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, February 18, 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 via Teleconference; Dial in number +1 617-675-4444 PIN: 111 221 257 9241#. 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 Committee. Matters not appearing on Committee's agenda will not receive action at this meeting but may be referred to staff for a future meeting. Persons are not required to give their names, but it is helpful for speakers to state their names so that 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 Association of Monterey Bay Area Governments on the City's 2018 Greenhouse Gas Inventory
2. Receive a Presentation from Central Coast Community Energy on their Climate

Action Initiatives and their new Energy Procurement Strategy

3. Provide Updates on the Outreach to Community Organizations and Regional Partners Conducted to Date and Discuss Outstanding Vulnerability and Resilience Topics for Outreach
4. Review, provide comments, and/or approve presentation summary sheets for the Beach, Bluff and Coastal Armoring (Version 2) and the Storm Drain Master Plan
5. Receive and Discuss a Project Status Update

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

February 18, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Receive a Presentation from the Association of Monterey Bay Area Governments on the City's 2018 Greenhouse Gas Inventory

RECOMMENDATION:

Receive a Presentation from the Association of Monterey Bay Area Governments on the City's 2018 Greenhouse Gas Inventory

BACKGROUND/SUMMARY:

The Association of Monterey Bay Area Governments (AMBAG) recently completed the 2018 Greenhouse Gas Inventory for the City of Carmel-by-the-Sea. The draft report is included as Attachment 1. AMBAG will provide a presentation on the results of the latest inventory.

FISCAL IMPACT:

N/A

ATTACHMENTS:

Attachment 1: Draft 2018 Carmel Community Greenhouse Gas Inventory

City of Carmel

DRAFT 2018 Community-Wide Greenhouse Gas Inventory Report

DRAFT CITY OF CARMEL 2018 COMMUNITY-WIDE GREENHOUSE GAS (GHG) INVENTORY

PREPARED FOR:

The City of Carmel-By-The-Sea

Monte Verde Street, Carmel-By-The-Sea, CA 93923

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PREPARED BY:

Lawrence Garber, Sustainability Program Graduate Student Intern

The Association of Monterey Bay Area Governments

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FUNDED BY:

Central Coast Community Energy

DECEMBER 2020

Executive Summary

The City of Carmel's 2018 Community-wide GHG Inventory totals 23,883 metric tons of carbon dioxide-equivalent (CO2e). This represents a 42 percent reduction from the 2005 Baseline Community-wide GHG Inventory. This decrease is the result of emission reductions across most sectors. It is important to note that while analysis of GHG inventory data can identify the amount of change this type of analysis does not specifically identify the factors that contribute to the changes and their level of contribution. Certain general factors that are able to be identified are noted below, but it should be understood that these are only general contributing factors and not the sole factors responsible for the total GHG changes. Figure 1 shows the 2005 to 2018 GHG emissions by sector.

In the residential sector, emission reductions of 30 percent occurred from 2005 to 2018. This can be attributed, in part, to the specific composition of electricity delivered by Pacific Gas & Electric Company (PG&E) and Central Coast Community Energy (3CE) to include both more renewable energy and energy generated from large hydro operations in their energy mix during this time period. 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. In the solid waste sector, a decrease in the actual tonnage of waste sent to landfills caused a 46 percent decrease in emissions. In the commercial and industrial sector there was a 43 percent reduction in emissions from 2005 to 2018. This can be attributed, in part, to decreases in electricity and natural gas usage, as well as to policy changes at the state level regarding energy use data access.

Figure 1:

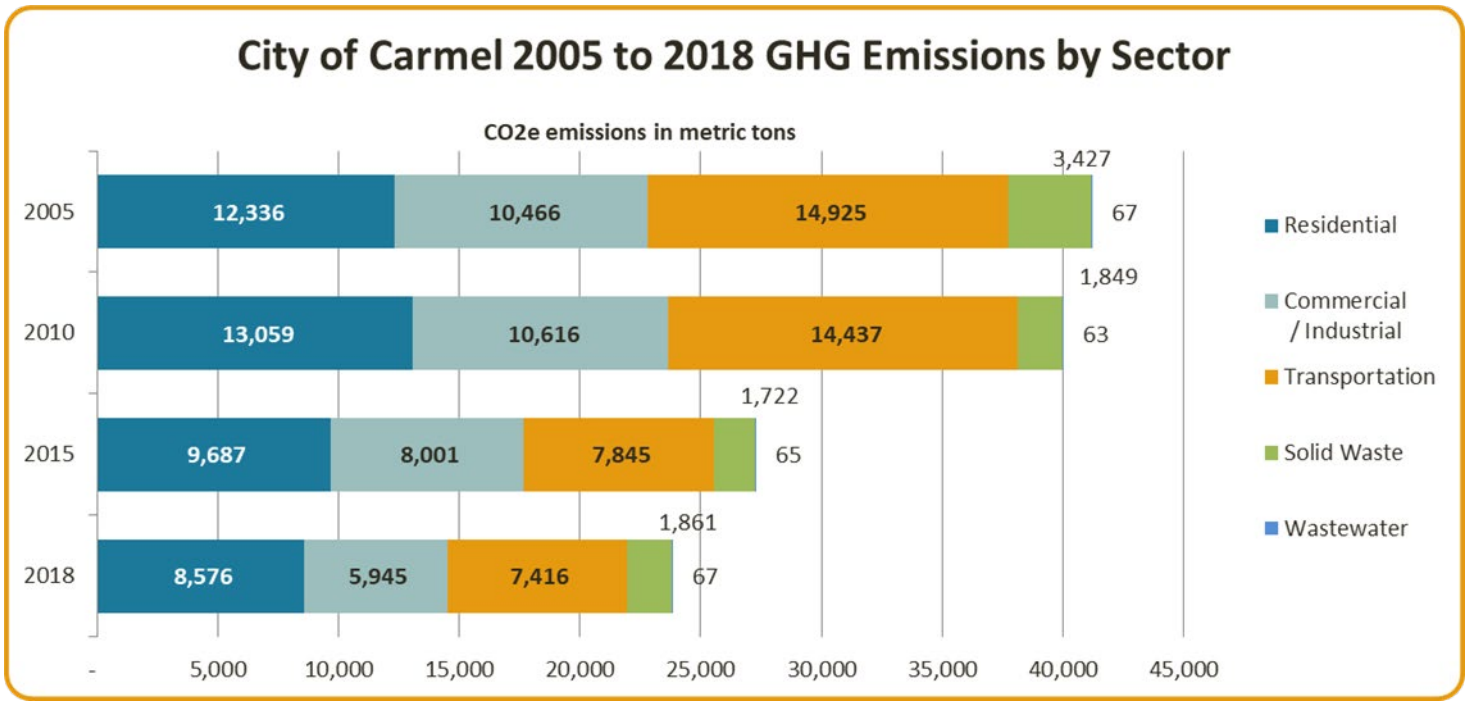

Table 1 summarizes the results of the 2005 Baseline Community-wide GHG Inventory, 2010 Community-wide GHG Inventory, 2015 Community-wide GHG Inventory and 2018 Community-wide GHG Inventory, broken out by sectors. The percentage change from the 2005 inventory to the 2018 inventory is a reduction of 42 percent.

Table 1:

Community CO2e Emissions by Sector	Residential	Commercial / Industrial	Transportation	Solid Waste	Wastewater	Total
2005	12,336	10,466	14,925	3,427	67	41,221
2010	13,059	10,616	14,437	1,849	63	40,024
2015	9,687	8,001	7,845	1,722	65	27,320
2018	8,576	5,945	7,416	1,861	67	23,883
% change 2005- 2018	-30%	-43%	-50%	-46%	1%	-42%

2018 Community-wide GHG Inventory Report

Introduction

A community-wide GHG emissions inventory is an accounting of the GHG emissions that occur as the result of a community's activities in a given year. GHG inventories can be used to determine the largest sources of GHG emissions from within a community, to set GHG emission reduction targets and to better understand how GHG emissions evolve across inventory years. The City of Carmel completed its 2005 Baseline Community-wide GHG Inventory as part of an Association of Monterey Bay Area Governments (AMBAG) regional effort to develop the 2005 baseline GHG inventory reports for all of the AMBAG jurisdictions. Subsequently, the 2010 and 2015 GHG inventories for all AMBAG jurisdictions were also completed by AMBAG. This year, AMBAG received funding from 3CE to complete 2018 Community-wide GHG inventories for all 3CE member jurisdictions which received 3CE electricity generation service as of January 1st 2020.

The Carmel 2005 Baseline, 2010, 2015 and 2018 Community Wide GHG inventories have been completed by following the US *Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions* as per the California Air Resources Board (CARB) 2017 Scoping Plan. The ICLEI ClearPath tool suite was used to perform the emissions calculations for all inventories in accordance with guidance from the Governor's office of planning and research. The methodology used in this 2018 Community-wide GHG Inventory is included in Appendix A.

California's Climate Change mandates

The State of California has adopted bold goals to reduce GHG emissions and address climate change. In order to meet these goals, the state supports local action on climate change by providing guidance for local jurisdictions to develop GHG emissions inventories and climate action plans. Local jurisdictions are required in many instances, and incentivized in others, to address greenhouse gas emissions under the California Environmental Quality Act (CEQA), AB 32 (California Global Warming Solutions Act of 2006), SB 375 (Sustainable Communities and Climate Protection Act of 2008), SB 32 (California Global Warming Solutions Act of 2006: emissions limit, 2016) and various California Executive orders, regulations, and programs.

A part of the effort to address climate Change the California Legislature has laid out clear GHG emissions reduction targets. AB 32 established a target of reducing GHG emissions back to 1990 levels by 2020, which corresponds to a 15% reduction from 2005 level. SB 32 set a GHG emissions reduction target of 40 percent below 1990 levels by 2030. Finally, Executive Order B-55-18, issued in 2018 by Jerry Brown, established a goal of reaching carbon neutrality by 2045 and maintaining negative emissions in subsequent years.

2018 Community-wide GHG Emissions by Sector

Many local governments find a sector-based analysis most relevant to policymaking and project management, as it assists in formulating sector-specific reduction measures and climate action plan components. This inventory evaluates community emissions from the following sectors:

- Residential
- Commercial and Industrial
- Transportation
- Solid Waste
- Wastewater

The community of Carmel emitted 23,883 metric tons of CO2e in 2018. As visible in Figure 2 and Table 2, 31.1 percent of emissions are from the transportation sector, and were generated by fuel use from travel on local roads. Emissions from electricity and natural gas usage in the residential sector generated 35.9 percent of emissions, while electricity and natural gas consumption in the commercial sector generated 24.9 percent of emissions. The disposal of waste generated by Carmel residents and businesses caused 7.8 percent of total emissions. The remaining 0.3 percent of emissions was generated from wastewater treatment processes.

Figure 2:

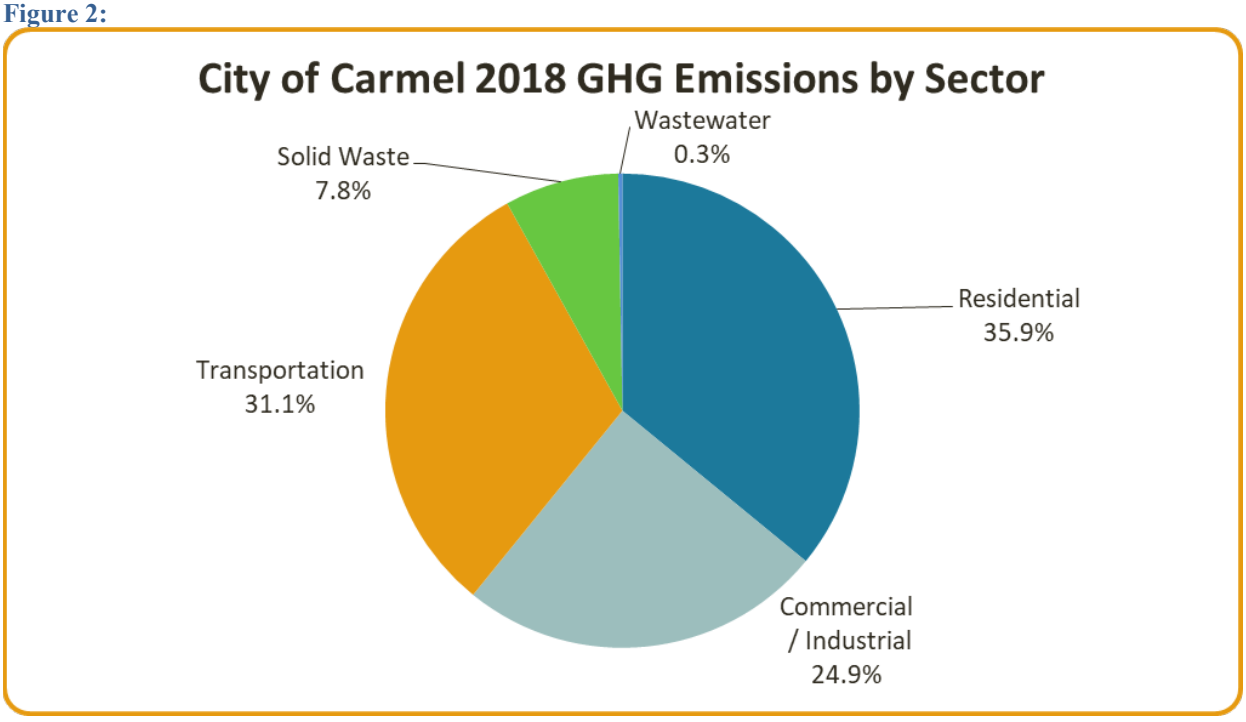

Table 2:

2018 Community Emissions by Sector	Residential	Commercial / Industrial	Transportation	Solid Waste	Wastewater	Total
CO2e (metric tons)	8,576	5,945	7,416	1,861	67	23,883
% of Total CO2e	35.9%	24.9%	31.1%	7.8%	0.3%	100%

Built Environment: Residential, Commercial and Industrial Sector

Carmel's built environment generated 60.8 percent of community-wide GHG emissions in 2018 or 14,521 metric tons of CO2e. Emissions were calculated using 2018 electricity and natural gas consumption data provided by PG&E and 3CE.

The residential sector accounted for 8,576 metric tons of CO2e and only includes emissions arising from the consumption of energy in residential buildings. The combined commercial and industrial sectors accounted for 5,945 metric tons of CO2e and include emissions arising from the consumption of energy in both commercial and industrial buildings. PG&E was not able to provide a breakdown between commercial and industrial electricity and natural gas consumption due to the California Public Utilities Commission's (CPUC) 15/15 rule[1].

Figure 3 and Table 3 show the breakdown of natural gas to electricity emissions in Carmel's built environment. The residential sector natural gas usage comprised 54 percent of emissions while the commercial and industrial sector natural gas comprised 37 percent of emissions.

Figure 3:

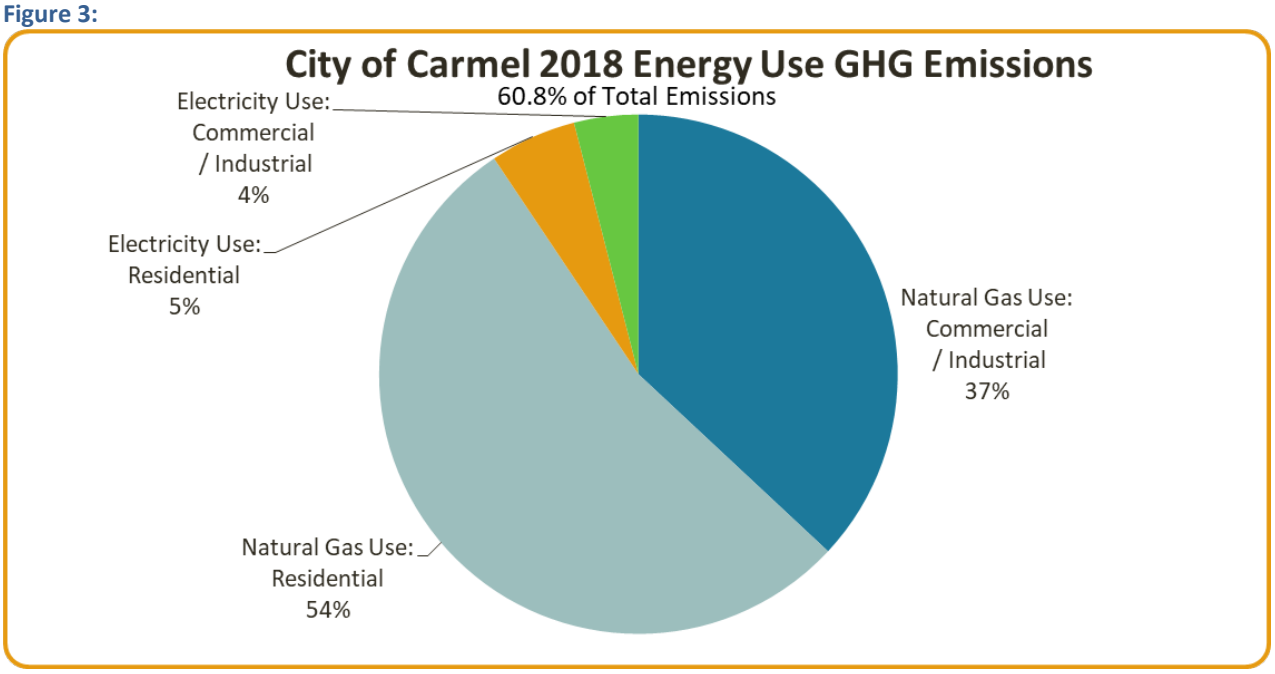

Table 3:

Natural Gas Use Emissions (CO2e):		Electricity Use: Emissions (CO2e):	
Commercial/Industrial	**Residential**	**Commercial/Industrial**	**Residential**
5,364	7,792	581	784

[1] The 15/15 Rule was adopted by the CPUC in the Direct Access Proceeding (CPUC Decision 97-10-031) to protect customer confidentiality. If the number of customers in the compiled data is below 15, or if a single customer's load is more than 15 percent of the total data, categories must be combined before the information is released.

Transportation Sector

As mentioned previously, Carmel's transportation sector generated 31.1 percent of community-wide GHG emissions in 2018, or 7,416 metric tons of CO2e. The transportation sector analysis includes emissions from all vehicle use on local roads within Carmel's jurisdictional boundaries. Emissions from air travel of Carmel's residents were not included in the transportation sector analysis.

Solid Waste Sector

As mentioned previously, the solid waste sector accounted for 7.8 percent of community-wide GHG emissions in 2018 or 1,861 metric tons of CO2e. Emissions from the solid waste sector are an estimate of methane generation from the anaerobic decomposition of organic wastes (such as paper, food scraps, plant debris, wood, etc.) that are deposited in a landfill. Transportation emissions generated from the collection, transfer and disposal of solid waste are included in transportation sector GHG emissions.

Wastewater Sector

As mentioned previously, the wastewater sector accounted for 0.3 percent of community-wide GHG emissions in 2018 or 67 metric tons of CO2e. This sector accounts for the operation of wastewater treatment facilities used to treat Carmel's wastewater. Emissions from the treatment of wastewater through septic tank systems are not included in this inventory.

Conclusion

The City of Carmel has taken steps toward reducing its impact on the environment by quantifying its 2005 baseline community-wide GHG emissions and regularly updating the inventory in 2010, 2015 and 2018. The City of Carmel has already met the 2020 AB 32 GHG emissions reduction targets. This inventory will now allow the city to look ahead and chart a path towards meeting the SB 32 2030 GHG emissions reduction target as well as the 2045 carbon neutrality goal.

Using a comprehensive approach to reduce community-wide greenhouse gas emissions, this inventory provides an important foundation for the City of Carmel to update its Climate Action Plan. Specifically, this inventory serves to:

- Establish a guideline for setting future emissions reductions targets.
- Identify the largest sources of communitywide emissions.
- Track changes to community emissions over time.
- Evaluate progress towards emission reduction goals.
- Support the development, implementation and evaluation of strategies to reduce emissions

Appendix A: Inventory Methodology by Sector

This appendix, describes in detail the data sources and processes used to calculate emissions in this community-wide GHG inventory.

Overview of Inventory Contents and Approach

The community inventory describes emissions of the major greenhouse gases from the residential, commercial and industrial, transportation, solid waste, and wastewater sectors. Emissions are calculated by multiplying activity data—such as kilowatt hours or VMT —by emissions factors, which provide the quantity of emissions per unit of activity. Activity data is typically available from electric and gas utilities, planning and transportation agencies, and air quality regulatory agencies. Emissions factors are drawn from a variety of sources, including PG&E, and the Community protocol.

Built Environment Methodology: Residential, Commercial and Industrial Sectors

Data on electricity and natural gas sold by PG&E to customers as well as data on electricity sold by 3CE to customers was provided by PG&E and 3CE. Bundled PG&E electricity emissions were calculated in ICLEI's ClearPath software using PG&E-specific emissions factors provided by PG&E as well as 3CE specific emissions factors provided by 3CE. All natural gas emissions were calculated in ClearPath with default emissions factors from the community protocol.

Transportation Sector Methodology

On-road transportation emissions were derived from local jurisdiction vehicle miles traveled (VMT) data and regional vehicle and travel characteristics. Observed VMT on non-state facilities (referred to in the inventory as "local roads") was obtained from Caltrans' Highway Performance Monitoring System reports. The EMFAC 2017 model developed by CARB was used to calculate emissions from these VMT figures. EMFAC defaults for each county include regionally-specific information on the mix of vehicle classes and model years, as well as ambient conditions and travel speeds that determine fuel efficiency. The model estimates carbon dioxide, methane, and nitrous oxide emissions from these factors as well as from inputted vehicle activity data.

For purposes of this inventory, AMBAG Sustainability Program staff ran the model for each of AMBAG's three counties (Monterey, Santa Cruz, and San Benito), leaving all CARB default values in place (including VMT). Staff then used the EMFAC output to calculate local fleet mix and emissions factors for each vehicle type. Different emissions factors were calculated for CO_2, CH_4 and N_2O. The total VMT was then distributed among the various EMFAC-defined vehicle types according to percentages derived from the EMFAC output. The appropriate emissions factor for each vehicle type was then applied for these greenhouse gases. Finally, global warming potentials were factored in and the total emissions from each vehicle type were summed to reach the total CO_2e emissions from the transportation sector.

Solid Waste Sector Methodology

Emissions from solid waste were captured by estimating future emissions from decomposition of waste generated in the inventory year ("community-generated solid waste"). Community-generated solid waste emissions were calculated in ClearPath using waste disposal data obtained from the California Department of Resources Recycling and Recovery (CalRecycle) Disposal Reporting System, which records tonnages of municipal solid waste and alternative daily cover by local jurisdiction.

As some types of waste (e.g., paper, plant debris, food scraps, etc.) generate methane within the anaerobic environment of a landfill and others do not (e.g., metal, glass, etc.), it is important to characterize the various components of the waste stream. Waste characterization for community-generated solid waste was estimated using the CalRecycle 2003, 2008 and 2014 California statewide waste characterization study.[2] Most landfills capture methane emissions either for energy generation or for flaring. The EPA estimates that 60 percent to 80 percent[3] of total methane emissions are recovered at the landfills to which the City of Carmel sends its waste. Following the recommendation of the community protocol, AMBAG adopted a 75 percent methane recovery factor and a 10% oxidation rate.

Recycling and composting programs are reflected in the emissions calculations as reduced total tonnage of waste going to the landfills. The model, however, does not capture the associated emissions reductions in "upstream" energy use from recycling as part of the inventory.[4] This is in-line with the "end-user" or "tailpipe" approach taken throughout the development of this inventory. It is important to note that recycling and composting programs can have a significant impact on greenhouse gas emissions when a full lifecycle approach is taken. Manufacturing products with recycled materials avoids emissions from the energy that would have been used during extraction, transportation and processing of virgin material.

Wastewater Sector Methodology

Wastewater coming from homes and businesses is rich in organic matter and has a high concentration of nitrogen and carbon (along with other organic elements). As wastewater is collected, treated, and discharged, chemical processes can lead to the creation and emission of two greenhouse gases: methane and nitrous oxide. Emissions from wastewater treatment were calculated by first assessing the treatment steps used to transform Carmel's wastewater. Staff then used the ClearPath tool and a population-based method to estimate treatment process emissions, in accordance with the methodology delineated in the US Community protocol.

[2] CalRecycle Waste Characterization Studies available at https://www2.calrecycle.ca.gov/WasteCharacterization/Study
[3] AP 42, section 2.4 Municipal Solid Waste, 2.4-6, http://www.epa.gov/ttn/chief/ap42/index.html
[4] "Upstream" emissions include emissions that may not occur in your jurisdiction resulting from manufacturing or harvesting virgin materials and transportation of them.

Appendix B: Glossary

This Appendix provides a brief description of technical terms used in the inventory.

Activity Data:
Data on the magnitude of a human activity resulting in emissions or removals taking place during a given period of time. Data on energy use, metal production, land areas, management systems, lime and fertilizer use and solid waste production are examples of bodata.

Baseline year:
A specific year against which emissions are tracked over time. For this inventory, the baseline year is 2005.

Boundaries:
GHG accounting and reporting boundaries can have several dimensions, i.e., jurisdictional, operational or geopolitical. The inventory boundary determines which emissions are accounted and reported.

Carbon Dioxide Equivalent:
A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). Carbon dioxide equivalents are commonly expressed as metric tons of carbon dioxide equivalents ($MTCO_2e$). The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP. See appendix A.

Community-wide GHG Inventory:
A calculation of GHG emissions generated as a result of activities within a community.

Consistency:
Consistency means that an inventory should be internally consistent in all its elements over a period of years. An inventory is consistent if the same methodologies are used for the base and all subsequent years and if consistent data sets are used to estimate emissions or removals from sources or sinks.

Direct GHG emissions:
Emissions from sources that occur within a jurisdiction's operational or geopolitical boundaries are called direct GHG emissions.

Emissions Factor:
A unique value for scaling emissions to activity data in terms of a standard rate of emissions per unit of activity (e.g., grams of carbon dioxide emitted per kWh of electricity use or per therms of natural gas use).

Fugitive emissions:
Emissions that are not physically controlled but result from the intentional or unintentional releases of GHGs. They commonly arise from the production, processing transmission storage and use of fuels and other chemicals, often through joints, seals, packing, gaskets, etc.

Global Warming Potential:
A measure of the total energy that a gas absorbs over a particular period of time (usually 100 years), compared to carbon dioxide.

Greenhouse gases (GHGs):
Gases which when released in the atmosphere have a warming impact. The GHG's considered in this inventory are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O).

Indirect emissions:
Emissions that are a consequence of activities inside a jurisdiction, but occur from sources outside of the inventory boundaries, e.g., as a result of the import of electricity, heat, or steam.

Intergovernmental Panel on Climate Change:
The IPCC was established jointly by the United Nations Environment Programme and the World Meteorological Organization in 1988. The purpose of the IPCC is to assess information in the scientific and technical literature related to all significant components of the issue of climate change. Leading experts on climate change and environmental, social, and economic sciences have helped the IPCC to prepare periodic assessments of the scientific underpinnings for understanding global climate change and its consequences. With its capacity for reporting on climate change, its consequences, and the viability of adaptation and mitigation measures, the IPCC is also looked to as the official advisory body to the world's governments on the state of the science of the climate change issue.

Methane (CH_4):
A hydrocarbon that is a greenhouse gas with a global warming potential estimated at 25 times that of carbon dioxide (CO_2). Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion. The GWP is from the IPCC's Fourth Assessment Report (AR4).

Nitrous Oxide (N_2O):
A powerful greenhouse gas with a global warming potential of 298 times that of carbon dioxide (CO2). Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, manure management, fossil fuel combustion, nitric acid production, and biomass burning. The GWP is from the IPCC's Fourth Assessment Report (AR4).

Process emissions:
Emissions from industrial processes involving chemical transformations other than combustion.

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

February 18, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Provide Updates on the Outreach to Community Organizations and Regional Partners Conducted to Date and Discuss Outstanding Vulnerability and Resilience Topics for Outreach

RECOMMENDATION:

Committee members will provide updates on the outreach to community organizations and regional partners they have conducted over the past month. Committee members will also discuss outstanding vulnerability and resilience topics that have not yet been addressed in our outreach process.

BACKGROUND/SUMMARY:

On February 20, 2020, the Climate Committee started assembling the list of community organizations and regional partners to engage. Included in this process, the Committee assigned outreach leads for each organization.

At the July 16, 2020 Climate Committee meeting, members agreed to start conducting outreach to community organizations and regional partners about the City's project. The updated outreach list is included in Attachment 1. The updated Climate Committee presentation schedule is included in Attachment 2.

Upon reviewing the list of data sources and data gaps that was developed early on in the project, staff noted that public health is a vulnerability topic that has not yet been directly addressed in the Committee's outreach efforts. Staff is requesting feedback on public health entities that should be reached out to, as well as other resilience topics Committee members think should be addressed.

FISCAL IMPACT:

N/A

ATTACHMENTS:

Attachment 1: Community Organizations and Regional Partners
Attachment 2: Updated Presentation Schedule

Attachment 1

Community Organizations and Regional Partners to Engage

City of Carmel-by-the-Sea Climate Project

January 2021

**Grey italics denote presentations that have already occurred*

	ORGANIZATION	Topic (s)	Contact Persons	Committee Lead	Present to	Hear from	Contacted?
	Utilities						
*1**	*Carmel Area Wastewater District*	*Sewer system Wastewater Treatment Facility*	*Barbara Buikema, Daryl Lauer*	*Jeff Baron, Agnes Martelet*		*X*	*Y*
2	*Central Coast Community Energy (was Monterey Bay Community Power)*	*Energy supply*	*Dan Bertoldi (dbertoldi@mbcommunitypower.org) J.R. Killigrew (jkilligrew@mbcommunitypower.org)*	*Evan Kort, Agnes Martelet*		*X*	*Y*
3	Cal Am	Water supply		Michael LePage		X	
4	*Monterey Peninsula Water Management District*	*Water supply*	*Stephanie Locke*	*Michael LePage*		*X*	*Y*
5	GreenWaste Recovery	Waste management and recycling	Jim Moresco	Carrie Theis, Agnes Martelet			
6	*Monterey Regional Waste Management District*	*Waste management and recycling*	*Tim Flanagan*	*Carrie Theis*		*X*	*Y*
7	*PG&E*	*Energy supply*	*Jeana Arnold Teri Vetere*	*Carrie Theis, Jeff Baron*		*X*	*Y*
	Professional Organizations						
1	*California AIA*	*Built environment resilience*	*Libby Barnes*	*John Hill*		*X*	*Y*
2	Chamber of Commerce	Local business, tourism	Jenny McMurdo	Carrie Theis	X		Y
3	Monterey County Association of Realtors	Sea Level Rise Wildfire risk	Ben Beasley	Scott Lonergan, LaNette Zimmerman	X		Y
4	MCCVB	Visitors		Carrie Theis			
5	Visit Carmel	Visitors / local business	Amy Herzog	Carrie Theis			Y
6	Sunset Center	Resilience	Christine Sandin	LaNette Zimmerman			

Attachment 1

	ORGANIZATION	Topic (s)	Contact Persons	Committee Lead	Present to	Hear from	Contacted?
	Local Community Groups						
1	*Carmel Residents Association*	*Community resilience Climate action*	*Fred Bologna Nancy Twomey*	*Jeff Baron*	*X*		*Y*
2	*Carmel Rotary Club*	*Community resilience Climate action*	*Susan Prest*	*Carrie Theis, Jeff Baron*	*X*		*Y*
3	Carmel Lions Club	Community resilience Climate action	Heidy Mozingo	Carrie Theis	X		
4	Friends of Carmel Forest	Urban forest	Ramie Allard	Scott Lonergan	X		
5	*Friends of MTNP*	*Wildfire risk Sensitive habitats*	*Karen Ferlito Greg D'Ambrosia*	*Scott Lonergan*	*X*		*Y*
6	Del Monte Forest Conservancy	Wildfire risk		Scott Lonergan			Y
7	Landwatch	Transportation, housing	Mike DeLapa	Jeff Baron		X	Y
8	Sustainable Carmel	Climate action	Ellen Gannon	Agnes Martelet	X		
9	Church auxiliaries	Community resilience		LaNette Zimmerman			Y
10	Heritage Society	Community resilience	Karl Iverson	Michael LePage			
11	Forest Theater Guild	Community resilience	Steven Moore	LaNette Zimmerman, Carrie Theis			
12	PacRep	Community resilience	Steven Moore	LaNette Zimmerman, Carrie Theis			
13	Carmel Women's Club	Community resilience Climate action	Nancy Twomey	Jeff Baron			
	City Departments						
1	Police	Emergency preparedness Transportation	Paul Tomasi	Agnes Martelet			Y
2	*Fire*	*Emergency preparedness*	*Carmyn Priew, Sichel Young*	*John Hill*		*X*	*Y*
3	*Forestry Division (PW)*	*Urban forest Sensitive habitats*	*Sara Davis*	*Agnes Martelet*		*X*	*Y*
4	*Public Works*	*Storm Drain Master Plan*	*Bob Harary*	*Agnes Martelet*		*X*	*Y*
5	Library	Historic events	Katie O'Connell	Evan Kort			Y

Attachment 1

	ORGANIZATION	Topic (s)	Contact Persons	Committee Lead	Present to	Hear from	Contacted?
	City Commissions						
1	*Forest & Beach Commission*	*Sea Level Rise* *Urban forest* *Sensitive habitats* *Climate action*		*Scott Lonergan*	*X*		*Y*
2	Planning Commission	Built environment resilience Climate action		Michael LePage	X		
3	City Traffic Safety Committee	Transportation		Agnes Martelet			Y
	Federal / State / Regional Agencies						
1	*AMBAG*	*Climate Action* *Transportation*	*Amaury Berteaud*	*Agnes Martelet*		*X*	*Y*
2	*USGS*	*Sea Level Rise*	*Patrick Barnard*	*Agnes Martelet*		*X*	*Y*
3	CalFire	Wildfire risk and resilience Urban forest management	John Reynolds	John Hill	X		Y
4	CA Department of Insurance	Wildfire risk / home insurability	Ricardo Laura	John Hill			Y
5	Fire Safe Council for Monterey County	Michael Emmett		John Hill			Y
6	California Coastal Commission	Sea Level Rise		Jeff Baron / Agnes Martelet		X	
7	IRWMP Group	Water supply Watershed / storm water projects		Michael LePage			
8	*Monterey County (OES)*	*Resilience planning*	*Kelsey Scanlon*	*Agnes Martelet*		*X*	*Y*
9	*Monterey County*	*Sustainability* *Climate Action*	*Ashley Paulsworth*	*Agnes Martelet*		*X*	*Y*
10	Monterey Bay National Marine Sanctuary (NOAA)	Marine Sanctuary impacts Carmel Beach	Karen Grimmer	Agnes Martelet			Y
11	Transportation Agency of Monterey County	Transportation		Jeff Baron			
12	MST	Transportation		Jeff Baron		X	
13	US Navy / Coast Guard	Coastal impacts		Carrie Theis			

Attachment 1

	ORGANIZATION	Topic (s)	Contact Persons	Committee Lead	Present to	Hear from	Contacted?
	Educational Groups						
1	Carmel High School Environmental Club	Internships Climate Action partnership / Green Schools	Ellen Gannon	LaNette Zimmerman, Scott Lonergan			Y
2	*Stevenson, York, Santa Catalina*	*Climate Action partnership / Green Schools*		*LaNette Zimmerman, Scott Lonergan*			*Y*
3	Youth Center	Climate Action partnership / Green Schools		LaNette Zimmerman, Scott Lonergan			
4	CSUMB	Internships Climate Action partnership / Green Schools		LaNette Zimmerman, Scott Lonergan			Y
5	MPCC	Internships Climate Action partnership / Green Schools		LaNette Zimmerman, Scott Lonergan			
6	MIISS	Climate Action partnership / Green Schools		LaNette Zimmerman, Scott Lonergan			Y
7	NPS	Climate Action partnership / Green Schools	Ann E. Rondeau (ret.) (pao@nps.edu)	LaNette Zimmerman, Scott Lonergan			
	Regional Non-Profit Organizations						
1	Monterey Bay Aquarium	Marine Sanctuary impacts Climate Action Support		Carrie Theis			
2	Ecology Action	Climate Action Support	Kirsten Liske	Agnes Martelet			
	Other Stakeholders						
1	Pebble Beach Company	Bluffs / Seawalls / Beach Regional transportation Emergency response		Jeff Baron / Carrie Theis	X		
2	*Principals Involved in 1983 response; authors of the CBTS Shoreline Management Plan*	*Bluffs / Seawalls / Beach*	*Greg D'Ambrosio (past Assistant City Administrator); David Shonman (Coastal Biologist)*	*Evan Kort, Scott Lonergan*		*X*	*Y*
3	Cities with similar challenges (e.g. PG, Monterey, Seaside, Pacifica, Del Mar, Malibu)			Jeff Baron / Carrie Theis			

Climate Committee

Presentation Schedule

2/18/2021

Climate Committee Meeting Date	Presenters
10/15/2020	**Sara Davis** – Forestry Science and Adapting Carmel's Urban Forest to Climate Change **Monterey Fire** – Defensible Space Inspection Program, community resilience to wildfires
11/19/2020	**Monterey County Office of Emergency Services –** Multi-jurisdictional Hazard Mitigation Plan **Greg D'Ambrosio, David Shonman** – Carmel coastal processes and damage caused by previous storms
12/17/2020	**United States Geological Survey** – CosMos Modeling of Sea Level Rise and storm impacts on Carmel coast **Carmel Public Works** – Storm Drain Master Plan and readiness of drainage system for climate change
1/21/2021	**Monterey Regional Waste Management District** – GHG reduction strategies **Monterey Peninsula Water Management District** – Water supply resilience
2/18/2021	**Association of Monterey Bay Area Governments** – results of 2018 greenhouse gas inventory **Central Coast Community Energy** (was Monterey Bay Community Power) – climate action efforts, new procurement policy, and how that will affect our Climate Action Plan **PG&E** – Power grid resilience

Not yet on the schedule

- Landwatch
- California Coastal Commission
- Monterey-Salinas Transit
- Monterey Bay Sanctuary

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

February 18, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Review, provide comments, and/or approve presentation summary sheets for the Beach, Bluff and Coastal Armoring (Version 2) and the Storm Drain Master Plan

RECOMMENDATION:

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

- Version 2 of the Beach, Bluff, and Coastal Armoring Summary Sheet
- Storm Drain Master Plan Summary Sheet

BACKGROUND/SUMMARY:

The Beach, Bluff, Coastal Armoring, Public Infrastructure, and Private Property Sheet summarizes presentations by David Shonman and Greg D'Ambrosio, and by the USGS. The first version of this summary sheet was reviewed at the Committee's January 2021 meeting. The revised version of this summary sheet is included as Attachment 1.

The Storm Drain Master Plan sheet summarizes the presentation made by the City's Public Works Director about the Storm Drain Master Plan in December 2020 and is included as Attachment 2.

FISCAL IMPACT:

N/A

ATTACHMENTS:

Attachment 1: Hazard and Asset Summary Sheet for the Beach, Bluff, Coastal Armoring, Public Infrastructure, and Private Property

Attachment 2: Hazard and Asset Summary Sheet for the Storm Drain Master Plan

CITY OF CARMEL-BY-THE-SEA

Hazard and Asset Summary Sheet for the Beach, Bluff, Coastal Armoring, Public Infrastructure, and Private Property

February 18, 2021

TO:	Climate Committee Members
SUBMITTED BY:	Scott Lonergan, Committee Member

SUMMARY

Asset: Beach, Bluff, Coastal Armoring, Public Infrastructure, and Private Property
Hazards: Sea Level Rise, Stronger Storms and Waves, More Variable Rainfall
Version: 8-Feb-2021

General Comments and Outlook:

- It is not widely understood that the climate change threat to coastal infrastructure, private property, the beach, along with the associated impacts on tourism and Carmel's economy, is so substantial, and that the potential solutions so complex.
- Nearly the entire coastline south of 8th Avenue has been armored by a combination of seawalls, vertical or stepped retaining walls, or engineered rock revetments. Secondary impacts to armoring often include escalating maintenance costs, and the loss of beach, aesthetics, and ecology.
- Coastal erosion and storm events already pose a threat, and climate change driven sea level rise and storm intensity will dramatically increase that threat.
- Longer term, the degree to which the City should, or can, forestall the natural processes driven by climate change is not fully understood.

Identified Issues:

- The frequency and duration of beach inundation and wave attack on armoring and natural barriers is increasing. The impacts of armoring on beach sand loss, as well as the seasonal migration of sand on and off shore, has not been investigated.
- The natural erosion processes along the mostly unarmored North Dunes area will accelerate bluff retreat and potentially create space for the beach to migrate inland. North Dune habitat at the retreating bluff would be reduced in this case.
- Seawall integrity is being compromised by ongoing erosion of the relatively soft sandstone base of some seawalls. Equipment access to areas on the beach required for completing repairs and maintenance is increasingly limited.
- Public infrastructure at risk along the coast including Scenic Road and the bluff walkway, beach access stairways, bathrooms, armoring, Del Mar Avenue beach parking, and some utilities.
- Private property at risk along the coast including: 1) that along Scenic Road, 2) that between 8th Avenue and Del Mar Avenue, and 3) that at the north end of the City (Pescadero Canyon area).
- The need to educate the community about the climate change threat to coastal infrastructure, private property, the beach, and the associated impacts on tourism and Carmel's economy, along with the potential solutions.

Remaining Issues to be Understood (in Preparation for the Committee's Final Report):

- Engagement of a coastal engineer with experience in planning for climate change in an LCP context.
    - Further assessment of the risks to our coastal assets.

    - Determine adaptation measures and LCP policy options. Draft updated or new LCP for certification with the Coastal Commission.
        - Prioritize adaptations and projects that protect and maintain public resources and beach access, and the viability of the community and tourism.
        - Coordinate with regional partners (e.g. County, Pebble Beach) and align with the Coastal Commission on acceptable plans.
        - Determine how the options and strategies along the coast are different for the:
            - Mostly natural, unarmored North Dunes area
            - Mostly armored bluffs along Scenic Road south of 8th Avenue
            - Unarmored dunes along private property between 8th Avenue and Del Mar Avenue
            - Armored private properties on the bluffs at the north end of the City (Pescadero Canyon area).
        - Evaluate feasibility and phasing, the use of thresholds for when different elements of these strategies are implemented. For example, maintaining armory or other defenses up to a point, but then if a threshold is reached, embracing a new bluff line and different adaptive measure.
        - Consider legal liabilities, coastal armoring and building regulations, real estate disclosures, and fiscal impacts.
        - Community-wide outreach and education, including that focused on exposed property owners.
- Actions independent of engaging a coastal engineer including:
    - Characterize erosion hot spot areas of particular concern along the City's coastline based on maintenance records, historical knowledge, and further assessment.
    - Research Carmel Cove sand supply dynamics through the engagement of local experts (e.g. CSUMB, NPS) or other resources.
    - Assess risks with the USGS Coastal Storm Modeling System (CoSMoS).
    - Investigate and, if appropriate, apply for pre-disaster planning and mitigation funding from the State or other sources.
    - Amend City documents, if appropriate, to enable the request of FEMA disaster relief post-disaster.

Possible Actions to be Recommended in the Committee's Final Report

- Update the CBTS Shoreline Management Plan and the General Plan / LUP.
- Proactive sourcing or contracting for repair resources prior to episodic events.

REFERENCES

- Coastal Resource Management Element of the Carmel-by-the-Sea General Plan: https://ci.carmel.ca.us/post/general-plan
- Carmel-by-the-Sea / Shoreline Management Plan: https://ci.carmel.ca.us/post/additional-forestry-division-resources
- David Shonman and Greg D'Ambrosio 19-Nov-2020 Climate Change Committee presentation slides: https://ci.carmel.ca.us/sites/main/files/file-attachments/shonman_-_ccc_presentation_-_final_nov_19_2020.pdf?1605903015
- USGS representative, Andrea O'Neill, 17-Dec-2020 Climate Change Committee presentation video: https://carmel.novusagenda.com/agendapublic/MeetingView.aspx?MeetingID=922&MinutesMeetingID=510&doctype=Agenda
- California Coastal Commission and Local Government Public Workshop on 17-Dec-2020 to discuss sea level rise planning in an LCP context: https://documents.coastal.ca.gov/reports/2020/12/SM-Th3/th3-12-2020-report.pdf

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History

- Version 8-Feb-2021

CITY OF CARMEL-BY-THE-SEA

Hazard and Asset Summary Sheet – Storm Drain Master Plan

December 17, 2020

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

SUMMARY

Asset: Public and Private Property, Public Safety
Hazards: Flooding due to stronger storms
Version: 1

General Comments and Outlook: The Director of Public Works presented the City's first Storm Drain Master Plan (SDMP), which was completed in 2020. The plan includes an evaluation of the physical condition of the existing storm drain system, a hydrologic and hydraulic analysis, and a prioritization of improvements to fix deficiencies and capacity issues. With the proposed improvements outlined in the SDMP at an estimated cost of $9.9 million, the drainage system could handle a 10-year storm (3 inches in 24 hours) without flooding.

Identified Issues:

- The City's storm drain system was built to handle only a 10-year storm; it was less costly to construct over the years but incurs the potential for more frequent flooding due to reduced capacity. Most agencies have storm drainage systems that accommodate 20-year storms.
- Repairs are needed for the system to currently be able to handle a 10-year storm.
- Climate change may cause storm intensities to increase by 12 to 20%. Models indicate that, with larger storms, some flooding may occur in the northeast part of the City, the southwest corner near Santa Lucia, and in Mission Trail Nature Preserve, even with improvements.

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

- Funding of the SDMP projects as part of the City's CIP and including them in the Multi-jurisdictional Hazard Mitigation Plan for potential FEMA funding.
- Upsizing pipes as repair projects are conducted so that critical components of the system can eventually handle larger storms

REFERENCES

- Carmel-by-the-Sea Storm Drain Master Plan: https://ci.carmel.ca.us/sites/main/files/file-attachments/complete_final_sdmp_report_september_2020_small.pdf?1602098761

History

- Version 1 presented at committee meeting on 2/18/2021

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

February 18, 2021
ORDERS OF BUSINESS

TO:	Climate Committee Members
SUBMITTED BY:	Agnes Martelet, Environmental Compliance Manager
SUBJECT:	Receive and Discuss a Project Status Update

RECOMMENDATION:

Receive and discuss a project status update

BACKGROUND/SUMMARY:

Staff will provide a short update on the project status and next steps. The work plans that were developed to keep track of project progress will be used to review milestones achieved and upcoming tasks. The work plans are included in Attachment 1.

FISCAL IMPACT:

ATTACHMENTS:

Attachment 1: Climate Action and Adaptation Plans

Climate Adaptation Plan
WORK PLAN - UPDATE
February 18, 2021

Project Phase	Tasks	Suggested Lead(s)	Done?	Timeline: Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21
Phase I - Project Definition and Initiation																										
	Assemble project team	Council	✓																							
	Identify desired project outcomes (mission)	Committee	✓																							
	Define priority hazards, assets, and resilience goals	Council	✓																							
	Define data source(s) and reliability, and data gaps for priority hazards & assets	Staff	✓																							
	Identify & make contact with community organizations to engage with for information sharing and coordination	*Committee*	✓																							
	Identify & make contact with regional partners to engage with for information and coordination	*Committee*	✓																							
	Identify sources of support & timing of support where applicable (e.g. grants)	Staff*	✓																							
	Council Update on priority hazards, assets, and partners	*Staff*	✓																★							
Phase II - Assess Vulnerability																										
	Describe historical hazard events, impacts, and identified vulnerabilities	*Committee/staff**																								
	Finalize list of climate effects of most concern, and assets and populations that will be susceptible to them	Council/Committee*																								
	Adaptive capacity and existing resources: develop matrix of existing community resources and policies that provide adaptation capacity	*Council/staff*																								
	Develop Vulnerability Scores for potential impacts and adaptive capacity	Committee*																								
	Council Update on Vulnerability Scoring	Council																								★
	Engagement and Outreach: workshops to gather feedback on local vulnerabilities and strengths, community priorities and ideas for adaptation	*Committee/Staff**																								
Phase III - Define Adaptation Strategies																										
	Confirm project outcomes and resilience goals	Council																								
	Review community ideas for adaptation and examples from other jurisdictions	Committee																								
	Assemble draft adaptation strategies	Staff*																								
	Review and prioritize strategies	Committee																								
	Council Review of Prioritized Strategies	Council																								
	Engagement and Outreach: workshops to develop and gather feedback on proposed strategies	*Committee/Staff**																								
Phase IV - Adaptation Plan																										
	Assemble a Climate Adaptation Workplan	Staff*																								
	Review and Finalize Workplan	Committee*																								
	Council Review and Adoption of the-Workplan	Council																								

* denotes item that could be conducted by consultant
Tasks in italics are likely to be impacted by social distancing requirements due to Covid-19

Climate Adaptation Plan
WORK PLAN - UPDATE
February 18, 2021

Project Phase	Tasks	Suggested Lead(s)	Done?	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22
Phase I - Project Definition and Initiation																	
	Assemble project team	Council	✓														
	Identify desired project outcomes (mission)	Committee	✓														
	Define priority hazards, assets, and resilience goals	Council	✓														
	Define data source(s) and reliability, and data gaps for priority hazards & assets	Staff	✓														
	Identify & make contact with community organizations to engage with for information sharing and coordination	*Committee*	✓														
	Identify & make contact with regional partners to engage with for information and coordination	*Committee*	✓														
	Identify sources of support & timing of support where applicable (e.g. grants)	Staff*	✓														
	Council Update on priority hazards, assets, and partners	*Staff*	✓														
Phase II - Assess Vulnerability																	
	Describe historical hazard events, impacts, and identified vulnerabilities	*Committee/staff**															
	Finalize list of climate effects of most concern, and assets and populations that will be susceptible to them	Council/Committee*															
	Adaptive capacity and existing resources: develop matrix of existing community resources and policies that provide adaptation capacity	*Council/staff*															
	Develop Vulnerability Scores for potential impacts and adaptive capacity	Committee*															
	Council Update on Vulnerability Scoring	Council															
	Engagement and Outreach: workshops to gather feedback on local vulnerabilities and strengths, community priorities and ideas for adaptation	*Committee/Staff**															
Phase III - Define Adaptation Strategies																	
	Confirm project outcomes and resilience goals	Council															
	Review community ideas for adaptation and examples from other jurisdictions	Committee															
	Assemble draft adaptation strategies	Staff*															
	Review and prioritize strategies	Committee															
	Council Review of Prioritized Strategies	Council															
	Engagement and Outreach: workshops to develop and gather feedback on proposed strategies	*Committee/Staff**															
Phase IV - Adaptation Plan																	
	Assemble a Climate Adaptation Workplan	Staff*															
	Review and Finalize Workplan	Committee*															
	Council Review and Adoption of the-Workplan	Council															

* denotes item that could be conducted by consultant
Tasks in italics are likely to be impacted by social distancing requirements due to Covid-19

Attachment 1

Climate Action Plan
WORK PLAN
February 18, 2021 Update

Project Phase	Tasks	Suggested Lead(s)	Done?	Timeline: Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21
Phase I - Project Definition and Initiation				**Phase I**																					
	Create a Climate Action Plan Advisory Committee	Council	✓																						
	Identify desired project outcomes (mission)	Committee	✓																						
	Education: Background on GHG Inventory	Staff	✓																						
	Education: Climate Action Planning Guideance	Staff	✓																						
	Work Plan & Discuss the Scope of the Plan	Staff	✓																						
**	Identify & make contact with community organizations to engage with for information sharing and coordination	Committee	✓																						
**	Identify & make contact with regional partners to engage with for information and coordination	Council	✓																						
**	Identify sources of support & timing of support where applicable (e.g. grants)	Staff	✓																						
**	Identify opportunies for community workshops and educational outreach (continious)	Council/Committee																							
**	Council Update on Phase I progress	Staff	✓																★						
Phase II (Option A) - Baseline Assessments & Target Adoption (Community Only)																**Phase II (Option A)**									
	Establish/Adopt Community Inventory Baseline (2015, 2018) - *AMBAG to deliver community Inventory (Date TBD)*	Committee	✓																						
	Identify Goals and GHG Emissions Reduction Targets	Committee	✓																						
++	Estimate trends through an emissions forecast	Staff*																							
**	Council Update on Inventories and Forcasting	Staff																							★
	Identify opportunies for community workshops and educational outreach (continious)	Council/Committee																							
Phase II (Option B) - Baseline Assessments & Target Adoption (Community & Municipal)														**Phase II (Option B)**											
	Establish/Adopt Community Inventory Baseline (2015, 2018) - *AMBAG to deliver community Inventory (Date TBD)*	Committee	✓																						
	Establish/Adopt Municipal Inventory Baseline	Staff*																							
	Identify Goals and GHG Emissions Reduction Targets	Committee																							
++	Estimate trends through an emissions forecast	Staff*																							
**	Council Update on Inventories and Forcasting	Staff																							★
	Identify opportunies for community workshops and educational outreach (continious)	Council/Committee																							
Phase III - Develop Climate Action Plan																									
	Identify Greenhouse Gas Emissions Reduction Strategies	Committee*																							
	Review and prioritize strategies	Committee*																							
	Conduct Analysis and Assemble Plan Strategies	Staff*																							
	Create Implementation Framework and Timeline	Council*																							
	Workshops to develop and gather feedback on proposed strategies & implementation timeline	Council/Committee*																							
	Council Review of Prioritized Strategies	Council*																							
Phase IV - Action Plan Implementation & Adoption																									
**	Assemble Climate Action Plan Report	Staff*																							
**	Review and Finalize Report	Staff*																							
**	Council Review and Adoption of the Plan	Council																							

* denotes item that could be conducted by consultant
** shared task with Adaptation Plan
++ Decision Point: Will require consultant to complete. If consultant assistance is unavailable, cannot have certified CAP. If unable to proceed, options include: waiting until funding is available (date unknown), prepare an uncertificed climate analysis without forecasts

Climate Action Plan
WORK PLAN
February 18, 2021 Update

Project Phase	Tasks	Suggested Lead(s)	Done?	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22
Phase I - Project Definition and Initiation																
	Create a Climate Action Plan Advisory Committee	Council	✓													
	Identify desired project outcomes (mission)	Committee	✓													
	Education: Background on GHG Inventory	Staff	✓													
	Education: Climate Action Planning Guideance	Staff	✓													
	Work Plan & Discuss the Scope of the Plan	Staff	✓													
**	Identify & make contact with community organizations to engage with for information sharing and coordination	Committee	✓													
**	Identify & make contact with regional partners to engage with for information and coordination	Council	✓													
**	Identify sources of support & timing of support where applicable (e.g. grants)	Staff	✓													
**	Identify opportunies for community workshops and educational outreach (continious)	Council/Committee														
**	Council Update on Phase I progress	Staff	✓													
Phase II (Option A) - Baseline Assessments & Target Adoption (Community Only)																
	Establish/Adopt Community Inventory Baseline (2015, 2018) - *AMBAG to deliver community Inventory (Date TBD)*	Committee	✓													
	Identify Goals and GHG Emissions Reduction Targets	Committee	✓													
++	Estimate trends through an emissions forecast	Staff*														
**	Council Update on Inventories and Forcasting	Staff														
	Identify opportunies for community workshops and educational outreach (continious)	Council/Committee														
Phase II (Option B) - Baseline Assessments & Target Adoption (Community & Municipal)																
	Establish/Adopt Community Inventory Baseline (2015, 2018) - *AMBAG to deliver community Inventory (Date TBD)*	Committee	✓													
	Establish/Adopt Municipal Inventory Baseline	Staff*														
	Identify Goals and GHG Emissions Reduction Targets	Committee														
++	Estimate trends through an emissions forecast	Staff*														
**	Council Update on Inventories and Forcasting	Staff														
	Identify opportunies for community workshops and educational outreach (continious)	Council/Committee														
Phase III - Develop Climate Action Plan				**Phase III**												
	Identify Greenhouse Gas Emissions Reduction Strategies	Committee*														
	Review and prioritize strategies	Committee*														
	Conduct Analysis and Assemble Plan Strategies	Staff*														
	Create Implementation Framework and Timeline	Council*														
	Workshops to develop and gather feedback on proposed strategies & implementation timeline	Council/Committee*														
	Council Review of Prioritized Strategies	Council*														
Phase IV - Action Plan Implementation & Adoption											**Phase IV**					
**	Assemble Climate Action Plan Report	Staff*														
**	Review and Finalize Report	Staff*														
**	Council Review and Adoption of the Plan	Council														

* denotes item that could be conducted by consultant
** shared task with Adaptation Plan
++ Decision Point: Will require consultant to complete. If consultant assistance is unavailable, cannot have certified CAP. If unable to proceed, options include: waiting until funding is available (date unknown), prepare an uncertificed climate analysis without forecasts