



**San Ramon Climate Action Plan
Annual Report**

2009-2012

Introduction

The Climate Action Plan Annual Status Report is intended to be a supplemental document to the General Plan Annual Report and provide the City and Public an overview of the activities associated with implementation of the Climate Action Plan.

The City of San Ramon's (City) Climate Action Plan (CAP) is the primary strategy for ensuring that the build-out of the General Plan 2030 will not conflict with the implementation of Assembly Bill 32 – the Global Warming Solutions Act of 2006. Assembly Bill (AB) 32 requires California to reduce statewide greenhouse gas (GHG) emissions to 1990 levels by the year 2020.

The City's focus is on emission sources within its regulatory authority, which are primarily related to land use and the local transportation system. To some extent, the City can influence activities that provide greenhouse gas reductions such as water conservation and solid waste diversion and recycling. The City can also require feasible mitigation measures for new projects as a Lead Agency under the California Environmental Quality Act (CEQA). The purpose of the Climate Action Plan is to:

- Outline a course of action for the City government and the community of San Ramon to reduce greenhouse gas emissions 15 percent below 2008 levels by the year 2020 and adapt to effects of climate change, and
- Provide guidance to City staff regarding when and how to implement key provisions of the CAP.

Climate Action Plan Strategy

The CAP strategy is based upon the land use, transportation, and conservation policies that are part of the General Plan 2030, specific plans, and significant development plans and proposals within the City. The CAP identifies policies within the City of San Ramon's General Plan and Implementation Strategies that would decrease the City's emissions of greenhouse gases. Conceptually the design and density of future development when coupled with the land use pattern can influence the amount people drive and provide options available for using less polluting and energy-consuming modes of transportation such as walking, bicycling, and transit. The CAP also promote energy efficiency in buildings, government operations, and more efficient water use. Implementation of CAP compliant development plans helps to ensure that the City will develop in ways that produce fewer GHG emissions. The CAP strategy and its contents are consistent with a "qualified" CAP pursuant to current Bay Area Air Quality Management District

recommendations and can be relied on for project level GHG mitigation under the California Environmental Quality Act (CEQA).

CAP Status Report

The CAP is intended to be a performance based strategy to obtain the targets established by AB 32. As such, it is important that the implementation of the CAP be monitored, the effectiveness measured and that the policies and strategies be updated as necessary to be consistent with current practice, new regulations and ultimately GHG reduction targets. This initial Report covers the period from 2009-2012 representing the timeframe following the 2008 baseline used in the CAP and one complete year following adoption of the CAP in August 2011. Subsequent reports will build on this information to provide both an incremental and cumulative assessment of the CAP progress leading up to the next comprehensive update GHG inventory.

The Status Report consists of three basic sections:

1. **CAP Strategy Status Update-** This section contains a summary table of the CAP strategies by topic, and applicable progress indicators and the current status.
2. **Community Benchmarks-** The Community Benchmarks section represents a snapshot of demographics, land use and performance measures that show how the City has changed overtime. The long-term update and assessment of the community GHG inventory is anticipated to coincide with the next comprehensive General Plan Update; however, the benchmarks provide general trends based on City actions.
3. **Summary and Future Actions-** While the CAP is still early in its implementation, it is important to address deficiencies and focus priorities for future action for both the near and long term. This Section identifies program actions anticipated for the next reporting period.

CAP STRATEGY STATUS UPDATE

The following tables represent the CAP strategies for Land Use, Transportation Energy, Regional Coordination and Climate Adaptation. The strategies and many of the progress indicators are on-going in that they are tied to new development or the continued implementation of the General Plan 2030.

LAND USE			
CAP Strategy		Progress Indicator	Status
LU-1	Increase the average development density of new development by 10 % by 2020.	5% by 2015, 10% by 2020	<p>Planning/Community Development continues to review Development Plans and Specific Plans based on General Plan 2030 and CAP guidance.</p> <p>The City Center (2008) and North Camino Ramon Specific Plan (2012) Priority Development Areas (PDAs) represent a continuing effort to pursue more compact mixed-use, transit-oriented development, which anticipates increased development density for those areas.</p> <p>The City is engaged in the One Bay Area regional planning process intended to address the Sustainable Communities Strategy requirements of SB 375.</p>
LU-2	Encourage mixed-use development in new development and redevelopment areas.	On-going based on project proposals.	<p>Planning/Community Development continues to review Development Plans based on General Plan policies.</p> <p>The General Plan and Zoning Ordinance (2012) establish Mixed-Use districts and development standards to facilitate mixed-use development. The North Camino Ramon Specific Plan (2012) provides a vision and future guidance for mixed-use development within the Plan Area.</p> <p>Approved mixed-use projects within the reporting period:</p> <ul style="list-style-type: none"> • St James Place (2011) • ABC Pet Clinic (2011) • 2255 San Ramon Valley Blvd (2012)
LU-3	Increase transit orientation in new development and redevelopment areas near current and planned transit facilities.	On-going based on project proposals.	<p>Planning/Community Development continues to review Development Plans based on General Plan Traffic and Circulation Element, which includes transit goals and policies.</p> <p>The City Center and North Camino Ramon Specific Plan are both transit oriented by design and will continue to promote these policies through their implementation.</p>
LU-4	Increase pedestrian orientation in new development and redevelopment areas.	On-going based on project proposals.	<p>Planning/Community Development continues to review Development Plans based on the General Plan 2030 Traffic and Circulation Element, which includes transit and pedestrian goals and policies.</p> <p>The City Center and North Camino Ramon Specific Plan are both transit oriented by design and will continue to promote these policies through their implementation.</p>

LAND USE			
CAP Strategy		Progress Indicator	Status
LU-5	Provide additional workforce housing opportunities in the City to improve the jobs housing balance and to reduce commute distances.	On-going based on project proposals.	<p>Planning/Community Development continue to review Development Plans based on the General Plan 2030 Housing Element, which includes workforce goals and policies.</p> <p>Since 2009, the City has annexed 1,465 units in the Dougherty Valley, which helps balance the job base primarily provided by Bishop Ranch. Additionally, the approved St. James Project, City Center and North Camino Ramon Specific Plan will add housing in close proximity to existing jobs.</p> <p>The Housing Element update is anticipated to begin in 2013, which will provide further opportunities to refine housing programs within the City.</p>
LU-6	Promote compact development by protecting open space and hillsides and encouraging infill and redevelopment of underutilized parcels in urbanized areas.	On-going based on project proposals and policy needs.	<p>Planning/Community Development continues to review Development Plans based on the General Plan 2030 Conservation Element, which includes open space and hillside protections in addition to the City Urban Growth Boundary which encourages a compact development pattern.</p> <p>In 2012, the City adopted revisions to the Zoning Ordinance to reinforce protections for Hillside, Creek and Ridgeline areas previously protected by Ordinance 197 that expired in 2010.</p>

TRANSPORTATION			
CAP Strategy		Progress Indicator	Status
T-1	Provide transit facilities and services that improve transit mode share.	On-going based on project proposals and funding opportunities.	<p>Planning/Community Development continues to review Development Plans and pursue opportunities to improve transit mode share.</p> <p>The Transportation Services Division promotes TDM policies as part of both new and existing development as well as the TRAFFIX program that is designed to minimize traffic congestion associated with school sites.</p> <p>The City Center Project and North Camino Ramon Specific Plan both contemplate transit centers to serve the respective mixed-use areas as well as specific TDM program participation.</p>

TRANSPORTATION			
	CAP Strategy	Progress Indicator	Status
T-2	Provide pedestrian connections in new and existing development to improve pedestrian mobility and accessibility.	On-going based on project proposals.	<p>Planning/Community Development continues to review new development plans to promote pedestrian connectivity.</p> <p>The City Center Project, North Camino Ramon Specific Plan and Crow Canyon Specific Plan are pedestrian oriented mixed-use areas that are anticipated during build-out of the General Plan 2030.</p> <p>The St. James development project includes pedestrian access points to the Iron Horse Trail (IHT) and the City has released a request for proposal to initiate community engagement and preliminary designs for IHT pedestrian overcrossings at Bollinger Canyon and Crow Canyon Roads.</p> <p>Parks and Community Services is in the process of developing a Trails Master Plan which will identify all trails for public use within the City, create a web based user map, and identify and prioritize incomplete trail connections.</p>
T-3	Provide a safe and well-connected system of bicycle paths, lanes, and trails to increase bicycle use.	On-going based on project proposals and funding opportunities.	<p>Planning/Community Development continues to review new Development Plans to promote bicycle facilities and overall connectivity. Bicycle parking and end of trip facilities are promoted as part of individual development proposals and Conditions of Approval.</p> <p>Additionally, the General Plan 2030 Complete Street policies support bicycle use as part of the overall street design administered through Engineering Services.</p> <p>Parks and Community Services is in the process of developing a Trails Master Plan which will identify all trails for public use within the City, create a web based user map, and identify and prioritize incomplete trail connections.</p> <p>The City also studied the feasibility of pedestrian/bicycle overcrossings along the Iron Horse trail at Crow Canyon Road and Bollinger Canyon Road. The City continues to pursue funding and design development for the overcrossing at Bollinger Canyon Road.</p>
T-4	Use traffic calming measures to improve traffic flow, pedestrian orientation, and bicycle use.	On-going based on available funding and need.	Transportation and Engineering Services continues to assess the need and opportunities for traffic calming features as part of new and existing development.

TRANSPORTATION			
CAP Strategy	Progress Indicator	Status	
T-5	<p>Increase the use of low and zero emission vehicles.</p>	<p>On-going based on available funding and need.</p> <p>Achieve 15% improvement in vehicle fuel efficiency with new purchases.</p>	<p>Planning and Building Services continues to issue electrical permits for charging stations for both residential and commercial applications. The City is in the process of installing charging stations at the City Permit Center and City Hall.</p> <p>The City currently has a fleet of 110 vehicles. 29% of the vehicles are gasoline/electric Hybrids, CNG, or Biodiesel.</p> <p>Additionally 14 San Ramon garbage trucks (under the trash franchise agreement) run on CNG derived from landfill waste and methane capture systems.</p>
T-6	<p>Improve the effectiveness of existing Transportation Demand Management Programs and ensure that new developments with large employee concentrations implement TDM Programs.</p>	<p>On-going based on project proposals.</p> <p>Increase participation in TDM by 15% by 2020.</p>	<p>The Transportation Division continues to review new development plans to promote TDM programs with a goal of 100 percent of applicable projects to include TDM programs.</p> <p>The Bishop Ranch TDM program continues to be effective in promoting alternative transportation and reducing Vehicle Miles Traveled.</p> <p>TDM participation and implementation are discussed in the Benchmark section of this report.</p>
T-7	<p>Require projects to provide facilities that make travel by bicycle and transit more convenient.</p>	<p>On-going based on project proposals.</p>	<p>Planning/Community Development continues to review new development plans to promote bicycle facilities.</p> <p>Bicycle parking and end of trip facilities are promoted as part of individual development proposals and through conditions of approval. The North Camino Ramon Specific Plan established specific requirements for end of trip facilities associated with new development.</p> <p>The City and Bishop Ranch continue to install bicycle racks and lockers at existing facilities as part of their TDM strategies.</p> <p>The City continues to pursue funding and design development for pedestrian/ bicycle overcrossings at Bollinger Canyon Road which will improve bicycle transit and connectivity.</p> <p>New park and ride facility which includes bike lockers at Bollinger Canyon and Stoneleaf Drive opened in 2011 and is incorporated as part of a park development.</p>

TRANSPORTATION			
CAP Strategy		Progress Indicator	Status
T-8	Encourage the use of parking facility designs and parking management to reduce vehicle trips.	On-going based on project proposals	<p>Planning/Community Development continues to review new development plans to promote parking strategies outlined in the General Plan 2030 and specific plans.</p> <p>The mixed-use development, shared parking and “park once” concepts of the City Center and North Camino Ramon Specific Plan continue to promote trip reductions associated with linked trips and alternative transportation.</p>
T-9	Provide vehicle support infrastructure to encourage use of low- and zero-emission vehicles.	On-going based on project proposals, available funding and need.	<p>Planning and Building Services continues to issue electrical permits for charging stations for both residential and commercial applications. The City is in the process of installing charging stations at the City Permit Center and City Hall.</p> <p>Additionally, there are vehicle emission reductions associated with the implementation of the City’s Adaptive Traffic Signal System in that idling and starts and stops are reduced when traffic is keep free flowing</p>

ENERGY			
CAP Strategy		Progress Indicator	Status
E-1	Increase the use of energy conservation features, renewable sources of energy, and low-emission equipment in new and existing development projects within the City.	On-going based on project proposals.	<p>New development subject to the entitlement process is required to demonstrate energy conservation in excess of Building Code T-24 standards as well as reductions in water usage based on CAP standards. The City continues to promote policies for solar ready roofs and reductions in impervious surfaces for stormwater management and to minimize heat island effect.</p> <p>City has completed retrofit of City-owned streetlights, parking lot lighting and illuminated street signs to LED light sources.</p> <p>Additional discussion is provided in the Benchmark section discussion.</p>

ENERGY			
	CAP Strategy	Progress Indicator	Status
E-2	Reduce energy use from the transport and treatment of water.	20% reduction from new development.	<p>New development subject to the entitlement process is required to demonstrate a 20% reduction in water use through implementation of drought tolerant landscaping, efficient fixtures and use of reclaimed water.</p> <p>Retrofit landscapes are required to demonstrate compliance with State Model Water Efficient Landscape Ordinance (MWELO) as part of the permit process.</p> <p>Additionally the City continues to support the use of reclaimed water through the coordination with reclaimed water providers (DERWA/ EBMUD) on infrastructure improvements intending to broaden the availability of reclaimed water throughout the City.</p>
E-3	Improve the City's recycling and source reduction programs to make continued progress in minimizing waste.	<p>On-going. Show reduction in per capita waste rate.</p> <p>Increase purchasing of recycled content materials.</p>	<p>Per capita solid waste disposal continues to decrease year after year dropping from 3.6 pounds per resident per day in 2008 to 2.7 in 2011. See Community Benchmark discussion.</p> <p>The City adopted purchasing policies includes a commitment to make an effort to purchase recycled and energy efficient products.</p>

REGIONAL COORDINATION			
	CAP Strategy	Progress Indicator	Status
R-1	Participate in regional programs and initiatives that reduce greenhouse gas emissions.	On-going.	<p>Planning Services continues to participate in the One Bay Area program development which seeks to align land use and transportation to address the requirement of SB 375 and AB 32.</p> <p>Additionally, Staff continues to monitor and participate in the Contra Cost County Climate Leader Program and forums.</p>

CLIMATE ADAPTATION			
CAP Strategy		Progress Indicator	Status
ADPT -1	New projects shall assess the significance of increased wildfires, decreased water supply, changes in agriculture, increased flooding, and any other potential impacts from climate change in California Environmental Quality Act documents.	On-going based on project proposals.	<p>All new development projects are assessed based on the requirements of CEQA. For those project requiring supplemental CEQA review, documentation and analysis, the impacts of climate adaptation are considered and addressed through project specific mitigation measures as well as to the requirements of the CAP which is also triggered by the CEQA review.</p> <p>Additionally, the City continues to work with the San Ramon Valley Fire Protection District to assess and address wild-fire risks in the urban-wildland areas, as well as participating in the Community Rating System through City programs and outreach that minimizes impacts and risks to properties located in Flood Zones.</p>
ADPT -2	Create an outreach and/or rebate program that encourages businesses and residents to construct graywater and rainwater collection systems on their properties. A minimum of one City employee should have appropriate training regarding these systems to help interested parties develop systems	<p>Create outreach program.</p> <p>Identify and train key personnel.</p>	<p>Planning/Community Development has done the code research and has identified staff with the necessary skills and training to assist interested parties in the permitting of graywater systems.</p> <p>The development of a web-based outreach program is still pending.</p>
ADPT -3	Developers shall provide an assessment of a project's potential impacts on the local and sub-regional storm drainage systems, so that the City can determine appropriate mitigation to ensure that system capacity and peak flow restrictions are not exceeded.	On-going based on project proposals.	New development is required to provide a stormwater control plan that addresses the potential impacts to the stormdrain system. Project conditions and CEQA mitigation measures ensure that system capacity and peak flow restrictions are addressed on a project basis.

CLIMATE ADAPTATION			
CAP Strategy		Progress Indicator	Status
ADPT -4	To reduce flood peaks, reduce sedimentation, temporarily store floodwaters, recharge aquifers and restore environmental flows, flood management should be integrated with watershed management on open space, agricultural, wildlife areas, and other low-density lands.	On-going based on project proposals and Policy Development.	New development is required to address sedimentation, storage, recharge, etc. as part of the stormwater management strategies for a project. Integration of stormwater features for dual-purposed uses such as recreation, open space, or habitat is preferred and considered as part of the design review process.
ADPT -5	Low-impact development techniques should be used in new development to infiltrate and store runoff.	On-going based on project proposals.	Low-impact development techniques are associated with stormwater management strategies for new development and are required for all new development proposal subject to the Regional Water Quality Control Board permit requirements.

COMMUNITY BENCHMARKS

The CAP was adopted in late 2011 and several years have passed since the 2008 CAP GHG inventory and baseline were initially established. As such, the following summaries look at specific measures for Land Use, Transportation and Conservation related to the CAP policies for the period from 2009-2012. Subsequent reports will focus on the incremental increase for subject year(s), as well as the data trends over the long-term. Ultimately, long-term trends are a better gauge of the CAP program's success because of the slow and incremental nature of development and land use change; however, it is important to conduct regular assessments to ensure that the CAP program is serving its intended purpose and the City is making progress toward GHG reduction targets.

Land Use

Land use is key and most basic component of the CAP strategy. The physical relationship between land uses directly impacts transportation, the use of resources and even certain individual behaviors. The General Plan 2030 recognizes this relationship through the development of specific policies in the various General Plan elements that are interrelated. The CAP documents utilizes these interrelated policies to effect long-term change toward meeting GHG reduction targets in a way that is consistent with the community vision and

values. The following benchmarks represent a snapshot in time in an effort to track and document land use changes over time toward meeting the goals and policies of the CAP.

Land Use and Zoning

The City's size, population and employment continues to grow as new development is proposed. The more recent physical expansion of the City has primarily been through the annexation of Dougherty Valley. The land use profile of each annexation varies in the amount of Residential, Non Residential, Mixed-Use and Open Space. In recent years, annexations have been primarily residential in nature, which has resulted in a corresponding reduction in the overall Non-Residential and Open Space percentages as the City has grown in overall area. Future annexations will likely include additional Non-Residential, Mixed-Use and Open Space areas, which will continue to alter the land use mix of the City. The following table is a summary of the basic land use classifications, land area and overall percentage of the City for the reporting period.

Year	Residential Zoning		Non Residential Zoning ²		Mixed-Use Zoning		Open Space Zoning		Total City Area Sq. Miles ¹
	Sq. Miles	% of City	Sq. Miles	% of City	Sq. Miles	% of City	Sq. Miles	% of City	
2009	7.85	45.90%	3.11	18.17%	0.61	3.58%	5.53	32.35%	18.42
2010	No Change								18.42
2011	7.96	46.25%	3.11	21.60%	0.61	3.55%	5.53	32.14%	18.56
2012	8.01	46.31%	2.84	16.42%	0.91	5.28%	5.53	31.99%	18.62

¹Roadway area is part of total City area, but not the zoning classifications.
²Parks and Golf Courses are classified as non-residential development for this analysis.

The most significant land use change within the reporting period relates to the increase in the Mixed-Use land use classification (1.73% of the City or 193 acres net change) which is attributed to the rezoning of existing commercial properties (primarily the North Camino Ramon Specific Plan) to support the mixed-use and transit oriented policies of the General Plan. The adoption of the North Camino Ramon Specific Plan in 2012 represents a substantial commitment of the City toward a higher density mixed-use, walkable, and transit oriented land use concept that are consistent with both the General Plan and the CAP policies and strategies. Additional areas in the City that also support higher density mixed-use, walkable, and transit oriented land use concept include the mixed-use commercial centers, the Crow Canyon Specific Plan (2006), and the City Center project (2007).

New Residential and Non-Residential Construction

New Residential and Non-Residential construction is a measure of new development added to the City and is an indicator of the type of growth that is occurring. Within the reporting period, the primary source of new development added to the City has been through annexation. While these units are already constructed and occupied, the transfer of these developments to the City represents a change to the overall profile of the City.

Year	New Construction		Annexation	
	Residential units	Non-Residential	Residential	Non-Residential
2009	13	0	445 units	0
2010	0	0	311 units	0
2011	105 (Valley Vista Project)	0	327units	0
2012	0	2,960 (ABC Pet Clinic)	382 units	0
Total	118 units	2,960 s.f.	1,465 units	0

The table above represents Residential and Non-Residential growth through new construction and annexation. Non-annexation Residential and Non-Residential growth has been modest over the reporting period representing 118 residential units and 2,960 square feet of commercial space when compared to the 1,465 residential units and no commercial square footage associated with annexations over the same period. The minimal non-residential construction is not unexpected given the economic recession that began in 2008 and the limited supply of vacant land available for development within the City that is not already planned for development as part of an approved project or Specific Plan.

New Residential Subdivisions and Parcel Maps Approved

Approved subdivision and parcel maps represent development that is in process and has a likelihood of construction. The following table represents the Parcel and Final Maps approved within the reporting period:

Year	Final Maps	Parcel Maps	New lots/Units approved	Average Density
2009	--	Swenson	3 single family unit	1.09 du/acre
2010	--	--	--	--
2011	--	--	--	--
2012	St. James	--	125 residential units	39 du/acre

The Swenson Parcel Map in 2009 subdivided an existing residential lot to create 4 (3 new) 1 acre residential lots which are zoned as RE-A (Residential Estates) which allows a density of up to 3 units per acre. The St. James Finall Map created 125 individual condominiums for the purposes of future sale and individual ownership with a project density of 39 units per acre. In 2011 the City approved the Fairway Village condominium conversion Final Map for 60 residential condominiums at a density of 37.5 du/acre. This project is not included in the summary of Final Maps because it was a conversion of an existing residential project, not a new development.

Jobs/Housing balance

A City's jobs to employed residents would be 1.0 if the number of jobs in the City equaled the number of employed residents, which also corresponds the amount of housing within the community. In theory, such a relationship could eliminate the need for commuting and signifies a balanced community although in practice there are many variations in where people chose to live and work. A ratio greater than 1.0 indicates a net in-commute (jobs rich); less than 1.0 indicates a net out-commute (housing rich). Bishop Ranch is one of the more significant employment centers in the Bay Area, which has resulted in San Ramon being a job-rich community.

Year	Estimated Jobs/Employment	Estimated Employed Residents/Housing	Estimated Jobs/Housing-Employed Residents Ratio
2000	40,030	26,561	1.51
2008	40,112 ¹	32,438 ¹	1.24
2011	41,660 ²	34,631 ³	1.20
2012	42,177 ²	35,362 ²	1.19

¹General Plan 2030

²Linear projections from American Communities Survey 2009-2011 growth rate (5% margin of error).

³American Communities Survey 2009-2011 (estimate does not include unemployed residents).

Since 2000, with the addition of the Dougherty Valley and other housing developments, the City's estimated jobs to employed residents ratio has been moving closer to a balanced condition. Over the current reporting period the jobs to employed resident ratio is estimated to have reduced from 1.24 to 1.19. Part of this reduction may be attributed to the slower rate of job creation coupled with the continued production of housing and annexations associated with Dougherty Valley. As housing and employment conditions improve, it is anticipated the jobs to employed residents ratio will continue to move toward this theoretical balance anticipated by build-out of the General Plan 2030.

Transportation and Circulation

While the strategies associated with Transportation and Circulation are directly related to land use, there are additional measure that can demonstrate progress toward GHG reductions targets such as trends in new lane miles constructed, vehicle miles traveled and transportation demand programs.

New Lane Miles of Roads Built

New Lane miles of road is an indicator of infrastructure expansion as well as growth. Construction of new roadways typically corresponds to new development construction; however, there are exceptions for improved roadway circulation associated with existing development and congestion management. The following table represents the lane miles constructed and that have been accepted by the City:

Year	Residential Lane Miles	Collector Lane miles	Arterial Lane Miles	Total
2009	26.4	0	0.72	27.12
2010	9.8	0	0	9.8
2011	6.0	2.8	0	8.8
2012	4.3	0	0	4.3
Total	46.5	2.8	0.72	50.02

During the reporting period, the City added (accepted) primarily residential lane miles (46.5 miles) with a modest gain (2.8 miles) in collector roads and a minimal gain in new arterials (0.72 miles). All of the new lane miles added to the City resulted from annexations in the Dougherty Valley which would account for the emphasis on residential streets as well as the fact that the majority of the larger roadway infrastructure is already in place.

Vehicle Miles Traveled (VMT)

Per capita Vehicle Miles Traveled (VMT) can be an indicator of community balance as well as the land use, housing and transit options and preferences. The Metropolitan Transportation Commission (MTC) has developed a methodology that establishes an estimated per capita VMT standard based on simulations from the regional transportation model. While the modeling can provide insight into the regional transit patterns, it becomes less effective as a predictor of vehicle use and behavior when applied at the local level. The following table represents several of the per capita classifications that are modeled as part of the MTC VMT simulations (excluding commercial traffic) that are specific to San Ramon. Regional totals for the Bay Area are estimated to have decreased from 16.31 to 15.57 vehicle miles per person; however, there are many external factors that can influence such reductions including employment (unemployment rate), public transit use as well as

additional development within the urban cores (compact growth pattern). The dynamic and variable nature of traffic models, land use and individual behavior affect the ability of local policies to influence VMT rates and is difficult to quantify. The modeling does; however, provide insight into the nature of VMT trips based on the demographic profile, assets and needs (employment, housing, transit, etc.) of the community.

Year	VMT Live-in/Work-in (Per Capita)	VMT Live-in/Work-out (Per Capita)	VMT Live-out/Work-in (Per Capita)	VMT Regional Total (Per Capita)
2005	11.88	36.69	35.09	16.31
2010	12.96	38.49	49.07	15.57
	+1.08	+1.80	+13.98	-0.74

While the Regional VMT rate has gone down by 0.74 miles, locally San Ramon's VMT has increased, which is not entirely unexpected given the existing land use pattern and current development trend. The ongoing annexation of Dougherty Valley continues to add less dense (on average) residential uses, which tend to rely heavily on automobiles for daily needs. As such, one would expect the VMT per capita to continue to increase based on the current land use program, resident's needs and community demographics until such time as build-out of the Dougherty Valley is complete.

The Live-in/Work-in VMT analysis for San Ramon indicates an increase of approximately 1 mile per capita based on the available data. From a Regional perspective, this could be seen as a positive in that the increased miles are local rather than the regional transportation system; however, it still represents an increase in auto related use locally. From a policy perspective, it would support the need for a continued effort to improve local transit and land use connectivity as a means to reduce Live-in/Work-in or local VMT.

The Live-in/Work-out estimates have also increased which indicates that San Ramon continues to be a commuter source for the employment centers of the Central and South Bay Area. As additional employment opportunities are developed locally, the need for longer commutes to these remote employment centers will likely be reduced. The key to establishing these jobs locally is to continue to foster a job-base and employment opportunities that are consistent with the education, income and employment needs of San Ramon residents, while promoting an environment in which business can thrive. Providing this balance is consistent with the economic development and policy goals associated with build-out of the General Plan 2030.

The increase in the Live-out/Work-in VMT numbers supports the Jobs/Employment analysis and reinforces that San Ramon is still a job rich community. As with the goal of

balancing existing residential demographics with local jobs, providing a variety of housing options can make living close to employment a viable alternative to a long commute. The General Plan 2030 outlines local policies for the creation of workforce housing, which can contribute to the overall reductions of VMT through build-out policies of the General Plan.

The community VMT measures discussed above highlight the interrelated nature of transit, land use connectivity, job growth and housing which are all fundamental components of the General Plan and CAP. The General Plan goes beyond the individual components to provide a compressive vision for the future. The City Center, Crow Canyon Specific Plan and North Camino Ramon Specific Plan are all expressions of the General Plan vision. Implementation of these projects is a mechanism by which the community can achieve additional balance to some of the historic development patterns, stabilized or reduce current VMT community-wide, while ensuring that individuals have a variety of choices in meeting their housing, employment and transit needs. With additional modeling and as long-term VMT trends emerge, the City will be better able to assess the impacts of local policies of VMT rates as well as the need for future policy revisions.

Transportation Demand Management Program Participation

Transportation is the largest GHG generator in the City. Transportation Demand Management (TDM) policies coupled with land use strategies are designed to reduce automobile traffic in order to improve air quality and reduce traffic congestion. These TDM measures include public transit, telecommuting, compressed work-weeks, carpooling, vanpooling, walking, bicycling, and other incentives as alternatives to individuals driving alone. Through the reduction of automobile traffic and congestion there is an estimated decrease in average Vehicle Miles Traveled (VMT) for the community which results in a corresponding reduction in GHG generation for the community. The following is a summary of the TDM reports for 2006 and 2009 and will be updated as additional information is available.

Year	Bishop Ranch Report ¹		Southwest Contra Costa County Report ¹	
	Surveyed Employees Driving Alone	Surveyed Employees Taking Alternative Transportation	Surveyed Employees Driving Alone	Surveyed Employees Taking Alternative Transportation
2006	73.8%	26.2%	77%	23%
2009	63.8%	36.2%	73.7%	26.3%
% Change	10% Reduction	10% Increase	3.3 % Reduction	3.3% Increase

¹ Based on 2006 and 2009 triennial transportation surveys conducted by 511 Southwest Contra Costa County and JD Franz Research, Inc.

Bishop Ranch manages its own TDM programs and the Southwest Contra Costa County TDM program, which is a component of the Countywide 511 Contra Costa County Program, serves the balance of the City. The Tri-Annual reports for both Bishop Ranch and Southwest Contra Costa County show a decrease in employees driving alone with the corresponding increase in employees taking alternative transportation. Bishop Ranch's TDM program showed a 10% increase in the use of alternative transportation while the Southwest Contra Costa County 511 program shows a more modest 3.3% increase in the use of alternative transportation over the same time period.

In addition, the Tri-Annual reports also provided information about public transit use for both Bishop Ranch and the Southwest Contra Costa County 511 program.

Year	Surveyed Employees Taking Public Transportation ²	
	Bishop Ranch Report ¹	Southwest Contra Costa County Report ¹
2006	8.6%	5.9%
2009	15.6%	10.7%
% increase	7.0%	4.8%

¹ Based on 2006 and 2009 triennial transportation surveys conducted by 511 Southwest Contra Costa County and JD Franz Research, Inc.

² Taking public transportation in this category includes taking BART, bus and ACE train.

The surveys indicate a 7% increase in those employees utilizing public transportation as part of the Bishop Ranch report and a 4.8% increase for the Southwest Contra Costa County Report. In both cases the trend is for increased participation in TDM programs and use of public transportation. The continuation of this trend will reduce traffic congestion, reduce VMT rates for the community and result in local and regional GHG reductions.

City Fleet Vehicle Mix

The following table represents the current mix of the City owned vehicle. Approximately 71% of City vehicles are traditional gasoline fueled vehicles. The balance, approximately 29%, are alternative fuel vehicles such as Gas-Electric Hybrid, Clean Natural Gas or Bio Diesel vehicles.

Year	Gasoline	Hybrid	CNG	Diesel ¹	Totals
2012	78	5	13	14	110
Percent	70.9%	4.6%	11.8%	12.7%	100%
Total %	70.9%	29.1%			100%

¹ Diesel vehicles are utilizing bio-diesel fuels

While the specific GHG reductions associated with vehicle selection are not associated with the local GHG reductions, they are accounted for as part of the Statewide reduction strategies for vehicles on the road. To this end, the continued purchase, use and tracking of alternative fuel vehicles by the City represents a local efforts to support the Statewide reduction targets of AB 32.

Conservation

Conservation includes a variety of activities including specific energy reduction improvements associated with new and existing development, alternative energy production, solid waste reduction, and water conservation measures. Conservation efforts translate into energy savings through the re-use of resources thereby eliminating the need for new resources and the associated energy use that comes with the resource production and transport. Additionally, resource conservation results in the reduction in the transfer and disposal of resources, which is also quantifiable as energy savings.

Energy Use

In San Ramon, energy use is the second largest generator of GHG behind transportation. The following table represents percent increase or decrease of energy use for the Residential and Non-Residential sectors of the City year after year based on available PG&E Data. Energy information for the 2012 reporting period was not available at the time of this report and will be addressed in future CAP reports.

Year	Residential (average per household)		Non Residential (service agreements)	
	Electricity (kwh)	Natural Gas (therms)	Electricity (kwh)	Natural Gas (therms)
2009	0.5%	3.7%	-4.6%	-2.7%
2010	-2.6%	2.1%	-3.1%	-0.7%
2011	-0.9%	6.4%	-2.3%	1.1%
Total	-3.0%	12.2%	-10.0%	-2.3%

Overall, the average electrical use for residential and non-residential use is lower by a combined 13% while the average combined rate of nature gas use shows an increase of 9.9%. Many factors can affect the energy use trends such as weather (heating and cooling), price of commodities (natural gas), alternative energy (solar) and more efficient energy use such as equipment upgrades and more stringent energy requirements for new and existing development. While 3 years is not adequate to establish a significant trend, the data available would suggest that the overall average energy use within the City is trending down which would be expected to help achieve GHG reduction targets.

Solar Power Permits

The City issues building permits for solar power installation on both residential and commercial applications. As a clean energy source, solar panels supplement local power supplies and reduce the use of energy from the local electrical service provider. Local energy production has multiple benefits in that solar is often a cleaner energy source (less GHG generation) than what is obtained from the commercial provider and that the energy and costs associated with transmittal is also reduced. The following table represents local solar permits for residential and commercial installations that have been completed as well as those that are issued and still pending final completion during the review period.

Year	Residential (KW)		Commercial (KW)		Total (KW)
	Built	Pending	Built	Pending	
2011 ¹	64.6	--	--	--	64.6
2012	388.4	218.6	--	69	676
Total	453	218.6	--	69	740.6

¹ The 2011 data represents 3 months data only (Oct – Dec)

Note: The table does not include school site installations that are part of Special Districts and not subject to local permit procedures

During the review period, the City issues building permits for 64.6 KWs of local solar power in the final 3 months of 2011. In the 2012 reporting period the City issued permits for a total of 676 KWs of residential and commercial solar power installations of which 388.4 KW have been completed.

Staff has identified improving the Solar permit tracking and reporting process as an action item for the upcoming reporting period.

City Initiated Energy Reductions (LED Fixture Replacement)

City owned and operated streetlights and public facility lighting represent a significant amount of the City's energy use. The conversion of conventional light fixtures to low energy LED technology is a proven way to reduce cost, energy use, and GHG emissions associated with energy production.

During the reporting period, the City converted approximately 5,167 light fixture to LED technology. The conversion represents an annual energy savings of 1,949,279 kWh which is an 57.1% improvement over the prior energy use for those lighting sources. The following table represents energy savings from the City initiated fixture replacement projects.

Year	Replacement Fixtures ²	Annual Baseline Energy Use (kWh)	Annual LED energy use (kWh)	Annual Energy Savings(kWh)	% reduction
2011	596	426,787	175,147	251,640	59.0%
2012 ¹	4,571	2,986,385	1,288,746	1,697,639	56.9%
Total	5167	3,413,172	1,463,893	1,949,279	57.1%

¹ Completion of the LED conversions initiated in 2012 are expected to be completed in early 2013

² The LED conversions do not include the PG&E owned light standards

Reclaimed Water Usage

The use of reclaimed water provides many benefits. The energy use associated with the treatment and pumping of water is the primary GHG generator associated with both potable and non-potable water use. The benefit of reclaimed water is that it significantly reduces water demand and storage requirements by offsetting the need to utilize treated potable water where it is not required. Application of reclaimed water is typical for water features and landscape areas such as greenbelts, golf courses and roadway medians. Additional benefits of reclaimed water is that it is typically not transmitted as far and is not treated to a potable water standard which results in additional energy savings. The following table represents the reclaimed water use for the reporting period for both East Bay Municipal Water District (EBMUD) and Dublin San Ramon Services District (DSRSD).

Year	EBMUD Meters (MG)	DSRSD Meters (MG)	Total Recycled Water Usage in San Ramon (MG)	Percent change
2008	201	296	497	Baseline
2009	111	313	424	-14.7%
2010	158	280	438	3.3%
2011	192	280	472	7.8%
2012	223 ¹	313	536	13.6%
Totals	684	1,186	1,870	10%

¹Data reported thru October 2012

Source: The EBMUD data is from DSRSD RW Standard Water Audit, Stan Kolodize 11/28/2012
The DSRSD data is from DSRSD Recycled Water Sales 2003-2012, Stan Kolodize 1/22/2013

Overall the use of recycled water has increased over the reporting period although there is a certain amount of variation in water used that can be attributed to weather patterns and the need to irrigate specific landscape areas throughout the year. There was a significant drop in EBMUD reclaimed water use in 2009 due to end user irrigation system problems,

which caused a switch from recycled water to potable water for several weeks during the summer. Regardless of the water use fluctuations, the use of reclaimed water use has increased by approximately 10% over the 2009-2012 reporting period.

Model Water Efficient Landscape Ordinance

The Model Water efficient Landscape Ordinance (MWELO) is a set of landscape requirements, developed by the California Department of Water Resources, which is applicable to most large new and rehabilitated landscapes. The Ordinance contains a methodology for establishing a water budget approach based on a Maximum Applied Water Allowance. The estimated total water usage for a proposed project is based on the water needs of the plant materials and may not exceed the Maximum Applied Water Allowance. As with the use of reclaimed water, water conservation translates into energy savings and a corresponding reduction in GHGs. The following table represents the average MWELO reductions for projects in the City for 2011 and 2012 for which permits were issued. MWELO data was not tracked for the 2009 and 2010 reporting period.

Year	Landscape Acres	Maximum Applied Water Allowance (Gal/Yr)	Estimated Total Water Use (Gal/Yr)	Estimated Water Savings (Gal/Yr)	Percent Reduction Above Water Allowance
2009	--	--	--	--	--
2010	--	--	--	--	--
2011	4.01	3,453,980	2,656,531	797,449	23.09%
2012	2.39	2,875,241	1,471,966	1,403,275	48.81%
Total	6.40	6,329,221	4,128,497	2,200,724	34.77%
Note: Includes the Bollinger Canyon Road turf conversion (29% water savings over existing conditions)					

During 2011 and 2012 the City issued permits for approximately 6.40 acres of landscape area the was subject to the MWELO standards. Based on the water budget calculations those projects represent a savings of 2,200,724 gallons of water (34.77% reduction) when compared to the allowable water use under the MWELO standards. While not representative of landscape water use in the City as a whole, these landscape projects collectively exceeded the 20% target for water reduction outline in the CAP and represent a water reduction trend for new landscape development.

Staff has identified improving the MWELO project tracking and reporting process as an action item for the upcoming reporting period.

San Ramon Waste Reduction

Solid waste generated by residents, employees, and visitors in the City are sent to a landfill outside of the City, where the trash produces GHG emissions from both the transport and decomposition process. Increasing waste diversion from landfills and recycling materials will significantly reduce greenhouse gas emissions. Furthermore, reuse of composted organic materials provides additional benefits by diverting more waste from the landfill and turning them into marketable products will reduce greenhouse gas emissions associated with the manufacture of new products and the methane (CH₄) emissions that would be produced from that waste in landfills. The following table represents per capita waste disposal for City residents and employees over the reporting period.

Year	Total Disposal/ Population (Lbs Per Day)	Total Disposal/Employment (Lbs Per Day)
2008	3.6	6.3
2009	3.3	6.3
2010	2.8	6.2
2011	2.7	5.6
50% Diversion Rate	5.7 pounds per resident per day to meet State standards	8.2 pounds per employee per day to meet State standards
Source: Jurisdiction Diversion/Disposal Rate Summary (www.calrecycle.ca.gov)		

The amount of waste that San Ramon has been disposing of in landfills decreased over the reporting period from 40,413 tons in 2008 to 36,032 in 2011. Disposal has decreased even though the City's population has increased. This is likely due in part to the recession and its impact upon commercial and construction waste generation, in addition to the effectiveness of San Ramon's recycling programs. San Ramon continues to make progress toward a theoretical zero waste community.

SUMMARY AND FUTURE ACTIONS

The CAP strategies, compliance activities and tracking continue to evolve as the City learns more and finds better ways to achieve and document GHG reduction goals. While the CAP strategy relies heavily on new development as a means to achieve GHG reduction goals, the City continues to pursue opportunities to capture GHG reductions associated with existing development and City programs. The next significant update to the City GHG inventory is anticipated to occur concurrently with the General Plan 2035 update. Until such time, the following short term action items represent the current needs for the CAP program.

Short-Term Actions

- Continue to review new development application for compliance with the policies of the CAP
- Improve T-24 Energy savings tracking.
- Improve MWELo water savings tracking.
- Improve communication and CAP program tracking between City Departments.
- Develop and implement a webpage with graywater information as well as other CAP related resources.

Long-Term Actions

Long-term milestones (approximately every 5 years) include the following actions:

- Review land use and transportation data collected from the previous 5 years for comparison with regional transportation goals.
- Analyze completed projects to determine if the CAP targets are being achieved and propose revisions or additional programs if needed.
- Update the CAP to reflect changes in state regulations and necessary CAP program revisions.