CITY OF CARMEL-BY-THE-SEA
CLIMATE COMMITEE

Contact: 831.620.2000 www.ci.carmel.ca.us/carmel

All meetings are held in the City Council Chambers
East Side of Monte Verde Street
Between Ocean and 7th Avenues

REGULAR MEETING
Thursday, May 20, 2021

3:30 PM

Governor Newsom's Executive Order N-29-20 has allowed local legislative bodies to hold public meetings via teleconference and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the local legislative body. Also, see the Order by the Monterey County Public Health Officer issued March 17, 2020. The health and well-being of our residents is the top priority for the City of Carmel-by-the-Sea. To that end, this meeting will be held via teleconference and web-streamed on the City's website ONLY.

To attend meeting via Zoom https://ci-carmel-ca-us.zoom.us/j/97225528052? or join by Phone +1 669 900 9128, Meeting ID: 972 2552 8052, Passcode: 514013. The public can also email comments to amartelet@ci.carmel.ca.us. Comments must be received 2 hours before the meeting in order to be provided to the committee. Comments received after that time and up to the beginning of the meeting will be added to the agenda and made part of the record.

CALL TO ORDER

PUBLIC APPEARANCES

Members of the public are entitled to speak on matters of municipal concern not on the agenda during Public Appearances. Each person's comments shall be limited to 3 minutes, or as otherwise established by the Chair. Matters not appearing on the agenda will not receive action at this meeting and may be referred to staff. Persons are not required to provide their names, and it is helpful for speakers to state their names so they may be identified in the minutes of the meeting.

ANNOUNCEMENTS

ORDERS OF BUSINESS

Orders of Business are agenda items that require Committee discussion, debate, direction to staff, and/or action.

1. Receive a Presentation from the Carmel High School Environmental Club about their Environmental Initiatives

2. Review and discuss the Correspondence between LandWatch and AMBAG regarding the Greenhouse Gas Inventory prepared by AMBAG for the City of Carmel-by-the-Sea

3. Receive a Presentation from Committee Member Michael LePage on the Monterey County Health Department Grey Water Guidelines

4. Review, provide comments, and/or approve Summary Sheets for the AMBAG 2018 Greenhouse Gas Inventory Presentation and for the Central Coast Community Energy Presentation

5. Review and discuss the Grid Resilience Summary Sheet

FUTURE AGENDA ITEMS

ADJOURNMENT

This agenda was posted at City Hall, Monte Verde Street between Ocean Avenue and 7th Avenue, outside the Park Branch Library, NE corner of Mission Street and 6th Avenue, the Carmel-by-the-Sea Post Office, 5th Avenue between Dolores Street and San Carlos Street, and the City's webpage http://www.ci.carmel.ca.us in accordance with applicable legal requirements.

SUPPLEMENTAL MATERIAL RECEIVED AFTER THE POSTING OF THE AGENDA

Any supplemental writings or documents distributed to a majority of the Climate Committee regarding any item on this agenda, received after the posting of the agenda will be available at the Public Works Department located on the east side of Junipero Street between Fourth and Fifth Avenues during normal business hours.

SPECIAL NOTICES TO PUBLIC

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the City Clerk's Office at 831-620-2000 at least 48 hours prior to the meeting to ensure that reasonable arrangements can be made to provide accessibility to the meeting (28CFR 35.102-35.104 ADA Title II).

CITY OF CARMEL-BY-THE-SEA
Climate Committee
Staff Report

May 20, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Review and discuss the Correspondence between LandWatch and AMBAG regarding the Greenhouse Gas Inventory prepared by AMBAG for the City of Carmel-by-the-Sea

RECOMMENDATION:

Review and discuss the Correspondence between LandWatch and AMBAG regarding the Greenhouse Gas Inventory prepared by AMBAG for the City of Carmel-by-the-Sea

BACKGROUND/SUMMARY:

LandWatch has sent letters to the Association of Monterey Bay Area Governments (AMBAG) disputing the methodogy used for estimating greenhouse gas emissions from the transportation sector in AMBAG's greenhouse gas inventories for the City of Carmel-by-the-Sea, as well as other local municipalities. LandWatch's first letter to AMBAG is included in Attachment 1; AMBAG's response is included in Attachment 2; and LandWatch's response is included in Attachment 3.

The Committee will review the content of these letters and discuss how this may affect our next steps in developing a Climate Action Plan, as well as a course of action to address the issues raised by LandWatch.

FISCAL IMPACT:

N/A

ATTACHMENTS:

Attachment 1: LandWatch Letter to AMBAG regarding GHG Inventory Methodology
Attachment 2: AMBAG Letter Response to LandWatch
Attachment 3: LandWatch Letter Response to AMBAG

m | r | wolfe
& associates, p.c.
attorneys-at-law

April 13, 2021

Via e-mail

Heather Adamson, AICP
Director of Planning
Association of Monterey Bay Area Governments
24580 Silver Cloud Court
Monterey , CA 93940
hadamson@ambag.org

Re: GHG Inventory Methodology and VMT

Dear Heather,

LandWatch recently reviewed the Draft GHG Inventory for the City of Carmel that was prepared by an AMBAG intern, and found that the approach to estimating GHG emissions from transportation had two important methodological issues. We've outlined these below and hope you or your staff can address them.

Generally, we are hoping to encourage the County of Monterey and the cities in Monterey County to base their climate action plans on consistently generated inventories of transportation emissions that include a fair share of the emissions attributable to trip origination or attraction. In short, we want to make sure that all transportation emissions are accounted for and that they are allocated to the jurisdictions that can mitigate them. We also want to ensure that changes in the Highway Performance Monitoring System (HPMS) methodology between the 2014 and 2015 do not result in mischaracterization of emissions.

1) Local streets-only allocation vs. origin/destination allocation

Carmel's GHG inventory has two critical issues with its VMT estimates. First, the approach being used (which AMBAG has used for many years and for many other jurisdictions) relies upon the Highway Performance Monitoring System (HPMS) to estimate VMT on local roads within the jurisdiction of interest.

This approach means that a jurisdiction is only accountable for emissions associated with travel on its local roads, regardless of how far the vehicles had to travel to get there – as far as Carmel is concerned, a trip to downtown Carmel from Monterey would have the same emissions as a trip that started in Salinas or Soledad.

For this reason, most jurisdictions typically use an origin-destination model to assign emissions from trips evenly between the origination and destination cities. In fact, AMBAG already has and maintains an origin-destination model for the Metropolitan Transportation Plan and Sustainable Communities Strategy. LandWatch was unable to identify a reason why it is not used for GHG emissions from transportation in local inventories as well.

This choice of a local streets-only approach to VMT emissions also leads to important policy outcomes: under AMBAG's methodology that looks solely at VMT from local streets, cities are incentivized to block new development, as it would increase VMT on local streets, regardless of how much it might reduce commute distances across the region. In contrast, an origin-destination approach accurately considers how changing land use patterns – namely, putting homes and jobs closer together – can help reduce VMT and GHGs.

2) HPMS methodology change

There is a second problem with the existing approach: HPMS' own methodology for generating these local VMT estimates changed in 2015. This change resulted in (in some cases) dramatic shifts in local VMT estimates. In 2014, HPMS estimated Carmel's daily VMT at 85,400; in 2015, HPMS pegged it at 47,250. Clearly, Carmel's VMT did not fall by 46% in one year; nevertheless, AMBAG's own GHG inventory for Carmel says "The transportation sector emissions decreased by 50 percent from 2005 to 2018. During this period there was a decrease in Vehicle Miles Travelled (VMT) on local roads in Carmel." Virtually all of the change between 2005 and 2018 is attributable to the 2015 methodology change.

If AMBAG is going to continue to rely upon HPMS and a local streets approach for GHG inventories, HPMS data prior to 2015 must be scaled to be consistent 2015 levels, to address the dramatic step change in VMT estimates that occurred. Failing to do so can lead cities to incorrectly evaluate their baseline year and the effects of any policies they may have adopted in the intervening time. For instance, due to this change in how VMT was estimated, Carmel appears to now be 42% below its 2005 baseline, despite the fact that VMT has not, in fact, changed nearly as substantially as reported. This can lead to cities failing to adopt necessary climate action policies and smart land use approaches to reduce VMT.

3) Public Records Act Request for AMBAG GHG inventories on which jurisdictions relied in preparing climate action plans

It appears that Carmel has only begun to consider a climate action plan and so has not yet relied on the AMBAG GHG inventory. However, it is not clear to us whether any <u>other</u> jurisdictions may have relied on AMBAG-generated GHG inventories that reflect the local-streets only approach or that do not recognize that HPMS changes its methodology between 2014 and 2015. Our preliminary research in Monterey County suggests to us

that only the cities of Gonzales and Monterey may have prepared climate action plans. The City of Monterey apparently used an origin/destination model prepared by Kimley Horn, but Gonzales apparently relied on an AMBAG inventory. (See Gonzales Climate Action Plan, 2018, Chapter 3, available at https://gonzalesca.gov/sites/default/files/2018-11/Adopted%202018%20Gonzales%20CAP%20Update.pdf.)

Would you please provide us with each of the AMBAG-generated GHG inventories, if any, that have been furnished to other Monterey County cities that have actually used those inventories to prepare a CAP?

Please provide at least the AMBAG-generated GHG inventories relied on by Gonzales. This would apparently include the "Gonzales 2005 Baseline Emissions Report," which is variously referenced in the Gonzales Climate Action Plan as AMBAG 2011, AMBAG 2017, and AMBAG 2018, perhaps reflecting the dates of the original report and its updates to that report.

LandWatch seeks electronic versions of responsive records if possible, in PDF, Word, Excel, CSV, or other accessible format. LandWatch does *not* seek direct access to the model or modeling software itself.

Thank you for your help with this.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.

John Farrow

JHF:hs

Cc: Ashley Paulsworth, County of Monterey
Ben Gould, EcoDataLab
Michael DeLapa

ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS

April 27, 2021

John H. Farrow
M.R. Wolfe & Associates, P.C.
580 California Street, Suite 1200
San Francisco, CA 94104

Dear Mr. Farrow,

Thank you for your April 13, 2021 letter and April 19, 2021 email. The Association of Monterey Bay Area of Governments (AMBAG) appreciates your commitment to climate action and achievement of greenhouse gas (GHG) reductions in Monterey County. As the Metropolitan Planning Organization (MPO) for the Monterey Bay Region, AMBAG is also committed to this mission. Through AMBAG's 2040 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) the agency demonstrated the AMBAG region will reduce per-capita GHG emissions through coordinated land use and transportation planning.

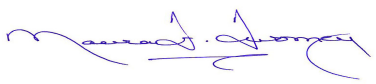
AMBAG provides community-wide GHG inventories to member local jurisdictions, at no cost, as a tool to start the conversation about GHG emissions with jurisdictional staff, elected officials, and community members. The inventories comply with the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions and are consistent in methodology across years and across jurisdictions. In the transportation sector the GHG inventories account for emissions from all vehicle miles travelled (VMT) occurring on roads maintained by each jurisdiction. This jurisdictional "local roads" VMT is based on HPMS data, as presented in the California Public Road Data (PRD) reports prepared by Caltrans every year. This methodology and data source was chosen because PRD data is readily and uniformly available for every year and every jurisdiction in the AMBAG region.

When developing inventories AMBAG meets with jurisdictional staff to discuss the scope of the inventories, the data sources used, and how the inventories could be used as a starting point to consider climate action or to further ongoing efforts. At these meetings AMBAG staff also discusses potential methodological artifacts which may be influencing the GHG emissions. This is because although inventory data sources and methodologies are kept consistent, the methodologies used to create the data sources themselves can sometimes evolve over time. For example, in the transportation sector, the 2015 PRD report acknowledges that starting in 2014 a Linear Referencing System (LRS) was used to link the HPMS attributes to geospatial data and that this may have led to segments of roads and associated VMTs being reattributed in order to match geospatial data. Generally speaking it is extremely difficult to disentangle the extent to which any methodological artifact contributes to an observed change in GHG emissions and attempts to correct a perceived issue often leads to the creation of further inconsistencies.

It is important to understand that the AMBAG inventories are designed to provide consistent and recurring picture of community-wide GHG emissions for communities that otherwise would be unable to regularly produce GHG inventories. The inventories serve as a first look at GHG emissions which each jurisdiction can then build upon according to need and capacity. As such, when local jurisdictions begin the process of creating or updating their climate action plan (CAP), the AMBAG GHG inventories are often used as a starting point for the GHG emissions analysis. AMBAG staff provides the inventory data and will often meet with the selected CAP consultants in order to discuss methodology and data sources. Once this process is complete, jurisdictional staff and CAP consultants typically update the GHG inventories to suit the needs of the climate action planning process. These updates often include changes in methodologies and data sources, such as using a trip based VMT approach to calculate transportation emissions. Because the GHG inventories used in CAPs are adjusted and refined as part of each individual jurisdictional climate action planning process, your concerns about Climate Action Plan GHG analysis methodologies and data sources can be most directly addressed by your contacting local jurisdictions as they develop their CAP methodologies.

AMBAG encourages all interested stakeholders to engage with the climate action planning process at the jurisdictional level to raise questions and provide feedback on climate action plan GHG analysis methodologies and GHG forecasting assumptions.

Sincerely,



Maura Twomey
Executive Director

m | r | wolfe
& associates, p.c.
attorneys-at-law

May 3, 2021

Via e-mail

Maura Twomey
Executive Director
Association of Monterey Bay Area Governments
24580 Silver Cloud Court
Monterey , CA 93940
mtwomey@ambag.org

Re: GHG Inventory Methodology and VMT

Dear Ms. Twomey:

Thank you for your April 27, 2012 letter responding to LandWatch's concerns about the GHG inventories that AMBAG has provided to local jurisdictions. After discussing your response with Ben Gould, EcoDataLab, who serves as LandWatch's climate consultant, we believe that the AMBAG GHG inventories are legally and technically inadequate for developing climate action plans because they are "in-boundary" estimates that include only the emissions generated by vehicles traveling on local streets within the jurisdiction. As such, the inventories fail to account for emissions that are generated outside the jurisdiction's boundaries as a result of activities undertaken, supported, or permitted by that jurisdiction.

We respectfully request that AMBAG use its influence and technical resources to encourage the County of Monterey and the cities in Monterey County to base their climate action plans on accurate data and consistently generated inventories of transportation emissions that include a fair share of the emissions attributable to trip origination or attraction in each jurisdiction. We want to make sure that all transportation emissions are accounted for and that they are allocated to the jurisdictions that can mitigate them. We want also to ensure that climate action plans comply with the California Environmental Quality Act ("CEQA"), as described below. If local governments fail to follow this advice, they risk investing significant public funds in climate action plans that will fail to pass legal muster.

Your letter characterizes the GHG inventories AMBAG has prepared for individual jurisdictions as a "no cost . . . tool to start the conversation about GHG emissions," a "first look at GHG emissions," and a "starting point for the GHG emissions analysis."

You suggest that jurisdictions "typically update the GHG inventories," often "making changes in methodologies and data sources, such as using a trip based VMT approach to calculate transportation emissions." However, at least one city (Gonzales) relied on the AMBAG-provided transportation GHG inventory to prepare its climate action plan without updating that inventory to include transportation emissions outside of its boundaries.[1] We understand that the cities of Salinas and Carmel and Monterey County are now beginning preparation of climate action plans.

Accordingly, we ask that AMBAG advise these local jurisdictions that they should not rely on the "in-boundary" transportation emission estimates provided by AMBAG for their climate action plans for several reasons. First, these "first look" inventories are neither recommended nor adequate for climate action planning because they fail to reflect local jurisdictions' control over emissions outside their boundaries. Second, reliance on these preliminary inventories will not result in climate action plans that are CEQA-compliant, defeating a principal purpose of these climate action plans. Third, some of these preliminary inventories reflect a steep decline in transportation GHG emissions between 2014 and 2015 that did not actually occur but is merely the result of a change in the Highway Performance Monitoring System's method to determine roadway lengths.

A. The "in-boundaries" approach to GHG inventories used by AMBAG for local GHG inventories is <u>not</u> recommended by the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions because it fails to account for a local government's control over transportation emissions outside its boundaries. Protocol-complaint inventories *must* use the recommended origin-destination method if a model is available.

The critical consequence of an "in-boundary" approach to a GHG inventory is that cities using it would have no accountability for, and no incentives to mitigate, transportation GHG emissions generated as a consequence of local government decisions that affect vehicle miles traveled, e.g., land use decisions that affect the jobs/housing balance and decisions about circulation policies. As explained in the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions ("Protocol"), local governments "have a larger influence over passenger vehicle GHG emissions than any other level of government:"

> Local governments have control over several policy areas that can influence individual travel choices and GHG emissions. First, unlike other economic sectors where the point of emission typically occurs on private property, greenhouse gases from passenger vehicles are primarily emitted on publicly owned transportation rights-of-way. State and local governments own, configure, maintain, and set policies that govern the use of these rights-of-way and influence travel behavior. Secondly, local government authority over land use controls the

[1] City of Gonzales, Gonzales Climate Action Plan, August 20, 2018, available at https://gonzalesca.gov/sites/default/files/2018-11/Adopted%202018%20Gonzales%20CAP%20Update.pdf.

> density, type of activity, and distribution of certain activities within a community. A passenger vehicle trip is one of the transportation modes individuals can use to connect between these activities and local governments can influence the total number and length of passenger vehicle trips. Third, as an extension of their land use authority, local governments have regulatory control over privately provided off-street parking in new developments. This allows local governments to exert considerable influence over vehicle activity, as each passenger vehicle trip segment begins and ends in a parking space.[2]

The Protocol distinguishes the "in-boundary GHG emission sources" approach (used in the AMBAG GHG inventories) from the "activities resulting in GHG emissions" approach that uses a demand-based origin-destination model.[3] Your letter states that the AMBAG GHG inventories "comply with" the Protocol. However, the Protocol states that where multiple accounting methods are provided, the "[r]ecommended accounting methods are indicated and **must be followed whenever possible for an inventory to be considered Protocol-compliant.**"[4]

The Protocol recommends using the activities-based origin-destination method, not the "in-boundary" method used in the inventories provided to local jurisdictions by AMBAG:

> The recommended method (TR.1.A) presented in this guidance recognizes that local governments possess the authority to influence GHG emissions from passenger vehicle trips **both inside and outside of a community's geographic boundaries**. This method also recognizes that local governments cannot influence all passenger vehicle GHG emissions within their boundaries. As such, **the recommended origin-destination method (using a demand-based model) better captures a local government's ability to affect passenger vehicle emissions than the alternate method (TR.1.B) to calculate in-boundary emissions**, which ICLEI USA has included in past guidance, including Clean Air and Climate Protection (CACP) Software.[5]

---

[2] ICLEI – Local Governments for Sustainability USA, U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2, July 2019, Appendix D: Transportation and Other Mobile Emission Activities and Sources, July 2013, p. 7, footnote omitted, available at https://icleiusa.org/us-community-protocol/.

[3] ICLEI – Local Governments for Sustainability USA, U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2, July 2019, pp. 14-17, available at https://icleiusa.org/us-community-protocol/.

[4] *Id.*, pp. 34-35, emphasis added.

[5] ICLEI – Local Governments for Sustainability USA, U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2, July 2019, Appendix D: Transportation and Other Mobile Emission Activities and Sources, July 2013, p. 8.

The in-boundary method that was "included in past guidance" is no longer recommended.

It is in fact possible for AMBAG to provide, or for local jurisdictions to develop, GHG inventories using the Protocol's recommended origin-destination method. AMBAG maintains a regional origin-destination travel demand model, makes that model available without charge to local jurisdictions and consultants, and uses it to prepare its own Metropolitan Transportation Plan and Sustainable Communities Strategy. Because it is possible to implement the Protocol's preferred origin-destination method using this AMBAG model, any inventory that fails to use the preferred method would not be considered Protocol-compliant.

B. The "in-boundary" GHG inventory will not support a CEQA-compliance climate action plan because CEQA does not permit an agency to ignore environmental effects of vehicle trips outside its boundaries that are attributable to an agency's actions.

A principal reason to prepare a climate action plan is to streamline CEQA review of future projects. In environmental review of future projects, an agency may rely on a formally-adopted, environmentally reviewed climate action plan to "determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements" of such a plan. (CEQA Guidelines, § 15183.5(b).) However, that climate action plan must actually assess and mitigate GHG emissions from the specific actions or categories of actions that the agency may wish to permit in the future. And that climate action plan must itself be reviewed under CEQA.

A climate action plan that considers only in-boundary GHG emissions will not pass muster under CEQA because an agency may not ignore an activity's environmental effects outside the agency's jurisdiction. In *City of Marina v. Board of Trustees of California State University* (2006) 39 Cal.4th 341, 360 the California Supreme Court specifically held an agency must assess and mitigate the effects of project-caused vehicle trips outside its own jurisdiction:

> CEQA requires a public agency to mitigate or avoid its projects' significant effects not just on the agency's own property but "*on the environment* " (Pub. Resources Code, § 21002.1, subd. (b), italics added), with "environment" defined for these purposes as "the physical conditions which exist *within the area which will be affected by a proposed project* " (*id.*, § 21060.5, italics added).

Similarly, in *American Canyon Community United for Responsible Growth v. City of American Canyon* (2006) 145 Cal.App.4th 1062, 1082, the Court held that an agency may not ignore the "extraterritorial environmental effects of any project it intends to carry out or approve." And in *Friends of Oroville v. City of Oroville* (2013) 219 Cal.App.4th 832, 843-844, the Court set aside a GHG impact analysis because the agency failed to determine the project's incremental transportation emissions, which would have

required determination of baseline "out-of-town trips for the City's residents" and post-project "round trips to it of up to 40 miles from neighboring communities."

Because the traffic generated by each local jurisdiction's activities, permits, and policies will include trips outside that jurisdiction, a CEQA-complaint climate action plan must assess and mitigate extra-territorial emissions from those vehicle trips. AMBAG should caution local agencies not to commit their planning resources to a climate action plan based on an in-boundary transportation emission inventory.

C. HPMS methodology changes.

Finally, we ask that AMBAG clearly warn local agencies not to rely on inventories that embody anomalies in data from the Highway Performance Monitoring System ("HPMS"). As we explained in our April 13 letter, the HPMS methodology changed in 2015. This change resulted in dramatic shifts in some local VMT estimates. For example, in 2014, HPMS estimated Carmel's daily VMT at 85,400; in 2015, HPMS pegged it at 47,250. Clearly, Carmel's VMT did not fall by 46% in one year; nevertheless, AMBAG's own GHG inventory for Carmel says "The transportation sector emissions decreased by 50 percent from 2005 to 2018. During this period there was a decrease in Vehicle Miles Travelled (VMT) on local roads in Carmel." Virtually all of the change between 2005 and 2018 is attributable to the 2015 methodology change.

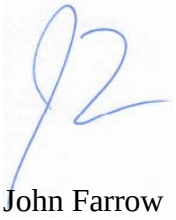
We suggested that if AMBAG is going to continue to rely upon HPMS and a local streets approach for GHG inventories, that it scale the HPMS data prior to 2015 to be consistent 2015 levels in order to address the dramatic step change in VMT estimates that occurred. Failing to do so can lead cities to incorrectly evaluate their baseline year and the effects of any policies they may have adopted in the intervening time. For instance, due to this change in how VMT was estimated, Carmel appears to now be 42% below its 2005 baseline, despite the fact that VMT has not, in fact, changed nearly as substantially as reported. This can lead to cities failing to adopt necessary climate action policies and smart land use approaches to reduce VMT.

Your response to this point was to suggest that it is "extremely difficult to disentangle the extent to which any methodological artifact contributes to an observed change in GHG emissions and attempts to correct a perceived issue often leads to the creation of further inconsistencies." We understand by this that AMBAG may not itself be willing to disentangle the clear error in reported emissions. We ask only that AMBAG not perpetuate the error and that it warn the local agencies of this problem.

We very much appreciate your willingness to exchange views with us on these issues. We look forward to working with AMBAG and the local jurisdictions in climate action planning and the forthcoming Sustainable Communities Strategy.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.



John Farrow

JHF:hs

cc: Heather Adamson, AMBAG
Ashley Paulsworth, County of Monterey
Brandon Swanson, City of Carmel
Megan Hunter, City of Salinas
Jonathan Moore, City of Salinas
Ben Gould, EcoDataLab
Michael DeLapa, LandWatch

CITY OF CARMEL-BY-THE-SEA
Climate Committee
Staff Report

May 20, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Receive a Presentation from Committee Member Michael LePage on the Monterey County Health Department Grey Water Guidelines

RECOMMENDATION:

Receive a Presentation from Committee Member Michael LePage on the Monterey County Health Department Grey Water Guidelines.

BACKGROUND/SUMMARY:

At the April 15, 2021 Climate Committee meeting, Committee members reviewed and discussed the Water Supply Summary Sheet that was prepared by Committee Member Michael LePage. The question was raised whether grey water systems, including laundry to landscape systems, were allowed locally. Mr. LePage will provide a summary of the guidelines provided by the Monterey County Health Department on grey water systems (Attachment 1).

FISCAL IMPACT:

N/A

ATTACHMENTS:

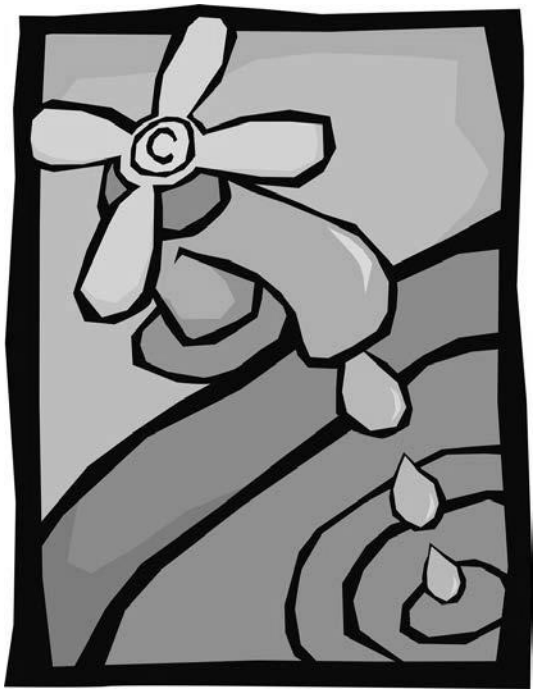
Attachment 1: Monterey County Health Department Grey Water Guidelines

Monterey County Health Department
Environmental Health Bureau
1270 Natividad Road, Salinas, CA 93906 (831) 755-4505

GRAY WATER IRRIGATION SYSTEM
Permitting Process and Design Criteria

INTRODUCTION

Properly installed gray water systems can provide a safe drought proof supply of irrigation water and impart the environmental benefit of conserving drinking water supplies. Gray water is untreated wastewater from bathroom sinks baths/showers and clothes washers. Wastewater from toilets, kitchen sinks and dishwashers is blackwater and must be disposed into a sanitary sewer or an onsite wastewater treatment system. California has recently adopted new standards for outside use (i.e. irrigation). These new standards ease the design criteria; increase the type of gray water dispersal systems that can be used; and exempts a specific type of system (i.e. clothes washer systems) from a construction permit.



The Monterey County Environmental Health Bureau (EHB) is the Administrative Authority for the oversight and permitting of onsite wastewater treatment systems (OWTS), which include gray water systems, in the unincorporated areas of Monterey County. City building departments may choose to be the permitting agency for properties within their jurisdiction, however Monterey County EHB will be the permitting agency for all properties served by wells and/or septic systems.

PURPOSE

Gray water systems are onsite wastewater treatment systems (OWTS) designed to collect gray water and transport it out of the structure for distribution in an irrigation or disposal field. A gray water system may include tanks, valves, filters, pumps or other appurtenances along with the piping and receiving landscape. OWTS can discharge pollutants to groundwater and are therefore regulated by California Water Code. California Water Code Section 13282 allows the RWQCB to authorize a local public agency to issue permits for and to regulate OWTS "to ensure that systems are adequately designed, located, sized, spaced, constructed and maintained".

The regulations for designing and installing a gray water system are found in the California Code of Regulations Title 24, Part 5 (California Plumbing Code), Chapter 15 – Alternate Water Source for Nonpotable Applications.

The objectives of this guidance document are:

- To make the criteria for the design, installation, operation and maintenance of gray water systems easily accessible to the public.
- To ensure that gray water irrigation/disposal systems will not contaminate groundwater, surface water, or create a public health hazard.
- To explain the permitting procedures and inspection of gray water systems installed within Monterey County.

WHAT CONSTITUTES GRAY WATER

Pursuant to Health and Safety Code Section 17922.12, "gray water" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Gray water" includes but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

TYPES OF GRAY WATER SYSTEMS

Chapter 15 of the Plumbing Code recognizes four types of gray water systems:

Clothes washer system	A gray water system utilizing only a single domestic clothes washing machine in a one- or two-family dwelling.
Simple system	A gray water system serving a one- or two-family dwelling with a discharge of 250 gallons (947 L) per day or less. Simple systems exceed a clothes washer system and/or a single fixture system.
Complex system	A gray water system that discharges over 250 gallons (947 L) per day.
Treated gray water system	Nonpotable water collected and treated on-site suitable for direct beneficial use.

THE PERMIT PROCESS

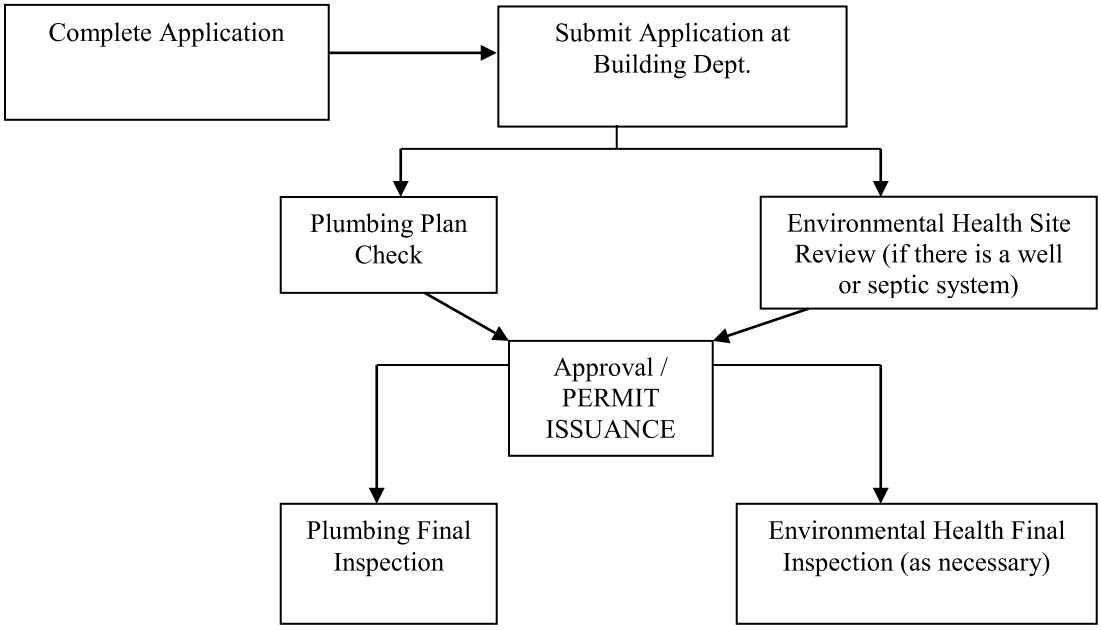
TYPE OF SYSTEM	PERMIT REQUIRED
Clothes washer (laundry) System	No permit required
Simple or Complex Systems	Submit application and fees to Monterey County Resource Management Agency (RMA): Building Services Department 1441 Schilling Place (831) 755-5027 Salinas, CA 93901

1. Clothes washer (laundry) systems: A construction permit is not required. However, the property owner is not exempt from complying with design, installation, and maintenance standards in Chapter 15 of the California Plumbing Code. If there is a complaint investigation that verifies a violation of the applicable standards, then the property owner will be subject to cost recovery and any fines resulting from the investigation. (See Design Criteria on page 5 below)

2. Simple and Complex Systems: A construction permit is required. An application can be obtained at Monterey County RMA-Building Services. The Environmental Health portion can be downloaded at www.mtyhd.org/graywater and completed at home (See Design Criteria on page 5 below).

Prior to submitting any fees or completing any work, it is recommended that the contractor or property owner contact EHB to determine what information is available for the subject property. Property owners or their representatives are encouraged to call or meet with EHB staff to discuss any concerns or questions and to prevent any unnecessary delays or costs when designing or installing a gray water system.

The permit process is outlined below:



REQUIRED APPLICATION MATERIALS

Please review the section below for the information and plot map requirements for the application process. In order to process your application as quickly as possible, the application and plot map must contain the following:

1. Property owners name, home address and telephone number, and Assessor's Parcel Number (APN) of the property, if available.

2. Sketched outline of the property, giving dimensions and the direction of north. Any septic tank and septic system drainfield on the property must be indicated.
3. Identification of all plumbing fixtures that will be draining into the gray water system.
4. Plot plan showing the proposed layout of the entire system, including its connection to any other piping system on the property (see Table 1 on page 7 of this document).
5. Cross-sectional drawing of the gray water disposal field (see Table 3 on page 9).
6. Location and design of backflow prevention air gap separation between make-up (top-off) fresh water supply and the gray water system.
7. A calculation of the maximum expected waste volume per day: Use the typical gray water flows set forth in Section 1502.8.1 of the California Plumbing Code to estimate wastewater volume per day (see example on page 6 below).
8. A calculation of the required disposal area for your system (see Table 2 on page 8).
9. Location of any existing well, whether domestic or irrigation, and whether in use or abandoned, either on the property or within one hundred (100) feet of the property.
10. Location of any existing or proposed embankments with slopes exceeding thirty (30) percent or any existing or proposed downhill cuts whether natural or manmade. Any proposed manmade cuts or excavations depicting height, length and/or area must also be shown (e.g. road cuts, pool/spa excavations, basements, pad cuts etc).
11. Location of ocean, lakes, sloughs, streams, springs, water channels, water courses, reservoirs, water supplies or any other body of water on or adjacent to the property.
12. Location of all recorded easements.
13. Such additional data as may be necessary, in the judgment of the Director, to insure that the proposed method of gray water disposal will not endanger health and sanitation.
14. Depth to groundwater, if known.

DESIGN CRITERIA

Anyone seeking a permit for a residential gray water system should review Chapter 15 of the California Plumbing Code (CPC) for design, installation, and maintenance requirements. Regulations for installation of a washing machine or simple system are summarized below:

1. Gray water can be obtained from clothes washers, showers, bathtubs, and hand washing sinks only. Kitchen sinks and dishwashers shall not be connected to a gray water system.
2. The design shall allow the user to direct the flow to the irrigation or disposal field or the building sewer. The direction control of the gray water shall be clearly labeled and readily accessible to the user. The system shall have an overflow pipe which is permanently connected to the building sewer (see page 10 of this Guide).

3. The installation, change, alteration or repair of the system does not include a potable water connection or a pump and does not affect other building, plumbing, electrical or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping or accessibility.
4. Gray water systems using tanks shall be designed to minimize the amount of time gray water is held in the tank and shall be sized to distribute the total amount of estimated gray water on a daily basis.
5. All storage tanks, pipes, and spigots shall be clearly labeled "Non-potable Water – Do Not Drink".
6. The gray water shall be contained on the site where it is generated.
7. Gray water shall be directed to and contained within an irrigation or disposal field.
8. Ponding or runoff is prohibited and shall be considered a nuisance.
9. Gray water may be released above the ground surface provided at least two (2) inches (51 mm) of mulch, rock, or soil, or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.
10. Gray water systems shall be designed to minimize contact with humans and domestic pets.
11. Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.
12. Gray water shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities.
13. Exemption from construction permit requirements of this code shall not be deemed to grant authorization for any gray water system to be installed in a manner that violates other provisions of this code or any other laws or ordinances of the Enforcing Agency.
14. An operation and maintenance manual shall be provided. Directions shall indicate the manual is to remain with the building throughout the life of the system and indicate that upon change of ownership or occupancy, the new owner or tenant shall be notified that the structure contains a gray water system.

Note: the public water utility or water system serving your property may require a backflow prevention device to protect its water supply. Details should be obtained from the utility or water system administrator.

Estimate Gray Water Discharge

The gray water discharge for single family and multi-family dwellings shall be calculated by estimates of gray water use based on water use records, calculations of local daily per person interior water use, or the following procedure:

Calculate Daily Flow (Section 1502.8.1, Chapter 15 of CPC).

The number of occupants of each dwelling unit shall be calculated as follows:	
First Bedroom	2 occupants
Each additional bedroom	1 occupant
The estimated gray water flows of each occupant shall be calculated as follows:	
Showers, bathtubs, and wash basins	25 GPD/occupant
Laundry	15 GPD/occupant
The total number of occupants shall be multiplied by the applicable estimated gray water discharge as provided above and the type of fixtures connected to the gray water system. Example: *A 3 bedroom house is considered to have 4 occupants. Four occupants taking a daily shower will be expected to generate 100 gallons/day.*	

DISPOSAL FIELD LOCATION AND CAPACITY

The disposal field location must take into account other structures on the property, such as building foundations, property lines, septic systems, wells, and domestic water lines. They must also be sized according to the type of soil present on the property, as soil type defines the ability of the soil to absorb and percolate water and prevent ponding.

Tables 1502.4, 1502.10, and 1502.11.3 of the California Plumbing Code are provided for reference below. These tables should be used to locate the system on the property and calculate the size of the disposal field and the number of lines and emitters required.

Location of Gray Water System (Table 1502.4, Chapter 15 of CPC)

Minimum Horizontal Distance Required From:	***Surge Tank***	***Subsurface and Subsoil Irrigation Field and Mulch Basin***	***Disposal Field***
	Feet	***Feet***	***Feet***
Building structures[1]	*5* [2,3,9]	*2* [3,8]	*5*
Property line adjoining private property	*5*	*5* [8]	*5*
Water supply wells[3]	*50*	*100*	*100*
Streams and lakes[3]	*50*	*100* [5,10]	*100* [5]
Sewage pits or cesspools	*5*	*5*	*5*
Sewage disposal field	*5*	*4* [6]	*4* [6]
Septic tank	*0*	*5*	*5*
Onsite domestic water service line	*5*	*0*	*0*
Pressurized public water main	*10*	*10*	*10* [7]

See footnotes on next page.

[1] *Building structures does not include* porches and steps, whether covered or uncovered, breezeways, *roofed porte cocheres*, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.
[2] The distance shall be permitted to be reduced to 0 feet for aboveground tanks where first approved by the Environmental Health Bureau.
[3] *Underground tanks shall not be located within a 45 degree angle from the bottom of the foundation, or they shall be designed to address the surcharge imposed by the structure. The distance may be reduced to six (6) inches (153 mm) for aboveground tanks when first approved by RMA-Building Services.*
[3]Where special hazards are involved, the distance required shall be increased as directed by the Environmental Heath Bureau or RMA-Building Services.
[4]These minimum clear horizontal distances shall also apply between the irrigation or disposal field and the ocean mean higher high tide line.
[5] These minimum clear horizontal distances shall apply between the irrigation or disposal field and the ocean mean higher high tide line.
[6] Add 2 feet (610 mm) for each additional foot of depth in excess of one (1) foot (305 mm) below the bottom of the drain line.
[7] For parallel construction or crossings, approval by the Environmental Health Bureau shall be required.
[8] The distance shall be permitted to be reduced to 1 ½ feet (457 mm) for drip and mulch basin irrigation systems.
[9] The distance shall be permitted to be reduced to 0 feet for surge tanks of 75 gallons (284 L) or less.
[10] T*he minimum horizontal distance may be reduced to 50 feet (15,240 mm) for irrigation or disposal fields utilizing gray water which has been filtered prior to entering the distribution piping.*

REQUIRED AREA OF IRRIGATION OR DISPOSAL FIELDS

Irrigation or disposal fields may have one or more valved zones. Each zone must be of adequate size to receive the gray water anticipated in that zone. No irrigation or disposal field shall extend within three (3) vertical feet of the highest known seasonal groundwater, or to a depth where gray water contaminates the groundwater, ocean water or surface water. The applicant shall supply evidence of groundwater depth to the satisfaction of the Enforcing Agency.

Note: The absence of groundwater in a test hole three (3) vertical feet below the deepest irrigation or disposal point shall be sufficient to satisfy this section unless seasonal high groundwater levels have been documented to rise to within this area.

Design Criteria of Six Typical Soils (Tables 1502.10, Chapter 15 of CPC)

Type of Soil	Minimum square feet of irrigation/leaching area per 100 gallons of estimated gray water discharge per day	Maximum absorption capacity in gallons per square foot of irrigation/leaching area for a 24-hour period
	(square feet)	(gallons)
Coarse sand or gravel	20	5.0
Fine sand	25	4.0
Sandy loam	40	2.5
Sandy clay	60	1.7
Clay with considerable sand or gravel	90	1.1
Clay with small amounts of sand or gravel	120	0.8

Subsoil Irrigation Field Construction (Table 1502.11.3, Chapter 15 of CPC)

DESCRIPTION	MINIMUM	MAXIMUM
Number of drain lines per valved zone[1]	1	—
Length of each perforated line[1]	—	100 feet
Bottom width of trench[1]	12 inches	24 inches
Spacing of lines, center to center[1]	4 feet	—
Depth of earth cover of lines	2 inches	—
Depth of filter material cover of lines	2 inches	—
Depth of filter material beneath lines[1]	3 inches	—
Grade of perforated lines	level	3 inches per 100 feet

[1] Manufactured leaching chambers shall be installed in compliance with the manufacturer's installation instructions.

When necessary on sloping ground to prevent excessive line slopes, disposal lines shall be stepped or installed on the contour lines of the slope. The lines between each horizontal leaching section shall be made with approved water-tight joints and installed on natural or unfilled ground.

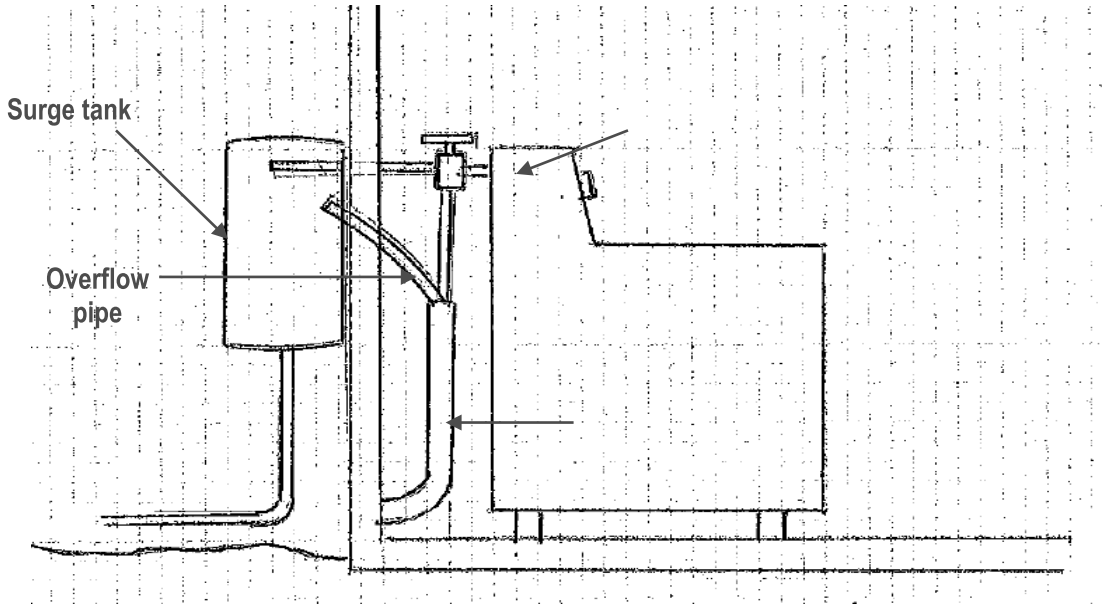
3-WAY VALVE REQUIRED

ALL gray water systems must have a way of diverting water from the gray water system to the sewer or septic tank. A 3-way valve is appropriate way to control the flow of water. Gray water must be redirected to the sanitary sewer or septic system under the following conditions:

- Rainy weather
- When the receiving soil becomes saturated
  (rather than pooling on the ground or running off to a neighbor's property)
- Washing diapers or other soiled laundry

TYPICAL 3-WAY VALVES
allows fixture to discharge to either the gray water system of the sewer/septic system

Any surge tank or container meant to receive gray water temporarily must also have an overflow pipe permanently connected to the building sewer.



CITY OF CARMEL-BY-THE-SEA
Climate Committee
Staff Report

May 20, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Review, provide comments, and/or approve Summary Sheets for the AMBAG 2018 Greenhouse Gas Inventory Presentation and for the Central Coast Community Energy Presentation

RECOMMENDATION:

Review, provide comments, and/or approve the following summary sheets:

- AMBAG 2018 Greenhouse Gas Inventory Summary Sheet
- Central Coast Community Energy Summary Sheet

BACKGROUND/SUMMARY:

The Association of Monterey Bay Area Governments (AMBAG) provided a presentation on their 2018 Community Greenhouse Gas Inventory for the City of Carmel-by-the-Sea at the Committee's February 2021 meeting. The presentation summary sheet is included in Attachment 1.

Central Coast Community Energy (3CE) provided an update on their power generation objectives and local energy conservation and electrification programs at the Committee's February 2021 meeting. The presentation summary sheet is included in Attachment 2.

FISCAL IMPACT:

N/A

ATTACHMENTS:

Attachment 1: AMBAG 2018 GHG Inventory Summary Sheet
Attachment 2: 3CE Presentation Summary Sheet

CITY OF CARMEL-BY-THE-SEA

2018 Draft Greenhouse Gas Inventory Summary

February 18, 2021 Meeting

TO:	Climate Committee Members
SUBMITTED BY:	Evan Kort, Associate Planner

SUMMARY

Asset:
2018 Draft Greenhouse Gas (GHG) Inventory

Hazards:
N/A

Key Terms:

- Baseline Year: A specific year against which emissions are tracked over time.
- Greenhouse gases (GHG): Carbon dioxide (CO2), methane (CH4), and nitrous oxide (N20). Emissions are expressed in equivalents of carbon dioxide (CO2e).
- Community Greenhouse Gas Inventory: A calculation of GHG emissions generated as a result of activities within a community.

General Comments and Outlook:
The Association of Monterey Bay Area Governments (AMBAG) has prepared GHG Inventories for member agencies for 2005, 2010, 2015. Starting 2018, in partnership with Central Coast Community Energy (3CE), AMBAG is preparing GHG Inventories for 3CE member jurisdictions for 2018, 2019, and 2020 –this 2018 GHG Inventory was prepared as part of the MOU between AMBAG and 3CE.

The state of California has adopted a baseline year of 1990 for statewide targets. The 2020 target (AB 32) was to return to 1990 emission levels, and the 2030 target (SB 32) is a 40% reduction from 1990 levels with the 2050 target (executive order: S-3-05) being an 80% reduction from 1990 levels. In 2018, an executive order (B-55-18) was passed with the goal of achieving carbon neutrality by 2045. Most cities do not have 1990 inventories and it is not possible to go back and establish a 1990 baseline. Therefore, in order to quantify targets, most cities use 2005 inventories and assume emissions increased by approximately 15% between 1990 and 2005.

The emission inventory is broken into 5 sectors: Residential, Commercial/Industrial, Transportation, Solid Waste, Wastewater. Residential and commercial/industrial sectors inventory electricity and natural gas emissions. The transportation sector is an inventory of emissions as a result of travel on local roads in the City of Carmel-by-the-Sea. Solid waste is an inventory of emissions as a result the waste that is generated by the community and sent to the landfill, and wastewater is an inventory of emissions as a result of the treatment of the wastewater.

Data is gathered directly from PG&E and 3CE in regard to electricity and natural gas consumption. Transportation data is gathered from an annual report prepared by the California Department of Transportation (CalTrans) that looks at the amount of Vehicle Miles Traveled on local roads as well as the CARB's EMFAC model which is used to estimate emissions based on on-road travel. Solid waste data is obtained from CalRecycle's annual

report as well as characteristic studies that study the composition of materials in the landfill. Lastly, wastewater data is gathered from a population-based method that uses the population to estimate the emission.

2018 Inventory Findings:

- Electricity between 2005 to 2018 has become cleaner. Electricity use has remained stable; however, the carbon intensity of the electricity has been drastically reduced (likely due to the local energy procurement being taken over by 3CE).
- Data sources have reported less and less travel on local roads over time resulting in a reduction in GHG for the transportation sector.
- Solid waste being sent to the landfill from the city has decreased significantly (46% emission reduction) and the composition of the solid waste being sent to the landfill is less impactful in 2018 than it was in 2005.
- Wastewater: not discussed.

Identified Issues:

- The California Air Resources Board (CARB) is required to update their Scoping Plan every 5 years. The scoping plan was last updated in 2017, prior to the executive order establishing a goal of carbon neutrality by 2045 so the carbon neutrality target has yet to be included in the Scoping Plan (80% reduction by 2050 is still the official target). When the scoping plan is updated in 2022, the 2045 carbon neutrality target will likely be included in the Scoping Plan and is expected to be the main target moving forward. There is still uncertainty regarding 2045 vs 2050 goal.
- The significant decrease in GHG emissions in the transportation sector may be the result of a change in methodology by CalTrans in preparing their annual report, which may account for some or most of the reduction in GHG emissions. The report provided to AMBAG from CalTrans is a finished product that does not provide the opportunity to evaluate the methodology used.
- CalRecycle reports the solid waste data and the reason for the significant decrease in emissions is unclear.

Possible actions to be recommended in the committee's Final Report

- Maintain the 2030 goal outlined in SB 32. There is still uncertainty regarding 2045 vs 2050 goal. The Committee could opt to use either long-term goal; however, the 2045 target is more rigorous and may become the new State goal in 2022.
- Re-evaluation of emissions may be required as a result of possible changes in methodology that may have impacted the outcomes of the inventory. Consultant assistance will be required in making a determination regarding the accuracy of the inventory and methodology.

REFERENCES

- City of Carmel Draft 2018 Greenhouse Gas Inventory
- EMFAC Model: https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools

History

- Version 1 presented at committee meeting on 5/20/21

Attachment 2

CITY OF CARMEL-BY-THE-SEA

Central Coast Community Energy

February 18,2021 Meeting

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager

SUMMARY

Asset:
Power Supply

Hazards:
Greenhouse gas emissions

General Comments and Outlook:
Central Coast Community Energy (3CE, formerly Monterey Bay Community Power) is a Joint Powers Authority with 33 municipal members to deliver energy throughout the Central Coast. 3CE delivers the energy to the power grid that is operated by PG&E locally. 3CE has a goal to reach 100% clean and renewable energy by 2030, although they have clarified that there will be times of the day when there will be natural gas on the grid for reliability when renewables are not available.

Regionally, 3CE is investing in technology to increase supply and storage capacity for reliable and clean power. Locally, 3CE is investing in programs to increase the pace of electrification, including in the transportation and construction sectors, and in the agricultural industry. 3CE also provides an incentive for local municipalities to adopt reach codes for energy conservation and electrification to reduce the use of natural gas in the built environment. Reach codes are more advanced or enhanced building codes that go above and beyond the State's building code requirements.

Identified Issues:

- Providing 100% clean energy power supply is challenging due to the times of energy use that do not always match the times of peak power supply from renewable sources. Thus, natural gas will remain a source of energy on the power grid.

Possible actions to be recommended in the committee's Final Report

- Consider taking advantage of 3CE's reach code incentive to amend the City's municipal code to increase the pace of energy conservation and electrification in local construction projects.

REFERENCES

- 3CE Presentation at the Climate Committee meeting: https://carmel.novusagenda.com/agendapublic/VODPreview.aspx?meetingVideoID=5ddd8ae3-bf7f-456c-8c9f-38f55eeb55a6&index=3004
- 3CE Energy Programs: https://3cenergy.org/energy-programs/

History

- Version 1 presented at committee meeting on 5/20/21

CITY OF CARMEL-BY-THE-SEA
Climate Committee
Staff Report

May 20, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Review and discuss the Grid Resilience Summary Sheet

RECOMMENDATION:

Review and discuss the Grid Resilience Summary Sheet

BACKGROUND/SUMMARY:

Power grid resilience was discussed at the Climate Committee's April 2021 meeting. Councilmember Baron will provide an update on information he has received from PG&E since the last Climate Committee meeting. Power grid resilience issues and questions are summarized in the Summary Sheet in Attachment 1.

FISCAL IMPACT:

N/A

ATTACHMENTS:

Attachment 1: Power Grid Resilience Summary Sheet

CITY OF CARMEL-BY-THE-SEA

Hazard and Asset Summary Sheet for Electrical Grid Resilience

May 20, 2021

TO:	Climate Committee Members
SUBMITTED BY:	Jeff Baron, Councilmember

SUMMARY

Asset: Electrical Grid
Hazards: Stronger Storms, Increasing temperatures
Version: 1

General Comments and Outlook: The electrical grid in Carmel has been historically somewhat unreliable during weather events, with outages affecting from half a block to the entire community. In the future, we could see causes of disruptions (related to climate change) include:

1. Larger weather events (storm damage to power line infrastructure.)
2. Public safety power shutoffs (related to the threat of wildfire during wind events along transmission lines.)
3. Supply shortages (related to grid shortages, as seen during the summer of 2020.)

Identified Issues:

Grid failure can lead to numerous effects, including:

- Residential – spoiled food, cold and dark homes
- Commercial – essential businesses shuttered
- Tourism – loss of income of reputation
- Government services impacts (police and fire, public works)

Outstanding Issues:

- Would be good to have access to PG&E Grid map to better understand power grid
- Ask PG&E for historical outage map (or list) with causes
- Work with PG&E to understand possible PSPS transmission lines. Which lines are subject to these? How does this effect Carmel?
- PG&E: Microgrids
  - Power sources within the power grid?
  - Could we get power from somewhere else, some dedicated “outside line” not subject to power outages?
- Community business survey to determine which businesses are grid resilient

Possible Committee Comments or Actions for Final Report

Explore and make recommendations on possible mitigation measures:

- Prevention
  - Tree planning and maintenance - Work with PG&E to prioritize tree trimming
  - Explore the possibility of undergrounding select or all utility lines (via with property assessments)
- Personal resiliency
  - Require new homes to be “ready” for home power storage
  - Require homes to be “EV ready” (also helps with GHG metrics.)

    - Explore new home requirements for home power generation (solar, fuel cells, generators)
- Carmel resiliency
    - Explore areas in which Carmel should or could provide resiliency services to local residents and business, beyond the simple continuation of essential government services. For example:
        - Warming or cooling areas
        - Electrical phone and other small appliance charging facilities
        - Food and other supplies (for visitors)
        - Communication infrastructure
- Regional resiliency
    - Explore possible peninsula microgrid

REFERENCES

- Click here to enter text.

HISTORY

- Version 1 presented at Committee meeting on 5/20/2021