Denver Climate Action 2020 Recommendations Report
Executive Summary

Call to Action

Denver's Climate Action Task Force submits these recommendations with full consensus to Denver's Mayor, City Council, and City Government, urging immediate and decisive action to reduce our impact and prepare for climate change. We were charged by the Mayor and City Council to submit these recommendations and funding options to propel Denver forward in climate action equitably and with broad community input.

We are a diverse group, made up of representatives from across Denver's diverse community both in terms of identity and interests. Members of the task force identify with the African American, Asian American, Caucasian, Native American, Latino/a, Pacific Islander, or LGBTQIA (lesbian, gay, bisexual, transgender, queer or questioning, intersex, straight, and asexual) communities. Interests and representation vary from small business interests, real estate, Xcel Energy, the solar industry, the oil and gas industry, environmental groups, religious institutions, transportation organizations, youth led organizations, and, of course, community members. Furthermore, we engaged members of the public through three distinct processes around needs and opportunities, equity, and solutions. This included two rounds of Meetings in a Box, Stakeholder Advisory Groups, and broad public input through an on-line forum. We interfaced with thousands of Denverites and collected thousands of comments.

Despite this diversity, this recommendations report had full consensus from our group.

We launched in January of 2020, before a trifecta of acute and interrelated crises unfolded during the writing of this recommendations report: a health crisis due to the COVID-19 pandemic, the associated economic crisis, and the racial justice crisis further brought to light by the killing of George Floyd by a police officer.

After natural disasters, such as a flood, we rebuild our infrastructure back stronger. The goal here is not to get back to normal, but to emerge from such crises with a more just, equitable, healthy, and sustainable community. In the same way, climate action is inseparable from racial justice, community health, and economic resiliency. Climate action is a necessary part of building a better Denver.

For this reason, we've organized the report by centering climate action with equity, then discussing the cost of inaction, and how climate action can support economic recovery. Then we move into sector specific goals and recommendations for buildings and homes, transportation, electricity supply, consumption and waste, and adaptation and resiliency. Finally, we discuss how to best invest in climate action through a package of revenue recommendations.

The recommendations included in this report are likely to be challenging for some elected officials and departments, given potential resistance from residents and industry groups. We offer this guidance for those wrestling with how to move forward. Consider the 26 volunteers, including community and industry interests, who donated over 1,000 hours of their time and expertise for five months, integrating the advice of technical and process experts throughout that time. The good news is, we figured this out. We reached consensus. And now much of the work is done and is included as recommendations in this

report. We know that does not make it easy to adopt some of the recommendations. But our choice and the path of integrity is clear. Either we can set up more processes to renegotiate these agreements and likely come to similar conclusions and recommendations after having lost precious time, or we can act now. We ask our elected officials and department leads to be brave; be courageous; be unequivocal; act now. The report breaks up our recommendations into three phases over the next 10 years, with a stress on moving forward with phase one policies and incentives from now through 2022.

Our community, Colorado, and the nation have not dealt with the climate crisis sufficiently up to this point. So now it is up to our current leaders. We urge Denver to leverage whatever momentum we have created through the full consensus of our diverse task force membership, as well as recognition due to COVID-19 and the Black Lives Matter movement of the existing inequity in our society. We can only achieve this vision if we acknowledge the suffering and tremendous cost if we fail to act. In addition, there are tremendous cost savings by investing now.

We thank our elected officials and city government in advance for what we expect to be strong and swift action to help build Denver back better.

The Climate Crisis

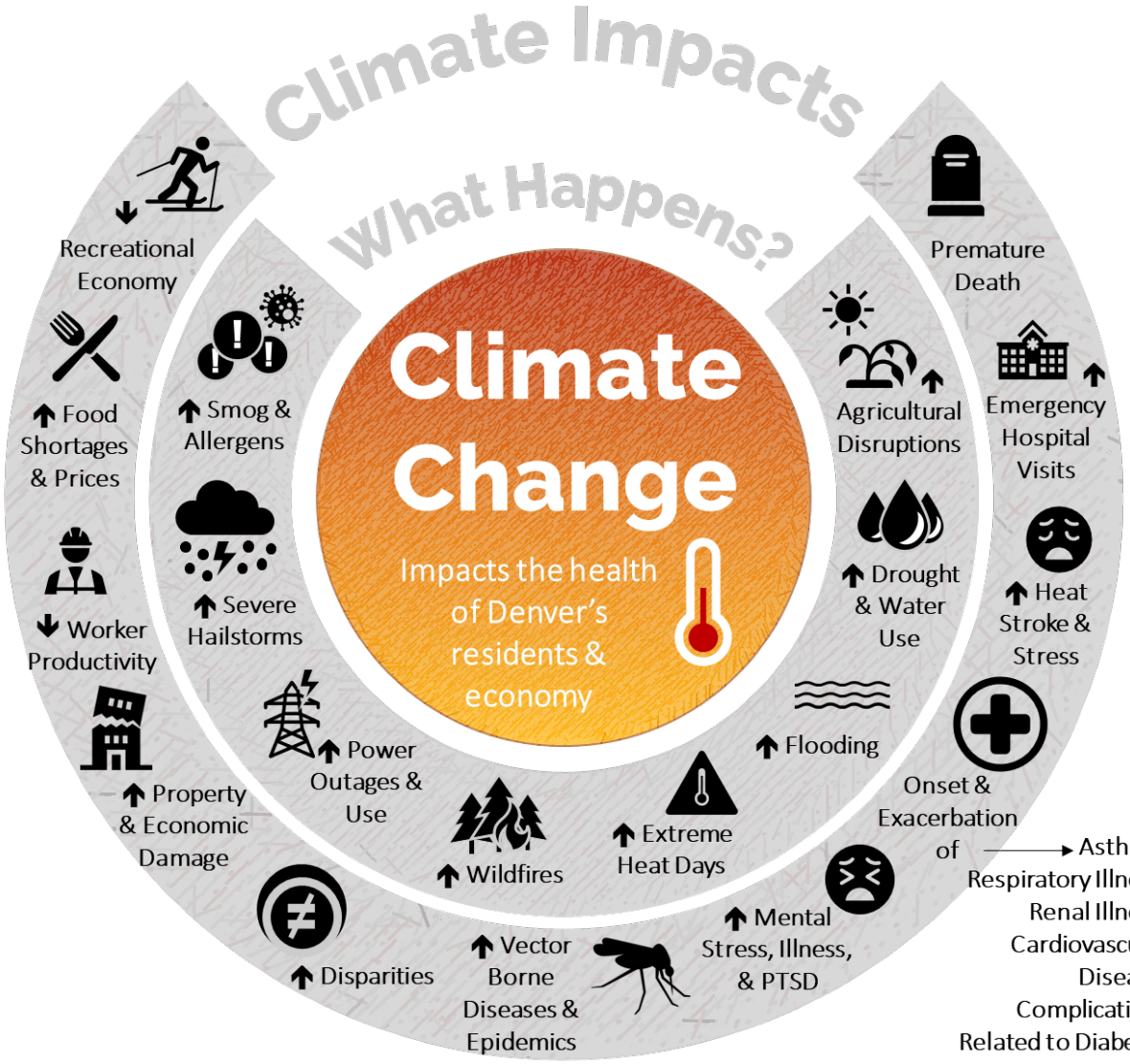


Figure ES 1. Climate change effects and impacts in Denver.

If we find ourselves in a severe climate crisis scenario, life as we know it will be impacted across all sectors. Figure ES 1 depicts some of the impacts to Denver's economy and our health. The stakes are high, and action is urgently needed, which is why the Denver 2020 Climate Action Task Force has laid out an aggressive policy and solutions agenda that is to be implemented as rapidly as possible over the next decade.

To avoid human suffering is sufficient motivation. In addition, we find that the return on investment underscores the soundness of action. We conducted a reconnaissance analysis to determine the cost of

Between averted impacts and savings, the minimum value of climate action investments are

$20.2 Billion

climate impacts to Denver as well as the potential savings that could result from enacting climate action initiatives. Even though there were several aspects for which we could not find good numbers, the result was a staggering combined total of $20.2 billion at a minimum, or nearly seven times the $3 billion investment needed. Even when the figure is not adjusted for population growth, the combined total is $13.8 billion. There are many impacts for which we do not have good numbers and these impacts will add billions more to this estimate.

Centering Climate Action in Equity

The Task Force is committed to making Denver a more equitable city, recognizing that broken systems have long contributed to racial, social, economic, and environmental injustice. As Mikka Macdonald writes, "78% of African Americans lived within 30 miles of a coal plant. 80% of Latino/Latinas live in counties that violate federal air-pollution law. In total, non-white populations breathe 38% more polluted air than their white counterparts. That's just the air. People of color are disproportionately affected by heat waves, wildfires, and storms" (Oct. 2019).

The Task Force participated in an equity training in Meeting 2 on January 30, 2020 and have used concepts learned in that training to craft the values and principles found throughout these recommendations.

> Equity means addressing broken systems connected to racial injustice and historic inequity.

The pursuit of equity happens in several ways. Government has historically excluded people of color, Native Americans, and under-resourced communities from decision-making processes, so it is critical that processes to make decisions about policies and programs are inclusive and fair. In addition, the benefits or burdens of policies, programs or investments have not always been fair or shared equitably across our City. Looking closely at those impacts and making future corrections is critical. Finally, equity is also about understanding historical patterns of discriminatory action and correcting for those injustices today.

We know that people of color, Native Americans, and under-resourced communities will be disproportionately impacted by the climate crisis. Flood risk, lack of adequate infrastructure to handle hail, poor air quality, the most intense heat zones, and other factors will all impact these groups to a greater degree. These same groups of people have been hit hard by the current health and economic crisis associated with COVID-19. One of the most important lessons of this time is that we are all interconnected and that the significant inequalities in our society are costly and harmful, and also prevent our ability to effectively respond and bounce back from significant shocks. In this way, a global pandemic and the climate crisis are similar.

Supporting Recovery

At the time of writing this report, a recession related to the COVID-19 pandemic was declared. People in Denver are suffering, many out of work, and with prospects that are uncertain at best. The economic downturn and pending recovery have already proven to disproportionately impact people of color, further exacerbating and highlighting the racial justice crisis. We have an opportunity to build Denver back better by interlacing the recovery across our current economic, racial justice, and climate crises.

The following proposals were identified as top priority if stimulus funds were available to invest in climate projects.

1. Deploy an all-Denver retrofit of existing homes and buildings to support energy efficiency as well as health and wellness.

2. Invest in an affordable, expanded, and carbon-free bus system.
3. Invest in reconfiguring Denver's streets to be shared streets while vastly expanding the use of bicycles and e-bikes.
4. Invest in electric vehicle infrastructure, such as charging stations.

These solutions, which have more detail in the report, will help build Denver back more sustainably and equitably through job creation.

Overarching Goal

The Denver Climate Action Task Force adopted an aggressive overarching goal, interlacing equity and eliminating greenhouse gas emissions.

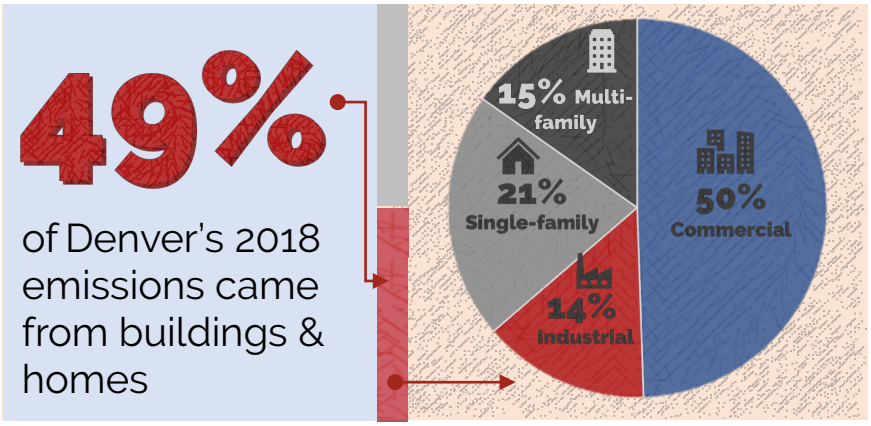
Denver will be a model for the nation and world by working urgently to create, pass, and implement bold policies that achieve 40% greenhouse gas emission decrease community-wide by 2025, 60% by 2030, and 100% by 2040, using a 2005 baseline, centering and investing in frontline communities, and inspiring people in our city to embrace sustainability as a value.

Sector Specific Recommendations

Buildings and Homes

Greenhouse gas emissions in buildings and homes must be addressed to solve climate change in Denver as together they represent 49% of the 2018 emissions. Recommendation highlights are provided here for existing and new buildings and homes. In addition, we show how retrofits to existing buildings and homes can support health, wellbeing, and affordability for Denver's low-income households.

Figure ES 2. 2018 Buildings and Homes Emissions Breakdown



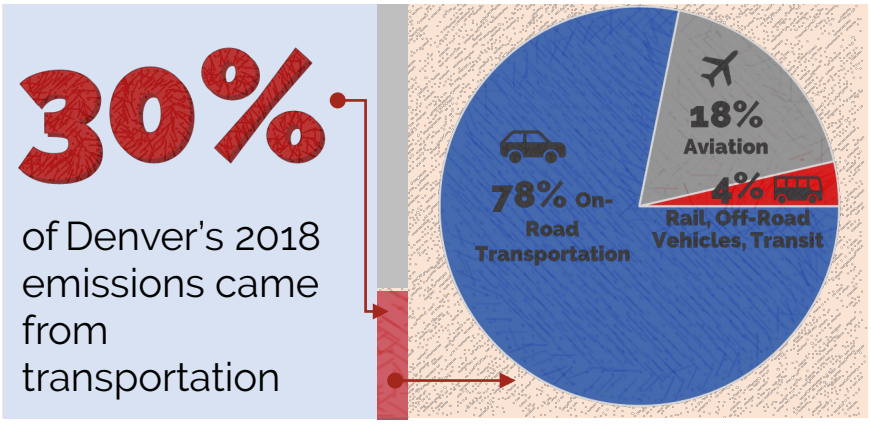
1. Existing buildings & homes:
   - Implement a building performance policy for existing buildings that supports COVID-19 recovery through jobs, healthy buildings, and limiting cost impact for tenants.
   - Requirements for electrification at the time of equipment replacement. Require that by 2040 all-natural gas equipment has been replaced where possible in existing buildings & homes.
2. New buildings & homes: Net-zero (highly efficient, all-electric, renewable energy, grid-flexible) new homes required in the 2024 base building code and in new buildings in the 2027 base building code.

3. **Affordable housing:** Connect and enhance low-income programs, include incentives that improve indoor air quality and health, and ensure that no requirements reduce the amount of affordable housing in existence or being built in Denver.

Transportation

In 2018, transportation was responsible for 30% of greenhouse gas emissions in Denver, the second largest source after buildings and homes. The majority of transportation emissions results from driving private vehicles and light trucks. Denver has one of the highest single occupancy vehicle commute rates in the nation (73%) compared to other large metropolitan cities. For instance, Seattle's single occupancy vehicle commute rate is 44%.

Figure ES 3. 2018 Transportation Emissions Breakdown



For this reason, several of our recommendations focus on making green transportation the easy and obvious choice:

1. **Prioritize transit.** Frequent, affordable citywide bus service and a Bus Rapid Transit system to move more people efficiently, paired with congestion mitigation and market-rate parking.
2. **Fewer polluting trips.** Citywide electric vehicle charging network and electric fleets paired with more telecommuting, developer and employer TDM plans and incentives, and density in housing.
3. **Smaller and smarter.** Citywide micromobility options paired with off peak freight delivery and smaller delivery vehicles.
4. **Completed, connected no-carbon networks.** Fully built out bike/ped and car-free street networks for next generation mobility devices paired with free citywide bikeshare and e-bike incentives.

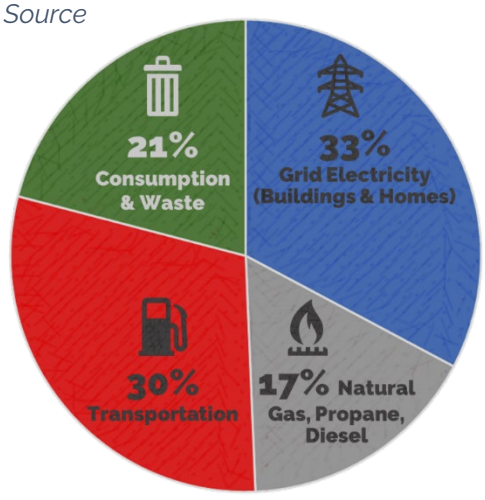
In addition, we have a suite of recommendations aimed at building electric vehicle infrastructure and moving Denverites toward using zero emission vehicles.

Electricity Supply

Denver's renewable electricity supply is essential to achieving Denver's decarbonization objectives. Grid electricity consumed in buildings and homes accounted for 33% of Denver's emissions in 2018 (Figure ES 4). In the coming decades, decarbonizing the electricity supply is foundational to achieving climate mitigation benefits through the electrification of vehicles and buildings.

1. **Carbon Free Denver:** By 2025 100% of Municipal buildings will be powered by renewable electricity. By 2030, renewable or carbon-free electricity will power all of Denver's electricity use.

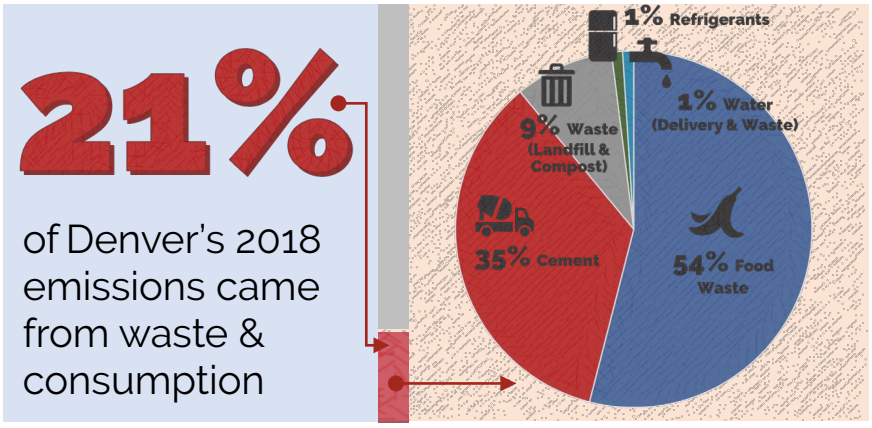
Figure ES 4. 2018 Emissions in Denver by Source



2. **Community Solar:** Fund community solar (and rooftop solar) programs near-term to expand rebates and incentives beyond utility programs and encourage deployment of distributed generation technologies.
3. **Carbon-free Colorado:** Continued City-utility partnership and participation in state regulatory proceedings, especially with Denver intervention in and support during implementation of Xcel Energy's statutorily required Electric Resource Plan to achieve an 80% statewide reduction in carbon emissions by 2030, in addition to the 100% goal for Denver.

Consumption and Waste

Figure ES 5. 2018 Consumption & Waste Breakdown



In 2018, consumption and waste were responsible for 21% of Denver's total greenhouse gas emissions. Consumption refers to greenhouse gas emissions associated with the use of goods and services by the residents of the city. Note that this excludes emissions from visitor activities and those goods and services that are produced in the city and exported. It does include emissions from goods and services that are imported and ultimately used and consumed. The breakdown in Figure ES 5 is an estimate, as Denver has yet to conduct a consumption-based emissions inventory. Because of this, the current Greenhouse Gas Inventory conducted by Denver only captures a small percentage of total emissions associated with consumption. A study by C40, the leading global organization working with cities to advance climate action, estimates that consumption-based emissions from nearly 100 of the world's big cities already represent 10% of global greenhouse gas emissions. Without urgent action, those emissions will nearly double by 2050.

Below are some key recommendations to address Denver's consumption and waste.

1. **Residential:** Approve and implement volume-based pricing, aka Pay As You Throw policy (PAYT – high impact, high order policy, revenue generation), where compost and recycling are the standard waste service and trash is charged by the size of the trash cart chosen by the customer. This would include subsidies or exemptions for low income households.
2. **Commercial:** Require all multifamily buildings and businesses to recycle and compost.
3. **Construction:** Require minimum waste diversion rate for construction and demolition as part of building code for those products that have viable end markets, focusing on diverting low-hanging fruit, such as cardboard, clean wood, and metal.

Adaptation and Resiliency

While we know that mitigation efforts at whatever level will reduce the impacts to climate change in the future, there is still the need to adapt to and be resilient in the face of a range of climate related impacts, such as those outlined in Figure ES 1. Some of these are described below:

Climate Impacts to Denver

	Air quality: Denver residents already live with elevated pollution levels every day, and air quality is likely to degrade further from heat related ground-level ozone formation, increased allergens, and more frequent wildfires.
	Mental health: Exposure to climate related disasters, changes, and uncertainty can lead to increased anxiety, depression, and post-traumatic stress disorder.
	Emergency services: Emergency response can be overwhelmed or stressed by large scale or repeated disasters as well as the onset and exacerbation of a host of diseases ranging from asthma to kidney disease.
	Epidemics and vector borne diseases: Changing temperatures and land use patterns are expected to increase our risk of vector borne diseases and epidemics.
	Power outages due to severe weather: Severe weather in Denver, including hail, strong winds, and heavy snow can also lead to power outages.
	Hail damage: Hailstorms are predicted to be less frequent but more severe, causing significant damage.
	Heat waves: Heat wave days in Colorado are expected to jump from 10 per year to nearly 50 per year by 2050. Heat related mortality is likely to double by 2050, with low-income households and those vulnerable to heat, such as older adults, most at risk. In addition, heat waves reduce worker productivity, impacting Denver's economy.
	Flooding: Changing climate patterns and poorly planned development that limits permeable land (already at less than 50% of the surface area in Denver) increase the risk of flooding.
	Drought & Water Use: Colorado is one of the states most threatened by severe drought in the coming decades. Drought could impact water supplies both for use in Denver and also could impact food security for food grown in Colorado and for Denver's supply chain. In addition, increased heat means that plants need more water to survive. This drives up water use in Denver's outdoor spaces as well as for agriculture across the state.
	Wildfire: Climate change is also expected to increase the area burned and length of the fire season. Post-fire erosion can cause major problems for water supply and storage infrastructure. In addition, Denver can be impacted by poor air quality from fires.
	Climate impacted economy: Climate related disasters often disrupt the local economy, with direct damages to property, and loss of jobs and revenue. Tourism will also be impacted.
	Greater inequities: Further exploration indicates that people of color, Native Americans, under-resourced communities, low-income households, children, older adults, those with disabilities, outdoor workers, the unhoused, and other frontline communities will be hardest hit. Many of Denver's poorest neighborhoods have high ratios of impervious surfaces, lack shade, are in the 100-/500-year flood plain, have worse air quality, and have a high vulnerability to extreme heat. At the same time, there is great opportunity to improve the lives of those most impacted by the climate crisis. Because these communities are already exposed to increased risk, addressing these risks by ensuring the communities are more resilient and adapt to climate change can and should be transformative.

We also know that investing in solutions now to adapt and become more resilient in the face of climate change will have clear benefits, financial and otherwise, in addition to avoiding some of the worst risks outlined above. Below are some recommendation highlights:

1. **Risk Plan:** Plan for adaptation and resiliency with a comprehensive risk assessment and city-wide adaptation plan.
2. **Economic Resilience Fund:** Establish an economic resilience fund to ensure communities not covered by other insurance and social programs are able to recover quickly and equitably from climate related disruptions.
3. **Incorporate Local Knowledge into Resilience Planning:** Invest in community resilience through a number of resources, education, and various programs that recognize the importance of local knowledge and understanding of building climate resilience, such as engaging neighborhoods to embed resilience in community disaster response efforts.
4. **Expand Tree Canopy Equitably:** Expand tree canopy in under-resourced neighborhoods.
5. **Require Resiliency in Building Codes:** Update building codes for new buildings to require green infrastructure, and resilient design, including low-energy cooling techniques, battery storage, storm resistance, limited impervious surfaces, use of drought tolerant plants that provide pollinator habitat.

Revenue

Phase 1 of the work identified by Denver's Climate Action Task Force requires a significant investment. All-in, at $198 million annually, this is more than can be invested right now. Infrastructure investments, primarily in transportation, are $121 million. While these are critical, we've focused our funding package on policies and policy implementation, at least for Phase 1, with the hope that the city will primarily fund infrastructure in the near future using other funding mechanisms, such as through public-private partnerships, bond measures, green or public banking, or stimulus funds. That brings the minimum total needed to be raised to approximately $76 million annually. We recognize that this is a significant number, especially during an economic downturn. However, we believe investments now are critical to not only address the climate crisis, but also to support economic recovery. We've designed solutions to support recovery efforts, including job creation and supporting people most impacted by the health, economic, and racial justice crises we find ourselves in. This includes investing in retrofits that will reduce the monthly cost to low-income households. This will help make these funding solutions more equitable. Every dollar we spend in prevention and preparedness now will save many dollars in the future.

We recommend moving forward with the revenue options identified in Table ES 6.

Table ES 6. Phase 1 Revenue Package with Initial pre-COVID 19 revenue estimates.

Revenue Source	Pre COVID 19 Revenue $/yr (Phase 1 - 2021-2022)	Potential reduction due to COVID-19 in the short term
1. Sales Tax at 0.25%	$45 m	≅ $36 m
2. Vehicle Efficiency Fee	≅ $15 m	≅ $15 m
3. Parking Meter Increase	$16 m	≅ $13 m
4. Parking Permit Fee	$0.6 m	$0.6 m
5. Commercial Parking Lot and Garage Fee	≅ $10 m	≅ $8 m
6. Meter buy-out fee increase	$0.7 m	$0.6 m
TOTAL	**≅ $87.3 m**	**≅ $73.2 m**

Following are our specific recommendations for each of these revenue options. (Note: there is

considerably more detail in the body of the document.)

- Sales and Use Tax: The Climate Action Task Force recommends that the City Council initiates a general sales tax referendum to appear on the November 2020 ballot at a rate of 0.25%. The Task Force strongly believes that the City Council must put in place appropriate guardrails to ensure that the sales tax does not overly burden those in Denver most impacted by social injustices, including which products are exempt from sales tax and specificity about how the money will be spent in a way that will most benefit people of color and under-resourced communities.
- Vehicle Efficiency Fee at Time of Registration: The Task Force recommends a vehicle efficiency fee to be implemented in phase 1 to address emissions from transportation. It should be structured in such a way that it does not cause undue burden to low income individuals or households either in cost or administratively. It should also be structured to incentivize purchasing highly efficient or zero emission vehicles. The fee should support incentives and policies to improve public transportation, micromobility, and buy-back of low-efficiency vehicles.
- Parking Meter Fee Increase: The Task Force recommends incrementally increasing parking meter rates over the next three years for existing meters up to $3 based on demand, and ultimately invest in meters that allow for dynamic pricing, and fund stronger meter enforcement and staffing by 2023. This would allow better management of the curb. It could raise $16 million annually by 2022 for transportation related climate action, such as multimodal transportation. In some places, like our college and university campuses, considerations for the impact of those who frequent the area should be taken into account. The City should also explore the addition of new areas with meters to support funding Phase 2.
- Commercial Parking Lot and Garage Fee: The Task Force recommends DOTI institute a commercial parking lot and garage fee in an equitable and timely manner to support climate action as part of the Phase 1 revenue package.
- Parking Permit Fee: The Task Force recommends DOTI institute a parking permit fee in an equitable and timely manner to support climate action as part of the Phase 1 revenue package.
- Meter Buyout fee (bagging): Recommend DOTI increases the fee for meter buyouts for construction or commercial purposes (Bagging).

The investment level for Phase 2 and 3 increases; additional revenue options are indicated in the report for further study.

In Conclusion

Addressing climate change is urgent. Supporting the economic recovery from COVID-19 is urgent. Building Denver back as a more equitable and sustainable city is urgent. And, ensuring we are prepared for the next climate related crisis is urgent. We greatly appreciate the faith that Mayor Hancock and City Council entrusted in us to deliberate on these urgent matters. After several months of work, we have reached unanimous consensus. For this reason, we urge Denver City Council and Mayor Hancock to immediately begin the referral process for our recommended sales tax ballot initiative and to move forward the additional fee options for Phase 1.

In addition, we ask that the City and County of Denver immediately develop an implementation plan. This plan should include bringing high impact Phase 1 policies to City Council, Mayor Hancock, or the appropriate commission or department to be adopted immediately. In instances where funding is required, the adopted plans should be ready for full implementation once revenue sources become available, assuring that the policies are equitably and affordably implemented.