STUDY SESSION MEMORANDUM

TO: Mayor and Members of City Council

FROM: Nuria Rivera-Vandermyde, City Manager
Chris Meschuk, Deputy City Manager
Jonathan Koehn, Interim Director of Climate Initiatives
Yael Gichon, Principal Project Manager
Carolyn Elam, Sustainability Senior Manager
Brett KenCairn, Senior Policy Advisor
Jamie Harkins, Policy Advisor Coordinator
Matt Lehrman, Policy Advisor
Emily Sandoval, Communications Senior Program Manager
Heather Sandine, Executive Assistant

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SUBJECT: Study Session for February 2, 2022
Financial and Revenue Strategies for Climate Work

EXECUTIVE SUMMARY

The climate emergency requires an acceleration of the city organization's efforts, particularly efforts to rapidly reduce emissions and strengthen the community's resilience to climate-driven shocks and chronic stresses. While the city organization cannot be responsible for all the actions and investments needed to achieve the community's climate and resilience goals, it does play a critical role in supporting the community through robust programs and services, capital investments, regulation and oversite, planning, education, and advocacy.

At the time the city needs to redouble its commitment to climate action, funding for climate work is set to step down. The voter-approved Climate Action Plan tax (CAP Tax) expires in March 2023. The CAP Tax provides critical funding for climate-specific programs, services, policy action and partnership efforts. When created in 2006, the CAP Tax was envisioned as an initial revenue mechanism to reduce greenhouse gas (GHG) emissions, in line with the Kyoto Protocol

targets[1]. While the tax has provided critical funding for climate strategies, climate science evolved, and it became apparent that much larger emissions reductions are required.

The science is clear—accelerated climate action is needed, and local governments must prepare for climate disruption. At its June 8 Study Session, council reviewed a series of updated climate goals and targets and directed staff to bring those updates to council for official action. The resolution on Oct. 26, 2021, adopted these goals:

- Reduce emissions 70% by 2030 from a 2018 baseline
- Become a net-zero positive city by 2035
- Become a carbon positive city by 2040

These goals reflect the maturing of climate science and global recognition that much more significant GHG emissions reductions are necessary, and the fact that cities must set much more aggressive targets. In addition to the mitigation of GHG emissions, there is an increasingly urgent need to prepare for significant climate change disruptions and to address the inequities that climate change perpetuates.

CAP Tax rates have not been increased since 2010, and since then, revenues have gradually declined as city-sponsored climate programs have matured and per capita energy use (and total residential electricity use) has declined. To maintain the progress toward Boulder's current climate targets, staff has evaluated the long-term solvency of program funding and explored potential funding alternatives for future consideration. Supporting the next generation of climate action will require stable and sustained investment over the next two decades. While the CAP Tax alone is insufficient to fund all city organization and community-wide efforts to address climate mitigation and resilience, it represents an important source of dedicated funding that, in the absence of council and community action, will expire. With council approval, voters must consider extending or revising funding in the November 2022 general election to maintain existing programs and services and/or to accelerate the community's actions to address the climate crisis.

Based on the evaluation of a variety of options, staff recommends the following:

1. **Pursue a ballot measure to create a new Climate Tax to replace the existing CAP Tax and Utility Occupation Tax (UOT):** Staff is recommending that council consider an approach to help continue and stabilize the city's dedicated climate funding. Staff recommends a 2022 ballot initiative for a new Climate Tax that would replace both the existing CAP Tax and the Utility Occupation Tax (UOT), which is currently used to fund projects, pilots, initiatives, and research that supports the city's clean energy goals,

[1] A 7 percent emissions reduction compared to 1990 levels

including efforts conducted in partnership with Xcel Energy, and will expire in 2025. Staff's recommendation includes strategies to address inequities in current funding mechanisms and avoid undue financial burden to the community moving forward.

2. **Expand the revenues collected by the new Climate Tax:** The new tax would expand the revenues collected from today's level of $3.9 million (current level of CAP tax[2] and UOT combined) to achieve a minimum of $5 million in annual revenues. The tax would be collected as a tax on electric and gas utility revenues, like the current UOT. This minimum represents a roughly $1 million increase in revenue compared to today's CAP and UOT collections. As described in greater detail later in this memo, the incremental increase in funding is intended to:
    - Prioritize investments in our community's climate resilience efforts
    - Leverage other funding sources such as federal infrastructure, climate, and resilience funds to meet local needs
    - Create cost-sharing opportunities (e.g., potential revolving loan fund) and expand emerging strategies such as natural climate solutions, building weatherization and electrification, and circular economy.

3. **Stabilize Boulder's Climate funding and create leveraging opportunities by extending the tax to 2040:** Stabilizing funding to 2040 and adding the ability to issue debt against the funds, in combination with the proposed incremental addition of revenues, would enable the department to raise funds now against future years' taxes. This strategy would allow for potential capital investments and create leverage for outside capital.

As envisioned, the new Climate Tax would continue to support work led by the Climate Initiatives department, including the partnership work with Xcel, with investments prioritized around the strategies outlined in this memo and further informed by the community. As council considers the long-term funding needs of our community's climate efforts, it is important to note that both emissions mitigation and climate resilience are a priority across the city organization, not just a single department. The city will continue to work on advancing the coordination of emissions reductions and resilience work across all departments. Through ongoing budgeting, master planning efforts and community engagement, we expect to further refine the scale of investment and revenue needs across the organization.

[2] Excludes the approximately ~$400,000 in annual Energy Impact Offset fees that are incorporated into the CAP budget.

KEY ISSUES IDENTIFIED

1. The current CAP tax has several constraints and, alone, is insufficient to support future climate action work. Current revenues are insufficient to fulfill the city's role in achieving the new climate targets. The original purpose of the CAP Tax was to fund implementation of city programs to reduce local GHG emissions to meet the Kyoto Protocol target (only 7% emissions reduction for the U.S. from 1990 levels). This tax was never intended to fully fund the achievement of the city's climate and energy goals. The structure of the tax has not changed since its original implementation, despite increasingly more aggressive goals. In terms of specific strategies funded by the revenues, the low-cost, low-lift actions have been employed, and the remaining work will be increasingly difficult, more complex, and expensive, and will require the commitment of multi-year, sustained investment to be successful. Further, when the tax was originally created, mitigation (reducing emissions that cause climate change) was the primary focus. Considering the realities of our changing climate, the emphasis must be expanded to include community resilience and adaptation.

2. The existence of both the CAP Tax and UOT may appear duplicative to customers. In 2020, when voters elected to pause the municipalization effort and pursue a new energy partnership with Xcel, they also extended the UOT to support the partnership, continue the broader clean electricity efforts, and provide additional funding for community-focused programs. Both the CAP Tax and the UOT currently fund work core to advancing the city's climate goals. Whether supporting exploration of a municipal utility or partnership with Xcel, the UOT has been central to achieving goals specific to clean electricity and to fund city staff to lead these efforts. The UOT is currently scheduled to sunset in 2025. Rather than presenting council and the community with yet another tax extension in two years, there is opportunity to consider this tax more holistically in the context of the overall climate funding needs.

3. Climate work and climate resilience is happening across the city organization, not just a single department. As mentioned above, emissions reductions and climate resilience cannot be addressed through siloed efforts, such as one team designing disaster recovery plans, another team exploring sustainability issues, another focused on livelihoods and well-being, and yet another on land-use planning and infrastructure. Cities are systems, not silos. Like equity, resilience must be centered in all our work, not as something standing alone. Similarly, climate efforts span all aspects of our economy, from our use of energy to our food systems, to our use of material goods, to the way we interact with our natural systems. For this reason, addressing the revenue needs of the city organization to advance the community's climate goals cannot be addressed through a single revenue source, nor single council decision. It will be built through refinement and prioritization within existing budgets and through additional revenues as opportunities and needs are

identified. Unifying climate and resilience strategies across the organization will support an integrated approach to address the greatest needs.

QUESTIONS FOR COUNCIL

1. Does Council support the staff recommendation for a new Climate Tax that replaces the combination of the current UOT and CAP tax?
2. Does Council support and/or have questions about staff's proposal to increase overall revenues and collect a new Climate Tax through 2040?
3. What would be helpful for council to know to determine whether to support advancing a Climate Tax as a 2022 ballot item?
4. Does Council have any guidance for staff related to scoping the broader city role and associated revenue needs?

BACKGROUND

Before diving into specific staff recommendations, it is important to revisit the scope and scale of the climate crisis and role of local jurisdictions. It will be no surprise to council that 2021, like the years before it, represented one of the hottest years on earth ever recorded, unleashing countless extreme weather events. Unprecedented heat waves struck traditionally temperate regions of North America; three months' worth of rain fell on Dakar, Senegal, flooding the capital and exposing residents to toxic algae; Afghanistan endured a severe drought, just as its government collapsed, putting 22 million people at risk of starvation. Calamities associated with a warmer climate reached nearly every corner of the globe.[3]

Tragically, climate change came home, too. Smoke from California fires harmed local air quality; the region went nearly 200 days without significant snowfall. And, at the end of the year, the Marshall Fire burned through swaths of grassland and suburban neighborhoods, displacing thousands of Boulder County residents.

Unfortunately, one need not look far to understand viscerally that time to adequately address the causes of climate change is running short. Scientists tell us that we have until 2030 to make the massive, societal, systems-scale changes required to stave off the worst effects of climate change.

Since the release of the 2018 Intergovernmental Panel on Climate Change (IPCC) Special Report, the Climate Initiatives department has been taking steps to align city climate work with

[3] https://www.nytimes.com/interactive/2021/12/13/opinion/climate-change-effects-countries.html?action=click&module=RelatedLinks&pgtype=Article

the scale of change required. In 2019, City Council declared a climate emergency and initiated a new phase of climate action planning.

Vision for the Future of the City of Boulder's Climate Efforts
In June 2021, the city outlined its new approach to climate action that aligns with the urgency of the crisis and the scale of change required. This section summarizes the key characteristics of this evolution. For more detailed information, see the June 8, 2021, council memo.

Aligned with the city's new approach on climate action, in October 2021 council adopted a new set of aggressive, science-based climate targets:

- Reduce emissions 70% by 2030 from a 2018 baseline
- Become a net-zero positive city by 2035
- Become a carbon positive city by 2040

To align with these new targets, the city's climate work aims to:

1. **Address systems-scale change.** Climate action requires much larger society-scale/systems-scale changes involving all aspects of the public and private sectors.
2. **Act beyond its boundaries**. Collaborating with partners, other cities, and government agencies to achieve impact at a larger scale, on topics within the city's sphere of influence. Swift, sweeping climate action must take place at **all levels of society**, including local, regional, national, and international in support of achieving larger climate targets.
3. **Focus resources on actions within the city's sphere of influence and control**. While the resolution sets goals and targets as a community, the city organization must focus its resources on actions within the city's sphere of influence and control—increasingly those actions which increase community resilience to the escalating impacts of climate change.
4. Allocate necessary time and resources to address the impacts of climate change in an **equitable manner**.
5. **Build resilience** and strengthen community capacity to adapt and thrive
6. Focus attention on **natural climate solutions**, both as a strategy to recapture atmospheric carbon and as critical green infrastructure to enhance community resilience to climate change.
7. Account for the **full scope of emissions** in our community, including emissions associated with the creation of the goods and food purchased.
8. Address **five focus areas** for climate action:
    1. Energy Systems
    2. Circular Materials
    3. Natural Climate Solutions (formerly Ecosystems)
    4. Land Use
    5. Financial Systems
9. **Bring the community together** with renewed urgency and hope to address the climate emergency and achieve clarity on the required next steps.
10. Ground all efforts in approaches that **address the historic inequities** of benefits and costs of climate action and climate change, respectively.

As events like the floods, fires, and extreme weather we have experienced now illustrate, climate change is a reality that is happening and will likely intensify. It is now clear that both the original climate action measures and the original funding strategies that the city put in place to work on climate change—including the CAP Tax—are also now insufficient to address the scale and accelerating intensity of climate change that we now face.

The following section explores the existing revenue sources and the challenges presented with the existing CAP Tax and identifies opportunities to align future revenue mechanisms with the scale of funding necessary for high-impact climate actions.

ANALYSIS: FUNDING STRATEGY

Current Funding Framework & Limitations

Climate funding in Boulder is integrated into many aspects of the city's work and generated through multiple taxes, fees and funds. While progress on climate-related work is ever-present through all departments in the city organization, there are three distinct taxes currently collected that provide funding dedicated to the city's climate efforts:

1. **Climate Action Plan (CAP) Tax:** A 2006 voter-approved tax on electricity consumption. This generates approximately $1.8 million per year and funds the city's climate and energy efforts. It was last approved by voters in 2015.

2. **Trash Tax:** A 1994 voter-approved tax on residential and commercial waste. This generates approximately $1.8 million per year, which funds the city's Zero Waste efforts.

3. **Utility Occupation Tax (UOT)[4]:** A 2010 voter-approved tax on the utility (Xcel Energy), which, after a voter-approved increase in 2011, provided an average of $2 million in annual funding to support the community's clean electricity efforts, primarily through the municipalization project[5]. In 2020, voters approved an extension of the tax through 2025 at a level of just over $2 million per year to fund the city's partnership with Xcel Energy.

Table 1 below shows a snapshot of the funding that supports the city's climate-centric programs, services, and staff. While not detailed here, climate-related investments are also embedded throughout the city's budget and planning efforts, including how we approach flood management, steward open space lands and parks, maintain and operate city-owned facilities and

[4] In 2010, The UOT funding mechanism was also approved by the voters to replace the franchise fee revenue from Xcel Energy while the city was out of franchise agreement. When the city re-entered into a franchise agreement in 2020, this portion of the UOT lapsed and was replaced by the franchise fee.
[5] In 2017, voters approved an extension of the tax through 2022. The 2017 vote also approved a two-year increase in the funding, with $6 million collected in 2018 and $5 million collected in 2019.

how we tackle transportation, for example. **Attachment A, Current Funding,** expands on Table 1 with greater detail. With the expiration of the CAP Tax there are opportunities to create efficiencies and address some of the limitations of our climate-dedicated initiatives; these are described further below in this section.

Table 1. Summary of Climate Initiatives Current Annual Funding

Funding Category	Funding Source	Annual Average Revenue	Expiration Date
Voter-Approved Tax	CAP Tax	~$1.8 Million	March 2023
	Utility Occupation Tax – Climate Initiatives Portion	~$2.1 Million	December 2025
General Fund Transfers via Taxes	Trash Tax	~$1.8 Million	No Expiration
	Solar Grants	~ $50,000	No Expiration
Fees	Environmental Impact Offset Fund	~$400,000	No Expiration
	Disposable Bag Fee	~ $180,000	No Expiration

CAP Tax: In Focus

The history of the CAP Tax dates to 2002, when council passed a resolution to reduce greenhouse gas emissions to 7% below 1990 levels by 2012, in line with the United States' targets under the Kyoto Protocol. Then in 2006, Boulder established the Climate Action Plan to provide a longer-term framework of strategies and policies to reduce the city's overall greenhouse gas emissions 80% below 2005 levels by 2050.

To help meet these goals, council recommended a carbon emissions-based charge to generate a consistent revenue stream for emission reduction programs, with an estimated need of $1 to $3 million annually. On Nov. 7, 2006, 60% of Boulder voters approved Initiative 202, The CAP Tax, marking the first time in the nation that a municipal government imposed an energy tax on its residents to directly combat climate change. The tax levels were set at their maximum amount allowable under the associated ordinance in 2010, and the most recent renewal of the CAP Tax in 2015 was passed by over 77% of voters, which extended the tax to March 2023.

The CAP Tax is levied on city residents and businesses and is based on the amount of electricity they consume in kilowatt hours (kWh). During the creation of the tax, there was considerable discussion by council and the community that the intended purpose of the tax was to generate

revenue sufficient to meet the 2012 Kyoto target. The levied amounts were not intended to be set high enough to serve as a direct disincentive to consumption.

Electricity use in the residential and commercial building sectors has historically been the largest contributor to Boulder's local emissions. Since it was first passed, the tax was structured to have a tiered rate, based on customer type as shown in Table 2 below. The tiered structure and specific tax rates were developed not based on relative contribution to emissions, but rather as a compromise to address concerns from commercial and industrial business that were expressed at the time the tax was being developed. The tax rates were revised in 2009, and in both 2011 and 2015, voters elected to extend the tax without a change in rates.

Table 2. The Tax Rate and Average Annual Electricity Tax per Sector

SECTOR	Tax Rate In 2007 (Per KWH)	Tax Rate (2009 - Present) (Per KWH)	Average Annual Tax[6]
Residential	$0.0022	$0.0049	$27 (per household)
Commercial	$0.0004	$0.0009	$86 (per customer)
Industrial	$0.0002	$0.0003	$128 (per customer)

Although CAP Tax was never intended to fully fund the achievement of the city's current climate goals, it has been a successful initiative. The CAP Tax has generated approximately $22 million in revenue since its inception in 2006, which has funded a variety of programs and policies aimed at reducing GHG emissions – rebates and incentives to help residents and businesses reduce their energy use and adopt solar, piloting innovative technologies, implementing local policy and regulation, advocacy, and support for legislative and regulatory changes at the state and federal level, and more.

While other factors have contributed to the community's climate successes, CAP Tax-funded programs can be credited for helping the community reduce emissions and avoid load growth. **Attachment B, Snapshot of CAP Tax Investments**, highlights specific accomplishments that have been achieved through CAP Tax investments.

Challenges with the Existing CAP Tax Structure

While the CAP Tax has supported a variety of city climate efforts since its inception in 2006, the city's ability to effectively achieve its climate goals is limited by the following:

- **Expires at the end of March 2023:** To, at a minimum, maintain current levels of climate funding, council and voters must approve an extension of the CAP Tax.
- **Current CAP Tax structure does not address long-term funding needs**: Historically, the city has experienced emission reduction rates of ~1.3% annually even with constant

[6] The average annual CAP Tax paid by each customer varies based on the customer's annual consumption.

growth in Boulder's population, jobs, and building square footage over the years. To achieve the city's new climate goals, we need to reduce emissions at a rate of ~5.8% annually. This signifies a dire need for greater near-term investment to keep on track with our science-based targets.

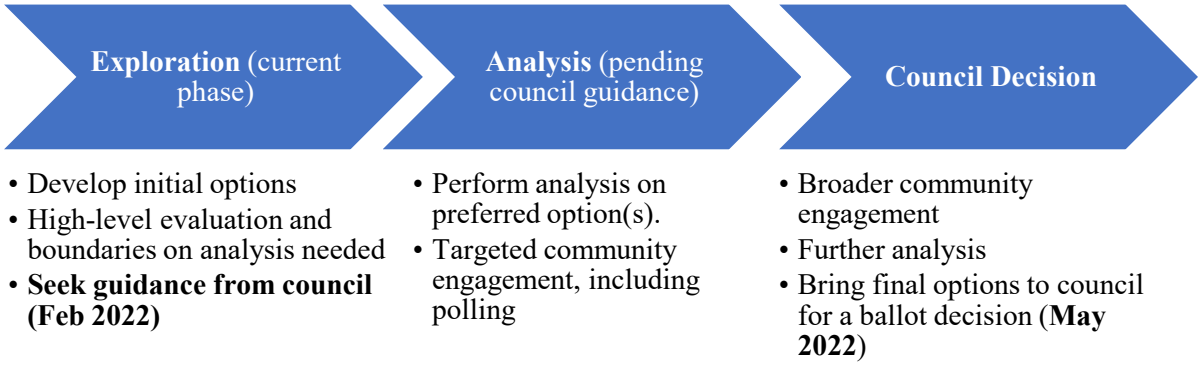
- **Collection mechanism may not fully align with strategic objectives:** While electricity currently remains the largest source of emissions, the electricity grid is rapidly becoming cleaner. Within the next three-to-five years, both natural gas- and transportation fuel-derived emissions will exceed those from electricity. While investment in clean and resilient electricity must remain a priority, continuing to tax electricity, the resource we are trying to move people towards, or at least solely taxing electricity, creates inconsistencies with our strategic objectives.
- **Potential for confusion or declining support due to multiple Boulder utility bill taxes and fees:** In 2020, the voters chose to pause municipalization and extend the current UOT to fund multiple energy-related actions, including support for the city-Xcel Energy partnership. Also, because of the 2020 vote, a franchise fee was reintroduced to the community's utility bills. With the CAP Tax, there are now three separate fees/taxes being collected. While the net amount being collected has not changed, there is a risk that voters might be confused about what each fee/tax funds and might resist renewing a tax that they might perceive as being duplicative of the other fees/taxes being collected. This issue will be further exacerbated given the fact that the continuation of the UOT will need to be addressed before it expires at the end of 2025.
- **As currently structured, the tax is regressive:** Because the CAP Tax is a fixed rate per kWh used, regardless of income level, it is considered a regressive tax. By extending this tax without revising its structure, this system would continue to take a larger percentage of income from low-income earner than from high-income earners.
- **Is not a true carbon tax:** Boulder's commercial and industrial sector is responsible for nearly 75% of the community's energy-related emissions, yet less than 37% of the CAP Tax revenues are collected from them due to the current tiered rates.
- **Does not align well with emergent focus areas such as Natural Climate Solutions and Circular Economy.** While the CAP Tax was intended and has been used to address climate issues beyond just energy, a revenue strategy that relies solely on a tax on energy may not be adequate or appropriate for achieving the scale of investment that are needed to advance other focus areas.
- **Climate science has evolved, and the city's targets have gotten more aggressive since the Boulder Climate Action Plan was first developed**. The city adopted new targets in its 2016 Climate Commitment; formally declared a Climate Emergency in 2019; and set out to achieve carbon neutrality goals in fall 2021. The world is faced with an even more urgent climate crisis and need to accelerate action – both to mitigate further emissions as well adapt our community to be resilient in the face of its effects. For this reason, staff is considering whether revising the existing CAP Tax or pursuing other funding options is advisable, as compared to a simple extension of the existing tax.
- **More innovative revenue models have been developed since the CAP tax's inception.** While the CAP tax was the first of its kind and a model for funding climate action at the local level, since its inception, other revenue models have been developed. This includes

Denver's Climate Protection Fund and Boulder County's sustainability tax outlined in **Attachment C, Scale of Funding Necessary to Support High Impact Climate Action**. There are also several lessons learned around how a tax's structure and duration can be leveraged to accelerate program investment without creating an undue burden on the community.

Funding Options and Staff Recommendation

Staff analysis has identified a range of potential revenue and tax options to expand the city's climate work beyond what is already funded. Strategic choices must be made about timing and prioritizing what to bring to the community, particularly when considering existing and potential tax and fee increases imposed on the community (e.g., Library District). Staff is seeking council feedback on this analysis, along with staff specific recommendations, as well as any guidance on the proposed timeframe for the analysis and implementation phases shown below.

Revenue Analysis Process



To inform its recommendation, staff identified four areas of consideration in developing the city's next stage climate action funding strategy:

- **Duration**: All options described proposed that the funding mechanism be authorized for at least the duration of the city's adopted climate goals and targets—through 2040.
- **Scale of Funding**: The two options presented represent two different scales of funding—one options maintains existing funding, the other expands funding by approximately 25% in ways that could enable leveraging significant increases in short-term funding availability through bonding.
- **Financial mechanisms**: The two options represent two different approaches to funding mechanisms—existing/status quo, and a new approach unifying the existing CAP and UOT taxes.
- **Equitable allocation**: Staff propose that any funding strategy, at a minimum, address identified equity considerations in the following ways:
    - Exempt current recipients of energy assistance (LEAP) funding from paying the tax

- Develop a rebate mechanism for qualifying low-income residents and possibly certain types of businesses who cannot be directly excluded from paying the tax
- Adjust the tax structure such that commercial and industrial businesses contribute a more equitable share based on their emissions

In addition to the four areas highlighted above, staff analyzed several potential funding options for viability and evaluated these against the following criteria:

- Legal feasibility[7]: *Is this allowed under current laws and regulation?*
- Technical feasibility: *How difficult is this to implement?*
- Social equity: *How aligned is the approach with the city's Racial Equity Plan and how easy is it to structure the revenues to reduce the burden to residents with lower incomes?*
- Administrative time/ease: *What are the one time and recurring costs and staff time required for staff?*
- Impact on local business[8]: *What is the impact to local economic vitality? Does this option ensure that businesses do not bear an inequitable burden? Can rate stability and predictability be provided?*
- Alignment with strategic objectives: *Will this encourage efficient and sustainable behavior and purchasing choices and discourage use of natural gas and petroleum?*
- Revenue stability: *Will this provide revenue diversity and longevity?*
- Political/Public Support: *What will the voter/community support likely be?*

After evaluating against these criteria and to further understand potential cost impact, two options were selected to analyze revenue potential and household/business impact.

Option 1: Simple CAP Tax extension

When considering its recommendation, staff considered the possibility of simply extending the current CAP Tax to provide the same level of funding that exists today. While this option would present the lowest risk politically based on historical voter support, it also holds numerous fundamental flaws that we aim to address with the opportunity to bring a new proposal to the ballot. Some of the anticipated pros and cons of this status quo option include:

Pros:

High likelihood of earning voter approval: Historically, the CAP tax has garnered widespread political support, passing with 60% of the vote in 2006, 82% in 2012 and 77% in 2015. Given this history, we anticipate an extension of the current tax to be popular with voters.

[7] If an option was not legally feasible for the city of Boulder to implement it was automatically excluded from further analysis.

[8] Boulder houses industrial facilities with very high energy use that are very important to the local economy, and these businesses do not get to vote for these taxes.

Cons:
Does not address challenges of the existing CAP Tax structure listed above.

Option 2: Modify the existing CAP Tax
Central to the challenges with the existing CAP Tax structure is its relationship to the UOT. Both the CAP Tax and the UOT currently fund work core to advancing the city's climate goals. Whether supporting exploration of a municipal utility or partnership with Xcel, the UOT has been central to achieving goals specific to clean electricity and to fund city staff leading these efforts. The UOT is currently scheduled to sunset in 2025. Rather than presenting council and the community with yet another tax extension in two years, there is opportunity to consider this tax more holistically in the context of the overall climate funding needs.

The current CAP Tax and UOT differ in how they are applied. The CAP Tax is a tiered tax rate based on customer type and applied only to electricity use. The UOT is a tax on the total utility bill, so it applies to both natural gas and electricity usage. While not a complete proxy for carbon emissions, a tax on the total gas and electricity bill would help address some of the existing concerns with the CAP Tax, in particular the fact that households and businesses who have electrified and transitioned off natural gas are currently paying more climate tax than those that continue to use gas. There is also opportunity to extend the tax to transport gas providers serving customers in the city. Thus, as an alternative to a simple extension of the CAP Tax, staff considered the creation of a new Climate Tax to replace the existing CAP Tax and UOT. Some of the pros and cons include:

Pros:

- **Pushes the proportional impact onto commercial and industrial users**: Given that the UOT is based on utility revenues rather than electricity usage, it will require that each entity pay the equivalency of their proportional impact of energy consumption. This framing aligns more strategically with a carbon tax.
- **Stabilization of revenue streams**: This option allows the city to determine the funds needed annually levied on the utility, Xcel Energy, who then passes the costs on to customers at the applicable rate, thereby creating a more stable revenue stream. This option would also alleviate the need to renew the UOT in 2025. With a more stable source of funding, there would be an opportunity to add bonding authority, a necessary element to accelerate infrastructure investments.
- **Helps address equity concerns**: Both the CAP Tax and the UOT, as currently structured, are regressive taxes, they have no variation for income level. In bringing a new measure to the ballot, there is the opportunity to structure the tax to address these equity concerns through potential options such as exempting customers participating in energy assistance programs, setting a minimum consumption level for electricity or natural gas before the tax is triggered, or by allowing residents with lower incomes to receive an energy tax rebate, like the food tax rebate currently offered by the city.

- **Ability to raise more funds**: With a new tax measure, there is an opportunity to increase the amount of funds being raised without necessarily increasing the overall financial burden on Boulder residents.

Cons:

- **Carries greater risk**: Because this option of combining the CAP Tax and the UOT into one revenue stream would be a new tax on the ballot that voters would be unfamiliar with and potentially confused by, there is a risk that the tax may not pass.

Other Options Considered

As previously presented to council in 2019, a tax based specifically on natural gas use remains an option that could be considered. A property-based tax is also an option that could be considered as a proxy for carbon impact and mechanism by which revenue could be generated either to replace what is collected through utility taxes or in addition to a utility tax. Because of the issues and limitations noted in the May 2019 study session, a vehicle fee was not considered a viable mechanism for this analysis.

Tax Implications

Based on the recommendation that the Climate Tax be structured as a tax on the total utility bill, consistent with the current UOT, staff conducted a preliminary analysis of the potential bill impacts to the community based on different utility customer type – residential, commercial, and industrial. The analysis is currently only based on applying the tax to Xcel utility bills, since the Xcel information is publicly available. There are also up to 14 independent natural gas providers that also serve customers in the community. Staff will need to conduct additional research to incorporate the revenues from these service providers into the analysis.

Table 3 shows the preliminary results based on different revenue collection targets, assuming the same tax rate for a new Climate Tax is applied to all customers.

Table 3. Annual Average Cost to Residents and Businesses

Per Customer	Current (CAP + UOT)	Proposed Climate Tax @ $3.9 million (current $ levels)	Proposed Climate Tax @ $5 million (25% increase)	Proposed Climate Tax @ $8 million (~double)
Residential	$42.95	$29.80	$38.20	$61.12
Commercial	$241.29	$292.42	$374.90	$599.84
Industrial	$704.83	$1,084.11	$1,389.89	$2,223.82

The Climate Tax would effectively act as a local sales tax on energy, where the $3.9 million target would equate to a 3% tax rate, $5 million a 3.8% tax rate and $8 million a 6% tax rate.

The Need for Accelerated Action: Funding the Next Phase of Climate-Focused Programs
As mentioned, current revenues are insufficient to fully meet the city's climate commitment and resilience goals. While staff is proposing an increase to the existing revenues collected through a new Climate Tax, staff is not recommending a ballot item that addresses the full scope of revenue needs to mitigate and adapt to the climate crisis; however, the climate crisis will likely require additional funding in future years. This section summarizes both a snapshot of how the incremental additional revenues would be allocated, and the potential scope of future climate action and associated funding needs. This analysis is preliminary and will be vetted with the community and further refined for future council discussion.

Based on the vision for the future of the city's climate work, learnings from the last two decades, ongoing input from council and the community, and best practices elsewhere, staff have identified strategies that prioritize systems change, recognize the important role of local government, leverage regional actions to reach the goals, and prepare our community for inevitable stressors. **Attachment D, Achieving Systems-scale impact for Climate Actions—Potential "Big Moves"**, details the types of programs that the Climate Initiatives department would prioritize going forward.

To provide some context, the following graphics are a few selected highlights from **Attachment D**:

1. Energy Systems: Examples of Big Moves

Just Energy Transition	Enhanced weatherization and electrification; Low-to-no-cost solar; Workforce Development
High-Performing, Healthy Buildings	Building codes and voluntary programs to ensure every new building is built to have the lowest possible carbon footprint and all buildings are improved over time
Clean Electricity Supply	New and innovative program models to close the community's emissions gap; Increased local generation and storage
Clean Mobility Solutions	Programs and services to support transportation electrification and infrastructure development, with an emphasis on those that enable solutions for currently underserved segements of the community

2. Circular Materials: Examples of Big Moves

Consumer Goods	Minimize use of single-use plastics; Maximize local reuse and repair; Support market developement for recyclable materials
Built Environment	Support market development for construction waste; Require low-carbon construction materials
Organic Materials (Biomass/ Trees/ Foodwaste)	Minimize foodwaste communitywide; Maximize high-quality compost/biochar production; Maximize local use of compost/biochar

3. Natural Climate Solutions: Examples of Big Moves

Cool Boulder	Major urban forestry climate action campaign to fill available tree-planting areas with appropriate species
Cool and Absorbent Landscapes	Land management strategies and actions designed to increase both carbon and water capture; Enhance ecosystem services critical to buffering climate extremes
Natural Climate Solutions Initiatives (NCI)	Support systems change in local government climate action through building a knowledge and best-practices entity that accelerates the development of natural climate solutions

4. Economic/Financial Systems and Land Use: Examples of Big Moves

Economic Systems	Cost-of-carbon budgeting; Other mechanisms to internalize the costs of climate impacts into city and community economic transactions
Land Use	Building and land use codes that are informed by and advance climate justice, resilience and mitigation goals

Beyond these "big moves" is the broader work of the city organization, to include mitigation efforts focused on our buildings and operations, preservation of our parks and open space, enhancing the resilience of our infrastructure, disaster management, and climate justice programs.

Investment Approach

Attachment C, Table C1, summarizes staff's estimate of the level of annual investment needed between 2023 and 2035 to advance the "big moves" identified, where Status Quo represents how funds are invested today, Transitional represents what might be necessary to make meaningful progress towards the "big moves" and Transformational represents the bottom-up budget estimate for what it would take to fully implement the "big moves". Recognizing this is an estimate, that other funding sources beyond taxes must be considered and that the "big moves" will ultimately be refined through further community engagement, staff focused on addressing the immediate need of preserving investment, and on exploring the opportunity of a modest increase in funding within the construct of what might be considered reasonable as a tax on energy use.

As noted, this is a provisional estimate that will continue to be refined as some of these new initiatives are further developed. Staff does not recommend trying to collect the full amount through an energy utility bill tax. Instead, staff is recommending a modest increase. The additional revenues would provide flexibility and serve as a source of funding for securing private capital. The ability to issue debt against future year's taxes would allow for accelerated investments in community resilience efforts, to include natural climate solutions and expanded building weatherization and electrification.

Given potential federal and private capital that could be leveraged, staff envision that a leverage ratio of 1:5 could be feasible. So, for example, if the city reserved $20 million, this could potentially secure another $100 million.

Environmental Advisory Board Feedback
On Feb. 2, 2022, staff presented information about the CAP Tax to the Environmental Advisory Board (EAB). The EAB members shared the following thoughts and recommendations to council:

The CAP Tax has been an important source of funding for the city's climate efforts since its passing in 2006 and its renewal in 2015. The bulk of the work funded by this tax has been towards mitigation efforts. Although mitigation work is necessary and commendable, we cannot mitigate ourselves out of the current climate emergency. In the past, climate change has been addressed through efforts to lower emissions. We now know that reducing emissions alone is inadequate to address climate change and ensure our citizens can lead happy, healthy, and safe lives. Even if emissions are reduced locally, Boulder will face more severe weather and climate-related events. Resilience and adaptation must be our focus, in conjunction with mitigation, as we move forward. The floods in 2013 and Marshall Fire in 2021 are examples of the types of disasters our community will face due to climate change. We must act to ensure our community is prepared for these types of events and other types of extreme weather events.

The approaching expiration of the CAP Tax in 2023 is an opportune time for us to align our funding source with climate goals adopted by council on October 26, 2021, and with the city's Sustainability and Resilience Framework. Although the option of playing it safe by extending the existing CAP Tax poses fewer risks, business as usual does not make sense during the current climate crisis. Therefore, the members of the EAB, support the following actions:

- Modifying the CAP Tax in a way that is more equitable and aligned with the city's Sustainability and Resilience Framework
- Considering staff recommendations to affect systems change and implement the "big moves" that will help us meet our climate goals while improving the lives of our citizens
- Increasing funding to match the scale of the climate crisis we now face

While we recognize that there is risk in creating a new tax, we believe that, by prioritizing engagement and communications, these risks can be reduced. Engagement and communication should recognize both the successes of our climate action and the threats we will face. We must build up recognition of the resilience efforts within our climate work to parallel and expand on how our funds are going to be used to support our resilience objectives. Finally, our community is accustomed to a focus on mitigation when discussing the CAP Tax. We must shift discussions to focus on resilience and adaptation through communicating the local, practical and tangible benefits of helping our community become more resilient.

This proposed ballot measure is about institutionalizing our environment as a priority. Many individuals, families and businesses have moved to the City of Boulder because of our collective environmental consciousness. We have the opportunity and the responsibility to show our voter base that environmental concerns remain a priority within the City of Boulder.

NEXT STEPS

Based on council's feedback, staff will conduct additional analysis and community engagement and present these results to council for their consideration for placement of an item on the ballot. At a minimum, staff would present council and the community with the estimated financial impacts to the community of the recommended strategy, and with recommended ballot language as informed by community engagement and polling. Staff will also prepare for the close-out or transition of CAP Tax-funded efforts and present this as part of the 2023 budget proposal to council. Details on planned communication and engagement activities are provided below.

If council does not feel that this is the right time to pursue any of the proposed options, staff will evaluate the impact to staff and an approach to discontinue CAP Tax funded programs. Staff will also develop a Budget Policy Issue for the 2023 Budget highlighting that if the 2022 vote does not pass, there will be a funding gap that will make it extremely challenging for the city to stay on track with the climate goals.

Community Consultation and Engagement

The Climate Initiatives department is planning several communication and engagement projects in 2022. This section describes the planned efforts to support the funding strategy decision outlined in this memo and is not inclusive of all communication and engagement activities planned for this year.

Tactical Calendar

The Boulder community is an essential partner in determining the future of climate funding in Boulder. If approved by council, any changes to funding will require voter approval, and it will be important that any ballot item reflect community input and is broadly understood by voters. In addition, changes to the UOT or CAP Tax may fall unevenly across customer classes, based on usage and type of service.

Phase 1: Targeted Outreach to Specific Customer Classes

- **Timeline:** February through May 2022
- **Communication Goal:** Support shared community understanding of climate funding situation, funding options and decision timeline.
- **Engagement Goal:** Ensure that any proposed funding mechanism reflects feedback from specific customer types
- **Key question**: Collection of a new Climate Tax will be tiered, depending on the type of energy customer (residential, small commercial, large commercial and industrial). What is a fair proportion of tax collection by sector?

Communication and Engagement Tactics

Inform	Consult

• City of Boulder web page
• Community-wide webinars and presentations
• City updates via Climate Newsletter, press releases, blog posts and social media
	• Targeted Community Meetings
	  ○ Climate and environmental activist organizations
	  ○ Business Leaders (i.e., Boulder Chamber)
	  ○ Industrial users
	  ○ Commercial energy users
	  ○ Residents (Neighborhood meetings, HOAs, manufactured housing)
	  ○ Energy-burdened community members
	  ▪ Information via trusted community partners
	• Statistically valid poll to likely voters

Phase 2: Voter Education (if applicable)

- **Timeline:** May through August 2022
- **Communication Goal:** Ensure that voters understand their choice on the 2022 ballot
- **Communication Tactics**
  - City of Boulder web page
  - Community-wide webinars and presentations
  - City updates via Climate Newsletter, press releases, blog posts and social media
  - Targeted mail piece

Based on council's feedback, staff will conduct additional analysis and community engagement and present these results to council for their consideration for placement of an item on the ballot. At a minimum, staff would present council and the community with the estimated financial impacts to the community of the recommended strategy, and with recommended ballot language as informed by community engagement and polling. Staff will also prepare for the close-out or transition of CAP Tax-funded efforts and present this as part of the 2023 budget proposal to council.

BEYOND 2022: NEXT STAGE OF CLIMATE ACTION AND INVESTMENT

It must be underscored that as events like the floods, fires, and extreme weather we have experienced now illustrate, climate change is a reality that is happening and will likely intensify. It is now clear that both the original climate action measures and the original funding strategies that the city put in place to work on climate change—including the CAP Tax are also now

insufficient to address the scale and accelerating intensity of climate change that we now face. Staff is not recommending a 2022 ballot item that addresses the full scope of revenue needs to mitigate and adapt to the climate crisis; however, the climate crisis will likely require additional funding in future years. This section summarizes the potential scope of future climate action and associated funding needs. This analysis is preliminary and will be vetted with the community and further refined for future council discussion.

Advancing Climate Action and Resilience and Associated Funding Strategy Development
To stabilize and ultimately reverse the rapidly intensifying impacts of climate change—and to anticipate, absorb and adapt to the impacts this will have—human societies at all levels and in all sectors will have to expand and accelerate both mitigation and adaptation/resilience actions.

Attachment C, Scale of Funding Necessary to Support High-Impact Climate Action, presents analysis intended to provide a sense of the scale of action and investment commensurate to Boulder's size and climate impacts. Staff recognizes that expanding the city's climate action and funding to be commensurate to this scale will require extensive consultation with the community, other key stakeholder groups, and other governmental entities who are critical partners in these efforts.

Staff proposes advancing a new climate action and funding engagement process. This will include both collaborative refinement of the big moves (**Attachment D, Achieving Systems-Scale Impact for Climate Actions—Potential "Big Moves"**) and identification of new funding mechanisms aligned with the type of expanded action that will be necessary such as expanded natural climate solutions, enhanced efforts to address consumption-based emissions, and new frontiers of energy system change. This approach to developing an expanded funding strategy is aligned with the city organization's continued work on addressing climate action and resilience through budgeting, master plans, and community engagement.

To support council's consideration of the city's next stage of climate action and investment, staff prepared three areas of analysis:

1. **Roles for local governments**—Explains the evolving role of local jurisdictions in impacting systems change in climate action.
2. **Scale of Action**—Preliminary overview of the scale of action necessary to implement high-impact climate action strategy across the three current climate action focus areas—energy, natural climate solutions and circular material economies.
3. **Scale of Funding—**Three methods to assess the funding necessary to develop and implement climate action at sufficient scale to have significant impacts on emissions, climate change resilience and equity**.**

1. Roles for Local Jurisdictions to Create Systems Change

Shifting from a strategy focusing primarily on mitigating local emissions and changing behaviors to one designed to drive larger systems-level change requires reconsidering the roles that each of the major sectors need to play - local government, private businesses, civic and non-governmental organizations, academic and research institutions, and community residents. Table 4 provides a working draft of an emerging understanding of what these new roles can and need to be across each of these sectors.

Table 4. Roles to Create Systems Change

	Culture Social Norms	Knowledge & Technology	Economic Systems/Markets	Public Policy
PUBLIC SECTOR	• Public education • Facilitation of dialogue	• Pilots • Ongoing programs	• Investments (municipal, employee pension) • Procurement • Financial services (who we do business with) • Funding innovation	• Local codes-ordinances & policies • State policy advocacy • Federal policy advocacy
PRIVATE SECTOR	• Communicate values • Support education • Advocate industry sector standards/practices	• Implement climate "smart" internal policies e.g. efficiency, energy sources etc • Pilot innovation	• Investments (municipal, employee pension) • Procurement • Financial services (who we do business with)	• Collaborative policy Development • Advocacy for even playing field policy change e.g. carbon tax
NON-GOVERNMENT ORGANIZATIONS	• Investments (municipal, employee pension) • Procurement • Financial services (who we do business with) • Funding innovation	• Program Implementation • Design • Management • Evaluation	• Investments (municipal, employee pension) • Procurement • Financial services (who we do business with)	• Policy Engagement • Analysis and education • Policy Development • Monitoring and reporting
ACADEMIC/ EDUCATIONAL	• Create educational programing • Research social values & narratives	• R&D around technology or services • Pilot project development	• Investments (municipal, employee pension) • Procurement • Financial services (who we do business with)	• Policy Analysis • Data gathering/analysis
PUBLIC/PERSONAL	• Communicate values through public media • Support initiatives aligned with cultural change	• Communicate with fellow residents and stakeholders • Participate in pilots/actions	• Investments (municipal, employee pension) • Values-based purchasing • Financial services (who we do business with)	• Participate in policy development • Communicate with other residents and stakeholders • Vote

The Climate Initiatives department has begun to assess both the larger systems-change actions that are needed, and what the specific roles of the city organization can play. While this table does not provide an exhaustive list of actions, it is helpful to break down larger systems into four broad categories: Culture, Knowledge, Economy and Policy. The city, other institutions, non-governmental organizations, academic institutions, the private sector, and individuals all have unique levers to drive systems change within these categories Row one of Table 4 summarizes major roles the city can play in this systems-change focused approach.

2. Scale of Action: Achieving systems-scale impact for climate actions, potential "big moves"

While recognizing that the need to shift towards equitable, systems-oriented strategies requires action by all sectors in the community, the emerging strategies described in **Attachment D, Achieving Systems-Scale Impact for Climate Actions—Potential "Big Moves"**, specifically

leverage the city's strengths and represent major actions proposed for the city organization to undertake.

The big moves in **Attachment D** are examples meant to serve as a starting point for a community-wide conversation on the steps the city, broader community and region must take to enable systems-level changes now required. While these actions reflect the initial thinking of the Climate Initiatives department, specific actions will evolve and be adjusted through community engagement and the changing context of climate action.

3. Scale of Funding: Funding Scale Necessary to Support High-Impact Climate Action
In considering the level of revenues that might be needed to scale up actions, including those identified as "big moves", staff considered lessons learned from two decades of climate action, including an assessment of past and existing programs; community engagement and feedback; a landscape review to learn from the programs, services and initiatives of other cities throughout the state, nationally and even globally; ongoing local climate risks and impacts studies and analysis of the political landscape to identify opportunities and likely gaps.
To arrive at a recommendation, staff identified various qualities that were important to consider when evaluating options, they include:

- The scale of funding matches the scale of action needed
- Funding sources align with the needed climate actions so that the community can intuitively understand the connection between revenue sources and services provided
- The process of scoping and securing funding is adaptive and emergent
- Sources are sufficiently stable to support sustained, multi-year actions
- Sources limit regressive effects on vulnerable populations

Three analyses were used to help frame the revenue discussion relative to the scale of funding, while outlined below, detailed content on these three analyses can be found in **Attachment C, Scale of Funding: Funding Scale Necessary to Support High Impact Climate Action**:

1. Social Cost of Carbon – Represents the global cost of the community's continued role in causing climate change. This would represent a true carbon tax on the community's emissions and is likely representative of the total investments that will be needed.
2. Comparison to other Communities – The level of revenues being collected by other communities to invest in their climate programs. This would represent keeping pace with other leading communities.
3. Big moves Financial Analysis – Based on the "big moves" outlined in **Attachment D, Achieving Systems-scale impact for Climate Actions—Potential "Big Moves",** staff created an estimate of what it would cost to implement the priorities using a bottom-up approach, building a budget based on estimated costs of these big moves.

- To summarize, Table 5 represents the results of the analysis outlined above and detailed in **Attachment C, Scale of Funding Necessary to Support High-Impact Climate Action**, to help define the scale of funding in each of the three analyses.

Table 5. Scale of Climate Action Funding Revenue Analysis Summary

	Low-End Estimate (Annual)	**High-End Estimate (Annual)**
Social Cost of Carbon	$54.9 Million[9]	68.7 Million[10]
Comparison to other Communities	$12 Million	$33 Million
Big Moves Cost Estimate	$10.5 Million	$15.1 Million

The above represents the likely range of investment that would be needed to fulfill the city organization's role in advancing the community's climate goals. It is important to note that saying $69 million might need to be invested is not the same as saying that $69 million in new revenues are need. Beyond the climate-centric programs discussed, climate mitigation and resilience is embedded in efforts throughout the city organization already. It is being further elevated through ongoing master and comprehensive planning efforts across the city organization and through city infrastructure investments. As the city continues to build and refine its understanding of the localized impacts of climate change, additional investment needs will be identified and will be brought forward to council.

Core Characteristics of Climate Work: Iterative, Nimble and Scalable

Planning for climate action efforts will be iterative and dynamic and staff's approach to developing work plans will be in response to this quickly changing world in which we find ourselves. Because of the rapid change in both climate and the many factors affecting our ability to respond to climate change—environmental, social, and political—staff has been and will continue to develop a much more iterative and adaptive approach to climate action planning and implementation. Some examples include – shifting our incentive investments to provide greater benefit to those who are most energy burdened, rather than those who emit the most emissions; entering a franchise with Xcel given their emissions reduction trajectory; increasing funding for natural climate solutions recognizing that our ecosystems are critical to both mitigation and adaptation; focusing on the entire life cycle of materials, instead of just focusing on managing waste diversion.

[9] Based on $42.23 per metric ton of carbon. In 2020, Boulder emitted 1.3 million metric tons of carbon dioxide.
[10] Based on $52.85 per metric ton of carbon emitted. In 2020, Boulder emitted 1.3 million metric tons of carbon dioxide.

ATTACHMENTS

Attachment A: Current Funding
Attachment B: Snapshot of CAP Tax Investments
Attachment C: Scale of Funding Necessary to Support High-Impact Climate Action
Attachment D: Achieving Systems-Scale Impact for Climate Actions—Potential "Big Moves"

Attachment A: Current Funding

Current Sources of Funding for Climate Initiative Department

Funding is generated through a combination of taxes and fees, summarized in Table A1.

Table A1: Current Sources of City of Boulder Climate Funding

Funding Category	Funding Source	Annual Average Revenue	Expiration Date
Voter-Approved Tax	CAP Tax	~$1.8 Million	March 2023
	Utility Occupation Tax – Climate Initiatives Portion	~$2.1 Million	December 2025
General Fund Transfers via Taxes	Trash Tax	~$1.8 Million	No Expiration
	Solar Grants	~ $50,000	No Expiration
Fees	Environmental Impact Offset Fund	~$400,000	No Expiration
	Disposable Bag Fee	~ $180,000	No Expiration

<u>Dedicated Funds (voter approved)</u>

- Climate Action Plan (CAP) Tax: Initiated in 2007, this voter-approved tax on electricity consumption generates approximately $1.7-$1.8 million per year. The CAP Tax was modified in 2009 and extended in 2011 and 2015. It is set to expire in March 2023.
- Utility Occupation Tax (UOT): A voter-approved tax on the utility (Xcel Energy), which gets passed on to ratepayers. The UOT originally included an allocation to fund the city's efforts to develop a local electric utility (i.e., municipalization). When renewed in 2017, the tax was approved by voters to collect ~$6 million in 2018, ~$5 million in 2019, and ~$2 million 2020-2022. In 2020, this tax was revised and repurposed to fund the city's partnership with Xcel Energy, as well as extended through 2025.

<u>Taxes under General Fund</u>

- Trash Tax: Initiated by council in 1989, and re-authorized with bonding authority by voters in 1994, this tax is levied on the quantity of residential and commercial waste collected in Boulder. The Trash Tax generates approximately $1.8 million per year, $400,000 of which is annually dedicated to debt service for a nonprofit general obligation bond that was used to purchase the city's recycling center property at 6400 Arapahoe (leased to Resource Central and Eco-Cycle). The remaining approximately $1.4 million funds the city's operational costs of its Zero Waste efforts.

- Solar Grants and Rebates: A portion of the sales tax on solar installations is used to provide rebates for solar installations and a grant fund for solar for lower-income households and nonprofits.

Fees

- Environmental Impact Offset
- Disposable Bag Fee
- Marijuana Licensing and Deconstruction Refundable Deposit

General Fund

- The department also receives a small amount of general funds for department administration.

Other

- The department also fund raises through external grant opportunities.

Attachment B: Snapshot of Climate Action Plan (CAP) Tax Investments

CAP Tax dollars fund both programs that deliver dollars to the community and city staff who manage programs, implement regulation and lead policy, regulatory and partnership efforts. The following provides a sampling of achievements realized through CAP Tax investments since 2005.

Program	Achievements
Commercial Rebates and Advising: Partners for a Clean Environment (PACE)	• 16,000 metric tons of CO_2 avoided • 24 million kWh/year saved • 2.5 megawatts of new local solar generation • $4.7 million in rebates, leveraging $23 million in private investment • More than 1200 businesses upgraded
Building Performance	• Visibility into energy use and savings opportunities for more than 420 commercial buildings • 100% compliance rate • 3% reduction in energy use in the first three years, with substantially more expected through ongoing efficiency upgrades • 152 buildings currently undergoing lighting upgrades
Residential Rebates and Advising: EnergySmart and Comfort365	• 10,000 metric tons of CO_2 avoided6 million kWh/year and 950,000 therms saved • $2 million in rebates, leveraging $23 million in private investment • Nearly 5000 homes upgraded • Leveraged $300,000 in grant funding to acceleration heat pump adoptions; achieved 200%+ adoption rate
SmartRegs	• 96% compliance by 2018 deadline • More than 7000 residential units upgraded • More than 4000 metric tons of CO_2 avoided
Solar Initiatives	• Ponderosa Solar Garden: First municipally owned solar garden in the country, dedicated to low-income customers • Low-Income Solar Programs: Low-to-no cost solar garden subscriptions saving Boulder residents as much as $400 a year • 2.1 megawatts of solar added to city facilities, including two downtown garages • More than $1 million in solar grants
Transportation	• 48 Public EV Charging Stations • Downtown access to EV Car Sharing • First vehicle-to-grid pilot project in the state, saving the city thousands of dollars a year in utility costs • Strategic planning to support transit electrification

Program	Achievements
Innovation: Boulder Energy Challenge	• $550,000 in grants awarded, leveraging millions in private investments • 10 projects advanced innovations in energy storage, clean mobility, energy efficiency and renewable energy
Energy Codes	• One of the most aggressive codes in the country; 25-30% better than national code • Roadmap to net zero construction by 2031 • More than half of residential homes built since 2018 have been net zero • Solar installed on all new buildings
Community Resilience	• Leveraged ~$400,000 in federal funding to enhance resilience at critical facilities • Implemented battery backup system for Boulder Housing Partners • Developed nanogrid infrastructure at Via Mobility
Policy Reform	• Co-founded CC4CA, which has grown to a coalition of 40 counties and municipalities • Through CC4CA, successfully influenced outcomes in numerous bills, including 42 in the 2021 legislative session • Substantial contribution to multiple climate bills, including 2010 Colorado Communities Solar Garden Act (the first-in-nation statewide shared renewables legislation) and 2019 Climate Action Plan • Climate Change Lawsuit against ExxonMobil and Suncor
Regulatory Reform	• Active intervention in Public Utilities Commission (PUC) proceedings, including more than 25 cases since 2016 • Annual publication of community energy reports
Partnership	• Founding Community, Building Electrification Institute • Core City, Urban Sustainability Directors Network and Carbon Neutral City's Alliance • Support for Climate Justice Collaborative

Attachment C: Scale of Funding Necessary to Support High Impact Climate Action

Three analyses were used help frame the revenue discussion relative to the scale of funding for climate action.

1. Social Cost of Carbon – Represents the global cost of the community's continued role in causing climate change. This would represent a true carbon tax on the community's emissions and is likely representative of the total investment that are needed.
2. Comparison to other Communities – The level of revenues being collected by other communities to invest in their climate programs. This would represent keeping pace with other leading communities.
3. Big Moves Financial Analysis – Based on the "Big Moves" outlined in **Attachment D: Achieving Systems-scale impact for Climate Actions—Potential "Big Moves"**, staff created an estimate of what it would cost to implement the priorities using a bottom-up approach.

Social Cost of Carbon/Social Cost of Greenhouse Gases

An important reference point is the social cost of carbon, an estimate of the economic costs, or damages, of emitting one additional ton of carbon dioxide into the atmosphere, and thus the benefits of reducing emissions. House Bill 21-1238 directed the Public Service Commission to apply a social cost of carbon of $68 per short ton ($2020) to the evaluation of demand-side management programs and electric resource plans. Senate Bill 21-246 directed the Public Service Commission to apply a social cost of methane of $1,756 per short ton. Since 2019, all Canadian provinces have applied a price on carbon dioxide emissions. The Report of the High-Level Commission on Carbon Prices (2017) estimated that the appropriate carbon price across the world will need to be $40 to 80/MT CO2e by 2020, and $50 to $100/MT CO2e by 2030, to be consistent with meeting the goals of the Paris Agreement. A 2018 study published in Nature Climate Change, "Country-level social cost of carbon", estimates the social cost of carbon (SCC) in the US to be $180 to $800 per ton (median $417/MT CO2e).

Forty-five countries and 34 sub-national regions (states, provinces, etc.) have a national or regional price on carbon, and many more are actively considering this. Together, these carbon pricing initiatives cover about 11.65 gigatons of carbon dioxide equivalent (GtCO2e), or about 21.5 percent of annual global GHG emissions.[1]

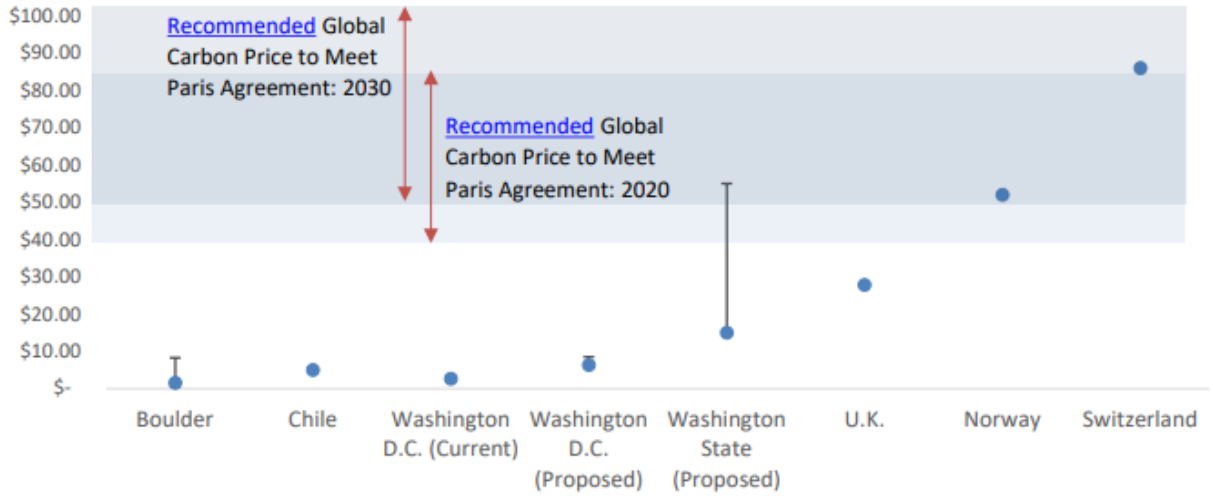
[1] https://carbonpricingdashboard.worldbank.org/

Examples of Recent and Proposed Carbon Taxes around the World

Carbon Tax (Date Enacted)	Sectors Covered	Rates	Estimated Annual Revenues ($/year)
U.K. Carbon Price Floor (2013)	Tax on fossil fuels used to generate electricity	$27.79/MT CO2e	$1.3 billion
Washington State Ballot Initiative 1631 (on 2018 ballot)	Fee that charges large polluters for the carbon content of fossil fuels used or sold and electricity generated or consumed within the state	$15/ MT CO2e (w/ $2 inflation up to $55/ton in 2035)	$459 million (average for first 5 years)
Washington D.C. Sustainable Energy Trust Fund (2008)	Electricity and gas surcharge; exempts low-income residents and electricity from renewable sources covered by RECs under the Renewable Portfolio Standard	$0.0015/kWh $0.014/therm Electricity: $3.28/MT CO2e Natural Gas: $2.63/ MT CO2e	$20 million
Washington D.C. Clean Energy DC Act 2018 (Proposed Oct 2018)	Would double current electricity surcharge and triple current natural gas surcharge; maintains exemptions for low income and renewables	Electricity: $6.35/MT CO2e Natural Gas: $8.49/ MT CO2e 24 *natural gas rate reduced each year until it plateaus at $2.63/ton in 2032	$26 million

While Boulder was the first city to pass a voter-approved climate mitigation tax, since 2007, many other cities, states and provinces have passed some version of a carbon tax or fee to generate necessary revenue to fund climate efforts and to create a pricing mechanism that accelerates the market shift to clean, renewable energy systems. Figure 1 below shows that most carbon taxes (current or proposed) are significantly higher than Boulder's CAP Tax, especially when considering that many of these apply to all fossil fuel sources, not just electricity.

Figure C1: Comparison of Carbon Prices ($/MT CO2e)



Comparison to Other Communities

Denver

In 2020, Denver's city-appointed Climate Action Task Force released a report detailing a set of recommendations urging action to reduce Denver's impact and prepare for climate change. The focus of the priorities outlined in the report included:

- A retrofit of existing homes and buildings to support energy efficiency, and stricter requirements for new buildings
- An expanded bus system that is more affordable and fully electric
- A reconfiguration of city streets to give more space to buses, cyclists, and in commercial areas, food vendors
- An investment in electric vehicle infrastructure
- An end to the use of natural gas for heating and cooking as much as possible

All in all, the report estimated a cost of $3.4 billion over the next decade at an average of $345 million per year that would be required to implement the recommendations and build the necessary infrastructure.

While the task force acknowledged their recommendations amounted to a "significant investment," their report suggests the plan could save Denver citizens billions in the long run. The policies could blunt the most expensive impacts of climate change. The recommendations could also move the city to technologies like electric buses, which have higher upfront costs than standard fossil-fuel buses, but that will save money in the long run through lower maintenance and fueling costs. This is just one example of how Denver's plan frames the importance of investing now to avoid future costs, noting that, "every dollar we spend in prevention and preparedness now will save many dollars in the future." Within the report, the Task Force conducted an analysis to determine the cost of climate impacts to Denver as well as the potential savings that could result from enacting climate action initiatives. The result was a staggering

combined total of $20.2 billion at a minimum, or nearly seven times the $3 billion investment needed.

To fund this unmet need, the task force recommended a quarter-cent sales tax hike and a slate of new fees on parking and personal vehicles as a first step towards covering the cost. On Nov. 3, Denver voters approved a measure to increase the city's sales tax rate by $0.0025 and generate between $20 and $40 million a year to combat climate change and economic disparity.

Denver's Climate Action Report recognized that while their findings show the city needs ~$345 million annually, that this is more than can currently be raised and invested. Therefore, they note alternative options for funding infrastructure investments, such as public-private partnerships, bond measures, green or public banking, or stimulus funds. It is for these same reasons that Boulder seeks a funding mechanism with bonding capacity, so that the city may accelerate invests in necessary infrastructure at the required time and scale. Without the infrastructure costs included, Denver estimates $76 million annually will be needed to engage in advocacy, policy, behavior change, and incentive provisions.

Given that Denver's total GHG emissions (excluding consumption-based) are approximately 6x the City of Boulder's emissions, we could use a proxy estimate of Denver's findings to determine what comparable levels of funding would look like for Boulder. Rather than the $345 million that Denver noted as a requirement for meeting their climate investment needs, that would equate to approximately $33 million annually needed for Boulder. The equivalent amount of funds needed without infrastructure costs included for Boulder would be approximately $12 million annually, with the ability to bond for larger capital projects.

Boulder County Sustainability Tax

In 2016, Boulder County voters approved a Boulder County Sustainability Tax (BCST), a sales tax to allocate a portion of sales and use tax revenue to fund sustainability infrastructure and programs. The tax passed with 70% support and went into effect in 2020. This tax is intended to reduce greenhouse gas emissions, conserve natural resources, support the local economy, protect the health of residents and ecosystems, and encourage citizens to be environmental stewardship leaders.

Minneapolis

In 2018, Minneapolis approved an additional 0.5% added to the electric and natural gas franchise fees to fund climate mitigation efforts. At the time of passage franchise fees varied by customer sector: residential customers paid 4.5%, commercial customers paid 5% and industrial customers paid 3%. The 0.5% increase added $0.57 per month to the average residential customer bill, $7.16 per month for commercial and $195 for industrial. The 0.5% increase was expected to raise approximately $2.9 million per year to fund climate and energy programs.

Ithaca, NY – Building Electrification

In November 2021, the City of Ithaca, NY approved a council resolution authorizing an energy efficiency retrofitting and thermal load electrification program. The city solicited proposals to improve the overall energy performance of the city's building stock with a focus on energy

conservation and efficiency and the transition of natural gas consumption and air conditioning to air- and ground-sourced heat pumps, LED lighting, on-site solar and energy storage and other distributed energy technology.

The 10-to-15-year program will leverage public and private funds (sourced from the community) and will include 4,500 residential and 1,500 non-residential buildings with an emphasis on low- and moderate-income communities.

Phase 1 of the project will focus on 1,000 residential and 600 non-residential projects. The city organization will provide investment to secure an estimated $100 million in private capital to provide the financing for the effort. Ithaca estimates a 40% reduction in greenhouse gas emission from existing buildings and the creation of 400 jobs to implement the initiative.

Big Moves Financial Analysis

Over the past two years, city staff have worked both internally and with a wide range of leaders in the field of climate action to assess what the city's greatest impacts could be in supporting the systems-scale changes that must be made within the next decade to give humanity a chance of avoiding pervasive catastrophic impacts globally and locally.

Attachment D: Achieving Systems-scale impact for Climate Actions—Potential "Big Moves", represents this proposed body of work. To achieve this scale of action and impact will require a significant increase in investment. Projections on the scale of these investments is included in Table 1 below.

Current Climate Initiatives Department funding levels are approximately $5.4M annually, which includes $1.8M from the expiring CAP Tax, $2M from the soon to expire Utility Occupation Tax, and $1.6M from the Trash Tax, which is an ongoing tax without expiration. More detail on current funding sources for the Climate Initiatives Department driven work is in **Attachment A: Current Funding.**

The Big Moves identified, and associated budgets, are focused on scaling and accelerating the types of community-facing programs, services and initiatives that have historically been funded through the three climate-specific funding sources – CAP Tax, UOT and Trash Tax. The analysis does not yet reflect the current investments or revenue needs of work housed within other city organizations and budgets. Accelerated investment will be needed in these areas, as well, particularly as it relates to climate resilience. Recent events spotlight the severity of the hazards climate change brings. Continued rising temperatures and extremes will add further stresses to our population and our infrastructure. Ongoing efforts are underway to refine our models and forecasts for what the localized impacts of climate change will mean in terms of the city's infrastructure and our services. Master Plan and Comprehensive Plan updates will also inform where priority needs to be placed and where additional revenue will be needed.

In Table C1 below, the Transitional funding levels would be $10.5M annually and transformational levels would be $15.1M annually. Staff does not currently support raising this level of funding through a tax on energy utility bills.

Table C1: Bottom-up Analysis Based on Big Moves

CAP Focus Area	Climate Action Objectives	Estimated Annual Funding Levels--Climate Initiatives 2023-2035								
		Current/Status Quo			Transitional			Transformational		
		Capital	Other	Leveraged	Capital	Other	Leveraged	Capital	Other	Leveraged
Energy Systems	Ensure equitable and affordable access to energy. Establish a safe, healthy, and resilient fossil-fuel-free energy system. Transform existing building stock to mitigate their environmental impacts and ensure they provide affordable, healthy, and resilient spaces for their occupants. Ensure all newly-constructed buildings have the lowest possible carbon footprint and provide affordable, healthy and resilient spaces for their occupants. Provide clean mobility solutions that are accessible and affordable to all.	$0	$3,800,000	$20,000,000	$1,000,000	$7,000,000	$40,000,000	$4,000,000	$8,700,000	$80,000,000
Circular Materials	Minimize waste production per capita and maximize diversion from landfills. Enable repair, reuse, and remanufacturing of components and materials Employ circular principals in building construction and demolition Employ circular principals in building construction and demolition. Reduce the carbon footprint of production cycles we have the greatest ability to affect Create a closed loop system that reduces fire risk in our community, converts biomass to biochar, and generates clean energy to fuel buildings by 2030	$400,000 (bond service)	$1,200,000	$3,100,000	$500,000	$2,000,000	State funding through EPR legislation, FRWD grants, and bag ban fees	$1,538,462	$4,000,000	$10,000,000 + state, county
Natural Climate Solutions	Foster community resilience through carbon enhanced ecosystems. Increase natural carbon sequestration within and beyond our boundaries. Support the growth of economic sectors that sustain critical ecosystem services. Design actions to maximize equitable ecosystem benefits. Advance the field of natural climate solutions beyond Boulder.	$0	$0	$400,000	$1,000,000	$1,500,000	$2,700,000	$3,000,000	$2,400,000	$3,200,000

Attachment D: Achieving Systems-scale impact for Climate Actions—Potential "Big Moves"

Energy

Addressing the emissions associated with our energy systems has been the dominant focus of the city's climate work and investments for the last two decades. Reducing emissions associated with electricity has been central to this, both because electricity use is the largest single source of the community's emissions and because the strategies to address the next two largest sources – transportation fuel and natural gas – rely on the ability to transition those systems to clean electricity.

Energy is fundamental to the health and well-being of mankind. Whether it is heating and cooling for our buildings, transporting people and goods, or manufacturing the things we rely on in our daily lives, energy is core to life as we know it. In the face of climate change, energy is even more critical. With rising temperatures, extreme weather events and declining air quality, livable buildings powered by reliable sources of clean energy are essential.

The city will continue to advance its energy-related goals through partnership with Xcel Energy; local, regional and state coalitions; regulatory and legislative advocacy; and implementation of local programs and services.

<u>Just Energy Transition</u>
Communities of color and low-income households often lack adequate sheltering to protect against the effects of climate change, to include the rising energy burden that comes with extreme temperatures. Today, 30% of Colorado households are considered energy burdened, with more than 10% classified as energy impoverished (meaning that more than 10% of their household income goes to cover energy costs). The energy transition must equitably address the energy burden and the climate inequities if we are to ensure the continued health and well-being of our community and our economy in the face of our changing environment.

Investments must provide bill stabilization and long-term relief for low-income households. Housing stock must be improved to ensure it is resilient and provides for healthy and safe space. Safe sheltering must be available for those who are most at risk during extreme temperature and air pollution events.

Priorities:

- Low-to-no-cost solar and solar garden subscriptions for energy-burdened residents and businesses
- Weatherization and electrification programs targeted towards the most vulnerable housing stock, such as the city's 1300 manufactured homes
- Workforce development efforts to enable clean energy job opportunities and ensure that adequate workforce is in place to deliver against goals

High Performing, Healthy Buildings

On average, people spend 90% of their time indoors. This percentage will likely increase as climate impacts continue to grow in severity. Today, energy use – electricity and natural gas – in residential and commercial buildings represent more than two-thirds of our local GHG emissions. Buildings represent other risks, as well. The use of natural gas appliances in buildings contribute as much to our front range air pollution as do our fossil power plants. A recent study by Rocky Mountain Institute showed that, in 2017 alone, pollution from Colorado's buildings contributed to 181 early deaths and more than $2 billion in health impact costs.[1] If our buildings are to provide healthy and resilient spaces for our community and we are to mitigate their role in driving climate change, our buildings must be high performing and they can no longer rely on gas combustion appliances.

Priorities:

- Building codes that ensure every new building is built to have the lowest carbon footprint possible and that all existing buildings are improved over time
- A combination of voluntary and regulatory programs to drive and support the community in electrifying our buildings
- New technology solutions and innovative strategies to make clean solutions accessible and affordable
- A combination of voluntary and regulatory programs that ensure our buildings remain resilient and can adapt to the changing needs of our community as climate extremes worsen

Clean Electricity Supply

Zero-emissions electricity supply is core to addressing electricity's contribution to climate change and for providing the clean electrification solution for transportation and buildings. Our electricity system must be reliable and resilient, and fully serve the demands of the community. Since the community first adopted its 100% renewable electricity goal, significant progress has been made, not just locally for Boulder, but statewide. Utilities, including Xcel Energy, are on trajectories to exceed state-mandated emissions reduction targets. Storage technologies have continued to advance, and the cost of renewables continues to drop, making zero-emission firm-dispatchable electricity truly viable as cost-effective replacement for fossil systems. While a gap remains to be closed, the strategies must adapt to reflect the significant progress that has been made. Recent climate-driven events – floods, fires, winter storms –spotlight the vulnerabilities of our energy systems. Mitigating these vulnerabilities must be centered in the city's electricity supply strategies.

Priorities:

- New and innovative program models to close the community's emissions gap

[1] https://rmi.org/health-air-quality-impacts-of-buildings-emissions/#CO

- Programs and investments to accelerate development of local renewable generation and storage
- Investment in tools, such as undergrounding, advanced grid technologies, and micro-grids and district systems that lead to increased system reliability and resilience
- Demand management programs to reduce the community's electricity needs and better align those needs to be served by zero-emission electricity sources

Accessible Solutions for All

Significant changes to our built environment are going to be necessary to achieve our community's climate goals. While the city can assist with incentive and grant programs, what can reasonably be provided is only a fraction of what is going to be needed in terms of investment. This means the costs of the transition will largely fall on residents and businesses. New tools and service models will be needed to deliver the speed and scale of the changes necessary to address climate change.

Priorities:

- Financing tools to alleviate the financial burden of implementing efficiency improvements; electrifying heating, cooling and cooking; and adopting on-site solar and storage
- Loan and service products that simplify the customer experience and accelerate action

Clean Mobility Solutions

Within the next few years, transportation will overtake electricity as the largest source of energy-related emissions. Transportation is also a significant contributor to our community's declining air quality. The city's Transportation Master Plan (TMP) represents the breadth of the community's transportation needs including core strategies to mitigate impacts through reduced vehicle miles traveled and for providing clean mobility solutions that advance those goals. Recognizing that those strategies will not fully mitigate the need for personal vehicle travel and that transit and fleet (e.g. government, corporate, rideshare, delivery, transit) electrification is essential to achieving climate and resilience goals, advancing electric vehicle adoption remains critical.

Priorities:

- Programs and services to support transportation electrification and infrastructure development, with emphasis on those that enable solutions for currently underserved segments of the community
- Building codes that ensure residents, businesses and workers have access to charging
- Programs and services that accelerate strategies as outlined in the TMP

Circular Materials

Over the course of the past several decades, the City of Boulder has focused much of its 'zero waste' work on mitigating the effects of waste production, aiming to minimize waste, while

maximizing recycling and composting. However, as the scope of the climate crisis becomes clear, it is imperative that the city consider the full impacts of our consumer-driven society; address the significant potential for climate improvements through organic-based living systems (trees, lumber, grass and food) management; and ensure every member of our community has equal access to durable goods and convenient waste management programs.

A study conducted in 2019[2] looked at all the materials that come into Boulder and what happens to them while inside our city boundaries – as a way to identify opportunities to create a more 'circular' economy locally. The city looked to identify ways to support everything being used in Boulder to be efficiently re-manufactured, thus ending the "take-make-dispose" path currently characterizing local materials flow. Among its findings, this study concluded that when looked at globally, the emissions associated with the 'stuff' that is consumed and used in Boulder is greater than all of the other local emissions combined; and, furthermore, a 5% reduction in the amount consumed in Boulder would be equivalent to cutting electricity emissions by 10% or transportation emissions by 20%.

While this is interesting, staff also recognizes that the city organization has very limited control over supply chains and the emissions 'embodied' in the materials that show up at our borders. For example, *electronics, appliances and equipment* were found to make up 34% of the embodied emissions in Boulder's inventory, and while we cannot affect those emissions that originate primarily overseas, the city *can* potentially affect the repairability of those electronics and appliances. In contrast, when looking at the life cycle of organic materials that comprise 18% of our community's embodied emissions, the city *could* have a direct impact by influencing how trees, grass and food are grown and managed, as well as whether these organic systems actively capture carbon to sequester it.

The resulting high-impact programs identified in the circular materials work area include:

Consumer Goods

- Minimize single-use plastics
- Support market development for recyclables, including Boulder Innovation Garage
- Maximize local reuse and repair
  - Promote sharing platforms over individual ownership
  - Repair clinics, thrift stores

Built Environment

- Maximize reuse and recycling
- Support market development for construction waste
- Require low-carbon construction materials

[2] Kennedy, Erin & Andrew McCue Metabolic Consulting, *Circular Boulder, Pioneering Steps Towards a Zero-Waste and Climate Neutral City*

- Ensure buildings are designed for deconstruction

Organics materials - Biomass/trees/food waste

- Minimize food waste community-wide
- Maximize high quality compost/biochar production
- Maximize local application/utilization of compost/biochar

Natural Climate Solutions

The city has a long history of efforts to conserve, protect, and restore environmental health--both in the Open Space and Mountain Parks lands that so define the Boulder Valley landscape, and in the urban landscapes managed by the Parks Department, utilities, and other public and private entities. In recent years, climate science has come to recognize the critical role that land and aquatic systems management also play in either contributing to climate change or supporting its stabilization. The growing focus on ecosystems-based climate stabilization are increasingly referred to as "Natural Climate Solutions". Over the past two years, the city has worked with departments across the city, as well as a wide range of researchers and leaders in the field of nature-based/natural climate solutions to identify and develop systems-change oriented action opportunities.

This process has also resulted in the establishment of a new workgroup within the city's Climate Initiatives Department called "Natural Climate Solutions". Through these collaborative efforts, new objectives, targets, and progress indicators have been developed that represent our best current assessment of the outcomes we need to rapidly work towards to achieve our three broader climate action goals—climate stabilization, climate change resilience, and expanded community equity.

The following "Big Moves" have been developed in collaboration with multiple city departments and a broad cross-section of other organizations and stakeholders as the next steps in the city's legacy of environmental leadership. Two of these action areas— "Cool Boulder" and "Cool and Absorbent Landscapes" are led primarily within the Natural Climate Solutions team and its partners in other departments. Four other action areas—Community Climate Change Projections, Climate/Green Jobs, Regeneration Resources, Urban Drawdown Initiatives—are being co-developed and enacted with other divisions within Climate Initiatives or other partners.

The resulting high-impact programs identified in the Natural Climate Solutions work area include:

Cool Boulder

- Urban Forest: In 2022, the Climate Initiatives and Parks and Recreation departments will launch a major urban forestry-as climate action campaign with a significant focus on supporting private landowners—both residential and commercial/institutional—to fill available tree planting areas with appropriate species.
- Cool Corridors: As part of the "Cool Boulder" campaign, Climate Initiatives will work with the Planning Department to expand efforts to develop a network of vegetative

("pollinator") corridors designed to create habitat connectivity and natural vegetative cooling systems across the city.

Cool and Absorbent Landscapes

Climate Initiatives is working with the city's Open Space and Mountain Parks Department to develop land management strategies and actions designed to increase both carbon and water capture and enhance the associated ecosystem-based services (cooling, storm water infiltration, biodiversity protection, drought durability) that will be critical to buffer increasing climate extremes.

Additional Initiatives

In collaboration with other city departments and external partners:

- Community Climate Change Projections: Climate Initiatives is leading efforts to coordinate the development of locally scaled climate change projections and processes that aid both city departments and potentially other sectors of the community in planning for climate change.
- Climate/Green Jobs: CI is working with a number of other public sector partners to explore opportunities to integrate natural climate solutions and other climate action priorities with an emerging federal priority to invest in Civilian Climate Corps programs.
- Regeneration Resources Production Center: CI is working with the County and external organizations to scope the infrastructure development costs for creating a "Regeneration Resources" production center capable of producing biochar, compost and other soil amendments.
- Urban Drawdown Initiative/Natural Climate Solutions Initiatives (UDI): The city initially co-sponsored the establishment of Urban Drawdown Initiatives in collaboration with the the Urban Sustainability Director's Network (USDN) in 2019 to support systems change in local government climate action through building a knowledge and best practices dissemination entity that accelerates the development of natural climate solutions. In early 2022 UDI will be renamed the Natural Climate Solutions Initiative (NCSI) and will continue to expand its current network of over 50 cities and counties actively collaborating on this initiative.

Economic and Financial Systems

Following the community's call for economic and financial systems to be included as a core area of the city's climate action strategy, staff began working with community partners to scope where the city could have the greatest impact in this area. While there have been a variety of tactical actions focusing on the economy and climate that some cities have been engaged in—most notably divestment from fossil fuel companies—there is currently no consistent framework for city-based, economy/financial systems-oriented climate action currently established.

Recognizing this need for a broader shared understanding of this action area and the options within it, the city initiated a unique six-month speakers forum that it developed and coordinated in collaboration with four other co-sponsors: the Urban Sustainability Directors Network, The Carbon Neutral Cities Alliance, the Council on World Affairs, and Boulder County. Starting in May 2021, the city coordinated internationally recognized leaders on topics ranging from global

sustainable development (Jeff Sachs) to redistributive economies (Kate Raworth), landscape scale regeneration (John Liu), and federal financial policy (Congressman Joe Neguse, Professor Robert Hockett). Through these sessions, the city elicited ideas, suggestions and possible directions for strategies designed to redirect the economy in service of climate stabilization.

This action area is still in its formative stages. We expect development of strategies and "Big Moves" in this area will emerge over the next six-to-nine months as the city continues to convene discussions with other jurisdictions and partner organizations to identify the roles where the city's actions could have the greatest impact. The strategy in this area will also be shaped in part by the outcome of the current negotiations in Congress around the size and content of the Presidents infrastructure and "Build Back Better" agenda. We expect greater clarity about both what will be passed into law and how those new authorities will translate into local action opportunities by sometime in the first quarter of 2022.

Action opportunities we are already exploring based on the Forum and other efforts already underway include:

- Development of Civilian Climate Corps (CCC) deployments in Boulder/Boulder County to address critical climate action priorities
- Engagement with state lawmakers to assess options for achieving greater alignment with the PERA investment portfolio and the community's climate priorities
- Exploration of opportunities to create more direct engagement between the city and the Federal Reserve in accessing both funding and technical assistance around climate action and economic transition investments
- Analysis of cost-of-carbon budgeting and other mechanisms to internalize the costs of climate impacts into both city and community economic transactions.

A more detailed strategy around economy-focused climate actions will be developed and integrated into the adaptively updated climate action plan.

Land Use

Land-use strategies, to include decisions around building density, acquisition and preservation of open space and parks, development and redevelopment, utility infrastructure, and hazard mitigation, all influence the degree to which the community can meet climate mitigation, resilience, and equity goals. These efforts are centered throughout the city organization and continue to evolve as our understanding of climate mitigation and resilience strategies continue to mature.

Priorities**:**

- Updates to Master Plans and Comprehensive Plans based on climate risk and opportunity analysis
- Building and land use codes that are informed by and that advance climate justice, mitigation, and resilience goals