[Bozeman Climate Plan](#)" (City of Bozeman, MT, 2020).

⁸ American Council for an Energy-Efficient Economy. "[Home Energy Efficiency Policies: Ratings, Assessments, Labels, and Disclosure.](#)" Washington D.C.: American Council for an Energy-Efficient Economy, October 2018.

⁹ City of Bozeman, MT, "[Bozeman Climate Plan](#)" (City of Bozeman, MT, 2020).

and Santa FE, NM are promising, more data is needed to assess the energy reductions that come with home energy disclosure and labeling.¹⁰

Workforce development

Pursuing a low carbon building stock will likely increase demand for a skilled workforce of energy service companies and contractors who can perform high-quality building audits and retrofits. Missoula will need to pursue partnerships between local energy efficiency businesses, Missoula College, and other relevant stakeholders to develop a robust clean energy workforce, as well as provide training opportunities for those already in the industry. Workforce development programs can and should diversify the clean energy workforce and support the hiring and training of those typically not employed in these jobs.

Energy efficiency “bulk buy”

A bulk buy program is when a local government makes a bulk purchase of high efficiency products (heat pumps, LED light bulbs, etc.) and then provides them to citizens at a below market cost to fill gaps in existing rebate and incentive programs.¹¹ This could reduce the upfront cost of high efficiency heating and lighting systems for project developers interested in low carbon new development. Such a purchase could be made in collaboration with other Montana cities to drive down cost and amplify benefits.¹² Ann Arbor, MI recently identified it as a top strategy to meeting their city’s carbon neutrality goal, with an estimated cost of \$3.92/MT of CO₂ reduced and strong health, economic, and equity co-benefits.¹³

Expand access to low carbon and high efficiency materials

Building materials are constantly evolving. As low-carbon, high efficiency materials (cross laminated timber, high efficiency windows, etc.) become more cost effective, it will be easier to incorporate them into retrofit projects. Additionally, this is a potential opportunity for supporting local entrepreneurs that focus on the manufacturing and distribution of these materials.

This work was funded by the National League of Cities’ Leadership in Community Resilience grant. For more information, visit www.missoulacclimate.org/buildings.

¹⁰ American Council for an Energy-Efficient Economy. “[Home Energy Efficiency Policies: Ratings, Assessments, Labels, and Disclosure](#).” Washington D.C.: American Council for an Energy-Efficient Economy, October 2018.

¹¹ “[A2Zero: Ann Arbor’s Living Carbon Neutrality Plan](#),” April 2020.

¹² Bozeman has identified “Increase energy efficiency in existing buildings” as a top strategy in their recent climate plan. For more information, see: City of Bozeman, MT, “[Bozeman Climate Plan](#)” (City of Bozeman, MT, 2020).

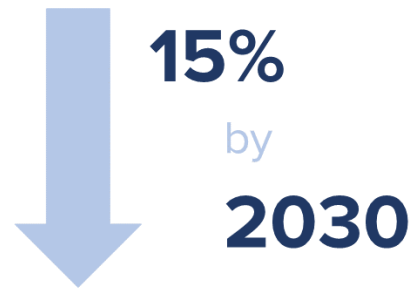
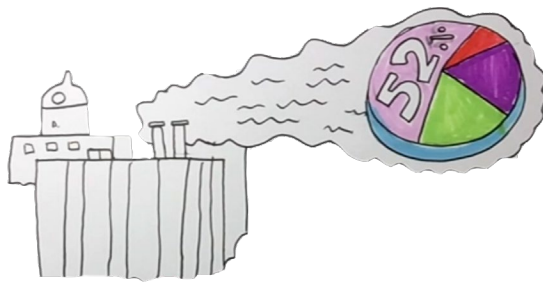
¹³ “[A2Zero: Ann Arbor’s Living Carbon Neutrality Plan](#),” April 2020.



Missoula
COUNTY

Building(s) for the Future Summit
Breakout Group: Owner Occupied Housing
January 15, 2020, 12:30 - 3:00pm

Welcome to Building(s) for the Future and the “Owner Occupied Housing” breakout group. Missoula has worked to advance climate mitigation and adaptation efforts in recent years (adoption of the 100% Clean Electricity Resolution, Climate Ready Missoula plan, Zero by Fifty plan, etc). Buildings play a role in each of these efforts as **they comprise 52% of our community’s carbon emissions, according to 2014 data.**¹ They are increasingly important as pressures mount for development to keep pace with community growth, and in order to meet our carbon neutrality and 100% clean electricity goals, we estimate that Missoula must **reduce total building emissions 15% by 2030.**



To “build for the future,” we need to consider ways to decarbonize the design, construction, operation, and deconstruction of our building stock. Over the past several months, we’ve done extensive research and received technical support from the American Council for an Energy-Efficient Economy (ACEEE) and National League of Cities on building policy and program precedents and best practices to inform our conversation. Panelists from across the country will share inspiring and innovative approaches, and our breakout group will build on their presentations to chart the path forward for how Missoula can build a more equitable, low-carbon future by focusing on ways to reduce energy intensity of owner occupied housing.

Homeowners comprise a major demographic in our community (49% of households in the city and 58% of households in the county), and energy efficient and affordable housing is a crucial area of need and opportunity in Missoula.²

¹ Climate Smart Missoula and City of Missoula. “[Missoula Community Greenhouse Gas Emissions Inventory](#),” March 2017.

² “[Missoula Housing Report](#)” (Missoula, MT: Missoula Organization of Realtors, 2020).

Primary Strategies to Consider

With technical assistance from the American Council for an Energy-Efficient Economy, the National League of Cities, and community members, we have identified several strategies that Missoula should consider implementing. This list is not meant to be exhaustive (we hope you will provide additional ideas!), and they are brief descriptions rather than comprehensive explanations of how such a program or policy would be designed or implemented. Where possible, we have included an estimate of the \$/MT of CO₂ reduced to help evaluate their impact and cost. Our hope is that the following will jumpstart the group's conversation and help all participants begin from a place of shared understanding. As you read, consider the pros and cons of each, as well as what you believe Missoula should prioritize pursuing in the next year, 5 years, and 10 years. Strategies include:

- Home energy disclosure at time of purchase (energy use label)
- Residential energy conservation ordinance
- Energy savings competition
- Retrofit assistance program
- Energy efficiency “bulk buy”

For an overview of all the strategies being discussed today, including the ones in this background brief, please reference Appendix A.

Home energy disclosure at time of purchase (energy use label)

Energy bills are a significant household expense, and yet prospective homebuyers are typically unable to factor this information into their decision making. Unless a prospective buyer specifically requests utility data, it is rarely provided.³ Requiring all units to include an energy use label at time of sale would allow homebuyers to make better informed decisions. A home energy label provides information about a property's energy consumption and costs, plus recommendations for cost-effective energy saving improvements. While there are several rating systems available, the Department of Energy's Home Energy Score has become popular because of its simplified approach that makes it easy for home buyers and sellers to make comparisons across properties.⁴ Bozeman has identified this as a strategy in their most recent climate action plan, and they cite the Department of Energy's Better Buildings Initiative's research that energy efficient certified homes sell faster and for 4 to 6% more.⁵ While initial results from home energy disclosure policies in Portland, OR, Berkeley, CA, and Santa FE, NM

³ City of Bozeman, MT, "[Bozeman Climate Plan](#)" (City of Bozeman, MT, 2020).

⁴ American Council for an Energy-Efficient Economy. "[Home Energy Efficiency Policies: Ratings, Assessments, Labels, and Disclosure.](#)" Washington D.C.: American Council for an Energy-Efficient Economy, October 2018.

⁵ City of Bozeman, MT, "[Bozeman Climate Plan](#)" (City of Bozeman, MT, 2020).

are promising, more data is needed to assess the energy reductions that come with home energy disclosure and labeling.⁶

Residential energy conservation ordinance

A residential energy conservation ordinance (RECO) requires prospective sellers or buyers to perform a set of energy efficiency improvements, many of which would be low-cost improvements. Ideally, a RECO is paired with technical assistance and rebate programs to reduce costs for the homeowner. These ordinances could result in 10 - 20% energy savings for the average home, but savings will vary based upon required measures.⁷ It may increase the listing price for the home, though this may be offset by the lower utility bills for the life of the house. Burlington, VT, San Francisco, CA, and Berkeley, CA each have adopted a RECO.⁸

Energy savings competition

An energy savings competition could encourage local businesses, homeowners, and renters to reduce their energy consumption. Program design of such competitions varies greatly, and Missoula would need to engage all relevant stakeholders when identifying the details of a Missoula based competition. Generally speaking, competitions measure the change in participants' energy use from before the competition to during the competition and provide prizes to winners, utilizing online software to engage participants and track results via a public leaderboard or dashboard.⁹ Missoula would not be the first Montana community to design an energy savings competition: Bozeman, MT hosted the "Energy Smackdown" competition in 2015.¹⁰

In a review of energy savings competitions, they were found to achieve, on average, a 5% reduction in electricity usage.¹¹ If paired with other incentives that could make whole home retrofits possible, energy savings could be much more substantial. Rutland NeighborWorks in Vermont spearheaded a program that allowed 5% of residences to undergo a comprehensive retrofit, which led to 30% savings in each household.¹² For an energy savings competition to be most effective, it needs to be paired with other resources, such as robust customer service: a

⁶ American Council for an Energy-Efficient Economy. "[Home Energy Efficiency Policies: Ratings, Assessments, Labels, and Disclosure](#)." Washington D.C.: American Council for an Energy-Efficient Economy, October 2018.

⁷ John O'Neill and Stefen Samarripas, "Missoula Residential Climate Action Strategies," October 2, 2020.

⁸ Ibid.

⁹ Ariel Drehobl, Maxine Chikumbo, and Kate Tanabe. "[Reducing Energy Waste through Municipally Led Behavior Change Programs](#)." Washington, D. C.: American Council for an Energy-Efficient Economy, November 2018.

¹⁰ Montana Right Now. "[City Launches Bozeman Energy Smackdown](#)," May 29, 2015.

¹¹ Edward Vine and Christopher Jones, "[A Review of Energy Reduction Competitions: What Have We Learned?](#)" (Berkeley, CA: California Institute for Energy and Environment, May 2015), p. v.

¹² Ibid.

recent study by Vine and Jones found that competition alone was not sufficient to achieve energy usage reductions.¹³

Retrofit assistance program

A retrofit assistance program would be a new local government program for homeowners that provides grants or low-interest rate loans to perform energy efficiency upgrades. Size and terms of the grants or loans would be determined at a later stage, though existing programs in Boulder, CO, Minneapolis, MN, Milwaukee, WI, Dallas, TX and Chicago, IL focus on both the health and safety upgrades that are needed before energy efficiency upgrades are possible, as well as the energy efficiency upgrades themselves. They also often include no-sell or affordability covenants for those accepting the funds in order to preserve existing affordable housing. Programs should be designed in tandem with, and promoted to, low-income residents who are unable to access traditional financing for efficiency projects. Funding for such a program could come from a variety of sources, such as Community Development Block Grants (CDBG), HOME Investment Partnerships Program (HOME), Affordable Housing Trust Fund, or other local funds. ACEEE estimates 20 - 25% residential energy savings can result from this type of program, and it is especially impactful for improving the health, comfort, and safety of marginalized residents¹⁴

Energy efficiency “bulk buy”

A bulk buy program is when a local government makes a bulk purchase of high efficiency products (heat pumps, LED light bulbs, etc.) and then provides them to citizens at a below market cost to fill gaps in existing rebate and incentive programs.¹⁵ This could reduce the upfront cost of high efficiency heating and lighting systems for homeowners interested in reducing their energy bills. Such a purchase could be made in collaboration with other Montana cities to drive down cost and amplify benefits.¹⁶ Ann Arbor, MI recently identified it as a top strategy to meeting their city’s carbon neutrality goal, with an estimated cost of \$3.92/MT of CO₂ reduced and strong health, economic, and equity co-benefits.¹⁷

~\$4/ MT of CO₂ reduced¹⁸

¹³ Ibid.

¹⁴ John O’Neill and Stefen Samarripas, “Missoula Residential Climate Action Strategies,” October 2, 2020.

¹⁵ “[A2Zero: Ann Arbor’s Living Carbon Neutrality Plan](#),” April 2020.

¹⁶ Bozeman has identified “Increase energy efficiency in existing buildings” as a top strategy in their recent climate plan. For more information, see: City of Bozeman, MT, “[Bozeman Climate Plan](#)” (City of Bozeman, MT, 2020).

¹⁷ “[A2Zero: Ann Arbor’s Living Carbon Neutrality Plan](#),” April 2020.

¹⁸ Ibid.

Foundational Strategies to Consider

Each of the primary strategies are more feasible when paired with one or more of the foundational strategies below. As you evaluate the primary strategies above, consider these foundational strategies and what they would need to look like or include in order for Missoula to be successful. Foundational strategies include:

- Expand available financing options (variety of forms)
- 1-stop energy shop for residential and commercial properties
- Workforce development
- Expand access to low carbon and high efficiency materials

Expand available financing options (can take a variety of forms)

- **Private financial institutions** can offer (or expand their offerings of) financial products for energy efficiency, renewable energy, and electrification.
- **Utilities** can offer on-bill financing or on-bill repayment. In on-bill financing, the utility incurs the cost of the upgrade and it is repaid in monthly installments on the bill. On-bill repayment is the same except that a third-party provides the up-front capital for the improvement.
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1-stop energy shop for residential and commercial properties

Technical assistance will be central to high compliance or participation rates for any of the above policies and programs. A 1-stop energy shop would centralize incentives and technical assistance to make it as easy as possible to implement energy efficiency measures. For example, a property owner could contact a 1-stop shop to schedule an energy audit, after which they would be connected to contractors to implement recommended upgrades and receive assistance identifying and applying for applicable incentives and financing options. Additionally, a 1-stop shop could raise community awareness about key issues such as electrification. For example, gas stoves are immensely popular. Recent research, however, has shown there are serious indoor air quality and health impacts associated with cooking with a gas stove.¹⁹ Additionally, climate science underscores the importance of moving away from gas and propane infrastructure and towards all-electric systems for cooking, heating, and cooling. 1-stop shops are typically pursued in partnership with the local utility, though Missoula may be able to create a 1-stop shop independently with appropriate funding.

¹⁹ Sabrina Imbler, "Kill Your Gas Stove," *The Atlantic*, October 15, 2020. <https://www.theatlantic.com/science/archive/2020/10/gas-stoves-are-bad-you-and-environment/616700/>

Workforce development

The policies and programs, if pursued, will likely increase demand for a skilled workforce of energy service companies and contractors who can perform high-quality building audits and retrofits. Missoula will need to pursue partnerships between local energy efficiency businesses, Missoula College, and other relevant stakeholders to develop a robust clean energy workforce, as well as provide training opportunities for those already in the industry. Workforce development programs can and should diversify the clean energy workforce and support the hiring and training of those typically not employed in these jobs.

Expand access to low carbon and high efficiency materials

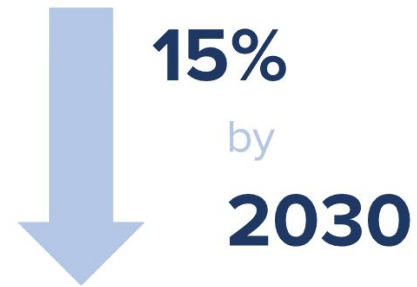
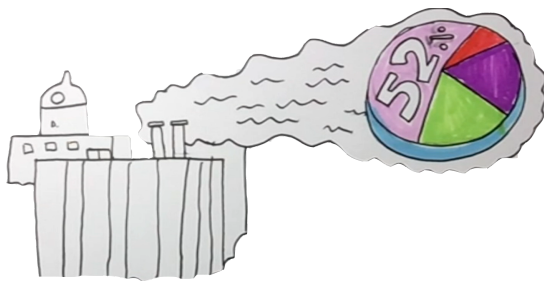
Building materials are constantly evolving. As low-carbon, high efficiency materials (cross laminated timber, high efficiency windows, etc.) become more cost effective, it will be easier to incorporate them into projects. Additionally, this is a potential opportunity for supporting local entrepreneurs that focus on the manufacturing and distribution of these materials.



Missoula
COUNTY

Building(s) for the Future Summit
Breakout Group: Rental Housing
January 15, 2020, 12:30 - 3:00pm

Welcome to Building(s) for the Future and the “Rental Housing” breakout group. Missoula has worked to advance climate mitigation and adaptation efforts in recent years (adoption of the 100% Clean Electricity Resolution, Climate Ready Missoula plan, Zero by Fifty plan, etc). Buildings play a role in each of these efforts as **they comprise 52% of our community’s carbon emissions, according to 2014 data.**¹ They are increasingly important as pressures mount for development to keep pace with community growth, and in order to meet our carbon neutrality and 100% clean electricity goals, we estimate that Missoula must **reduce total building emissions 15% by 2030.**



To “build for the future,” we need to consider ways to decarbonize the design, construction, operation, and deconstruction of our building stock. Over the past several months, we’ve done extensive research and received technical support from the American Council for an Energy-Efficient Economy (ACEEE) and National League of Cities on building policy and program precedents and best practices to inform our conversation. Panelists from across the country will share inspiring and innovative approaches, and our breakout group will build on their presentations to chart the path forward for how Missoula can build a more equitable, low-carbon future by focusing on ways to reduce the energy use intensity of rental housing.

Renters comprise a major demographic in our community (51% of households in the city and 42% of households in the county), and energy efficient and affordable rental housing is a crucial area of need in Missoula.² With 48.2% of renters cost burdened in the city,³ there is little room for spending an outsized amount of income on utilities. Nationwide, renters are often in the least efficient housing and spend a disproportionate amount of their income on utilities.⁴ Furthermore, renters have less control than homeowners over their homes’ energy efficiency or

¹ Climate Smart Missoula and City of Missoula. “[Missoula Community Greenhouse Gas Emissions Inventory](#),” March 2017.

² “[Missoula Housing Report](#)” (Missoula, MT: Missoula Organization of Realtors, 2020).

³ Ibid.

⁴ “[America’s Rental Housing 2020](#).” Joint Center for Housing Studies of Harvard University, 2020.

ability to generate renewable energy. More robust programs with stakeholder engagement of renters, property managers and landlords are urgently needed.

Primary Strategies to Consider

With technical assistance from the American Council for an Energy-Efficient Economy, the National League of Cities, and community members, we have identified several strategies that Missoula should consider implementing. This list is not meant to be exhaustive (we hope you will provide additional ideas!), and they are brief descriptions rather than comprehensive explanations of how such a program or policy would be designed or implemented. Where possible, we have included an estimate of the \$/MT of CO₂ reduced to help evaluate their impact and cost. Our hope is that the following will jumpstart the group's conversation and help all participants begin from a place of shared understanding. As you read, consider the pros and cons of each, as well as what you believe Missoula should prioritize pursuing in the next year, 5 years, and 10 years. Strategies include:

- Rental certification program with energy efficiency requirements
- Home energy disclosure at time of rent (energy use label)
- Energy savings competition
- Renewable energy for renters
- Retrofit assistance program
- Energy efficiency “bulk buy”

For an overview of all the strategies being discussed today, including the ones in this background brief, please reference Appendix A.

Rental certification program with energy efficiency requirements

A rental certification program would attach energy efficiency requirements to the process of acquiring or renewing a rental property owner's certificate of occupancy or business license (such a registry program does not currently exist in Missoula.) The certification program requires local government to establish a rental property registry, and all rental properties must meet a minimum energy efficiency rate or perform a prescriptive list of actions before receiving a rental license. With financial incentives, technical assistance, and flexible compliance pathways, a rental certification program can mitigate increases in rent that may come with property improvements. The city of Bozeman identified this as a top strategy in their recent climate action plan, and Boulder, CO and Ann Arbor, MI currently have successful programs in place. According to ACEEE, 10 - 30% energy savings are possible across rental properties.⁵ It may not necessarily save renters money if the cost of the improvement is passed on to them as a rent increase, though it would result in reduced monthly utility bills as well as improved comfort inside of the home.

⁵ John O'Neill and Stefen Samarripas, “Missoula Residential Climate Action Strategies,” October 2, 2020.

Home energy disclosure at time of rent (energy use label)

Energy bills are a significant household expense, and yet prospective renters are typically unable to factor this information into their decision making. Unless a prospective renter specifically requests utility data, it is rarely provided.⁶ Requiring all units to include an energy use label at time of rent would allow tenants to make better informed decisions. A home energy label provides information about a property's energy consumption and costs, plus recommendations for cost-effective energy saving improvements. While there are several rating systems available, the Department of Energy's Home Energy Score has become popular because of its simplified approach that makes it easy for renters to make comparisons across properties.⁷ The same department that would manage the rental property registry (see above) could oversee this disclosure. While initial results from home energy disclosure policies in Portland, OR, Berkeley, CA, and Santa FE, NM are promising, more data is needed to assess the energy reductions that come with home energy disclosure and labeling.⁸

Energy savings competition

An energy savings competition could encourage local businesses, homeowners, and renters to reduce their energy consumption. Program design of such competitions varies greatly, and Missoula would need to engage all relevant stakeholders when identifying the details of a Missoula based competition. Generally speaking, competitions measure the change in participants' energy use from before the competition to during the competition and provide prizes to winners, utilizing online software to engage participants and track results via a public leaderboard or dashboard.⁹ Missoula would not be the first Montana community to design an energy savings competition: Bozeman, MT hosted the "Energy Smackdown" competition in 2015.¹⁰

In a review of energy savings competitions, they were found to achieve, on average, a 5% reduction in electricity usage.¹¹ If paired with other incentives that could make whole home retrofits possible, energy savings could be much more substantial. Rutland NeighborWorks in Vermont spearheaded a program that allowed 5% of residences to undergo a comprehensive

⁶ City of Bozeman, MT, "[Bozeman Climate Plan](#)" (City of Bozeman, MT, 2020).

⁷ American Council for an Energy-Efficient Economy. "[Home Energy Efficiency Policies: Ratings, Assessments, Labels, and Disclosure](#)." Washington D.C.: American Council for an Energy-Efficient Economy, October 2018.

⁸ Ibid.

⁹ Ariel Dreihobl, Maxine Chikumbo, and Kate Tanabe. "[Reducing Energy Waste through Municipally Led Behavior Change Programs](#)." Washington, D. C.: American Council for an Energy-Efficient Economy, November 2018.

¹⁰ Montana Right Now. "[City Launches Bozeman Energy Smackdown](#)," May 29, 2015.

¹¹ Edward Vine and Christopher Jones, "[A Review of Energy Reduction Competitions: What Have We Learned?](#)" (Berkeley, CA: California Institute for Energy and Environment, May 2015), p. v.

retrofit, which led to 30% savings in each household.¹² For an energy savings competition to be most effective, it needs to be paired with other resources, such as robust customer service: a recent study by Vine and Jones found that competition alone was not sufficient to achieve energy usage reductions.¹³

Renewable energy for renters

Increasing renters' access to clean energy can be accomplished via Missoula's 100% clean electricity efforts, specifically:

- **Solar-ease expansion.** Solar-ease is the community campaign to encourage residents and businesses to go solar. It has so far not focused on landlords and tenants, though this could be an opportunity for expansion of existing outreach efforts. Because the landlord would incur the initial capital costs and the benefits would be reaped by the tenants through lower utility bills, a green lease (a lease that helps align tenant and landlord interests for investments in energy efficiency) would likely need to be developed in order to better share costs between the landlord and tenant.
- **Green Tariff.** A green tariff is a mechanism that has been used in a number of other states with regulated utility markets (like Montana's) to meet customers' demands for new renewable energy on a large scale. It's important to note that in utility jargon, the word "tariff" does not mean "tax," it simply refers to a rate that customers pay for electricity. NorthWestern Energy is currently working with stakeholders, including Missoula City and County, to develop a green tariff that will (if successful) result in the development of new large-scale renewable energy systems in the state of Montana that NorthWestern customers will have the option of buying into through their utility bills.
- **Utility owned community solar.** The City, County, and NorthWestern Energy have been discussing the possibility of developing a solar project in the Missoula area that would be available for any NorthWestern customer in Missoula County to buy into. The rate structure would be similar to the green tariff (above).

Retrofit assistance program

A retrofit assistance program would be a new local government program for homeowners and landlords that provides grants or low-interest rate loans to perform energy efficiency upgrades. Size and terms of the grants or loans would be determined at a later stage, though existing programs in Boulder, CO Minneapolis, MN, Milwaukee, WI, Dallas, TX and Chicago, IL focus on both the health and safety upgrades that are needed before energy efficiency upgrades are possible, as well as the energy efficiency upgrades themselves. They also often include no-sell or affordability covenants for those accepting the funds in order to preserve existing affordable housing. Programs should be designed in tandem with, and promoted to, low-income residents who are unable to access traditional financing for efficiency projects. Funding for such a program could come from a variety of sources, such as Community Development Block Grants

¹² Ibid.

¹³ Ibid.

(CDBG), HOME Investment Partnerships Program (HOME), Missoula's Affordable Housing Trust Fund or other local funds. ACEEE estimates 20 - 25% residential energy savings can result from this type of program, and it is especially impactful for improving the health, comfort, and safety of marginalized residents¹⁴

Energy efficiency "bulk buy"

A bulk buy program is when a local government makes a bulk purchase of high efficiency products (heat pumps, LED light bulbs, etc.) and then provides them to citizens at a below market cost to fill gaps in existing rebate and incentive programs.¹⁵ This could reduce the upfront cost of high efficiency heating and lighting systems for landlords interested in owning more efficient properties, or tenants interested in making simple energy efficient improvements. Such a purchase could be made in collaboration with other Montana cities to drive down cost and amplify benefits.¹⁶ Ann Arbor, MI recently identified it as a top strategy to meeting their city's carbon neutrality goal, with an estimated cost of \$3.92/MT of CO₂ reduced and strong health, economic, and equity co-benefits.¹⁷

~\$4/ MT of CO₂ reduced¹⁸

Foundational Strategies to Consider

Each of the primary strategies are more feasible when paired with one or more of the foundational strategies below. As you evaluate the primary strategies above, consider these foundational strategies and what they would need to look like or include in order for Missoula to be successful. Foundational strategies include:

- Expand available financing options (variety of forms)
- 1-stop energy shop for residential and commercial properties
- Workforce development
- Expand access to low carbon and high efficiency materials

Expand available financing options (can take a variety of forms)

- **Private financial institutions** can offer (or expand their offerings of) financial products for energy efficiency, renewable energy, and electrification.
- **Utilities** can offer on-bill financing or on-bill repayment. In on-bill financing, the utility incurs the cost of the upgrade and it is repaid in monthly installments on the bill. On-bill

¹⁴ John O'Neill and Stefen Samarripas, "Missoula Residential Climate Action Strategies," October 2, 2020.

¹⁵ "[A2Zero: Ann Arbor's Living Carbon Neutrality Plan](#)," April 2020.

¹⁶ Bozeman has identified "Increase energy efficiency in existing buildings" as a top strategy in their recent climate plan. For more information, see: City of Bozeman, MT, "[Bozeman Climate Plan](#)" (City of Bozeman, MT, 2020).

¹⁷ "[A2Zero: Ann Arbor's Living Carbon Neutrality Plan](#)," April 2020.

¹⁸ Ibid.

repayment is the same except that a third-party provides the up-front capital for the improvement.

- **The City of Missoula**, as a charter city, can establish PACE financing where a clean energy improvement is paid for via property taxes. The repayment is attached to the property rather than the individual. **Missoula County** may also be able to establish a similar program tied to property taxes.

1-stop energy shop for residential and commercial properties

Technical assistance will be central to high compliance or participation rates for any of the above policies and programs. A 1-stop energy shop would centralize incentives and technical assistance to make it as easy as possible to implement energy efficiency measures. For example, a property owner could contact a 1-stop shop to schedule an energy audit, after which they would be connected to contractors to implement recommended upgrades and receive assistance identifying and applying for applicable incentives and financing options. Additionally, a 1-stop shop could raise community awareness about key issues such as electrification. For example, gas stoves are immensely popular. Recent research, however, has shown there are serious indoor air quality and health impacts associated with cooking with a gas stove.¹⁹ Additionally, climate science underscores the importance of moving away from gas and propane infrastructure and towards all-electric systems for cooking, heating, and cooling. 1-stop shops are typically pursued in partnership with the local utility, though Missoula may be able to create a 1-stop shop independently with appropriate funding.

Workforce development

The policies and programs, if pursued, will likely increase demand for a skilled workforce of energy service companies and contractors who can perform high-quality building audits and retrofits. Missoula will need to pursue partnerships between local energy efficiency businesses, Missoula College, and other relevant stakeholders to develop a robust clean energy workforce, as well as provide training opportunities for those already in the industry. Workforce development programs can and should diversify the clean energy workforce and support the hiring and training of those typically not employed in these jobs.

Expand access to low carbon and high efficiency materials

Building materials are constantly evolving. As low-carbon, high efficiency materials (cross laminated timber, high efficiency windows, etc.) become more cost effective, it will be easier to incorporate them into projects. Additionally, this is a potential opportunity for supporting local entrepreneurs that focus on the manufacturing and distribution of these materials.

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¹⁹ Sabrina Imbler, "[Kill Your Gas Stove](#)," *The Atlantic*, October 15, 2020.