



BOARD/COMMISSION RECOMMENDATION

Joint Sustainability Committee

Recommendation Number: (20240430-002): Environmental Investment Plan Funding Needs

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Cross-Sector Funding Needs

1. Outreach and Engagement for Sustainability Incentives

Details: The City of Austin has numerous sustainability incentive programs aligned with the goals of the Climate Equity Plan. However, many of these programs are underutilized, especially among low-income households. A part of the challenge is awareness. The city should host a user-friendly website that consolidates information on all sustainability incentives offered by the City of Austin (i.e., home weatherization and repair, water conservation, rainwater collection, landscape and green infrastructure programs), as well as state and federal incentives that align with the goals of the Austin Climate Equity Plan and other city sustainability plans.

Additional community outreach by the city and trusted organizations can increase the effectiveness of these programs. A new Community Engagement Specialist FTE in the Office of Sustainability is needed to coordinate community outreach and partnership activities associated with promoting sustainability incentives, with a focus on building relationships with low-income communities, communities of color, and related organizations and service providers. This employee would manage grants, contracts and stipends for community leaders and community-based organizations to do direct outreach to promote sustainability incentive programs in targeted Austin communities, in partnership with the Office of Sustainability.

Benefits: GHG reduction, water conservation, more equitable participation in programs

Cost: \$500,000/year to the Office of Sustainability for:

- one additional Community Engagement Specialist FTE
- outreach grants, contracts, and stipends
- website construction and maintenance

Plan Alignment: Austin Climate Equity Plan; Water Forward Plan; Austin Energy Resource, Generation and Climate Protection Plan

2. Austin Civilian Conservation Corps

Details: Funding should be allocated to support the continuation and expansion of the Austin Civilian Conservation Corp (ACCC) program. The following tracks should be fully funded:

- Natural Systems (protecting critical ecosystems on preserves and parkland)
- Environmental Education
- Zero Waste (should be expanded beyond computer refurbishment)
- Clean Energy (solar, energy efficiency, demand response, batteries)
- Digital Media

Providing permanent funding to support and expand these programs is important in order to train people to provide needed environmental services in Austin. The ACCC should connect program participants with relevant programs at Austin Community College whenever possible for continuing education. This includes the solar technology program and sustainable agriculture program.

Benefits: The Austin Civilian Conservation Corp invests in people and projects that have a direct impact on climate justice and builds more equitable pathways to employment, organizational leadership, entrepreneurship and strengthens networks of support for those most impacted by a changing climate

Cost: \$3.93 million/year: \$570,000/year for 6 FTE Program Specialists; \$160,000 to support temporary staff and \$3,200,000/year to support the programming and training and partnerships with external organizations. \$80,000 one time for access to a truck.

Plan Alignment: Climate Equity Plan; Austin Resource Recovery Comprehensive Plan; Parks and Recreation Department Land Management Plan; Austin Energy Resource, Generation and Climate Protection Plan

Energy and Water Conservation Funding Needs

Additional investments in energy efficiency, demand response, local solar, batteries and coal retirement are needed to meet the carbon-free by 2035 goal in the Austin Energy Resource Generation and Climate Protection Plan and the greenhouse gas emissions reduction goals in the Austin Climate Equity Plan. These are the resources that are locally available and cost effective for decarbonizing the energy sector. Decarbonizing the energy sector is doubly important because it is the lynchpin for decarbonizing transportation, buildings and other activities. Decarbonizing city buildings and improving water conservation will also yield greenhouse gas (GHG) reductions and other co-benefits and aligns with the Water Forward plan.

3. Expand Austin Energy’s energy efficiency programs

Details: More investment is needed to improve building envelopes and air sealing and install efficient heat pumps for heating and cooling and hot water production, as well as LED lighting and other energy efficiency appliances. Additional community outreach is needed to inform the community about available local, state and federal incentives. Building performance should be measured and ranked to enable focused attention on buildings with the highest need.

Benefits: GHG reduction, air pollution reduction (and health benefits), affordability/bills reduction (for program participants and non-participants), improved health and safety of buildings and their occupants, increased building life (reduced embedded GHG emissions), greater equity in energy bills and home comfort, improved grid resilience

Cost: AE budget is \$13.6 million/year for existing programs. This amount should be doubled to \$27.2 million/year (\$13.6 million/year increase). An additional 14-20 FTEs should be allocated to run energy efficiency programs, costing \$1.68-2.4 million/year. These costs will be offset by reduced AE energy purchases, ancillary services purchases, and transmission costs.

Plan Alignment: Austin Energy Resource, Generation and Climate Protection Plan; Austin Climate Equity Plan Sustainable Buildings Goal 1, Strategies 1 and 3

4. Expand Austin Energy’s demand response programs

Details: Expanded price-based demand response programs, including to the residential, commercial, industrial, and transportation sectors is needed. “Demand response ready” should be well defined and enforced. Demand response should be automated as much as possible.

Electric hot water tank programs, thermostats, home energy managements systems, commercial and residential battery storage, electric vehicle smart chargers, smart meters

Benefits: GHG reduction, affordability/reduced bills (reduce peak demand costs for AE), improve grid resilience

Cost: AE budget is \$3.6 million/year for existing programs. This amount should be quadrupled to \$14.4 million/year (\$10.8/year increase). An additional 11-16 FTEs should be allocated to run demand response programs, costing \$1.32-1.92 million/year. These costs will be offset by reduced AE energy purchases when ERCOT prices are high.

Plan Alignment: Austin Energy Resource, Generation and Climate Protection Plan; Austin Climate Equity Plan Sustainable Buildings Goal 1, Strategies 1 and 3

5. Invest in battery energy storage

Details: Battery storage is an important part of a decarbonized grid. Austin Energy must invest in utility scale and distributed battery storage to enable the retirement of its fossil fuel power plants and flatten the demand curve and avoid local electric grid price spikes that increase bills. Decentralized batteries on resilience hub buildings, school and supportive housing can be used as a virtual power plant (VPP) to help with load shifting during normal use and provide critical resiliency backup energy during outage events. Longer term heat batteries can decarbonize industrial facilities throughout Austin by soaking up excess solar and wind during curtailment and putting energy into those industrial uses, or even storing it to later export to the grid, which allows much higher penetration of renewables.

Benefits: GHG reduction, air pollution reduction (and health benefits), affordability/bills reduction (for program participants and non-participants), improved grid resilience

Cost: For utility scale batteries: Using the average cost of 4-hr duration batteries provided by AE (\$1,168/kW), 200 MW would cost \$233.7 million. Using the average cost of 8-hr duration batteries provided by AE (\$1,992/kW), 400 MW would cost \$797 million. Using the average cost of 100-hr duration batteries provided by AE (\$2,150/kW), 100 MW would cost \$215 million. The combined 700 MW battery investment would cost \$1,245.7 million. These costs would be recovered by earnings in the ERCOT energy and ancillary services markets. Heat battery pilots could be funded as public/private partnership with local industrial facilities and piggyback on federal funding currently flowing to these companies.

Plan Alignment: Austin Energy Resource, Generation and Climate Protection Plan; Austin Climate Equity Plan

6. Utility-owned or contracted rooftop solar

Details: Austin Energy needs a considerable expansion of local solar to meet energy needs and keep bills affordable (by avoiding price separation from remote resources). Land is expensive, so rooftop solar is the best locally available clean renewable energy source. New programs are needed to allow the utility to invest directly in this local rooftop solar (different from current programs that require customer investment). Under this structure, AE would pay for installation of residential rooftop solar. The utility or a third party would own the installations for the first 15 years (est.) and the customer would pay a tariff that is less than the Value of Solar credits they earn on their bill. After 15 years, ownership would flip to the customer.

Benefits: GHG reduction, air pollution reduction (and health benefits), affordability/bills reduction (for program participants and non-participants), more equitable access to solar, reduced land use for energy production

Cost: Assuming \$3/watt current solar cost and \$2.70/watt solar cost starting in 2024 and getting the solar ITC and domestic content incentives and recovering cost over 15 years via tariff, \$74.46 million could establish a revolving fund that could support 5 MW installation per year. \$223.38 million could establish a revolving fund that could support 15 MW installation per year. The 5 MW program would also need approximately 3 FTEs, costing approximately \$360,000/year, and the 15 MW program would need 6 FTEs, costing approximately \$720,000/year. These costs will be offset by reduced AE energy purchases, ancillary services purchases, and transmission costs.

Plan Alignment: Austin Climate Equity Plan Sustainable Buildings Goal 1, Strategies 1 & 3; Austin Energy Resource, Generation and Climate Protection Plan

7. Shut down/retire AE's portion of Fayette coal plant

Details: Austin Energy and LCRA co-own two coal-burning units at Fayette. Austin Energy's portion accounts for about 25% of the entire Austin Energy's scope 1 and 2 emissions (current GHG inventory). It is impossible to reach near, medium or long-term GHG reduction goals without closing Austin Energy's portion of Fayette. LCRA has demanded payment from Austin Energy for changing the contract so AE fully owns one unit and can shut it down. We don't know the exact amount, but it was rumored to be in the 100's of millions.

Benefits: GHG reduction, air pollution reduction (and health benefits), water pollution reduction (and health benefits and liability), long-term affordability improvement

Cost: \$100-300 million. Because of the large amount of GHG emissions from Fayette, this cost is still much less than the social cost of carbon (cost of contribution to climate change) from AE's portion. Based on AE's share of Fayette emissions in 2022 (2,710,000 metric tons) and the EPA

social cost of carbon with a 2% discount rate¹, the cost of AE's Fayette GHG emissions will be \$563.68 million in 2024, \$574.52 million in 2025, \$582.65 million in 2026, and \$593.49 million in 2027, and \$604.33 million in 2028. Thus, the cost over the coming three years (2024-2026) is approximately \$1.72 billion and the cost over the coming five years (2024-2028) is approximately \$2.92 billion.

Plan Alignment: Austin Energy Resource, Generation and Climate Protection Plan; Austin Climate Equity Plan

8. Air sealing task force and training program

Details: According to RMI and DOE air sealing is the lowest cost path to lowering operational carbon. Air sealing is a sequencing and trade knowledge problem, not a technical or product problem, so training up our trade base is the best way to ensure higher quality, more air sealed buildings. Under this new program, Austin Energy would publish air sealing results of all new buildings and retrofits and host trainings for trades on how to execute tight building envelopes. Research grants and federal funds for trainings and air sealing knowledge and skills

Benefits: GHG reduction, air pollution reduction (and health benefits), affordability/bills reduction (for program participants and non-participants), improved indoor air quality, improved grid resilience

Cost: \$2 million There is a lot of federal money for this type of training.

Plan Alignment: Austin Climate Equity Plan Sustainable Buildings Goal 1, Strategies 2 & 3; Austin Energy Resource, Generation and Climate Protection Plan

9. Passive House incentive program

Details: As [directed by City Council on April, 18, 2024](#), create a program that offers cash incentives to affordable housing projects in Austin that certify as Passive House buildings. Use the Massachusetts Passive House Challenge Program as a model for this program. This program will reduce energy use costs for affordable housing providers while also creating a market shift - helping local design and construction teams learn how to build much more energy efficient buildings. As these projects are completed the added cost comes down through a learning curve that has been seen in other markets using this strategy, eventually allowing for smaller incentives and code mandates of more efficient buildings. Passive House buildings can play a critical role in the energy transition as well due to their low load and ability to load shift to help with peak demand curve reduction and resilience.

Benefits: GHG reduction, air pollution reduction (and health benefits), affordability/bills reduction (for program participants and non-participants), improved health and safety of

¹ Pg. 154, https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf

buildings and their occupants, increased building life (reduced embedded GHG emissions), greater equity in energy bills and home comfort, improved grid resilience

Cost: \$8 Million would fund 2,000 units of housing at \$4,000/unit. This also piggybacks on IRA funding as any project doing this would also be eligible for \$5k/unit of 45L tax credits.

Plan Alignment: Austin Climate Equity Plan Sustainable Buildings Goal 1, Strategies 1, 2 & 3; Austin Energy Resource, Generation and Climate Protection Plan

10. Decarbonizing municipal buildings

Details: Retrofitting existing municipal buildings to reduce energy use, decarbonize them and make them more resilient will benefit the City budget and the services offered to the community. In addition to energy efficiency upgrades to meet suggested 2030 EUI reduction, all buildings should have solar installed (where appropriate), be equipped to participate in demand response programs, utilize 100% electric appliances, include rainwater harvesting and utilization for landscaping irrigation, which should be minimal, and should utilize sustainable and low-embodied carbon materials. Energy modeling and life cycle assessments should be done for all retrofits and new construction for municipal buildings.

Benefits: GHG reduction, long-term benefit for city budget; more resilient community; serve as a reference for sustainable buildings in the commercial sector - laying the ground to replicate high-performance, low embodied carbon, all-electric buildings in the commercial sector

Cost: For 10 buildings: \$45 million

Plan Alignment: Austin Climate Equity Plan Sustainable Buildings Goal 1, Strategy 3; Austin Energy Resource, Generation and Climate Protection Plan

11. Water leak detection programs

Details: In 2023, Austin Water loss 8,678,000,000 gallons of water which equates to a 21.68 gallons per capita per day of water loss. While this loss is within the acceptable loss for water utilities as set by the American Water Works Association (AWWA), there is a lot of room to make significant improvements.

Benefits: water conservation; GHG reduction (Reducing water loss in the water will preserve this water for productive use and will reduce energy use for pumping and treatment.)

Cost: Austin Water should, at a minimum, triple its current leak detection budget from \$1.14 million/year to \$3.42 million/year (\$2.28 million/year increase).

Plan Alignment: Water Forward Plan; Austin Climate Equity Plan Sustainable Buildings Goal 4, Strategy 1

12. Improve rebates for residential and commercial landscape conversions

Details: During summer months, the use of water dramatically increases, mainly due to the watering of landscapes. Turf areas in particular require the most water per square foot in any landscape. While ordinances for new construction can help reduce the amount of turf areas, existing properties don't have requirements to adapt their landscapes to conserve water. Reducing the amount of turf grass that requires a lot of water to survive will help conserve water.

Austin Water should offer more substantial and accessible rebates for landscape conversions. Currently, Austin Water offers a landscape conversion rebate of \$100 per 100 square feet, up to a maximum rebate of \$3000. Most conversions will be smaller areas and thus, the currently offered rebate amounts don't incentivize many customers to implement landscape conversions. In 2023, only 19 rebate applications were submitted to Austin Water. Austin Water should implement a tiered rebate structure that offers more rebate money for smaller areas of landscape conversion and should substantially increase the maximum rebate offered. As suggested by the [Get Fertilizer Wiser campaign](#), there should also be incentives that are more easily accessible to individuals who may not need to fully remove turf grass in order to reduce or eliminate watering.

Benefits: water conservation; GHG reduction (Reducing water use for landscaping irrigation will preserve this water for productive use and will reduce energy use for pumping and treatment.)

Cost: \$400,000/year

Plan Alignment: Water Forward Plan; Austin Climate Equity Plan Sustainable Buildings Goal 4, Strategy 1

Consumption & Waste Reduction Funding Needs

13. Circular economy & waste reduction programs

Details: A recent greenhouse gas inventory conducted by the Office of Sustainability indicates that Scope 3 emissions (emissions that result from the production and transportation of the products and services we use) are larger than the Scope 1 and 2 emissions that have traditionally been part of the GHG inventory. The Austin Resource Recovery has several programs to address this issue by encouraging reducing and reuse and use of more sustainable materials, but these programs are funded at such a low level they are essentially pilot projects.

Considerable additional investment is needed to address this outsized source of emissions from the Austin community.

- Zero Waste Business Incentives and Rebates: This program provides incentives to businesses to reduce waste, including switching from plastic or Styrofoam containers to reusable or compostable. The current program provides a one time incentive up to \$3,000 and is only providing about \$5,000/year. The incentive should be restructured to help businesses address ongoing costs (multi-year incentive) and funding should be allocated for additional staff to do outreach to businesses (including all restaurants) (\$1 million/year).
- ARR zero waste education: Expand to reach the full Austin community, not just ARR customers, including with a paid canvassing team. (increase from \$410,000/year to \$4 million/year)
- Furniture collection for Reuse Warehouse: Current plan is for drop-off only. Funds are needed to enable pick-up to increase diversion from landfill. (\$400,000)
- Deconstruction Warehouse: To divert salvaged construction materials from the landfill. (\$10-15 million)
- Fix-it Clinics: Expand and host more (\$500,000/year)
- Circular Austin Accelerator and Circular Austin Showcase competition: Expand outreach and an increased number and value of awards for competition winners would increase effectiveness in building a circular economy in Austin. (increase award from a total of \$12,000 to \$100,000/year)
- MoveOutATX: Increase the number of events from 1 to 4 per year. (\$50,000/year)

Benefits: GHG reduction, plastic pollution reduction, reduce need for new landfill, local economic development, save on ARR tipping fees

Cost: \$10.4-\$15.4 million one time and \$5.35 million/year

Plan Alignment: Austin Resource Recovery Comprehensive Plan; Austin Climate Equity Plan Food and Product Consumption Goal 2, Strategy 4 and Goal 3, Strategies 1 & 5

14. Low-carbon concrete fund

Details: Concrete represents the largest of Austin’s purchasing emissions, with potential surcharges for truly carbon neutral cement ranging as high as an additional \$18/cubic yard, but with costs falling as new technology scales up. This fund would pay for additional testing, program fees, and surcharges to cover both city and non-city owned buildings of 1.1 M cubic yards of concrete.

Benefits: GHG reduction: 200,000 MT of CO₂/year

Cost: \$2 million/year

Plan Alignment: Austin Climate Equity Plan Sustainable Buildings Goals 1, 2 & 3 (and overarching goal of ACEP); City Council Resolution No. 20230420-024

15. Pro-climate, pro-health foods

Details: Replacing animal products with plant-based foods is one of the most cost effective ways to reduce GHG emissions. Funds would be used to provide education and incentives to the Austin community to enable better choices, including 2 FTEs to help implement programming.

Benefits: GHG reduction, air and water pollution reduction, water use reduction, improved public health

Cost: \$1 million/year

Plan Alignment: Austin Climate Equity Plan Food and Product Consumption Goal 1, Strategies 1, 2 & 3; Austin/Travis County Food Plan Goal 8

16. Sustainable purchasing and carbon accounting

Details: Austin can't get to net-zero without measuring our progress. Today, staff make tradeoffs between doing the work and accounting for that work. Additional staff, consultant, and software money can add capacity and speed up this critical work.

Benefits: Unlocks GHG reduction

Cost: \$1 million

Plan Alignment: Austin Climate Equity Plan

17. City-owned composting facility

Details: Emissions from Austin's waste like methane and nitrous oxide decay quickly in the atmosphere, but have a large short-term impact. Looking at waste using 20-year global warming potential puts landfill waste as our 3rd largest source of emissions (right behind energy & transport), or well over 1 million metric tons of CO₂e. Purchasing and operating a municipal composting facility will help avoid the landfilling of organic waste and save money.

Benefits: GHG reduction, air pollution reduction, reduced costs: 66,130 MT CO₂E (1.3 metric tons CO₂E/ton of feedstock)

Cost: \$1.5M for startup costs with savings of \$1,222,980 / year for 51,000 tons of waste

Plan Alignment: Austin Climate Equity Plan

Natural Systems Funding Needs

18. Preservation of existing agricultural land

Details: Funding is needed to preserve existing agricultural land and increase the amount of farmland using practices that improve soil health through land trusts, land banks, conservation easements and/or other legal or financing mechanisms. Develop an inventory of available farmland in Austin/Travis County, conduct appraisals, fund conservation easements for farmers adopting regenerative agricultural practices (TBD but may include cover cropping, crop rotation, no/low-till, mulching, compost application, elimination/ reduction of synthetic pesticide and fertilizer use, etc.)

Benefits: Slows the loss of local farmland; improves the quality of locally produced food and protects soil carbon pools. Soils with healthy levels of organic material increase water retention, improve water quality, protect biodiversity, sequester carbon and mitigate greenhouse gas emissions.

Cost estimate: \$200,000 for inventory and appraisals (one time); and \$25.25 million/year: \$25,000,000/year to fund easements (assuming 5,000 acres protected per year at \$5,000 per acre); \$250,000 for operating expenses (annual). Leverage federal funding where available such as the Agricultural Conservation Easement Program of the USDA.

Plan Alignment: Food Plan Goal 1; Austin Climate Equity Plan Natural Systems Goal 2

19. Revolving loan fund for Working Farms Fund pilot

Details: Establish a revolving loan fund to preserve agricultural land in Austin/Travis County through a pilot program that provides a path to ownership for a new generation of farmers and increases the amount of farmland acting as carbon pools.

A collaboration with the Conservation Funds Working Farms Fund and local agricultural nonprofits will acquire and permanently protect small to mid-sized farms, and provide a pathway for underrepresented farmers to own their own farms

Benefits: Slows the loss of local farmland, improves the quality of locally produced food, protects carbon pools, and serves as a template for program replication.

Cost estimate: \$5.5 million/year: \$5.25 million/year to establish a revolving loan fund; \$250,000/year for operational expenses

Plan Alignment: Food Plan Goal 1; Austin Climate Equity Plan Natural Systems Goal 2

20. Energy and water dashboard for city facilities

Details: Create a consolidated energy and water dashboard to automate data collection and track real-time. Consolidate disparate data sources throughout the City's operations to reduce complexity, streamline management and conservation

Benefits: Advances the sustainability of City operations by enabling near real-time response to leaks, solar panel outages etc. and improving management of water and electricity usage in City parks, pools and buildings.

Cost: \$350,000 one time/ and \$15,000/year for operational expenses (maintenance, licensing etc.)

Plan Alignment: Austin Climate Equity Plan Natural Systems Goal 4

21. Comprehensive public tree inventory for the city of Austin

Details: Ensure full funding for City Council resolution [20240418-051](#) to support a comprehensive public tree inventory for the city of Austin on all city-owned property. Collect data on Austin's urban forest, which will allow the city to commit to coordinated and comprehensive urban forest management across city departments in support of ongoing implementation of the Urban Forest Master Plan. Collecting this data will allow the city's Urban Forester to complete a comprehensive urban forest management plan, including a robust tree planting and tree replacement plan. Data collection methods should follow nationally recognized best management practices in acquiring vegetation information for the purposes of maintenance, planning, canopy goal establishment, and other comprehensive urban forest management efforts, and should be done in collaboration with federal, state, regional, and local governmental jurisdictions, community nonprofits, and the private sector where appropriate. Data should be stored in formats that can be easily shared across departments and stakeholders.

Benefits: Urban forests serve as carbon sinks that promote climate mitigation efforts, but at present the city does not have a comprehensive tree inventory that would allow for effective urban forest planning and maintenance. Developing and maintaining a robust data catalog of existing trees is a necessary first step to ensuring that the city can maintain the health of the overall tree ecosystem, as outlined in the Urban Forest Master Plan, and also supports the increase of our overall tree canopy footprint to the 50% goal proposed in the Climate Equity Plan.

Cost: \$6.25 million one time: \$6 million for the initial tree inventory; \$250,000 for the development of a comprehensive tree planting and tree replacement plan based on inventory data

Plan Alignment: Urban Forest Master Plan and the Climate Equity Plan Natural Systems goal 3 (50% citywide tree canopy)

Transportation and Land Use Funding Needs

22. Austin Resource Recovery Fleet Electrification

Details: Replace all 300 heavy duty Austin Resource Recovery vehicles (flatbed trucks and refuse trucks) with electric vehicles. Install appropriate heavy-duty charging infrastructure to charge these vehicles.

Benefits: Nearly 1 million (968,400) tons CO₂ emissions avoided; air pollution reduction (health benefits); reduced maintenance; lower heat exposure for ARR workers (better AC during hot weather)

Cost: \$204.5 million for trucks and \$60 million for chargers to be phased in over 8 years. Funding is available from TCEQ now, and prices are likely to decrease over time, but the city needs to apply for TCEQ grant funding now to get started before funds are depleted. May be biannual (every other year) opportunity in the future.

Plan Alignment: Austin Resource Recovery Master Plan; Austin Climate Equity Plan Transportation Electrification

23. Austin Resource Recovery Transfer Station

Details: A transfer station is needed to reduce truck rout lengths and host electric truck chargers is necessary to enable full ARR fleet electrification

Benefits: Unlocks GHG and air pollution reduction from transportation electrification

Cost: \$100 million

Plan Alignment: Austin Resource Recovery Comprehensive Plan, Austin Climate Equity Plan

24. Expand All Ages and Abilities Bicycle Network, Urban Trails, Sidewalks, and Shared Mobility

Details: Expand the number of Metro Bike stations and to build out the All Ages and Abilities (AAA) Bicycle Priority Network, the Tier One Urban Trails network, and sidewalks and shared

streets as recommended in the Urban Transportation Commission's "Climate Equity Investment" Recommendation 20240305-006.

- \$48,960,000 to build out an additional 148 miles of the AAA Bicycle Priority Network and meet the 2023 Bicycle Plan Goal of 380 miles built out by 2026. Projects should be selected using the project prioritization model in the 2023 Bicycle Plan, which scores projects based on equity, destinations & travel demand, connectivity & safety, and cost. Relevant plan sections: Austin Strategic Mobility (ASMP) Bicycle Policy 2, Austin Climate Equity Plan (ACEP) Transportation and Land Use (TLU) Goal 3, and 2023 Bicycle Plan Item 4.7.1a.
- \$22,600,000 to build out an additional 200 Metro Bike Stations to reach the 2023 Bicycle Plan goal of 300 stations by 2025. The investment should prioritize new stations in low-income areas with high mobility needs and connections to CapMetro's existing high-frequency bus and Metro Rail network. Relevant plan sections: ASMP Shared Mobility Policy 1, ACEP TLU Goal 3, and 2023 Bicycle Plan Item 4.7.2.
- \$75,826,000 to build out 15.6 miles of Tier One Urban Trails by 2028 and put COA on track to reach the 2023 Urban Trails goal of building all 94 miles of Tier 1 trails by 2043. City Manager should also consider investments to ensure "the Urban Trails Plan is deliver[ing] projects on an accelerated timeline" as the Urban Trails Plan notes doing so is "dependent on increasing internal City of Austin capacity across supporting departments concerning staffing, systems, and the processes for permitting" Urban Trails Plan Section 3.5). Relevant plan sections: See ASMP Urban Trails Policy 2 & 3, ACEP TLU Goal 3, and 2023 Urban Trails Plan Section 3.5.
- \$64,000,000 to build out 136 miles of new sidewalks and 80 miles of shared streets per year through 2028, putting Austin on track to address all "Very High" and "High" priority sidewalks and shared streets within 10 years. Projects in the highest Equity Analysis Zones should be prioritized for funding, per the Sidewalks, Crossings, and Shared Streets Plan. Relevant plans: ASMP Pedestrian Network Policy 1 & 2, ACEP TLU Goal 3, and 2023 Sidewalks, Crossings, and Shared Streets Plan Section 2.3.4)

Benefits: Carbon dioxide (CO₂) emissions reduction from reducing Vehicle Miles Traveled (VMT) in single-occupancy vehicles (SOVs). The estimated reduction for #1, added bikeways, is 1000-2000 metric tons of CO₂-equivalent per year, and for #2, added MetroBike stations, is 84 to 336 metric tons of CO₂-equivalent per year. (We lack data to calculate #3 and #4.) More trips within Austin will use modes split between public transit, bicycles, walking/wheelchair, carpooling, or shared mobility, or will be avoided altogether. Public health benefits include improving air quality by reducing vehicle CO₂ emissions along with co-pollutants such as nitrous oxide (NO_x) and fine particulate matter (PM_{2.5}) as well as encourage more active transportation for overall wellbeing. Equity benefits include increasing the variety and accessibility of modes of

transportation besides SOVs which are significantly more expensive. Building out this infrastructure in under resourced zones will increase these benefits for low-income and communities of color. Community benefits of greater cohesion from using public spaces and infrastructure and being better connected to the city. Greater land availability for uses other than car and parking infrastructure, which can aid with heat mitigation if drought-tolerant tree plantings are prioritized along bikeways and sidewalks per Council [Resolution 20240321-039](#). Jobs creation.

Cost: \$211.39 million:

- \$48,960,000. 2023 Bicycle Plan estimates the average protected bike lane costs \$600k/mile. The total cost to reach the 2026 goal is \$88,800,000. The 2016 and 2020 Mobility Bonds have a total of \$39,840,000 in unspent bikeways funds (as of December 5th, 2023)
- \$22,600,000. MetroBike received \$11.3 million from the Texas Department of Transportation's Transportation Alternative Set-Aside grant program. Those funds will build 100 new stations, including replacing 83 existing stations, and 800 new electric bicycles. An additional \$22.6M is required to achieve the goal of 300 stations total.
- The Urban Trails Plan uses the assumption of \$10 million per mile. To build out all Tier 1 trails by 2043, Austin needs to average \$52 million in Urban Trails spending per year. The 2016, 2018, and 2020 Mobility Bonds contain a total of \$80,174,000 in unspent funds for Urban Trails (as of December 5th, 2023)
- \$64,000,000. The Sidewalks, Crossings, and Shared Streets Plan notes the city currently has "less than half the estimated funding required to meet plan goals through 2028". Those goals are spending \$32 million for 34 miles of new sidewalks and 20 miles of shared streets annually. Over four years that amounts to \$128,000,000.

Plan Alignment: ACEP TLU Goal 3; ASMP Bicycle Policy 2, Shared Mobility Policy 1, Urban Trails Policies 2 & 3, Pedestrian Network Policies 1 & 2; 2023 Urban Trails Plan Section 3.5; 2023 Bicycle Plan Strategies 4.7.1a & 4.7.2; 2023 Sidewalks, Crossings, and Shared Streets Plan Section 2.3.4

25. [Extend Pickup Service Zones](#)

Details: CapMetro (CM) should invest to extend the service area for the CM Pickup ride hailing and ridesharing service. Pickup launched in 2017 and serves [11 zones](#) in Austin and the surrounding areas. Ridership is [projected](#) to increase 26.8% in FY2024 compared to FY2023; this follows a 200% increase over FY2022. On April 1, 2024, it passed the 1 millionth passenger mark. This milestone and the projected increase in riders attest that Pickup fulfills an unmet

need in under resourced transit areas. It expanded to Dove Springs in January 2024 and plans to extend to Decker Lake. We recommend CM pursue the Decker Lake zone and also study user data and rider surveys through an equity lens to identify where it's needed most and expand into 1-2 additional zones by May 2025. Possible zones include Del Valle and Montopolis. We also endorse CM's [planned initiative](#) to pilot an electric Pickup fleet by the end of 2024.

Benefits: Contributes to ACEP's overarching goal of "equitably reaching net-zero community-wide greenhouse gas emissions by 2040" and specifically Transportation and Land Use (TLU) Goal 3, "By 2030, 50% of trips in Austin are made using public transit, biking, walking, carpooling, or avoided altogether by working from home." Pickup reduces VMTs by connecting riders to services and amenities in their zone, including school, work, shopping, recreation, and medical clinics and hospitals. It also solves the "first/last mile" problem in transit accessibility and utilization by connecting riders to transit stops that may be prohibitively far away and therefore especially improves transit access for the disabled, elderly, and riders with children who may not be able to use e-bikes, scooters, and other solutions for short trips and the "last mile." Given Austin's extreme temperatures and paucity of shade corridors, eliminating the first/last mile is essential to encouraging transit ridership. Provides community cohesion by connecting people to the services and amenities they need.

Cost: up to \$5 million/year: Based on CapMetro's FY2024 Operating Budget, we estimate the annual cost of adding 1-2 new zones will be \$3-5 million per year.

Plan Alignment: CM's [FY2024 budget](#) lists extending Pickup service areas as one of its priorities (p. 91); ACEP TLU Goal 3, Strategies 1, 3; if fleet is electrified, ACEP TE Goal 1, Strategy 5; ASMP Shared Mobility Policies 1-3, 5, 6; Public Transportation Policies 1 & 6; Air & Climate Policy 1

26. [Downtown High-Frequency Circulator](#)

Details: CoA and CapMetro (CM) invest up to \$7 million per year to resurrect a high-frequency, free or low-fare downtown circulator along the routes proposed by the Downtown Austin Alliance in [a June 2020 report](#). We also propose the addition of the Long Center and Barton Springs/Zilker Park to address 2023 Urban Trails Plan Policy 3, "Pursue opportunities to connect to and expand the Urban Trails System." This service should be free or <\$1/ride, thereby addressing ACEP TLU Goal 3, Strategy 2 to "promote free transportation options," as well as Strategy 1 ("Expand and improve public transportation"). The circulator should also run frequently, i.e., with stops serviced every 15 minutes or less, which is one of the highest predictors of public transit usage [according to a 2016 study](#). We also recommend the circulators be electric vehicles to reduce CO₂ emissions and co-pollutants in the downtown area, thereby

addressing ACEP Transportation Electrification (TE) Goal 1, Strategy 5. Reviewing and updating the DAA analysis for present conditions and drawing best practices from the models examined there will facilitate design and implementation.

Benefits: Contributes to ACEP's overarching goal of "equitably reaching net-zero community-wide greenhouse gas emissions by 2040" and specifically Goal 3, "By 2030, 50% of trips in Austin are made using public transit, biking, walking, carpooling, or avoided altogether by working from home." Circulators reduce VMTs and the associated environmental and public health damages of SOV travel. They also reduce reliance on expensive and dangerous ride-hailing services filling high-congestion downtown zones. Ride-hailing cars idle and block bike, bus, and car lanes, creating dangerous conditions for everyone on the roads. Reduce congestion and therefore emissions and co-pollutants.

Though the Circulator routes do not serve low-income or under resourced neighborhoods, additional free transportation options can reduce the transportation cost burden for low-income residents traveling within the downtown core for work, services, and leisure.

Cost: \$7 million/year

27. Neighborhood E-Circulators

Details: CoA and CapMetro should implement high-frequency, free or low-fare electric circulators serving neighborhoods across Austin, especially those neighborhoods facing significant mobility barriers (e.g., neighborhoods with a high percentage of low-income households, households with children, elderly residents, residents facing disabilities, etc.). We propose starting with three (3) neighborhoods, with a focus on neighborhoods underserved by transit. This service should be free or <\$1/ride, thereby addressing ACEP TLU Goal 3, Strategy 2 to "promote free transportation options," as well as Strategy 1 ("Expand and improve public transportation"). The circulator should also run frequently and connect neighborhood residents with essential community services, including health clinics, grocery stores, cultural and recreation centers, parks and trails, libraries, and other community centers and amenities. We also recommend the circulators be electric vehicles to reduce CO₂ emissions and co-pollutants threatening public health in these neighborhoods, thereby addressing ACEP Transportation Electrification (TE) Goal 1, Strategy 5.

Benefits: Contributes to ACEP's overarching goal of "equitably reaching net-zero community-wide greenhouse gas emissions by 2040" and specifically Goal 3, "By 2030, 50% of trips in Austin are made using public transit, biking, walking, carpooling, or avoided altogether by working from home." Circulators reduce VMTs and the associated environmental and public

health damages of SOV travel. They also reduce reliance on expensive and dangerous ride-hailing services. Ride-hailing cars idle and block bike, bus, and car lanes, creating dangerous conditions for everyone on the roads. Reduce congestion and therefore emissions and co-pollutants. These Circulator routes should provide an equity benefit by providing free transportation options in low-income and under resourced neighborhoods.

Cost: \$10 million per year

Plan Alignment: ACEP TLU Goal 3, Strategies 1, 2; if fleet is electrified, ACEP TE Goal 1, Strategy 5; ASMP Shared Mobility Policies 1, 3, 5, 6; Public Transportation Policies 1 & 6; Air & Climate Policy 1; 2023 Urban Trails Plan Policy 3

28. Heat Resilience Infrastructure

Details: Building off JSC Recommendation 20240228-014, we further recommend that CoA invest \$30 million in building shade and cooling interventions, green infrastructure, and other resilient infrastructure projects. These measures mitigate the effects of extreme heat, increase water conservation, increase carbon sequestration, encourage transit usage and active transportation, and improve flood control through water retention. Council's approved resolution 20240228-014 directs the City Manager to improve and build out green infrastructure - including drought-tolerant trees, plantings, rain gardens, and bioswales - along new roadways, transit lines, in the right-of-way, and around utilities. We endorse these directives and further request the following allocations for green infrastructure development:

- \$25 million to design, build, and maintain curb extensions and neighborhood roundabouts along new bikeways as a traffic calming measure and a space for green infrastructure. The projects should use the equitable prioritization methods of the ASMP and related plans to equitably distribute these projects in neighborhoods throughout the city.
- \$5 million in recurring annual funding for shading and cool corridors to address urban heat island effects and the needs of key neighborhood sites. Identify priority mobility corridors to serve as “cool corridors” with natural and engineered shade and cooling solutions to provide safe, climate-resilient connectivity on core pedestrian and transit routes. These corridors should (1) prioritize benefits in low-income neighborhoods facing high heat vulnerability, (2) address gaps based on the City’s existing heat vulnerability analyses, and (3) be developed in consultation with community-based organizations. Initial locations to prioritize for cool corridors should include the Rundberg area and the St. Johns, Montopolis, Franklin Park, and Dove Springs neighborhoods, due to high heat vulnerability as measured by various socioeconomic

and heat exposure indicators. Priority project include research, design, installation, and maintenance of heat resilient infrastructure at new and existing transit stops, including shade structures (with solar panels, where feasible) and fan misters at high-traffic stops; research, design, installation, and maintenance of shade structures and shaded drinking fountains in parks, recreation centers, trails, and other community spaces/facilities adjacent to cool corridors.

Benefits: Summer 2023 was [Austin's](#) and the [planet's](#) hottest summer on record, and future summers are expected to bring more extreme heat. Mitigating heat through increased shade provision and urban cooling strategies reduces the negative health effects of heat, especially for children, the elderly, low-income populations, communities of color, and outdoor workers. As ACEP emphasizes, "Low-income communities and communities of color are the most impacted by extreme weather and pollution despite having contributed least to the drivers of climate change and pollution." Reduce VMTs in SOVs by making public transit, trails, sidewalks, and bikeways more comfortable and safer in the face of extreme heat. Jobs creation. Traffic calming promotes safer streets for all forms of mobility, serving ASMP Bike System Policy 1 (Make streets safe for bicycling).

In addition to local cooling and carbon reduction benefits, green spaces have aesthetic benefits that can increase neighborhood satisfaction and make the public transit and active transportation experience more comfortable for all users, serving ASMP priorities.

Providing shade and cooling in public spaces serves several other ASMP Policies (e.g., Public Transportation System Policy 5, Improve the public transportation experience) and ACEP TLU Goal 3, Strategies 1 (Expand and improve public transportation), 3 (Enhance transit stations and stops), 4 (Prioritize bicycle networks), and 6 (Improve sidewalks, urban trails, and crossings) and Natural Systems Goal 3, Strategy 3 (Increase community tree planting) and Goal 4, Strategy 2 (Reclaim public space and prioritize green infrastructure).

Cost: \$30 million

Plan Alignment: ACEP TLU Goal 3, Strategies 1, 3, 4, 6; ACEP Natural Systems Goal 4, Strategy 3; ASMP Pedestrian Network Policy 2; Public Transportation System Policy 5; Bicycle System Policy 1; Land Use Policy 5; Land and Ecology Policy 2; 2023 Urban Trails Plan Goals 4-7; 2023 Bicycle Plan Chapter 2, Shade & Green Infrastructure; 2023 Sidewalks, Crossings, and Shared Streets Plan Strategies 1-3

29. CityLeap ATX Plan: convert travel lanes on arterial roads to protected bike or bus lanes

Details: JSC recommends the Smart Streets Austin CityLeap ATX Plan. On all City-owned arterial roads of 4 or more lanes (approx. 100 miles), one or more travel lanes should be converted to either dedicated bus lanes or two-way protected bicycle lanes and protected intersections as appropriate. This should occur within 5 years of EIP approval using "quickbuild" materials. Examples of arterial roads include Burnet, William Cannon, W. 45th, Menchaca, and Oltorf, among others. This proposal serves ACEP TLU Goal 3 (50% of trips in Austin are made using public transit, biking, walking, carpooling, or avoided altogether by working from home) and ASMP's overall goal of achieving a 50/50 mode share (50% drive-alone, 50% taking transit, riding a bicycle, walking, carpooling, or teleworking) by 2039.

Benefits: Equity benefits of expanding the public transit system to be affordable, reliable, accessible, safe, and comfortable and expanding the bicycle network on major arteries throughout the city, making bikeways accessible to public transit and other services and amenities. Climate benefits of carbon dioxide (CO₂) emissions reduction from reducing VMT in SOVs as more trips within Austin will use modes split between public transit and bicycles. Public health benefits include improving air quality by reducing vehicle CO₂ emissions along with co-pollutants such as nitrous oxide (NO_x) and fine particulate matter (PM_{2.5}) as well as encourage more active transportation for overall wellbeing. Significant transportation modeshift in the shortest time by converting Austin's most direct routes to bike and bus lanes. Dedicating more lanes to space-efficient transportation will also move more people faster and reduce commuter delay, which reduces emissions and co-pollutants and improves public health and urban liveability. Safer streets for all forms of mobility. Jobs creation.

Cost: \$38.5 million. Assumes half (55 miles) of lane conversions will be bus lanes (\$100K/mile) and half will be protected bike lanes (\$600K/mile). Estimate does not include protected intersections or other measures.

Plan Alignment: ACEP TLU Goal 3, Strategies 1 & 4; ASMP Overall Goal; Air & Climate Policy 1; Bike System Policy 1 & 2; Shared Mobility Policy 1; Public Transportation Policy 1; 2023 Bicycle System Plan Strategy 2

30. Establish a city-owned all-electric carshare service

Details: Establish a City of Austin-owned all-electric carshare service with at least 200 vehicles within the City of Austin by December 2025. This program has already been proven to be successful in St. Paul, Minnesota, where the city launched the largest publicly owned,

renewably powered, electric car-sharing program in the nation called Evie Carshare. Therefore, the Evie Carshare should be used as an example for best management practice to establish a successful program. Service areas should be prioritized in low-income and marginalized communities and lower fees to use the vehicles should be considered to COA's Customer Assistance Programs (CAP) customers.

Benefits: Based on Evie Carshare program, each carshare vehicle put into service reduces 71,540 Vehicle Miles Traveled (VMT) in Single Occupancy Vehicles (SOVs) annually, or 196 VMT per day. For 200 cars that would be 14,308,000 VMT. If we assume the average passenger vehicle emits about 400 grams of CO₂ per mile, that would be equivalent to displacing 5,723 metric tons of CO_{2e} annually from internal combustion engines. In addition, by reducing VMT in Single Occupancy Vehicles (SOV) and replacing Internal Combustion Engine (ICE) vehicle trips with Electric Vehicle (EV), the project will significantly reduce harmful criteria pollutants, including Carbon Monoxide (CO), Nitrous Oxides (NO_x), and Volatile Organic Compounds (VOC). Benefits also include residents being able to drive an electric vehicle without the cost of having to purchase one.

Cost: \$10 million: Assuming each car costs approximately \$30,000, total cost for 200 all-electric vehicles would be \$6 Million. At least \$4 Million toward application development and support, customer interface development, management of fleet and service.

Plan Alignment: Austin Climate Equity Plan Transportation Electrification Goal 1, Strategy 4

31. Low-cost, accessible charging stations at City of Austin owned facilities

Details: City of Austin (COA) will be conducting an assessment to identify city facilities where charging stations can be installed. This assessment is focused on COA properties to support fleet, workplace, and public charging needs. Funding is needed for the installations of the charging stations once they are identified in COA's assessment. Service areas should be prioritized in low-income and marginalized communities. In addition, the funding should prioritize city buildings near local small businesses to increase their revenue potential to benefit Austin's small business local community economy. Installations of charging stations should be completed no later than July 2026.

Benefits: Assuming at \$10k per installed port (level 2 - 7.2kW) that would be 1,000 ports so roughly 7.2MW of installed load for EV charging. That would be equivalent to approximately 3,154 MWh/year of potential load to EV vehicles. Assuming a 0.321 kWh/mile EV fuel economy and an Average Port Utilization Rate of 20%, that would be equivalent to displacing

approximately 39,500,000 miles of internal combustion vehicles. Assuming, an average passenger vehicle emits approximately 400 grams/mile of CO₂, the CO₂ reduction would be as follows: CO₂e reduction = 39,500,000 miles/year x 400 grams CO₂/mile x 1,000,000 grams/metric ton = 15,800 metric tons of CO₂ per year. In addition, by reducing VMT in Single Occupancy Vehicles (SOV) and replacing Internal Combustion Engine (ICE) vehicle trips with Electric Vehicle (EV), the project will significantly reduce harmful criteria pollutants, including Carbon Monoxide (CO), Nitrous Oxides (NO_x), and Volatile Organic Compounds (VOC), improving local air pollution.

Cost: \$10 Million for the installation of the charging stations, prioritizing areas of low-income and marginalized communities and local small businesses.

Plan Alignment: Austin Climate Equity Plan Transportation Electrification Goal 2, Strategy 1

32. Install charging stations at multi-family homes with priority in low and moderate income communities

Details: Charging BEVs at home is the most affordable way to charge your vehicle. However, a significant portion of the population in Austin lives in multi-family homes where in most cases charging stations are not available. Therefore, the JSC recommends \$10 million be provided to supplement existing EV rebates for multifamily properties in low- and moderate-income communities for the installation of electric vehicle charging stations by December 2024.

Benefits: Assuming at \$10k per installed port (level 2 - 7.2kW) that would be 1,000 ports so roughly 7.2MW of installed load for EV charging. That would be equivalent to approximately 3,154 MWh/year of potential load to EV vehicles. Assuming a 0.321 kWh/mile EV fuel economy and an Average Port Utilization Rate of 20%, that would be equivalent to displacing approximately 39,500,000 miles of internal combustion vehicles. Assuming, an average passenger vehicles emits approximately 400 grams/mile of CO₂, the CO₂ reduction would be as follows: CO₂e reduction = 39,500,000 miles/year x 400 grams CO₂/mile x 1,000,000 grams/metric ton = 15,800 metric tons of CO₂ per year. In addition, by reducing VMT in Single Occupancy Vehicles (SOV) and replacing Internal Combustion Engine (ICE) vehicle trips with Electric Vehicle (EV), the project will significantly reduce harmful criteria pollutants, including Carbon Monoxide (CO), Nitrous Oxides (NO_x), and Volatile Organic Compounds (VOC), improving local air pollution.

Cost: \$10 Million for the installations of the charging stations, prioritizing areas of low-income and marginalized communities

Plan Alignment: Austin Climate Equity Plan Transportation Electrification Goal 2, Strategy 1

33. E-mobility solutions pilot program

Details: The City of Austin should develop an E-mobility Solutions Program to address transportation barriers faced by residents, social service providers, non-profit and community-based organizations, and businesses in underserved communities. The Pilot Program should fund community-driven e-mobility solutions, including the establishment of all-electric carshare programs, electric vans or shuttles for social service providers (e.g., elderly care services, after-school youth programs, childcare services, food access programs, healthcare services, etc.), local mini-bus services or on-demand rideshare services for underserved populations, e-mobility solutions for local small businesses, mobile health clinics or food pantries, or similar programs. Service areas should be prioritized in low-income and marginalized communities.

Benefits: Contributes to ACEP's overarching goal of "equitably reaching net-zero community-wide greenhouse gas emissions by 2040". E-mobility will replace internal combustion vehicles and therefore reduce GHG emissions. In addition, by reducing replacing Internal Combustion Engine (ICE) vehicle trips with Electric Vehicle (EV), the project will significantly reduce harmful criteria pollutants, including Carbon Monoxide (CO), Nitrous Oxides (NOx), and Volatile Organic Compounds (VOC).

Cost: \$10 Million