



AGENDA

SAN RAFAEL CITY COUNCIL - TUESDAY, SEPTEMBER 5, 2023

REGULAR MEETING AT 7:00 P.M.

In-Person:

San Rafael City Council Chambers
1400 Fifth Avenue, San Rafael, CA 94901

Participate Virtually:

Watch on Zoom Webinar: <https://tinyurl.com/cc-2023-09-05>

Watch on YouTube: www.youtube.com/cityofsanrafael

Listen by phone: (669) 444-9171

ID: 844-3204-9611

One Tap Mobile: +16694449171,,84432049611# US

This meeting will be held in-person. The public may attend in-person or participate virtually using Zoom. This meeting is being streamed to YouTube at www.youtube.com/cityofsanrafael.

How to participate in the meeting virtually:

- Submit public comment in writing before 4:00 p.m. the day of the meeting to city.clerk@cityofsanrafael.org.
- Join the Zoom webinar and use the 'raise hand' feature to provide verbal public comment.
- Dial-in to Zoom's telephone number using the meeting ID and press *9 to raise your hand, and *6 to unmute yourself, then provide verbal public comment.

If you experience technical difficulties during the meeting, please contact city.clerk@cityofsanrafael.org.

OPEN SESSION – THIRD FLOOR CONFERENCE ROOM – 6:00 PM

Dial-in: (669) 900-9128, Meeting ID# 812-7652-1604

1. Mayor Kate to announce Closed Session items.

CLOSED SESSION – THIRD FLOOR CONFERENCE ROOM – 6:00 PM

2. Closed Session:

- a. CONFERENCE WITH REAL PROPERTY NEGOTIATORS

Property: 519 Fourth Street, San Rafael (APN 014-123-06)

Lead Negotiator: Jerry Ramiza, Burke, Williams and Sorensen

Agency Representatives: Cristine Alilovich, John Stefanski, Micah Hinkle, Alicia Guidice, Chris Hess

Negotiating parties: Seagull Prime Real Estate Fund and CRC Development LLC

Under negotiation: Price and terms of sale

OPEN TIME FOR PUBLIC EXPRESSION

The public is welcome to address the City Council at this time on matters not on the agenda that are within its jurisdiction. Please be advised that pursuant to Government Code Section 54954.2, the City Council is not permitted to discuss or take action on any matter not on the agenda unless it determines that an emergency exists, or that there is a need to take immediate action which arose following posting of the agenda. Comments may be no longer than two minutes and should be respectful to the community.

CITY MANAGER AND COUNCILMEMBER REPORTS:

(including AB 1234 Reports on Meetings and Conferences Attended at City Expense)

3. City Manager and Councilmember Reports:

CONSENT CALENDAR:

The opportunity for public comment on consent calendar items will occur prior to the City Council's vote on the Consent Calendar. The City Council may approve the entire consent calendar with one action. In the alternative, items on the Consent Calendar may be removed by any City Council or staff member, for separate discussion and vote.

4. Consent Calendar Items:

a. **Approval of Minutes**

Approve Minutes of the Regular City Council Meeting of August 21, 2023 (CC)

Recommended Action - Approve minutes as submitted

b. **North San Rafael Pavement Maintenance Project**

Award the Construction Agreement for the North San Rafael Pavement Maintenance Project to VSS International, Inc. in the Amount of \$1,035,522 (PW)

Recommended Action - Award the construction agreement for the North San Rafael Pavement Maintenance Project to VSS International, Inc. in the amount of \$1,035,522; authorize the City Manager to execute the construction agreement; and appropriate \$1,190,000 for the agreement, including contingency funds of \$154,478, from the Gas Tax Fund (206)

SPECIAL PRESENTATIONS:

5. Special Presentations:

a. **Proclamation Supporting National Suicide Prevention and Awareness Month (HR)**

b. **Proclamation Supporting Hispanic Heritage Month (HR)**

c. **Proclamation Supporting National Preparedness Month (FD)**

OTHER AGENDA ITEMS:

6. Other Agenda Items:

a. **Greenhouse Gas Emissions Report and Climate Action Priorities Update**

i. San Rafael Greenhouse Gas Inventory Report (CM)

Recommended Action - Accept report

ii. 2023-2025 Two-Year Workplan Priorities Report (CM)

Recommended Action - Accept report

b. **Electric Vehicle Strategy**

Marin Countywide Electric Vehicle Acceleration Strategy and City of San Rafael Draft Workplan (CM)

Recommended Action - Accept report and provide feedback on the City of San Rafael's Electric Vehicle Acceleration Strategy Draft Workplan

SAN RAFAEL SUCCESSOR AGENCY:

1. Consent Calendar: - None.

ADJOURNMENT:

Any records relating to an agenda item, received by a majority or more of the Council less than 72 hours before the meeting, shall be available for inspection online and at City Hall, 1400 Fifth Avenue, and placed with other agenda-related materials on the table in front of the Council Chamber prior to the meeting. Sign Language interpreters may be requested by calling (415) 485-3066 (voice), emailing city.clerk@cityofsanrafael.org or using the California Telecommunications Relay Service by dialing "711", at least 72 hours in advance of the meeting. Copies of documents are available in accessible formats upon request. To request Spanish language interpretation, please submit an online form at <https://www.cityofsanrafael.org/request-for-interpretation/>.



AGENDA

SAN RAFAEL CITY COUNCIL - MONDAY, AUGUST 21, 2023

REGULAR MEETING AT 7:00 P.M.

In-Person:

San Rafael City Council Chambers
1400 Fifth Avenue, San Rafael, CA 94901

Participate Virtually:

Watch on Zoom Webinar: <https://tinyurl.com/cc-2023-08-21>

Watch on YouTube: www.youtube.com/cityofsanrafael

Listen by phone: (669) 444-9171

ID: 860-6190-5675

One Tap Mobile: +16694449171,,86061905675# US

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OPEN SESSION - THIRD FLOOR CONFERENCE ROOM - 5:30 PM

Dial-in: (669) 900-9128, Meeting ID# 820-2978-5066#

1. Mayor Kate to announce Closed Session items.

CLOSED SESSION - THIRD FLOOR CONFERENCE ROOM - 5:30 PM

2. Closed Session:

- a. CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION

Government Code section 54956.9(d)(1): 2 cases

1. *Shaleeta Boyd, et al. v. City of San Rafael, et al.* (U.S. District Court, N.D. Cal., Case No. 23-cv-04085-EMC)
2. *Mark Rivera v. City of San Rafael, et al.* (U.S. District Court, N.D. Cal., Case No. 23-cv-03804-YGR)

Present: Councilmember Bushey
Councilmember Hill
Councilmember Kertz
Mayor Pro Tem Llorens Gulati

Absent: Mayor Kate

Also Present: City Manager Cristine Alilovich
City Attorney Robert Epstein
City Clerk Lindsay Lara

Mayor Pro Tem Llorens Gulati called the meeting to order at 7:04 p.m. and invited City Clerk Lindsay Lara to call the roll. All members of the City Council were present, except for Mayor Kate.

City Attorney Robert Epstein announced that no reportable action was taken at the closed session held before the meeting or at the closed session held on July 27, 2023.

Mayor Pro Tem Llorens Gulati provided opening remarks, which included a land acknowledgment.

City Clerk Lindsay Lara announced the process for Spanish interpretation for the evening. She informed the community that the in-person meeting would also be recorded and streamed live to YouTube and through Zoom, and members of the public would provide public comment either on the telephone or through Zoom. She explained the process for community participation on the telephone, through Zoom and in-person.

OPEN TIME FOR PUBLIC EXPRESSION

- Kevin addressed the City Council regarding homelessness.
- Stephen Gates addressed the City Council regarding parking on Robert Dollar Drive.
- Elizabeth Braunstein addressed the City Council regarding theft and threatening, inappropriate behaviors in the parking lots of Bayview Business Park, near Target and Home Depot.
- Chris Brown addressed the City Council regarding Ordinance 2030 and camping restrictions.
- Carey MacCarthy addressed the City Council regarding a noise complaint.
- Marina Palma addressed the City Council regarding prostitution in the Canal neighborhood.
- Aurelia Vargas addressed the City Council regarding prostitution in the Canal neighborhood.
- Darlin Ruiz addressed the City Council regarding prostitution in the Canal neighborhood.
- Veronica Duarte addressed the City Council regarding prostitution in the Canal neighborhood.
- Eva Calderon addressed the City Council regarding prostitution in the Canal neighborhood.
- Eva Chrysanthe addressed the City Council regarding the death of Jimmy Sanders.

CITY MANAGER AND COUNCILMEMBER REPORTS:

(including AB 1234 Reports on Meetings and Conferences Attended at City Expense)

3. City Manager and Councilmember Reports:

City Manager Cristine Alilovich:

- Introduced and welcomed the new Assistant City Manager, John Stefanski
- Invited City Attorney Robert Epstein to comment on camping ordinances and the Martin v. Boise case law
- Announced National Fentanyl Prevention & Awareness Day
- Police Advisory and Accountability Committee (PAAC) Community Outreach Update
 - PAAC Open Houses with City Councilmembers and Staff
 - Open House at B Street Community Center with Councilmember Hill, to be held Friday, August 25, 12-6pm
 - Open House at Al Boro Community Center with Vice Mayor Llorens Gulati, to be held Wednesday, August 30, 12-6pm
- Marin Wildfire Prevention Authority to host a tour/hike event on San Rafael/San Anselmo Fuel Reduction Zone Project Tuesday, August 29, 10-noon, meet at end of Ridgewood Drive
- Movies in the Park Update

- Gerstle Park featuring Puss in Boots, to be held Friday, August 25. Event starts at 5pm and movie to start 15 minutes after sunset

City Councilmember Reports:

- Councilmember Bushey reported on a meeting with Supervisor Sackett and discussed a bridge/causeway on China Camp Road, met with the Loch Lomond Oversight Committee to discuss temporary structures on the site and getting the playground re-opened, met with San Rafael Sanitation District Board and discussed review and revisions to policy concerning reserves, met with the Marin Transit Board and discussed acquisition of a site and attended a Water Managers meeting and discussed water supply.
- Councilmember Hill announced his Police Advisory and Accountability Committee Open House to be held Friday, August 25, 12-6pm in City Council Chambers. He will attend from 1:30 – 3pm.
- Councilmember Kertz reported that the Northgate Design Review Board (DRB) meeting has moved from August 22 to September 6, gave an Age Friendly San Rafael update, attended National Night Out and thanked the police department, reported on the Homeless Policy Steering Committee, met with Supervisor Sackett to discuss a new facility on 30 Joeseph Court for additional housing services for people experiencing homelessness, reported on a Marin Wildfire Prevention Authority (MWPA) meeting discussing what to learn from Maui and was appointed as Vice President of MWPA. She will attend the field trip for the San Rafael/San Anselmo Fuel Reduction Zone Project event.
- Mayor Pro Tem Llorens Gulati reported on Marin Clean Energy and discussed conserving energy from 4-9pm, attended ribbon-cuttings at the AC Marriot Hotel and the new Marin Mazda dealership, attended a quarterly meeting with Supervisor Dennis Rodoni to talk about their shared district and attended a Voces del Canal fundraiser.

Mayor Kate invited public comment.

Speaker: Al Vetere, Name withheld, Name withheld

CONSENT CALENDAR:

Mayor Pro Tem Llorens Gulati invited public comment.

Speakers: Annika Osborn, Sustainable San Rafael, Craig Yates, Name withheld, Phillip Mooney, Eva Chrysanthe, Sue Saunders

Staff responded to public comment.

Councilmember Bushey moved and Councilmember Hill seconded to approve the Consent Calendar.

4. Consent Calendar Items:

a. **Approval of Minutes**

Approve Minutes of the Regular City Council Meeting of July 17, 2023 (CC)

Approved minutes as submitted

b. **Designation of Voting Delegate for the League of California Cities Annual Conference & Expo**

Designation of Councilmember Eli Hill as Voting Delegate for the 2023 League of California Cities Annual Conference & Expo in Sacramento – September 20-22, 2023 (CC)
Approved designation of Councilmember Eli Hill as voting delegate

- c. **Legal Services Contract**
Professional Services Agreement with Burke, Williams & Sorensen, LLP for General Municipal Legal Services, in an Amount not to Exceed \$170,000 (CA)
Authorized the City Manager to execute the agreement
- d. **Transportation Authority of Marin (TAM) Fee Agreement**
Resolution Authorizing the City Manager to Execute a Fee Agreement Between the Transportation Authority of Marin (TAM) and Marin County, Towns and Cities (CM)
Resolution 15245 - Resolution Authorizing the City Manager to Execute a Fee Agreement Between the Transportation Authority of Marin (TAM) and Marin County, Towns and Cities
- e. **SEIU Local 1021 Side Letter Agreement and FY 2023-24 Authorized Positions in the Childcare Program**
Resolution Approving the Side Letter Agreement and Amending FY 2023-24 Authorized Positions in the Childcare Program (HR/LR)
Resolution 15246 - Resolution Approving the Side Letter Agreement and Amending FY 2023-24 Authorized Positions in the Childcare Program
- f. **Special Event Street Closures**
Resolution Authorizing the Temporary Closure of Streets for Two Special Events (PD)
Resolution 15247 - Resolution Authorizing the Temporary Closure of Streets for Two Special Events
- g. **Southern Heights/Courtright/Pearce Retaining Walls Project**
Award the Construction Agreement for the Southern Heights/Courtright/Pearce Retaining Walls Project to Valentine Corporation in the Amount of \$993,369 (PW)
Authorized the City Manager to award and execute the agreement
- h. **Grand Avenue Cycle Track Project and Grant Funding Agreements**
 - i. **Award the Construction Agreement for the Grand Avenue Cycle Track Project to Ghilotti Bros., Inc. in the Amount of \$1,432,887 (PW)**
Authorized the City Manager to award and execute the agreement
 - ii. **Resolution Approving and Authorizing the City Manager to Execute a Master Agreement and Program Supplement Agreement with Caltrans to Receive State Funds (PW)**
Resolution 15248 - Resolution Approving and Authorizing the City Manager to Execute a Master Agreement and Program Supplement Agreement with Caltrans to Receive State Funds
- i. **Rotary Manor Culvert Replacement Project**
Authorize the City Manager to Negotiate and Enter into a Professional Services Agreement with Coastland Civil Engineering, Inc. for Construction Management, Inspections, Testing, and Environmental Compliance Services Related to the Rotary Manor Culvert Replacement Project, in the Amount of \$335,035 (PW)
Authorized the City Manager to execute the agreement

- j. **Fleet Replacement Fiscal Year 2023-24**
Authorize City Manager to Purchase Ten (10) Vehicles for Replacement, in an Amount Not to Exceed \$2,554,150 (PW)
Authorized City Manager to purchase ten (10) vehicles for replacement, in an amount not to exceed \$2,554,150

AYES: Councilmembers: Bushey, Hill, Kertz & Mayor Pro Tem Llorens Gulati
NOES: Councilmembers: None
ABSENT: Councilmembers: Mayor Kate

PUBLIC HEARINGS

5. Public Hearings:

- a. [Tax Equity and Fiscal Responsibility Act of 1982 “TEFRA” Public Hearing for Tax-Exempt Financing – The Shining Star Foundation](#)
Resolution Approving Issuance of Revenue Obligations by the California Enterprise Development Authority (CEDA) for the Purpose of Financing, Refinancing and/or Reimbursing the Cost of Acquisition, Construction, Installation, Equipping and Furnishing of Certain Facilities for the Benefit of the Shining Star Foundation and Other Matters Relating Thereto Herein Specified Pursuant to the Tax Equity and Fiscal Responsibility Act of 1982 (“TEFRA”) (ED)

Micah Hinkle, Economic Development Director presented the staff report.

Staff responded to questions from the City Council.

Mayor Pro Tem Llorens Gulati opened the public hearing.

Speaker: None

Councilmembers provided comments.

Councilmember Bushey moved and Councilmember Kertz seconded to adopt the resolution.

AYES: Councilmembers: Bushey, Hill, Kertz & Mayor Pro Tem Llorens Gulati
NOES: Councilmembers: None
ABSENT: Councilmembers: Mayor Kate

Resolution 15249 - Resolution Approving Issuance of Revenue Obligations by the California Enterprise Development Authority (CEDA) for the Purpose of Financing, Refinancing and/or Reimbursing the Cost of Acquisition, Construction, Installation, Equipping and Furnishing of Certain Facilities for the Benefit of the Shining Star Foundation and Other Matters Relating Thereto Herein Specified Pursuant to the Tax Equity and Fiscal Responsibility Act of 1982 (“TEFRA”)

OTHER AGENDA ITEMS:

6. Other Agenda Items:

- a. [Response to Grand Jury Report – Build More ADUs – An Rx to Increase Marin’s Housing Supply](#)

Resolution Approving and Authorizing the Mayor to Execute the Response to the Marin County Civil Grand Jury Report Entitled – Build More ADUs – An Rx to Increase Marin’s Housing Supply (CD)

Alexis Captanian, Housing Program Analyst presented the staff report.

Mayor Pro Tem Llorens Gulati invited public comment.

Speakers: Bill Carney, Sustainable San Rafael, Matt Butler, Eva Chrysanthe

Councilmembers provided comments.

Councilmember Bushey moved and Councilmember Kertz seconded to adopt the resolution.

AYES: Councilmembers: Bushey, Hill, Kertz & Mayor Pro Tem Llorens Gulati
NOES: Councilmembers: None
ABSENT: Councilmembers: Mayor Kate

Resolution 15250 - Resolution Approving and Authorizing the Mayor to Execute the Response to the Marin County Civil Grand Jury Report Entitled – Build More ADUs – An Rx to Increase Marin’s Housing Supply

b. **[Automated License Plate Readers](#)**

Authorize the City Manager to Execute an Agreement with Flock Group Inc. for the Lease and Installation of Nineteen Flock Automated License Plate Reader Cameras (ALPR) for a 24-Month Term in an Amount Not to Exceed \$118,200 (PD)

David Spiller, Chief of Police introduced Lt. Scott Eberle who presented the staff report along with Hector Soliman-Valdez, Flock Safety representative.

Staff responded to questions from the City Council.

Mayor Pro Tem Llorens Gulati invited public comment.

Speakers: Name withheld, Al Vetere, Robert Chatham, Veronica Duarte, Vicky Tenorio, Voces del Canal, Anabel Vicente, Cruz Vargas, Voces del Canal, Darlin Ruiz, Marina Palma, Voces del Canal, Aurelia Vargas, Voces del Canal, Zoila Rios, Voces del Canal, Eva Chrysanthe

Staff responded to public comment.

Councilmembers provided comments.

City Attorney Robert Epstein suggested a modification to the motion to authorize the City Manager to enter into an agreement in a form that the City Attorney can approve following negotiations with Flock Safety.

Councilmember Kertz moved and Councilmember Hill seconded to authorize the City Manager to execute an agreement with the Flock Group Inc. for the lease and installation of nineteen Flock automated license plate reader cameras (ALPR) for a 24-month term in

an amount not to exceed \$118,200, with the direction that the City Attorney were to amend the language with Flock's council.

AYES: Councilmembers: Bushey, Hill, Kertz & Mayor Pro Tem Llorens Gulati
NOES: Councilmembers: None
ABSENT: Councilmembers: Mayor Kate

Authorized the City Manager to execute the agreement

SAN RAFAEL SUCCESSOR AGENCY:

1. Consent Calendar: - None.

ADJOURNMENT:

Mayor Pro Tem Llorens Gulati adjourned the meeting at 10:15 p.m.

LINDSAY LARA, City Clerk

APPROVED THIS ____ DAY OF _____, 2023

KATE COLIN, Mayor

DRAFT



SAN RAFAEL CITY COUNCIL AGENDA REPORT

Department: Public Works

Prepared by: Sage Crosby, Junior Engineer
April Miller, Public Works Director

City Manager Approval: 

File No.: 16.06.98

TOPIC: NORTH SAN RAFAEL PAVEMENT MAINTENANCE PROJECT

SUBJECT: AWARD THE CONSTRUCTION AGREEMENT FOR THE NORTH SAN RAFAEL PAVEMENT MAINTENANCE PROJECT TO VSS INTERNATIONAL, INC. IN THE AMOUNT OF \$1,035,522

RECOMMENDATION:

1. Award the construction agreement for the North San Rafael Pavement Maintenance Project to VSS International, Inc. in the amount of \$1,035,522.
2. Authorize the City Manager to execute the construction agreement.
3. Appropriate \$1,190,000 for the agreement, including contingency funds of \$154,478, from the Gas Tax Fund (206).

BACKGROUND: The City's annual pavement management program (PMP) provides vital updates to the City's 331-lane mile network. One of the most important aspects of managing a road network is a continual investment toward preserving recently rehabilitated roads. These types of preservation projects represent relatively low-cost improvements that prolong the effective life of roadways in good condition. The City utilizes the industry standard Pavement Condition Index (PCI) system to identify streets needing preventative maintenance and then conducts field investigations to analyze conditions. Additionally, the City intentionally applies an equity lens to ensure that pavement conditions are being improved in all neighborhoods, across the City on an annual basis.

In 2022, the City completed both the FY 2021-22 and FY 2022-23 slurry seal projects. The FY 2021-22 slurry seal project focused on roadways in the Glenwood, Loch Lomond, and Dominican neighborhoods. The FY 2022-23 slurry seal project focused on the Bret Harte and Canal neighborhoods as well as portions of Fourth Street and C Street downtown. The two pavement preservation projects resurfaced over twenty miles of roadway in total with 330,000+ square yards of slurry seal and included restriping of pavement markings.

For FY 2023-24, the proposed project is a pavement maintenance project that includes crack sealing, slurry sealing, fiberized micro-surfacing, and the installation of new traffic striping, crosswalks, and legends to the current standards for the streets shown in Attachment 1, which includes streets in the Terra Linda neighborhood.

FOR CITY CLERK ONLY

Council Meeting:

Disposition:

Additional slurry sealing will take place on Treehaven Drive and Culloden Road at the locations shown in Attachment #2 to restore the roadways following the trenching work by the Marin Municipal Water District (MMWD) for the District Pipeline Replacement Project. MMWD has a reimbursement agreement with the City of San Rafael to cover the construction cost to slurry seal the portion of the roadway impacted by the trenching operations.

ANALYSIS: On August 2, 2023, the project was advertised in accordance with San Rafael Municipal Code Chapter 11.50. On August 18, 2023, the following bids were received and read aloud:

Business	Bid Total
VSS International, Inc.	\$1,035,522.00
Dryco Construction, Inc.	\$1,051,786.90
Pavement Coatings Co.	\$1,064,269.00

Public Works staff reviewed the construction bids, and the low bid from VSS International, Inc. of \$1,035,522 was found to be both responsive and responsible.

City staff recommends awarding the construction agreement to VSS International, Inc. for the bid amount and recommends the City Council authorize a construction contingency of \$154,478, approximately fifteen percent, for a total appropriated amount of \$1,190,000. The Public Works Director would be authorized to issue any change order to the contract within the total contingency amount. The construction agreement will be in a form approved by the City Attorney.

PUBLIC OUTREACH: In July 2023, staff worked with consultant, Unico Engineering, to develop the list of roadways under consideration for slurry sealing or micro-surfacing and notified utility companies of the project. These utility coordination efforts will minimize the need for repairs within the limits of the newly resurfaced roadways. A mailer will be sent to residents within the project limits describing the project and its impacts, along with an FAQ about the City's annual pavement management program and the proposed roadway treatments. In addition, staff posted updates on the Department of Public Works news blogs and updated the City's Pavement Management Program website.

ENVIRONMENTAL DETERMINATION: In August 2023, a notice of exemption (NOE) was filed with Marin County for the FY 2023-24 Pavement Maintenance Project for categorical exemption based on existing facilities (§15301).

FISCAL IMPACT:

The recommendation included in this staff report would authorize expenditures not-to-exceed \$1,190,000 in support of the North San Rafael Pavement Maintenance Project (Project No. 11432). A corresponding budget amendment is required to appropriate available Gas Tax Fund (206) resources to support this contact cost.

OPTIONS:

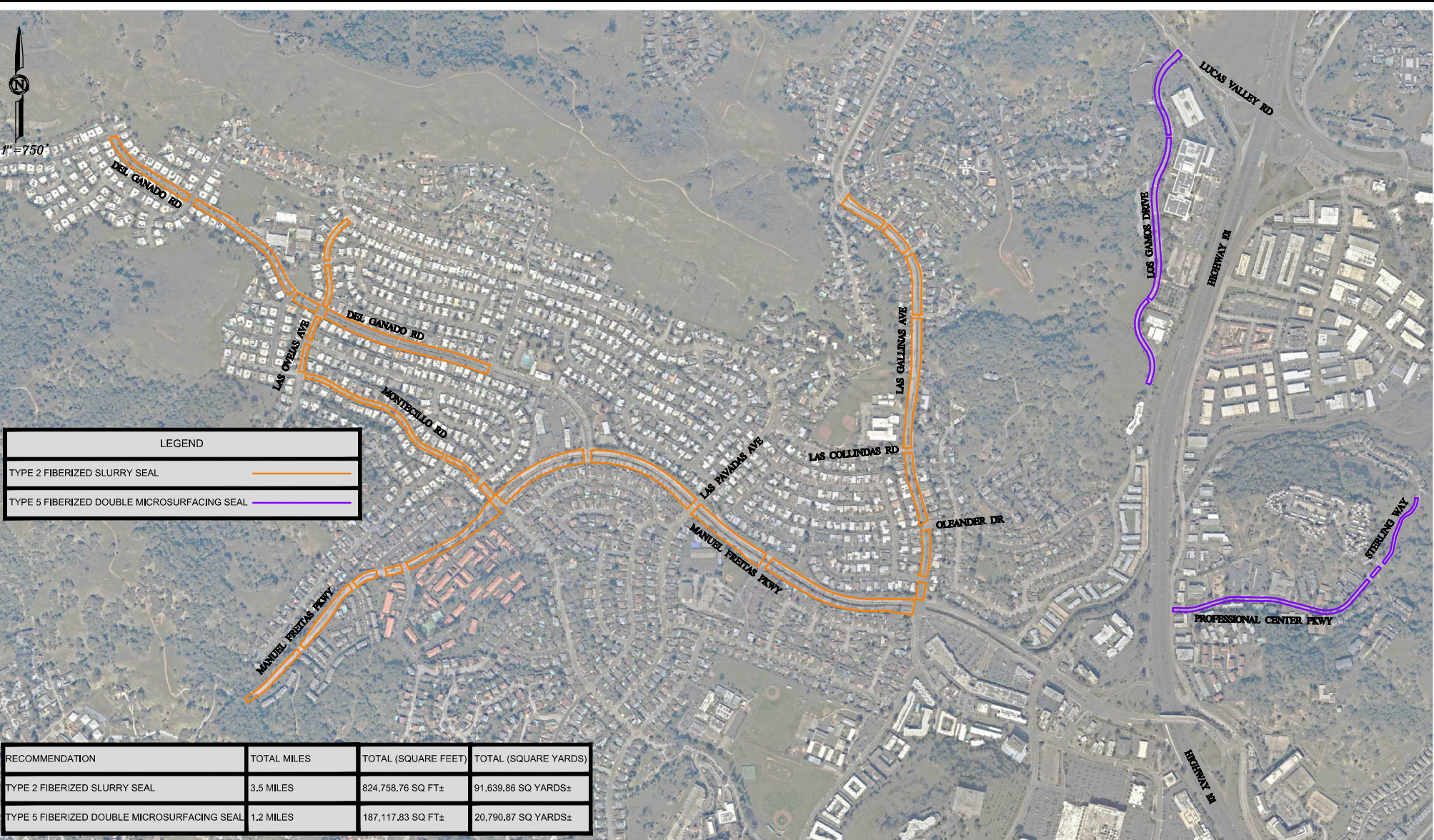
1. Award the contract as recommended.
2. Do not award the contract and direct staff to rebid the project. If this option is chosen, rebidding will delay construction by approximately six months.
3. Do not award the contract and provide direction to staff.

RECOMMENDED ACTION:

1. Award the construction agreement for the North San Rafael Pavement Maintenance Project to VSS International, Inc. in the amount of \$1,035,522.
2. Authorize the City Manager to execute the construction agreement.
3. Appropriate \$1,190,000 for the agreement, including contingency funds of \$154,478, from the Gas Tax Fund (206).

ATTACHMENTS:

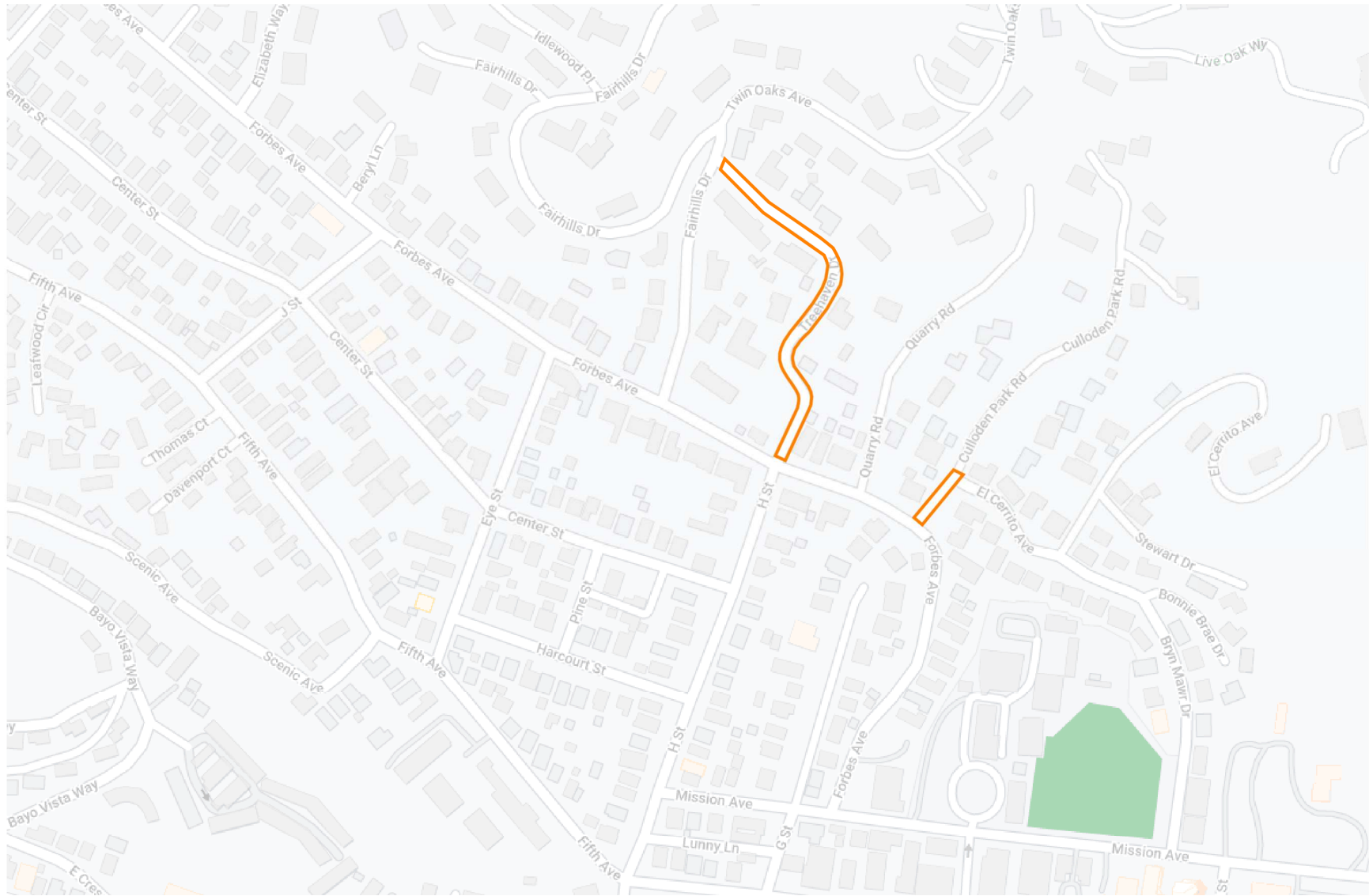
1. Map of Terra Linda streets
2. Map of Treehaven Drive and Culloden Park Road



LEGEND	
TYPE 2 FIBERIZED SLURRY SEAL	
TYPE 5 FIBERIZED DOUBLE MICROSURFACING SEAL	

RECOMMENDATION	TOTAL MILES	TOTAL (SQUARE FEET)	TOTAL (SQUARE YARDS)
TYPE 2 FIBERIZED SLURRY SEAL	3.5 MILES	824,758.76 SQ FT±	91,639.86 SQ YARDS±
TYPE 5 FIBERIZED DOUBLE MICROSURFACING SEAL	1.2 MILES	187,117.83 SQ FT±	20,790.87 SQ YARDS±





TYPE 2 FIBERIZED SLURRY SEAL ———

City of San Rafael
Proclamation in Recognition of
Suicide Prevention Month, September 2023

WHEREAS, the month of September is recognized as National Suicide Prevention Month, and throughout the month, mental health advocates, prevention organizations, survivors, allies, and community members unite to promote and raise awareness surrounding suicide prevention resources available in the community; and

WHEREAS, suicide is a national and statewide public health problem, and suicidal thoughts can affect anyone regardless of age, race, gender, orientation, financial situation, religion and background, or any other factors; and

WHEREAS, suicide remains a leading cause of death in the United States and the 2nd leading cause of death among individuals between the ages of 10 to 34; and

WHEREAS, over 90% of the people who die by suicide have a diagnosable and treatable mental health condition, although often that condition is not recognized or treated, and the destigmatization of seeking help is paramount in supporting individuals; and

WHEREAS, the National Alliance on Mental Illness and the 988 Suicide and Crisis Lifeline (just dial 988) works to help individuals in crisis and provide resources; and

WHEREAS, everyone can help prevent suicide by learning the warning signs, recognizing the importance of checking on and supporting one another, promoting prevention and resilience, and committing to social change, all of which are significant and valuable to individuals, families, and our community at large.

THEREFORE, BE IT RESOLVED that the Mayor and City Council of the City of San Rafael hereby proclaim the month of September 2023, as Suicide Prevention Month in the City of San Rafael and encourages all citizens to advance equity in mental health, transform how mental health is understood, perceived, and treated, and strive to build safe and supportive environments for our community.



A handwritten signature in blue ink, appearing to read "Kate", is written over a horizontal line.

Kate Colin
Mayor

City of San Rafael
Proclamation in Recognition of
HISPANIC HERITAGE MONTH 2023

WHEREAS, the City of San Rafael recognizes the contributions, diverse cultures, and extensive histories of the American Hispanic and Latino communities, whose ancestors came from Spain, Mexico, the Caribbean, and Central and South America; and

WHEREAS, we as a nation celebrate National Hispanic Heritage Month annually from September 15 to October 15, through festivals, music, art shows, conferences, community gatherings, and much more; and

WHEREAS, during National Hispanic Heritage Month, the anniversary of independence for the Latin American countries of Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua are on September 15; and Mexico and Chile's independence days are on September 16 and September 18; and Día de la Raza is on October 12; and

WHEREAS, over thirty percent of the population of San Rafael is of Hispanic, Latino, and Indigenous descent, who contribute to the economic, cultural, social, and historic fabric of our City; and

WHEREAS, many City of San Rafael employees have Hispanic and/or Latino heritage, and they contribute to the strength and diversity of the overall city workforce; and

WHEREAS, the City of San Rafael is proud to recognize its Hispanic and Latino leadership, including the Hispanic Chamber of Commerce of Marin, Canal Alliance, Latino Council, Voces del Canal, the Multicultural Center of Marin, and others; and

WHEREAS, it is important to increase cultural awareness and diversity by paying tribute to the valuable contributions made by Hispanic and Latino Americans to our business, cultural, and educational communities.

THEREFORE, BE IT RESOLVED that the Mayor and City Council of the City of San Rafael, hereby proclaim September 15 through October 15, 2023, as Hispanic Heritage Month in the City of San Rafael and urge its residents to join in observing and recognizing the accomplishments of Hispanic Americans.



A handwritten signature in blue ink, appearing to read "Kate Colin".

Kate Colin
Mayor

**City of San Rafael
In Recognition of
National Preparedness Month 2023**

- WHEREAS,** in San Rafael, our community is susceptible to human-caused and natural disasters, including earthquakes, wildland fires, floods, pandemics, and other large-scale emergencies we cannot predict; and
- WHEREAS,** recent events, including drought, wildfires, and an ongoing pandemic, have emphasized environmental, structural, and social vulnerabilities; and
- WHEREAS,** when large-scale emergencies occur, Professional First Responders and Disaster Workers will be overwhelmed and need the support of prepared and trained residents; and
- WHEREAS,** government agencies and disaster organizations cannot bear the sole responsibility to prepare for and respond to disasters; and
- WHEREAS,** working in partnership with our community members, Community Emergency Response Teams (CERT), Neighborhood Response Groups (NRGs), and community organizations, we can minimize the loss of lives and injuries, reduce the impact to property and the natural environment, and more quickly help our community find a new normal, post-emergency; and
- WHEREAS,** as an age-friendly City committed to being inclusive and accessible, San Rafael will join the nation in emphasizing this year's theme, "Preparing for Older Adults"; and
- WHEREAS,** the City of San Rafael and partner organizations will provide a variety of trainings, resources, and outreach to encourage residents and staff to take steps to be better prepared for all emergencies and disasters; and
- WHEREAS,** the time, energy, and effort that residents, business owners, and San Rafael employees invest in preparing now will create more resilient communities that can better prevent, navigate, and recover from a disaster.

NOW, THEREFORE, I, Kate Colin, Mayor of San Rafael, do hereby proclaim the month of September 2023 as

National Preparedness Month

and in doing so, urge all residents and community members to take emergency preparation steps to increase our community's resiliency to large scale emergencies or disasters.



**Kate Colin
Mayor**



SAN RAFAEL CITY COUNCIL AGENDA REPORT

Department: City Manager's Office

Prepared by: Cory Bytof,
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City Manager Approval: _____

TOPIC: GREENHOUSE GAS EMISSIONS REPORT AND CLIMATE ACTION PRIORITIES UPDATE

SUBJECTS:

1. SAN RAFAEL GREENHOUSE GAS INVENTORY REPORT
2. 2023-2025 TWO-YEAR WORKPLAN PRIORITIES REPORT

RECOMMENDATIONS:

1. Accept the Greenhouse Gas Inventory and Reduction Strategy Annual Report for 2021.
2. Accept the 2023-2025 Two-Year Workplan Priorities Report.

EXECUTIVE SUMMARY:

The City conducts annual greenhouse gas (GHG) emissions inventory reports to gauge progress toward GHG reduction targets as reflected in the [Climate Change Action Plan 2030](#) (CCAP). The latest report is for calendar year 2021 which is the latest data available. This report shows the City has achieved a 33% reduction in GHG emissions since 2005, and a 21% reduction from 1990 levels. In addition, every two years staff submits a two-year workplan for review and updates the City Council on achievements from the previous two years. Proposed priority focus areas include some similar areas of focus from the prior two years, including implementing more electric vehicle adoption programs, energy efficiency programs, economic development initiatives, and adaptation planning. New proposed initiatives include integrating climate action and resilience into department goals and projects, exploring a Climate Resilience District, and reimagining the Volunteer Program.

BACKGROUND:

State of the Climate

Greenhouse gas emissions reached a new high worldwide in 2022, and 28 countries saw their warmest year on record. 2022 was also the warmest year on record for ocean heat content, which is a more significant indicator than surface temperature since over 90% of heat trapped in the atmosphere goes into the oceans. Antarctic sea ice extent dropped to the lowest level on record in February, and sea levels have risen to a new high as well. These climate trends contributed to record-breaking extreme heat events in several countries and catastrophic flooding in others. More information regarding these statistics can be found at [Carbon Brief](#) and [World](#)

FOR CITY CLERK ONLY

Council Meeting:

Disposition:

[Meteorological Organization.](#)

Major insurance companies no longer take new customers in California due to the rapid growth of catastrophes such as wildfires, of which California saw over 7,000 in 2022. The State and Federal government are focusing more policies and funding on both reduction of the greenhouse gases that are contributing to climate change and efforts to plan and adapt accordingly. Climate change and the efforts to address it touch every aspect of society from infrastructure to health, natural ecosystems, the economy, and housing.

California Climate Goals

The State of California has responded to growing concerns over the effects of climate change by adopting a comprehensive approach to addressing emissions in the public and private sectors. This approach was officially initiated with the passage of the Global Warming Solutions Act of 2006 (AB 32), which requires the state to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020. The AB 32 Scoping Plan was developed to identify strategies for meeting the AB 32 goal and was adopted by the California Air Resources Board (CARB) in December 2008. Among many other strategies, it encourages local governments to reduce emissions in their jurisdictions by fifteen percent below 2005 baseline levels by 2020, and proposed longer-term goals established by Executive Order S-3-05 to reduce emissions 80 percent below 1990 levels by 2050.

In 2016, the State Legislature passed [SB 32](#), which set interim targets of 40% reductions below 1990 levels by 2030. CARB subsequently updated its Climate Change Scoping Plan in 2017 to lay out a strategy to achieve the 2030 target. In 2018, Executive Order B-55-18 committed California to achieve carbon neutrality – the point at which the removal of carbon from the atmosphere meets or exceeds emissions – by 2045.

City's Climate Change Action Plan

San Rafael's first [Climate Change Action Plan \(CCAP\)](#) was developed by a 17-member Green Ribbon Committee in 2008 and adopted by the City Council in 2009. In 2011, the City incorporated the CCAP measures into General Plan 2020 as a new Sustainability Element. A GHG Emissions Reduction Strategy was also prepared to provide technical support to the Sustainability Element and adopted CCAP. In 2017, then Councilmember Kate Colin and the City Manager's Office convened a 20-member community working group to update the CCAP to meet the new 2030 State targets. The working group developed the greenhouse gas reduction measures/activities with the assistance of nineteen local subject matter experts. Over 350 San Rafael residents and business representatives gave input on the plan, which was adopted by the City Council on [May 19, 2019](#).

City's Greenhouse Gas Reduction Strategy

The City's Climate Change Action Plan has also been integrated into [General Plan 2040](#) and serves as the City's Greenhouse Gas Reduction Strategy. This strategy meets the California Environmental Quality Act (CEQA) for a "qualified" greenhouse gas reduction strategy. It commits the City to track implementation measures and emissions reductions while providing a valuable streamlining tool for reviewing new development and building projects. It allows applicants to demonstrate that they comply with greenhouse gas reduction strategy measures through utilization of a compliance checklist, saving time and cost for contractors and staff, while ensuring that GHG emissions reduction activities are included in projects. San Rafael is currently the only local jurisdiction in Marin County with such a strategy.

As part of the CCAP implementation, a City Council sustainability liaison meets quarterly with

primary staff involved with implementing the CCAP as well as the president of Sustainable San Rafael, with occasional additional meetings as needed to address specific initiatives of high importance. Councilmember Llorens Gulati is the current sustainability liaison. As liaison, Councilmember Llorens Gulati chairs the quarterly public CCAP implementation forums consisting of staff and interested members of the community. The liaison's role is important in helping staff prioritize requests from the public and in shaping projects and programs for City Council action.

Greenhouse Gas Inventory

The City measures progress toward GHG reduction goals through completion of an annual community greenhouse gas (GHG) inventory report. These reports provide the City Council with an overview of community-wide emissions as well as status of City actions accomplished in that same year. The report also fulfills the City's requirement to report annual emissions for the strategy to reduce greenhouse gas emissions. GHG emissions and reductions are calculated for various sectors, including energy, transportation, waste, and water. This is done using a common protocol cities use to show what is called in-boundary emissions, meaning the emissions created most directly within the geographical boundary of the City. Emissions data is typically not available for a year and a half; thus, inventories have a lag time. The last community inventory was conducted in in 2022 for the 2020 calendar year.

In addition, approximately every five years, the City conducts a municipal inventory which provides a deep analysis of the emissions from municipal operations and facilities. The last municipal inventory was conducted in 2018 for calendar year 2016. The next municipal inventory will cover calendar year 2023 which staff believes will result in a better comparison to prior years, avoiding significant anomalies that occurred due to the COVID-19 pandemic. Municipal emissions typically comprise approximately 1% of community-wide emissions. Almost 99% come from the community: residents, businesses, and visitors.

The City partners with the Marin Climate and Energy Partnership (MCEP) for conducting the inventory and developing the report. MCEP publishes all the results on the MCEP website, MarinClimate.org, and at MarinTracker.org so that members of our community can easily access the data using an interactive map.

Two-Year Priorities

Every two years staff identifies key priorities taken from the Climate Change Action Plan to focus limited resources on. These are reviewed with the City Council Sustainability Liaison and at the Climate Change Action Plan quarterly community forum for review before finalizing into a workplan. These priorities and workplan align with the subset of objectives represented in the *Sustainability, Climate Change and Disaster Preparedness Policy Focus Area* in the City Council's adopted fiscal year [2023-24 & 2024-25 goals and objectives](#).

ANALYSIS:

Greenhouse Gas Inventory Report

The 2021 Greenhouse Gas Inventory Report (Attachment A) provides the City Council with an overview of community-wide emissions as well as status of City actions accomplished in that same year. The report also fulfills the City's requirement to report emissions for the greenhouse gas reduction strategy. The report provides broad category, best-estimate community-wide emissions data for calendar year 2021 based on publicly available data. This data shows an overall reduction of approximately 33% of community-wide emissions since 2005, including an approximate 7% reduction between 2019 and 2021. Table 1 below shows where our emissions reductions came from.

	Percent Change in Emissions 2005-2021
Transportation	-21%
Built Environment - Electricity	-83%
Built Environment – Natural Gas	-13%
Waste	-45%
Water	-95%
Off-Road	-33%
Wastewater	+14%
TOTAL	-33%

Table 1: Change in Emissions by Sector

Following are a sampling of programs and policies the City undertook to reduce GHG emissions and increase resilience in 2021 and 2022:

- Promoted ride and drive clean events.
- Contributed to development of a Countywide Electric Vehicle Acceleration Strategy.
- Installed new bike lanes and wayfinding signage.
- Adopted new mandatory composting ordinance in compliance with SB 1383, the Short-Lived Climate Pollutants law.
- Adopted new Green Building reach codes limiting gas and requiring increased energy efficiency and electric vehicle charging requirements for all new residential construction.
- Supported residential and commercial outreach programs such as Resilient Neighborhoods, Canal Community Resilience Council, California Youth Environmental Services’ Green House Calls, the Chamber Green Business Committee, the Electric Vehicle Working Group, and Marin School of Environmental Leadership, among others.
- Conducted fire fuel reduction efforts, education, support programs for fire safety, and other measures in our Wildfire Prevention and Protection Action Plan.
- Secured over \$750,000 in funding for equity-based adaptation planning for sea level rise in and around the Canal neighborhood.
- Hired a new Climate Adaptation and Resilience Planner and convened an internal cross-departmental adaptation and resilience working group to plan for climate impacts such as sea level rise and flooding.
- Completed energy efficiency, electrification, and lighting projects at several facilities to reduce energy consumption.
- Increased zero emissions vehicles in the fleet in Fire Department (1), Public Works (1) and Parking Services (2).

The City has made significant progress towards implementation of its CCAP and has a strong commitment toward continuing to implement policies and programs. San Rafael met its interim goal of a 25% reduction in communitywide GHG emissions from 2005 baseline by 2020. However, State targets set by SB 32 and the CCAP referenced above establish a new baseline of 1990 GHG emissions for 2030 reduction targets. This 40% reduction by 2030 using the new baseline means that emissions reductions will have to be even greater to meet the mark since GHG emissions were significantly lower in 1990. Translating current reductions to a 1990 baseline means San Rafael reduced emissions 21% since 1990. In order to meet our CCAP targets of 80% reductions by 2050, San Rafael will need to continue to innovate, collaborate, and be at the forefront of local GHG reduction strategies.

Finally, regarding GHG inventories, the value of this in-boundary type of inventory is that it isolates emissions from local sources, providing a snapshot of sectors and activities that can be affected to some degree by local government actions. In addition, it allows for a rough aggregation of data to allow for county-wide, regional, state and larger groupings of emissions calculations. This can be helpful to understand California-wide emissions for instance or to compare to the U.S. at large. One thing it does not do, however, is get at the larger set of emissions driven by consumption.

Consumption includes all the “upstream” emissions from the things individuals buy, including the mining, manufacturing, packaging, and transportation of products, which carry a lot of embedded GHG emissions. A consumption-based inventory would show a very different picture of San Rafael’s GHG emissions. It could easily triple or even quadruple emissions per capita due to the number of materials and products we consume, mainly from imported food and goods. In San Rafael, we have chosen to include consumption messaging – our “carbon footprint” – in our engagement rather than just rely on an in-boundary inventory. This is a primary focus of the [Resilient Neighborhoods](#) program, which works county-wide to educate residents about this and help them reduce their household carbon footprint.

2021-2023 Two-Year Workplan Priorities

Every two years staff proposes workplan priorities from the CCAP in order to be efficient with City resources and stay focused on key initiatives. These are reviewed with our Sustainability Liaison to the Council and at the quarterly CCAP implementation forums, which are open to the public, as a means of aligning the workplan with other City priorities and with community concerns. The practice of setting two-year priorities was established due to the fact that most items require more than one year to complete.

Below is a snapshot of the accomplishments from the past two years. City Council will receive a report on one of the 2021-2023 Action Strategies, *Develop Electric Vehicle Strategy for San Rafael*, at this City Council meeting.

2021-2023 ACTION STRATEGIES

STATUS

1. ZEV Policies and Programs	
Develop Electric Vehicle Strategy for San Rafael	In process, expected Fall 2023
Continue to transition fleet to low-carbon alternatives	3 electric fleet vehicles added
Promote Drive Clean Marin and other low-carbon transportation programs	4 events promoted
Develop policies to reduce off-road emissions and increase EV chargers	Leaf blower ordinance adopted
2. Mandatory Recycling and Organics	
Develop and adopt ordinance and implement programs for SB 1383 compliance	Adopted
Identify opportunities for organic waste diversion that also sequesters carbon	Study underway
3. Adaptation Planning	
Secure funding and conduct adaptation planning process with focus on equity & sea level rise	Funding secured; project started
Begin comprehensive adaptation planning with county-wide coordination	Staff person hired, plan under consideration
4. Microgrids Assessment and Development	
Develop an analysis of opportunities for municipal and community microgrids with a special focus on underserved communities	Not started
Seek funding to implement a microgrid project with community partners such as MCE Clean Energy	Grant applied for but not funded
5. Building Energy Efficiency & Electrification	
Work with Marin Energy Watch Partnership to promote EE & electrification	Website updates, countywide engagements, e-news, etc. ongoing
Adopt new Green Building Code with analysis of all-electric and other reach codes	Adopted Nov 2022
Identify & include incentives & technical assistance with permit requirements	In development
6. Equitable Low Carbon Economy	
Convene thought leader team to develop plan of action	Completed and ongoing
Conduct specific, time-limited business engagement to develop a work plan and recommendations	Recommendations expected by December 2023
7. Illegal Dumping	
Conduct Pilot program for Canal Neighborhood	Pilot completed with MRC and data on participation
Bring recommendations to Council for further programs to address disposal needs and dumping	In development and final suite of options expected fall 2024

Many of the actions in the CCAP 2030 will be completed using existing funding sources, grants, or other incentives and funding from utilities and community partners. Fortunately, the State is continually coming out with new programs, mandates, and funding opportunities to assist cities with climate action and adaptation planning and projects. A table showing the key objectives of the Draft Two-Year Priorities is below, and can be found in Attachment B. Some earlier priorities

will continue as they have become more of an ongoing effort, such as continuing to promote solar and renewable energy, adaptation planning, and installation of electric vehicle charging infrastructure.

Draft Two-Year Priorities: 2023-2025

ACTION STRATEGIES	COLLABORATING DEPARTMENTS	TARGET START DATE
1. Work with City departments to integrate climate action and resilience into department goals and projects.	All Depts	Jan 2024
2. Implement SB 1383 , including enforcement, reporting, procurement, and edible food recovery requirements.	Code Enforcement	In progress
3. Explore a Climate Financing District with County & other stakeholders to help plan adaptation and mitigation combined with housing security	City Manager	In progress
4. Adopt and implement an Electric Vehicle Strategy Workplan based on the Countywide EV Acceleration Strategy. Include City fleet as well as public charging infrastructure and a focus on equity.	Public Works	In progress
5. Work with County to promote energy efficiency and electrification of existing buildings , including investigating potential for community Microgrids	Community Development	In progress
6. Develop the Equitable Low Carbon Economy program recommendations and begin work on relevant projects.	Economic Development	In progress
7. Continue the Illegal Dumping program pilots and bring a suite of solutions to Council for consideration for long-term dumping reductions.	Together San Rafael Team	In progress
8. Complete the grant-funded Canal Collaboration and SLR Feasibility Assessment project toward identifying adaptation priorities to pursue.	Community Development Public Works	In Progress
9. Develop a citywide climate resilience plan and integrate with Local Hazard Mitigation Plan and other resilience planning efforts and documents.	Community Development Public Works	January 2024
10. Implement and respond to state laws such as automated solar permitting, green building, renewable energy, and others that arise.	Community Development Public Works City Attorney	Ongoing
11. Reimagine and rebuild the Volunteer Program including development of new positions in departments and new community volunteer opportunities such as increasing community cleanups and tree and landscape programs.	All Departments	January 2024

In all cases, staff has communicated with and developed these draft priorities based on input from community partners such as the County of Marin Sustainability Team, Sustainable San Rafael, members of our quarterly CCAP community forums, the Marin Climate and Energy Partnership, our utility partners, and others. This allows for county-wide collaboration and resource sharing. In addition, whenever possible, staff seeks opportunities to develop work products that other cities or organizations can use as well to extend their impact. For example, the Chief Building Official

identified a significant source of emissions coming from extension of gas lines for luxury items such as hot tubs and Council adopted a novel limitation on gas line extensions in our Green Building Reach Code that other jurisdictions are employing now as well.

COMMUNITY OUTREACH:

Staff has given presentations with opportunities for input and feedback to the following organizations: the CCAP quarterly implementation forums (twice), the Canal Community Resilience Council, Dominican University student and faculty Earth Day committee, and the San Rafael Chamber of Commerce Green Business Committee. Information has gone out to the public through the City's sustainability email list, the City Manager's Snapshot, and through City social media channels.

FISCAL IMPACT:

There is no direct fiscal impact to accepting the reports. However, funding for implementation of programs identified as two-year priorities will be supported through existing budget resources as well as grants, and utility-sponsored programs. Where required, supplemental funding requests for supplemental General Fund support will be contingent on separate City Council action through the budget process.

RECOMMENDED ACTIONS:

1. Accept the Greenhouse Gas Inventory and Reduction Strategy Annual Report for 2021.
2. Accept the 2023-2025 Two-Year Priorities Report.

ATTACHMENTS:

Attachment A: Greenhouse Gas Emissions Reduction Strategy 2021 Annual Report
Attachment B: 2023-2025 Two-Year Sustainability Priorities



CITY OF SAN RAFAEL

COMMUNITY GREENHOUSE GAS EMISSIONS INVENTORY FOR THE YEAR 2021



August 2023

Prepared by the
Marin Climate & Energy Partnership



TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	2
PURPOSE OF INVENTORY	2
GENERAL METHODOLOGY	2
COMMUNITY INVENTORY	4
COMMUNITY INVENTORY SUMMARY	4
PER CAPITA EMISSIONS	6
SIGNIFICANT SOURCES OF EMISSIONS	7
BUILT ENVIRONMENT - ELECTRICITY	7
BULT ENVIRONMENT - NATURAL GAS	8
TRANSPORTATION	8
WASTE DISPOSAL	9
WATER USE	10
WASTEWATER	11
APPENDIX	A-1

EXECUTIVE SUMMARY

THE TAKEAWAY:

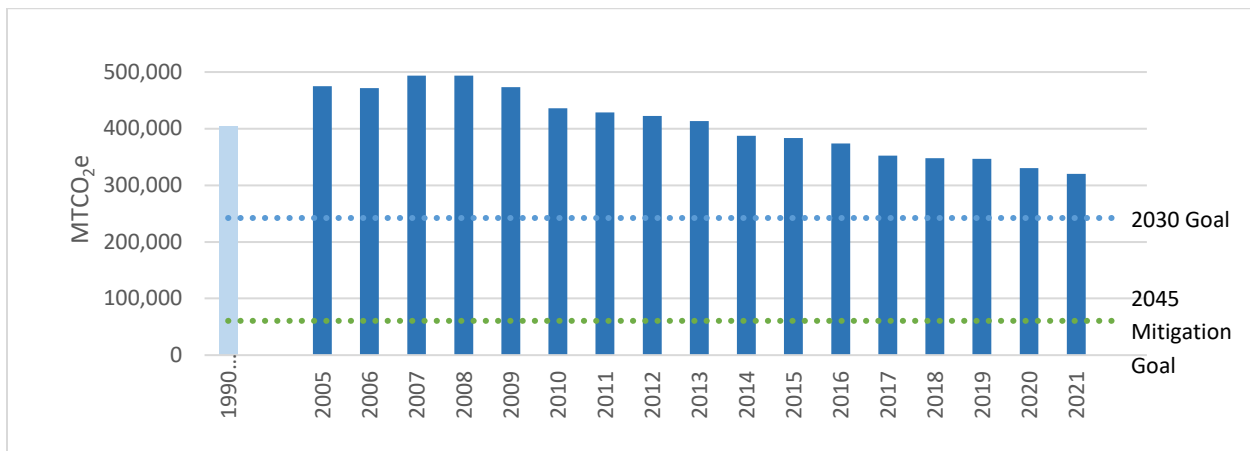
**COMMUNITY EMISSIONS ARE
DOWN 33% SINCE 2005 AND
21% SINCE 1990**

San Rafael publishes annual community greenhouse gas (GHG) emissions estimates through the Marin Climate & Energy Partnership (MCEP). Annual inventories help the City to more closely monitor its progress in meeting its goal to reduce community emissions at least 40% below 1990 emissions by 2030. The City also publishes GHG emissions inventories for municipal operations approximately every five years. Municipal emissions accounted for less than 1% of community emissions when the municipal inventory was

last conducted for year 2016.

This report reviews emissions generated from the community from 2005 through 2021, the most recent year data is available. The inventory shows that emissions dropped from about 475,000 metric tons carbon dioxide equivalents (MTCO_{2e}) in 2005 to 320,370 MTCO_{2e} in 2021, which is equivalent to 33% below the 2005 baseline and 21% below 1990 levels. The community emissions trend and targets are shown below. San Rafael needs to reduce emissions another 78,140 MTCO_{2e} to meet the local and State target for 2030. San Rafael adopted a Climate Emergency Resolution in 2021 that establishes a goal to achieve net-zero emissions by 2045 or earlier, similar to the State's long-term goal. This is expected to be accomplished by reducing GHG emissions approximately 85% below 1990 levels and employing sequestration and/or carbon capture strategies to offset the remaining emissions. San Rafael needs to reduce GHG emissions another 259,810 MTCO_{2e} to meet the GHG mitigation target for 2045, as shown in Figure 1.

FIGURE 1: SAN RAFAEL GHG EMISSIONS AND REDUCTION TARGETS



Recognizing the need for a collaborative approach to greenhouse gas reductions, City and county leaders launched the Marin Climate and Energy Partnership (MCEP) in 2007. The City of San Rafael is a member of MCEP and works with representatives from the County of Marin and the other Marin cities and towns to address and streamline the implementation of a variety of greenhouse gas reduction measures. Funding for this inventory was provided by the Marin County Energy Watch Partnership, which administers public goods charges collected by PG&E. Community inventories are available on the MCEP website at marinclimate.org and are used to update the [Marin Sustainability Tracker](#).

INTRODUCTION

PURPOSE OF INVENTORY

The objective of this greenhouse gas emissions inventory is to identify the sources and quantify the amounts of greenhouse gas emissions generated by the activities of the San Rafael community in 2021. This inventory provides a comparison to 2005 and estimated 1990 emissions and identifies the sectors where significant reductions in greenhouse gas emissions have occurred. In some instances, previous year emissions were updated with new data and/or recalculated to ensure the same methodology was employed for all inventory years.

GENERAL METHODOLOGY

This inventory uses the national standard for the accounting and reporting of community-wide greenhouse gas emissions, the [U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, version 1.2 \(July 2019\)](#). Quantification methodologies, emission factors, and activity and source data are detailed in the appendix.

Community emissions are categorized according to seven sectors:

- Built Environment - Electricity
- Built Environment – Natural Gas
- Transportation
- Off-Road Vehicles and Equipment
- Waste
- Water
- Wastewater

CALCULATING EMISSIONS

Emissions are quantified by multiplying the measurable activity data – e.g., kilowatt hours of electricity, therms of natural gas, gallons of diesel or gasoline, etc. – by emissions factors specific to the greenhouse gas-generating source. Most emissions factors are the same from year to year. Emission factors for electricity, however, change from year to year due to the specific sources that are used to produce electricity. For example, electricity that is produced from coal generates more greenhouse gases than electricity that is generated from natural gas and therefore has a higher emissions factor. Electricity that is produced solely from renewable energy sources such as solar and wind has an emissions factor of zero.

This inventory calculates individual greenhouse gases – i.e., carbon dioxide, methane, and nitrous oxide – and converts each greenhouse gas emission to a standard metric, known as “carbon dioxide equivalents” or CO₂e, to provide an apple-to-apples comparison among the various emissions. Table 1 shows the greenhouse gases identified in this inventory and their global warming potential (GWP), a measure of the amount of warming each gas causes when compared to a similar amount of carbon dioxide over 100 years. Methane, for example, is 28 times as potent as carbon dioxide over 100 years; therefore, one metric ton of methane is equivalent to 28 metric tons of carbon dioxide. Greenhouse gas emissions are reported in this inventory as metric tons of carbon dioxide equivalents, or MTCO₂e.

TABLE 1: GREENHOUSE GASES

Gas	Chemical Formula	Emission Source	Global Warming Potential
Carbon Dioxide	CO ₂	Combustion of natural gas, gasoline, diesel, and other fuels	1
Methane	CH ₄	Combustion, anaerobic decomposition of organic waste in landfills and wastewater	28
Nitrous Oxide	N ₂ O	Combustion, wastewater treatment	265

Source: IPCC Fifth Assessment Report (2014), 100-year values

TYPES OF EMISSIONS

Emissions from each of the greenhouse gases can come in a number of forms:

- **Stationary or mobile combustion** resulting from the on-site combustion of fuels (natural gas, diesel, gasoline, etc.) to generate heat or electricity, or to power vehicles and equipment.
- **Purchased electricity** resulting from the generation of power from utilities outside the jurisdictional boundary.
- **Fugitive emissions** resulting from the unintentional release of greenhouse gases into the atmosphere, such as methane from waste decomposition.
- **Process emissions** from physical or chemical processing of a material, such as wastewater treatment.

UNDERSTANDING TOTALS

The totals listed in the tables and discussed in the report are a summation of emissions using available estimation methods. Each inventoried sector may have additional emissions sources associated with them that were unaccounted for due to a lack of data or robust quantification methods. For example, greenhouse gas emissions associated with air travel and the production of goods outside the community's boundary are not included in the inventory. Additionally, the community inventory does not include refrigerants released into the atmosphere from the use of air conditioning in cars and buildings.

COMMUNITY INVENTORY

COMMUNITY INVENTORY SUMMARY

In 2005, the activities taking place by the San Rafael community resulted in approximately 475,000 metric tons of CO₂e.¹ In 2021, those activities resulted in approximately 320,369 metric tons of CO₂e, a reduction of 33% from 2005 levels, which is equivalent to 21% below 1990 levels.

The community inventory tracks emissions in seven sectors:

- The **Built Environment – Electricity** sector represents emissions generated from the use of electricity in San Rafael homes and commercial, industrial, and governmental buildings and facilities.
- The **Built Environment – Natural Gas** sector represents emissions generated from the use of natural gas in San Rafael homes and commercial, industrial, and governmental buildings and facilities. Propane used as a primary heating source is also included, although it represents less than 1% of emissions in this sector.
- The **Transportation** sector includes tailpipe emissions from passenger vehicle trips originating and ending in San Rafael, as well as a share of tailpipe emissions generated by medium and heavy-duty vehicles travelling on Marin County roads. The sector also includes emissions from Marin Transit and Golden Gate Transit buses and the SMART train as these vehicles travel within San Rafael’s boundaries. Electricity used to power electric vehicles is embedded in electricity consumption reported in the Built Environment - Electricity sector.
- The **Waste** sector represents fugitive methane emissions that are generated over time as organic material decomposes in the landfill. Although most methane is captured or flared off at the landfill, approximately 25% escapes into the atmosphere.
- The **Off-Road** sector represents emissions from the combustion of gasoline and diesel fuel from the operation of off-road vehicles and equipment used for construction and landscape maintenance.
- The **Water** sector represents emissions from energy used to pump, treat, and convey potable water from the water source to the San Rafael water users.
- The **Wastewater** sector represents stationary, process and fugitive greenhouse gases that are created during the treatment of wastewater generated by the community. Emissions created from energy used to convey and treat wastewater are included in the Built Environment sectors.

Table 2 shows how emissions in each sector have changed since 2005. The greatest reductions have occurred in the Built Environment – Electricity sector (73,812 MTCO₂e), followed by the Transportation sector (56,205 MTCO₂e) and the Built Environment – Natural Gas sector (12,156 MTCO₂e). The likely reasons for the largest emissions decreases are described in the remainder of this report.

¹ Baseline and historical emissions are recalculated in the annual inventory to integrate new data and improved calculation methodologies and to ensure consistent comparison across each year. For this reason, emission levels may differ from levels reported in previous inventories.

TABLE 2: EMISSIONS SUMMARY BY SECTOR (MTCO₂E), 2005 THROUGH 2021

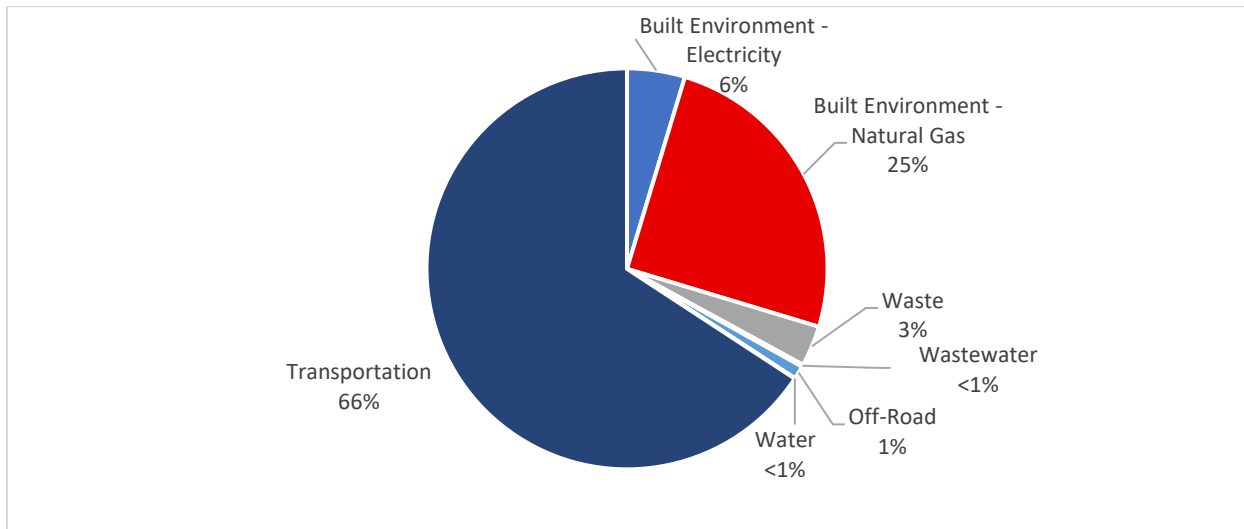
Year	Built Environment - Electricity	Built Environment - Natural Gas	Transportation	Waste	Water	Wastewater	Off-Road	Total	% Change from 2005	% Change from 1990 ²
1990 (est.) ¹								403,713		
2005	88,767	92,247	266,928	19,075	2,371	484	5,085	474,956		
2006	83,610	95,425	266,209	18,913	2,074	485	5,008	471,723	-1%	
2007	111,739	92,455	264,388	17,101	2,804	488	4,895	493,868	4%	
2008	112,024	93,985	265,598	14,205	2,579	490	4,611	493,491	4%	
2009	101,128	92,767	259,960	12,223	2,593	492	4,235	473,398	0%	
2010	76,081	93,296	248,651	12,006	1,486	496	3,895	435,911	-8%	
2011	71,056	96,073	244,487	11,718	1,053	498	3,784	428,670	-9%	
2012	72,706	90,344	241,741	12,149	1,136	503	3,707	422,286	-10%	
2013	68,716	89,797	236,978	12,303	1,323	506	3,666	413,289	-11%	
2014	61,976	76,304	231,401	12,437	1,189	517	3,645	387,469	-16%	
2015	61,260	77,920	226,110	12,887	933	491	3,609	383,209	-16%	
2016	49,936	81,715	222,389	15,147	692	551	3,554	373,984	-18%	
2017	26,412	85,650	220,291	15,852	202	541	3,491	352,440	-24%	
2018	25,961	85,625	218,402	14,054	71	539	3,396	348,049	-25%	
2019	25,813	86,037	217,805	13,397	77	538	3,295	346,961	-26%	-13%
2020	18,412	79,630	215,766	12,732	95	553	3,244	330,430	-30%	-17%
2021	14,955	80,091	210,723	10,507	115	550	3,427	320,369	-33%	-21%
Change from 2005	-73,812	-12,156	-56,205	-8,568	-2,256	66	-1,658	-154,587		
% Change from 2005	-83%	-13%	-21%	-45%	-95%	14%	-33%	-33%		

¹ Per California Air Resources Board guidance, 1990 levels are estimated at 15% below 2005 levels.

² In 2019, San Rafael adopted a Climate Action Plan that established a goal to reduce emissions 40% below 1990 levels by 2030. This column will track that progress over time.

Figure 2 shows the relative contribution of emissions from these sectors in 2021. Transportation emissions represent the largest share of communitywide emissions (66%), while the use of natural gas and propane in the Built Environment accounts for one-quarter of emissions.

FIGURE 2: EMISSIONS BY SECTOR, 2021

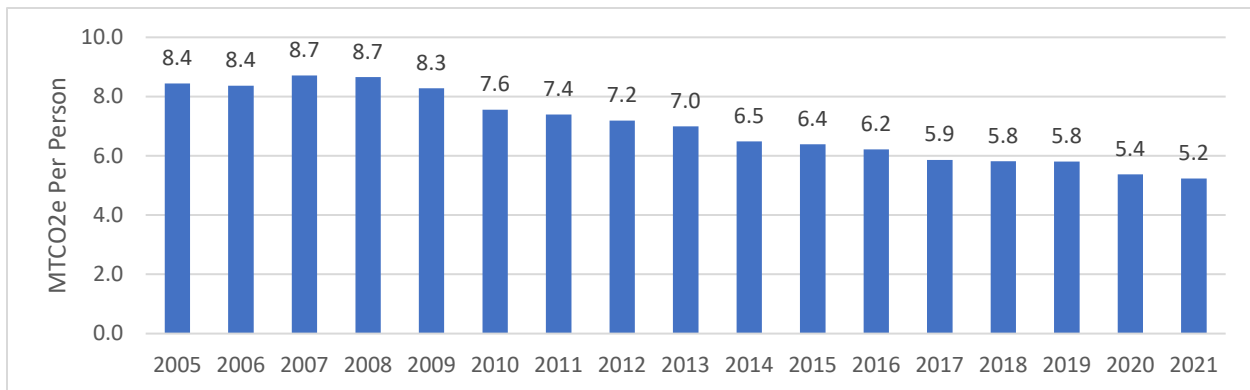


PER CAPITA EMISSIONS

Per capita emissions can be a useful metric for measuring progress in reducing greenhouse gases and for comparing one community’s emissions with neighboring cities and against regional and national averages. That said, due to differences in emission inventory methods, it can be difficult to produce directly comparable per capita emissions numbers. Per capita emission rates may be compared among Marin jurisdictions, although some jurisdictions may have higher rates due to the presence of commercial and industrial uses.

Dividing the total communitywide GHG emissions by residents yields a result of 8.4 metric tons CO₂e per capita in 2005. Per capita emissions decreased 36% between 2005 and 2021, falling to 5.2 metric tons per person. Figure 3 shows the trend in per capita emissions over time. It is important to understand that this number is not the same as the carbon footprint of the average individual living in San Rafael, which would include lifecycle emissions, emissions resulting from air travel, etc.

FIGURE 3: EMISSIONS PER CAPITA



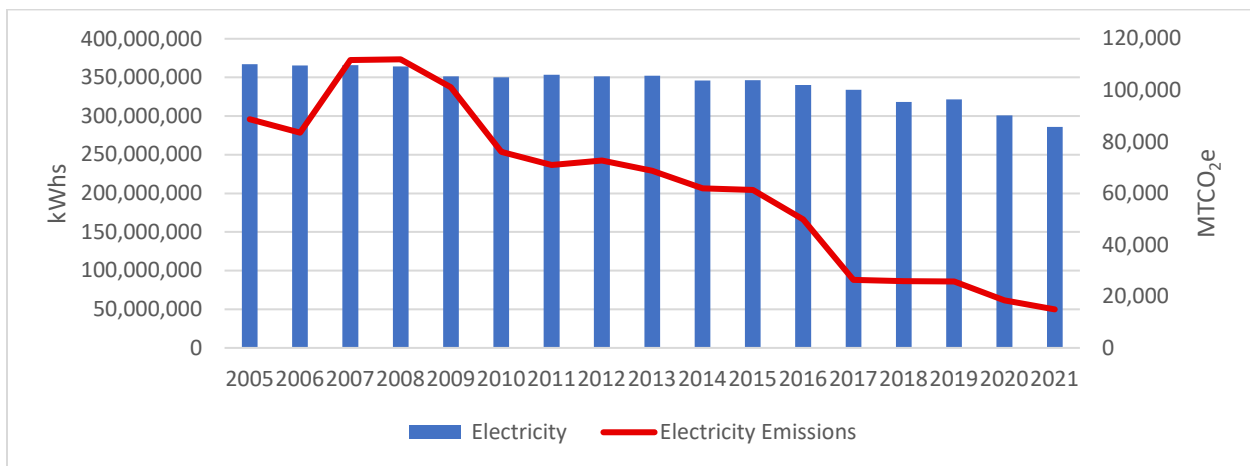
SIGNIFICANT SOURCES OF EMISSIONS

The following sections provide a year-by-year analysis of the changes in source GHG emissions in the Built Environment, Transportation, Waste, and Water sectors. Whenever possible, each section discusses the change in emissions from previous years and the likely influence of state and local programs or policies and external factors on reducing emissions.

BUILT ENVIRONMENT - ELECTRICITY

Purchased electricity consumption in homes and businesses in San Rafael decreased about 22% between 2005 and 2021. Greenhouse gas emissions from this electricity use decreased 83% since 2005, as shown in Figure 4. This is primarily due to the lower carbon intensity of electricity. PG&E has been steadily increasing the amount of renewable energy in its electricity mix. In 2021, PG&E electricity came from a mix of renewable (48%), large hydroelectric (4%), nuclear (39%), and natural gas (9%) energy sources and was 91% GHG-free.² MCE Light Green electricity came primarily from renewable (61%) and hydroelectric (37%) sources and was 98% GHG-free.³ In 2021, about 12% of MCE electricity purchased by San Rafael customers was 100% renewable Deep Green electricity, including electricity purchased by the City for facilities and operations.

FIGURE 4: ELECTRICITY USE AND EMISSIONS



BUILT ENVIRONMENT - NATURAL GAS

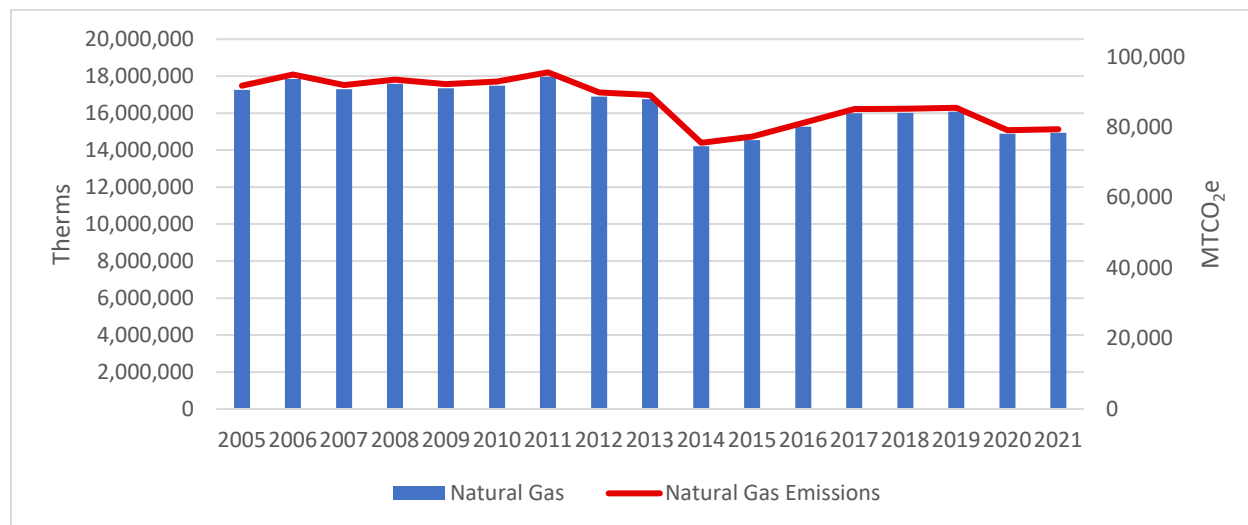
Natural gas is used in residential, commercial, and industrial buildings to provide space and water heating and power appliances. Use of natural gas is highly variable depending on the weather conditions. This variability has led natural gas use consumption in San Rafael to fluctuate from year to year, from a high of 18 million therms in 2011 to a low of 14.2 million therms in 2014. Reduction in energy use may also be attributed to energy efficiency programs and rebates, local green building ordinances, and State building codes.

² PG&E 2021 Power Content Label, [2021 Power Content Label submitted by Pacific Gas and Electric Company \(ca.gov\)](https://www.pge.com/energy/energy_content_label/2021). Nuclear and large hydro sources are considered GHG-free.

³ MCE 2021 Power Content Label, [2021 Power Content Label submitted by MCE \(ca.gov\)](https://www.mce.com/energy/energy_content_label/2021).

Natural gas consumption was virtually flat between 2020 and 2021 and was 13% below the 2005 level. Unlike electricity emissions which reflect the power content mix, natural gas emissions track the amount of natural gas consumed (Figure 5).

FIGURE 5: NATURAL GAS USE AND EMISSIONS



TRANSPORTATION

Transportation activities accounted for approximately 66% of San Rafael’s emissions in 2021. According to the transportation model and annual data the City uses to calculate passenger and commercial vehicle miles, vehicle miles traveled (VMT) have decreased approximately 2% since 2005.

On-road transportation emissions have decreased 21% since 2005 due to more fuel-efficient and alternatively fueled cars (Figure 6). As shown in Figure 7, most transportation emissions come from passenger vehicles, which accounted for 72% of transportation emissions in 2021. Marin County continues to be a leader in zero emission vehicles (ZEVs) – second only to Santa Clara County – with 15,449 ZEVs in Marin at the end of 2022, or about 8.1% of registered automobiles. ZEVs include battery electric cars, plug-in hybrid electric cars, hydrogen fuel cell cars, and zero-emission motorcycles. San Rafael had 2,779 ZEVs by the end of 2021, or 4.8% of registered light-duty vehicles.

While it is difficult to pinpoint exactly how each land use and transportation policy affects emissions, the City has undertaken many efforts to reduce transportation emissions. The City encourages workforce housing and has made improvements to the transportation network to make it easier for residents to bicycle, walk, and take public transportation. The City has also promoted electric vehicle adoption by installing chargers and providing free electricity at select municipal EV charging stations.

FIGURE 6: ON-ROAD TRANSPORTATION VEHICLE MILES TRAVELED AND EMISSIONS

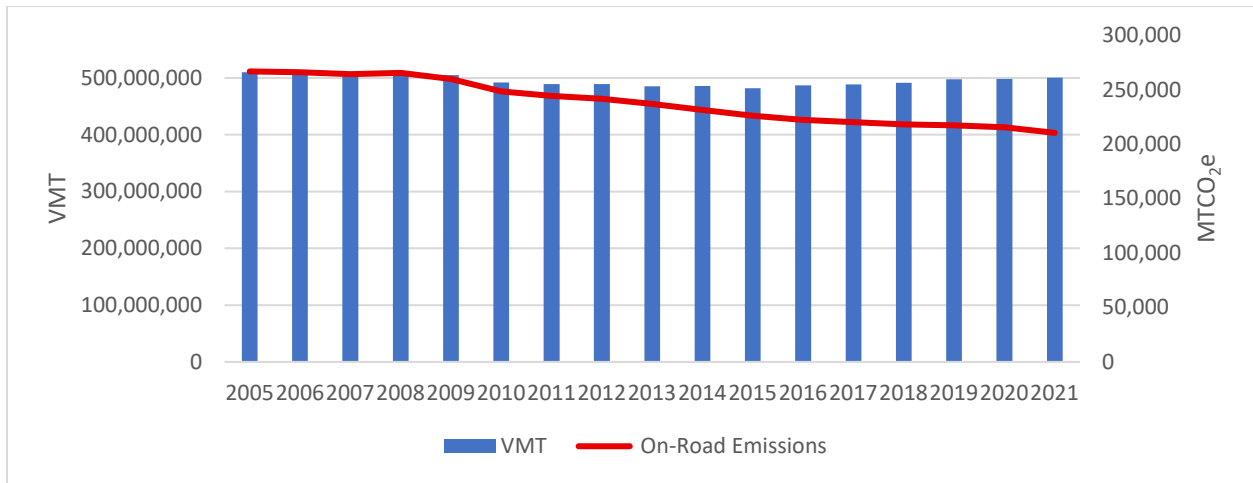
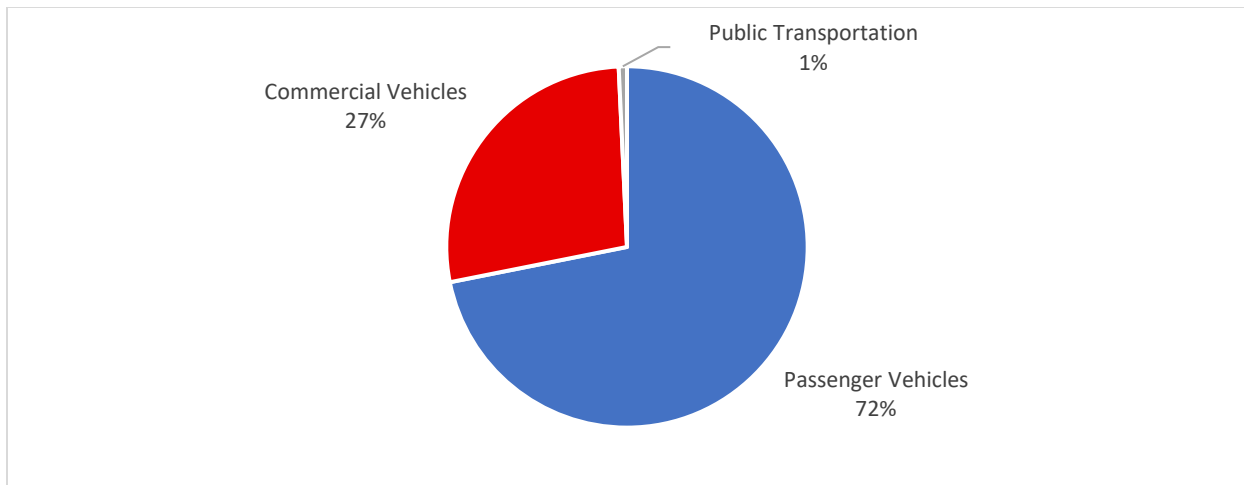


FIGURE 7: TRANSPORTATION EMISSIONS BY VEHICLE CATEGORY, 2021



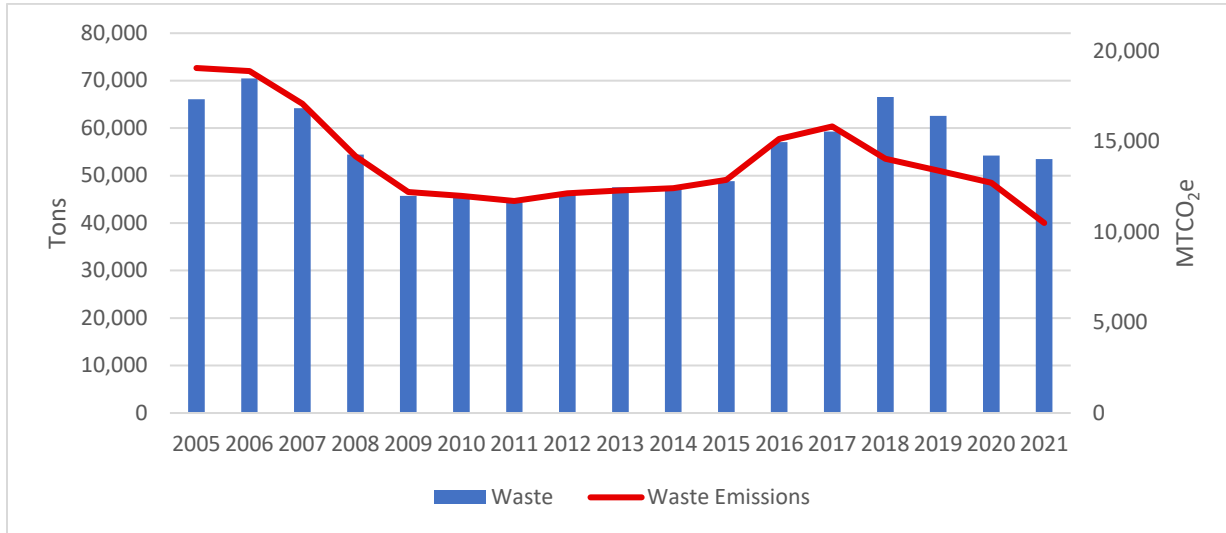
Note: Public transportation includes emissions from Marin Transit and Golden Gate Transit fixed-route buses and the SMART train.

WASTE DISPOSAL

Waste generated by the community decreased 1% between 2020 and 2021 and was 19% below the 2005 level by 2021 as shown in Figure 8 (based on countywide disposal data). Total landfilled waste includes alternative daily cover.⁴ Emissions from waste disposal decreased 45% due to the lower organic content of landfilled waste and material used for alternative daily cover (Figure 8).

⁴ Alternative daily cover is cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging.

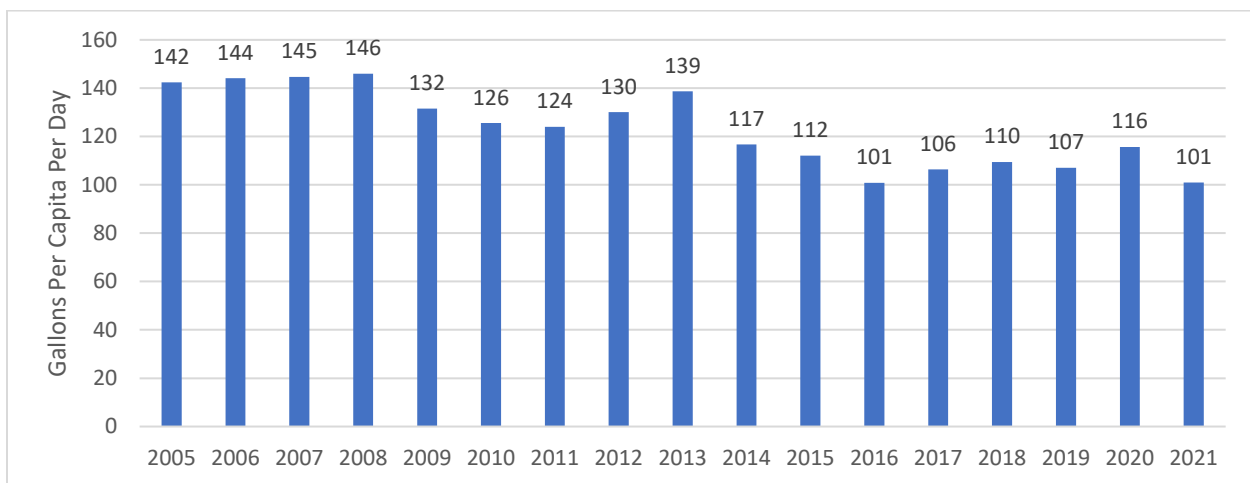
FIGURE 8: DISPOSED WASTE



WATER USE

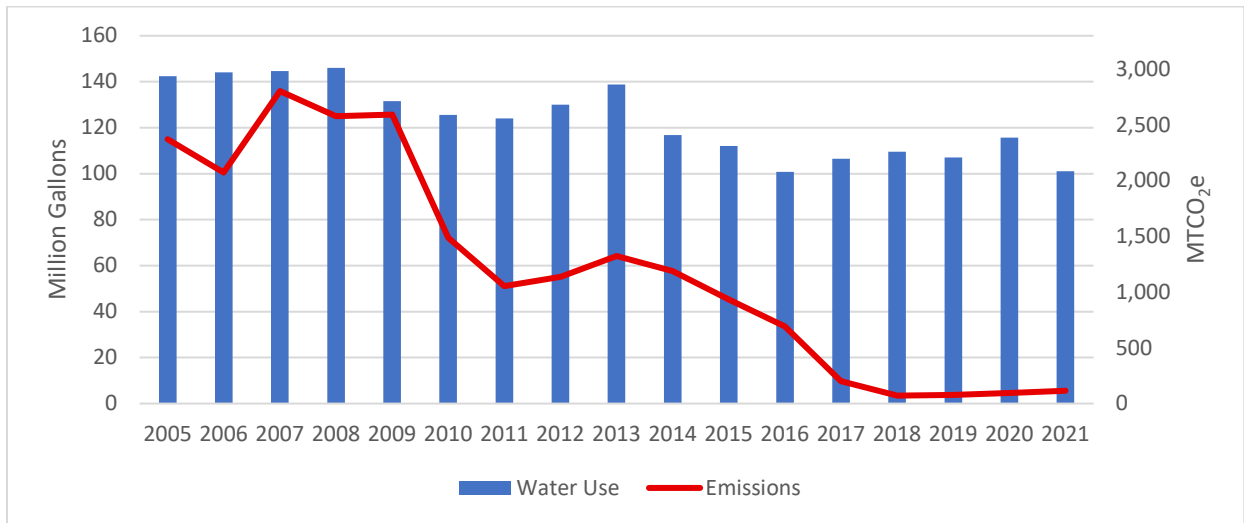
Per capita water use declined 29% since 2005, as shown in Figure 9, based on Marin Municipal Water District (Marin Water) district-wide data. Emissions, which are based on an estimate of energy used to pump, treat, and convey water from the water source to the City limits, dropped 95% between 2005 and 2021 (Figure 10). The reduction is primarily due to the lower carbon intensity of electricity. Marin Water began purchasing MCE Deep Green electricity in mid-2017. The Sonoma County Water Agency (SCWA), which supplied approximately 38% of Marin Water’s water in 2021, uses renewable and carbon-free sources for its electricity needs; a small amount of emissions comes from stationary and mobile combustion of fuels used in SCWA’s operations.

FIGURE 9: PER CAPITA WATER USE



Source: Marin Water

FIGURE 10: WATER USE AND EMISSIONS



Marin Water provides rebates and programs to reduce water use. Rebates are available to replace fixtures with high-efficiency clothes washers and to purchase cisterns and rain barrels. Marin Water provides free home and landscape water-use evaluations as well as free high-efficiency showerheads and faucet aerators. The City of San Rafael actively promotes water conservation and Marin Water rebates and programs to residents and businesses.

WASTEWATER

Greenhouse gas emissions are created during the treatment of wastewater generated by the community. These emissions have increased 14% since 2005 as San Rafael’s population has increased.

Emissions created from energy used to convey and treat wastewater are included in the Built Environment sectors. The Central Marin Sanitation Agency (CMSA), located in San Rafael, has two anaerobic digesters that process primary sludge, thickened waste-activated sludge, and organic waste to produce biogas. The biogas is used to generate heat and renewable electricity via the cogeneration system. CMSA normally produces 100% of the facility’s power needs, and, at times, exports renewable energy to the grid, which is procured by MCE.

In 2023, the Las Gallinas Valley Sanitary District completed a Secondary Treatment Plant that expanded the treatment plant’s capacity and the recycled water facility’s capacity from 1.4 million to over 5 million gallons per day.

APPENDIX: COMMUNITY INVENTORY

Community GHG Emissions Summary Table

Jurisdiction: City of San Rafael

Population: 61,179 (CA Department of Finance)

Number of Households: 23,373 (CA Department of Finance)

Inventory Year: 2021

Date Prepared: August 7, 2023

Reporting Framework: Communitywide Activities

ID	Emissions Type	Source or Activity	Included, Required Activities	Included, Optional Activities	Excluded (IE, NA, NO or NE)	Notes	Emissions (MTCO ₂ e)
1.0	Built Environment						
1.1	Use of fuel in residential and commercial stationary combustion equipment	Both	•				80,091
1.2	Industrial stationary sources	Source			NE		
1.3	Power generation in the community	Source			NO		
1.4	Use of electricity in the community	Activity	•			Includes transmission and distribution losses	14,955
1.5	District heating/cooling facilities in the community	Source			NE		
1.6	Use of district heating/cooling facilities in the community	Activity			NE		
1.7	Industrial process emissions in the community	Source			NO		
1.8	Refrigerant leakage in the community	Source			NE		
2.0	Transportation and Other Mobile Sources						
2.1	On-road passenger vehicles operating within the community boundary	Source			IE	Obtained data for preferred activity-based method instead	
2.2	On-road passenger vehicles associated with community land uses	Activity	•				151,449
2.3	On-road freight and service vehicles operating within the community boundary	Source			IE	Obtained data for preferred activity-based method instead	
2.4	On-road freight and service vehicles associated with community land uses	Activity	•				57,725
2.5	On-road transit vehicles associated with community land uses	Activity		•			1,306
2.6	Transit rail vehicles operating with the community boundary	Source		•			244
2.7	Use of transit rail travel by the community	Activity			NE		

2.8	Inter-city passenger rail vehicles operating within the community boundary	Source			NO		
2.9	Freight rail vehicles operating within the community boundary	Source			NO		
2.10	Marine vessels operating within the community boundary	Source			NE		
2.11	Use of ferries by the community	Activity			NE		
2.12	Off-road surface vehicles and other mobile equipment operating within the community boundary	Source		•			3,427
2.13	Use of air travel by the community	Activity			NE		
3.0	Solid Waste						
3.1	Operation of solid waste disposal facilities in the community	Source			NE		
3.2	Generation and disposal of solid waste by the community	Activity	•			Includes alternative daily cover	10,507
4.0	Water and Wastewater						
4.1	Operation of water delivery facilities in the community	Source			IE	Energy use is included in 1.1 and 1.4	
4.2	Use of energy associated with use of potable water by the community	Activity	•				115
4.3	Use of energy associated with generation of wastewater by the community	Activity	•			Energy use is included in 1.1 and 1.4	
4.4	Process emissions from operation of wastewater treatment facilities located in the community	Source			NE	Wastewater treatment facilities are located in the community but only process emissions associated with generation of wastewater by the community are reported in 4.5	
4.5	Process emissions associated with generation of wastewater by the community	Activity	•				550
4.6	Use of septic systems in the community	Source			NE		
5.0	Agriculture						
5.1	Domesticated animal production	Source			NE		
5.2	Manure decomposition and treatment	Source			NE		
6.0	Upstream Impacts of Communitywide Activities						
6.1	Upstream impacts of fuels used in stationary applications by the community	Activity			NE		
6.2	Upstream and transmission and distribution (T&D) impacts of purchased electricity used by the community	Activity			IE	Transmission and distribution losses included in 1.4	
6.3	Upstream impacts of fuels used by water and wastewater facilities for water used and wastewater generated within the community boundary	Activity			IE		
6.4	Upstream impacts of select materials (concrete, food, paper, carpets, etc.) used by the whole community.	Activity			NE		

Legend

IE – Included Elsewhere: Emissions for this activity are estimated and presented in another category of the inventory. The category where these emissions are included should be noted in the explanation.

NE – Not Estimated: Emissions occur but have not been estimate or reported (e.g., data unavailable, effort required not justifiable).

NA – Not Applicable: The activity occurs but does not cause emissions; explanation should be provided.

NO – Not Occurring: The source or activity does not occur or exist within the community.

Community Emissions Data Sources and Calculation Methodologies

Sector/ID	Emissions Source	Source and/or Activity Data	Emission Factor and Methodology
1.0 Built Environment			
1.1 Stationary Combustion	Stationary Combustion (CO ₂ , CH ₄ & N ₂ O)	Known fuel use (meter readings by PG&E) and estimated fuel use (American Community Survey 5-Year Estimates, and U.S. Energy Information Administration Household Site Fuel Consumption data).	Default CO ₂ , CH ₄ & N ₂ O emission factors by fuel type (U.S. Community Protocol v. 1.1, Appendix C, Tables B.1 and B.3). U.S. Community Protocol v. 1.1, Appendix C, Method BE.1.1 and BE.1.2.
1.4 Electricity Use	Electricity Use (CO ₂ , CH ₄ & N ₂ O)	Known electricity use (meter readings by PG&E and MCE) and estimated direct access electricity consumption.	Verified utility-specific emission factors (PG&E and MCE) and eGrid subregion default emission factors. U.S. Community Protocol v. 1.1, Appendix C, Method BE.2.1.
	Electric Power Transmission and Distribution Losses (CO ₂ , CH ₄ & N ₂ O)	Estimated electricity grid loss for Western region from eGrid.	U.S. Community Protocol v. 1.1, Appendix C, Method BE.4.1.
2.0 Transportation and Other Mobile Sources			
2.2 On-Road Passenger Vehicle Operation	On-Road Mobile Combustion (CO ₂)	Estimated passenger vehicle miles traveled associated with origin and destination land uses (Metropolitan Transportation Commission, CAPVMT Data Portal 2.0 (mtcanalytics.org)).	CO ₂ for on-road passenger vehicles quantified in the EMFAC2021 v.1.0.2 model. Passenger vehicle emissions calculated according to U.S. Community Protocol v. 1.1, Appendix D, Method TR.1.A.
	On-Road Mobile Combustion (CH ₄ & N ₂ O)	Estimated vehicle miles traveled associated with origin and destination land uses (Metropolitan Transportation Commission, CAPVMT Data Portal 2.0 (mtcanalytics.org)).	CH ₄ and N ₂ O for on-road passenger vehicles quantified in the EMFAC2021 v.1.0.2 model. Passenger vehicle emissions calculated according to U.S. Community Protocol v. 1.1, Appendix D, Method TR.1.A.
2.4 On-Road Freight and Service Truck Freight Operation	On-Road Mobile Combustion (CO ₂)	Estimated commercial vehicle miles traveled within the boundary (Metropolitan Transportation Commission utilizing Plan Bay Area 2050).	CO ₂ for on-road commercial vehicles quantified in the EMFAC2021 v.1.0.2 model. Emissions allocated utilizing LEHD data according to U.S. Community Protocol v. 1.1, Appendix D, Method TR.2.A.
	On-Road Mobile Combustion (CH ₄ & N ₂ O)	Estimated commercial vehicle miles traveled within the boundary (Metropolitan Transportation Commission utilizing Plan Bay Area 2050).	CH ₄ and N ₂ O for on-road commercial vehicles quantified in the EMFAC2021 v.1.0.2 model. Emissions allocated utilizing LEHD data according to U.S. Community Protocol v. 1.1, Appendix D, Method TR.2.A.
2.5 On-Road Transit Operation	On-Road Mobile Combustion (CO ₂)	Estimated vehicle miles traveled within the boundary (Marin Transit and Golden Gate Transit) and estimated diesel fuel efficiency for transit fleet (Golden Gate Transit). Fuel type provided by Marin Transit and Golden Gate Transit.	Renewable diesel emission factor provided by NEXGEN . U.S. Community Protocol v. 1.1, Appendix D, Method TR.4.A.
	On-Road Mobile Combustion (CH ₄ & N ₂ O)	Estimated vehicle miles traveled within the boundary (Marin Transit and Golden Gate Transit) and estimated diesel fuel efficiency for transit fleet (Golden Gate Transit). Fuel type provided by Marin Transit and Golden Gate Transit.	Renewable diesel emission factor provided by NEXGEN . U.S. Community Protocol v. 1.1, Appendix D, Method TR.4.B.

2.6 Passenger Rail	Mobile Combustion (CO ₂ , CH ₄ & N ₂ O)	Estimated train-miles by multiplying the number of train cars per day (in both directions, according to the SMART published schedule) by the railway track mileage located within the community boundary (Marin Map). Average Diesel Multiple Unit fuel efficiency provided by SMART.	U.S. Community Protocol v. 1.1, Appendix D, Method TR.5. Emission factors from Equation TR.5.2.
2.12 Off-Road Vehicles and Equipment	Off-Road Mobile Combustion (CO ₂)	Estimated fuel use from OFFROAD 2021 v.1.0.1 for Lawn and Garden and Construction equipment. All categories are allocated by share of countywide households.	CO ₂ emissions calculated according to U.S. Community Protocol v. 1.1, Appendix D, Method TR.8. Emission factors provided in Table TR.1.6.
	Off-Road Mobile Combustion (CH ₄ & N ₂ O)	Estimated fuel use from OFFROAD 2021 v.1.0.1 for Lawn and Garden and Construction equipment. All categories are allocated by share of countywide households.	CH ₄ and N ₂ O emissions calculated according to U.S. Community Protocol v. 1.1, Appendix D, Method TR.8. Emission factors provided in the Local Government Operations Protocol Table G.11 and G.14.
3.0 Solid Waste			
3.2 Solid Waste Generation and Disposal	Fugitive Emissions from Landfilled Waste (CH ₄)	Estimated landfilled tons based on reporting to CalRecycle by Marin County Solid and Hazardous Waste JPA and allocated to jurisdiction based on share of countywide population. Waste characterization based on the Statewide Waste Characterization Study (2008, 2014, 2018 and 2021) and Alternative Daily Cover by Jurisdiction of Origin and Material Type as reported to CalRecycle.	Emission factors calculated utilizing U.S. Community Protocol for Accounting and Report of Greenhouse Gas Emissions, Version 1.1, July 2013, Appendix E, Method SW.4.
4.0 Water and Wastewater			
4.2 Water Supply & Conveyance, Treatment and Distribution	Electricity Use (CO ₂)	Water consumption data provided by Marin Water. Sonoma County Water Agency (SCWA) delivery amount provided by SCWA .	Verified utility-specific emission factors (PG&E, MCE and SCWA). Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.14.
	Electricity Use (CH ₄ & N ₂ O)	Water consumption data provided by Marin Water. Electricity consumption data provided by MMWD.	eGrid subregion default emission factors. Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.14.
4.5 Treatment of Wastewater	Stationary Emissions from Combustion of Digester Gas (CH ₄)	Known amount of digester gas produced per day and known percent of methane in digester gas provided by Central Marin Sanitation Agency. Known amount of digester gas produced per day (2016) and known percent of methane in digester gas (2017) provided by Las Gallinas Valley Sanitary District.	Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.1.a.
	Stationary Emissions from Combustion of Digester Gas (N ₂ O)	Known amount of digester gas produced per day and known percent of methane in digester gas provided by Central Marin Sanitation Agency. Known amount of digester gas produced	Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.2.a.

		per day (2016) and known percent of methane in digester gas (2017) provided by Las Gallinas Valley Sanitary District.	
	Process Emissions from Wastewater Treatment Plant without Nitrification or Denitrification	Estimated population served by wastewater treatment plant provided by Central Marin Sanitation Agency.	Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.8.
	Process Emissions from Wastewater Treatment Plant with Nitrification or Denitrification	Estimated population served by wastewater treatment plant provided by Las Gallinas Valley Sanitary District (2010 data).	Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.7.
	Fugitive Emissions from Effluent Discharge (N ₂ O)	Estimated population served by wastewater treatment plant provided by Central Marin Sanitation Agency. Assumed significant industrial or commercial input.	Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.12(alt).
	Fugitive Emissions from Effluent Discharge (N ₂ O)	Estimated population served by wastewater treatment plant provided by Las Gallinas Valley Sanitary District. Assumed no significant industrial or commercial input.	Emissions calculated according to U.S. Community Protocol v. 1.1, Appendix F, Method WW.12.



CLIMATE ACTION PLAN PROGRAM WORKPLAN

Draft Two-Year Priorities: 2023-2025

ACTION STRATEGIES	COLLABORATING DEPARTMENTS	TARGET START DATE
1. Work with City departments to integrate climate action and resilience into department goals and projects.	All Depts	Jan 2024
2. Implement SB 1383 , including enforcement, reporting, procurement, and edible food recovery requirements.	Code Enforcement	In progress
3. Explore a Climate Financing District with County & other stakeholders to help plan adaptation and mitigation combined with housing security	City Manager	In progress
4. Adopt and implement an Electric Vehicle Strategy based on the Countywide EV Strategy done by TAM and MCEP. Include City fleet as well as public charging infrastructure and focus on equity.	Public Works	In progress
5. Work with County to promote energy efficiency and electrification of existing buildings , including investigating potential for community microgrids	Community Development	In progress
6. Develop the Equitable Low Carbon Economy program recommendations and begin work on relevant projects.	Economic Development	In progress
7. Continue the Illegal Dumping program pilots and bring a suite of solutions to Council for consideration for long-term dumping reductions.	Together San Rafael Team	In progress
8. Complete the grant-funded Canal Collaboration and SLR Feasibility Assessment project toward identifying adaptation priorities to pursue.	Community Development Public Works	In Progress
9. Develop a citywide climate resilience plan and integrate with Local Hazard Mitigation Plan and other resilience planning efforts and documents.	Community Development Public Works	January 2024
10. Implement and respond to state laws such as automated solar permitting, green building, renewable energy, and others that arise.	Community Development Public Works City Attorney	Ongoing
11. Reimagine and rebuild the Volunteer Program including development of new positions in departments and new community volunteer opportunities such as increasing community cleanups and tree and landscape programs.	All Departments	January 2024



SAN RAFAEL CITY COUNCIL AGENDA REPORT

Department: City Manager's Office

**Prepared by: Cory Bytof,
Sustainability Program Manager**

City Manager Approval: _____

A handwritten signature in blue ink, appearing to be 'CJ', written over a horizontal line.

TOPIC: ELECTRIC VEHICLE STRATEGY

SUBJECT: MARIN COUNTYWIDE ELECTRIC VEHICLE ACCELERATION STRATEGY AND CITY OF SAN RAFAEL DRAFT WORKPLAN

RECOMMENDATION:

Accept report and provide feedback on the City of San Rafael's Electric Vehicle Acceleration Strategy Draft Workplan.

BACKGROUND:

Climate Change Action Plan

San Rafael's first [Climate Change Action Plan \(CCAP\)](#) was developed by a 17-member Green Ribbon Committee in 2008 and adopted by the City Council in 2009. In 2017, the City developed a new community-based Climate Change Action Plan 2030 that built upon the original plan and included new greenhouse gas reduction (GHG) targets and programs to achieve 40% reductions from 1990 levels by 2030. Over 350 San Rafael residents and business representatives provided input on the plan, which was adopted by the City Council on May 19, 2019. In 2021 the City Council adopted a Climate Emergency Resolution committing the City to have net-zero GHG emissions by 2045.

Every two years staff identify key priorities to work on from our Climate Change Action Plan to be implemented during the year. The City Council Sustainability Liaison, Councilmember Llorens Gulati, reviews and provides input on the draft workplan. Additionally, feedback is sought at the Climate Change Action Plan quarterly community forum for review before finalizing and bringing to the City Council. The development of an electric vehicle strategy has been a priority due to the fact that over 60% of the City's in-boundary GHG emissions come from the transportation sector and over 30% of the estimated emissions reductions in the Climate Change Action Plan are projected to come from transitioning gas-powered vehicles to zero emission vehicles, typically in the form of electric vehicles (EVs).

Since many other jurisdictions in Marin have similar climate action plans and GHG reduction targets, the Marin Climate and Energy Partnership (MCEP) and Transportation Authority of Marin (TAM) saw an opportunity to develop a Countywide Electric Vehicle Acceleration Strategy that

FOR CITY CLERK ONLY

Council Meeting:

Disposition:

could be utilized by all cities and towns, including San Rafael (Attachment A). City staff helped develop and gave input on the countywide strategy throughout the process.

The work of developing and implementing an electric vehicle strategy aligns with the City Council's adopted fiscal year [2023-24 & 2024-25 goals and objectives](#). Specifically, one of the City Council's sustainability goals is to:

- Collaborate with Transportation Authority of Marin and other community partners to develop an electric vehicle strategy for San Rafael, including increasing electric vehicles and electric vehicle charging infrastructure at City facilities and in the community.

In addition, one of the City Council's Public Asset goals is to:

- Reduce the City's greenhouse gas emissions by transitioning, where feasible, diesel and gasoline-powered vehicles to electric vehicles.

ANALYSIS:

The Marin Climate and Energy Partnership developed the Countywide Electric Vehicle Acceleration Strategy over the course of two years and engaged numerous stakeholders including city and town staff, subject matter experts, local nonprofits and community groups, sustainability commissions, and others. The strategy provides background information to familiarize the reader with electric vehicles and charging terminology; existing electric vehicle charging conditions and projections; state and local legislation, policies, and actions aimed at increasing the number of electric vehicles on the road; and barriers to widespread electric vehicle adoption. The countywide strategy then identifies recommended actions that jurisdictions can take to address these barriers and accelerate electric vehicle adoption by both public agencies and community members. The countywide strategy also supports the State's goal to require all new light-duty vehicle sales in California to be zero emission vehicles by 2035.

Accompanying the Strategy and recommendations is a Workplan that cities and towns can customize for use. City staff worked with the Employee Green Team, consisting of members of several departments and met with Public Works to identify priorities for the Workplan. Sustainable San Rafael provided input as well. This City's Draft Workplan (Attachment B) identifies key activities the City will undertake in the next two years with columns that describe what initiatives are new, what the City is currently doing, the approximate staff workload level (low, medium, or high), and which departments are involved.

Given time and resource constraints, staff focused their selection of draft workplan items based on available resources as well as places where the City can make an impact in the most efficient way possible. The guiding principles identified in the countywide strategy were considered as well, which align with overall City priorities such as striving for equitable access, economic co-benefits, and countywide collaboration. The draft workplan focuses on near-term priorities with the understanding that future initiatives will be developed and refined to account for rapid developments in technology, consumer demand, and innovation, as well as the ability to leverage emerging funding opportunities.

Several items in the draft workplan such as developing a fleet replacement plan to transition the City to zero emission vehicles can be completed in the two-year time frame. Others like coordinating with public utilities to prepare the grid may begin in this time frame but will require a longer time frame to be completed. In some cases, recommendations in the countywide strategy have already been completed such as the adoption of [green building reach codes](#) requiring more electric vehicle charger installations in new construction, which the City Council adopted in November 2022.

There are thirty-six recommended actions in the countywide strategy, of which twenty are represented in the City's draft workplan. Of these twenty, nine are current City practices and eleven are new actions the City will undertake for this workplan period. Recommended actions from the countywide strategy not selected for this workplan period will be considered for incorporation into the next workplan.

Staff is requesting input from the City Council about the priorities staff selected to work on for this initial two-year draft workplan.

Next Steps

After receiving feedback from the City Council, staff will finalize the workplan, proceed with its implementation, and regularly update the City's Sustainability Liaison, Councilmember Llorens Gulati.

COMMUNITY OUTREACH:

City staff and members of the Marin Climate and Energy Partnership engaged numerous stakeholders including city and town staff, subject matter experts, local nonprofits and community groups, sustainability commissions, and others through surveys, meetings, presentations, and document sharing. Staff brought this item to the quarterly Climate Action Plan Community Forums for input as well.

FISCAL IMPACT:

There is no direct fiscal impact associated with consideration of the workplan, however the implementation of the action items listed in the strategy will require varying levels of funding. Many of the action items can be advanced within existing resources (ex. planning, outreach, and coordination), while others will require supplemental funding (ex. Electric vehicle charging infrastructure and City Fleet purchases). It is anticipated that the City will pursue funding support through grants and utility-sponsored programs, with potential General Fund support subject to future Council approval through the budget process.

RECOMMENDED ACTION:

Accept report and provide input on the Draft City of San Rafael Electric Vehicle Acceleration Strategy Workplan.

ATTACHMENTS:

Attachment A: Marin Countywide Electric Vehicle Acceleration Strategy

Attachment B: Draft City of San Rafael Electric Vehicle Acceleration Workplan



Marin Countywide Electric Vehicle Acceleration Strategy

February 2023

Increasing adoption of electric vehicles and supporting infrastructure

MCEP

+

TAM

Marin Countywide Electric Vehicle Acceleration Strategy

Developed
by



With
funding by



table of contents

Executive Summary	2
Introduction	4
Existing Conditions	13
Barriers to EV Adoption	30
Recommended EV Acceleration Strategies and Actions	33
Resources	37
Appendix A: Work Plan Template	A-1
Appendix B: Guiding Principles	B-1

data and tables

List of Tables

Table 1: Zero-Emission Vehicle Types	5
Table 2: EV Charger Types	7
Table 3: Local ZEV Goals	12
Table 4: BEVs and E-bikes In Marin Jurisdictions' Fleets, 2021	23
Table 5: EV Chargers Installed by Marin Jurisdictions	25
Table 6: Fees Charged by Marin Jurisdictions	26
Table 7: Barriers to EV Adoption	31
Table 8: Strategies to Address Barriers to EV Adoption	32

List of Figures

Figure 1: Marin Countywide Emissions by Sector, 2020	8
Figure 2: Marin Countywide Transportation Emissions by Vehicle Type, 2020	9
Figure 3: ZEV Registrations in Marin County	13
Figure 4: ZEVs as a Percent of Light-Duty Vehicle Registrations by Jurisdiction	14
Figure 5: Bay Area EVs and Projected Increase to Meet Bay Area 2050 Goal	16
Figure 6: Projected Population of Marin EVs to Meet 35% Adoption Target	17
Figure 7: Percent of New ZEV Registrations Needed to Reach 35% Adoption Target vs. State Sales Targets	18
Figure 8: Level 2 and Level 3 Chargers	21

Outcome Statement for Marin County

Marin will be a thriving county where electric vehicles (EVs) are integrated with other options in a healthy, sustainable, and equitable transportation system. Marin jurisdictions will support a holistic approach to reducing and ultimately eliminating the use of fossil fuel-powered cars by residents, visitors, businesses, and organizations, and will encourage biking, micromobility, walking, shared transportation, and transit use and reduced dependence on the automobile. Marin jurisdictions will support programs that facilitate a transition toward EVs and ensure information is widely available about EV benefits, models, affordability, rebate and incentive opportunities, and associated infrastructure. Permitting and regulatory processes will be efficient and transparent, and charging infrastructure and parking will be abundant, highly visible, accessible, and available to all. Marin's local governments will lead the way, building and supporting a safe and well-connected bicycle, pedestrian, and transit network and encouraging alternative modes of transportation while transforming their public fleet to all-electric and providing EV chargers at public parking lots.

A Guide to Using this Strategy

This Strategy is intended to inform and support jurisdiction staff within Marin County to implement local Climate Action Plans, specifically in relation to accelerating the adoption of EVs in their respective communities.

The following sections are included:

- **The Executive Summary** provides decision-makers with a list of key actions that advance the community's readiness to adopt clean, EV technology.
- **The Introduction** orients the reader to the goals and guiding principles of this Strategy and why Marin cities, towns, and the County encourage the adoption of EVs within the context of state, regional, and local greenhouse gas emission reduction goals and plans. This section also contains definitions pertinent to zero-emission vehicles and infrastructure.
- **The Existing Conditions** section discusses both existing and projected numbers of EVs and EV chargers in the community and at the local government level, as well as building codes that require installation of EV infrastructure.
- **The Barriers to Adoption** section identifies existing barriers to the widespread adoption of EVs.
- **The Recommended EV Acceleration Strategies and Actions** section identifies strategies and recommended actions to overcome barriers and accelerate EV adoption in Marin.

EVs vs. ZEVs

This Strategy uses the term "electric vehicles" or "EVs" in reference to both fully electric vehicles and plug-in hybrid vehicles that have a battery and an internal combustion engine and can run solely on the battery for limited mileage. The term "zero emission vehicles" or "ZEVs" refers to these electric vehicles as well as fuel cell electric vehicles that run on hydrogen. There are very few fuel cell vehicles in Marin County. While this Strategy focuses on EVs, it recognizes that fuel cell vehicles may play a larger role in the future.

Executive Summary

By the end of 2021, Marin County was home to more than 12,360 zero-emission vehicles (ZEVs), over 930 public and shared private chargers (not including home chargers), and a growing number of electric bicycles and scooters, positioning the county as a leader in EV adoption in California and the United States. Citizens and local leaders recognize the urgent need for much higher electric vehicle adoption rates, in tandem with greater use of all forms of low-carbon transportation, if Marin's communities are to meet the long-term greenhouse gas reduction goals established in their local Climate Action Plans. The transportation sector currently contributes more than half of countywide greenhouse gas emissions, and light-duty vehicles represent 80% of those emissions. Success will not be possible without a transformative shift to EVs, which currently make up less than 6% of all light duty vehicles registered in the County.

Marin's local governments have incorporated the acceleration of EV adoption into their Climate Action Plans and are taking steps to integrate EVs into their fleets and facilitate EV adoption by the public. This Strategy lays the path forward to accelerate the use of EVs by both public agencies and community members.

The Strategy provides background information to familiarize the reader with EVs and EV charging terminology; existing EV and EV charging conditions and projections; state and local legislation, policies, and actions aimed at increasing the number of EVs on the road; and barriers to widespread EV adoption. The Strategy then identifies strategies and recommended actions that jurisdictions can take to address these barriers

Key actions include:

- Adopting a reach code that requires EV charging equipment installation for multi-family and non-residential developments above State building code requirements. The number of required 'EV Ready' spaces and chargers should support local EV targets.
- Facilitating the proliferation of EV charging stations in local shopping centers, large workplaces, and on well-traveled corridors by removing permitting obstacles, such as parking minimums or sign ordinances.
- Encouraging community members to drive EVs through awareness campaigns across multiple media platforms and outlets, public outreach, and events.
- Addressing perceived and real barriers to adoption.
- Ensuring equitable access to programs and outreach that includes all income levels and communities of color.

- Participating in regional and coordinated local procurement efforts, outreach campaigns, and planning efforts.
- Piloting cutting-edge EV solutions that showcase new technologies and have the potential to accelerate EV adoption.
- Advocating for and supporting regional, state, and federal legislation, policies, and funding to incentivize and facilitate the widespread availability of EVs and EV charging.
- Committing to achieving a 100% ZEV public agency fleet as technology improves and special-duty vehicles become available. Maintaining a pipeline of priority EV fleet conversions and regularly updating this list.
- Committing to expanding the availability of EV chargers on municipality-owned land and exploring partnerships with third-party vendors to reduce installation costs.



Belvedere, California

Introduction

Goal of the Strategy

The goal of this Strategy is to help Marin communities reduce greenhouse gas (GHG) emissions, lower vehicle operating and fuel costs, and improve air quality by encouraging the use of electric vehicles (EVs) in lieu of driving fossil fuel-powered vehicles and transforming municipal fleets to EVs. Fueling vehicles in Marin offers the potential to use 100% renewable electricity, an environmentally responsible fuel source. The widespread adoption of EVs by 2030 is a critical component of meeting individual jurisdictions' Climate Action Plan (CAP) goals and is an important step in achieving meaningful greenhouse gas reductions. The Strategy also supports the State's goal to require all new light-duty vehicle sales in California to be ZEVs by 2035.

Origins of the Strategy

The content of the Strategy, its guiding principles, and recommended actions, are the result of the planning process undertaken by the Marin Climate and Energy Partnership (MCEP), which is comprised of the eleven cities and towns of Marin, the County of Marin, MCE, the Transportation Authority of Marin, and the Marin Municipal Water District. Established in 2007, MCEP works to efficiently and cost-effectively implement mutual programs outlined in each agency's CAP. Funding for the Strategy was provided by the Transportation Authority of Marin through its Alternative Fuels Program.

Zero-Emission Vehicle Types

The State of California identifies three types of electric vehicles as Zero-Emission Vehicles, or ZEVs, as shown in Table 1 ^[1] In Marin County, most ZEVs are battery electric vehicles (BEVs), comprising two-thirds of the 12,369 ZEVs registered with the California Department of Motor Vehicles (DMV) in Marin County by the end of 2021. Plug-in hybrid electric vehicles (PHEVs) represent about one-third of all ZEVs, and there were 56 fuel cell electric vehicles (FCEVs) registered in Marin County in 2021. This Strategy uses the term electric vehicle (EV) to describe a BEV or PHEV.

[1]

California Energy Commission (2021), <https://www.energy.ca.gov/data-reports/energy-insights/zero-emission-vehicle-and-charger-statistics>. Although plug-in hybrid electric vehicles (PHEVs) have an internal combustion engine and use fossil fuels, the state includes them as zero-emission vehicles. This Strategy similarly includes PHEVs as zero-emission vehicles.

The term “Zero-Emission Vehicle” refers to emissions created from energy used to power the vehicle and does not include emissions generated over the course of the vehicle’s life cycle, including mining, manufacturing, and disposal. Despite these “embodied” or “life cycle” emissions, studies show that ZEVs have lower greenhouse gases over the course of their lifecycles than fossil fuel vehicles. [2] However, the embodied emissions can vary significantly





between different ZEV models, typically based on the size and weight of the vehicle and of the battery.

In addition to supporting the accelerated adoption of electric light, medium, and heavy-duty vehicles, this Strategy also supports the widespread use of electric bikes, scooters, and motorcycles.

[2]

Georg Bieker, “A Global Comparison of the Life-cycle Greenhouse Gas Emissions of Combustion Engine and Electric Passenger Cars,” July 2021.

TABLE 1: Zero-Emission Vehicle Types

Vehicle Type	Abbreviation	Description	Example
Battery Electric Vehicle	BEV	Runs fully on electricity (no internal combustion engine.)	Nissan Leaf 
Plug-In Hybrid Electric Vehicle	PHEV	Can operate on electricity alone but once the electric driving range is depleted, the internal combustion engine extends the driving range.	Ford Escape 
Fuel Cell Electric Vehicle	FCEV	Powered by hydrogen, which is converted to electricity in the fuel cell. Produces no tailpipe emissions, just water vapor and warm air.	Toyota Mirai 
Electric bikes and scooters	e-bike and e-scooter	Electric bikes and scooters are charged by plugging into a standard 110 outlet, and most are fully charged after 4 hours.	Trek e-bike 

Charging Infrastructure

Electric Vehicle Supply Equipment (EVSE) is available at three different power levels (Level 1, 2, and 3). Typical charging rates, applications, and installation for each type of charger are shown in Table 2. Fuel cell EVs charge at a dedicated hydrogen fueling station. Currently, there is one station located on Redwood Boulevard in Strawberry, which provides 67% fossil fuel-derived hydrogen and 33% renewable hydrogen. [3]

[3]

Currently, most hydrogen is produced from natural gas. Electricity can also be used to generate hydrogen through the process of electrolysis. Renewable hydrogen is produced from electricity that comes from renewable resources like solar, wind, geothermal, biomass, and small-scale hydropower. For more information, see <https://www.energy.gov/eere/fuelcells/hydrogen-production-electrolysis>.



Marin Civic Center, San Rafael

TABLE 2: EV Charger Types

Type	Miles / Charge Time	Typical Applications	Equipment and Installation Costs ^[4]	Example
Level 1	≈5 miles per hour of charging ≈25 miles per hour of charging for an e-bike	Home, workplace, hotels, ferry terminals, and park and ride lots.	\$0 (existing outlet) \$Variable (commercial/ public station)	
Level 2	≈25 miles per hour of charging	Home, workplace, shopping centers, public parking lots	\$1,000-\$2,000 (residential station) \$5,000 - \$15,000 (commercial/ public station)	
Level 3	15 to 45 minutes for an 80% charge	Fast fueling at shopping centers, grocery stores, rest stops, and near restaurants and services	\$50,000+ (commercial station)	

[4]

Installation costs vary due to the need to upgrade electrical panels and/or capacity and the need to trench and/or install conduit from the power source to the charger.

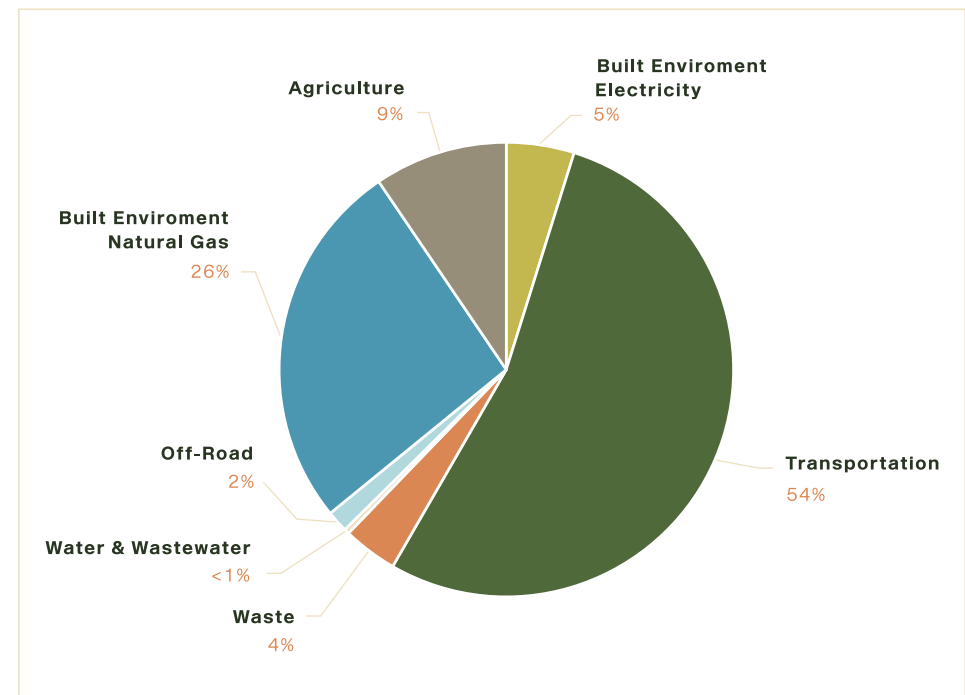
Transportation Emissions

Each year, [MCEP](#) prepares communitywide GHG emissions inventories for every Marin jurisdiction. Emissions are categorized according to eight sectors: Built Environment – Electricity; Built Environment – Natural Gas; Transportation; Off-Road Vehicles and Equipment; Waste; Water; Wastewater; and Agriculture.

The Transportation sector includes more than half of all communitywide emissions in Marin County (Figure 1), and is influenced by a wide range of factors, including vehicle ownership, land use, neighborhood design, housing availability and affordability, fleet composition, and vehicle speeds. This is true for all the individual towns and cities in Marin except Belvedere and Ross, where the Built Environment – Natural Gas sector leads, and the County of Marin, where the Agriculture sector is the largest source of emissions. The inventory represented in Figure 1 shows emissions in 2020, the latest year data for all eight sectors is available.

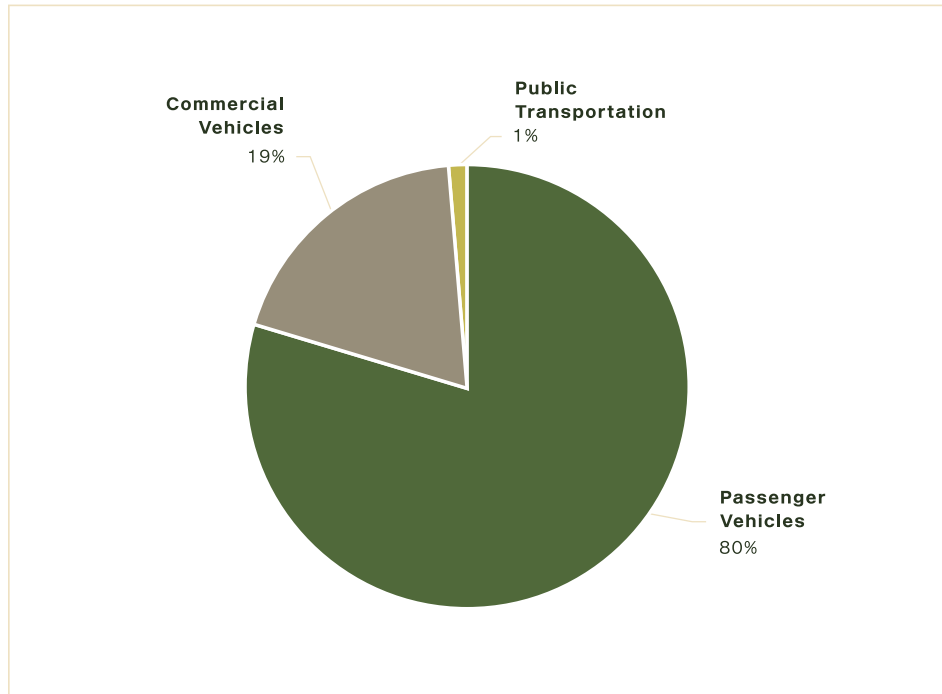
The Transportation sector includes tailpipe emissions from passenger vehicle trips originating and/or ending in Marin, as well as tailpipe emissions generated by medium and heavy-duty vehicles and buses traveling on Marin County roads. The sector

FIGURE 1: Marin Countywide Emissions by Sector, 2020



Source: MCEP

FIGURE 2: Marin Countywide Transportation Emissions by Vehicle Type, 2020



Source: MCEP

includes emissions from Marin Transit and Golden Gate Transit buses and the SMART train as these vehicles travel within Marin County and half of the emissions generated by Golden Gate ferries for trips that serve Marin ferry terminals. As shown in Figure 2, passenger vehicles represent 80% of transportation emissions, while commercial vehicles account for 19% of emissions, and public transportation just 1%.

Emissions from electricity used by EVs are embedded in the Built Environment – Electricity sector and vary according to the power content of electricity and, for plug-in hybrid vehicles, the number of miles driven using the vehicle's electric battery. While the electricity supplied in Marin County is some of the cleanest electricity in the nation, the only way to ensure that an EV is not generating emissions is to charge with MCE Deep Green electricity or a comparable 100% renewable electricity product such as PG&E 100% Solar, in addition to charging when there is ample renewable electricity on the grid, or using electricity being produced or stored on-site via a solar array and battery storage.

State and Regional ZEV Goals, Legislation, and Plans

The State of California has adopted legislation to reduce statewide emissions 40% below 1990 levels by 2030 (Senate Bill 32) and has set longer term goals to reduce emissions 85% below 1990 levels and achieve carbon neutrality by 2045 (Assembly Bill 1279).

To meet these goals, significant reductions in passenger vehicle travel through the use of walking, biking, public transportation, and shared transportation, along with wide-scale adoption of EVs, including e-bikes, and electrification of all types of transportation are required.

The State uses various regulations to reduce transportation emissions including increases in fuel economy standards, promotion of alternatives to vehicles with internal combustion engines (ICEs), and reduction in vehicle miles traveled (VMT) in passenger vehicles.

With the passage of SB 375, California established a planning process that coordinates land use planning, transportation plans, and air quality plans to support meeting its GHG reduction goals. One of the state's priorities is to reduce VMT by encourag-

ing the co-location of housing, jobs, services, and education so that people rely less on personal cars and trucks and more on transit, biking, walking, and micromobility options. Regional long-range transportation plans are required to reduce VMT to meet mandated GHG reductions and focus on the interrelated elements of housing, the economy, transportation, and the environment.

[Plan Bay Area 2050](#) is the Bay Area's regional transportation plan/Sustainable Communities Strategy and is required to meet a 19% reduction in GHG emissions. The plan identifies policies and investments over the next three decades to shape how Bay Area residents get around and to support land use policies that support multimodal transportation options. The transportation strategies outlined in Plan Bay Area 2050 maintain and optimize the existing transportation system, while creating healthy and safe streets and building a next-generation transit network.

SB 743 introduced changes to how transportation impacts are measured through the California Environmental Quality Act (CEQA), requiring new developments to reduce VMT by 15% per capita, reflecting the impact of land use decisions on the transportation system.

Micromobility

Micromobility refers to forms of transportation, human-powered or electric, that can occupy space alongside bicycles. It includes electric scooters and skateboards, docked and dockless shared bikes, and other forms of small, lightweight devices operating at speed typically below 20 mph. Micromobility devices do not have an internal combustion engine.

In addition to changes in mobility, the State has introduced the [Low Carbon Fuel Standard](#), designed to reduce the carbon intensity of transportation fuels in California, and the [Advanced Clean Cars Program](#) establishes fuel efficiency standards that require automobile manufacturers to produce a certain number of ZEVs each year based on the total number of cars sold in California by the manufacturer.

The State has also set specific targets for ZEV adoption. In January 2018, Governor Brown signed Executive Order B-48-18, setting a target of 250,000 electric vehicle chargers and 200 hydrogen fueling stations installed to support 1.5 million ZEVs on California roads by 2025, with a longer-term goal of 5 million ZEVs by 2030.

In September 2020, Governor Newsom issued Executive Order N-79-20, setting the following ZEV targets for California:

- 100% percent of in-state sales of new passenger cars and light-duty trucks to be ZEVs by 2035,
- 100% of medium- and heavy-duty vehicles operating in the State to be ZEVs by 2045 where feasible, and
- 100% zero-emission off-road vehicles and equipment operations by 2035, where feasible.

The California Governor's Office of Business and Economic Development's [California Zero-Emission Vehicle Development Strategy](#) (February 2021) presents a high-level roadmap to achieve these ambitious targets. The Strategy is centered on four market pillars – vehicles, infrastructure, end users, and workforce – and identifies the roles and responsibilities of each public and private market player. The Strategy identifies local governments' roles in permitting, code development and adoption, municipal fleets, planning (e.g., Climate Action Plans and EV Readiness Plans), directional charging signage, and vehicle and infrastructure incentives.

Regionally, the Bay Area Air Quality Management District (“Air District”) has set a target for 1.5 million ZEVs in the Bay Area by 2030 (equivalent to 27% of the 2020 registered vehicle population) and for 90% of vehicles in the Bay Area to be zero emissions by 2050. The Air District released a draft [Bay Area Electric Vehicle Acceleration Plan](#) in March 2021 that encourages local governments to enact EV ready reach codes by 2030, adopt EV charging station permitting and streamlining procedures and policies by 2022, and prioritize and empower low-income and communities of color that are disproportionately impacted by air pollution and climate change. The Air District's Plan details 23 specific actions that local governments can take. These

actions were considered in the development of this Strategy, along with the eleven local government strategies identified in the California Zero-Emission Vehicle Development Strategy discussed above.

Local Climate Action Plan Goals and Targets for ZEVs

The eleven cities and towns in Marin and the County of Marin have adopted Climate Action Plans that set long-term targets to reduce emissions within the communities they serve. Currently, ten of the twelve jurisdictions have adopted ZEV targets for the percentage of passenger vehicles registered in Marin County in their updated CAPs (Table 3) ^[5]. Meeting these ZEV targets is critical to achieving their overall GHG reduction goals for 2030.

[5]

Consistent with the way emissions reductions are calculated, this target applies to Marin-registered vehicles and trips that start and/or end within the jurisdiction.

TABLE 3: Local ZEV Goals

Jurisdiction	GHG Reduction Goal for 2030	ZEV registrations as % of total passenger vehicle registration by 2030
City of Belvedere	40% below 1990 level	35%
Town of Corte Madera	40% below 1990 level	25%
Town of Fairfax	Zero emissions	100%
City of Larkspur	40% below 1990 level	35%
County of Marin	40% below 1990 level (mitigation only)	45%
City of Mill Valley	47% below 1990 level	35%
Town of San Anselmo	45% below 1990 level	25%*
City of San Rafael	40% below 1990 level	25%
City of Sausalito	40% below 1990 level	30%
Town of Tiburon	50% below 1990 level	45%

*The Town of San Anselmo has also adopted a local target of 3,000 ZEVs registered in San Anselmo by 2030.

Existing Conditions

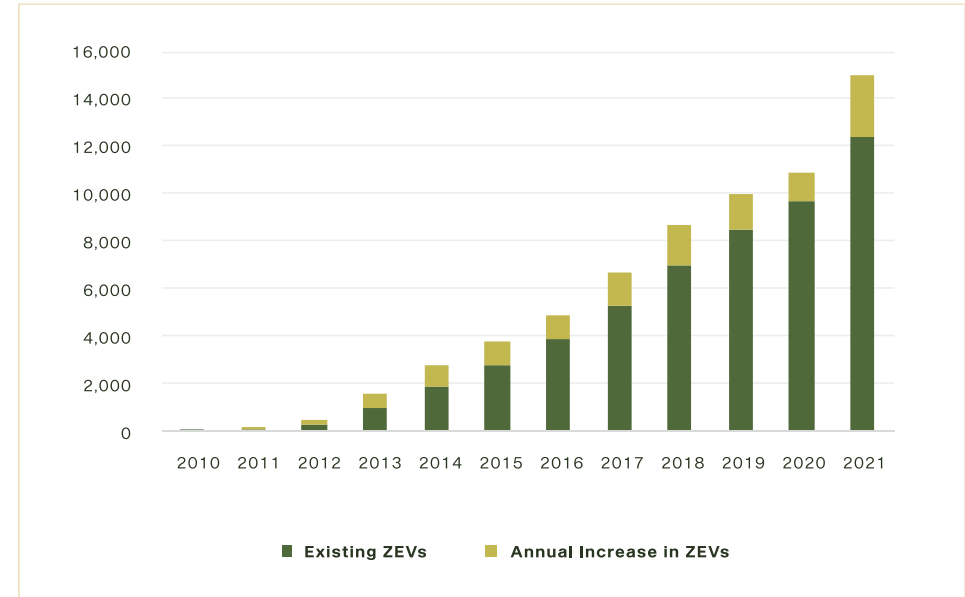
ZEV Adoption and Sales

While California’s ZEV goals are a huge challenge, they also offer an excellent opportunity. ZEVs were California’s number one export in 2020^[6] and approximately 43% of all ZEVs in the US are sold in California.^[7] With over 70,000 shared EV chargers and 45 hydrogen fueling stations, California is the country’s leader in ZEV infrastructure.

California DMV [registration data](#) shows that Marin had 12,369 ZEVs by end of 2021, representing 5.8% of the county’s light-duty vehicles (Figure 3). Of all counties in California, Marin County has one of the highest rates of adoption, second only to Santa Clara County at 6.0%. Within Marin County, ZEV registration rates range from a high of 10.5% for Ross to a low of 4.0% for Novato (Figure 4).

In 2021, BEVs accounted for 66% of all ZEVs registered in Marin County, PHEVs made up nearly 34%, and FCEVs less than 1%. Across the state, ZEVs made up 10.7% of new car sales in Q1-Q2 2021, with Tesla accounting for 47% of ZEV sales and the Model Y being the most popular EV. Auto manufacturers are currently producing 35 BEV models and 38 PHEV models, although availability has been

FIGURE 3: ZEV Registrations in Marin County



Source: MCEP

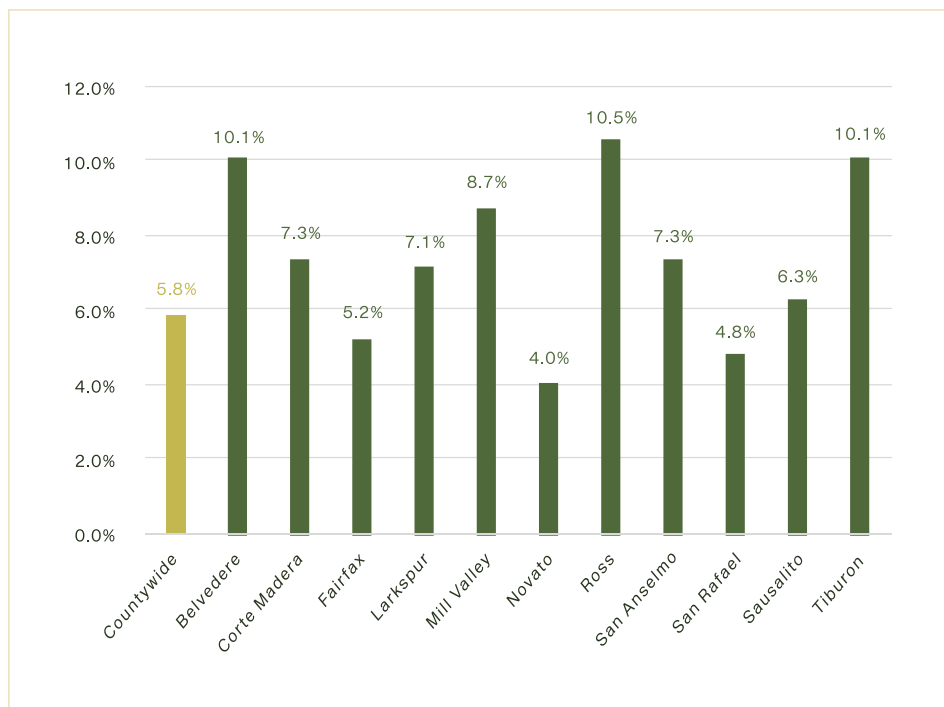
[6]

United States Census Bureau, “State Exports from California,” <https://www.census.gov/foreign-trade/statistics/state/data/ca.html>, accessed August 18, 2021.

[7]

VELOZ, <https://www.veloz.org/ev-market-report/>, accessed August 18, 2021.

FIGURE 4: ZEVs as a Percent of Light-Duty Vehicle Registrations by Jurisdiction by end of 2021



Source: California Energy Commission, Zero Emission Vehicle and Infrastructure Statistics. Note: Data is by zip code and includes unincorporated areas. Belvedere and Tiburon are under one zip code.

limited for many models.^[8] The emergence of new EV models at lower price points, in addition to the inclusion of popular models such as the Ford F-150 pickup truck, present an opportunity for increased conversion. Many automobile manufacturers have also announced plans to phase out and ultimately stop producing internal combustion engine vehicles, some as early as 2025.

It is important to note that EV adoption is significantly higher among Marin's more affluent communities and increasing equitable access to EV programs for lower-income communities in Marin County is a founding principle of this Strategy.

[8]

Drive Clean Bay Area, <https://drivecleanbayarea.org/electric-vehicle-makes-and-models/>, accessed 1/11/22.

While quantitative data does not exist, empirical data suggests that e-bikes and e-scooter adoption is rapidly growing throughout Marin, and they are providing an efficient and credible alternative for many local errands and commutes. Because 57% of daily trip lengths are 5 miles or less in Marin County (and another 20% between 5 and 10 miles),^[9] and because the starting cost of an e-bike is around \$1,000, e-bikes can eliminate greenhouse gas emissions for local trips in a way that is more affordable and accessible for people and families who are not yet able to access EVs. A study by the Transportation Authority of Marin in 2020, [Electric Bicycles in Marin](#), provides a comprehensive overview of the benefits and challenges to e-bike use, the role e-bikes can play as part of the transportation system in Marin County, and what public agencies and private entities can do to encourage their use.

EV Market Projections

For the past seven years, [BloombergNEF](#) has produced a [Long-Term Electric Vehicle Outlook](#) analysis. 2021 marked the first year the company forecasted a major increase in its EV adoption outlook, driven by rising policy support around the globe, increased commitments from automobile manufacturers, new battery technologies and lower expected costs, accelerated investment in infrastructure, and rising

consumer adoption. In its 2022 report, the company projects 23% of new passenger vehicle sales globally will be EVs in 2025, with three-quarters of those sales for BEVs. In that year, approximately 6% of the global passenger vehicle fleet will be EVs. BloombergNEF also asserts that internal combustion engine (ICE) passenger vehicle sales reached their peak in 2017 and now are in “permanent decline.”^[10] Unsubsidized price parity between ICE vehicles will be achieved by the late 2020s for most passenger and commercial end uses. The 2022 report also acknowledges, as one of its five key thematic highlights, the importance of reshaping mobility demand through modal shifts and names the public sector as uniquely positioned to drive demand reductions: “Governments should prioritize investments in these areas, many of which also have concurrent health benefits.”^[11]

In California, the Bay Area Air Quality Management District has developed two potential pathways to reaching its 2050 goal of EVs accounting for 90% of the fleet (or roughly 5 million EVs). Figure 5 shows historic share of EVs in the Bay Area based on DMV data through 2019, then charts two different trajectories (i.e., traditional and expedited) to reaching the 2050 goal. The projections assume EVs achieve cost parity with ICE vehicles in 2024, resulting in varying degrees of impact based on the projection

[9]

Fehr & Pehrs, “[TAM Origin and Destination Report](#),” April 3, 2018.

[10]

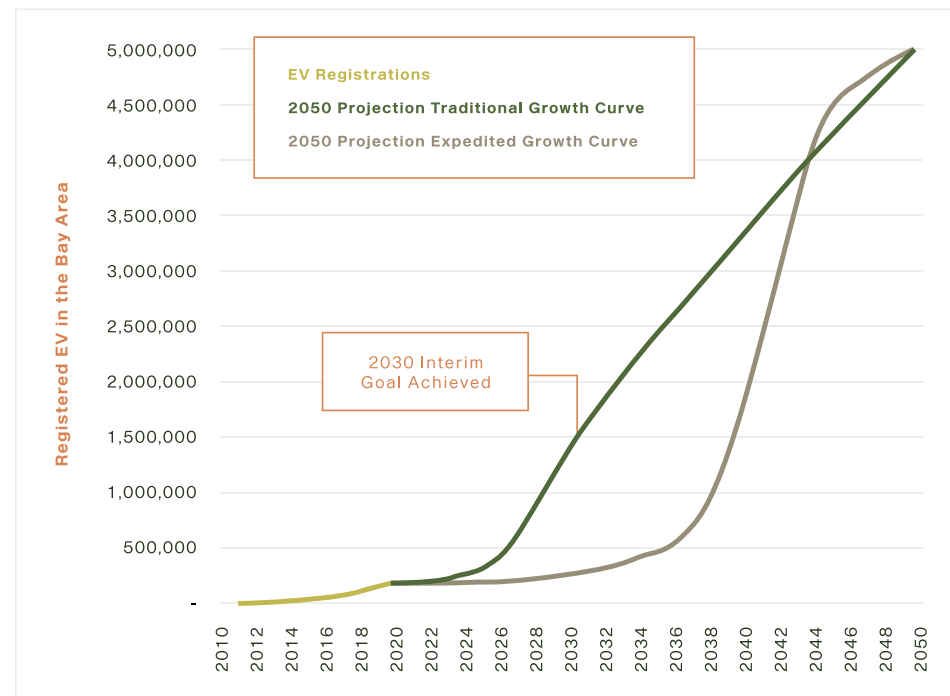
BloombergNEF, [Electric Vehicle Outlook 2022 Executive Summary](#).

[11]

Ibid.

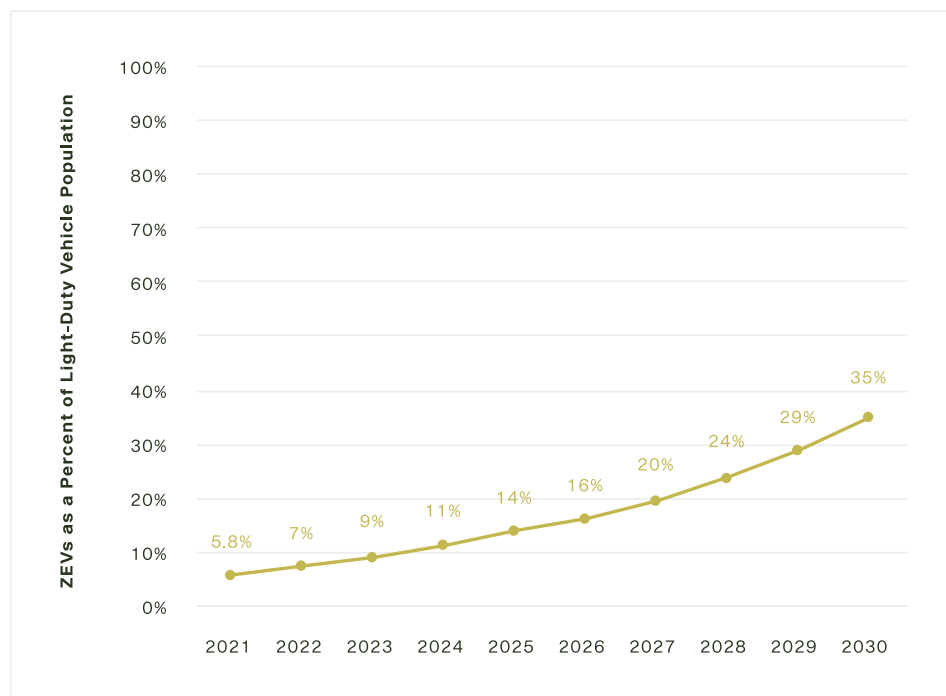
trajectory. The traditional trajectory assumes economic stagnation and only a slight uptick in new EV sales as range anxiety continues to be a large barrier to adoption, and the expedited trajectory assumes consumer demand increases as price outweighs range anxiety. The graph also considers the enactment of a ban on new ICE vehicle sales in 2035, as outlined in Executive Order N-79-20. While these projections use estimates for the actual EV share increases, they show two different paths the Bay Area EV market might take to 2050.

FIGURE 5: Bay Area EVs and Projected Increase to Meet Bay Area 2050 Goal



Source: Bay Area Air Quality District, Bay Area Electric Vehicle Acceleration Plan.

FIGURE 6: Projected Population of Marin EV's to Meet 35% Adoption Target

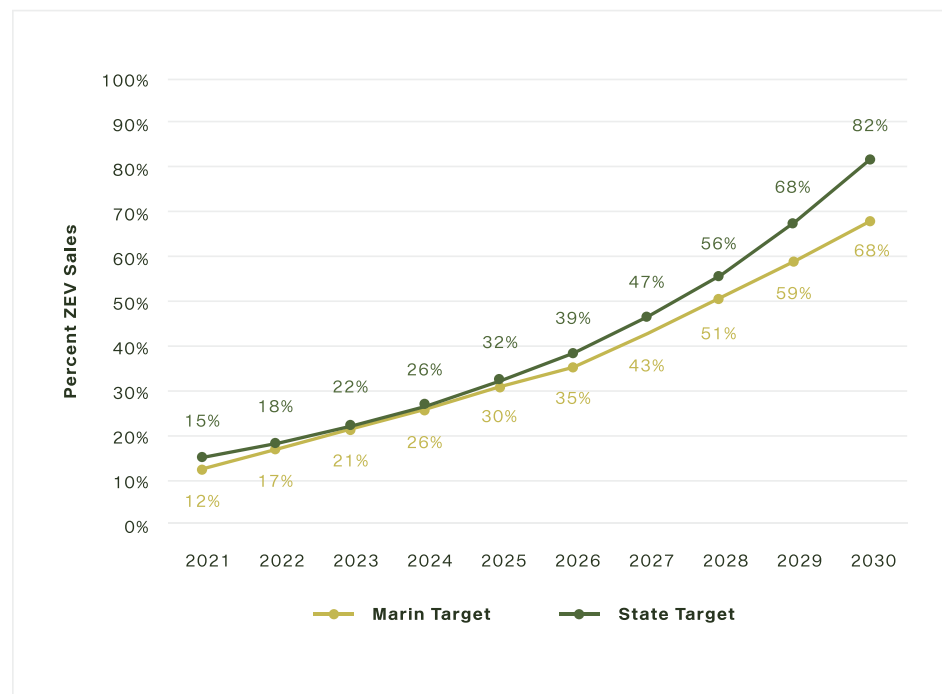


In Marin County, ZEV registrations will need to increase 14% annually to reach a ZEV penetration rate that is 25% of all passenger vehicles registered in Marin by 2030; an annual growth rate of 27% is needed to achieve a 45% adoption rate. Between 2019 and 2021, annual EV growth rates have averaged 21%. Assuming Marin can sustain a 21% EV growth rate, 35% of Marin's light-duty vehicle population will be ZEVs in 2030, as shown in Figure 6.

Figure 7 shows the percent of new ZEV registrations in Marin needed to achieve a 35% adoption rate in 2030. This is compared to Statewide targets for new ZEV sales. The Advanced Clean Cars II rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be ZEVs. The regulation realizes and codifies the light-duty vehicle goals set out in Governor Newsom's [Executive Order N-79-20](#), and establishes an increasing number of ZEVs beginning in model year 2026. Sales of new ZEVs will start with 35% that year, build to 68% in 2030, and reach 100% in 2035. The 2021 data point reflects actual sales, and the 2022-2025 data points are interpolated.

This analysis suggests that ambitious targets are achievable but will most likely require concerted and coordinated efforts among local governments, public agencies, and community partners, as well as a continuing expansion of EV programs and infrastructure that address existing barriers to widespread EV adoption.

FIGURE 7: Percent of New ZEV Registrations Needed to Reach 35% Adoption Target vs. State Sales Target



EV Charging Infrastructure

The California Energy Commission (CEC) tracks the number of public and shared private EV chargers in California counties. Public chargers are located at parking spaces available and accessible to the public. Shared chargers are located at parking spaces designated by a property owner or lessee to be available to employees, tenants, visitors, and residents, such as workplaces and shared parking at multifamily buildings.

According to CEC statistics, there were 739 public and shared private EV chargers in Marin as of January 2022. The majority of these are Level 2 chargers, representing 88% (or 650) of the total number of chargers. In addition, there were 88 Level 3 chargers and one Level 1 charger. Approximately 75% of the chargers were public, and 25% were shared private chargers. This data does not include private EV chargers installed in single family homes. Although the Marin jurisdictions do not track this data in a manner that allows robust analysis and aggregation, anecdotal evidence from Building Department staff indicates that private EV charging installation has been increasing rapidly. The number of private



EV chargers in single family homes is undoubtedly much higher than the number of public and shared private chargers in Marin County.

In recent years there has been a rapid proliferation of Level 3 charging equipment funded by private companies in commercial developments such as shopping centers, including Vintage Oaks in Novato, the Village in Corte Madera, and in Mill Valley. New business models have emerged to install Level 3 charging on commercial properties with leasing revenues for property owners and fees for consumers.

EV Charging Projections

The availability and accessibility of EV chargers is a factor in the number of people who switch to EVs.

^[12] Publicly accessible EV chargers are needed to support the growing number of EV drivers, especially for long-distance trips and for drivers that do not have access to private home chargers.

The [National Renewable Energy Laboratory](#) and the CEC have developed a computer simulation tool, [Electric Vehicle Infrastructure Projection](#) (EVI-Pro), which uses the results of a statewide transportation habits survey to quantify the charging infrastructure needed to ensure that future EV drivers can meet their transportation needs. This analysis

accounts for shifts in vehicle and charging technologies, user demographics, market adoption conditions, and shared use of chargers, as well as travel and charging preferences.

According to EVI-Pro, Marin needs approximately 4,000 charging ports to support the charging needs of 16,518 EVs by 2025 (914 Level 2 public charging ports, 600 Level 2 workplace charging ports, 316 Level 3 public charging ports, and up to 2,204 multi-family charging ports). According to the CEC, there are 551 public and 188 shared private chargers (workplace and multi-family) in Marin County as of March 2022. As shown in Figure 8, the greatest need is for shared private chargers.

An individual or household's need for public charging infrastructure is related to home type, with EV drivers in single-family homes being much more likely to have home charging than those in apartments or multi-unit dwellings. Since EV owners tend to live in single-family homes ^[13], extending the EV market beyond those living in single-family homes will require a substantial expansion of EV charging infrastructure at multi-unit dwellings, workplaces, and in public spaces.

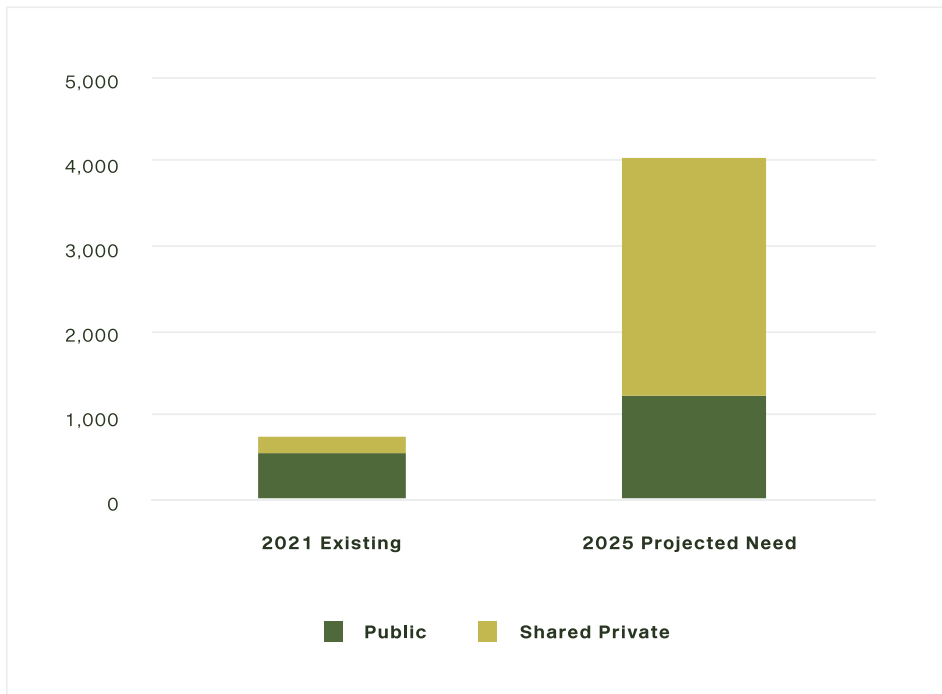
[12]

Hauke Engel, Russell Hensley, Stefan Knupfer, and Shivika Sahdev, McKinsey & Company, 2018, [Charging Ahead: Electric Vehicle Infrastructure Demand](#).

[13]

International Council on Clean Transportation, Quantifying the electric vehicle charging infrastructure gap across U.S. markets, January 2019.

FIGURE 8: Level 2 and Level 3 Chargers



In Marin County, approximately 27% of housing units are in multi-unit dwellings. ^[14] Installing charging infrastructure has been challenging for this segment of the housing stock, requiring EV owners living in multi-unit dwellings to charge their vehicles at public charging stations or work (if available). In addition, long distance driving also requires public charging.

[14]

Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark*.

In 2019, TAM prepared the [Marin County Electric Vehicle Charging Station Siting Plan](#) (“Siting Plan”) which identifies opportunity sites for additional EV charging stations in Marin. Locations for Level 2 charging stations included:

- Southern Marin, especially around TAM junction, and in Mill Valley and Strawberry, where there is a limited supply of existing charging stations. Opportunities along frontage roads next to Highway 101, as well as Miller Avenue, Blithedale Avenue, Highway 1, Camino Alto, and other major road corridors.
- Shopping centers such as the Strawberry Shopping Center, The Village at Corte Madera, and Bon Aire Shopping Center in Larkspur, and an expansion of EV charging at Northgate Mall in Terra Linda.
- School parking lots that can be used by students and staff during the day and nearby residents overnight.
- SMART stations.
- Ferry terminals.
- Park and Ride lots.
- Marin City in Southern Marin and the Canal Neighborhood of San Rafael, where increasing EV infrastructure would support equitable EV access and adoption in Marin.



Vintage Oaks Shopping Center, Novato

The Siting Plan also describes priority locations for Level 3 fast charging as identified by [PG&E's Electric Program Investment Charge Program](#). These general locations include Terra Linda, downtown San Rafael, downtown Novato, Sausalito, Point Reyes Station, Larkspur/Corte Madera, and Mill Valley. Public utilities are coordinating closely with private Level 3 charging installations to support the grid upgrades for planned improvements.

Most Marin cities and towns prioritize purchasing and leasing of EVs over internal combustion engine vehicles for their public fleets, even if the electric version is more expensive. Several jurisdictions have transitioned passenger vehicles used for site inspections, code enforcement, police undercover work, off-site meetings, and commuting to EVs. However, these types of vehicles typically make up a small percentage of a municipal fleet. Mission critical and emergency response vehicles and trucks (e.g., police patrol cars) are difficult to convert due to the lack of electric models that can provide the necessary utility. In addition, some specialized heavy-duty public works trucks are used and replaced infrequently. As a greater range of EVs become available, most municipalities have policies – written or otherwise – to electrify their fleet. Table 4 lists EVs and e-bikes in the fleets of the various Marin jurisdictions as of the preparation of this Strategy.

TABLE 4: BEVs and E-Bikes in Marin Jurisdictions' Fleets, 2023

Jurisdiction	BEVs
City of Belvedere	2 passenger cars and 1 e-bike
Town of Corte Madera	3 passenger cars and 1 e-bike
Town of Fairfax	1 passenger car and 1 light truck (on order)
County of Marin	13 passenger cars
City of Larkspur	2 passenger cars
City of Mill Valley	6 passenger cars and electric utility carts
City of Novato	3 passenger cars and 5 e-bikes
Town of Ross	1 passenger car
Town of San Anselmo	3 passenger cars and 2 e-bikes
City of San Rafael	1 passenger vehicle, 3 parking service buggies, 2 pickup trucks, 1 utility vehicle, and 4 e-bikes
City of Sausalito	None
Town of Tiburon	3 passenger cars, 1 e-bike, and 1 utility cart



Public parking lot, San Rafael

Municipal fleets are eligible for a wide range of vehicle rebates from state, regional, and local funding sources. Locally, the Transportation Authority of Marin (TAM) provides funding and technical assistance for Marin's public agencies to electrify their fleet. Currently, [TAM](#) provides matching rebates for vehicles that qualify for a rebate from the [California Clean Vehicle Rebate Program](#). MCE and the Bay Area Air Quality Management District also provide rebates. TAM has prepared a [Toolkit for Electric Vehicles and Charging Infrastructure](#) for Marin public agencies that provides guidance on incorporating EVs into fleets and installing charging infrastructure.

The [Electrification Coalition](#) is a national nonprofit organization that provides service to members of the [Climate Mayors EV Purchasing Collaborative](#). The Coalition is free to join and provides assistance on grant funding, policy, fleet analysis, implementation, and procurement.

EV Charging Stations on Municipal-Owned Land

Nearly all Marin jurisdictions have installed EV chargers on land owned by the jurisdiction, as shown in Table 5. At the time this Strategy was prepared, several jurisdictions had plans in the pipeline to install additional chargers. However, a few jurisdictions have concerns about the cost effectiveness of installing chargers because the revenue generated from charging rarely covers the full cost of installation, subscription fees, electricity, maintenance, and depreciation. Installation costs for trenching and electrical capacity upgrades can be prohibitive.

TAM's Marin County Electric Vehicle Charging Station Siting Plan provides guidance on siting and placement principles for EV charging stations. In 2020, TAM prepared an analysis of public parking lot capacity for EV charging. The study identifies public parking lots in each jurisdiction, their size (small, medium, and large), and power availability based on the observation of nearby streetlights or overhead powerline. The study identifies far more capacity than currently utilized.

As discussed above, TAM's Toolkit for Electric Vehicles and Charging Infrastructure is a great resource

TABLE 5: EV Chargers Installed by Marin Jurisdictions

Jurisdiction	EV Chargers
City of Belvedere	4 ports, Level 2 chargers (City Hall parking lot)
Town of Corte Madera	1 port, Level 2 charger (Town Hall parking lot)
County of Marin	68 Level 2 charging ports at 7 County locations (Civic Center, Marin Center, Health and Wellness Campus, 20 North San Pedro, 1600 Los Gamos, West Marin Service Center, Tomales Fire Station) and 20 Level 2 ports for fleet vehicles
Town of Fairfax	6 ports, Level 2 chargers, some with Level 1 charging (Parkade parking lot) and 1 single-port Level 2 charger with a Level 1 port (Town Hall parking lot)
City of Larkspur	6 ports, Level 2 chargers (Piper Park parking lot and Police Station parking lot)
City of Mill Valley	2 port, Level 2 charger (Hauke Park parking lot)
City of Novato	24 -port, Level 2 chargers (various locations)
Town of Ross	4 ports, Level 2 Chargers (Town hall and Post Office)
Town of San Anselmo	8 ports, Level 2 chargers (Magnolia parking lot) and 2-port, Level 2 charger (Fire Department at Station 19)
City of San Rafael	28-port Level 2 chargers (various locations) and 6-port Level 2 chargers (City staff only)
City of Sausalito	None
Town of Tiburon	2 single-port, Level 2 chargers (Town staff only)

TABLE 6: Fees Charged by Marin Jurisdictions

Location	Pricing
Belvedere City Hall	\$0.25 /kWh
Corte Madera Town Hall	None
County of Marin	\$1/hour for public, \$0.50/hour for employees
Fairfax - Town Hall & Parkade	\$0.50/hour, \$12 max. for every 24 hours
Larkspur - Piper Park	\$1/hour, \$1 minimum
Mill Valley - Hauke Park	\$1/hour
City of Novato	First hour free, \$1.50/hour thereafter with 4-hour max. \$4/hour idle for exceeding 4-hour max.
San Rafael - Public Parking Lots	Free charging with paid parking
San Rafael - City Hall	\$1 per hour in free parking spaces for public, \$2 per hour after 2 hours; \$.50 per hour for employees, \$1 per hour after 2 hours
San Anselmo - Public Parking Lot	\$0.32/kWh and free parking while charging

for public agencies. Both [MCE](#) and [TAM](#) provide combined rebates up to \$6,500 per charging port, exceeding typical installation costs for most projects. [Air District](#) grants are also available.

EV Charging Pricing Policies

EV charging fees in the local region are varied and include both time-based and per kWh pricing structures. Examples of local per kWh fees include Tesla at \$0.28/kWh, San Rafael School District at \$0.23/kWh, and the City of Belvedere at \$0.25/kWh. Time-based EV charging rates vary considerably in Marin, ranging from \$0.50/hour to as much \$3/hour, which also reflects different charging levels. Fees charged by Marin jurisdictions are shown in Table 6.

In order to standardize methodologies used to determine EV charging rates and provide greater transparency for consumers, the California Office of Administrative Law has banned operators of electric vehicle charging stations from charging a time-based fee at Level 2 stations installed after January 1, 2021, and DC Fast Charging stations installed after January 1, 2023. Public agencies are exempt from the new rule.

CALGreen Requirements and Reach Codes in Marin

The California Green Building Standards Code or “CALGreen” (California Code of Regulations, Title 24, Part 11) currently requires EV capable spaces for new residential and non-residential development. “EV capable” means that electrical panel capacity must be allocated and conduit installed for a future Level 2 charger. The property owner would still need to run wiring from the electrical panel and install the charger at the parking space. 2022 CALGreen requirements are as follows for new construction:

- Single family, two-family, and townhouses with attached private garages: one EV capable space for each dwelling unit.
- Multifamily, hotels and motels: 25% of parking spaces must be EV ready with low power Level 2 receptacles; 10% of parking spaces must be EV capable; and 5% of parking spaces in building with 20 or more units must have Level 2 chargers installed. For existing buildings, 10% of new added parking spaces and 10% of altered spaces must be EV capable.
- Non-residential: No EV spaces are required for projects with fewer than 10 parking spaces. Over 10 spaces, four EV capable spaces are generally required for every 25 parking spaces (i.e., 10-25 spaces require four EV capable spaces, 26-50 spaces require eight EV capable spaces, etc.). Over 201 parking spaces, 20% of spaces must be EV capable. Approximately one-quarter of the

EV capable spaces must have EV chargers (depending on total number of spaces).

The County of Marin has developed and adopted a “reach code” that requires EV infrastructure above the base CALGreen code, including EV ready spaces for all new construction. “EV ready” means that wiring and a receptacle needs to be installed in addition to electrical panel capacity. In this case, “EV ready” means the resident could simply plug into a Level 2 charger. In general, the reach code requirements for new construction are as follows:

- Single family, two-family, townhomes with private garages, and ADUs with dedicated parking: one EV ready space.
- Multifamily: 85% of parking spaces are EV ready with low power Level 2 receptacles, and the remaining 15% of parking spaces must have Level 2 EV chargers installed.
- Hotels and motels: 35% of the parking spaces must be EV ready with low power Level 2 receptacles; 10% must be EV capable; and 10% must have level 2 EV chargers installed.
- Non-residential: 20-50% of parking spaces are EV capable depending on the number of spaces, and 7-33% of parking spaces must have EVSE installed depending on the number of spaces (same as CALGreen Tier 1).

For renovations of single family, two-family and townhomes with private garages, an EV ready parking space must be provided if the project is upgrading the main electrical service panel. Multifamily and nonresidential renovations require electrical capacity to be designated for 20% of onsite parking spaces to be Level 2 EV ready, if the service panel is modified. Raceway/conduit must be added for multifamily and nonresidential renovations if the parking lot surface is modified. For more details, see the [County of Marin's 2022 Green Building Model Reach Code and Development](#) webpage.

Permit Streamlining

In 2015, the State passed Assembly Bill 1236 with the objective of providing transparency, certainty, and uniformity in the permitting process for EV charging stations to support the rapid expansion of EV charging stations. AB 1236 requires all local jurisdictions to adopt an ordinance and checklist that provides an expedited, streamlined process for permits for EV charging stations. In 2020, MCEP vetted a streamlined checklist that is now used by several jurisdictions. All Marin jurisdictions have adopted a streamlining ordinance and checklist in compliance with AB 1236.



San Marin Plaza, Novato

Innovative Charging

Innovative charging solutions offer the potential to expand access to charging equipment, reduce site installation costs, and build more resilient communities. Below is a list of several technological advancements and innovative solutions that have the potential to transform the EV charging landscape:

- [Orange](#) provides a payment management system that tracks individual energy usage at shared outlets and chargers, allowing the user to pay the owner for the electricity used.
- Curbside charging on an existing streetlight system can expand charging access for multi-family neighborhoods, such as a project undertaken by the [City of Los Angeles](#).
- Pop-up chargers that rise up from the pavement when activated remotely using a smartphone app.
- Wireless charging that will allow electricity to be transferred from a magnetic coil underneath the pavement to a second magnetic coil fitted to the underside of the vehicle.
- Off-grid solar charging.
- EV batteries that can be used to power homes and businesses in the event of a power outage. The [Ford F-150 Lightning](#) claims it will be able to fully power a home for up to three days on a fully charged battery, and as long as 10 days, if rationing power.
- Bidirectional charging which allows electric vehicles to serve as “batteries on wheels” to send energy back to the grid and strengthen grid reliability. Emerging Vehicle-to-Everything (V2X) technologies can be used to power homes and businesses by using the batteries in electric vehicles when the grid goes down. These mobile energy sources could also be moved to where they’re needed most during power outages, like backing up medical centers, fire stations, and grocery stores.
- Energy management tools for chargers that optimize panel sharing and scheduled charging.

Barriers to EV Adoption

As part of the preparation of this Strategy, MCEP conducted a series of stakeholder interviews with local government staff, nonprofits, regional agencies, and community leaders to identify barriers to EV adoption. These, combined with selected barriers identified in the Bay Area Air Quality Management District's 'Bay Area Electric Vehicle Acceleration Plan', are listed in Table 7. The recommended strategies in the following section are designed to address these barriers to the greatest extent possible.

Recommended EV Acceleration Strategies and Actions

The following strategies represent an overall approach to addressing the barriers to EV adoption, along with the universe of local actions recommended as part of this EV Acceleration Strategy.



Fire Chief Darrin White and Administrative Analyst Thomas Wong, City of San Rafael

TABLE 7: Barriers to EV Adoption

Vehicle Technology	<ul style="list-style-type: none"> • EV range • Battery degradation (especially in the used EV market) • Lack of diversity in vehicle types (light/heavy duty trucks, police pursuit vehicles) and price points • Lack of vehicle availability
Charging	<ul style="list-style-type: none"> • Not enough publicly accessible charging locations, both Level 2 and 3 • Cost to install chargers, especially for trenching and getting electricity to site • Distribution capacity or connectivity in certain locations • Not enough wayfinding signage for EV charging locations • Difficult to retrofit existing multi-family buildings for EV chargers and lack of parking spaces for EVs • EV charging cost allocation to residents at multi-family buildings can be complicated with electricity meters • Cost and effort to upgrade electrical panel/install Level 2 charger at home • Reliability of public and shared private chargers
Economics	<ul style="list-style-type: none"> • Higher initial purchase or lease price of EVs compared to internal combustion engine vehicles • Complicated incentives (vehicles and EV chargers) • Revenue from public EV chargers does not cover cost of subscription, maintenance, electricity, and depreciation
Perception and Behavior	<ul style="list-style-type: none"> • Misinformation about EV models, range, charging, etc. • Resistance to change/fear of the unknown • Lack of EV knowledge at car dealerships • Lack of knowledge about best times to charge
E-bikes and E-scooters	<ul style="list-style-type: none"> • Higher purchase price • Limited rebates and incentives • Lack of secure parking • Lack of safe, protected cycling infrastructure

TABLE 8: Strategies to Address Barriers to EV Adoption

Barrier	Strategy
Vehicle Technology	<ul style="list-style-type: none"> • Support statewide actions to clean the vehicle fleet including increasing ZEV manufacturing and vehicle availability. • Pilot new technologies in municipal fleets to showcase new technologies, including bidirectional charging. • Convert public agency municipal fleets to 100% ZEV, when and where feasible. • Advocate for, support, and utilize regional, state, and federal funding to electrify public fleets.
Charging	<ul style="list-style-type: none"> • Adopt local policies that facilitate EV charging installations through reach codes, reduced parking requirements, etc. • Encourage regional, state, and federal funding to support local EV charging installations at multi-family residential developments and single family residential with significant upgrade costs. • Commit to maintaining a pipeline of priority EV charging installations and EV fleet conversions and commit to regular updates of these project lists, either as part of an adopted capital improvement plan, or other publicly available document. • Commit to reducing barriers in procurement and EV charging installations by participating in local joint procurement efforts and coordinated EV charging installations, fleet purchases, and outreach activities. • Explore bidirectional charging equipment.
Economics	<ul style="list-style-type: none"> • Advocate for, and support regional, state, and federal funding action to support local EV charging installations and electrify public fleets. • Support statewide and federal actions to support streamlined incentives and rebates at point of sale or other mechanisms to identify the true cost of vehicle ownership. • Support regional and state actions that ensure all income levels have access to EV technology.
Perception and Behavior	<ul style="list-style-type: none"> • Support coordinated regional or statewide actions to address public concerns including through e-bike share, public utilities, and MCE information on EV rates, TNC (Uber/Lyft) transition to EVs and streamlined information on EV benefits.
E-bikes and E-scooters*	<ul style="list-style-type: none"> • Promote available rebates and advocate for regional, state, and federal funding. • Develop e-bike support facilities, including chargers and secure lockers. • Incorporate e-bikes into municipal fleets.

*For additional strategies, see Transportation Authority of Marin [Electric Bicycle Bicycles in Marin](#) (September 2020).

The following actions build on the overarching strategies identified in Table 8. The actions are grouped into general themes to guide implementation of the Strategy. Actions listed under the heading Increase Municipal Fleet Electrification are geared to reducing emissions from local government operations, while all other actions are designed to reduce community emissions.

In order to accelerate EV adoption across the County, local jurisdictions are encouraged to identify and prioritize specific actions from this list for implementation. Appendix A contains a work plan template that could be used for this purpose.

Conduct Robust Community Outreach and Education

- OE-1** Conduct EV outreach and education utilizing City/Town newsletters, social media, traditional media, websites, webinars, and events.
- OE-2** Work with other jurisdictions to develop, implement, and support countywide EV acceleration marketing campaigns that address barriers to EV adoption and focus on the benefits of tran-

sitioning to clean, low-carbon transportation.

- OE-3** Support consumer awareness programs such as ride-and-drives and targeted outreach.
- OE-4** Promote the use of existing EV, e-bike, and charging infrastructure rebates, incentives, and technical support for multi-family development and workplaces.

Accelerate Public Charging Infrastructure

- PC-1** Update municipal capital improvement project plans to identify locations for public EV charging installations, including cost and time-frame for advancing installations.
 - a. Maintain an updated list of proposed EV charging infrastructure projects and indicate priority projects to advance.
 - b. Include EV charging installations in planning process for new public facilities and coordinate early with funding agencies to maximize funding opportunities and leveraging of local funds.

- PC-2** Direct municipal investment in EV charging infrastructure to frequently used municipal properties, prioritizing locations at high-use community centers and near multifamily buildings.
- PC-3** Adopt comprehensive building standards and reach codes that facilitate the transition to EVs, micro-mobility, and reduced car dependence, and ensure new construction can meet future demand to avoid unnecessary retrofitting costs. Continue to work with other Marin jurisdictions to develop model reach codes for EV charging requirements that go beyond State building code requirements.
- PC-4** Coordinate with local school districts to identify and plan for EV charging installations at school campuses to support workers and students. Promote access to overnight chargers to support neighbors' use of EVs.
- PC-5** Ensure equitable access to public EV charging infrastructure in low-income and/or underserved communities.
- PC-6** Utilize available assistance for municipal EV charging site analysis, equipment selection, financing, and installation.
- PC-7** Work with other Marin jurisdictions to develop a countywide model pricing policy for public charging that recovers operational/depreciation costs and encourages user turnover.
- PC-8** Identify electric bike support facilities, including Level 1 charging and lockers.
- PC-9** Coordinate with local public utilities to prepare the grid for more on-demand and consider the benefits of reverse charging.
- PC-10** Engage large employers and multifamily property owners to encourage EV charging infrastructure deployment.
- PC-11** Explore reducing parking requirements beyond current State law in exchange for EV charging infrastructure installation for new development.
- PC-12** Consider partnering with EV charging vendors to identify potential City/Town-owned locations for EV chargers that may be installed at a reduced cost. Include reliability requirements in any such agreements.

PC-13 Explore innovative opportunities to expand the City/Town EV charging network, such as wireless charging or curbside charging equipment.

PC-14 Support mobility hubs that co-locate electric bike charging facilities and micro-mobility services at existing transit locations including bus stops with electrical access.

PC-15 Consider revising the Town/City's sign ordinance to allow EV chargers that display advertising.

PC-16 Promote and/or incentivize use of 100% renewable energy for public charging sites.

Increase Municipal Fleet Electrification

MF-1 Adopt a model EV fleet replacement policy with the goal to convert 100% of municipal fleets to EVs by 2030.

MF-2 Develop a Fleet Replacement Plan that includes updating existing fleet management tracking, identifies vehicles with short haul or existing available ZEV replacement, a time-frame for replacement, and funding require-

ments to convert the public fleet to 100% ZEV, inclusive of anticipated charging needs to support fleet conversion. Consider bidirectional charging capability and lifecycle costs.

MF-3 Identify a fleet manager responsible for tracking and monitoring fleet procurement and coordinating with funding agencies for ZEV opportunities on an annual basis.

MF-4 Install municipal chargers in anticipation of 100% City/Town ZEV fleet.

MF-5 Identify opportunities for fleet conversion and charging infrastructure in the Capital improvement Plan (or other publicly available plan) and commit to implementation.

MF-6 Identify local fire and police conversion opportunities for mission critical and non-emergency fleet vehicles.

MF-7 Incorporate electric bicycles in the City/Town fleet, potentially replacing the use of other vehicles.

MF-8 Apply decals to City/Town EVs to promote the jurisdiction's use of ZEVs that utilize 100% renewable electricity.

MF-9 Support or advocate for countywide assistance to jurisdictions for fleet replacement analysis, purchase, and financing.

MF-10 Identify potential pilot projects to test new technology and demonstrate leadership in the conversion to EVs, such as bidirectional charging opportunities.

MF-11 Issue press releases on municipal EV purchases to encourage wider community EV adoption.

Support and Advocate for Policy and Funding that Accelerates EV Adoption

PL-1 Support and advocate for EV programs that focus investment in low-income and/or underserved communities.

PL-2 Support and/or advocate for increased funding for EV needs, including for emerging technologies, from regional, state, and federal funding programs.

PL-3 Consider revisions to procurement policies to allow for joint procurements for technical assistance, engineering, vehicles, and charging equipment across county jurisdictions and special districts including fire, police, and schools.

PL-4 Support and/or advocate for EV programs that provide equitable access to EVs and EV charging infrastructure rebates and incentives, such as deeper discounts and for income-qualified participants and Equity Priority Communities ^[15] or neighborhoods. This can include buy-back programs and vehicle replacement programs targeted to older polluting vehicles.

PL-5 Support and/or advocate for regional or state grants that provide rebates or incentives to lower the cost of single-family home EV charger installations.

[15]

Equity Priority Communities are census tracts that have a significant concentration of underserved populations, such as households with low incomes and people of color, as identified by the Metropolitan Transportation Commission. For more information see <https://mtc.ca.gov/planning/transportation/access-equity-mobility/equity-priority-communities>.

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Appendix A: Work Plan Template

The following work plan template can be used by jurisdiction to identify and prioritize actions within the Marin Countywide EV Acceleration Strategy that the jurisdiction will undertake. The headings included in the template are defined as follows:

Action ID:

Refers to the actions listed in the Recommended Actions section that have been selected by the jurisdiction for implementation.

Priority:

Actions are categorized as high, medium, and low priority to assist staff in prioritizing the most impactful and/or achievable actions.

Department:

The lead department which is responsible for implementing the action. Supporting departments may also be identified.

Timeframe:

The year by which an action should be effective by year's end. For an action to be effective, the neces-

sary programs and efforts should be active, and any infrastructure or other capital improvements should be in place. Once effective, many actions will continue through 2030, so they do not have end dates. Time frames for effectively setting up the actions may be described qualitatively as follows:

- Ongoing (continuation of an action that has been implemented since 2023)
- Near-Term (by 2025)
- Mid-Term (by 2027)
- Long-Term (by 2030)

Staff Time:

The estimated cost to the City/Town (in staff hours) to complete implementation of the action, identified as follows:

- Low (less than 80 hours)
- Medium (80–500 hours)
- High (more than 500 hours)

Funding Sources:

Actual and potential funding sources may include the General Fund, fee revenue, rebates, grants, and other agencies.



A-2

Action ID	Priority	Department	Timeframe	Staff Time	Funding Sources

Appendix B: Guiding Principles

The following principles served as the foundation for decision-making during the development of this Strategy and are intended to guide implementation efforts:

1. Align with and support local climate action plans.
2. Provide equitable access to EV programs and strive for equitable outcomes
3. Coordinate countywide for consistency, efficiency, and cost-effectiveness of program implementation.
4. Track and measure progress of EV Strategy actions and adoption rates.
5. Strive to capture local economic co-benefits whenever possible.
6. Focus government actions on those that most efficiently utilize public funds and resources.
7. Leverage regional, state, and federal funds to support EV deployment in Marin County.
6. Support acceleration of EV sales and charger installation by the private market.



Design:

Cole Short Design

www.colehshort.com



Electric Vehicle Acceleration Strategy Workplan

DRAFT September 5, 2023

Action ID	Action	Status	Department	Timeframe	Staff Time
OE-1	Conduct EV outreach and education utilizing City/Town newsletters, social media, traditional media, websites, webinars, and events.	Current Practice	Sustainability Digital Services	Near-Term (by 2025)	Low (less than 80 hours)
OE-2	Work with other jurisdictions to develop, implement, and support countywide EV acceleration marketing campaigns that address barriers to EV adoption and focus on the benefits of transitioning to clean, low-carbon transportation.	Current Practice	Sustainability Digital Services	Near-Term (by 2025)	
OE-3	Support consumer awareness programs such as ride-and-drives and targeted outreach.	Current Practice	Sustainability	Near-Term (by 2025)	Low (less than 80 hours)
OE-4	Promote the use of existing EV, e-bike, and charging infrastructure rebates, incentives, and technical support for multi-family development and workplaces.	Current Practice	Sustainability Community Development	Near-Term (by 2025)	Low (less than 80 hours)
PC-1	Update municipal capital improvement project plans to identify locations for public EV charging installations, including cost and timeframe for advancing installations. a. Maintain an updated list of proposed EV charging infrastructure projects and indicate priority projects to advance. b. Include EV charging installations in planning process for new public facilities and coordinate early with funding agencies to maximize funding opportunities and leveraging of local funds.	New	Sustainability Public Works Parking	Near-Term (by 2025)	Low (less than 80 hours)
PC-2	Direct municipal investment in EV charging infrastructure to frequently used municipal properties, prioritizing locations at high-use community centers and near multifamily buildings.	New	Sustainability Public Works Parking	Near-Term (by 2025)	Low (less than 80 hours)

Action ID	Action	Status	Department	Timeframe	Staff Time
PC-3	Adopt comprehensive building standards and reach codes that facilitate the transition to EVs, micro-mobility, and reduced car dependence, and ensure new construction can meet future demand to avoid unnecessary retrofitting costs. Work with other Marin jurisdictions to develop a model reach code for EV charging requirements that goes beyond State building code requirements.	Complete	Community Development	Near-Term (by 2025)	Low (less than 80 hours)
PC-5	Ensure equitable access to public EV charging infrastructure in low-income and/or underserved communities.	New	Sustainability Public Works Parking	Near-Term (by 2025)	Low (less than 80 hours)
PC-6	Utilize available assistance for municipal EV charging site analysis, equipment selection, financing, and installation.	Current Practice	Sustainability Public Works Parking	Near-Term (by 2025)	Low (less than 80 hours)
PC-9	Coordinate with local public utilities to prepare the grid for more on-demand and consider the benefits of reverse charging.	New	Sustainability	Near-Term (by 2025)	Low (less than 80 hours)
PC-10	Engage large employers and multifamily property owners to encourage EV charging infrastructure deployment.	New	Sustainability	Near-Term (by 2025)	Low (less than 80 hours)
PC-12	Consider partnering with EV charging vendors to identify potential City/Town-owned locations for EV chargers that may be installed at a reduced cost. Include reliability requirements in any such agreements.	New	Sustainability Public Works Parking	Near-Term (by 2025)	Low (less than 80 hours)
PC-16	Promote and/or incentivize use of 100% renewable energy for public charging sites.	Current Practice	Sustainability	Near-Term (by 2025)	Low (less than 80 hours)

Action ID	Action	Status	Department	Timeframe	Staff Time
MF-2	Develop a Fleet Replacement Plan that includes updating existing fleet management tracking, identifies vehicles with short haul or existing available ZEV replacement, a timeframe for replacement, and funding requirements to convert the public fleet to 100% ZEV, inclusive of anticipated charging needs to support fleet conversion. Consider bidirectional charging capability and lifecycle costs.	New	Sustainability Public Works Finance	Near-Term (by 2025)	Medium (80-500 hours)
MF-3	Identify a fleet manager responsible for tracking and monitoring fleet procurement and coordinating with funding agencies for ZEV opportunities on an annual basis.	Current Practice	Sustainability Public Works Finance	Near-Term (by 2025)	Low (less than 80 hours)
MF-6	Identify local fire and police conversion opportunities for mission critical and non-emergency fleet vehicles.	New	Sustainability Public Works Finance Police & Fire	Near-Term (by 2025)	Medium (80-500 hours)
MF-9	Support or advocate for countywide assistance to jurisdictions for fleet replacement analysis, purchase, and financing.	Current Practice	Sustainability	Near-Term (by 2025)	Low (less than 80 hours)
MF-11	Issue press releases on municipal EV purchases to encourage wider community EV adoption.	New	Sustainability Digital Services	Near-Term (by 2025)	Low (less than 80 hours)
PL-1	Support and advocate for EV programs that focus investment in low-income and/or underserved communities.	Current Practice	Sustainability	Near-Term (by 2025)	Low (less than 80 hours)
PL-3	Consider revisions to procurement policies to allow for joint procurements for technical assistance, engineering, vehicles, and charging equipment across county jurisdictions and special districts including fire, police, and schools.	New	Sustainability	Near-Term (by 2025)	Low (less than 80 hours)