

Alameda County
Community Climate Action Plan
Implementation Status Report



October 2019



1. Overview

On February 4, 2014, the Board of Supervisors approved the *Alameda County (Unincorporated Areas) Community Climate Action Plan (CCAP)* as an Element of the County General Plan. The CCAP was the culmination of work by County staff from various agencies and departments and involved an extensive public consultation process. The CCAP acknowledged that climate change may represent the greatest challenge to society's future well-being, and committed the County to a course of action to reduce community greenhouse gas (GHG) emissions generated within the unincorporated areas of Alameda County with a target of 15 percent below 2005 levels by 2020 and setting the County on a path towards reducing emissions to 80 percent below 1990 levels by 2050. This CCAP Implementation Status Report provides an update on progress made under the CCAP, including:

- Measure Implementation: Section 2 outlines a qualitative assessment of progress made on each of the measures contained in the CCAP in six Climate Action Areas: 1) Transportation, 2) Land Use, 3) Building Energy, 4) Water, 5) Waste and 6) Green Infrastructure; and
- 2015 Emissions Inventory: Section 3 includes a quantitative assessment of GHG emissions reductions between 2005 and 2015, applying the U.S. Community Protocol, a national standard for accounting and reporting GHG emissions at the community scale. The Emissions Inventory calculates GHG reductions in five sectors: 1) transportation, 2) residential energy, 3) commercial energy, 4) waste and 5) water.

Section 4 summarizes the progress made under the CCAP and identifies related activities and changes that have been occurring within the County and within the broader policy context at the State and National level that will inform "what's next" for climate action planning in unincorporated Alameda County.

In summary, the measure implementation and emissions inventory assessments in this report demonstrate that Alameda County has made substantial progress towards implementation of the measures contained in the CCAP and is on track to achieving and exceeding the adopted

target of reducing GHG emissions to 15 percent below 2005 levels by 2020. The ability of the County to achieve these successes is due to several factors including continued commitment by County departments towards achieving the County's climate action goals but also other developments and responses to climate change, including leadership and major policy commitments at the State level in relation to vehicle emissions, energy standards and building codes.

In this context, reporting on progress achieved under the CCAP alone does not tell the full story about the extent of progress that has been made since the CCAP was adopted in 2014. In addition to the measures identified in the CCAP, the County has been involved in several other major developments including the establishment of East Bay Community Energy (EBCE), which has and will continue to contribute substantially to increasing the mix of more local, sustainable and renewable energy sources powering Alameda County homes and businesses and associated decreases in GHG emissions. There has also been a major shift in the climate change policy context from focusing primarily on mitigating GHG emissions towards a more comprehensive approach that considers a community's capacity for climate adaptation and resilience and includes consideration of climate equity and environmental justice.

The purpose of this report is to outline what has been achieved under the CCAP in terms of measure implementation and emissions reductions and to position the County to consider the next steps that will be required to continue to develop and adopt policy measures and programs to ensure that the unincorporated communities in Alameda County are responding appropriately to a future shaped by climate change.

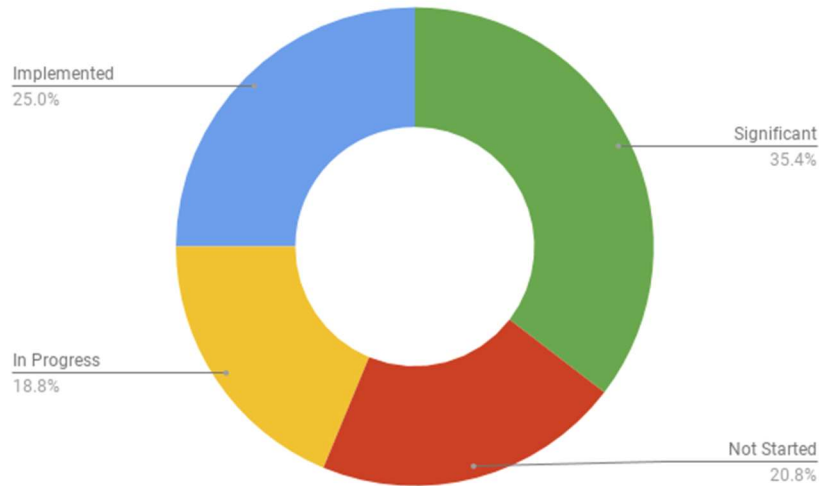
2. Measure Implementation

The Community Climate Action Plan identifies 48 measures which the County proposed would be completed or significantly underway by 2020. In 2019, staff in the Planning Department of the Alameda County Community Development Agency (CDA) conducted interviews with staff from County departments with responsibility for measures under the CCAP to determine which of the measures have been implemented. Appendix A identifies the progress made by the various departments within the County in implementing the actions contained in the 2014 CCAP. It identifies each measure, summarizes the status of actions taken toward implementation and identifies progress based on one of the following four progress levels:

Progress Key:

	Blue Implemented
	Green Significant progress made
	Yellow In progress or progress made on an alternative related action
	Red Not yet started

Based on this assessment, most measures (60.4%) in the CCAP are underway, with 13 measures (25.0%) implemented and significant progress made on a further 17 measures (35.4%). Nine measures (18.8%) are in progress or progress has been made on an alternative related action, leaving a remainder of 10 measures (20.8%) that have not been started.



The following table identifies the number of measures in each Climate Action Area that were designated into each category within the Progress Key:

	Implemented	Significant Progress	In Progress	Not Started	Total
Transportation	1	8	5	0	14
Land Use	3	2	0	0	5
Building Energy	4	3	2	7	16
Water	3	0	0	1	4
Waste	1	0	1	2	4
Green Infrastructure	0	4	1	0	5
Total	12	17	9	10	48
	25%	35.4%	18.8%	20.8%	

For measures where work has not been started, the staff interview responses indicated this was often because the measure had a practical barrier, would have involved a separate stand-alone effort which was not clearly funded or prioritized or where policy and program measures have gone in a different direction than was anticipated when the CCAP was adopted in 2014. The building energy Climate Action Area has the highest proportion of measures which were not started however, several additional and alternative actions have been taken in this sector at the local and State level which are expected to result in substantial emissions reductions in terms of building energy Countywide including in unincorporated Alameda County.

3. Emissions Inventory

As identified in the CCAP, the purpose of a GHG emissions inventory is to assist policymakers and planners by identifying the source types, distribution, and overall magnitude of GHG emissions to support adoption of effective GHG reduction measures and implementation actions contained in a CAP. There are two main types of emissions inventories which adopt different approaches to seeking to account for the emission of GHGs:

- *A sector-based emissions inventory*: allocates carbon emissions primarily among the local residential, commercial, industrial and transportation sectors according to energy use of each sector. This represents the supply side of the economy.
- *A consumption-based emissions inventory*: attributes carbon emissions based primarily on the local consumption of goods and services, regardless of where those goods were produced. This represents the demand side of the economy.

Consistent with the approach that was being adopted by jurisdictions at the time and for which there was data available, the GHG reduction target in the CCAP was based on a sector-based emissions inventory. The GHG reduction target in the CCAP aimed to contribute to the stabilization of global GHG emission concentrations and achievement of AB 32 goals, which called for California to reduce its GHG emissions to 1990 levels by 2020¹. The CCAP established a target for a reduction of GHG emissions in unincorporated Alameda County to 15 percent below 2005 levels by 2020 to set the County on a path toward reducing emissions to 80 percent below 1990 levels by 2050. The CCAP did not specify goals for 2050 or any interim target periods between 2020 and 2050, as it was anticipated that the targets and measures to achieve the County's goals would be reviewed and adjusted at a later date.

In 2017, the Planning Department conducted an emissions inventory update of emissions data for 2015. The 2015 emissions inventory year was selected based on the most recently available

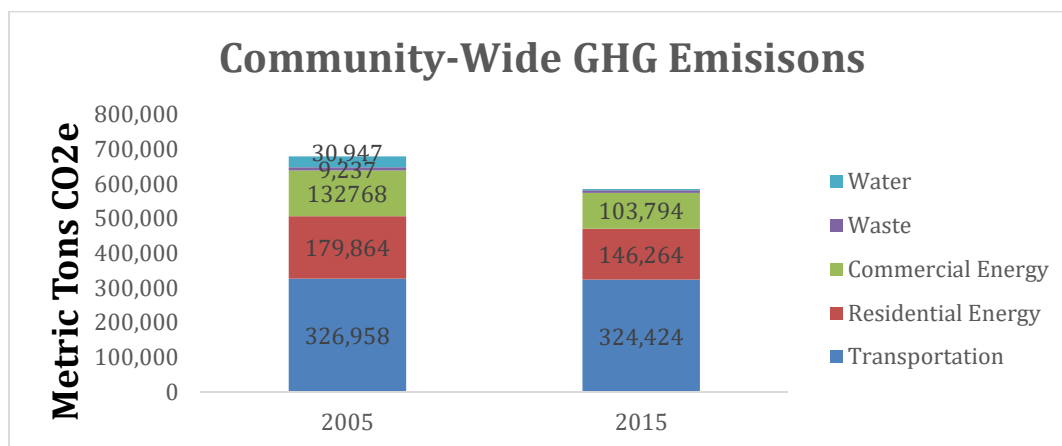
¹ California Global Warming Solutions Act of 2006 (Assembly Bill 32) <https://ww3.arb.ca.gov/cc/ab32/ab32.htm>

data and represents an update on emissions reductions 10 years after 2005, which was the baseline year for GHG emissions reductions targets in the CCAP.

The 2015 emissions inventory was prepared applying the U.S. Community Protocol². This protocol is focused on activities for which local government may be able to have influence over, which includes the sectors of transportation, residential energy, commercial energy, waste and water. The emissions inventory produces the following outcomes for unincorporated Alameda County based on metric tons of carbon dioxide equivalent per year (MT CO₂e/yr):

Percentage reduction in emissions between 2005 and 2015					
	<u>Original 2005 Baseline</u>	<u>Updated 2005 Baseline</u>	<u>2015</u>	<u>Reduction 2005-2015</u>	<u>% reduction</u>
Transportation	556,041	326,958 ³	324,424	-2,534	-1%
Residential Energy	179,864	179,864	146,264	-33,600	-19%
Commercial Energy	132,768	132,768	103,794	-28,974	-22%
Waste	30,419	9,237 ⁴	7,717	-1,520	-16%
Water	30,947	30,947	5,610	-25,337	-89%
Total CO₂e (MT)	930,039	679,774	585,682	-94,092	-14%

The following graph depicts the GHG emissions for each sector in 2005 and 2015:



² US Community Protocol for Accounting and Reporting of GHGs, ICLEI, <https://www.climatesmartplanning.org/dataset/us-community-protocol-accounting-and-reporting-greenhouse-gas-emissions.html>

³ The 2005 transportation baseline was updated to reflect a change in the model used for transportation.

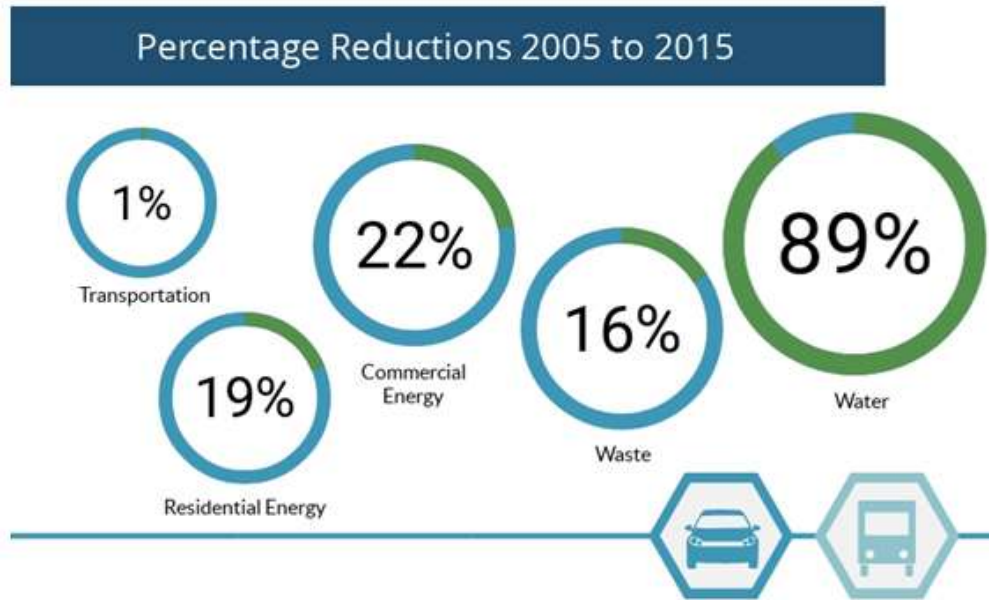
⁴ The 2005 waste baseline was updated to reflect new methodology, which applies more accurate percentages of different waste types, and substantially reduces the metric tons of CO₂e attributed to waste in 2005.

In summary, the Emissions Inventory reports that by 2015 annual GHG emissions in the unincorporated areas had reduced to 14 percent below 2005 levels, leaving only a one percent reduction to be achieved in the following five years to meet the target for per year emissions in 2020. In fact, the reductions achieved are higher than 14 percent, as the 2015 percentage calculations are based off 2005 emissions baselines for two sectors (transport and waste) that are lower than those which were accounted for in the CCAP targets. The CCAP identified that to attain the adopted target the County would need to reduce community-wide GHG emissions to approximately 790,000 MT CO₂e/yr by 2020, and based on this measure the County's goals for per year emissions have already been achieved as the emissions inventory reports that total emissions in the community in 2015 were at 585,682 MT CO₂e/yr, which exceeds 2020 per year target by 26 percent. These results must be treated with some caution however, given a considerable portion of the reduction in emissions is due to a change in methodology and to broader changes, not to specific County actions.

The reduction in annual GHG emissions in the 2015 emission inventory is a positive achievement and is consistent with the adoption of actions and commitments locally and at the State level to respond to the challenges associated with climate change but it is not easy to make a strong connection between efforts that have been implemented at the local level (including implementation of measures under the CCAP) and the results in the emissions inventory. The emissions inventory is based on models, assumptions and aggregated data that does not have a clear correlation with or demonstrate the effect of emissions reductions achieved through specific policies and programs. Technical Appendix B to the CCAP summarizes the assumptions and parameters that were used to calculate the anticipated GHG emission reduction performance of the measures identified in the CCAP, but there is no tool available to assess with any degree of accuracy whether these reductions were achieved from the implementation action taken by the County. There have been some developments, including efforts by ICLEI⁵, to provide a framework for local governments to undertake contributions analysis to understand what is driving changes in local GHG emissions, but this would require a further level of data and analysis above and beyond the emissions inventory assessment.

⁵ <http://icleiusa.org/contribution-analysis-report/>

A description of the key findings for each sector based on the 2015 emission inventory undertaken by the County in accordance with the U.S. Community Protocol is summarized below. The data sources for each sector are summarized in Appendix B.



Transportation

The transportation of people and goods generates the largest portion of the unincorporated county's GHG emissions. In 2015, this sector represented 48 percent of emissions from unincorporated Alameda County. The Emissions Inventory reports that transportation emissions in 2015 had only reduced by one percent from the 2005 baseline. There remains substantial work to be done in this sector to reduce GHG emissions, and this is consistent with the trends across the State where notwithstanding substantial progress in vehicle emissions standards, adoption of hybrid and electric vehicles and the like, private and commercial vehicle miles travelled remain high.

Residential Energy

In 2015, emissions from the residential energy sector represented 26 percent of total emissions in unincorporated Alameda County. The 2015 Emissions Inventory demonstrates that emissions from this sector reduced by 19 percent between 2005 and 2015. This reduction is consistent with the trends in Alameda County and PG&E's broader service area towards increased renewable energy sources and the widespread adoption of energy efficiency measures and programs.

Commercial Energy

The 2015 Emissions Inventory records a 22 percent reduction in GHG emissions associated with commercial energy sources between 2005 and 2015. This is a substantial reduction however, without further analysis it is difficult to attribute what the main source of this change would be. Similar to residential energy, there has been a general shift towards increased renewable energy sources and an increase in the adoption of energy efficiency measures and programs. In 2015, the commercial energy sector represented 20 percent of total emissions for unincorporated Alameda County, so it is a substantial opportunity area for pursuing emissions reductions.

Waste

Of the sectors assessed in the 2015 Emissions Inventory, the waste sector is the smallest, representing only one percent of total GHG emissions in unincorporated Alameda County. It is nonetheless an important sector and one where substantial reductions have been achieved. To reduce the community's waste-related GHG emissions, the County set goals to build upon its waste management programs and establish a target of diverting 82.5 percent of waste from landfills by 2020. The goal of the CCAP was to reduce waste related emissions by 2,500 MT CO₂e/yr by 2020, and as of 2015 the Emissions Inventory reports that waste related emissions were reduced by 1,520 MT CO₂e/yr. The methodology and data from CalRecycle and StopWaste which were applied in the 2015 Emissions Inventory are much more accurate than was previously available. Therefore, the reported 16 percent reduction in GHG emissions from the waste sector in unincorporated Alameda County should be quite accurate, and is consistent with trends towards a major reduction in GHG emissions from solid waste.

Water

Substantial amounts of energy are used to pump, treat, transport, heat, and cool water for consumption and for wastewater treatment. This sector represents five percent of total GHG emissions in unincorporated Alameda County in 2015. The Emissions Inventory indicates that GHG emissions from the water sector reduced by 89 percent between 2005 and 2015. There is no easily attributable reason for the source of this huge reduction. Based on preliminary review of the data, it is possible that the 2005 baseline of 30,947 MT CO₂e/yr may be erroneously high. It is high compared against some other jurisdictions in the County and may reflect an error with the methodology that was applied to calculate the baseline. For example, the 2005 baseline may have included attribution for GHG emissions associated with pumping water over the Sierra Nevada Mountain Range, which is not accounted for in the 2015 figures. Further research and analysis would need to be undertaken to determine this.

4. What's next for Climate Action Planning?

The measures assessment and emissions inventory in this report demonstrate that the County has made substantial progress towards achieving its adopted climate change target by 2020. Consistent with the County's Vision 2026 Goals⁶ to set a course for the next decade that anticipates community challenges and maximizes the County's ability to meet residents' needs in a rapidly changing world, the County now needs to consider what next steps need to be taken in relation to climate action planning in the unincorporated areas.

The County has not implemented all the measures identified under the CCAP. In many cases the technological and policy context has moved on since these measures were adopted, and if the CCAP was updated today those measures may not be maintained or prioritized. Since the CCAP was adopted in 2014, substantial developments in the field of climate action planning have occurred. These include a move towards zero-net energy goals for GHG emissions reductions, including a commitment by the State of California to achieve carbon neutrality by 2045, an increasing trend towards consumption-based emissions inventories which consider the lifecycle of products and activities and an increasing focus on the broader implications of climate change, including climate adaptation and resilience, environmental justice and climate equity.

For the reasons outlined above, there are limitations to the assessment undertaken in this report and its effectiveness for demonstrating progress made under the CCAP. The measures assessment is qualitative. It does not provide clearly attributable GHG emissions reductions to a particular action or actions and only assesses measures that were identified in the CCAP. It does not take into account other achievements achieved outside of the scope of activities that were adopted at that time, which have been many. The 2015 emissions inventory is one tool which demonstrates general progress at a high-level in reducing GHG emissions from the unincorporated communities, but additional assessment would be required to ascertain what the source of those reductions are and which of the measures in the CCAP have been most effective at contributing to those reductions.

⁶ <https://vision2026.acgov.org/index.page>

A further limitation of the CCAP is that the detailed measures and calculations contained in the CCAP only address the County's 2020 target. The 2035 and 2050 projections are provided as a matter of reference only, as the CCAP identified that there would be uncertainty in projecting 2035 and 2050 activity and associated emission levels. Communities in the Bay Area, including the unincorporated communities of Alameda County, have strong capacity to continue to contribute to substantial reductions in GHG emissions as the State moves towards its goal for 2045. This will be through commitments at the local level including measures adopted under the CCAP and equivalent documents which have been adopted across jurisdictions throughout the Bay Area and also to regional advantages, including a strong public commitment to addressing climate change and the presence of organizations, companies and government agencies that are implementing and mainstreaming climate change objectives into their operations.

In 2018, Alameda County joined a growing number of California jurisdictions to introduce a community choice aggregation (CCA) program to provide electricity at a lower cost and with less GHG emissions than the investor-owned utility. East Bay Community Energy (EBCE) commenced service to residential and commercial customers in Alameda County in 2018. It purchases electricity from renewable and carbon free electricity sources and provides it to customers⁷, while Pacific Gas & Electric (PG&E)⁷ continues to handle delivery and the grid. EBCE has the capacity to substantially improve GHG emissions reductions from the residential and commercial energy sectors across the County and, in addition, provides funding and technical support to jurisdictions through a Local Development Business Plan (LDBP). The County demonstrated strong leadership in initiating and establishing EBCE and should continue to build on this legacy in assessing the capacity for the unincorporated areas of Alameda County to continue to contribute towards local and State climate action goals.

⁷<https://ebce.org/power-mix/>

Appendix A: Measure Implementation




This appendix identifies the progress made to date by the various departments within the County in implementing the actions contained in the 2014 Climate Action Plan. It identifies each measure description, summarizes the status of actions taken toward implementation and identifies progress based on one of the following four progress levels:



Progress Key:





	Blue Implemented
	Green Significant progress made
	Yellow In progress or progress made on an alternative related action
	Red Not yet started






Transportation:





Progress	Action Title, Description, and Responsible Department	Status
	<p>T-1 Improve bicycle infrastructure near community activity areas: Amend the 2007 Alameda County Bicycle Master Plan to prioritize bicycle areas, including major transit stations, schools, employment centers, neighborhood commercial centers, and downtown business districts. Public Works</p>	<p>Significant progress made: The 2007 Alameda County Bicycle Master Plan was updated in 2012 to a Bicycle and Pedestrian Master Plan. In 2018 the County engaged an external consultant and commenced community outreach for an update to the 2012 Bicycle and Pedestrian Master Plan. The update will include developing strategies to improve bicycle safety; increase access to work, school shopping; and facilitate more biking. The updated Bicycle and Pedestrian Master Plan is anticipated to be adopted in 2019.</p> <p>All capital projects incorporate “Complete Streets” elements including bicycle areas pedestrian accessibility.</p>
	<p>T-2 Develop appropriate bicycle infrastructure for high traffic intersections and corridors: Develop separated Class 1 bike paths on all streets greater than 7,000 average daily trips or average speeds over 30 mph. Construct Class 1 bike paths. Create criteria for installation of bicycle boxes and priority signals at bicycle route/major street intersections. Identify and redesign problem intersections for improved pedestrian and bicycle travel. Public Works</p>	<p>Significant progress made: The update of the 2012 Bicycle and Pedestrian Master Plan is anticipated to be adopted in 2019. The updated plan implements the latest bicycle features and practices. A comprehensive assessment of feasible bicycle facilities will be considered on all projects. However, driveways and parking requirements continue to serve as a barrier to developing separated Class 1 bike paths.</p> <p>Bicycle facilities have been implemented on many capital projects within the unincorporated areas.</p>
	<p>T-3 Retrofit bicycle racks and parking facilities in underserved and commercial areas: Conduct bicycle parking analysis in County’s commercial and civic areas. Install bicycle parking facilities in underserved areas. Public Works, Planning, Economic and Civic Development</p>	<p>Significant progress made: The update to the 2012 Bicycle and Pedestrian Master Plan is anticipated to be adopted in 2019. It will guide the development of convenient bicycle and pedestrian transportation alternatives to motor vehicles for residents, visitors, shoppers, and commuters. It will include recommendations for installation of bicycle parking in underserved areas.</p> <p>For all major corridor projects, bike racks are included in sidewalk areas where feasible.</p>

	<p>T-4 Enhance pedestrian infrastructure within easy walking distance from community activity centers: Conduct a pedestrian obstacle study. Develop pedestrian improvement plan for the unincorporated county that prioritizes investments that enhance access to community activity centers. Construct pedestrian improvements identified in the pedestrian obstacle study and improvement plan.</p> <p>Public Works</p>	<p>Significant progress made: The update of the 2012 Bicycle and Pedestrian Master Plan is anticipated to be adopted in 2019. It will include updated prioritization for sidewalk construction. This update will be used to develop program sidewalk capital improvement projects.</p>
	<p>T-5 Expand the traffic calming program to improve pedestrian safety: Expand funding for the Traffic Calming Program to provide increased community outreach and implementation</p> <p>Public Works, Finance</p>	<p>Significant progress made: Speed humps are currently implemented in response to community requests. In addition to providing speed humps when requested, Public Works also regularly installs bulb-outs to extend the sidewalk as a traffic calming measure and pedestrian safety feature. Bulb-outs reduce the distance pedestrians must cross and allow approaching vehicles to see beyond parked cars which normally block visibility.</p>
	<p>T-6 Improve pedestrian connectivity and route choice in neighborhoods: Conduct analysis of pedestrian network, and identify areas of low connectivity and route choice. Develop pedestrian alleys, punch-throughs, and similar design features. Adopt a General Plan Circulation Element amendment that requires pedestrian connectivity features in all new developments.</p> <p>Planning, Public Works</p>	<p>In progress: Opportunities for improving pedestrian connectivity will be addressed in the Bicycle and Pedestrian Master Plan update which is anticipated to be adopted in 2019. There is no immediate planning or funding for adoption of a General Plan Circulation Element to require pedestrian connectivity features in all new developments.</p> <p>In practice however, this is a design consideration for all new major projects. For example, the Daughtrey's Building Development Project has embarked on a streetscape project that widened sidewalks, added new banners, street trees and street furniture, planted medians, and improved pedestrian lighting along downtown Castro Valley's main commercial corridor.</p>
	<p>T-7 Work with school districts to develop a School Alternative Transportation Plan by improving/expanding walking school bus, safe routes to school program, and school bus services: Work with school districts to develop outreach program that promotes alternative travel modes for school-related trips. Develop educational modules that promote safe bicycle travel.</p>	<p>Implemented: Public Works conducted a comprehensive assessment of all schools in the unincorporated area to review opportunities to reduce pedestrian and bicycle accidents in the vicinity of schools. The assessment included meeting with school administrators and community members to identify issues, collect traffic and pedestrian counts and information on bike and pedestrian accidents. The assessment also includes</p>

	Transportation	pedestrian and bicycle safety education to promote bicycling and walking as viable transportation modes to school.
	<p>T-8 Conduct a public transit study and implement ridership enhancement program: Conduct public transit study in partnership with transit agencies. Develop and implement County-led inter-agency public transit ridership enhancement program.</p> <p>Public Works</p>	<p>Significant progress made: Public Works funding is not able to be used for transit focused action. However, where possible, Public Works has partnered transit agencies to improve transit facilities and ridership. For example, Public Works partnered with MTC to implement a transit priority system on Hesperian Boulevard. They have also partnered with ACTC to conduct a corridor study on East 14th and Mission addressing transit. The County collaborates with regional transit agencies to address transit accessibility.</p>
	<p>T-9 Work with AC transit to increase service frequency on select bus routes: Request that AC Transit evaluate the potential for increasing service frequency on key routes. Prepare formal request for AC Transit to extend BRT bus service to the unincorporated county. Determine the conditions necessary for BRT route expansion.</p> <p>Transportation, Planning, County Supervisors</p>	<p>In progress: Public Works partnered with MTC to implement a transit priority system on Hesperian Boulevard. The County has also partnered with ACTC to conduct a comprehensive corridor study on East 14th and Mission, including strategies to improve transit services such as BRT. The County regularly collaborates with regional transit agencies to address transit accessibility. To the extent possible, Public Works partners with AC Transit on capital projects to address transit accessibility.</p>
	<p>T-10 Provide transit buses with signal prioritization devices to facilitate time effective public transit service: Work with AC Transit to evaluate key bus routes for TSP integration. Work with AC Transit to install TSP infrastructure at intersections and in buses. Evaluate need for queue bypass lanes and implement any necessary intersection redesigns.</p> <p>Transportation, Public Works</p>	<p>In progress: Public Works has not undertaken a comprehensive evaluation of TSP integration. Progress has been made however, in relation to the Hesperian Corridor. Public Works has worked with MTC and other agencies to implement a TSP system along Hesperian Boulevard Corridor from San Leandro to Fremont. Public Works is collaborating with MTC on this effort. Construction is scheduled to be completed by January 2022.</p>
	<p>T-11 Work with AC Transit to provide transit with essential improvements including shelters, route information, benches, and lighting: Consult with AC Transit to ensure that bus stops provide shade, weather protection, seating, lighting, and route information.</p> <p>Transportation</p>	<p>In Progress: While Public Works funding is not applicable to transit oriented actions, the agency collaborates with AC Transit on capital projects.</p> <p>Public Works received a grant to install bus shelters along East 14th Street.</p>



	<p>T-12 Work with public transit agencies to better accommodate bicycles: Install Class 1 bike storage lockers at heavily used bus stops. Formally request BART to develop Class 1 bicycle storage at the Castro Valley and Bay Fair stations and to provide special bicycle train cars.</p> <p>Transportation, Public Works</p>	<p>Significant progress made: Bike storage lockers are provided at a number of heavily utilized transit corridors, including Castro Valley Boulevard and East 14th Street. Public Works worked with BART to upgrade the bicycle lockers at the Castro Valley BART Station.</p>
	<p>T-13 Enhance rideshare infrastructure and services to increase community participation in this important travel mode: Work with ACCAMA and MTC to develop a plan and schedule for updating ride-match systems to the most advanced technologies. Work with ACCMA to encourage employers to create rideshare databases for their employees and employees of adjacent businesses. Identify locations for community rideshare stations and develop appropriate infrastructure. Adopt an ordinance that requires new offices with 50 or more employees to provide preferential parking spaces for rideshare commuters.</p> <p>Transportation, Public Works, County Supervisors, Planning</p>	<p>In Progress: Enhancing rideshare infrastructure is encouraged on a case by case basis. The CDA Planning Department includes conditions of approval for new development contracts that address providing information to tenants regarding rideshare programs. An ordinance requiring this has yet to be developed.</p>
	<p>T-14 Reduce minimum parking requirements for mixed-use pedestrian and transit-oriented development: Conduct an evaluation of the County's parking policies and their effects on mixed-use, TOD, and similar development. Reduce parking requirements in areas targeted for mixed-use and TOD development, while ensuring that neighborhoods are not adversely affected. The actual requirements for mixed use parking should be accurately evaluated. Evaluate potential for shared parking strategies in the unincorporated county.</p> <p>Planning, County Supervisors, Economic and Civic Development</p>	<p>Significant progress made: An evaluation of parking policies is in progress through the Alameda County Parking Study.</p> <p>In 2015, parking requirements in the unincorporated areas were reduced from a mandated 2 parking spaces per residential lot down to 1.1 parking spaces. Parking benefits, including a reduction in parking space requirements, are offered to new developments that provide alternative transportation methods and facilities (e.g. bike locking infrastructure).</p>





Land Use:




Progress	Action Title and Description, and Responsible Department	Status
	<p>L-1 Facilitate the establishment of mixed-use, pedestrian and transit-oriented development near major transit stations or transit corridors: Conduct audit of existing zoning, development, standards, etc. for compatibility for TOD. Develop and adopt specific plans for each TOD area. Develop TOD assembly program. Create TOD infrastructure investment program that identifies and implements basic infrastructure improvements needed to attract TOD developers. Planning, Economic and Civic Development, County Supervisors</p>	<p>Significant progress made: An audit of all zoning, development, standards etc for TOD has not been conducted. However, the CDA Planning Department has undertaken several area-specific actions. The Ashland/Cherryland Business District Specific Plan was updated in December 2015. The updated Specific Plan addresses and encourages transit-oriented development. The City of San Leandro is developing the Bayfair BART Transit Village TOD Specific Plan, which will include spillover investment in Ashland. The Castro Valley Business District Specific Plan will be updated in 2019. It will facilitate TOD development, including parking benefits within a quarter mile of BART.</p>
	<p>L-2 Reduce restrictions on second units in single-family residential districts near transit stations, major bus route corridors, neighborhood commercial centers, and central business districts: Revise zoning code, development standards, and relevant specific plans to allow second units in R-1, RS-5, and Residential Low Density Areas within ½- mile walking distance of major transit stations. Revise parking requirements for new second units to 1 space per unit. Provide outreach to affected property owners. Planning</p>	<p>Significant progress made: 2018 changes to State law substantially increased opportunities for secondary dwelling units and included reductions in parking requirements. The CDA Planning Department has introduced ordinance amendments consistent with these changes.</p>
	<p>L-3: Increase the diversity of uses in neighborhood-serving commercial centers: Develop small business incentive programs targeted at neighborhood commercial centers. Economic and Civic Development</p>	<p>Implemented: The Economic and Civic Development Office (ECD) has established the Small Business Development Center (SBDC). The program runs five workshops in the Eden Area to provide business skills training to encourage small business development and commercial centers. ECD additionally hosts the Food Business Entrepreneurial Training Academy (FBETA).</p>
	<p>L-4 Improve the vitality of mixed-use neighborhood-serving commercial centers: Increase allowable residential densities and commercial floor-area-ratios in neighborhood commercial centers. Revise development standards that conflict with mixed-use</p>	<p>Implemented: Mixed-use residential standards have been introduced to allow for a variety of housing types in the unincorporated areas of Alameda County that serve all types of households, while also achieving neighborhood goals for an active</p>





	<p>development in neighborhood centers. Establish design guidelines for development within neighborhood commercial centers.</p> <p>Planning, Economic and Civic Development</p>	<p>pedestrian realm along transit corridors, an attractive street appearance, and minimizing impacts on neighboring properties. The design guidelines and standards for mixed-use projects were updated in 2015 to reflect these goals.</p>
	<p>L-5 Conduct land use and market analyses to identify sites within expensive residential areas that could support new or expanded neighborhood commercial centers:</p> <p>Conduct land use and market analysis to identify potential locations for new or expanded neighborhood commercial centers. Work with landowners, community, and interested developers to implement new neighborhood commercial centers.</p> <p>Economic and Civic Development</p>	<p>Implemented:</p> <p>ECD has ongoing programs to identify sites with commercial potential and recruit developers and investors to support new commercial centers. ECD has engaged an external consultant to analyze sites and facilitate development. ECD additionally takes part in the Ashland Cherryland Healthy Communities Collaborative Economic Development program to partner with the community on commercial development opportunities.</p>



Building Energy


Progress	Action Title and Description, and Responsible Department	Status
	<p>E-1 Work with PG&E and Alameda County cities to accelerate smart grid integration in the community:</p> <p>Partner with PG&E and develop a community smart grid integration plan. Develop an outreach program that informs property owners and businesses about benefits of smart grid and smart appliances. Adopt ordinance that requires smart grid energy management system and compatible heating, ventilation, air conditioning, lighting in new construction.</p> <p>Planning, County Supervisors</p>	<p>Not Started:</p> <p>Smart grid integration has not been implemented within unincorporated Alameda County.</p> <p>Alameda County's Santa Rita Jail has implemented a smart grid, which is the country's largest CERTS-based* microgrid with renewable generation and large-scale energy storage. The smart grid helps to reduce utility grid peak demand while improving power quality and reliability, increasing grid security, reducing grid congestion, and helping Alameda County meet its energy and environmental goals. This may serve as a model that the County could leverage from in relation to future smart grid integration in the community.</p>
	<p>E-2 Evaluate the potential for district energy systems in mixed-use and higher density areas of the community, and develop an implementation plan for cost-effective systems:</p> <p>Conduct an analysis of district heating potential in the Central Business District Specific Plan area, the San Lorenzo Specific Plan Area, and other neighborhood commercial centers. Develop an</p>	<p>Not Started:</p> <p>Analysis for district energy systems has not been developed.</p>

	<p>implementation plan for cost-effective systems.</p> <p>Planning, Public Works</p>	
	<p>E-3: Develop a comprehensive outreach program to facilitate voluntary home energy efficiency improvements: Work with PG&E and other community organizations to develop energy efficiency outreach programs for residents and multi-family property owners. Develop and maintain a website describing energy efficiency rebates, incentives, and case studies.</p> <p>Community Development</p>	<p>Implemented: The statewide program Energy Upgrade California helps Alameda County homeowners and renters make home improvements that can increase the energy efficiency in homes. The County adopted this program, which offers information describing rebates and incentives through PG&E.</p>
	<p>E-4 Identify and develop low-cost financing products and programs that encourage investment in energy efficiency for existing residential buildings: Evaluate financing programs including AB 811 that are being developed by regional/state agencies and select the appropriate programs. Develop capacity to administer energy efficiency financing programs. Develop monitoring website and publicity strategy with local contractors, building supply companies, and PG&E.</p> <p>Neighborhood Preservation and Sustainability, Building</p>	<p>Significant progress made: Financing programs to develop capacity to administer energy efficiency financing programs have been passed at a state level. State programs apply to the county and offer incentives through PG&E.</p> <p>A monitoring website has yet to be developed. Resources about financing programs are available on PG&E's website. Property assessed clean energy financing programs are also available.</p>
	<p>E-5 Expand outreach to low-income homeowners in order to encourage participation in federally funded energy efficiency and weatherization programs: Apply for funding from the Federal Recovery Act and other sources to fund expanded community participation in Weatherization Assistance Program. Develop an outreach program to encourage participation in WAP at eligible low-income households.</p> <p>Neighborhood Preservation and Sustainability</p>	<p>Implemented: The Neighborhood Preservation and Sustainability Department was awarded a grant to implement a countywide Weatherization Assistance Program. The program provides a housing inspection, repair work, and a repair inspection to increase efficiency and weatherproofing. All energy efficiency measures were provided free to income-qualified applicants.</p>
	<p>E-6 Identify and implement opportunities to improve efficiency of rental units: Conduct a review of various municipalities' multi-family energy efficiency improvement programs. Develop a rental property energy efficiency outreach and incentive program. Create and publicize a web-based database of energy efficient rental properties in the community. Develop monitoring website and publicity strategy with local contractors,</p>	<p>Not Started: This action has yet to be implemented.</p> <p>Energy efficiency standards have been set for multifamily units through the Green Building Code. New multifamily units must achieve 25 GreenPoints by Build it Green or LEED for Homes.</p>



	building supply companies, and PG&E. Neighborhood Preservation and Sustainability	
	<p>E-7 Develop and implement an outreach and financial assistance program that encourages businesses to invest in efficiency improvements: Work with PG&E and EBMUD to expand energy and water efficiency outreach programs for commercial and industrial businesses. Provide commercial energy efficiency and renewable energy financing products to business. Develop tools that demonstrate the financial benefits of the efficiency upgrades. Develop monitoring website and publicity strategy with local contractors, building supply companies, and PG&E.</p> <p>Economic and Civic Development, Finance, Community Development, Neighborhood Preservation and Sustainability, Building</p>	<p>Not started: This action has not been implemented.</p> <p>Financial assistance programs encouraging business investment are relevant to large-scale developments. The County typically works at a smaller scale, without much opportunity to implement a program such as this.</p>
	<p>E-8 Renew the County Green Building Ordinance: Amend the County's Green Building Ordinance to comply with 2010 CALGreen, and readopt the County GBO without future sunset clause.</p> <p>County Supervisors, Building</p>	<p>Implemented: The Building Department adopted a County Green Building Ordinance in 2009. The code is renewed updated triennially, with the most recent update occurring in 2019. This update will be effective in 2020. The state has also adopted a green building code through CALGreen 2016, which applies to the county.</p> <p>The Green Building Ordinance promotes practices that will reduce water and resource usage, reduce waste, and increase energy efficiency in the construction or remodeling of residential and nonresidential structures.</p>
	<p>E-9 Provide incentives, such as priority permitting for buildings that exceed the current California Title-24 standards for energy efficiency by 30%: Evaluate and select incentives for projects that exceed 2010 Title 24 energy efficiency requirements by 30%.</p> <p>County</p>	<p>Implemented: The County provides expedited building permits and inspection processing for qualified green building projects under a third-party certification program that achieve:</p> <p><i>Residential:</i> 100 GreenPoint by Build it Green or a LEED for Homes certification; and <i>Non-Residential:</i> LEED Silver Certification.</p>



	<p>E-10 Require or provide incentives for new construction to use building materials containing recycled content: Adopt an ordinance that requires or develop an incentive program to encourage the use of recycled materials for 10% building materials in new construction. Develop an outreach program to design and building professionals about the availability of recycled building materials in construction. County Supervisors, Building</p>	<p>Not Started: No progress has been made on this action yet.</p>
	<p>E-11 Require new commercial parking lots with over 200 spaces to mitigate heat gain through the use of shade trees, solar arrays, or cool pavement: Amend the Zoning Code to require one out of three following elements for new parking lots with 200 or more parking spaces: (a) 50 percent of the parking lot to be shaded by tree canopy, (b) solar photovoltaic panels, (c) or the use of cooling pavements or pavement coatings with albedos greater than 40% if trees and solar panels are impractical due to site considerations. Develop parking lot heat gain mitigation design guidelines to facilitate construction and review process. County Supervisors, Planning, Public Works, Building</p>	<p>In Progress: The Zoning Code has not yet been amended to include these requirements for new parking lots with 200 or more parking spaces. However, this has limited GHG reduction potential, as no commercial parking projects have reached the capacity of 200 spaces. In all specific plans, there is a minimum requirement for shade trees in commercial parking lots.</p>
	<p>E-12 Require all new construction and major renovation of multi-unit buildings to be “sub-metered” to enable each individual unit to monitor energy consumption: Amend the building code to require each new and major renovation of multi-family development to install electricity and gas meters for each unit. County Supervisors, Building</p>	<p>Not Started: No progress has been made on this measure. Individual condominiums sub-meter multi-unit buildings, however, a cost-effectiveness study and affordability analysis would need to be done to require new construction to be sub-metered.</p>
	<p>E-13 Establish Solar EmPowerment Districts that remove barriers to and facilitate the installation of solar PV systems on eligible commercial and industrial buildings and parking lots: Identify commercial and industrial areas with optimal solar orientation, building structure, and land management conditions. Adopt an ordinance that establishes Solar EmPowerment Districts in high potential areas. Conduct an analysis of potential regulatory, structural, and market barriers to installation of PV systems on commercial buildings and</p>	<p>Significant Progress Made: Solar EmPowerment Districts have not been established. However, significant progress has been made in other ways to facilitate residential solar. Ordinance 15.08.229 was passed in 2015 and amended in 2018, requiring the installation of solar PV in all single-family and low-rise (three stories or fewer) multifamily new construction. The ordinance was adapted from a model developed by the California Energy Commission and the Bay Area Regional Collaborative. It</p>

	<p>parking lots with defined districts. Minimize barriers and streamline permitting for solar PV installation in EmPowerment Districts. Develop outreach and technical assistance programs to encourage the installation of solar PV systems.</p> <p>Planning, Economic and Civic Development, County Supervisors, Community Development, Building</p>	<p>preserves the energy efficiency required in the current statewide building code and further requires that self-generation be included. Free standing and roof-mounted solar panels are also incentivized through no height restrictions.</p> <p>The ordinance goes beyond state standards, establishing the requirement for the installation of solar PV cells as a REACH code in Alameda County. This will help achieve energy savings and increase deployment of renewable energy technology such that 80% of the buildings' annual electric requirements are to be provided by on-site solar power.</p>
	<p>E-14 Facilitate the installation of solar hot water heating systems on large commercial buildings:</p> <p>Create outreach program that promotes SHW systems and educate business owners about CSI- Thermal Program and related federal incentives. Remove unnecessary regulatory barriers to SHW system installation and streamline permitting processes.</p> <p>Community Development, Planning, Building</p>	<p>Not Started:</p> <p>This measure has not been implemented to date and is unlikely to be a priority in the future as the county does not deal with approvals for many large commercial buildings.</p>
	<p>E-15 Develop a comprehensive residential renewable energy program that provides outreach, financing, and other forms of assistance:</p> <p>In partnership with ABAG and/or the State, develop a financing program to fund residential investment in renewable energy. Develop a targeted outreach program to maximize residential installation of solar hot water systems. Streamline permitting for photovoltaic and solar hot water system installation.</p> <p>Neighborhood Preservation and Sustainability, Planning, Building</p>	<p>Significant Progress Made:</p> <p>A comprehensive residential renewable energy program has been established at the state level and is available to Alameda County residents and homeowners through PG&E.</p>



	<p>E-16 Develop a green jobs program for the unincorporated areas of Alameda County: Partner with local organizations and community colleges, as appropriate to develop a green jobs program for the unincorporated areas of Alameda County.</p> <p>Community Development</p>	<p>In Progress: No progress has been made on a green jobs program to date. However, the Alameda County Office of Education offers Leadership in Energy Efficiency Program (LEEP), which includes participants from the unincorporated areas. The program teaches high-school and community-college students about energy efficiency and equipment, emphasizing skills that are directly transferable to green careers and employment opportunities.</p>
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Water

Progress	Action Title and Description, and Department Responsible	Status
	<p>WT-1 Encourage residents and businesses to conserve water in existing buildings and landscapes: Work with utilities and StopWaste.org to expand water conservation outreach and rebate programs. Develop a targeted landscape irrigation outreach program for landscape professionals. Adopt an ordinance that prohibits homeowners associations from preventing the use of water-conserving landscape techniques. Homeowners associations will retain authority to apply minimum standards for appearance, quality, and maintenance of landscapes.</p> <p>Community Development, Public Works, County Supervisors, Planning</p>	<p>Implemented: The Water Efficient Landscape Ordinance (WELO) is a statewide water conservation law for new and renovated landscapes that sets minimum water efficiency requirements. WELO applies to Alameda County and encourages residents to conserve water in new buildings and landscapes. WELO applies to Home Owners Associations (HOA's).</p> <p>Additionally, Public Works has continued outreach efforts through the Alameda County Clean Water Program. The program includes projects to encourage homeowners and landscapers to reduce stormwater pollution and conserve water.</p> <p>StopWaste.org promotes landscape irrigation rebates through EBMUD and ACWD for water-efficient lawn conversions, irrigation equipment upgrades, and more.</p>
	<p>WT-2 Require new landscape projects to reduce outdoor potable water use by 40 percent: Amend the building code to require major landscape projects to reduce potable water use for landscape irrigation by 40% below the initial requirements for plant installation and establishment.</p> <p>Economic and Civic Development, Planning, Public Works</p>	<p>Implemented: The Water Efficient Landscape Ordinance (WELO) statewide water conservation law for new and renovated landscapes sets minimum water efficiency requirements. WELO applies to Alameda County and encourages residents to conserve water in landscape projects. The Alameda County building code reflects the State WELO standards and requires a 40% reduction.</p>





	<p>WT-3 Adopt an ordinance that allows the installation and use of greywater systems for subsurface irrigation: Adopt an ordinance that allows the installation and use of greywater systems that conform to Title 24 Part 5 of the California Plumbing Code. Board of Supervisors, Building</p>	<p>Implemented: An ordinance that allows the installation of greywater systems has been issued in the state code. The greywater ordinance has been moved from the appendix into the code in Title 24 Part 5. State requirements now exceed the objective contained in Measure WT-3.</p>
	<p>WT-4 Work with EBMUD and Zone 7 to redesign water bill format to encourage water and conservation in residential and commercial users: Work with EBMUD and Zone 7 to establish comparative metrics on all residential water bills. Planning, Public Works</p>	<p>Not Started: No progress has been made on this measure to date. However, EBMUD has established programs encouraging water conservation, information about rebates, comparative usage reports, and water smart tips available to residences.</p>

Waste

Progress	Action Title and Description, and Department Responsible	Status
	<p>WS-1 Increase solid waste reduction and diversion to 90 percent by 2030: Adopt an amendment to the Waste Diversion Resolution to achieve 90 percent waste reduction and diversion by 2030. Expand outreach programs to maximize participation in waste reduction and diversion programs. Board of Supervisors, Planning</p>	<p>Not Started: The Waste Diversion Resolution Policy has not been amended and currently requires 75% waste reduction.</p>
	<p>WS-2 Strengthen the Construction and Demolition Debris Management Ordinance: Amend an ordinance to require diversion of (1) 100% of inert waste and 50% wood/vegetative/scrap metal net of Alternative Daily Cover (ADC) and unsalvageable material put to other beneficial uses at landfills, and recycling and (2) beneficial reuse of 100% of inert materials- concrete and asphalt by 2015. Work with Stopwaste.Org to develop educational programs for construction and demolition waste diversion techniques. Partner with Stopwaste.Org and local businesses to establish a construction and demolition material recycling industry in the area. County Supervisors, Community Development, Building</p>	<p>In Progress: The Building Department is in the process of revising a stormwater construction and demolition debris ordinance on the diversion of materials. The ordinance will ensure that waste is disposed of properly and will set standards for recycling practices. The Building Department also adopted a construction and debris ordinance in 2010, requiring new construction sites to designate dump sites and receipts collected by inspectors. Landfill dumping is not permitted. CALGreen has further adopted an ordinance addressing debris management which the County has implemented.</p>

	<p>WS-3 Develop a food waste collection program and adopt an ordinance that requires all household and commercial food wastes and food-soiled paper to be placed in organics carts: Develop a residential and commercial food waste collection and composting outreach and education program. Amend the County's Waste Management Resolution to prohibit the disposal of household and commercial food scraps and food-soiled paper with other household waste.</p> <p>Community Development, County Supervisors</p>	<p>Implemented: The County partnered with StopWaste and the Northern California Recycling Association to produce a 2017 study on opportunities for preventing and recovering food waste from businesses and institutions across the County, including the unincorporated areas. StopWaste has developed a grant program funding projects that prevent food waste and recover edible surplus food.</p> <p>The Alameda County Integrated Waste Management Plan was amended and updated in 2017. In addition, StopWaste and the County developed an incentives program for food waste diversion to provide a one-time payment to member agencies for accomplishing a specific food waste diversion goals.</p> <p>Green waste disposal is available to homes, apartments, and businesses in Alameda County. Outreach and education events have been conducted around composting and food disposal and requires organics to be disposed of in green waste.</p>
	<p>WS-4 Work with Stopwaste.Org, Alameda County cities, and other organizations to urge adoption of State and federal legislation that requires extended producer responsibility, and improves the recyclability of products and packaging: Develop a resolution of support to encourage the state and federal governments to pass legislation that requires extended producer responsibility and improves recyclability of products and packaging.</p> <p>County Supervisors, Community Development</p>	<p>Not Started: A resolution to encourage the state and federal governments to pass legislation on increased recyclability has not been started.</p>

Green Infrastructure

Progress	Action Title and Description, and Department Responsible	Status
	<p>G-1 Expand the urban forest in order to sequester carbon and reduce building energy consumption: Develop an Urban Forest Management Plan. Develop an outreach program to educate the community about urban forest benefits and encourage the planting of additional trees on private property. Expand public/private partnership programs to encourage urban forestry through planting, preserving, maintaining, and controlling invasive species. Public Works, Economic and Civic Development</p>	<p>In Progress: An Urban Forest Management Plan has not been developed. However, Public Works regularly install street trees as a part of sidewalk construction and major corridor projects and the Planning Department has received a Coastal Conservancy Climate Ready Grant for an urban greening program within Ashland/Cherryland to expand the urban forest, sequester carbon, reduce GHG emissions, and lower energy consumption in residential buildings. The program will plant over 300 trees to address nature-based solutions to climate change adaptation and educate the community about the benefits of trees.</p>
	<p>G-2 Include carbon sequestration as an objective within county-led natural area restoration projects: Evaluate the carbon sequestration potential of riparian forest restoration projects. Public Works</p>	<p>Significant Progress Made: Public Works has developed the Urban Parkways Program which uses nature-based solutions to sequester carbon and promote public green spaces through tree planting. Public Works conducts creek restorations to restore urban creeks to natural conditions, ensure flood protection, and sequester carbon. The Castro Valley and San Lorenzo creek restoration projects have been completed.</p>
	<p>G-3 Establish a local community garden program to increase local food security and provide local recreation amenities: Develop a community garden program in partnership with EBMUD, EBRPD, HARD, and other organizations. Identify potential community garden sites. Develop community gardens and necessary infrastructure and management policies. Community Development</p>	<p>Significant Progress Made: ECD is working to retain Paradise Garden to establish a community-based garden as a part of Cherryland Place, a mixed-use development proposal. The garden will be a component of the mixed-use development vision on Mission Boulevard. ECD has also developed the Food Pipeline program to advance food security, facilitate training for food entrepreneurs, and promote brick and mortar food businesses.</p>
	<p>G-4 Work with local farmers and agricultural non-profits to develop urban-edge farming opportunities in the unincorporated county: Develop an agricultural parks program with local farmers and relevant non-profits. Identify potential agricultural parks and interested farmers. Develop infrastructure, technical support, and management policies to support</p>	<p>Significant Progress Made: A comprehensive agricultural parks program has not been established to date. However, an AgPark project in Sunol was established to provide land for sustainable farming, support to beginning farmers, and educational opportunities for community members. The Alameda County Resources Conservation District (ACRCD) manages the day-to-day management of the</p>

	<p>Agricultural Parks. Community Development, Agriculture Department</p>	<p>sustainable farming, educational programs, and ecological benefit elements of the AgPark. ACRCDC helps to facilitate the Sunol AgPark Education Program (SAGE), which focuses on agricultural revitalization and urban-rural connection projects to promote sustainable agriculture and food systems.</p>
	<p>G-5 Work with local organizations to establish farmers' market sites in the unincorporated county: Work with farmers' market associations to identify potential sites for farmers markets in the unincorporated county. Assist farmers' markets associations develop markets in appropriate locations throughout the unincorporated county. Promote farmers' markets through community outreach programs. Planning, Economic and Civic Development</p>	<p>Significant Progress Made: The County has taken a positive policy stance on farmers' market proposals, encouraging their establishment and partnering with organizations to determine site locations for potential site locations. This has facilitated the establishment of farmers markets including the Castro Valley Farmer's Market.</p>

Appendix B: Data Sources

This appendix identifies the data sources of data for the 2015 Emissions Inventory:

Transportation

The transportation sector includes quantification of emissions from on-road passenger and commercial vehicles, public transit, and passenger rail.

The Metropolitan Transportation Commission (MTC) organizes a large-scale simulation model of daily travel behavior. The model simulates transportation activities that the average household is currently living in or expected to be living in the nine-county Bay Area. The activity-based model is called the "Travel One Model". This model reports average daily miles traveled by six population segments that travel to or within a given community over a year, and for three trip types; entirely within, partially in, and entirely outside the jurisdiction. Overall, this model accounts for mileages which are generated by trips originating or ending in the jurisdiction, instead of estimation of the miles driven within a jurisdictional boundary.

For commercial vehicle miles travelled (VMT) estimates, the ICLEI U.S. Community Protocol recommends disaggregating county-level VMT to the municipal level by using the employment categories related to high truck trip generation employment categories. Following the methodology, employment by NAICS industry sector for unincorporated Alameda County was used from the Census Bureau's Longitudinal Employment Household Dynamics (LEHD). 2015 LEHD percentages were applied to the total commercial daily VMT for the year 2015 to determine the unincorporated area specific VMT. Unlike the passenger vehicle VMT, commercial vehicle data is an estimate of the travel on unincorporated roads regardless of whether the trips began and/or ended in unincorporated Alameda County.

Energy (Residential and Commercial/ Industrial)

The energy sector accounts for the total electricity (kWh) and natural gas (Therms) usage within a community. This data is provided from Pacific Gas & Electric (PG&E) through their Green Community Portal. PG&E also provides emissions factor associated with electricity which they submit to California Action Registry (CCAR) for confirmation. The emissions factor for natural gas is a constant number that is provided by PG&E, ICLEI or other protocol guides.

Solid Waste

Solid Waste data is available from CalRecycle, which provides the total tonnage of landfill waste. The StopWaste 2008 waste characterization study includes percentages of the waste stream represented by each organic material type, which was then applied to the total tonnage.

Water

The water sector includes emissions related to energy use for upstream water treatment and distribution, downstream treatment and methane generation from wastewater. Data was obtained from the following sources:

- EBMUD: potable water for Castro Valley, San Lorenzo, and other unincorporated areas including Ashland and Cherryland.
- Zone 7: agricultural water for 4,000 acres in South Livermore.
- Oro Loma Sanitary District: treats wastewater for Castro Valley, San Lorenzo, and other unincorporated areas including Ashland and Cherryland. Oro Loma Sanitary District provided monthly energy consumption related to treating wastewater in kWh, which was annualized.