



Town of Moraga	Agenda Item
Ordinances, Resolutions, Requests for Action	11. B.

Meeting Date: May 8, 2019

TOWN OF MORAGA

STAFF REPORT

To: Honorable Mayor and Councilmembers

**From: Derek Farmer, Planning Director
Steve Kowalski, Senior Planner**

Subject: Receive a Status Update on Efforts to Implement Various Strategies Within the Town’s Climate Action Plan (CAP) and Provide Direction to Staff Regarding CAP-related Projects, Specifically: (1) Installing New Publicly-Available Electric Vehicle Charging Stations at the Town Offices and Moraga Commons Park; (2) Installing New Publicly-Available Water Bottle Refilling Stations at the Town Offices and the Council Chambers; and, (3) Undertaking Various Energy Efficiency Lighting and HVAC System Upgrades in Town-Owned Buildings/Facilities

Background

In October 2014, the Town Council accepted as an advisory document the Town’s Climate Action Plan (CAP). The CAP calls for the Town to consider implementing a wide variety of environmentally-sustainable strategies that aim to achieve the overall goal of reducing Town-generated greenhouse gas (GHG) emissions by 15% below 2005 levels by the year 2020. This target was chosen because it is consistent with the statewide goal of the California’s Global Warming Solutions Act of 2006 (Assembly Bill or “AB” 32).

The strategies are broken down into six separate sections within the CAP: (1) Land Use and Transportation; (2) Residential Energy Use; (3) Commercial Energy Use; (4) Solid Waste; (5) Water and Wastewater; and (6) Municipal Operations. Some of the strategies involve the adoption of new policies or regulations that would apply to new residential or commercial development, some involve investments in and/or expenditures on capital improvement projects, and some involve partnering with regional agencies, utility companies and/or community or non-profit organizations to assist in the roll-out of educational, promotional and/or grant programs for Moraga residents and businesses. All of the strategies are intended to result in real reductions to the Town’s carbon footprint by, among other things, attempting to reduce dependence on single-occupancy vehicles and encouraging alternative forms of transportation, requiring new developments and existing facilities undergoing

1 renovations to be energy efficient, conducting audits of Town-owned facilities to identify
2 energy savings opportunities and implementing recommended measures as feasible,
3 reducing the Town's overall waste stream, conserving water, and making Town-owned
4 facilities and infrastructure (such as public buildings, parking lots and fleet vehicles)
5 more sustainable.

6
7 Achievements to Date
8

9 Since 2014, the Town has completed a number of projects that have resulted in
10 reductions in GHG emissions. Information on the projects is discussed in detail, below:
11

12 Land Use and Transportation
13

- 14 • In December 2015, the Town adopted Ordinance No. 261 (now codified as
15 Municipal Code Chapter 8.92 – Animal Keeping) allowing citizens to keep small
16 animals such as chickens, rabbits and honey bees on residential, institutional
17 and open space properties and larger types of livestock (such as cattle, turkeys
18 and sheep) on larger, more rural residential and open space properties in an
19 effort to promote local food production of such items as eggs, honey, and dairy
20 products. In taking this action, the Town successfully implemented Land Use
21 and Transportation Strategy LU&T.8.
22
- 23 • In October 2016, the Town adopted the Moraga Walk | Bike Plan (Plan) which
24 contains numerous strategies aimed at encouraging bicycling and walking by
25 making various improvements to the Town's transportation infrastructure in order
26 to increase safety for cyclists and pedestrians. The Plan, which has a lifespan of
27 15 years, identifies specific infrastructure improvement projects and prescribes a
28 number of support programs that address safety, education, promotion and
29 enforcement efforts. The strategies contained within the Plan are consistent with
30 several of the strategies of the CAP's Land Use and Transportation Section
31 which call for reducing the total number of daily single-occupancy vehicle trips.
32
- 33 • The Town also participates in the Lamorinda School Bus Program that provides
34 home-to-school bus transportation to over 1,500 students in Lafayette, Moraga
35 and Orinda. Ongoing participation in the program helps to achieve Land Use and
36 Transportation Strategy LU&T.3.
37
- 38 • Each year, CIP projects construct new safety features promoting non-vehicular
39 travel such, as sidewalks, crosswalks, corner bulb-outs, bike lanes and public
40 bike racks, all of which aid in the Town's goal to reduce community-generated
41 GHG emissions. The following projects incorporate "Complete Street" elements
42 aimed at designing and providing access to safe transportation facilities for all
43 users, including pedestrians, bicyclists, motorists and transit riders, consistent
44 with Land Use and Transportation Strategies LU&T.1, LU&T.2 and LU&T.3:
45
 - 46 ○ Annual Street Resurfacing Program;
 - 47 ○ ADA Streets Program;
 - 48 ○ St. Mary's Road Roundabouts;
 - 49 ○ Moraga Road Streetscape Improvements;

- Bike/pedestrian improvements to Moraga Way and the intersection of Canyon Road & Camino Pablo currently being implemented under the Safe Routes to School program;
- Rheem Boulevard Slide Repair and Roadway Improvements project.

Residential and Commercial Energy Use

- The Town enrolled in MCE (formerly Marin Clean Energy) in July 2017, a Community Choice Aggregation Program serving a number of communities in the Bay Area, in order to provide Moraga’s residents and businesses the ability to select the source of their electricity supply. The current electricity options MCE offers are “Light Green” (50% from renewable sources) and “Deep Green” (100% renewable – zero emissions). PG&E's default option is 33% renewable, while it also offers a 100% renewable option called “Solar Choice.” In April 2018, all 6,417 existing residential and commercial electric accounts in Town were automatically enrolled in MCE and provided with the ability to opt out at any time. As of December 2018, 5,740 of those accounts, or 89.9%, were still enrolled and, of that total, 1.33% of customers were enrolled in the Deep Green program. The change of approximately 90 percent from 33% renewables to 50% renewables equates to an estimated 17% reduction in electricity related GHG emissions.
- The state’s Green Building Standards Code (also known as “CALGreen”), mandates various statewide energy efficiency and water conservation measures for all new construction and promotes healthy indoor and outdoor air quality in accordance with the provisions of AB 32. CALGreen underwent regular triennial updates in both 2015 and 2018. These updates included new standards aimed at further reducing energy consumption in all new or remodeled buildings, recycling construction waste materials, reducing water use, promoting the development of renewable energy systems (such as rooftop solar) and requiring low-emissions interior finish materials such as paint and carpet. The Town adopted by reference all applicable CALGreen building standards as well as additional, more restrictive standards pertaining specifically to Contra Costa County in late 2015 by adopting by reference Contra Costa County Ordinance No. 2016-22 in January 2017. Since that time, all new construction in Moraga has had to adhere to CALGreen standards. By adopting CALGreen and County Ordinance No. 2016-22, the Town was able to effectively implement several strategies in both the Residential Energy Use and Commercial Energy Use Sections of the CAP.

Solid Waste

- In November 2016, the state voted to ban single-use plastic bags at most retail outlets (including grocery stores, liquor stores, convenience stores and department stores) which effectively implemented Strategy SW.3 of the Solid Waste Section of the CAP for the Town.

1 Water and Wastewater
2

- 3 • In April 2015, the state mandated statewide reductions in municipal water
4 consumption through a number of measures, one of which was to update the
5 Model Water Efficient Landscape Ordinance (WELO) and require all
6 municipalities to either adopt it by reference or craft their own more restrictive
7 ordinances by December 31, 2015. As a result, all new development in Moraga
8 currently must adhere to the water conservation requirements of the WELO. The
9 provisions of the WELO address both Strategies WW.3 and WW.4 of the Water
10 and Wastewater Section of the CAP.
11

12 Municipal Operations
13

- 14 • An organics waste (food scrap and food-soiled paper) collection program was
15 recently implemented at all three of the Town's offices (the Town Offices, the
16 Public Works Corporation Yard office at 335 Rheem Boulevard, and the Parks
17 and Recreation Department office at the Hacienda de las Flores) in order to
18 divert everyday green waste from the landfill, consistent with both Municipal
19 Operations Strategy M.3 and Solid Waste Strategy SW.1.
20
- 21 • When possible, new picnic tables, benches, and trash receptacles, made from
22 recycled materials (some of which have been funded through a RecycleSmart
23 grant program) are now purchased for the Town's park facilities.
24
- 25 • Recycling services are also provided at public and private events on Town-
26 owned properties.
27
- 28 • New bike racks have been installed at the Town Hall Offices, the Council
29 Chambers, the Hacienda de las Flores, and the Town Library.
30
- 31 • Bay-Friendly planting techniques are used on all of the Town's properties as
32 applicable and the techniques have been incorporated into the design of
33 upcoming landscaping changes for the Town Library property.
34
- 35 • The Town adopted an Integrated Pest Management (IPM) program to manage
36 pest problems in and around its public facilities. The IPM program has
37 significantly reduced or eliminated the use of harmful applications of pesticides.
38
- 39 • The parking lot lights at the Hacienda de las Flores property were recently
40 replaced with new LED lighting.
41
- 42 • The heating, ventilation and air conditioning (HVAC) units at the Town Offices at
43 329 Rheem Boulevard were replaced and the new system incorporated an
44 airside economizer to reduce energy use.
45
- 46 • Installation of a new water fountain and water bottle refilling station to replace
47 disposable water bottles is scheduled at the Moraga Commons skatepark.
48

1 Current Council's Position

2
3 On February 13, 2019, the Council affirmed as one of its "Town Council and Community
4 Goals for 2019" Goal #12, which states:

5
6 "Continue implementation of viable strategies in Moraga's Climate Action Plan
7 to lessen the Town's impact on the environment."
8

9 Affirmation of this goal demonstrates the Council's commitment to continue
10 implementing viable and affordable public projects identified in the CAP that yield
11 tangible environmental benefits. In an effort to begin accomplishing this goal in 2019,
12 staff has identified three feasible projects that would help to further reduce the carbon
13 footprint at four of the Town's properties where public buildings are located: the Town
14 Offices; the Public Works Corporation Yard and Council Chambers; the Moraga Library;
15 and the Hacienda de las Flores. These projects are discussed in detail below.
16

17 Discussion

18
19 While the Town's financial resources are limited for unplanned capital improvements at
20 the present time, staff has identified three separate CAP-related projects that could be
21 financially feasible to undertake during the remainder of Fiscal Year (FY) 2018/19 and
22 through FY 2019/20. Information on these three projects – New Publicly-Available
23 Electric Vehicle (EV) Charging Stations, New Water Bottle Refilling Stations, and
24 Lighting and HVAC System Energy Efficiency Upgrades - is discussed in greater detail
25 below.
26

27 EV Charging Stations: According to the Bay Area Air Quality Management District
28 (BAAQMD), tailpipe emissions from on-road motor vehicles such as passenger cars and
29 trucks, buses and semi-trucks account for approximately 41% of all greenhouse gases
30 emitted in the San Francisco Bay Area Air Basin. In Moraga, as in most cities and
31 towns within the Air Basin, the transportation sector constitutes the single largest source
32 of GHG emissions, or nearly 50% of the Town's total emissions. The Land Use and
33 Transportation section of the CAP contains several strategies designed to help reduce
34 GHG emissions generated by transportation sources. One of the identified strategies
35 (Strategy LU&T.6) is installing publicly-available EV charging stations in Town-owned
36 parking lots.
37

38 There are currently no publicly-available charging stations in either Moraga or Orinda,
39 and only four locations in Lafayette where EV owners can charge their vehicles while
40 away from home. This is an unusually low number of station locations given the high
41 percentage of EV ownership in the Lamorinda area. In 2017, all three Lamorinda
42 municipalities ranked in the top 25 in California (out of 482 total municipalities) in terms
43 of EV sales as a proportion of total new vehicle sales, with EVs accounting for 13% to
44 18% of all new vehicles purchased in each (Palo Alto ranked highest in the state at
45 29%, while Moraga rounded out the top 25 at 13%)¹.

¹ This data was borrowed from The International Council on Clean Transportation's May 2018 Briefing titled "California's continued electric vehicle market development."

1 A number of regional programs currently exist wherein a public agency can obtain grant
2 funding to help offset the cost of installing publicly-available EV charging stations at
3 places like city halls, courthouses and public parks. Staff has been working diligently
4 over the last several months on pursuing grant money to assist with the installation of
5 publicly-available charging stations at both the Town Offices and the main parking lot at
6 the Moraga Commons Park. Staff has obtained an estimate for the project from a
7 licensed electrical engineer (such an estimate was a specific requirement of some of the
8 grant applications), and the estimated cost to install a total of five EV chargers is
9 approximately \$56,000. Five is the minimum number of chargers that must be provided
10 in order to qualify for much of the grant funding; if the project moves forward, staff
11 envisions installing chargers at the Town Offices and at the Commons Park.
12

13 Staff has secured a \$7,500 grant award from MCE, the Town's Community Choice
14 Aggregation electricity provider, an \$11,000 grant award from BAAQMD, and an
15 \$11,000 matching grant from 511 Contra Costa, the countywide Transportation Demand
16 Management (TDM) program that promotes alternatives to single-occupant vehicles and
17 improving air quality through, among other means, encouraging the use of public
18 transportation, bicycles, carpools, and clean-air vehicles. All three grants combined
19 amount to \$29,500, or more than 50% of the estimated \$56,000 cost of the project.
20

21 There is a minimum usage requirement that must be met by the end of the third year
22 after activation of the chargers in order to receive the full amount of the BAAQMD grant.
23 This minimum usage threshold equates to three hours of daily usage at each station
24 during a typical 5-day workweek, or two hours of usage every day over a full year's
25 period. According to the agencies that offer the grant programs, these thresholds
26 should be easily attainable, particularly due to the high percentage of EV ownership and
27 current shortage of publicly-available chargers in the Lamorinda area.
28

29 The Town would cover the cost of providing the electricity to EV owners as well as the
30 data and maintenance plans and software licensing fees of the charging station vendor
31 by charging a nominal fee for the service. The estimated fee would be between \$0.20
32 and \$0.60 per kilowatt hour, consistent with the fees charged by other municipalities
33 that provide public charging stations at their city halls, such as Danville, Pleasant Hill
34 and San Ramon. The fee could be adjusted as needed to recover the Town's costs
35 only, not to make a profit.
36

37 The Minor Improvements to Government Facilities Program (CIP 16-305) in the FY
38 2018/19 Budget includes \$49,000 for an electronic card reader system for the Town
39 Offices and Council Chambers. This project has been abandoned due to the high
40 installation and monthly maintenance costs. Staff recommends that \$26,500 in
41 available funding in CIP 16-305 in the FY 2018/19 Budget, funded by Fund 780,
42 General Government Facilities Impact Fees, be repurposed for the installation of EV
43 charging stations in order to implement Land Use and Transportation Strategy LU&T.6.
44

45 Water Bottle Refilling Stations: The CAP contains strategies in both the Solid Waste
46 and Municipal Operations Sections that address the desire to reduce overall waste
47 generated by, and within, the Town and encourage the use of reusable products in our
48 everyday lives. Recently, many environmentally-conscious citizens have begun using
49 refillable water bottles as opposed to single-use plastic bottles for their everyday

1 drinking needs. Over the years, several citizens attending various public hearings at the
2 Council Chambers at 335 Rheem Boulevard or visiting the Town Offices at 329 Rheem
3 Boulevard have questioned the lack of public drinking fountains at either facility.
4

5 In an effort to address the perceived need for public water fountains while also
6 attempting to reduce the Town's overall waste stream by discontinuing the use of
7 single-use plastic water bottles, staff has researched the costs to install new water
8 bottle refilling stations that would be available to the public at 329 Rheem Boulevard
9 during normal business hours and at 335 Rheem Boulevard during all public meetings.
10 Such a project would cost approximately \$20,000 for all labor, materials and permits
11 needed to install the stations at these two locations. The locations where the two
12 stations would be located do not currently have plumbing or electrical power in the
13 necessary locations, so the bulk of the estimated cost is for the labor needed to run
14 plumbing and electrical wiring to the locations. Specifically, the cost to install a station
15 at the Town Hall Offices would be \$7,500 with an additional \$550 in building permit
16 fees, while the cost to install one at the Council Chambers would be \$9,000 with an
17 additional \$600 in permit fees. The stations would be energy efficient, ADA compliant
18 and capable of refilling all types of water bottles. They would also feature an electronic
19 display with a counter that tracks how many bottles the station's users have eliminated
20 from the waste stream (an excerpt from the manufacturer's brochure for the refilling
21 station is provided in Attachment A).
22

23 Staff recommends that the two water bottle refilling stations also be funded from the
24 electronic card reader project cost savings in the Minor Improvements to Government
25 Facilities Program (CIP 16-305) in the FY 2018/19 Budget.
26

27 Lighting and HVAC System Energy Efficiency Upgrades: In March of this year,
28 Quantum Energy Services & Technologies, Inc. ("QuEST"), operating under the 2019
29 Municipal Implementation Team Program of East Bay Energy Watch (a local
30 government partnership between PG&E and Alameda and Contra Costa Counties, of
31 which the Town is a member), conducted energy efficiency audits on all of the existing
32 buildings at the four Town-owned properties. QuEST identified a number of easily-
33 implementable projects that would yield quick and significant energy savings. These
34 projects include replacing the remaining incandescent, fluorescent and/or sodium-vapor
35 interior, exterior and parking lot lighting at all four properties with new LED light fixtures,
36 adding "smart" thermostat and lighting controls that provide the ability to remotely and
37 wirelessly control the Town's HVAC and lighting systems, and retro-commissioning the
38 Library's current HVAC system.
39

40 QuEST estimates that undertaking these energy efficiency/management projects could
41 be completed within a matter of months, would cost a total of \$75,242 and result in a
42 total savings of 88,695 kilowatt hours per year. The payback period for the four facilities
43 is an estimated 5.4 years on average, ranging from as little as 2.5 years for the retrofits
44 to the Town Hall Offices to 8 years for the retrofits to the Hacienda. The results of the
45 audit are included in Attachment B.
46

47 QuEST partners with PG&E to offer an On-Bill Financing Program to finance the capital
48 costs. Through this program, the Town would not have to spend any money up front,
49 but instead would pay for the project in monthly installments at 0% interest on its current

1 PG&E bill, with the caveat that complete payoff must occur within 10 years of the
2 project's implementation. California Government Code Section 4217 authorizes
3 government agencies to utilize sole-source contracting for these types of projects, a
4 process that can minimize administrative costs that would otherwise be required if the
5 project were put out to bid and save time by enabling the Town to hire a qualified
6 contractor that QuEST has already fully vetted and can refer to staff.
7

8 Through this financing mechanism, the Town's current energy bill would not change;
9 instead, the portion of the bill for actual energy consumption would decrease as a result
10 of the captured energy savings while the remainder of the bill payment would go
11 towards paying off the loan that was used to implement the improvements. As such,
12 this project would have no fiscal impact on the Town and would actually save it money
13 over the long term once the project has been completely paid off.
14

15 Staff requests approval from the Council to participate in this Energy Watch program to
16 retrofit the Town's buildings at no cost to the Town, given the immediate energy savings
17 that would be realized along with the significant cost savings that would be realized after
18 the average 5.4-year payback period.
19

20 **Fiscal Impact**

21
22 \$46,500 included in the FY 2018/19 Budget in the Minor Improvements to Government
23 Facilities Program funded by Fund 780, General Government Facilities Impact Fees,
24 would be utilized to pay for the EV charging stations and water bottle refilling stations,
25 as opposed to the electronic card reader system project that has been abandoned.
26

27 **Alternatives**

- 28
- 29 1. Direct staff to proceed with implementation of any or all of the three CAP-related
30 projects discussed above; or
- 31 2. Direct staff to explore other possible CAP-related projects that Council would like
32 to implement at this time.
33

34 **Recommendation**

35
36 Provide direction to staff on whether to pursue implementation of certain CAP-related
37 projects, specifically: (1) installing new publicly-available EV charging stations at the
38 Town Offices and Moraga Commons Park; (2) installing new publicly-available water
39 bottle refilling stations at the Town Offices and Council Chambers; and, (3) undertaking
40 various energy efficiency lighting and HVAC system upgrades in Town-owned
41 buildings/facilities.
42

43 **Report reviewed by: Cynthia Battenberg, Town Manager**
44

45 **Attachments:**

- 46 **A.** Elkay Water Bottle Refilling Station product brochure
- 47 **B.** Preliminary Energy Efficiency Recommendations from QuEST

ATTACHMENT A

Elkay Water Bottle Refilling Station Product Brochure



Enhanced Bottle Filling Stations

IDEAL FOR

- Schools and Universities
- Hospitality
- Indoor Gym/Fitness
- Office Buildings
- Healthcare Facilities
- Government/Municipal
- Public Facilities



Bottle Filling Station with ADA Cooler

Introducing our new line of enhanced indoor bottle filling stations with an updated look. These units have all the features of our standard ezH2O bottle filling stations with some added ingenuity.

Easy Installation

Now just one power connection. Everything arrives in one box.

Energy-Saving Feature

Turns off refrigeration at programmed times to lower energy use.

Smart System

Unit self-monitors to maintain optimal performance.

Easy Filter Changes

FillSafe™ sensors automatically reset the filter monitor light from red to green so users always know they are getting filtered water.

Display Screen

Our Green Ticker™ counts the quantity of 20 oz. plastic bottles of water served; without the plastic bottles.

Low-Energy LED Light

Assists users when filling bottles and illuminates dark hallways.

- Bottle filler features sanitary, no-touch sensor activation with automatic 20-second shut-off timer.
- Quick fill rate - 1.1 to 1.5 GPM.
- Versatile bi-level cooler design allows for standard cooler installation of high-left/low-right or the alternate, reverse cooler installation.
- Rated for indoor use.



AVAILABLE OPTIONS

- Filtered /non-filtered.
- Single/bi-level.
- Light gray granite/stainless steel.

ACCESSORIES

- WaterSentry filters (see page 7).

ATTACHMENT B

Preliminary Energy Efficiency Recommendations from
QuEST

Town of Moraga
Preliminary Energy Efficiency Recommendations*
Provided by the Municipal Implementation Program (QuEST, Inc.)



Building	EEM	Measure Description	Peak Demand Savings (kW)	Electrical Energy Savings (kWh/yr)	Natural Gas Energy Cost Savings (Therm/yr)	Energy Cost Savings (\$/yr)	Estimated Installed Cost (\$)	Simple Pay Back (Yrs)
Town Hall	M1	Interior Lighting Upgrade to LED Technology		16,148		\$ 2,769.37	\$ 11,602.00	4.19
Town Hall	M3	Add Pelican Lighting Controls		2,565		\$ 544.74	\$ 2,500.00	4.59
Town Hall	M4	T-Stat Replacement with Pelican T-stats		10,864	256	\$ 2,643.07	\$ 3,000.00	1.14
Town Hall	M5	Install Pelican Economizer Controllers		8,148	154	\$ 1,931.88	\$ 2,000.00	1.04
Town Hall		TOTAL		37,725	410	\$ 7,889.05	\$ 19,102.00	2.42
Chambers/Corp Yard	M1	Interior Lighting Upgrade to LED Technology		4,922		\$ 1,068.11	\$ 2,971.00	2.78
Chambers/Corp Yard	M4	T-Stat Replacement with Pelican T-stats		1,049	67	\$ 106.91	\$ 3,000.00	28.06
Chambers/Corp Yard	M5	Install Pelican Economizer Controllers		787	40	\$ 80.18	\$ 2,000.00	24.94
Chambers/Corp Yard		TOTAL		6,757	107	\$ 1,255.20	\$ 7,971.00	6.35
Library	M1	Interior/Exterior LED Lighting Upgrade		25,840		\$ 3,359.19	\$ 23,039.00	6.86
Library	M3	Add Pelican Lighting Controls		1,229		\$ 281.27	\$ 3,000.00	10.67
Library	M6	Retrocommission HVAC Systems		9,992	277	\$ 2,626.03	\$ 4,566.77	1.74
Library		TOTAL		37,061	277	\$ 6,266.49	\$ 30,605.77	4.88
Hacienda	M1	Interior/Exterior LED Lighting Upgrade		5,011		\$ 1,152.51	\$ 6,813.00	5.91
Hacienda	M3	Add Pelican Lighting Controls		1,026		\$ 251.15	\$ 4,000.00	15.93
Hacienda	M4	T-Stat Replacement with Pelican T-stats		1,115	570	\$ 779.75	\$ 6,750.00	8.66
Hacienda		TOTAL		7,152	570	\$ 2,183.42	\$ 17,563.00	8.04
All Facilities Combined		GRAND TOTALS		88,695	1,364	\$ 17,594.15	\$ 75,241.77	5.4 avg.

*Savings and cost estimates are preliminary and subject to revision.