Appendix B

Cost of Implementation

Cost of Implementation

In coordination with Rincon Consultants, Inc. (Rincon) and the community of Healdsburg, the City of Healdsburg is developing a Climate Mobilization Strategy (CMS) that identifies specific Measures and Actions designed to help reduce greenhouse gas (GHG) emissions within the City. Making progress towards GHG reduction goals will require strategic investments into many City and community elements including infrastructure and technology systems and policies and programs to influence behavior change on the part of the community. To develop transparency around the prioritization of these investments, Rincon has assembled this cost of implementation assessment. This document includes a preliminary estimate of implementation cost for 15 specific Actions as well as qualitatively details the costs associated with each action and the implementation of each of the 18 Measures as a whole. City staff also provided rough cost estimates for moderate and high-cost actions.

Climate action and sustainability plans exhibit variability in implementation costs depending on the specific Measures identified, their level of effort, time of replacement, alternative costs, and the accompanying funding and financing strategies. For example, costs may vary from capital-intensive investments like the installation of bike infrastructure to encourage alternative means of transportation to less capital-intensive, but more staff-intensive investments related to outreach and education campaigns for increased organic waste diversion. The intent of this assessment is to distill these variable considerations into a document that provides a description of the potential costs on an order of magnitude, where they will be born, and the primary variables that affect each Measure and Action to help the City prioritize Measure implementation and best work towards GHG reductions. It is important to note that lifespan and accuracy of all cost estimates are limited by external changes or differences related to variables such as market pressures, inflation, fee structure, technological innovation, etc. Thus, the cost estimates presented herein are limited to the information available and reviewed at the time of this document's preparation and all interpretation and decisions made with this information must be constrained by these and other limitations.

Cost Considerations

Variability in implementation costs depends on the goals identified within Measures, their level of specificity, and the accompanying funding and financing strategies. This assessment considers several types of cost when assessing each Measure and Action. First, this assessment considers internal and external costs. Internal costs are those felt by the City (aka. municipal costs) while external costs are those felt by the residents and businesses (aka. community costs). Second, the assessment considers upfront and lifecycle costs. Upfront costs include the costs associated with purchasing and installing an item. Lifecycle costs include the costs associated with purchasing and installing the item along with operating, maintaining, and disposing of that item. Lastly, the assessment considers comparative costs. This cost represents the difference in cost between an item and a similar item. Costs can include monetary costs, such as purchases and investments, and less tangible costs such as staff and community time.

These costs have been broken down into four categories presented in Table 1.

Table 1 Cost Categories

Cost Category	City	Community
No-Cost	Goals associated with operational changes that do not include new upfront costs or result in zero lifecycle costs. ▪ Continuing existing programs	Goals associated with changes that do not include new upfront costs or result in zero lifecycle costs. ▪ Switching transportation modes from single occupancy vehicles to active transportation.
Low-Cost	Goals associated with low upfront costs and will only require staff time to implement, such as: ▪ Developing partnerships ▪ Policy Updates ▪ Community Outreach	Goals associated with low upfront costs compared to existing alternatives, such as: ▪ Additional energy bill costs for renewable energy compared to fossil fuel-based energy
Moderate-Cost	Goals associated with moderate upfront costs to the City and require moderate capital costs or consultant time along with staff time, such as: ▪ Feasibility Studies ▪ Incentive and Compliance Programs ▪ Pilot Projects	Goals associated with moderate upfront costs that are not comparable to existing costs nor are offset over lifetime, such as: ▪ New fees from utilities or city taxes ▪ Upfront costs partially offset by rebate opportunities
High-Cost	Goals associated with high upfront costs and require substantial investments into infrastructure and technology system upgrades, such as: ▪ Bike Lanes ▪ Energy Storage Systems ▪ EV Charging Networks	Goals associated with high upfront costs that are not comparable to existing cost nor are offset over lifetime, such as: ▪ New electric vehicle purchase prior to existing vehicle replacement

As part of this assessment, Rincon provided an in depth analysis of cost for 15 specific Actions selected by the City. To provide a more complete estimate of implementation of these specific actions, Rincon collected and analyzed cost data for each of the designated Actions using the following expenditure categories: capital cost, municipal staffing, consultants, and supply and materials. Capital expenditures for a municipality include upfront costs, like installation or infrastructure development, and lifecycle costs, such as operation and maintenance. Capital cost estimates presented herein were obtained from various sources including technical studies, analysis of current markets, information on expenditures provided by the City, as well as information regarding expenditures obtained from other similar cities or projects. Staffing represents the personnel costs by City staff to implement the action and are calculated using the current City of Healdsburg Master Fee Schedule and based on the estimated hours a given staff position would be required to implement the action.[1] The city has a limited staff to implement the CMS so there will likely be a need to rely on vendors and consultants to complete some of the actions. The consultant expenditure category captures the cost to hire a consultant to implement various actions, such as developing an ordinance and conducting a feasibility study. Costs for consultants and vendors were developed based on Rincon's experience conducting these activities and the fee schedule as well as consultant and vendor fees documented by both the City of Healdsburg and other similar California cities. Finally, many actions require materials and supplies to support implementation such as brochures or meeting materials for outreach activities which are estimated based on the City of Healdsburg Master Fee Schedule and our experience of the level of materials and supplies required. It is important to note that determining cost for infrastructure relies heavily on specifics that are

[1] https://healdsburg.gov/DocumentCenter/View/15274/Master-Fee-Schedule-FY-2022-2023

often determined during a feasibility study and during the planning phase. When possible, ranges or annual budgets related to infrastructure changes have been included, however in many cases it is not yet possible to provide a quantitative evaluation of future infrastructure that has not yet been determined. Additionally, it should be noted that while there are a number of grants, rebates, loans, and financing opportunities available to fund or partially fund many of the actions listed, the funds available is also variable and therefore cost estimates related to amounts available by grants or other financing options have not been included in this assessment.

Table 2 presents the municipal cost analysis for each action in the CMS. It includes a preliminary cost estimate (i.e., quantitative estimates) for the 15 actions selected by the City, as well as, a qualitative cost evaluation and categorization for all other actions, denoted by grey shading in the table below.[2] Additional rough cost estimates for City costs were estimated by City staff and are include in italics. Table 3 presents the community cost analysis for each measure in the CMS. It includes a qualitative cost evaluation and categorization for each measure and a quantitative cost estimate when data was available. Unless otherwise noted, all cost estimates are for a one-time expenditure. If a cost is anticipated to be ongoing, the estimated cost and time frame (i.e., annually) are included in the cost estimate.

[2] Actions that were not analyzed quantitatively and only received a qualitative cost analysis are denoted in Table 2 with grey shading.

Table 2 Cost to City for GHG Emissions Reduction Measures and Actions

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
Measure BE-1 Procure 85% of electricity from renewable and zero-carbon sources by 2030 and 100% renewable and carbon-free no later than 2045. (2,171 MT CO_2e reduction)				
BE-1.1	Conduct electrification infrastructure and capacity feasibility studies. This would include: ▪ Develop a long-range community-wide electric energy and demand forecast to estimate future usage and peak demands due to adoption rates of building and transportation electrification. Use the forecast to help inform the amount of new energy sources and system capacity improvements required. ▪ Formalize the City's electric department long-range (ten-year) electric capital improvement plan with consideration for necessary infrastructure improvements to meet future demands. ▪ Using the developed long-range energy and demand forecast, formalize a pathway (resource-plan) to meet the City's energy needs and list of potential resources through 2045. Generation Resources may include a combination of local and remote generation sites as well as energy storage. ▪ Prioritize and schedule projects for implementation. The energy forecast study and formalized plans should identify barriers for implementation of priority projects, as well as identify funding sources, impacts on rates, and partnerships needed for successful implementation.	Moderate	▪ Consultant time to conduct electrification feasibility and capacity study (moderate) ▪ Staff time [estimated 400 hrs] to support feasibility and capacity study research (moderate)	▪ Consultant [$180,000 - $400,000] ▪ Staff [$70,000 - $100,000] ▪ **Total [$250,000 - $500,000]**
BE-1.2	Develop a resolution that Healdsburg Electric will exceed the requirements of SB 100 and SB 1020 by 2030 where 85% of the electricity mix is sourced from a combination of eligible renewable sources and/or carbon-free sources. As part of this resolution include actions of: 1. In setting the target establish valuation rankings for various generation types and projects. 2. Consider the reliability and cost benefits of energy storage and/or demand response by 2030 3. Continue to offer 100% renewable Green Rate with consideration that both the Standard and Green rates will reach the SB 100 goal of 100% renewable and carbon-free energy by 2045.	Low	▪ Staff time [estimated 240 hrs] to conduct research, collect data to develop resolution, gain community input, and develop staff reports and presentations for resolution adoption (low)	▪ Staff [$38,000]

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
	4. Indicate that geothermal and other low-carbon eligible renewables will continue to be included in the overall electricity mix.			
BE-1.3	Work with Lodi Energy Center (LEC) project participants to continue to advocate for and support the Department of Energy grant application to fund the LEC hydrogen-electrolyzer project. Identify and pursue other possible incentives or funding to transition facility to green hydrogen. This will reduce emissions of Healdsburg Electric electricity and increase reliability of the electricity source.	Low	▪ Staff time to support the grant application preparation (low)	Not quantified
BE-1.4	Work with community groups, local organizations, and NCPA to: ▪ Engage with community to advertise/highlight the adoption of the resolution establishing the goal of achieving 85% renewable and/or carbon-free electricity by 2030 and 100% renewable and/or carbon-free no later than 2045. Provide information on the process for providing reliable electricity 24/7 year around and the importance of power sources to ensure the reliability of the electricity provided. ▪ Provide information to the community on the importance of achieving this goal and how to meet this goal through city and community actions and involvement. This may include information on the benefits of local generation of renewable energy versus purchasing of Renewable Energy Certificates (RECs) to promote community installation and use of solar and battery storage to better achieve local carbon-free electricity community wide. ▪ Implement a software solution for residents and businesses to view electric consumption data in near real time. ▪ Include information on time of energy use as it factors into carbon intensity and how community members can capitalize on using electricity when it has the lowest carbon intensity (e.g., when to charge electric vehicles and when to run space heating and cooling). Work with industry experts to help with demand response planning, developing strategies to increase flexibility of the grid, and for informing consumers of carbon intensity of the electricity they are using to promote behavior change.	Low	▪ Staff time to develop partnerships and perform outreach, engagement, and education (low) ▪ Materials and supplies for outreach, engagement and education events (low)	Not quantified

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
BE-1.5	Partner with community organizations to ensure low/moderate income households are aware of the CARE and State's HEAP program to receive decreased electricity rates and provide technical assistance.	Low	▪ Staff time to develop partnerships and perform outreach and education (low)	Not quantified
Measure BE-2 Continue to adopt an Electrification Reach Code for all new residential and commercial buildings with each triannual code cycle. Update electrification ordinance to eliminate natural gas consumption in new construction for the 2025 California Building Standards Code and moving forward. (929 MT CO_2e reduction)				
BE-2.1	Continue to enforce the Electrification Reach Code for the 2022 California Building Standards Code requiring electric space and water heating in new construction.	No-cost	▪ Continue staff time to enforce code (no new cost)	Not quantified
BE-2.2	In 2025 and every 3-years thereafter if not included within State building codes, revisit the building electrification ordinance to update the scope and reduce exemptions to align with industry technology advancements. As part of ordinance update, include the following scope changes: 1. Minimize the exemptions associated with the ordinance, while allowing for health and safety exemptions as necessary and exploring potential exemptions for specific use cases determined to have substantial economic development or business impacts. 2. Continue to require the submittal of an infeasibility waiver to review specific end uses where electrification is technologically infeasible. 3. Require that any end-use deemed infeasible for electrification exceed existing Title 24 energy efficiency standards and be electric ready for future electrification. 4. Establish a zero NOx threshold. 5. Specify that affordable housing developments will be all-electric to ensure no stranded assets. 6. Revisit substantial remodel and improvement definitions to be included in the ordinance.	Low	▪ Staff time to update ordinance (low)	Not quantified

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
BE-2.3	Engage with the community, key stakeholders, and local-based community organization representing vulnerable communities to raise awareness about building electrification before revising the electrification ordinance. Emphasize the economic and environmental advantages of electrification and address concerns related to emergency response to minimize exceptions. Publicize the cost savings, environmental benefits, and flexibility of electrification through the City website and permit counters, targeting builders, property owners, and contractors.	Low	▪ Staff time to conduct outreach and education (low) ▪ Materials and supplies for outreach and engagement (low)	Not quantified
BE-2.4	Engage with interested parties, both internal interested parties, such as City staff and officials, and external interested parties, such as local developers and community groups regarding the purpose and impact of the Healdsburg Electrification Reach Code and to identify and address equity concerns in policy implementation.	Low	▪ Staff time to conduct outreach and education (low) ▪ Materials and supplies for outreach and engagement (low)	Not quantified
BE-2.5	Engage with affordable housing developers to leverage incentives for new all-electric and efficient low-income residential buildings through the California Energy Commission Building Initiative for Low-Emissions Development (BUILD) Program and the Affordable Housing and Sustainable Communities (AHSC) Program. Regularly investigate and leverage other incentive programs available for electrification of new buildings.	Low	▪ Staff time to conduct outreach and education, and research existing incentive programs to promote (low) ▪ Materials and supplies for outreach and engagement (low)	Not quantified
Measure BE-3 Decarbonize residential building stock by 10% by 2030. (947 MT CO_2e reduction)				
BE-3.1	Assess the feasibility and cost for electrification retrofitting as well as identify potential equity concerns/impacts. Identify the appropriate project threshold to require electric upgrades in order to electrify 10% of existing residential buildings by 2030. Establish the funding and financing requirements necessary to support the community in this transition.	Moderate	▪ Consultant time to conduct feasibility, cost, capacity and equity analysis (moderate) ▪ Staff time [estimated 100 hrs] to work with consultant in analysis, develop partnerships and working groups, and perform engagement (moderate) ▪ Materials for community engagement activities (low)	▪ Consultant [$50,000 - $100,000] ▪ Staff [$20,000 - $30,000] ▪ Materials & Supplies [$1,000 - $10,000] ▪ **Total [$71,000 - $140,000]**

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
BE-3.2	Continue to monitor the 9th circuit court of appeals of the CRA vs City of Berkeley ruling. Once electrification costs and funding/financing options are identified, develop an-electric-preferred reach code for existing residential buildings during the next building code cycle to be implemented through the building code for projects that are valued at $250,000 or greater. Include the following aspects in the code development: 1. If necessary, modify the reach code such that it satisfies the federal Energy Policy and Conservation Act's (EPCA) seven criteria for an exemption from preemption. 2. Establish a zero-NOx standards for replacement appliances. 3. Establish a time of renovation energy efficiency performance requirement and electrification requirement that includes a checklist of cost-effective efficiency and electrification options for renovations to be completed based on scale of project.	Low	▪ Staff and/or consultant time required to monitor the ruling and develop the mandatory requirements within the building code (low) ▪ Staff time required for adoption of requirement (low)	▪ Consultant [$25,000 - $60,000] ▪ Staff [$10,000 - $20,000] ▪ **Total [$35,000 - $80,000]**
BE-3.3	Align with SB 379 to implement an online, automated permitting platform. As part of a comprehensive permitting compliance program, include routine training of City staff, dedicating City staff time to building inspections, charging fees for noncompliance, providing easy-to-understand compliance checklists online and with permit applications, and facilitating expedited permitting online, including solar and battery storage.	Low	▪ Ongoing staff time to review projects and implement compliance program (low) ▪ Grant received and in progress for online permitting	▪ Staff [$12,000 - $15,000 annually]
BE-3.4	As allowed by the law, continue to provide incentives available for community members installing solar and battery storage to their homes such as a Net Metering Program with high-compensation NEM rates, and continue to provide incentives for energy efficiency and efficient electrification upgrades, as well as promote other funding and incentive opportunities available through the State and Federal government. Provide resource information to the community through websites, workshops, and partnerships. Include outreach to newly sold homes, when homeowners are more likely to make upgrades.	Moderate	▪ Staff time [estimated 200 hrs] for program expansion to include outreach to newly sold homes (low) ▪ Consultant time for outreach activities, develop outreach tool-kit, and website upkeep (low) ▪ Materials and supplies to provide to community (e.g., brochures) (low) ▪ Incentives and rebates to offset home or property owner costs (moderate)	▪ Staff time [$20,000 - $35,000] ▪ Consultant [$30,000 - $50,000] ▪ Materials and Supplies [$2,000 - $5,000] ▪ Incentives and Rebates [$200,000 - $300,000 annually] ▪ NEM Compensation [$0.0888 per kWh net-generation] ▪ **Total [$252,000 - $390,000]**

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
			▪ Net Energy Metering compensation for excess electricity generation (moderate)	
BE-3.5	Review incentives, rebates, and financing options for procedural equity and ensure that existing and updated incentive programs are being equitably distributed to the community. Develop a suite of Equity Guardrails with input from the community to ensure existing building electrification improves equity in the community.	Low	▪ Staff and/or consultant time to conduct outreach and engagement and develop equity metrics (low) ▪ Staff and/or consultant time to regularly review and update existing incentives (low)	Not quantified
BE-3.6	Develop an appliance direct install program for Multi-Family income-restricted properties. Consider implementing a Neighborhood Retrofit Program to improve resiliency in residential buildings (i.e., on-site power generation and storage, weatherization, cooling, etc.), with an emphasis on connecting incentives and resources with rental property owners and low-income residents. Partner with community organizations to utilize existing resources.	Moderate to High	▪ Staff or consultant time to develop and launch program, conduct outreach, develop partnerships, and coordinate implementation (moderate) ▪ Vendor cost to provide appliances and direct install services (moderate to high) ▪ Materials and supplies for outreach activities (low) ▪ Other incentives and rebates included in BE-3.5	▪ Staff/consultant [$100,000 – $200,000 annually][3] ▪ Vendor [up to $2,500,000][3] ▪ Materials and Supplies [$2,000 - $10,000 annually] ▪ **Total [$2,600,000 – 2,710,000]** ▪ Proposed Budget [$500,000 annually][4]

[3] Estimates on program obtained from March 2023 Staff Report regarding program implementation.

[4] The City receives about $500k annually from the Cap & Trade program for GHG reduction programs such as energy rebates, EV charging, etc. Using the funds on this specific Action would limit funds for other programs. The budget is included herein to provide context for potential funds reduced from other programs if this Action is implemented.

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
BE-3.7	Once feasibility studies and cost analysis are completed, dedicate staff time or funding of consultants to pursue funds through CARB, the Investment Reduction Act, and the Infrastructure Investment and Jobs Act including, but not limited to: 1. DOE block grants 2. Green bonds 3. Grant Anticipation Notes or Short-Term Loans 4. Tax exempt lease purchases 5. Energy as a service 6. Energy Performance Contracting from Energy Service Companies (ESCOs)	Low	▪ Staff time to determine program needs (low) ▪ Staff time to prepare funding applications (low)	Not quantified
BE-3.8	Continue to conduct periodic energy efficiency rebates reviews. Promote existing available rebates and incentives for energy efficiency and electrification from Healdsburg Electric, the State, and the Federal government through partnership with community groups to educate the community on ways to finance electrification.	Low	▪ Staff time to review rebates and conduct community outreach (low)	Not quantified
Measure BE-4 Decarbonize non-residential building stock by 10% by 2030. (706 MT CO_2e reduction)				
BE-4.1	Identify non-residential building electrification barriers and analysis supporting future adoption of a non-residential building electric-preferred reach code. Assess the cost range for electrification retrofitting for different industries. Identify the appropriate project threshold to require electric upgrade in order to electrify 10% of existing non-residential buildings by 2030.	Moderate	▪ Staff and consultant time to conduct feasibility strategy (moderate)	Not quantified (to be completed with Action BE-3.1)
BE-4.2	Continue to monitor the 9th circuit court of appeals of the CRA vs City of Berkeley ruling. As part of the next building code cycle, develop an electric-preferred reach code for existing non-residential buildings to be adopted by 2026 to be implemented through the building code for projects that are valued at $500,000 or greater. As part of this reach code include the following steps: 1. If necessary, modify the reach code such that it satisfies the federal EPCA's seven criteria for an exemption from preemption. 2. Encourage commercial buildings to comply with the Commercial Energy Performance Assessment and Disclosure Program (AB 1103). 3. Establish a zero-NOx standards for replacement appliances.	Low	▪ Staff and/or consultant time required to develop the mandatory requirements within the building code (low) ▪ Staff time required for adoption of requirement (low) ▪ One full-time staff member hired to implement compliance program (moderate)	▪ Consultant [$25,000 - $50,000] ▪ Staff [$10,000 - $20,000] ▪ Staff [$120,000 - $150,000 annually] * If this Action is developed in concert with Action BE-3.2 and Action BE-3.3 there would not be a cost associated with this Action

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
	4. Allow for health and safety exemptions as necessary. 5. Explore potential exemptions for specific use cases determined to have substantial economic development or business impacts. 6. Enforce the permitting of replacement appliances through the same permitting compliance program as for residential building electric-preferred reach code.			
BE-4.3	Develop an education campaign to promote electrification and include items in the program such as: 1. Conduct engagement efforts for the commercial sector to identify ways the City can support commercial energy storage installations and neighborhood scale microgrid opportunities. 2. Facilitate funding opportunities for commercial business electrification by identifying and supporting grant opportunities available to the community, prioritizing small and community owned. 3. Implement feedback provided during the community outreach process for small businesses and community-owned businesses to address potential equity impacts of the building performance program. 4. Utility bill inserts to advertise the incentive programs or grants available and the cost benefits of electric appliances 5. Targeted outreach to builders, developers, local contractors, and property managers with an informational brochure describing the financial benefits of replacing natural gas appliances with all electric appliance when they apply for permits 6. Provide informational webinars and an updated website to advertise and promote All-Electric Building Initiative rebates and incentives 7. Promote the use of the Energy Star Portfolio Manager program and benchmarking training programs for nonresidential building owners.	Low	▪ Staff and/or consultant time to develop and implement an education campaign (low) ▪ Staff time to conduct outreach and education (low) ▪ Materials and supplies for outreach and engagement, including bill inserts (low)	Not quantified
BE-4.4	Continue to partner with electrification/efficiency experts to provide guidance to commercial buildings covered by the new code(s) and/or ordinance(s).	Low	▪ Continue partnerships to provide technical assistance (low)	*City staff estimate current costs at less than $10,000 per year, depending on technical support needed.*

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
BE-4.5	Partner with the Healdsburg businesses and the Chamber of Commerce to inform and facilitate electrification for commercial business owners.	Low	▪ Staff time to develop partnerships and conduct outreach (low)	Not quantified
Measure BE-4A Decarbonize 50% municipal buildings and facilities by 2030.				
BE-4A.1	Develop a resolution to decarbonize 50% of municipal buildings and facilities by 2030 and 100% by 2045, by retrofitting natural gas appliances with electric alternatives. Include in the resolution an "electric first" purchasing policy for any equipment or appliances in need of replacement.	High	▪ Staff time [60 hrs] to develop resolution and develop replacement schedule (low) ▪ Consultant to conduct natural gas appliance audit (moderate) ▪ Capital/comparative cost for appliance and lighting replacements and building retrofits as needed (high) ▪ Long-term energy bill savings (no-cost)[5]	▪ Staff [$8,000 - $12,000] ▪ Consultant [$40,000 – $60,000] ▪ Capital/comparative investment [$35-$200/square foot][6] ▪ Cost savings [~ $2,000 over 15 years][7] ▪ **Total per 50,000 square feet [$1,796,000 - $10,070,000]**
BE-4A.2	Conduct a feasibility study to understand current decarbonization and barriers to installing additional distributed energy resources such as solar and battery storage, or other renewable energy generation infrastructure, at municipal facilities. Plan for directing resources through the city for funding, energy storage, and distributed energy resources. Direct municipal efforts to sourcing space for energy storage projects, microgrid implementation, and future electrification.	Moderate	▪ Staff and consultant time to conduct feasibility study (moderate)	*City staff estimate costs between BE-3.1 and BE-3.2 [$35,000 - $140,000].*

[5] A portion of gas distribution costs is covered by the customer's gas bill payments, by electrifying this incremental cost is saved. Accessed at: https://rmi.org/insight/the-economics-of-electrifying-buildings/

[6] The cost to retrofit commercial buildings is highly variable depending on the retrofit, existing conditions, type of building, equipment available, etc., Furthermore, electric retrofits often show cost savings overtime. Recent studies found that for a typical office building electric retrofits would cost on average $25 - $150 per square foot. Accessed at: https://rmi.org/wp-content/uploads/2017/04/Pathways-to-Zero_Bldg-Case-for-Deep-Retrofits_Report_2012.pdf

[7] https://rmi.org/insight/the-economics-of-electrifying-buildings/

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
BE-4A.3	Complete a Wastewater treatment plant energy efficiency study and implement the highest impact recommendations. Utilize grant funding opportunities as much as possible.	High	▪ Staff time to acquire funding (low) ▪ Staff and consultant time to conduct an energy efficiency study (moderate) ▪ Capital costs to implement study recommendations (high)	*City staff estimate:* ▪ *Staff time to acquire funding [$5,000]* ▪ *Staff/consultant time to conduct study [$45,000 - $85,000]* ▪ *Capital costs may vary widely depending on recommendations [$10,000 - $1,000,000+]* ▪ ***Total [$60,000 - $1,090,000+ depending on grant funding opportunities]***
Measure T-1 Implement programs that increase access to safe active transportation, such as walking and biking, that achieve 15% of active transportation mode share by 2030. (353 MT CO2e reduction)				
T-1.1	Work with Sonoma County Transportation Authority (SCTA) to update the 2013 Existing and Planned Bicycle and Pedestrian Facilities for City of Healdsburg with new planned and completed projects by 2025. As part of the update consider including: 1. Identified projects from the 2013 plan not yet implemented and include a progress update and/or reasons that identified projects were determined infeasible in updated Master Plan 2. Safe Routes to School plan 3. Increased biking infrastructure off the main street to enhance connectivity throughout the City and/or in communities where there is currently no or limited infrastructure 4. In partnership with surrounding communities, identify opportunities for infrastructure improvements or expansions to enhance cross-community active transportation 5. Explore streets for permanent through traffic closures to promote walking, biking, and other forms of active transportation with a focus on closing off downtown 6. Explore areas of the City to remove parking and/or additional traffic lanes to prioritize walking and biking	High	▪ Consultant time to develop Safe Routes to School Plan (SRSP) (moderate) ▪ Staff [estimated 300 hrs] time to work with SCTA to update Bicycle and Pedestrian Plan (moderate) ▪ Consultant or staff time to conduct analysis (e.g., identification of areas for through traffic closure, equity analysis) for update (moderate) ▪ Materials and supplies needed for outreach and engagement events throughout process of updating document (low) ▪ Capital cost for increasing and improving biking infrastructure (high) ▪ Capital cost for street closures (moderate)	**Initial Planning Cost** ▪ Consultant - SRSP [$100,000 - $210,000] ▪ Consultant – analysis [$150,000 - $300,000] ▪ Staff [$45,000 - $60,000] ▪ Materials and Supplies [$5,000 - $10,000] ▪ **Total [$300,000 – $580,000]** ***(some costs potentially supported by grant for plan update)***

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
	7. Determine equity barriers to safe bike and pedestrian infrastructure.			**Infrastructure Cost** ▪ Bike Infrastructure [$325,000 - $650,000 per mile][8] ▪ Street Closures [$50,000 – $150,000 per short -term closure location][8]
T-1.2	Continue to utilize discretionary funds to implement the bicycle and pedestrian infrastructure improvements and updates such as the protected bike lanes along Healdsburg Avenue and reduction of through lanes on Healdsburg Avenue (e.g., Healdsburg Avenue Improvement Project). Select consultant to finalize designs for Healdsburg Avenue Improvement Project by end of 2023 to aim for project completion end of 2028. Improvement projects underway include: 1. Healdsburg Avenue Complete Streets improvements 2. Grove Street improves including ADA compliance 3. Foss Creek & Front Street connections 4. Saggio Hills Foss Creek Pathways Extension	High	▪ Staff and consultant time to finalize designs (low) ▪ Infrastructure investment (high)[9] ▪ Capital costs to implement bicycle and pedestrian infrastructure improvements (high)	*City staff estimate for current projects underway:* ▪ *Healdsburg Ave [$15M]* ▪ *Grove Street [$3-4M]* ▪ *Foss & Front [<$1M]*
T-1.3	Support the Sonoma County Bicycle Coalition and local community groups to facilitate community outreach and education on transportation alternatives and promote infrastructure improvements and expansion, such as Foss Creek Trail. Continually improve methods for engaging the community, gathering input, and utilizing it to prioritize projects from the Bicycle and Pedestrian Master Plan. Promote and distribute regionally available tools, such as bike maps, bus routes and schedules, etc. to the community and to hotels and tourism centers to increase visitor use of active transportation.	Low	▪ Staff time to develop partnerships and conduct outreach and education (low) ▪ Materials and supplies for outreach and engagement (low)	Not quantified

[8] Capital costs for infrastructure obtained from following study and include 30% inflation since time of study. Accessed at: https://www.pedbikeinfo.org/cms/downloads/Countermeasure%20Costs_Report_Nov2013.pdf

[9] Rough estimates provided by City of Healdsburg Public Works Department

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
T-1.4	Develop the Pilot Bike Share Program into a permanent and dependable bike share network that provides access to key destinations throughout the City, and work with regional partners including SMART and others, to assess potential for a regional bike share system. Include educational outreach and campaigns promoting use of the re-inspired program.	Moderate	▪ Staff time to develop regional partnerships and conduct outreach and education (low) ▪ Staff time and capital costs to develop program (moderate)	*Current 3-year pilot costs approximately $100,000 per year. Staff estimate future costs of $100,000-$150,000 annually, and would encourage bike share vendor to seek local business sponsorship.*
T-1.5	Coordinate regionally through Sonoma County leveraging the regional active transportation plan to facilitate cross-community active transportation improvements, such as SMART multi-use path and Great Redwood Trail. As part of this action include community outreach and education on active transportation improvements to affected areas as well as the community.	Low	▪ Staff time to conduct education and outreach and coordinate infrastructure improvements with regional partners (low)	Not quantified
T-1.6	Evaluate existing bike parking facilities and evaluate what improvements can be made to increase supply, reduce theft, and increase rider attraction. Based on existing surveys and evaluation findings, improve and expand existing bike parking facilities throughout the city. Improve bike parking facilities near public transit stops and expand access to safe transit (i.e., first and last-mile access), as well as consider car parking spaces that could be converted to bicycle parking. Include analysis of last mile limitations and hurdles. Explore ways to require safe, secure bike parking and/or bike lockers as part of large commercial and multi-family projects.	Moderate	▪ Staff and consultant time to conduct evaluation and identify opportunity improvements (moderate)	*City staff estimate costs to be similar to BE-3.1 and BE-3.2 [$35,000 - $140,000]. Initial budget of $10,000*
T-1.7	Support the tourism and business sectors of the greater Healdsburg County region to increase active transportation from tourists and employees.	Low	▪ Staff time to develop partnerships and identify opportunities (low)	Not quantified
T-1.8	Partner with local bike shops to provide subsidies to low-income residents for e-bikes, helmets, locks, and other bicycle equipment. Continue to offer e-bike rebates with increased rebate opportunities for low-income customers. Implement an income-qualified coupon for the e-bike share program, in addition to the available 50% discounted e-bike share rate.	Moderate	▪ Staff time to develop partnerships (low) ▪ Capital costs to increase and provide new rebates (moderate)	*City staff estimate $50,000 annually.*

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
Measure T-2 Implement programs for public transportation that achieve 10% of public transit mode share by 2030. (2,022 MT CO2e reduction)				
T-2.1	Partner with SCT to conduct a feasibility study to inform the development of a tourism-based mobility plan aimed at decreasing tourism-based single passenger vehicle use. In this study: 1. Identify community boundary locations for tourism designated parking and optimal route connectivity. 2. Identify opportunities for town shuttle services and park-and-ride locations for residents and tourists. 3. Pilot study on private funded transportation to wineries. 4. Gauge potential of private partnerships with big tourism destinations such as wineries and local businesses to implement direct public transit routes between park and ride and the relevant tourist destinations.	Moderate	▪ Consultant time to conduct feasibility study (moderate) ▪ Staff [200 hrs] time to work with SCT or consultant on feasibility study and develop/implement pilot project (low) ▪ Capital cost to develop and implement pilot study (moderate)	▪ Consultant [$60,000 - $100,000] ▪ Staff [$25,000 - $40,000] ▪ Pilot Study [$200,000 - $300,000][10], [11] ▪ **Total [$285,000 - $440,000]**
T-2.2	Partner with regional organizations or community groups to conduct local transportation surveys to better understand the community's needs and motivation for traveling by car versus other alternatives such as the bus. Use survey results to inform policy development and education/outreach campaigns that are transit focused.	Low	▪ Staff time to develop regional partnerships and conduct community surveys (low)	Not quantified
T-2.3	In the identification of access improvements to transportation include design improvements of seating and shading at bus stops and along active transportation routes. Partner with SCT to incorporate design changes throughout infrastructure modifications.	Moderate	▪ Staff and consultant time to design bus stop improvements (moderate) ▪ Staff time to work with STC to incorporate design improvements (low) ▪ Capital cost for bust stop infrastructure improvements (e.g., street furniture, shade) (moderate)	*City staff estimate costs similar to T-1.6 [$35,000 - $140,000], plus the infrastructure costs which may vary depending on the modifications.*

[10] Assumed a one-year pilot study costing ~$100/hr based on average rates for shuttles locally, operations 7 days a week from 10 am to 6 pm (hours of winery operations).

[11] Based on conversations between Public Works Director and SMART on the on-demand e-shuttle. Assumed that pilot study for transportation to wineries would be a year long, though is anticipated to be a lower cost as hours of operation would be less.

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
T-2.4	Work with public transit partners and rider groups to improve ridership through improved routes and modifying schedules to increase efficiency and align with rider needs. Ensure public transportation access and improvements are prioritized in low-income areas, active aging neighborhoods, schools and at major destinations. This could include surveying existing transportation services, routes, schedules, and facilities throughout the city and developing a plan to improve these for implementation with preference given to improving public transportation facilities and expand access to transit (i.e., first and last-mile access).	Moderate	▪ Staff and/or consultant time to conduct survey, develop a plan, and coordinate with partners and stakeholders (moderate)	*City staff estimate costs similar to T-1.6 [$35,000 - $140,000].*
T-2.5	Promote free or subsidized regional public transit programs for vulnerable communities in Healdsburg that makes it free or discounted for participants to travel regionally via SCT.	Low	▪ Staff time for promotion and outreach (low)	Not quantified
Measure T-2A Explore the development of a micro-mobility and/or car-share program to support mode shift from single occupancy fossil fuel vehicles to Zero Emission Vehicles.				
T-2A.1	Conduct a background review of options for purchasing, operating, and maintaining an on-demand door-to-door e-shuttle. This may include the development of a new on-demand e-shuttle, the expansion of DASH (Drivers Assisting Seniors in Healdsburg) for all residents of Healdsburg, or the development of a program to subsidize the cost for electric car-share programs such as Uber or Lyft. The analysis should include identification of potential funding sources (e.g., grants, local taxes, local business sponsorship, discretionary funds, etc.) and identification of barriers and opportunities for how such a micro-mobility program may enhance active transportation or public transit use. Present the findings to City Council and the public to determine next steps.	Moderate	▪ Staff and consultant time to conduct feasibility study (moderate)	*City staff estimate costs similar to T-1.6 [$35,000 - $140,000].*
T-2A.2	Based on the findings of the feasibility study and the response from City Council and the public, develop and implement a micro-mobility policy that establishes a deployment protocol and permitting process, identifies any restrictions for use for safety reasons, and promotes equitable access through requirements for consistent placement of micro-mobility devices (e-scooters, e-bikes, etc.) in underserved areas or reductions in usage fees for lower-income users.	Moderate/High	▪ Staff time [300 hrs] to develop and implement micro-mobility policy (moderate) ▪ One part-time employee for staff management of program and permitting process (moderate) ▪ Annual cost to fund micro transit service operated by City (high)	▪ Staff [$35,000 - $60,000] ▪ Permitting Staff [$50,000 - $70,000]

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
			▪ Funding potential through Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program	▪ Micro transit annual budget ***if City funded*** [$500,000 - $2M]12,[13]
T-2A.3	Facilitate transportation equity through multilingual programs that identify local equity issues and seek to remove barriers for vulnerable communities to use carshare or micro-mobility options.	Low	▪ Staff time to conduct outreach and engagement (low) ▪ Materials and supplies for outreach and engagement (low)	Not quantified
T-2A.4	Leverage community groups and local organizations to develop outreach and education materials advertising micro-mobility options and the benefits of use for traveling locally and increasing connectivity of public transit. Provide information on available funding opportunities or subsidies offered for low-income residents.	Low	▪ Staff time to conduct outreach and engagement (low) ▪ Materials and supplies for outreach and engagement (low)	Not quantified
Measure T-3 Develop programs and policies to discourage driving single passenger vehicles and to support the bicycle/pedestrian and public transit mode share goals of Measures T-1 and T-2.				
T-3.1	Reduce future VMT of new development through infrastructure requirements modifying the General Plan and/or specific plans (e.g., Central Healdsburg Avenue Plan) such that the plans for different City areas include policies that support the development of a connected pedestrian and cyclist network and maximize infill development. Infrastructure requirements may include: 1. Small scale version of park and ride for residents and tourists. 2. Interconnected bike lanes and sidewalks throughout the City. 3. Electric Bike stations or other micro-mobility hubs outside of major residences and shop destinations	Low	▪ Staff and/or consultant time to update policies and plans (low)	Not quantified

12 Example projects receiving funding for micro-transit/ on-demand shuttle received ~$1M for demonstration project, it is assumed that if the City funded the micro-transit system, a similar budget would be needed annually. Accessed at: FY22 SMART Project List.pdf (transportation.gov)

13 Cost to fund a micro transit program annually varies drastically depending on the micro-transit services (e.g., on demand shuttle, e-scooters), and whether the service is operated by an outside vendor (e.g., BIRD) or if the City is bearing the cost. The SacRT's SmaRT Ride on-demand micro transit service in Sacramento, funded by local sales tax, is $1M a year. Accessed at: Creative ways to fund on-demand public transportation and microtransit in California - Via Transportation (ridewithvia.com).

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
T-3.2	Investigate parking policies to disincentivize single passenger vehicles while enabling alternative options for communities meeting defined equity metrics. Based on City Council and public feedback, implement parking policies to disincentivize single passenger vehicles. This ***may*** include options such as, but not limited to: 1. Eliminate or severely limit parking options for single-passenger vehicles in downtown and other commercial areas of the city using best available information on implementation. a. Implement a parking permit system to reserve available parking for employees of businesses downtown or in commercial areas. 2. Utilize a static or dynamic parking pricing for all downtown parking locations and use revenue to fund active transportation and public transportation projects. 3. Price all public parking spaces for all areas of the city with fees directed towards active transportation	Moderate	▪ Staff and/or consultant time to evaluate parking policies and structures (moderate) ▪ Staff time [1 FTE] to develop, implement and enforce parking permit system and program (moderate) ▪ Capital cost in smart parking meters, equivalent parking price equipment, and/or enforcement technology (moderate) ▪ Cost offset associated with revenue from parking fees and permits (no-cost)	▪ Consultant [$60,000 - $100,000] ▪ Staff [$100,000 - $200,000 annually] ▪ Capital [$20,000 - $60,000][14] ▪ **Total [$180,000 - $340,000]**
T-3.3	Conduct an analysis of the potential community impacts and benefits of charging for parking in downtown. Analysis should include evaluation of different parking fee structures as well as ensure that potential equity concerns are identified.	Moderate	▪ Staff and consultant time to conduct analysis (moderate)	*City staff estimate costs similar to T-1.6 [$35,000 - $140,000].*
T-3.4	City lead by example by encouraging and providing incentives for active transportation and public transit use, such as free access to the e-bike share program, public transit passes, telework options, or other incentives.	Moderate	▪ Staff time to conduct outreach and education on incentives (low) ▪ Materials and supplies for outreach and education (low) ▪ Capital costs to provide new or expanded incentives (moderate)	*City staff estimate $75,000-$100,000 a year based on incentives selected.*
T-3.5	Pursue land use and development policies that promote infill development and/or increased density of residential development in the downtown core, along transit corridors, and within future planned development areas that is compact, mixed use, pedestrian friendly, and transit oriented where applicable.	Moderate	▪ Staff time to develop policies (moderate)	*City staff estimate costs of approximately $140,000.*

[14] Installation of smart parking meters range between $250 - $500. Assumed 25 to 75 installed as part of this effort as well as additional cost for technology related to enforcement of parking. Reference accessed at: https://www.itskrs.its.dot.gov/node/209124

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
Measure T-4 Increase passenger zero-emission vehicle use and adoption to 50% by 2030. (14,513 MT CO2e reduction)				
T-4.1	Develop a reach code requiring electric vehicle capable charging spaces. By 2024, amend the Healdsburg Development and Municipal Code to promote EV chargers in new development and existing parking spaces, to require at minimum: ▪ Single Family – CalGreen Tier 2 provisions ▪ Multifamily – CalGreen Tier 2 provisions ▪ Non-Residential – CalGreen Tier 2 provisions ▪ Expand the designation of EV charging parking spaces to 15% of existing parking spaces within the City by 2030. ▪ Require larger residential rental building owners (more than 20 tenants) and large commercial building owners (more than 10,000 square feet) to install working electric vehicle chargers in 20% of parking spaces for new and existing buildings at time of renovation if projects are valued at $1,000,000 or greater. ▪ Expediate EV charger permits	Low	▪ Consultant time to aid in development of reach code (low) ▪ Staff time [estimated 80 hrs] required to support reach code development and for adoption of requirement (low)	▪ Consultant [$25,000 - $40,000] ▪ Staff [$12,000 - $15,000] ▪ **Total [$37,000 - $55,000]**
T-4.2	Develop an ordinance requiring Healdsburg vehicles to participate in the States Biennial smog check program and contribute towards clean energy standards. Work with the Northern Sonoma County Air Pollution Control District to require biennial smog checks.	Low	▪ Staff and/or consultant time to develop ordinance (low) ▪ Staff time to coordinate with the air district (low)	Not quantified
T-4.3	Partner with local organizations and community groups to distribute outreach and education materials to residents and local businesses on the financial, environmental, and health and safety benefits of ZEVs, as well as anti-idling for fossil-fuel vehicles. Provide information on available funding opportunities.	Low	▪ Staff time to conduct outreach and education (low) ▪ Materials and supplies for outreach and education (low)	Not quantified

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
T-4.4	Identify private sector partnerships and develop affordable, zero-emission vehicle car share programs to serve affordable housing and/or multifamily developments with a priority to target vulnerable communities.	Moderate	▪ Staff time to develop partnerships (low) ▪ Staff time and capital costs to develop car share program (moderate)	*City staff estimate public chargers to cost up to $200,000 per parking lot (6 connectors), depending on infrastructure and accessibility. City staff estimate other costs to be similar to T-1.4 [$100,000 - $150,000 annually], depending on discounts provided.*
T-4.5	Continue to promote the EV Monthly Bill Discount Program with increased discount opportunities for low-income customers, and develop an updated or replacement program following program sunset in 2025. Continue to promote affordable EV charging rates at city-owned EV charging stations and adjust rates as necessary to cover program costs. Explore methods for charging different rates for different user groups or other programs to offset charging costs at public stations for low-income residents.	Moderate	▪ Continue staff time to promote programs and rates (no cost) ▪ Staff time and capital costs to develop incentive program (moderate)	*City staff estimate $150,000 - $200,000 annually.*
T-4.6	Utilize the CALeVIP rebate to install new electric vehicle chargers at the Senior Center and downtown Maher lot. Applied for Federal Charing and Fueling Infrastructure (CFI) grant to install electric vehicle chargers at the Community Center, Giorgi Park, High School, and West Plaza. These projects would add 34 new public EV charging ports.	Moderate	▪ Capital costs to install electric vehicle chargers, offset by grant funding (moderate)	*City staff estimate $425,000 from already approved budget, plus an additional $680,000 from grant funding (if awarded).*
T-4.7	In addition to the 6 City-owned lots already identified, conduct a survey of existing publicly accessible electric vehicle chargers and their locations and identify a prioritized list of additional locations for new electric vehicle charging stations, or lots for increased chargers, with consideration for equitable distribution of chargers to vulnerable communities. Study should include an evaluation of capacity needs associated with the installation of new EV chargers and identification of the businesses or stakeholders that own the property to coordinate with for installation of chargers.	Moderate	▪ Staff and/or consultant time to conduct survey (moderate)	*City staff estimate similar to BE-3.1 [approx. $150,000].*

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
T-4.8	Identify and promote incentives and financing options for residential electric vehicle charger installations. Develop programs and policies to add 500 new publicly accessible and private workplace Level 2 and 3 electric vehicle charging stations to the City by 2030 through grants such as the California Energy Commission's Clean Transportation Program. Develop programs that incentivize residents and businesses to charge during times of abundant solar resources and avoid charging during peak hours and grid emergencies	Moderate to High	▪ Staff time to conduct outreach and education (low) ▪ Staff time to develop programs and policies (moderate)	*City staff estimate $500,000 - $2,500,000, depending on public charger rebate amount and grant availability. Proposed budget of $100,000 annually. Other action components to leverage T-4.5.*
T-4.9	Collaborate with neighboring jurisdictions and the Sonoma County Transportation Authority to develop a connected network on ZEV car share. Prioritize car share to serve affordable housing and/or multifamily developments.	Low	▪ Staff time to develop partnerships and coordinate ZEV infrastructure improvements (low)	Not quantified
T-4.10	Partner with the local air district and RCPA to communicate State requirements for off road equipment and identify funding opportunities to support low-income residents to replace gas-powered landscaping equipment and off-road engines with zero emission equipment, such as through rebates or buyback programs.	Low	▪ Staff time to develop partnerships and identify funding opportunities for low-income residents (low)	Not quantified
Measure T-5 Increase commercial zero-emission vehicle use and adoption to 40% by 2030. (2,000 MT CO2e reduction)				
T-5.1	Complete white paper for US Postal Service fleet electrification in Healdsburg. Use white paper to inform the overall electrification study (BE-1.1) regarding commercial fleet electrification, peak demands, and on-peak/off-peak energy requirements. This information can be applied to other identified commercial vehicle fleets in Healdsburg.	Low	▪ Staff time to complete white paper and provide for comment (low)	Not quantified
T-5.2	Adopt a ZEV plan for commercial vehicles in line with state targets and in line with the findings of the accompanying feasibility study. Work with stakeholders to develop and implement the plan for City-supported accelerated fleet electrification. As part of the plan, identify opportunities for accelerated fleet electrification and promote zero-emission vehicle (ZEV) adoption within business and municipal fleets.	Low	▪ Staff time to conduct outreach and engagement (low) ▪ Staff time to adopt the plan (low)	Not quantified
T-5.3	Provide information to businesses on state and federal programs to help fund conversion of commercial fleets to zero emissions vehicles.	Low	▪ Staff time to conduct outreach and education (low) ▪ Materials and supplies for outreach and education (low)	Not quantified

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
T-5.4	Identify, implement, and connect vehicle fleet owners, particularly those serving vulnerable communities to incentivize vehicle electrification. This could include local tax breaks.	Moderate	▪ Staff time to conduct outreach and education (low) ▪ Staff time and capital costs to implement incentives (moderate)	*City staff estimate approx. $100,000 annually.*
T-5.5	Secure funding from state programs (such as the California Air Resources Board's Clean Vehicle Rebate Project and the Truck and Bus Voucher Incentive Program) and federal sources to increase procurement of EV or ZEV cars, trucks, and other vehicles and installation of EV/ZEV charging/fueling infrastructure.	Low	▪ Staff and time to acquire funding (low)	Not quantified
Measure T-5A Lead by example and electrify or otherwise decarbonize the municipal fleet in compliance with the state's Advanced Clean Fleet Rule.				
T-5A.1	Continue to implement the Zero-emission vehicle first purchasing policy for all light-duty municipal vehicles, and update to also include off road equipment, medium-duty vehicles, and provide a path to comply with the State's Advanced Clean Fleet rule requiring 50% of medium- and heavy-duty vehicle purchases be zero-emissions beginning in 2024 and 100% beginning in 2027. Also consider operational needs to determine appropriate size of vehicles. Maintain exemptions needed to ensure public safety and delivery of critical services.	Moderate	▪ Staff time to update policy (low) ▪ Comparative cost to purchase and maintain ZEV instead of internal combustion engine vehicle and off-road vehicle (low-moderate) ▪ Lifecycle cost savings for ZEV (no-cost)	*City staff estimate incremental light duty vehicle cost increase of $10,000-$15,000 per vehicle, additional charging infrastructure costs of $200,000, and ongoing savings in fuel costs. Incremental costs for medium- and heavy-duty vehicles will vary widely. City staff estimate incremental off road vehicle replacement cost increase of $20,000-$30,000 per vehicle, additional charging infrastructure costs of $50,000, and ongoing savings in fuel costs.*

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
T-5A.2	Install additional ZEV chargers in municipal parking lots for fleet, employees, and public use to meet projected demand.	Moderate	▪ Capital costs to install ZEV chargers (moderate)	*City staff estimate public chargers to cost up to $200,000 per parking lot (6 connectors), depending on infrastructure and accessibility. Non-public charger costs are substantially lower.*
T-5A.3	Develop a resolution to replace City-owned end-of-life small off-road equipment with electric equipment (e.g., lawn equipment and leaf blowers) at time of replacement.	Low	▪ Staff time to develop resolution (low) ▪ Incremental costs for small off-road equipment (low-moderate)	Not quantified
Measure SW-1 Achieve Zero Waste by 2030 through 90% diversion of solid waste from the landfill. (7,729 MT CO2e reduction)				
SW-1.1	Meet the requirements of SB 1383 to reduce organics in the waste stream by 75% below 2014 levels by 2025 and achieve Zero Waste through 90% solid waste diversion by 2030. Include activities such as: 1. Implement enforcement and fee for incorrectly sorted materials with sensitivity to shared collection. 2. Assure adequate bin signage across commercial and residential areas of acceptable landfill, recyclable, and compostable materials. 3. Conduct additional food scrap collection pail giveaways and promote the free curbside organics collection service by Recology 4. Expand existing ban on disposable food ware made of polystyrene foam or products containing PFAS to include additional items without means of recycling or recycling markets, such as produce bags.	Moderate[15]	▪ Staff time [estimated at 100 hours] to develop and implement pilot projects (moderate) ▪ Capital costs to develop and implement pilot projects (i.e., reusable to-go container program) (moderate) ▪ One-part time employee to develop and implement enforcement and fee program (moderate) ▪ Capital costs for adding bins in public areas (moderate)	▪ Staff – pilot projects [$20,000 - $38,000] ▪ Capital – pilot projects [$125,000 - $375,000][16] ▪ Staff – compliance monitoring [$60,000 - $80,000] ▪ Capital/ Staff - signage [$50,000 - $75,000][17]

[15] See SB 1383 Local Service Rates Analysis – CalRecycle for more information regarding the variables impact cost on municipalities for implementing programs to meet SB 1383 requirements. Accessed at: https://www2.calrecycle.ca.gov/Publications/Details/1698

[16] Cost of a pilot study is highly variable depending on type of study. Grant awards offered by CalRecycle are up to $1.5M – it is assumed that if a grant for a pilot project was not received and City funded project it would cost a similar amount. Accessed at: https://calrecycle.ca.gov/bevcontainer/grants/bevcontainer/rpp/fy202122/

[17] Cost for signage is variable depending on the type of signs or labels and number of signs the City chooses to install. For this estimate it is assumed that signs and labels range from $3 to $10 and the City would install 2,000 labels/signs and the public works department would be responsible for distribution an installation of signs with the staff's hourly rate $125 for 400 hrs. Accessed at: https://healdsburg.gov/DocumentCenter/View/15274/Master-Fee-Schedule-FY-2022-2

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
	5. Implement pilot project for reusables for restaurant to-go containers. 6. Identify long-term and alternate solutions for the community's wastewater bio-solids to avoid long hauling distances and develop local, beneficial reuse. 7. Identify public areas for adding organics collection and recycling bins where needed. Partner with Recology and Zero Waste Sonoma as applicable for the actions listed above.		▪ Staff time and materials and supplies to conduct outreach and education including bin distribution events (low) ▪ Staff time [estimated at 80 hours] to amend existing ban on polystyrene products (low) ▪ Staff and consultant time to conduct feasibility study for wastewater bio-solids (moderate) ▪ Cost offset based on revenue from lid flipping fees (no-cost)	▪ Staff – community engagement [$25,000 - $50,000 annually][18] ▪ Staff – ordinance development [$12,000 - $15,000] ▪ Consultant – feasibility study [$100,000 - $150,000] ▪ **Total [$400,000 - $700,000]**
SW-1.2	Partner with Zero Waste Sonoma to support a Bring your own (BYO) education and outreach training for residents and businesses on reusables and implementing more sustainable packaging into daily use. Also educate the community on opportunities to use or compost food scraps. Provide resources of education and technical assistance on city website. Partner with libraries and other existing facilities to market campaigns about waste reductions, reuse and repair.	Low	▪ Staff time to develop partnerships and conduct outreach and education (low) ▪ Materials and supplies for outreach and education (low)	Not quantified
SW-1.3	Leverage community groups and local organizations to work with multi-family property owners/managers to increase education through signage for their properties and supplies for proper sorting.	Low	▪ Staff time to develop partnerships and conduct outreach and education (low) ▪ Materials and supplies for outreach and education (low)	Not quantified
SW-1.4	Leverage Zero Waste Sonoma 2022 Waste Characterization study and visual characterization conducted at the Healdsburg transfer station to understand the waste stream and create a plan to increase diversion and reduce contamination. Continue to work with Zero Waste Sonoma to conduct a waste characterization study every 5 years that includes Healdsburg to inform programs and policies.	Low	▪ Staff and/or consultant time to create a plan (low) ▪ Continue staff time to maintain relationship with partners (no cost)	Not quantified

[18] Based on SB 1383 education/community outreach programs budget for other cities. Accessed at http://www.losbanos.org/wp-content/uploads/2020/03/Los-Banos-Solid-Waste-RFP-Package-Final.pdf.

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
SW-1.5	Partner with Recology and/or Zero Waste Sonoma to pursue funding, such as the Organics Grant Program from CalRecycle or for projects through California Climate Investment, to reduce generated organic waste from multi-family homes and expand waste diversions programs within the City.	Low	▪ Staff time to develop partnerships and acquire funding (low)	Not quantified
SW-1.6	Develop and implement a Zero Waste Protocol for special events.	Low	▪ Staff time to create and implement protocol (low)	Not quantified
Measure W-1 Reduce per capita potable water consumption by 25% by 2030. (46 MT CO2e reduction)				
W-1.1	Update the Urban Water Management Plan every 5 years, as required by the State, and implement the identified demand reduction actions to ensure compliance with the State's Making Water Conservation a Way of Life regulations. Include new actions in the UWMP as needed to achieve State regulations, which may include: 1. Amend the City's Water Shortage Contingency Plan to restrict any water waste at any time for households, businesses, industries, and public infrastructure. 2. Work with Community Development, large water users, and other stakeholders to develop an On-Site Water Reuse Plan to maximize utilization of local water supplies decreasing energy intensity of distribution. 3. Revisit and update the Water Efficient Landscape Ordinance as needed. Engage, through regional partnerships, with builders and developers to provide information on the requirements for development projects. 4. Develop an ordinance for installation of dual-plumbing water systems that utilize greywater or recycled water for irrigation at new residential and commercial construction. 5. Increase engagement with the community, specifically low-to-moderate income residents, to understand available incentives or rebates, options, and programs to reduce per capita water use. Leverage regional programs and resources available through membership in the Sonoma-Marin Saving Water Partnership, and leverage partnerships with local organizations to expand water conservation outreach.	Moderate	▪ Staff and/or consultant time to update plan (moderate)	*City staff estimate $15,000 - $20,000 to update required plan. Cost of implementation for new actions will vary widely.*

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
	6. Implement a software solution for residents and businesses to view water consumption data in near real time. 7. Complete grant funded Municipal Water Pipeline and work to expand the Municipal Recycled Water Pipeline project, as funding is available. Identify additional locations available for recycled water use and establish a schedule for potable water replacement with recycled water in appropriate applications residentially, commercially, and municipally, and determine recycled water user fees. 8. Revise water and wastewater rates as necessary to ensure cost of service is covered.			
Measure CS-1 Increase carbon sequestration by preserving existing mature trees and planting 500 new trees and high emissions reduction potential land cover types throughout the community by 2030. (25 MT CO2e reduction)				
CS-1.1	Develop a Street Tree Master Plan to include goals for promoting street tree health, enhancing resiliency, increasing the environmental benefits and co-benefits resulting from street trees and shading, community engagement around the urban forest. Include activity to promote street tree health and maintaining existing trees through partnerships with the community and local organizations, including organizations with connections to vulnerable communities to assist in the implementation of the Street Tree Master Plan to ensure equity is prioritized as part of the plan.	Low	▪ Staff or consultant time to develop Street Tree Master Plan (low) ▪ Staff time [estimated 100 hrs] for community outreach activities and development of partnerships (low) ▪ Funding potential through CAL FIRE Urban and Community Forestry grant	▪ Staff/Consultant [$50,000 - $200,000] ▪ Staff [$10,000 - $20,000] ▪ *Grant Funding [$150,000 - $ 200,000]* ▪ **Total [$60,000 - $220,000]**
CS-1.2	Develop a new Tree Protection Ordinance to include protection for native and heritage trees. The ordinance should regulate the removal of not just heritage trees, but native trees that increase the City's carbon stock and carbon sequestration. Ordinance may include: 1. Development requirements to protect or replace one-for-one existing trees and greenspace. 2. Implementation of a tree removal in-lieu fee that provides funding for the City to plant a new tree equivalent to every tree removed from private property. 3. Identification of native tree species and heritage trees to be protected. 4. Shade tree requirements for new development. 5. Parking lot landscaping requirements.	Low	▪ Staff time to develop ordinance (low) ▪ Capital cost of trees (low) ▪ Lifecycle cost of tree maintenance (low)	Not quantified

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
	6. Increased permeable surfaces and green spaces in new development. 7. Vegetative barrier requirements between busy roadways and developments to reduce exposure to air pollutants from traffic. 8. Protocols for proper tree maintenance and care. 9. Best practices to protect existing carbon stocks against wildfire risk.			
CS-1.3	Establish an adopt-a-tree or adopt-a-street program that enables individuals, businesses, and community organizations to plant and care for trees in selected communities. Program should provide formalized information on appropriate trees eligible for planting in Healdsburg (i.e., native, drought tolerant, locations, fire resistant) and their maintenance. Leverage existing plant lists developed by nearby and partner organizations.	Moderate	▪ Staff time and capital costs to develop program (moderate) ▪ Materials and supplies for education (low)	*City staff estimates $15,000 per 150 trees, to potentially be supported by in-lieu fees, donations, or other funding.*
CS-1.4	Prioritize low-income areas of the city with less existing tree canopy for tree plantings. Increase shading in gathering spaces.	Low	▪ Capital cost for planting and maintaining shade trees (low)	Not quantified
CS-1.5	Explore urban and community forestry grant programs (e.g., CAL FIRE) and other sources of state, federal, and philanthropic funding to fund urban forestry programs. As part of this effort, establish a goal to apply for at least one grant every three years.	Low	▪ Staff time to research grants and establish goal (low)	Not quantified
Measure CS-2 Maintain and expand existing restoration projects to sequester carbon in restored lands.				
CS-2.1	Continue maintenance and expansion of Healdsburg Ridge Open Space Preserve (150 acres), and the Fitch Mountain Park and Open Space Preserve (170 acres), including wildfire mitigation. Continue maintenance and restoration projects in existing green spaces within City and urban areas.	Moderate	▪ Enhanced staff time to manage preserves (moderate) ▪ Capital costs to expand preserves (moderate)	*Expansion would depend on available land and partners.*
CS-2.2	Develop a community-based volunteer program supporting restoration project activity to create a maintained restoration process.	Low	▪ Staff time to develop a volunteer program (low)	Not quantified
CS-2.3	Apply for at least one grant every three years for obtaining grant funding for restoration and preservation activities with a focus on projects that have been unable to be fully completed due to funding constraints.	Low	▪ Staff and/or consultant time to prepare grant applications (low)	Not quantified

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
CS-2.4	Partner with local community organizations to promote and coordinate sequestration opportunities and facilitate volunteer maintenance projects.	Low	▪ Staff time to develop partnerships and support outreach and engagement (low)	Not quantified
Measure CS-3 Align with SB 1383 and procure products of organic diversion at a rate of 0.08 tons of organic waste per capita per year with a focus on increasing compost application within City limits to increase carbon sequestration. (235 MT CO2e reduction)				
CS-3.1	Meet the baseline procurement requirement of SB 1383 through direct procurement of applicable products, as feasible, for the City's use and application. Establish contracts with service providers that use applicable products (e.g., landscape services, transportation services, waste haulers) on the City's behalf to meet the remaining procurement requirement not met through direct procurement.	Moderate	▪ Staff time to evaluate opportunities and maintain procurement activities (low) ▪ Staff time to establish and maintain contracts (moderate)	*City staff estimate similar to part time enforcement in SW-1.1 [$60,000-80,000].*
CS-3.2	Identify locations within the City to apply compost as applicable/appropriate to help meet the procurement requirements of SB 1383. Leverage Zero Waste Sonoma to collaborate with local schools, City Departments, Ag+Open Space, and the Resource Conservation Districts to identify additional opportunities to apply compost.	Moderate	▪ Staff and/or consultant time to conduct study (moderate)	*City staff estimate approximately $35,000 for study and collaboration.*
CS-3.3	Implement compost application on City-owned properties, according to findings of feasibility study for suitable locations and appropriate application rates.	Low	▪ Staff time to apply compost or coordinate with service providers (low) ▪ Increases to scope of work with service providers (low)	Not quantified
CS-3.4	Develop requirements for compost application, tracking, and reporting for developers.	Low	▪ Staff time to develop requirements (low) ▪ Staff time to include requirements in new construction approvals (low)	Not quantified
CS-3.5	Work with Recology and ZWS to provide residents, businesses, and developers with educational material on where to get compost and how it can be used (i.e., landscaping), as well as how compost promotes carbon sequestration. Consider increasing free compost giveaways.	Low	▪ Staff time to develop partnerships (low) ▪ Materials and supplies for education (low) ▪ Bulk compost purchases (moderate)	Not quantified

Action ID	Action Text	City Cost Category	City Cost Variables	Preliminary Cost Estimate by Action
CS-3.6	Prioritize providing increased outreach and translated materials on the annual compost giveaway to low-income households, small businesses, and other vulnerable communities.	Low	▪ Staff time and outreach materials (low)	Not quantified
CS-3.7	Apply for at least one grant every three years for obtaining grant funding for SB 1383 compliance, assuming there are such grant opportunities available.	Low	▪ Staff and/or consultant time to prepare grant applications (low)	Not quantified
CS-3.8	Work with Sonoma County to identify opportunities for a regional compost procurement program to help meet the organics procurement provisions of SB 1383 as well as streamline hauler routes through regional collaboration.	Low	▪ Staff time to develop partnerships and identify opportunities (low)	Not quantified
Measure F-1 Identify Administrative Needs for Successful CMS Implementation				
F-1.2	Consider creating a Climate Program Manager new position who is responsible for implementing CMS measures and actions by drafting ordinances, managing technical studies, leading outreach efforts, updating online information, managing the webpages and social media posts to promote climate programs, networking with partners and stakeholders, and pursuing relevant and impactful grant opportunities.	Moderate	▪ Staff time for new position [1 FTE] (moderate)	*City staff estimate up to $170,000 per year for salary, benefits, and operating expenses.*
F-1.2	Report progress on CMS implementation annually to the City Council to measure progress and ensure accountability in achieving CMS emissions reduction goals.	Low	▪ Staff time to report progress (low)	Not quantified
F-1.3	Partner with RCPA and other jurisdictions to ensure transparency in GHG emission reporting and make GHG emission data and inputs publicly available.	Low	▪ Staff time to develop partnerships and coordinate (low)	Not quantified

Table 3 Cost to Community for GHG Emissions Reduction Measures

Measure ID	Measure Text	Community Cost Category	Community Cost Variables	Preliminary Cost Estimate by Measure
Building Energy				
BE-1	Procure 85% of electricity from renewable and zero-carbon sources by 2030 and 100% renewable and carbon-free no later than 2045.	Moderate	▪ Electricity costs per rate plan changes and choosing to opt into Green Rate (low) ▪ Rate increases due to additional procurement of renewables (moderate)	▪ Green Rate Additional Energy charge [~$150/ household/year][19] ▪ Standard Rate increase [$50 - $100/household/year][20]
BE-2	Continue to adopt an Electrification Reach Code for all new residential and commercial buildings with each triannual code cycle. Update electrification ordinance to eliminate natural gas consumption in new construction for the 2025 California Building Standards Code and moving forward.	No-cost	▪ Upfront cost savings of building all-electric homes and buildings (no-cost)[21] ▪ Long-term energy bill savings (no-cost) ▪ Avoided cost of not installing natural gas infrastructure (no-cost)[22]	No cost

[19] Over the next four years the Green Rate will cost an additional ~ $0.02 - $0.03/kWh compared with the standard rate. Based on the 2018 inventory, the average household uses ~6,000 kWh per year. Accessed at: Electric Rates | Healdsburg, CA - Official Website

[20] Utilities director of Healdsburg Electric estimates a possible average of $50-$100 annual residential additional cost increase for increased procurement of renewables to 85%, which would be further analyzed in the feasibility study. Income-qualified customers may apply for the CARE program providing a 25% discount on the electric bill.

[21] Electrification at time of new construction found to have minimal cost impacts to cost savings for building owner. Accessed at: https://rmi.org/insight/the-economics-of-electrifying-buildings/

[22] https://newbuildings.org/new-study-on-electrification-costs-shows-benefits-to-building-owners-and-society/

Measure ID	Measure Text	Community Cost Category	Community Cost Variables	Preliminary Cost Estimate by Measure
BE-3	Decarbonize residential building stock by 10% by 2030.[23]	Moderate	▪ Long-term energy bill savings (no-cost) ▪ Long-term savings from not paying incremental gas infrastructure costs (no-cost)[24] ▪ Additional cost from installation of electric appliance compared to installation of traditional appliance (moderate) ▪ Additional cost for infrastructure upgrades, permitting, contractors (moderate) ▪ Cost partially offset from state, federal and local rebates and incentives (no-cost)	▪ Upfront cost [$5,000-$30,000/single family home][25,26,27] ▪ Savings [$50 - $1,000/year/single-family home][25,26] ▪ Discounts Available [$2,000 - $14,000][28]
BE-4	Decarbonize non-residential building stock by 10% by 2030.	Moderate	▪ Long-term energy bill savings (no-cost) ▪ Additional cost from installation of electric appliance compared to installation of traditional appliance (moderate) ▪ Additional cost for infrastructure upgrades, permitting, contractors (moderate)	▪ Capital cost [$35-$200/square foot][29] ▪ Cost savings [~ $2,000 over 15 years][30]

[23] City estimates that the average upfront cost for a residential electrification project could be approximately $25,000, which corresponds to 10% of the threshold requirement ($250,000) for a large renovation project that would trigger electrification requirements as detailed in Action BE-3.2.

[24] A portion of gas distribution costs is covered by the customer's gas bill payments, by electrifying this incremental cost is saved. Accessed at: https://rmi.org/insight/the-economics-of-electrifying-buildings/

[25] Energy + Environmental Economics. 2019. Residential Building Electrification in California: Consumer economics, greenhouse gases, and grid impacts. Accessed at: E3_Residential_Building_Electrification_in_California_April_2019.pdf (ethree.com)

[26] City of San Jose. 2022. Healthy Homes, Healthy Air: A Framework for Existing Building Electrification Centered on Community Priorities.

[27] Upfront cost for electrification of a single-family home can vary widely depending on the existing condition of the home (i.e., level of additional electrical work needed) and the scenario of replacement (i.e., replace "on-burnout" vs replace "before burnout"). A replace "on-burnout" scenario has a marginal cost range of full-home electrification between $5,000 and $15,000, whereas a full home electrification scenario where the existing equipment has not burnout could range between $15,000 to $30,000. The cost range includes product and installation cost, 15% contractor markup, as well as accounts for the range in economy to budget appliance options, simple to complex installation parameters, and zero to additional electrical work required.

[28] Cost of electrification can be offset by several incentives and rebates for high efficiency and electric appliance replacement that exist through the state and federal government including incentives under the Inflation Reduction Act (IRA) for High Efficiency Electric Home Rebate Act (HEEHRA) which caps upfront discounts at $14,000 for all electrification projects. Rebate and incentives are broken out by income band with higher rebates available for low to moderate income residents. Accessed at: https://www.rewiringamerica.org/IRAguide

[29] The cost to retrofit commercial buildings is highly variable depending on the retrofit, existing conditions, type of building, equipment available, etc., Furthermore, electric retrofits often show cost savings overtime. Recent studies found that for a typical office building electric retrofits would cost on average $25 - $150 per square foot. Accessed at: https://rmi.org/wp-content/uploads/2017/04/Pathways-to-Zero_Bldg-Case-for-Deep-Retrofits_Report_2012.pdf

[30] https://rmi.org/insight/the-economics-of-electrifying-buildings/

Measure ID	Measure Text	Community Cost Category	Community Cost Variables	Preliminary Cost Estimate by Measure
BE-4A	Decarbonize 50% municipal buildings and facilities by 2030.	N/A	N/A	N/A
Transportation				
T-1	Implement programs that increase access to safe active transportation, such as walking and biking, that achieve 15% of active transportation mode share by 2030.	No-cost	▪ Cost savings of reducing single occupancy vehicle use (no-cost)	No cost
T-2	Implement programs for public transportation that achieve 10% of public transit mode share by 2030.	No-cost	▪ Cost savings of reducing single occupancy vehicle use (no-cost)	No cost
T-2A	Explore the development of a micro-mobility and/or car-share program to support mode shift from single occupancy fossil fuel vehicles to Zero Emission Vehicles.	Low	▪ Cost associated with funding mechanism, e.g., city tax to fund program (low) ▪ Cost associated with use (low)	▪ Cost of ride [$1.50 - $3.50/ride][31]
T-3	Develop programs and policies to discourage driving single passenger vehicles and to support the bicycle/pedestrian and public transit mode share goals of Measures T-1 and T-2.	Low	▪ Potential costs of disincentive-based policies, e.g., parking fees (low) ▪ Cost savings of reducing single occupancy vehicle use (no-cost)	▪ Incremental cost on parking [$3.50/hour to $24/ max daily][32]

[31] Some current on-demand shuttles in surrounding areas cost $1 to $4 per ride. Accessed at: Silicon Valley Hopper | Affordable, On-Demand Rideshare in Cupertino (ridewithvia.com) & SMART launches on demand microtransit shuttle connecting the train to the Sonoma County Airport (STS) (ca.gov)

[32] Existing paid parking in Healdsburg is managed by AirGarage and is rated as $3.50/hour and $24/ daily Max. Accessed at: Paid Parking Comes to Healdsburg—but Is It Legal? - Healdsburg Tribune

Measure ID	Measure Text	Community Cost Category	Community Cost Variables	Preliminary Cost Estimate by Measure
T-4	Increase passenger zero-emission vehicle use and adoption to 50% by 2030.	Moderate	▪ Cost of charging infrastructure (moderate) ▪ Financing of charging infrastructure and vehicle purchase (no-cost to cost offset)[33] ▪ Initial investment in ZEV compared with ICE vehicle (moderate) ▪ Additional cost of zero-emission vehicle ownership compared to internal combustion engine ownership (i.e., higher upfront costs but lower operating costs) (low)	▪ Charging infrastructure [$700 – $4,000][34] ▪ Incremental maintenance cost savings [$0.05/mile][35] ▪ Comparative initial investment cost [$8,000-$35,000/vehicle][36]
T-5	Increase commercial zero-emission vehicle use and adoption to 40% by 2030.	Moderate	▪ Cost of charging infrastructure (moderate) ▪ Financing of charging infrastructure and vehicle purchase (no-cost to cost offset) ▪ Initial investment in ZEV compared with ICE vehicle (moderate) ▪ Additional cost of zero-emission vehicle ownership compared to internal combustion engine ownership (i.e., higher upfront costs but lower operating costs) (low)	▪ Charging infrastructure for business [$3,000 – $100,000][34] ▪ Incremental maintenance cost savings [$0.05/mile][35] ▪ Comparative initial investment cost for business [$35,000 - $250,000/vehicle][36]
T-5A	Lead by example and electrify or otherwise decarbonize the municipal fleet in compliance with the state's Advanced Clean Fleet Rule.	N/A	N/A	N/A

[33] There are a number of opportunities through state programs (e.g., CARB's LCFS) to receive grants, financing, or carbon credits for installing ZEV infrastructure and charging vehicles from it that can aid in offsetting the cost of ZEV infrastructure installation and use. Example program: https://ww2.arb.ca.gov/resources/documents/lcfs-zev-infrastructure-crediting

[34] Cost ranges depending on type of parking space and the installation requirements necessary (i.e., conduit and panel or retrofit) and type of charger installed. Accessed at: https://afdc.energy.gov/fuels/electricity_infrastructure_development.html

[35] An internal combustion engine costs on average 1.66 times per mile to maintain compared with an EV. Accessed at: https://publications.anl.gov/anlpubs/2021/05/167399.pdf

[36] Initial investment depends on vehicle type, year, etc. General ranges provided by US Department of Energy accessed at: https://www.energy.gov/sites/default/files/2022-12/2022.12.23%202022%20Incremental%20Purchase%20Cost%20Methodology%20and%20Results%20for%20Clean%20Vehicles.pdf

Measure ID	Measure Text	Community Cost Category	Community Cost Variables	Preliminary Cost Estimate by Measure
Solid Waste				
SW-1	Achieve Zero Waste by 2030 through 90% diversion of solid waste from the landfill.	Low	▪ Incremental cost associated with full implementation of SB 1383, e.g., waste diversion requirements, lid flipping fees, composting practices (low) ▪ Non-compliance fees (low)	**Implementation Cost** ▪ $17/household/annually[37] ▪ $662/small businesses/annually[37] **Non-compliance fee** ▪ ~$50/bin[38]
Water				
W-1	Reduce per capita potable water consumption by 25% by 2030.	No-cost	▪ Water bill savings from conservation (no-cost)	No cost
Carbon Sequestration				
CS-1	Increase carbon sequestration by preserving existing mature trees and planting 500 new trees and high emissions reduction potential land cover types throughout the community by 2030.	Low	▪ Potential energy bill savings from tree shade (no-cost) ▪ Cost of trees, water, and maintenance (low)	▪ <$500
CS-2	Maintain and expand existing restoration projects to sequester carbon in restored lands.	No-cost	▪ Property value appreciation from maintained open space (no-cost)	No cost
CS-3	Align with SB 1383 and procure products of organic diversion at a rate of 0.08 tons of organic waste per capita per year with a focus on increasing compost application within City limits to increase carbon sequestration.	N/A	N/A	N/A

[37] CalRecycle. 2016. Proposed Regulation for Short-Lived Climate Pollutants: Organic Waste Methane Emissions. Accessed at https://www.dof.ca.gov/Forecasting/Economics/Major_Regulations/Major_Regulations_Table/documents/Final_Sria_11-16%20.pdf#search=%22SB%201383%20Economic%20Analysis%22.

[38] Lid flipping fee for not complying with sorting organic diversion requirements can be placed by the City. Other cities have used a fee of $50 per bin for waste contamination. Accessed at: https://www.wm.com/location/california/san-joaquin/lodi/index.jsp

Measure ID	Measure Text	Community Cost Category	Community Cost Variables	Preliminary Cost Estimate by Measure
Funding and Administration				
F-1	Identify Administrative Needs for Successful CMS Implementation	N/A	N/A	N/A