

CITY OF HAYWARD

Hayward City Hall
777 B Street
Hayward, CA 94541
www.Hayward-CA.gov



CITY OF
HAYWARD
HEART OF THE BAY

Agenda

Monday, September 14, 2020

4:30 PM

Remote Participation

Council Sustainability Committee

This meeting is being conducted utilizing teleconferencing and electronic means consistent with State of California Order No. 29-20 dated March 17, 2020, and Alameda County Health Officer Order No. 20-10 dated April 29, 2020, regarding the COVID-19 pandemic.

<https://hayward.zoom.us/j/96135681287?pwd=ZjRkRytWQ1d3L29WNGVRUVI0bkVWZz09>

Passcode: cM6#7hpp

A Guide to attend virtual meetings is provided at this link: <https://bit.ly/3jmaUxa>

To submit written comments:

1. **Send an email to erik.pearson@hayward-ca.gov by 1 p.m. the day of the meeting.**

Please identify the Agenda Item Number in the subject line of your email. Emails will be compiled into one file, distributed to the Council Sustainability Committee and City staff, and published on the City's Meeting and Agenda Center under Documents Received After Published Agenda. <http://hayward.legistar.com/Calendar.aspx>

ROLL CALL

PUBLIC COMMENTS:

Limited to Only Items on the Agenda

MINUTES

1. [MIN 20-085](#) Approval of Minutes of the Council Sustainability Committee (CSC) Meeting held on July 13, 2020

Attachments: [Attachment I Minutes](#)

REPORTS/ACTION ITEMS

2. [ACT 20-056](#) Review and Comment on the Five-Year Performance of Cogeneration Engine at the Water Pollution Control Facility

Attachments: [Attachment I Staff Report](#)

3. [ACT 20-057](#) Review and Comment on the 2018 Greenhouse Gas Emissions Inventory and Preliminary 2019 Greenhouse Gas Emissions Inventory

Attachments: [Attachment I Staff Report](#)

FUTURE AGENDA ITEMS

4. [ACT 20-058](#) Review and Comment on the Proposed 2020 Agenda Planning Calendar

Attachments: [Attachment I Staff Report](#)

COMMITTEE MEMBER/STAFF ANNOUNCEMENTS AND REFERRALS

ADJOURNMENT

Next Meeting: October 15, 2020 (Special Added Meeting)



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777 B Street
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File #: MIN 20-085

DATE: September 14, 2020

TO: Council Sustainability Committee

FROM: Director of Public Works

SUBJECT

Approval of Minutes of the Council Sustainability Committee (CSC) Meeting held on July 13, 2020.

RECOMMENDATION

That the Council Sustainability Committee reviews and approves the July 13, 2020 Council Sustainability Committee meeting minutes.

ATTACHMENTS

Attachment I Staff Report

CITY COUNCIL SUSTAINABILITY COMMITTEE MEETING
Remote Participation – Digital Meeting
July 13, 2020
4:00 p.m. – 5:48 p.m.
MEETING MINUTES

CALL TO ORDER: Meeting called to order at 4:30 p.m. by Chair Mendall.

ROLL CALL:

Members:

- Al Mendall, City Council Member/CSC Chair
- Elisa Márquez, City Council Member
- Francisco Zermeño, City Council Member

Staff:

- Alex Ameri, Director of Public Works
- Angel Groves, Administrative Secretary
- Cheryl Munoz, Water Resource Manager
- Elli Lo, Management Analyst
- Erik Pearson, Environmental Services Manager
- Irene Perez, Senior Secretary
- Kait Byrne, Management Analyst
- Linda Ko, Senior Secretary
- Maria Hurtado, Assistant City Manager
- Paul Nguyen, Economic Development Manager

PUBLIC COMMENTS

No public comments on items not on the agenda had been received prior to the meeting.

1. Approval of Minutes of the Council Sustainability Committee (CSC) Meeting held on March 9, 2020

The item was moved by Council Member Márquez, seconded by Council Member Zermeño, and approved unanimously.

2. Discuss Possible Amendments to the City's Noise Ordinance and Provide Direction to Staff

Erik Pearson, Environmental Services Manager, provided a summary of the state's efforts to regulate emissions of small off-road engines (SORE), a survey of requirements in other cities, and staff's recommendations for Hayward's Noise Ordinance. He asked the Council Sustainability Committee to provide direction to staff on possible amendments to the City's Noise Ordinance regarding the use of leaf blowers.

A written public comment from Joanna Callenbach, Vice-President of Construction and Development, Stonebrae, proposing a revision to the recommended ordinance in regard to existing commercial golf courses was presented to the Committee.

Council Member Márquez expressed her support for pursuing the proposed amendments and inquired about any measures that could incentivize small landscapers and large businesses to transition from gasoline-operated equipment to electric. Alex Ameri, Director of Public Works, commented that the next steps would be to work with the State and the County to phase out gasoline-powered equipment over time. Council Member Márquez stated that she was comfortable with modifying Section 4-1.03.1 as presented by staff and thanked staff for reaching out to the community for input through a survey.

Council Member Zermeño inquired about the written public comment from Stonebrae. Director Ameri stated that staff would investigate the matter to address specific concerns. Council Member Zermeño stated that he was okay with all recommendations by staff and thanked staff.

Council Member Mendall recommended setting a date to allow the gradual transition of all gas-powered leaf blowers to electric-powered leaf blowers. He also suggested working with EBCE to help incentivize the transition, possibly through a rebate program. Council Member Mendall agreed with staff's recommendations and suggested extending the work hours to 7 p.m. or 8 p.m. into the evening. Council Member Mendall recommended phasing out gas-powered leaf blowers for residential properties first. He suggested January 2022 or January 2024 for residential properties.

Council Member Márquez asked staff to outreach Mission Hill Golf Course, another golf course that is adjacent to a neighborhood, for language consideration on ordinance amendments.

3. Review the Health and Climate Resilience Tax Credit Ballot Measure (Natural Gas Tax) and Direct Staff to Not Pursue the Measure in November 2020 Election

Erik Pearson, Environmental Services Manager, presented a review of the Health and Climate Resilience Tax Credit Ballot Measure (Natural Gas Tax) and sought the Committee's comments on staff's recommendation to not pursue the ballot measure for the November 2020 election. The measure would decrease the Utility Users Tax (UUT) by 1% for residential natural gas and it would increase by up to 5% the UUT for natural gas for large commercial customers.

Written public comments from Phil Lucas, Director of Dow Site Manufacturing, and Joseph Compani, owner of Compani Color, two of the city's manufacturing businesses, in opposition to pursuing the measure were presented to the Committee.

Council Member Zermeño agreed with staff's recommendation to not pursue the measure. Council Member Márquez also agreed that now was not the right time to move forward with the measure and thanked staff for the work.

Council Member Mendall agreed with staff's recommendation and suggested a possible measure in the future that targeted only very large polluters. He recommended rescheduling the item for a future meeting.

4. Review and Comment on a Potential Rate Increase for Electricity from East Bay Community Energy and Provide Direction to Staff

Erik Pearson, Environmental Services Manager, presented the item and noted that Brilliant 100 may be phased out by the end of calendar year 2021. Erik provided options and the impacts of each for Council to consider, including changing Hayward's default electricity product effective January 1, 2021.

Council Member Mendall presented the idea of retiring Brilliant 100 but creating a fourth product option that the City of Hayward and other cities could select as a default product. He stated that if the City of Hayward were to make such a change, EBCE would be committed to notifying customers. He also stated that switching to Bright Choice as the default product would negatively affect Hayward's Climate Action Plan goals for lowering carbon emissions.

Council Member Márquez stated that she would like the City to lead in using renewables and select Renewable 100 for municipal facilities. She also stated her concerns about increasing rates considering the current COVID-19 situation and the increasing unemployment rates.

Council Member Mendall suggested that EBCE could accept an allocation of nuclear energy for Brilliant 100 and doing so could allow the Brilliant 100 rate to remain unchanged. Council Member Zermeño stated that he was in favor of looking into partial nuclear power energy as well as Council Member Mendall's suggestion of a new fourth product option.

Committee members commented that PG&E's Power Charge Indifference Adjustment is the primary reason for EBCE's financial challenges. Council Member Mendall thanked staff for providing the information and the opportunity to discuss the issue. He also stated that this was a difficult decision and that they would incorporate input from the rest of the Council in the upcoming meeting.

5. Review and Comment on the Proposed 2020 Agenda Planning Calendar

Council Member Mendall proposed adding to the September meeting agenda the item regarding potential rate increase for electricity from EBCE and the item in regard to limiting the number of service stations selling fossil fuel. Council Member Zermeño asked about an update on tree planting and Director Ameri noted it is on staff's work plan. Council Member Mendall suggested an annual report on implementation of the tree planting project in the Strategic Roadmap.

COMMITTEE MEMBER/STAFF ANNOUNCEMENTS AND REFERRALS:

No announcements or referrals were made.

ADJOURNMENT: 5:48 p.m.

MEETINGS

Attendance	Present 07/13/20 Meeting	Present to Date This Fiscal Year	Excused to Date This Fiscal Year	Absent to Date This Fiscal Year
Elisa Márquez	✓	1	0	0
Al Mendall	✓	1	0	0
Francisco Zermeño	✓	1	0	0



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File #: ACT 20-056

DATE: September 14, 2020

TO: Council Sustainability Committee

FROM: Director of Public Works

SUBJECT

Review and Comment on the Five-Year Performance of Cogeneration Engine at the Water Pollution Control Facility

RECOMMENDATION

That the Council Sustainability Committee (CSC) receives this informational report.

SUMMARY

The Water Pollution Control Facility (WPCF), the City's single-largest energy user, has been producing renewable electricity for decades via a cogeneration system (combined heat and power) using biofuel produced as part of the treatment process. The original cogeneration system was in operation between 1982 and 2014 and had reached the end of its useful life. In December 2014, a new cogeneration facility was commissioned that included a 1,137-kW cogeneration engine capable of producing more energy than is needed at the WPCF. This report presents an update on the five-year performance of the cogeneration system. In addition, an update is provided on the WPCF Solar Phase 1 and Phase 2A projects.

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BACKGROUND

The City's General Plan includes the following goals related to the generation of renewable energy at City facilities:

NR-2.5 Municipal Greenhouse Gas Reduction - The City shall reduce municipal greenhouse gas emissions by 20 percent below 2005 baseline level by 2020, 30% below 2005 levels by 2025, 55% below 2005 levels by 2030. In addition, the City shall work with the community to develop a plan that may result in the reduction of community based GHG emissions to achieve carbon neutrality by 2045.

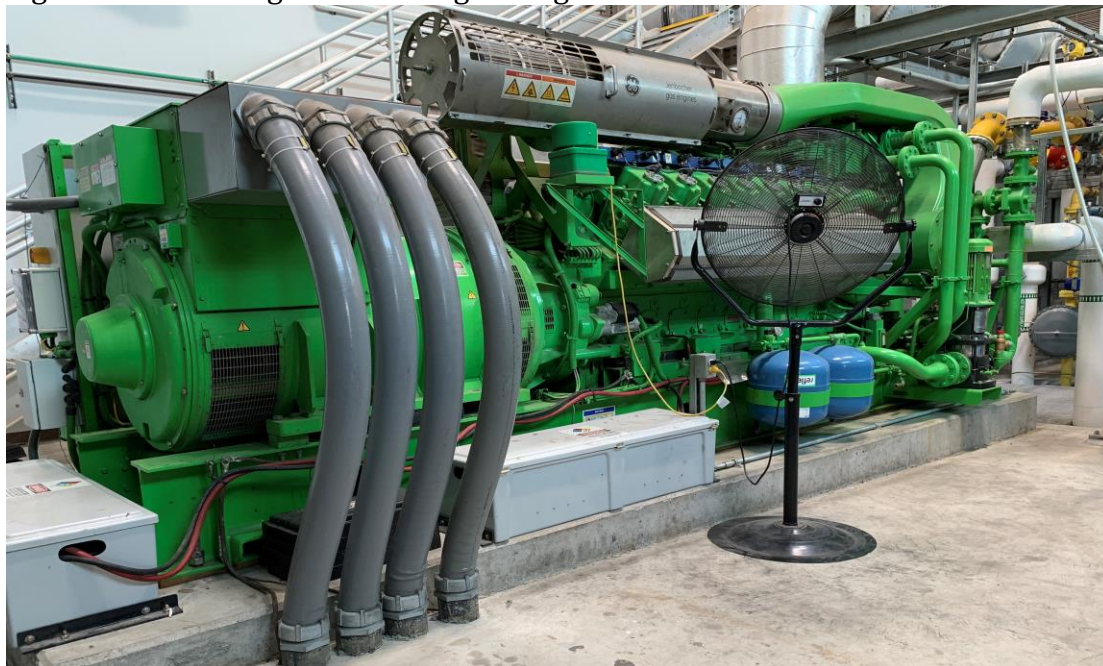
NR-4.10 Public Renewable Energy Generation - The City shall ensure that all new City-owned facilities are built with renewable energy, as appropriate to their functions, and shall install renewable energy systems at existing City facilities where feasible.

In addition to the above General Plan goals, on December 6, 2016, Council adopted Resolution 16-219 establishing the goal achieving Zero Net Energy (ZNE) for electricity and natural gas use for the City's portfolio of facilities by 2025.

The WPCF is the largest energy consumer owned by the City with an average annual demand of 8,263,000 kWh over the past five years. In 1981, the City installed its first 700 kW cogeneration facility consisting of two-350 kW cogeneration engines designed to use biofuel produced in the digestion process to generate energy for use at the WPCF. After 30 years in service, the cogeneration system combined energy output had declined to approximately 390 kW on average supplying 41 percent of the total electricity demand at the WPCF. In December 2010, the City added a one-megawatt solar facility (Phase 1 project) to its on-site green power portfolio supplying 20 percent of the total electricity demand at the WPCF. Together the cogeneration and solar installations met an average of 63 percent of the total electricity demand at the WPCF.

In 2013, to increase on-site green power production, the WPCF commissioned a fats, oils, and grease (FOG) receiving station that accepts organic waste directly into the city's digesters, boosting biogas production. With more available biogas, the WPCF evaluated options for increasing its green power production and selected a new, larger cogeneration system to replace the existing aged system. In 2014, the City commissioned a new 1,137 kW cogeneration facility nearly tripling its power production capability. A recent photograph of the cogeneration engine is shown in Figure 1.

Figure 1 – WPCF Cogeneration Engine August 2020



DISCUSSION

Self-Generation Incentive Program

At the end of 2019, the WPCF achieved a five-year operational milestone for the cogeneration facility. Construction of the cogeneration facility was partially funded by the California Public Utilities Commission's (CPUC) Self-Generation Incentive Program (SGIP). The City applied for and was awarded a grant totaling up to \$2.665 million for the project. The City was eligible for disbursement of half of the grant money (or \$1,332,500) upon project completion and the other half payable under a five-year performance-based incentive. Under the performance-based incentive, the City was required to monitor and report net energy output, fuel consumption (both natural gas and digester gas), and useful thermal energy delivered. To receive the maximum performance-based incentive, the following performance metrics were required:

- Biogas satisfying a minimum of 75% of the total energy input required each year.
- Engine operation able to produce a minimum of 80% of the rated output each year including down-time.

Plant operations and maintenance staff have exceeded the minimum performance metrics consistently over the past five years to achieve the maximum grant reimbursement of \$1,332,500 under the performance-based incentive.

Plant Demand and Summary of Green Power Energy Imports and Exports

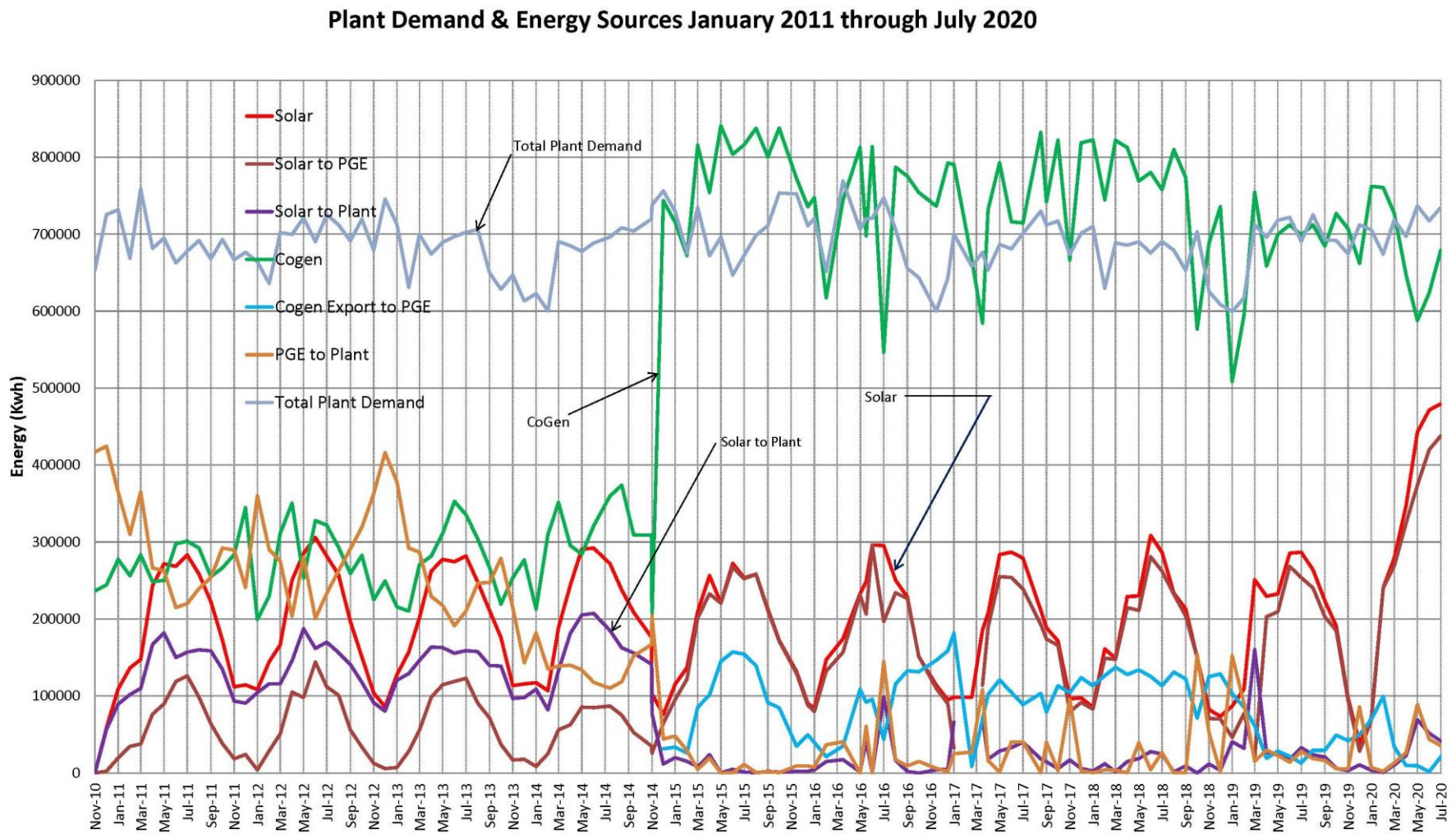
Over the past five years, the cogeneration facility has supplied on average 107% of plant demand. At the same time, in light of the additional energy produced by the new cogeneration system, the one-megawatt solar facility went from supplying 20% of plant demand to 3% of plant demand, resulting in solar exports to the grid increasing by 274% to 2,010,000 kWh annually. Between 2015 and 2019, the WPCF exported 15.5 megawatt-hours of excess green energy (combined solar and cogeneration energy) to the grid for use at other City facilities under PG&E's Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) tariff. These facilities include various water and sewer pump stations, reservoirs, City Hall, and the police station (newly added as a benefitting account with the new Solar Phase 2A project). An update on the RES-BCT arrangement is presented below. A summary of plant demand and energy sources is presented in Table 1 for the years following commissioning of the one-megawatt solar facility (2011 – 2014) and for the years following commissioning of the 1,137 kW cogeneration facility (2015 – 2019).

Table 1. WPCF Energy Demand vs. Generation (kWh)

Plant Demand & Energy Sources	Average 2011 - 2014	Average 2015 - 2019
WPCF Total Plant Demand (kWh/year)	8,248,000	8,263,000
WPCF Solar Phase 1 Production (kWh/year)	2,359,000	2,270,000
WPCF Solar Phase 1 Export to Grid (kWh/year)	734,000	2,010,000
WPCF Solar Phase 1 to WPCF (kWh/year)	1,625,000	226,000
% Plant Demand Met by Solar ⁽¹⁾	20%	3%
WPCF Cogeneration Energy (kWh/year)	3,413,000	8,863,000
WPCF Cogeneration Energy Export to Grid (kWh/year)	0	1,082,000
WPCF Cogeneration Energy to WPCF (kWh/year)	0	7,781,000
% WPCF Plant Demand Satisfied by Cogen ⁽¹⁾	41%	94%
PG&E Import to WPCF (kWh/year)	2,849,000	328,000
% Plant Demand Met by PG&E ⁽¹⁾	35%	4%
Excess Energy Exported to Grid (kWh/year)	734,000	3,092,000
% WPCF Plant Demand Met by Cogen & Solar ⁽¹⁾	61%	97%
% Green Power in Excess of Plant Demand	0%	137%
	Total 2011-2014	Total 2015-2019
Total Green Power Exported to Grid (kWh)	2,937,000	15,460,000
Notes: (1) Percentages for solar, PG&E, and cogeneration contributions to total plant demand do not add up to 100% due to inaccuracies derived from gathering data from multiple sources (REC solar, PG&E, and plant supervisory control and data acquisition (SCADA) system.		

A graph showing plant energy demands and power sources including exports to PG&E is shown in Figure 2.

Figure 2 – Plant Demand and Energy Sources / Exports



Solar Phase 2A Update

In February 2020, the City commissioned a new solar facility, Phase 2A, which added 0.6-megawatts of solar energy production to the WPCF's green power portfolio. The new facility is anticipated to produce an additional 1.4 megawatt-hours of energy that will be available for use at other City facilities under the Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) tariff. Addition of this solar array boosts the facility's green power exports by 45% to 4.5 megawatt-hours annually. Figure 2 shows the increase in both solar production and solar export upon commissioning of the solar Phase 2A project beginning in February of this year. An aerial view of the WPCF Solar Facilities - Phase 1 and Phase 2A is shown in Figure 3.



Figure 3 – Expanded Solar Field Phase 1 and Phase 2A

RES-BCT Tariff Update

At the time the cogeneration system was commissioned, the WPCF was the first publicly owned treatment works (POTW) and largest generating account in the California RES-BCT program. The RES-BCT tariff allows local governments to generate electricity at one account and based on the value of any exported electricity, transfer bill credits (in dollars) to another account owned by the same local government within the same city or county. In 2019, the City

received annual bill credits totaling \$346,000. With the added 0.6-megawatt solar array commissioned in February 2020 the annual bill credits are projected to save the City up to \$550,000 in 2020 from the cogeneration facility and solar combined. With the additional energy exports to the grid, additional accounts including the police station were added to the RES-BCT arrangement and are now receiving bill credits.

EPA Green Power Partnership – On-Site Generation

The City has been a member of the U.S. Environmental Protection Agency (EPA)'s Green Power Partnership Program since 2015 after the cogeneration facility was fully operational. The Green Power Partnership encourages the voluntary use of green power to reduce the risk of climate change. To be considered a green power partner for organizations the size of the City (organizations that use between 10 and 1,000 megawatt-hours of electricity a year), a minimum of 10% of the total electricity used must be from green power sources. In 2019, the City's total energy demand was 20.6 megawatt-hours (including total plant demand at the WPCF), with 62% of that demand satisfied by green power sources. Green power sources included cogeneration, solar at the WPCF, and a portion of the power purchased from EBCE that was eligible under the States renewable portfolio standard. As part of the green power partnership, EPA also tracks the top on-site generators. Since 2015, the City's WPCF has been included in the Top 30 On-Site Generators. As of January 27, 2020, the City ranked 28 in comparison to other on-site green power generators that include Apple, Walmart, the City of Portland, and General Motors among others.

ECONOMIC IMPACT

The City's investments in renewable energy have little impact on the local economy, however the most recent solar Phase 2A project included the community workforce agreement requirements that required outreach to hire local Hayward residents and Hayward Unified School District graduates.

FISCAL IMPACT

Renewable energy generation at the WPCF saved the City \$346,000 in bill credits in 2019. The savings are anticipated to increase to \$550,000 in bill credits in 2020 due to the recently commissioned Solar Phase 2A project.

STRATEGIC ROADMAP

This agenda item relates to the Strategic Priority of Combat Climate Change. Specifically, this agenda item relates to the implementation of the following project:

Project 3: Transition electricity use in city operations to 100% renewable energy (beginning in FY22)

SUSTAINABILITY FEATURES

Renewable energy generation at the WPCF is helping the City achieve municipal zero net energy (ZNE) by 2025 and supports the City's sustainability and long-term GHG reduction goals. It is consistent with General Plan Policies NR-4.4 (Energy Resource Conservation in Public Buildings) and NR-4.10 (Public Renewable Energy Generation). Additionally, if the goal is achieved, the City and the community will benefit from the following sustainability features:

Energy: Achieving municipal ZNE will reduce the City's reliance on fossil fuels and provide energy from clean and renewable sources.

Air: Achieving municipal ZNE will reduce pollutants and make significant progress toward meeting the City's municipal greenhouse gas emissions reduction goals.

NEXT STEPS

Engie was awarded a 2.0 megawatt solar project with the first phase (Phase 2A - 600 kW) to be added to the WPCF power grid for export to other City facilities under the RES-BCT tariff, and the second phase (Phase 2B - 1,400 kW) to be interconnected to EBCE. Staff were unable to negotiate an agreement with EBCE to buy the power, and subsequently awarded only the first phase to Engie for construction. Staff continue to explore opportunities to use the additional 1,400 kW of power including potentially off-setting additional power demands at the WPCF upon completion of the facility upgrades required to meet upcoming regulatory requirements to reduce nutrient loading to the bay.

Prepared by: Suzan England, Senior Utilities Engineer and
Erik Pearson, Environmental Services Manager

Recommended by: Alex Ameri, Director of Public Works

Approved by:



Kelly McAdoo, City Manager



CITY OF HAYWARD

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777 B Street
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File #: ACT 20-057

DATE: September 14, 2020

TO: Council Sustainability Committee

FROM: Director of Public Works

SUBJECT

Review and Comment on the 2018 Greenhouse Gas Emissions Inventory and Preliminary 2019 Greenhouse Gas Emissions Inventory

RECOMMENDATION

That the Council Sustainability Committee (CSC) reviews and comments on this report.

SUMMARY

The Council-adopted General Plan includes greenhouse gas (GHG) emission reduction targets for the Hayward (City) community. To track progress, staff historically completed a full community GHG inventory every five years. Due to an opportunity with East Bay Energy Watch (EBEW) and StopWaste, staff has completed interim inventories annually starting in 2017. This report provides the results of the calendar year 2018 inventory and compares it to the previous four inventories. Table 1 on page 2 summarizes the emissions totals for the six sectors -electricity, natural gas, transportation, BART, off-road vehicles, and waste. Emissions are displayed in metric tons of carbon dioxide equivalent (MTC02e).

This report also includes an estimate of the 2019 GHG inventory. For the 2019 inventory, staff has made assumptions to calculate electricity and waste-related emissions. Staff anticipates receiving the missing data by the end of 2020 and will update the Committee with the verified total reduction at that time. 2019 is also the first full calendar year that the City received a full year of East Bay Community Energy's service.

Table 1: GHG Emissions by Sector (MT C02e)

	2005	2010	2015	2017	2018	% Change from 2005	2019*	% Change from 2005
Electricity	185,890	165,304	141,854	75,118	47,531	-74.4%	11,013	-94.1%
Natural Gas	189,995	191,526	176,803	186,110	187,991	-1.1%	176,649	-7.0%
Transportation	636,581	580,238	571,556	553,298	531,104	-16.5%	522,897	-17.9%

BART	3,440	3,425	4,276	3,994	556	-83.5%	547	-84.1%
Off-Road Vehicles	24,345	37,630	71,034	69,279	36,064	+48.1%	51,392	+111.1%
Waste	50,924	38,338	38,148	47,555	52,209	+2.5%	52,209	+2.5%
Total	1,091,174	1,016,461	1,003,670	935,354	855,465	-21.6%	814,707	-25.3%
Hayward Population	140,530	143,921	155,753	159,623	159,603		160,197	
Total Emissions/ Capita	5.2	4.8	4.4	4.1	3.7	-28.9%	3.5	-32.5%

*Electricity and waste sectors are estimated data in 2019

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TO: Council Sustainability Committee

FROM: Director of Public Works

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SUMMARY

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Transportation	636,581	580,238	571,556	553,298	531,104	-16.5%	522,897	-17.9%

¹ Carbon dioxide is not the only gas that contributes to climate change. Each greenhouse gas causes varying amounts of warming. For example, one ton of methane (CH₄) causes the same amount of warming as 23 tons of CO₂ (1 ton of CH₄ = 23 tons CO₂e). To simplify reporting, it is standard practice to report carbon equivalent emissions (CO₂e) as opposed to the actual emissions of each gas.

BART	3,440	3,425	4,276	3,994	556	-83.5%	547	-84.1%
Off-Road Vehicles	24,345	37,630	71,034	69,279	36,064	+48.1%	51,392	+111.1%
Waste	50,924	38,338	38,148	47,555	52,209	+2.5%	52,209	+2.5%
Total	1,091,174	1,016,461	1,003,670	935,354	855,465	-21.6%	814,707	-25.3%
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BACKGROUND

The last report on the City's GHG emissions was presented to the CSC in January 2020.³ The 2018 report and previous reports are available on the City's [Climate Action Plan](#) page.⁴ The City of Hayward's General Plan Policy NR-2.4 sets the following GHG emissions reduction targets.

NR-2.4: Community Greenhouse Gas Reduction

The City shall...reduce community-based GHG emissions by 20 percent below 2005 baseline levels by 2020, 30 percent below 2005 baseline emissions levels by 2025, 55 percent below 2005 baseline emissions levels by 2030, and work with the community to develop a plan that may result in the reduction of community-based GHG emissions to achieve carbon neutrality by 2045.

² Carbon dioxide is not the only gas that contributes to climate change. Each greenhouse gas causes varying amounts of warming. For example, one ton of methane (CH₄) causes the same amount of warming as 23 tons of CO₂ (1 ton of CH₄ = 23 tons CO₂e). To simplify reporting, it is standard practice to report carbon equivalent emissions (CO₂e) as opposed to the actual emissions of each gas.

³ <https://hayward.legistar.com/LegislationDetail.aspx?ID=4300975&GUID=03727954-DAC6-4ABC-8906-477CFB078E75&Options=&Search=>

⁴ <https://www.hayward-ca.gov/services/city-services/climate-action>

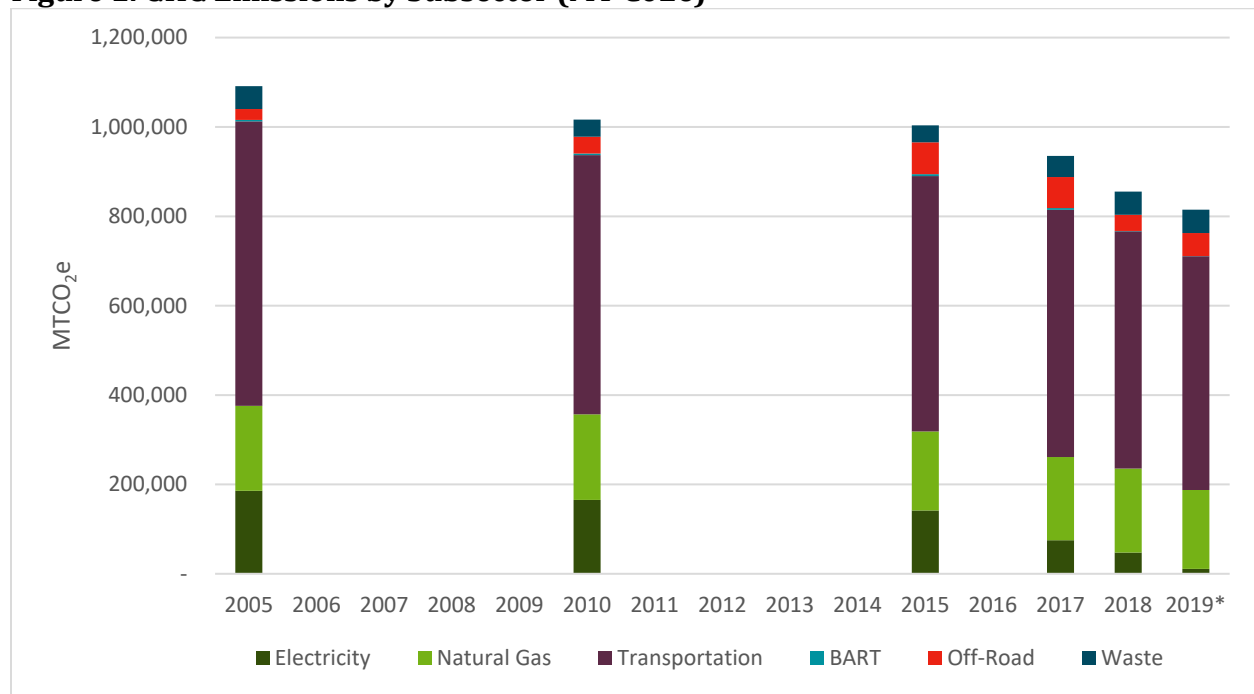
To track compliance with these targets, the City has historically conducted community GHG emissions inventories every five years, starting with 2005 as the baseline year. Starting with the 2017 inventory, the City has begun to conduct community GHG emission inventories annually. The first three inventories were completed with assistance from ICLEI–Local Governments for Sustainability, StopWaste, and the Statewide Energy Efficiency Collaborative (SEEC). For the 2017 and 2018 inventories, Alameda County and Contra Costa County jurisdictions hired a consultant through EBEW and StopWaste. All five inventories use the U.S. Protocol for Community-Scale methodology to calculate GHG emissions.

Over the past thirteen years, organizations have continuously refined and updated the methodology to estimate emissions more accurately. In response, staff has recalculated emissions for the 2005, 2010, 2015, and 2017 in the tool created by EBEW’s consultant to make an apples-to-apples comparison. Therefore, the emissions totals reported in this report do not match the numbers from previous reports.

DISCUSSION

The City’s GHG inventory is comprised of six sectors: electricity, natural gas, transportation, BART, off-road vehicles, and solid waste. Figure 1 below shows the subsector breakdown for each year and the percent of each subsector for that year. Transportation, shown in purple, is the largest sector, making up 57-62% of the total. BART accounts for less than 1% of all emissions, off-road vehicles account for 2-7% of emissions, and solid waste makes up 3-6% of emissions. Electricity, shown in dark green, makes up 5-17% of emissions and natural gas, shown in light green, accounts for 17-22% of emissions.

Figure 1: GHG Emissions by Subsector (MT CO₂e)⁵



*Electricity and waste sectors are estimated data in 2019

⁵ The percentages for each subsector are relative to the total emissions for each year.

Energy Sector

Overall energy emissions in 2018 were 37.3% below 2005 levels, with a 74.4% decrease in electricity emissions and a 1.1% decrease in natural gas emissions from 2005 to 2018. From 2017 to 2018, residential and nonresidential electricity emissions decreased, and residential and nonresidential natural gas emissions increased. While electricity emissions have declined, electricity usage has not changed drastically. Residential electricity use has decreased by 1% and nonresidential electricity use has decreased by 13% since 2005, compared to a 61.9% decrease and 79.6% decrease in emissions, respectively. The primary reason that electricity emissions have decreased is that Pacific Gas & Electric Company (PG&E) sources have become cleaner as PG&E strives to meet the State's Renewable Portfolio Standard goal of 33% by 2020 and PG&E's continued use of large hydro and nuclear energy, which have no GHG emissions. Additionally, starting in 2018, the City's customers were transitioned to electricity provided by East Bay Community Energy. The default product for the majority of the City's customers is Brilliant 100, a carbon-free product. Electricity usage (kWh) in the table below (Table 2) is actual data received from PG&E and EBCE. However, electricity emissions (GHG) for 2019 are estimated as EBCE's 2019 emission factor for Bright Choice⁶ will not be finalized until later this year.

There was a 1% increase in natural gas emissions from 2017 to 2018. The increase in natural gas emissions in 2018 may be related to the new residential homes built and new commercial operations in the City, as well a slight increase in heating degree days (HDD) (see Figure 3 below). With a new building code and electrification reach code going into effect in 2020, it is possible that emissions from natural gas will have peaked in 2019.

The overall small reduction in natural gas emissions may also be credited to milder winters that Hayward has experienced since 2005, which reduced the need for residents to heat their homes. A mild winter equates to fewer HDD. HDD is the unit which measures how many degrees, and for how many days, outside air temperatures were lower than the base temperature of 65 degrees Fahrenheit. As shown in Table 2, residential gas emissions have increased since 2015. This aligns with the increase in HDD since 2014 (see Figure 3).

Table 2: Energy Sector GHG Emissions

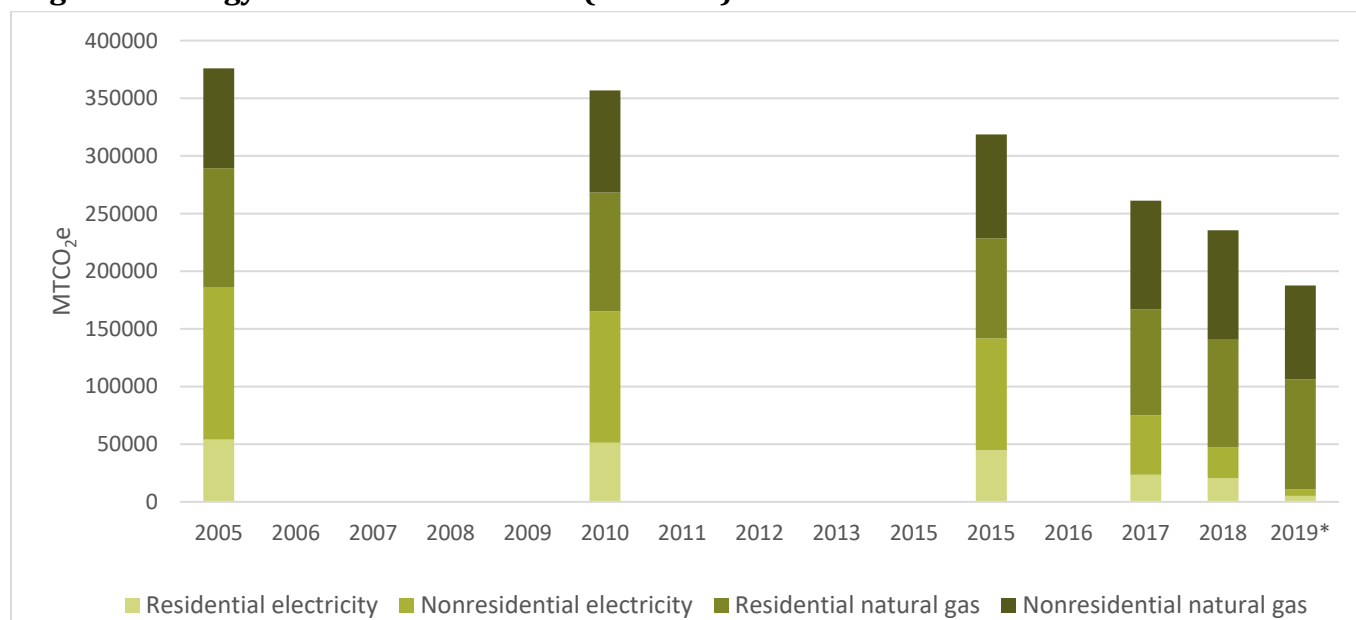
		2005	2010	2015	2017	2018	% Change from 2005	2019*	% Change from 2005
Residential Electricity	GHG Emissions	54,042	51,207	44,819	23,502	20,582	-61.9%	5,198	-90.4%
	kWh	242,161,904	252,327,941	242,783,315	243,910,202	239,735,346	-1.0%	239,006,697	-1.3%
Non-Residential Electricity	GHG Emissions	131,848	114,097	97,034	51,616	26,949	-79.6%	5,815	-95.6%
	kWh	590,811,842	562,228,183	525,628,036	535,682,182	513,657,102	-13.1%	511,639,672	-13.4%
Residential Natural Gas	GHG Emissions	103,502	103,027	86,736	91,719	93,019	-10.1%	95,291	-7.9%
	therms	19,489,985	19,400,629	16,332,954	17,271,164	17,516,060	-10.1%	17,943,901	-7.9%
Non-Residential	GHG Emissions	86,493	88,499	90,066	94,392	94,972	+9.8%	81,358	-5.9%

⁶ Approximately 25% of Hayward customers receive Bright Choice.

		2005	2010	2015	2017	2018	% Change from 2005	2019*	% Change from 2005
Natural Gas	therms	16,287,167	16,664,879	16,960,038	17,774,540	17,883,737	+9.8%	15,320,155	-5.9%
Total GHG Emissions		375,885	356,830	318,657	261,228	235,522	-37.3%	187,663	-41.1%

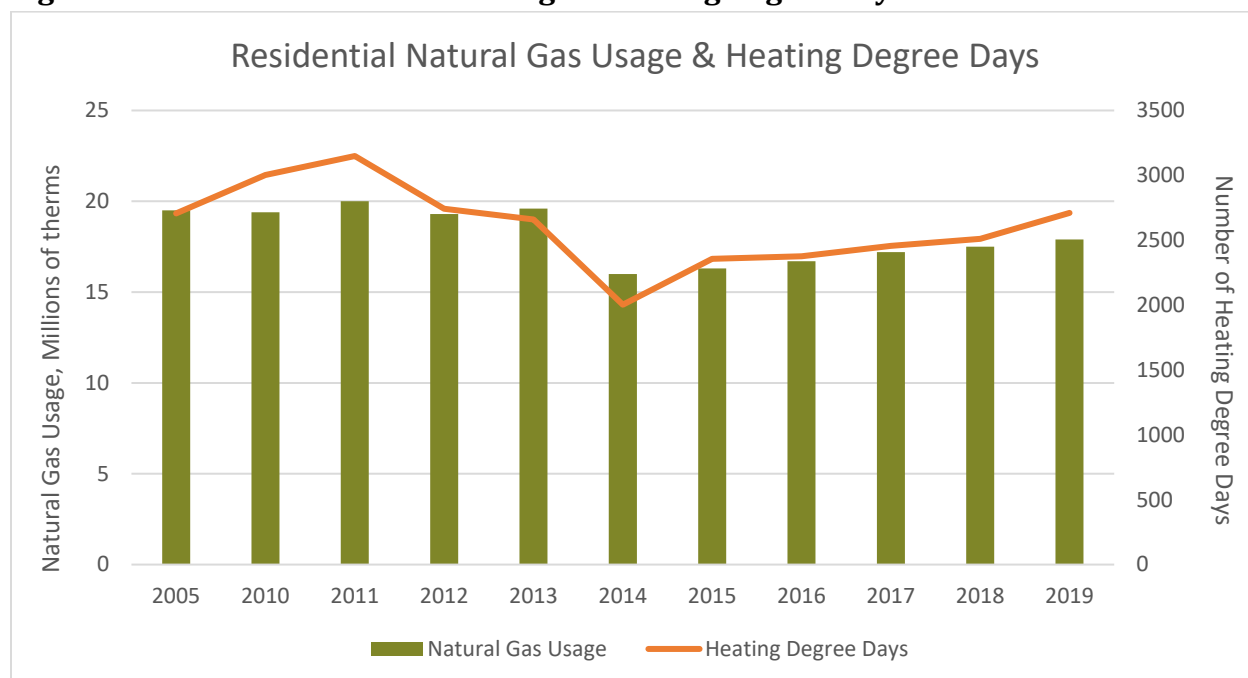
*Electricity and waste sectors are estimated data in 2019

Figure 2: Energy Sector GHG Emissions (MT CO₂e)



*Electricity emissions are estimated data in 2019

Figure 3: Residential Natural Gas Usage & Heating Degree Days



Transportation Sector

As shown in Table 3, transportation emissions in 2018 were 16.5% below emissions in 2005. As seen in the table below, the total vehicle miles traveled (VMT) decreased in 2010 and then increased again in 2015, 2017, and 2018. This is likely related to the economic recession and recovery.

Overall emissions factors have decreased in all categories over the last thirteen years as vehicles have become cleaner. The decrease in emission factor value is why we have seen an overall decrease in emissions of 16.5%, while only seeing a 4.4% decrease in VMT.

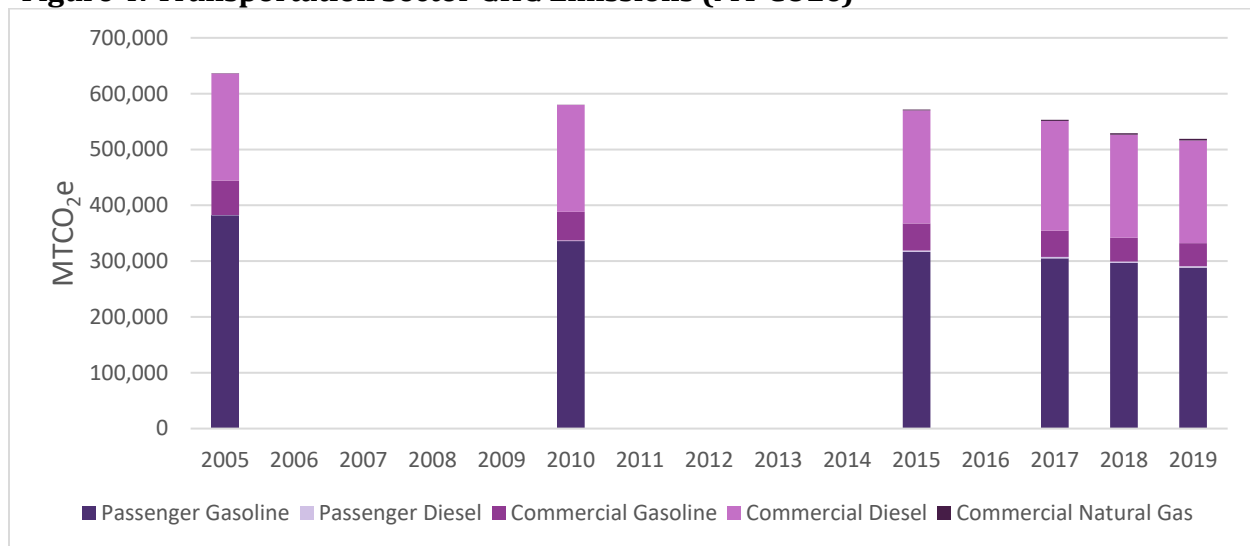
Table 3: Transportation Sector GHG Emissions

		2005	2010	2015	2017	2018	% Change from 2005	2019	% Change from 2005
Passenger Gasoline	GHG Emissions	381,808	336,036	316,516	305,005	296,722	-22.3%	288,273	-24.5%
	VMT	956,623,171	858,832,865	884,055,725	891,575,635	889,818,652	-7.0%	888,130,583	-7.2%
Passenger Diesel*	GHG Emissions	849	896	2,418**	2,430	2,561	+201.7%	2,661	+213.4%
	VMT	2,349,479	2,719,823	8,153,097**	8,105,329	8,663,158	+268.7%	9,149,605	+289.4%
Passenger Electric	GHG Emissions**	0	0	0	0	0		0	
	VMT	195,306	296,949	7,157,788	11,187,141	12,386,296	+6,242.0%	13,587,918	+6857.2%
Commercial Gasoline	GHG Emissions	61,642	51,326	48,542	46,969	42,598	-30.9%	41,141	-33.3%
	VMT	48,729,452	41,099,193	39,351,019	38,745,467	35,376,067	-27.4%	34,399,386	-29.4%
Commercial Diesel	GHG Emissions	191,821	191,556	202,565	196,815	184,611	-3.8%	184,253	-3.9%
	VMT	123,825,051	122,518,404	137,833,264	140,567,582	134,860,040	+8.9%	137,208,117	+10.8%
Commercial Electric	GHG Emissions**	0	0	0	0	0		0	
	VMT	48,918	0	54,340	49,251	46,022	-5.9%	45,710	-6.6%
Commercial Natural Gas	GHG Emissions	462	424	1,514	2,078	2,681	+480.3%	2,817	+509.7%
	VMT	175,959	126,375	434,689	636,407	894,571	+408.4%	939,111	+433.7%
Total GHG Emissions		636,581	580,238	571,556	553,298	531,104	-16.5%	522,897	-17.9%
Total VMT		1,131,703,112	1,025,296,660	1,069,827,794	1,079,630,420	1,082,044,806	-4.4%	1,083,460,430	-4.3%

*Change between 2010 and 2015 in Passenger Diesel vehicles in most likely due to a reclassification of vehicle types

**GHG Emissions associated with these vehicles are considered zero because the emissions are accounted for in the energy emissions sector

Figure 4: Transportation Sector GHG Emissions (MT CO₂e)



Off-road Vehicles Sector

Off-road (including construction and industrial equipment) vehicles emissions have increased by 48% from 2005 to 2018. However, from 2017 to 2018, emissions decreased, primarily due to a decrease in the construction and mining equipment emissions. Staff received the 2019 emissions associated with this sector and see emissions increase back up to 51,392 MTCO₂e, primarily due to an increase in the construction and mining equipment emissions. Overall, the off-road vehicle sector accounts for 4.2% of the City's total emissions.

Table 4: Off-road Sector GHG Emissions

	2005	2010	2015	2017	2018	% Change from 2005	2019	% Change from 2005
Agricultural Equipment	0	0	0	0	0		0	
Airport Ground Support Equipment	0	0	0	0	0		0	
Construction and Mining Equipment	0	11,478	40,143	37,833	5,696	-50%*	20,447	+78%*
Dredging	0	0	0	0	0		0	
Entertainment Equipment	83	83	83	85	83	+1%	83	0%
Industrial Equipment	12,564	13,030	14,007	14,350	14,522	+16%	14,697	+17%
Lawn and Garden Equipment	2,470	2,460	2,562	2,664	2,640	+7%	2,653	+7%
Light Commercial Equipment	4,958	5,009	5,046	5,141	5,185	+5%	5,230	+5%
Logging Equipment	0	0	0	0	0		0	
Military Tactical Support Equipment	0	0	0	0	0		0	
Oil Drilling	0	0	0	0	0		0	
Pleasure Craft	1,531	1,751	2,036	2,218	2,247	+47%	2,311	+51%
Recreational Equipment	379	455	544	597	608	+60%	628	+66%
Transport Refrigeration Units	2,359	3,000	3,832	4,461	5,083	+115%	5,342	+126%
Total GHG Emissions	24,345	37,265	68,251	67,348	36,064	+48%	51,392	+111%

*Percent change is compared to 2010

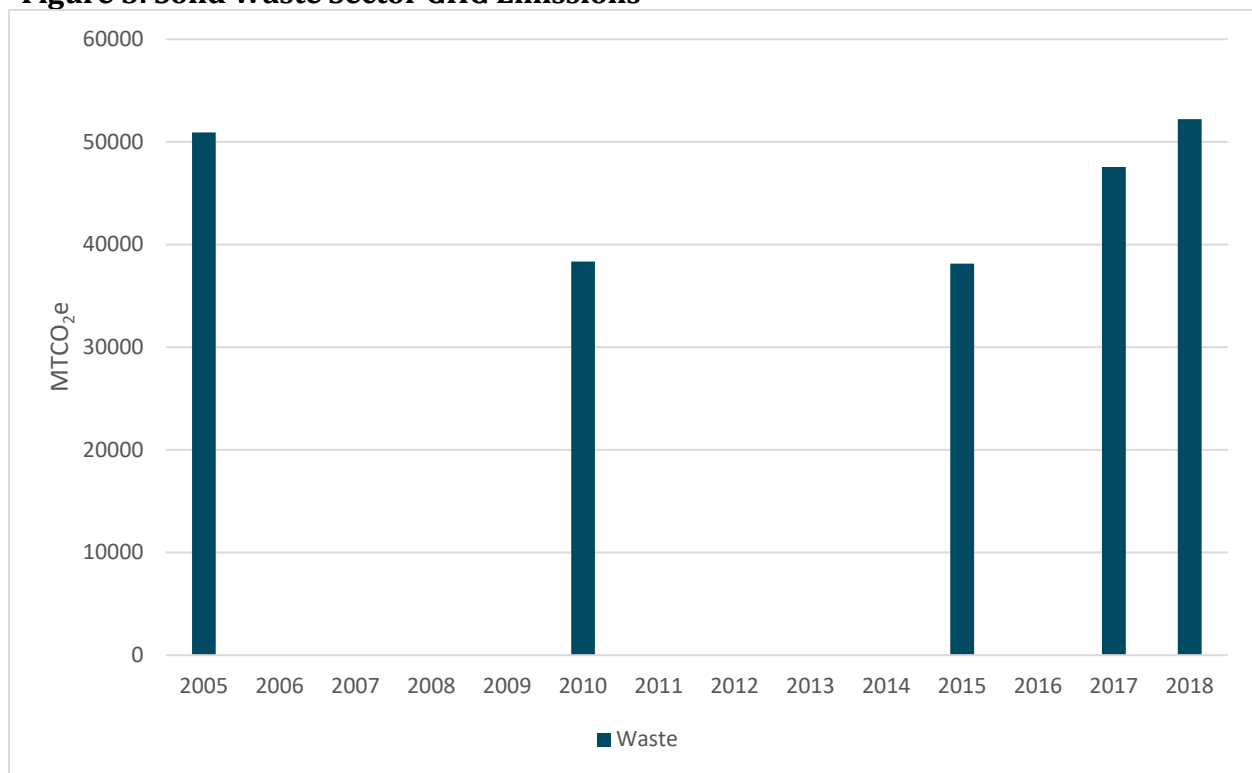
Solid Waste Sector

Solid waste emissions in 2018 were 2.5% above 2005 levels. As shown in Table 5, emissions have increased since 2015. This increase is most likely due to an increase in economic activity. Waste data for 2019 is not yet available. For the purposes of the overall GHG emissions shown in Table 1 and Figure 1, it is assumed that 2019 waste data is equal to that of 2018.

Table 5: Solid Waste Sector GHG Emissions

		2005	2010	2015	2017	2018	% Change from 2005
Waste Sent to Landfill	GHG Emissions	50,924	38,338	38,148	47,555	52,209	+2.52%
	Tons of waste	173,908	130,806	136,261	167,434	185,432	+6.63%

Figure 5: Solid Waste Sector GHG Emissions



Progress Towards the 2020 Goal

Hayward has met its goal of 20% below 2005 levels by 2020 two years early by achieving a reduction of 21.6% in 2018. For the 2019 inventory, staff has made assumptions to calculate electricity and waste-related emissions. With these assumptions, staff projects around a 25.3% reduction of GHG emissions in 2019.

Meeting this goal is attributed in large part to the roll out of East Bay Community Energy (EBCE) and Council's decision to set the majority of customers' default product to Brilliant 100 (carbon-free), which began in mid-2018. The full impact of EBCE will be seen in the 2019 inventory. However, due to the likely retirement of the Brilliant 100 product, the City could see an increase in emissions associated with the electricity sector beginning in 2021. Staff has calculated how this could affect the City's emissions using 2018 data. If in 2018, the Brilliant 100 product had the same emissions factor as the Bright Choice product, the City would have seen a total reduction of community-wide emissions of 20.6% (Table 6).

Table 6: 2018 GHG Emission Reduction Predictions without EBCE's Brilliant 100 Product

	2005	2018 - Actual	2018 - Scenario
Electricity	185,890	47,531	58,655
Natural Gas	189,995	187,991	187,991
Transportation	636,581	531,104	531,104
BART	3,440	566	566
Off-Road	24,345	36,064	36,064
Waste	50,924	52,209	52,209
Total	1,091,174	855,465	866,589
Percent Change from 2005 to 2018		21.6%	20.6%

Limitations of this Inventory

The GHG inventory method that the City's uses, along with most cities worldwide, was originally designed by ICLEI and partners in the early 2000s. The focus then and now is on measuring emissions from the data sources that are most readily available, such as utility data. This approach is practical, but it comes with limitations.

The inventories completed omit large sources of emissions over which the City may have some influence. Specifically, the inventory does not include the upstream emissions of the goods consumed in the City. For example, emission reductions from green purchasing policies would not be reflected in the current inventory. Also, one of the biggest contributors to GHG emissions worldwide, food, is not reflected in Hayward's inventory.

As mentioned above, the reason upstream emissions are not included is that it is difficult to obtain data on consumer consumption patterns. However, some attempts are being made. In 2016, the Bay Area Air Quality Management District (BAAQMD) launched a project with UC Berkeley to create consumption-based inventories⁷ for Bay Area cities.⁸ Staff has concerns with the data sources used for this project, but feels that the intent is meaningful.

⁷ <http://www.baaqmd.gov/about-air-quality/research-and-data/emission-inventory/consumption-based-ghg-emissions-inventory>

⁸ The City's current inventory is a hybrid of consumption and production. For example, energy consumed by residents is consumption-based and energy consumed by industry is production-based. The State of California

ECONOMIC IMPACT

There is no economic impact associated with the completed inventory. However, the information acquired from the inventory provides staff with insight on what needs to be done to meet the City's GHG reduction goals. Meeting the City's ambitious GHG reduction goals will require significant investment throughout the community and has the potential to create new local jobs, however some necessary improvements are not currently cost-effective.

FISCAL IMPACT

Through the partnership with EBEW, StopWaste, and other Bay Area cities, the 2018 GHG inventory was prepared at no cost to the City.

STRATEGIC ROADMAP

This agenda item supports the Strategic Priority of Combat Climate Change. This item is not specifically related to a project identified in the Strategic Roadmap. However, this agenda item does help keep track of progress of projects identified in the Strategic Roadmap, such as:

- Project 1: Reduce dependency on fossil fuels
- Project 2: Work with EBCE to transition citywide electricity use to 100% carbon free
- Project 4: Adopt & implement 2030 GHG Goal & Roadmap
- Project 7: Reduce Carbon Emissions – transition 15% of total city fleet to EV/hybrid model

SUSTAINABILITY FEATURES

Meeting GHG reduction goals is the primary objective of the City's Climate Action Plan. Meeting the goals will require reducing emissions in every sector and will entail improving energy efficiency in buildings, decarbonizing buildings, increasing the use of renewable energy, and reducing vehicle-related emissions. All these actions will result in cleaner air for Hayward residents and for the region.

NEXT STEPS

Staff will continue to work with EBCE, StopWaste and regional agencies to identify potential opportunities to streamline GHG inventories on a county or regional level, with the goal of maintaining annual reporting. Once the 2019 inventory is finalized, staff will present an update to the Committee.

performs a true production-based inventory, measuring all emissions produced in California from all sectors, including agriculture.

One of the projects identified under the Combat Climate Change priority in the Strategic Roadmap is to adopt a 2030 GHG target and develop a roadmap to meet the 2030 target. Staff will bring to the Committee suggested revisions to the Strategic Roadmap in Fall 2020.

Prepared by: Nicole Grucky, Sustainability Specialist
Erik Pearson, Environmental Services Manager

Recommended by: Alex Ameri, Director of Public Works

Approved by:

A handwritten signature in black ink, appearing to read 'K. McAdoo', is written over a horizontal line.

Kelly McAdoo, City Manager



CITY OF HAYWARD

Hayward City Hall
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Hayward, CA 94541
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File #: ACT 20-058

DATE: September 14, 2020

TO: Council Sustainability Committee

FROM: Director of Public Works

SUBJECT

Review and Comment on the Proposed 2020 Agenda Planning Calendar

RECOMMENDATION

That the Council Sustainability Committee (CSC) reviews and comments on this report.

SUMMARY

The proposed 2020 agenda planning calendar contains planned agenda topics for the Council Sustainability Committee meetings for the Committee's consideration. This agenda item is included in every Council Sustainability Committee agenda and will reflect any modifications to the planning calendar, including additions, rescheduled items, and/or cancelled items.

ATTACHMENTS

Attachment I Proposed 2020 Agenda Planning Calendar



DATE: September 14, 2020

TO: Council Sustainability Committee

FROM: Director of Public Works

SUBJECT: Review and Comment on the Proposed 2020 Agenda Planning Calendar

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That the Council Sustainability Committee (CSC) reviews and comments on this report.

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The proposed 2020 agenda planning calendar contains planned agenda topics for the Council Sustainability Committee meetings for the Committee's consideration. This agenda item is included in every Council Sustainability Committee agenda and will reflect any modifications to the planning calendar, including additions, rescheduled items, and/or cancelled items.

DISCUSSION

For the Committee's consideration, staff suggests the following tentative agenda topics for 2020.

Underlined – Staff recommends item to be added to Approved Agenda Planning Calendar.

~~Strikeout~~ – Staff recommends item to be removed or rescheduled from previously Approved Agenda Planning Calendar

Monday, September 14, 2020 (listed for reference)
Five-Year Performance of Cogeneration Engine at the Water Pollution Control Facility
2018 & 2019 Greenhouse Gas Emission Inventory
Special Meeting: Thursday, October 15, 2020
<u>Default Electricity Product from East Bay Community Energy</u>

Monday, November 9, 2020
Limiting the Number of Service Stations Selling Fossil Fuel
Proposed Updates to Strategic Roadmap Priority: Combat Climate Change
Unscheduled Items
Sustainable Groundwater Plan
Long Term Water Conservation Framework
Low Carbon Concrete
Roadmap to Meet 2030 GHG Target
Pilot Program for Reusable Dishware
Advanced Metering Infrastructure (AMI) Customer Portal Pilot Program Update
EV Charging Requirements for Existing Multifamily Properties
Ending Natural Gas Use by 2045
Implementation of Reach Code
Implementation of Strategic Roadmap (Combat Climate Change projects)
Draft Revisions to the Municipal Regional Stormwater Permit (MRP 3.0)

NEXT STEPS

Upon direction from the Committee, staff will revise the above list and schedule items accordingly for 2020 and 2021.

Prepared by: Erik Pearson, Environmental Services Manager

Recommended by: Alex Ameri, Director of Public Works

Approved by:



Kelly McAdoo, City Manager