

RESOLUTION OF THE BOARD OF DIRECTORS OF WEST COUNTY  
WASTEWATER DISTRICT, COUNTY OF CONTRA COSTA, CALIFORNIA

RESOLUTION NO. 2019-72

APPROVING THE WEST COUNTY WASTER DISTRICT (WCWD)  
CLIMATE ACTION PLAN (CAP)

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The Board of Directors finds and determines as follows:

- A. The 2019 WCWD Strategic Plan Goals include a specific goal to become a carbon negative enterprise by 2031.
- B. A Climate Action Plan establishes specific measures proposed to achieve the above stated goal.
- C. An approved Climate Action Plan will increase the eligibility score of the District's Third loan application with the State Revolving Fund.
- D. The Board of Directors of the West County Wastewater District, Contra Costa County, California has reviewed the Climate Action Plan and has determined it to be consistent with its 2019 Strategic Plan Goals.

**NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE WEST  
COUNTY WASTEWATER DISTRICT AS FOLLOWS:**

- 1. The foregoing recitals are true and correct statements of fact and are incorporated into this Resolution.
- 2. The Board of Directors of the West County Wastewater District, Contra Costa County, California hereby approves the WCWD Climate Action Plan.

I DO HEREBY CERTIFY that the foregoing resolution was duly and regularly adopted at a regular meeting of the Board of Directors of the West County Wastewater District held on the 18<sup>th</sup> day of December, 2019, by the following vote of the Board:

AYES: Alvarado, Stanley, Sudduth, Zepeda, Wiener  
NOES: None  
ABSENT: None

/s/ Sherry Stanley  
Vice President of the Board of Directors  
West County Wastewater District  
Contra Costa County, California

West County Wastewater District  
Climate Action Plan  
December 2019



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## 1. Introduction

West County Wastewater District (WCWD/District) has a long-standing commitment to environmental stewardship, conservation, recycling/reuse of resources, environmentalism, and sustainable practices that is reflected in the public posture of the Board of Directors and the operational approach taken by staff in conducting the business of WCWD. The Board recognizes and understands the grave threat to our way of life that is posed by Global Warming, and recognizes that greenhouse gases are the cause of Global Warming and its attendant negative environmental and societal impacts. The Board further acknowledges a responsibility to reduce our own greenhouse gas (GHG) emissions footprint, setting a challenging and aspirational goal for the District in this area, and further acknowledges the impact that sea level rise will have on WCWD and our ratepayers, and intends to address this issue with our regional partners.

As a result, the Board of Directors is adopting this formal Climate Action Plan (“CAP” or “Plan”) to help guide the District and staff in making appropriate choices in procurement, sourcing of energy, and progress on environmental goals. While the Board recognizes that this Plan is a living document and will be updated and modified as circumstances change and new technologies and opportunities arise, the plan will nonetheless serve as the roadmap and guide in moving forward in the program to reduce our GHG emissions footprint and develop a sustainable business model for the treatment and reuse of wastewater and its byproducts.

## 2. Guiding Principles

The Board of the West County Wastewater District has established as its guiding environmental principle an organizational goal of eliminating its carbon footprint entirely by December 31, 2031, and establishing its status as a Carbon Negative enterprise by Board Resolution on April 30, 2019. WCWD plans to achieve this goal by not only eliminating or offsetting greenhouse gas (carbon and other) emissions from operations, including District Fleet emissions, emissions associated to Wastewater Treatment and Transmission and emissions associated

to employee commute, but also producing additional clean energy generation or GHG emissions offsets that will reduce the GHG emissions of other entities, resulting in District status as a “negative producer of greenhouse gases”.

Incorporated into this main guiding principle are the following steps and commitments to achieve the elimination of District GHG emissions and to ensure environmental compliance and to support our regional partners and State climate goals as we progress towards the elimination on District emissions.

Specifically, the Board and District support the goals of the Bay Area Air Quality Management District Clean Air Plan and are committed to contributing its efforts to the goals of that plan, have pledged to work towards the goals of the North Richmond Horizontal Levee work group on Regional Climate Change Adaptation as a member of that group, and are working with Regional partners on finding beneficial uses of processed biosolids in the Bay Area Biosolids Coalition initiative.

### 3. Current Plans and Actions to Continue Reduction of GHG Emissions

#### 3.1. Emissions Inventory

##### Baseline Creation

In 2019, the District contracted with Sage Energy Consulting of San Rafael for creation of a Greenhouse Gas Emissions (the most common of which is carbon dioxide (CO<sub>2</sub>) emissions) inventory associated to the business operations for the District, which will serve as the baseline for the District. The emissions baseline will incorporate the core elements of energy use, process emissions, fleet emissions and employee commute emissions.

The baseline emissions work will be used for determining annual reductions in emissions and in documenting progress toward the District’s ultimate goal of being Carbon Negative (having no direct emissions and offsetting emissions elsewhere). However, the establishment of the baseline hasn’t been necessary for the District to initiate carbon emissions reductions activities and measures as mentioned elsewhere in this plan, as the ultimate goal for the District is to first

eliminate or offset ALL carbon emissions rather than a portion of emissions as some Plans call for based on State mandates or advocate recommendations. Therefore, determining current emissions levels in 2019 serves as the basis to calculate and track total emissions reduced.

The GHG baseline emission inventory will use Best Practices for the quantification of GHG emissions as identified in the Local Government Operations (LGO) Protocol from the California Air Resources Board. The inventory will include Scope 1 and Scope 2 emissions, as required for mandatory reporting, and will include an optional Scope 3 category (employee commute emissions). In most cases, the LGO Protocol identifies more than one quantification option for each emission category, reflecting detailed data inputs or default inputs for the reporting entity. The District inventory will include as much detail as is feasible for the baseline inventory, considering that the District is not subject to mandatory reporting because District emissions annually are less than the mandatory reporting threshold. For subsequent inventories, we will seek to improve the quality of data to establish increased rigor.

*Energy Use* – Sage will evaluate all of the electrical and gas accounts for the District and determine the carbon content of the energy consumed in this fashion. The scope of the analysis will include the Plant, District offices, and Lift Stations. The carbon content of the electricity and gas will be included in the baseline. (NOTE-The District baseline will reflect solar power generation covered elsewhere in the Plan).

*Fleet Emissions* – Sage will calculate the fuel consumption of all District vehicles used for District business and will calculate the carbon content of the fuels consumed in performing District business operations.

*Employee Commute* – Sage will calculate the carbon emissions associated with employee commute using industry best practices for surveying and aggregating commute data, and will add these emissions to the District baseline.

*Water Treatment and Resource Recovery Plant Process Emissions* – As a part of their scope in providing baseline emissions inventory and calculations, Sage will evaluate the wastewater treatment process to determine whether there are emissions attributable to the District from the natural carbon cycle for waste based on industry and scientific best practices.

Emissions from the natural carbon cycle, or from biogenic sources, are treated differently than emissions from fossil fuels. As part of the natural carbon cycle, “short-lived” emissions such as CO<sub>2</sub> from biogenic sources can be distinguished from fossil fuel CO<sub>2</sub> emissions which have been sequestered in the ground for millions of years. Short-lived, biogenic CO<sub>2</sub> can therefore be viewed as continuously recycled through the natural carbon cycle: removed from and reintroduced into the atmosphere with zero net change in the amount of CO<sub>2</sub>. However, combustion of fossil fuel, otherwise trapped underground, results in a net increase in atmospheric CO<sub>2</sub>.

Biogenic emissions are currently not required to be reported from WWTPs. However, in light of WCWD’s goal of being net “negative producer for greenhouse gases”, the District will identify opportunities to measure, quantify and reduce the biogenic component of its GHG emissions in the future as information about best practices for these emissions becomes available.

The baseline will be completed in early 2020 and presented to the Board for review and adoption.

### 3.2. Greenhouse Gas Emissions/CO<sub>2</sub> reduction action steps previously accomplished

The District has had a long-standing commitment to environmental stewardship, in addition to operating the most efficient wastewater treatment facility possible. As such, the District has implemented a number of projects that have reduced GHGs, but have also reduced costs to the ratepayers.

Solar array installation – As a part of the District’s commitment to the environment and to reduce the District’s GHG footprint, the District entered into a Power Purchase Agreement and permitted the installation of a 1 megawatt tracking solar array at the District Treatment Plant. The array generates clean electrical power and offsets much of the Plant’s electrical demand. This project reduces the gross GHG footprint of the District from what it would otherwise have been using standard PG&E electricity with its higher carbon content.

Marin Clean Energy electrical supply – The District has chosen Marin Clean Energy as its electrical provider. Marin Clean Energy provides electrical power with a lower carbon content than that provided by PG&E, and this step also decreases the District’s GHG footprint from what it would be, absent this selection.

Comprehensive Energy Project – The District issued a Request for Proposals in 2019 to select a partner company to assist the District in evaluating the potential for an Energy Project under Government Code Section 4217. The District selected Engie, Inc., an energy-services company skilled and experienced in the evaluation, design and execution of Energy Projects, to evaluate a number of project options which will significantly reduce electrical and natural gas use and therefore the District’s GHG footprint. As a part of this study, Engie will evaluate the opportunity for the installation of additional clean energy generation, co-generation at the District Treatment Plant, and the maximization of the use of methane produced as a part of the wastewater treatment plant. Currently, Engie is at the 30 percent design phase of a project, which is anticipated to include such elements as efficiency upgrades to the blowers, pumps lighting, digestion and thickening in addition to new solar panels and a cogeneration system. This project will be supported by an Investment Grade Audit providing a financial guarantee supporting the energy savings (and therefore the GHG reductions) forecast for the project.

Recycled Water Reliability Upgrade project – the Board has also discussed and expressed a desire for a goal of 100 percent reuse of all of the by-products of its treatment process, and secured 9 million dollars in grant funding and invested an additional 25.7 million dollars in a recycled water project which upgraded the quality of the effluent so more of it would be usable as recycled water by East Bay Municipal Utility District (EBMUD) customers, particularly Chevron. This project and the contract agreement with District partner EBMUD results in up to 12.5 MGD of effluent going to a secondary and beneficial use rather than being pumped 5 miles to the treated water discharge point in San Pablo Bay. It is widely acknowledged that the largest use of electrical power in the State of California is in the transmission of water, as pumping water is a very energy-intensive process. In addition to the environmental benefits associated with a second use of treated wastewater, this agreement provides energy savings for the District resulting from reduced pumping of water. The project also produces an average of 2,460



million gallons of recycled water annually, which is a substitute for the potable water that was used prior to the project. This is a huge environmental benefit, without consideration of any GHG reductions associated to the project.

Bay Area Biosolids Coalition Member – WCWD is a member of the Bay Area Biosolids Coalition, a regional partnership in pursuit of preserving land application of biosolids as a common practice and creating alternative beneficial uses for biosolids that recycle biosolids (and the associated carbon and organic material) back into California soils as a strategy for sequestering carbon and mitigating climate change.

### **3.3. Related Environmental and Climate Change Adaptation Initiatives –**

Sea Level Rise Adaptation to Climate Change – The District has also committed to addressing the impacts of Climate Change and GHG emissions in the form of sea-level rise. The District has joined with multiple non-profit and local government agencies in the North Richmond Horizontal Levee Workgroup (Levee Workgroup) partnership to investigate the potential for steps to combat sea level rise, and is actively investigating the possibility of a horizontal levee along the San Pablo Bay shore. Sea level rise will adversely impact the communities we serve over time, and investing in climate adaptation measures such as a levee serves both the community and the environmental commitments and goals of the District.

The District committed \$500,000 in the FY 2019 budget towards making the goals of this project a reality. Partners in this initiative include;

San Francisco Estuary Partnership (SFEP)

The Watershed Project

East Bay Regional Parks District

Republic Services

Chevron

Contra Costa County Flood Control District

City of Richmond

Contra Costa County District 1 Supervisor John Gioia

NHA Advisors

Mithun

Carollo Engineers

Urban Tilth

### 3.4. Potential Actions for GHG Reductions

The District’s commitment to reduce its GHG emissions to zero, and beyond, will take a long-term commitment of time and staff to implement, and the Plan will be a living document that will need regular updates to ensure that it is effective at achieving the established goals. The initial effort will combine the GHG inventory that is currently in progress (Sage) with the development of a specific action plan that includes a blend of the actions that are included in this section. Each of the end-uses addressed below include a rough estimate of the scale of the reductions,<sup>1</sup> a summary of the specific actions that can be addressed, and a brief summary of challenges that are presented in identifying and implementing the actions.

This following list is neither exhaustive nor mandatory, but serves to suggest common and currently available concepts and approaches that can reduce the District’s GHG footprint. Many of the items referenced regarding infrastructure will be evaluated as a part of the Engie energy project evaluation. The list also serves to capture some of the challenges associated to the goal of being Carbon-Neutral, or Carbon Negative. For example, it is not reasonable to assume that employee commute can be eliminated by any measures currently available, and a 20 percent reduction is considered exceptional – leaving 80 percent of the emissions to be offset in some other way.

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<sup>1</sup> Note that the estimates of reductions are based on WCWD consultant’s, Kenwood Energy, more than 20 years experience developing and implementing Climate Action Plans, Energy Management Plans, and Renewable Energy projects.

Staff will develop a specific Action Plan or measures staff recommends be undertaken in pursuit of our climate goals and GHG reduction targets for presentation to the Board and incorporation into the CAP. Using this process, the CAP will be updated to identify the specific actions to be taken, and to include an evaluation of the cost of and any potential cost savings that result from these actions.

#### 1. Fleet

- a. Reductions: 0 - 100% of Fleet emissions
- b. Actions:
  - i. Replace all fleet vehicles with hybrid or electric equivalents.
  - ii. Utilize low carbon fuels in vehicles that are not electric or are Hybrids.
  - iii. Implement a diesel anti-idling program
- c. Challenges: offsetting 100% of emissions would require that the entire fleet be electrified, which may not be feasible for much of the heavier duty equipment with current technologies.

#### 2. Commute

- a. Reductions: 0 to 20% of Commute
- b. Actions:
  - i. Support alternative work schedules and work-at-home programs.
  - ii. Support Trip Reduction Programs such as biking, carpool, and bus use.
  - iii. Develop programs that reward high efficiency personal vehicles.
  - iv. Install electric vehicle charging stations at District facilities.
  - v. Programs that support local residence and shortened commutes.
- c. Challenges: Difficult to control employee actions and modify personal behavior.

#### 3. Energy Conservation

- a. Reductions: 0 to 10% of Electricity and natural gas emissions
- b. Actions:
  - i. Energy efficient lighting

- ii. Variable Frequency Drives (VFDs)
    - iii. High efficiency motors
    - iv. High efficiency boilers
    - v. High efficiency heating, ventilation and air conditioning (HVAC)
    - vi. Process improvements
  - c. Challenges: conservation reduces energy use, but does not eliminate it.
4. Onsite Generation
- a. Reductions: 0 to 100% of Electricity emissions, or more
  - b. Actions:
    - i. Install additional PV systems
    - ii. Install wind turbine generators
    - iii. Install methane cogeneration system
    - iv. Capture and store methane
    - v. Track emerging technologies for future consideration
  - c. Challenges: PV systems take a great deal of space, and the District may have space limitations. Wind energy is very cost effective, but local communities often object to the visual impact, which can make permitting difficult.
5. Marin Clean Energy
- a. Reductions: 0 to 100% of Electricity emissions, or more
  - b. Actions:
    - i. Enroll in MCE's 100% renewable option. This option has nearly zero emissions, but will cost 5% to 10% more than PG&E energy.
  - c. Challenges: The 100% renewable option will be required to reach zero GHG, which will add costs.
6. Fuel Switching
- a. Reductions: 0 to 100% of Natural Gas
  - b. Actions: eliminate equipment powered by natural gas and replace with electric alternatives.
    - i. Replace natural gas heating systems with heat pumps.
    - ii. Replace gas water heaters with heat-pump hot water heaters.
    - iii. Replace process water heaters and boilers with heat pump water heaters and boilers.

- c. Challenges: Technologies do not reduce overall energy use, they eliminate gas use but increase electricity use. However electricity can be offset with renewable energy.
- 7. Carbon Offsets
  - a. Reductions: 0 to 100% of emissions, or more
  - b. Actions: Purchase of Carbon Offsets that can take the form of offsite renewable energy, methane collection and combustion programs, destruction of industrial pollutants, land use and forestry programs, and carbon retirement.
  - c. Challenges: Many different types of offsets exist, some are more effective than others, and some are more rigorously tracked.
- 8. Non District Actions
  - a. Reductions: Unknown
  - b. Actions: Implement programs that result in partnerships with service providers that have low carbon footprints. For example, consider including the carbon footprint as a metric for selecting a trucking vendor.
  - c. Challenges: Unknown
- 9. Resiliency
  - a. Reductions: Unknown
  - b. Actions: Install emergency backup and generation systems that have relatively low GHG emissions.
  - c. Challenges: Virtually all emergency backup and micro-grid systems include a fossil fuel combustion component.

#### 4. Staff Assignments and Responsibilities for the Plan

District staff responsible for managing the development, implementation and reporting of progress associated to this Plan include;

Deputy General Manager Andrew Clough – overall leadership and direction of staff efforts

Infrastructure and Planning (I&P) Department Manager Michael Savannah - ESCO project proposal evaluation and management of any resulting projects, and assigning (I&P) staff to specific initiatives.

Environmental Programs Manager – Joe Neugebauer – overall environmental compliance and reporting, and management of the sea level rise initiative

Water Quality and Resource Department Manager Aaron Winer – technical guidance and oversight of plant process improvements and infrastructure enhancements reducing GHG emissions

## **5. Process for Monitoring Plan Actions and Progress in Reductions**

The science of managing GHG emissions is relatively new. Best practices will be updated and will need to be incorporated into revisions of the Plan.

On an annual basis, District staff will prepare a report for presentation to the Board on the progress on all initiatives associated with this Plan. These progress reports will include re-calculations of GHG emissions from electrical and natural gas use, process emissions, fleet fuel use, and employee commute emissions, and will allow for the comparison of new calculations to the baseline amounts from each emission category and in the aggregate. Updated emissions metrics will be reported and published so that progress can be observed by the public.

As a part of this plan, District staff will develop a location on the District website dedicated to the Environmental initiatives undertaken by the District, and will have a permanent feature highlighting the Climate Action Plan, GHG emissions data, and the annual progress report.

## **6. Additional Specific Next Steps for Staff –**

As a part of this Plan, District staff is directed to;

Develop a set of specific Actions that can be implemented to achieve the goals established by the Board. It is recognized that some activities will have the effect of reducing net costs to the District and thus will reduce costs to ratepayers, but the opposite is also true; some of the Actions will likely increase net costs to the District and may have the impact of increasing costs to ratepayers. Thus it will be important to include a comprehensive financial analysis of all Actions being considered.

The first step will be to review the recommendations of the Comprehensive Energy Project (CEP) evaluation that is currently being developed by Engie. This effort will include a list of potential Actions such as:

- Energy conservation measures including installation of more efficient equipment
- Renewable Energy installation
- Co-generation
- Operation and control strategies
- Process improvement

In parallel, staff will investigate other GHG reduction Actions, such as:

- Marin Clean Energy's Deep Green program that supplies 100% renewable energy.
- The potential to use solar or other renewable and carbon-free energy generation, as installed by the District or a partner, to off-set any electricity used that cannot be sourced from 100 percent renewable energy generation from MCE or PG&E.
- The transition of all passenger and other District vehicles to all-electric alternatives where available which will be powered by renewable energy sourced by the District.
- Options for offsets of GHG emissions available to the District through use of bio-solids and excess generation, carbon sequestration, planting of trees, or

other measures currently available or which becomes available in the future

The Actions, detailing cost impacts and GHG reductions, will be presented to the Board for discussion and input. Based on Board input, Staff will finalize the Action Plan for inclusion in the CAP.