**T&E AGENDA: 05/02/22**
**ITEM: (d) 1**

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

# Memorandum

**TO:** TRANSPORTATION AND ENVIRONMENT COMMITTEE

**FROM:** Kerrie Romanow

**SUBJECT:** **DISCHARGE REGULATIONS AND FUTURE IMPACTS ON THE SAN JOSÉ – SANTA CLARA REGIONAL WASTEWATER FACILITY**

**DATE:** April 13, 2022

Approved

Date 4/20/22

## RECOMMENDATION

Accept a report on future wastewater discharge requirements and their potential impacts on Regional Wastewater Facility Capital Projects.

## EXECUTIVE SUMMARY

The San José-Santa Clara Regional Wastewater Facility[1] (RWF) is the largest advanced wastewater treatment plant in the western United States. It works nonstop to clean Silicon Valley's wastewater to very high national standards to protect public health. In addition to protecting public health, the RWF has the vital responsibility of protecting our environment, not just through regulatory compliance but through stewardship efforts that further enhance and benefit the ecosystems and wildlife present. The RWF is the largest discharger into the San Francisco Bay, an industrial air emissions source, and is continually faced with meeting increasingly stringent regulatory requirements. The RWF is regulated under two principal operating permits: A National Pollutant Discharge Elimination System (NPDES) permit under the Clean Water Act, administered by San Francisco Bay Regional Water Quality Control Board (Water Board), and an Air Operating Permit under Title V of the Clean Air Act, administered by Bay Area Air Quality Management District (BAAQMD).

NPDES permit requirements have become increasingly restrictive over the years, but the RWF has been able to successfully meet them through capital improvements and a robust pretreatment/source control program. Since 1997, the RWF has also had a South Bay Monitoring Program (SBMP), which tracks a variety of water quality and habitat data points to demonstrate

[1] *The legal facility name remains San Jose-Santa Clara Water Pollution Control Plant, but a new common name, San José-Santa Clara Regional Wastewater Facility, was approved in early 2013.*

that the RWF's discharge, or effluent, is not harmful to the South San Francisco Bay (Bay). Data from the SBMP has helped inform new regulations and facilitated a reduction in the requirements in recently issued NPDES permits. The SBMP also provides critical data that informs proposed water quality criteria that would be most protective for the Bay by the Water Board.

For air emissions, staff is focused on the California Air Resources Board (CARB) programs regulating Toxic Air Contaminants and Greenhouse Gas (GHG) emissions, which could impact the RWF. Staff is also engaged with BAAQMD in implementation of rules to limit human health risk and GHG emissions from wastewater treatment facilities. The BAAQMD is also studying the RWF and several facilities as potential sources of odor in the region. Staff has been coordinating air sampling activities with BAAQMD for the odor attribution study.

New and pending wastewater regulations represent advancements in analytical capabilities, enabling lower detection levels and enhancing the ability to identify water quality contaminants at environmentally relevant concentrations. Additional investments in treatment technologies to the extent available do not always result in a commensurate improvement in overall water quality (i.e., there are diminishing returns on investment). Staff continues to monitor and participate in the formal rulemaking process on behalf of the rate payers to advocate for reasonable requirements. Air emission regulations are typically focused on human health impacts in the vicinity of the source, but recent trends show that more focus is being given to climate-related concerns where impacts are non-localized. Emissions reductions are typically achieved through end-of-pipe and fuel-cleaning control technologies. Like their wastewater counterparts, emissions reduction regulations can come with high costs. Staff continually evaluates new rules and proposed permit conditions and look for the most cost-effective engineering and policy solutions. This report provides a summary of the more significant regulations that impact the RWF and discusses how the Environmental Services Department (ESD) is advocating and often influencing these regulations and responding through capital improvements.

## BACKGROUND

The RWF is the largest wastewater discharger in San Francisco Bay and the largest advanced wastewater treatment plant in the western United States, serving a population of 1.5 million people and over 17,000 businesses across eight cities and the County. From industrial dischargers to residents and restaurants, the RWF is responsible for cleaning wastewater to the highest standards before it is discharged to the shallow waters of the Lower South Bay. The RWF incorporates primary sedimentation, secondary biological nutrient removal (BNR), filtration, and disinfection into its treatment processes.

Since 1956, the RWF has continually treated the majority of Silicon Valley's wastewater and protected public health as well as the Bay environment. The RWF is sized to treat an average of 167 million gallons per day (MGD) during dry weather. The year-round average influent flows for 2020 and 2021 were 101 MGD and 93 MGD respectively. Average effluent flow into the Bay

through the Artesian Slough was 83 MGD and 76 MGD over the same two years, with an average of approximately 11 MGD diverted to the South Bay Water Recycling system to be used as recycled water in three cities with peak recycled water production of approximately 23 MGD occurring in the summer when demand for recycled water is highest and flows to the RWF are lowest.

Wastewater treatment at the RWF is accomplished by using a series of physical, biological, and chemical processes to treat the liquids stream and the solids stream. Separated solids (or sludge) from wastewater are thickened and processed through anaerobic digesters to reduce pathogen content, sludge volume, and create biogas for beneficial reuse. Currently, the digested sludge (biosolids) is then pumped to open air lagoons capped with water, and then to drying beds for further volume reduction. The treatment and stabilization of biosolids is completed over a four-year cycle. At the RWF, this process generates approximately 85 dry metric tons of biosolids per day. The sundried biosolids are sent annually to the adjacent Newby Island Landfill to be used as alternative daily cover (ADC). Upon completion of the Digested Sludge Dewatering Facility, anticipated to be in 2025, the digested sludge/biosolids will be pumped from the RWF's main operational area across Zanker Road where enclosed mechanical equipment (centrifuges) will reduce the weight and volume of the material requiring transport. The dewatered biosolids will be transported off-site for beneficial use.

The RWF is a critical regional asset and functions as a good steward of the environment, enabling recreational uses by and in the Bay. The Don Edwards National Wildlife Refuge is located adjacent to the effluent discharge. Public trails winding along Artesian Slough accommodate day hikers and wildlife photographers. Fishing enthusiasts and seasonal duck hunters launch from the nearby Alviso Boat Launch to fish and hunt in waters flowing from the RWF.

The RWF is regulated under two principal operating permits:

- A NPDES permit under the Clean Water Act is administered by the Water Board. After nearly a year of negotiation with the Water Board, a new NPDES Permit was issued in November 2019 and after some additional revisions, was approved by the Water Board on February 12, 2020. The new permit, Order Number R2-2020-0001 became effective April 1, 2020 and will be effective for approximately five years.
- A "Permit to Operate" under Title V of the Clean Air Act is administered by BAAQMD. The Air Permit was issued in March 2017. A renewal application was submitted in 2021 and the renewed permit is expected to be issued by the end of June 2022.

<u>NPDES Permit</u>

The RWF's wastewater is currently regulated under the following three separate NPDES Permits that are typically revised and reissued at five-year intervals, POTWs refer to Publicly Owned Treatment Works:

| NPDES Permit | Current Permit Effective | Expected Reissuance |
|---|---|---|
| RWF Individual Permit | April 2020 | April 2025 |
| Nutrients for POTWs | July 2019 | July 2024 |
| Mercury and PCBs for POTWs | December 2017 | December 2022 |

The NPDES Permits mandate water quality monitoring requirements for the RWF's effluent discharge to the Bay and set specific concentration limits for several conventional wastewater pollutants, metals, and organic compounds. The RWF's individual NPDES Permit further requires that RWF effluent discharge may not cause or contribute to impairment of any beneficial uses designated for the Lower South Bay. The designated beneficial uses of the Lower South Bay where the RWF discharges are:

- Estuarine Habitat
- Preservation of Rare and Endangered Species
- Wildlife Habitat
- Contact Recreation
- Non-contact Recreation.

The RWF continues to be recognized in its individual NPDES Permit as supporting all these beneficial uses and providing additional environmental enhancement to the Lower South Bay estuarine habitat. The environmental enhancements are due to the elevated oxygen content in the effluent and the consistent flow of highly treated freshwater into an otherwise mostly stagnant system. This recognition is supported by the consistent documentation of beneficial use attainment by the SBMP.

Over the last two decades, the United States Environmental Protection Agency (EPA) and the Water Board have developed water quality regulations related to a variety of pollutants. Regulatory focus through the late-1980s and early-1990s was on copper, nickel, and freshwater flows. In the late-1990s, this focus shifted to cyanide, legacy mercury, and polychlorinated biphenyls (PCBs).

The RWF submits monthly and annual compliance reports in accordance with its multiple NPDES Permits.

Title V Permit

The Title V program is designed to standardize air quality permits for major sources of emissions across the country and is required for facilities that emit more than the Major Source Thresholds (MSTs) of criteria pollutants. The criteria pollutants include carbon monoxide, ozone, lead, nitrogen oxides, particulate matter, and sulfur dioxide. The Title V permit incorporates the RWF's Permit to Operate, also issued by the BAAQMD, and all other applicable local, state, and federal air quality regulations.

The RWF tracks emissions from its engine generators through a combination of fuel consumption, source testing, and monitoring of pollutant levels in the digester gas fuel supply. These parameters are reported to the BAAQMD on an annual basis. In addition, the RWF submits Title V compliance reports semi-annually.

## ANALYSIS

Wastewater regulations typically evolve over multiple five-year NPDES and Air permit cycles but can have significant impacts to operational and capital costs that affect rate payers, so RWF staff proactively engage with their regulators to advocate for the most cost-effective approaches. Staff is proactive in identifying issues on the horizon, collecting data, and building case studies to inform common sense, science-based solutions for the Bay and the RWF.

Wastewater Regulations under Consideration or Development

***San Francisco Bay Nutrient Watershed Permit*** - In addition to discharging a variety of chemical constituents within the range allowed under each POTWs NPDES permit, POTWs are also large dischargers of nutrient compounds to the Bay, specifically nitrogen and phosphorus. Nitrogen levels in San Francisco Bay are elevated compared to other urban water bodies. However, the elevated nitrogen is not currently causing impairment of the Bay, which would manifest through effects like harmful algal blooms and low dissolved oxygen levels. Despite no currently observed impairment, regulators have considered a hard limit, or cap, on nutrient loads discharged to the Bay and not allowing any future increases, disregarding inherent long-term increases due to expected population growth.

Through continued participation in the research and investigations into the impact of nutrients in the Bay and ongoing negotiation with Water Board staff, the RWF, in collaboration with partner wastewater agencies, successfully worked with regulators on the adoption of a Nutrient Watershed Permit, which took effect in July 2019. The new Permit delays load caps in any form until 2024, at the earliest; and factors in projected population growth and inherent load variability into any future load caps or regulatory requirements. While the 2019 Nutrient Watershed Permit does not require load caps, it instead includes:

- Increased funding from dischargers, based proportionally on nutrient discharge loads from each facility, to support studies to further evaluate nutrient impacts on the Bay;
- Continued monitoring of nutrient discharges from wastewater treatment plants; and
- Regional evaluations of potential nutrient reduction strategies utilizing natural treatment systems (wetlands and horizontal levees) and increased recycled water.

Staff is actively engaged in all requirements to ensure the RWF is well represented in terms of its current nutrient removal performance, contribution of nutrients to the Bay, and opportunities to achieve additional nutrient reductions should they be necessary.

It is anticipated that the Water Board will impose nitrogen limits that account for growth and variability in the 2024 Nutrient Watershed Permit in the form of a collective effluent load cap or

regulatory limit for all discharges to the Bay and trigger levels for individual agencies. The trigger levels are expected not to impose an immediate regulatory penalty or violation but would require the agency take actions to reduce nitrogen loads below the trigger. Similar requirements for phosphorus are not expected because phosphorus does not appear to pose a potential threat to Bay water quality. The load cap envisioned for the 2024 nutrient permit will likely need to be achieved by 2029, which is the end of the next permit term. Additional treatment modifications to remain below the trigger for the RWF will be necessary due to increased nitrogen loads from projected population growth and due to changes in solids dewatering that will generate a return stream of high strength nitrogen. The RWF will need to develop the capacity to fully treat this high strength nitrogen return stream. If no further action is taken by 2029 to reduce nitrogen loads discharged from the RWF, the RWF is expected to exceed the anticipated future nitrogen trigger at some point between 2024 and 2029.

The RWF staff initiated a comprehensive process optimization study in early 2020 to evaluate how the Capital Improvement Program (CIP) and the RWF could respond to future nutrient load limits and other regulatory requirements in a cost-effective and environmentally protective manner within the existing CIP project timelines. The evaluation was not included in the Plant Master Plan because at that time, nutrient regulations were not a high priority for the regulators and there were no indications that the Bay could be impaired by nutrients. Furthermore, nutrient load caps for wastewater treatment plants did not exist until the 2019 nutrient watershed permit, so there was not a limit or treatment threshold upon which to base an evaluation. The study has identified the advanced biological treatment upgrade to the existing secondary treatment as the best treatment technology to keep the RWF in compliance with the future nitrogen load cap until the study's planning horizon of 2051. The study also evaluated options and projected costs to reduce nitrogen loads beyond the future nitrogen load cap in case the scientific evaluation of the Bay indicates additional reductions are necessary. Since the study identified the treatment technology to meet the future load cap, the next five-year CIP plan will need to modify existing projects or include new project(s) in order to meet the nutrient loads cap. Similarly, the timing and phasing of nutrient treatment systems upgrades are under evaluation in order to ensure they will keep pace with future nutrient increases and regulations.

***Constituents of Emerging Concern -*** Constituents of Emerging Concern (CECs) is a term used that includes a broad range of unregulated chemical components found at trace levels in many of our water supplies, and there is a concern that these compounds may have an impact on aquatic life. Examples of these components include chemicals commonly found in pharmaceuticals and personal care products, which are increasingly being detected at low levels in surface water. The RWF is taking a proactive approach to CECs by engaging in regional science-driven efforts to understand the sources and environmental impacts of various CECs and integrating pollution prevention messaging into public outreach campaigns to educate the public on proper disposal. The number of CECs that have raised concern in the environmental and scientific communities has steadily and rapidly grown over the past five years.

The current list of elevated concern CECs in the Bay Area includes:

- Poly- and per-fluoroalkyl compounds (PFAS)

- Fipronil and imidacloprid
- Bisphenols
- Organophosphate esters
- Microplastics
- Alkylphenols

Of the list of CECs that are of elevated concern, PFAS and the flea and tick treatment pesticides fipronil and imidacloprid are the most likely to result in effluent limits or regulatory control programs in near term.

*Poly- and per-fluoroalkyl Compounds*
PFAS compounds are a large class of chemicals with a diverse number of applications that have received increasing regulatory attention over the past years. Used in textiles, carpet treatments, metal plating, cookware coatings, food packaging, and fire-fighting foams, PFAS are ubiquitous in homes and in the environment. Because of their broad applications, PFAS are entering the wastewater stream through residential, commercial, and industrial pathways and are persistent in the environment with some forms accumulating in wildlife, potentially causing harm.

The State Water Resources Control Board (SWRCB) issued requirements to evaluate various pathways through which PFAS are entering the environment. In response, wastewater agencies in the San Francisco Bay Region initiated a study in late 2020 to characterize the levels of PFAS entering and leaving POTWs as well as gain a better understanding of the source of PFAS in wastewater. The study, which is unique in California, is underway and is being conducted in collaboration with scientific experts from the San Francisco Estuary Institute (SFEI) and the Water Board. This collaboration is the result of RWF staff actively participating in and assuming leadership roles in regional science programs, which has built trust between the wastewater community and our regulators over the course of many years. The study characterized PFAS in influent, effluent, and biosolids from over a dozen POTWs in the region and is currently collecting samples from targeted industrial and commercial facilities as well as flows that are predominantly residential in nature. This information will help identify whether wastewater PFAS is coming from specific industries or is predominantly from residential sources.

Consistent with this approach of identifying true sources of PFAS in wastewater, the RWF and ESD are also supporting potential legislation, such as Assembly Bill 2247, which would require manufacturers who use PFAS in their products to disclose its presence in their products. Such legislation will provide additional information about true sources of PFAS, which will aid developing effective management and control methods that are unlikely to be treatment technology upgrades at POTWs. The chemical nature and behavior of PFAS in water makes treating them at a wastewater treatment plant problematic and treatment at a POTW is likely an ineffective control or reduction strategy. Focused scientific studies and supporting legislation to improve our understanding of PFAS sources will provide the necessary information for effective pollution prevention and pretreatment strategies for PFAS should reductions in wastewater become necessary in the future.

*Flea and tick pet treatment*

Flea and tick treatments for household pets have received considerable attention and potentially pose a future regulatory threat due to their impact on the environment. Many of the most popular and lower cost products on the market today are applied topically to a dog's or cat's skin between their shoulders. Studies conducted in the San Francisco Bay Area have demonstrated that the topical application causes the product and chemicals to spread rapidly throughout a household, onto furniture, clothes, bedding, hands, and faces. As these items are washed, the chemicals are sent into the collection system and to the RWF. Many of the popular topical flea and tick treatments in wide use today contain one of the two most problematic pesticides, fipronil and imidacloprid. Studies conducted at the RWF and other POTWs have shown that these two compounds are not removed or reduced by treatment at even advanced wastewater treatment facilities like the RWF and are thus discharged to the environment. These compounds are highly toxic to aquatic life, especially insect-like aquatic invertebrates. In addition, imidacloprid is a class of pesticide known as a neonicotinoid, which are pesticides that have been implicated in honeybee colony collapses.

Since there is not an identified treatment technology to remove these compounds from wastewater, RWF staff initiated a proactive pollution prevention (P2) effort to educate the public and San José staff on the environmental risks posed by fipronil and imidacloprid. Outreach messaging encourages residents to consider using chewable flea and tick treatments for their pets after speaking to their veterinarian, to practice integrated pest management (less toxic alternatives) for flea and tick control and treatment, and to research alternative products that do not contain fipronil and imidacloprid. The RWF staff has continued to research and refine P2 messaging for flea and tick pet treatment via research, outreach to veterinarian associations, and collaborations with partner agencies in the collaborative Bay Area Pollution Prevention Group as well as the State Department of Pesticide Regulations. Staff developed information websites and conducted a series of outreach campaigns online, through partnerships with local sports teams, and at Christmas in the Park to educate residents in the service area about options for flea and tick treatments for their pets. In addition to educating residents about the environmental harm caused by some topical flea and tick treatments, the messages encourage pet owners to discuss alternative treatments with their veterinarian, including the use of chewable flea and tick treatments.

Microplastics and the State Toxicity plan were reported on in the May 3, 2021, update to the Transportation & Environment Committee as future regulations impacting the RWF. However, notable progress has not been made this year toward adoption of regulations or limits for these. The following describes their status.

- Microplastics: Scientific focus has shifted away from documenting their presence towards gaining a better understanding of sources and pathways to the environment. These efforts are mostly being led by the Ocean Protection Council.
- Toxicity: Water Board adopted numeric toxicity limits for all POTWs on December 1, 2020. They will now include numeric toxicity limits in all NPDES Permits as they are reissued. Therefore, a change can be expected around 2025 when the next Individual NPDES Permit is issued to the RWF.

Staff continues to monitor these issues for any further developments and advocate for scientific studies to focus on environmental effects.

Air Quality Regulations under Consideration or Development

***Toxic Air Contaminants / Rule 11-18*** – BAAQMD is implementing a new rule: Regulation 11, Rule 18 (Rule 11-18) to assess and reduce human health risks associated with toxic air contaminant emissions from facilities throughout the Bay Area. The RWF will be subject to Rule 11-18 and will be required to fund a human Health Risk Assessment (HRA) for the entire RWF under the guidance of BAAQMD. Implementation of Rule 11-18 has been delayed and the BAAQMD has not provided an updated timeline for implementation.

This HRA under Rule 11-18 is expected to commence with a request for information from BAAQMD. Staff will coordinate with BAAQMD to ensure that the most up to date emissions information is used in the HRA so that the health risks associated with the RWF are accurate. The HRA will be conducted after BAAQMD has all the emissions and process information required for the analysis. Facilities that are found to have elevated potential adverse health effects on the surrounding community will be required to submit and implement a plan to reduce impacts.

However, the RWF recently completed HRAs conducted as part of the permitting process for the new equipment including the Cogeneration Facility and Headworks 3. Those HRAs showed compliance with health risk standards under the strict HRA methodology. The new engines include Best Available Control Technology (BACT) which reduces emissions and associated health risks from the new equipment compared to the equipment that will be replaced. Headworks 3 and the sludge thickening facility, part of the Digester and Thickener Facilities Upgrade project that are under construction, include improved emissions control for toxic air contaminants compared to the existing processes.

***Toxic Air Contaminants / Rule 2-5*** – BAAQMD adopted a revised Rule 2-5, *New Source Review for Toxic Air Contaminants* that sets stricter standards for new or modified facilities in and near communities that are deemed to be disproportionately affected by air pollution. The RWF is not located in a target area for the rule and will not be subject to the more stringent standards. The revised rule also includes review times for processing permit applications and includes a definition of essential public services that does not include wastewater treatment.

City staff worked through Bay Area Clean Water Agencies (BACWA) to submit comments on the proposed rule revisions. Concerns included weak justification for the rule, inadequate consideration for costs of compliance, and the exclusion of wastewater treatment from the definition of essential public service. In response, BAAQMD proposed to form a working group comprised of BAAQMD staff and BACWA members to discuss rule implementation and report

on progress to the BAAQMD Board of Directors. San José staff are participating in the workgroup to increase engagement with BAAQMD and address concerns with the air permitting process.

***Greenhouse Gas Emissions / Cap and Trade*** - In the absence of federal action to reduce GHG emissions, California has created statewide programs, including a Cap and Trade program to track and promote reduction of GHG emissions. The current program authorized by Assembly Bill (AB) 32 in 2006 was set to expire in 2020 but was extended through 2030 with the adoption of Senate Bill (SB) 32 in 2017.

The RWF uses its digester gas as a fuel to power operational equipment but must blend it with pipeline natural gas (a fossil fuel) to have sufficient fuel supplies. After five years of being subject to the Cap and Trade program, the RWF was able to exit the program in 2018 by purchasing electrical power from the utility grid rather than generating it onsite by using additional natural gas. This decreased GHG emissions generated onsite to less than the Cap and Trade threshold, but requires consistent management of emissions to remain under the cap. The RWF power generation systems are changing as the on-site power generation system transitions to the new Cogeneration Facility. Staff is working on plans for the operation of the Cogeneration Facility with the goal of balancing overall GHG emissions below the Cap and Trade threshold, while powering the RWF in the most reliable and economical way for rate payers.

CARB has adopted a regulation to implement the directives of SB 32. The regulation to continue the Cap and Trade program is similar in structure to the existing Cap and Trade regulation and includes the same 25,000 Metric Tons (MT) of Carbon Dioxide equivalents ($CO_2e$) applicability threshold. However, the overall allowable statewide emissions cap will decrease from approximately 350 million MT of CO2e to 250 million MT $CO_2e$ in 2030. This is designed to increase the cost of GHG emission allowances. The increased allowance cost would result in higher compliance costs for the RWF if allowance purchases were required in the future. Emissions from the RWF are expected to remain below the Cap and Trade threshold through 2030.

***Greenhouse Gas Emissions / BAAQMD Methane Rules*** - Methane is a potent GHG (21 times as potent as carbon dioxide) that is generated through the anaerobic decomposition of organic matter in processes such as in the anaerobic digesters at the RWF. The high potency of methane has made reduction of methane emissions a high priority for BAAQMD. Nearly all biogas currently produced at the RWF is captured on-site and used to generate energy for operations. The remaining methane is burned in flares or escapes as fugitive emissions. As part of the CIP at the RWF, all biogas piping in the RWF is being replaced and updated, reducing potential leak sources, and improving overall safety.

BAAQMD has begun rule development on measures intended to reduce methane emissions at Bay Area facilities. The first of these rules, Rule 13-1, was intended to require facilities to find

and eliminate any large (defined as more than 10 pounds per day) methane leaks. The rule adoption has been deferred in favor of rules targeted at organic waste processing, composting, wastewater treatment, and landfills. Planned Rule 13-4, targeting wastewater treatment facilities and anaerobic digesters for methane and nitrous oxide emission reductions has the greatest potential effect on the RWF. The intent of the rule will be to limit fugitive methane emissions and minimize the formation of nitrous oxide in the treatment process. Formal rulemaking for this was expected by the end of 2019 but has been delayed indefinitely due to lack of BAAQMD staff resources and effects of COVID-19. City staff and BACWA are working to educate BAAQMD personnel on wastewater treatment and anaerobic digester operations to help inform their rulemaking process. City staff and BACWA will monitor developments, provide comments, and participate in discussions with BAAQMD during the rule development process.

Air Permit Changes

***Digester Permit to Operate –*** The BAAQMD revised the Permit to Operate (PTO) for the anaerobic digesters before construction began on the Digester and Thickener Facilities Upgrade project. The PTO included new monitoring requirements for compliance demonstration. A requirement to monitor and record all instances of digester gas releases through pressure relief valves is the most significant additional requirement in the PTO. This monitoring will require the installation of new equipment to monitor instances of gas releases from the pressure relief valves. RWF staff is installing the necessary monitoring equipment on all the digesters.

***Title V Renewal*** – BAAQMD has completed processing of the Title V renewal and has issued a draft for public comment. The renewed permit will be issued after all public comments have been addressed. The renewed permit will incorporate all permit changes made since the 2017 permit was issued. Updates to the permit include adding the emergency generators, new cogeneration facility, and new equipment associated with the digester rehabilitation project to the Title V permit.

South Bay Odor Study

***Regional Odor Attribution Study*** – BAAQMD conducted a procurement in early 2020 to hire consulting firms to conduct an odor attribution study for the RWF, Newby Island Landfill, and Zero Waste Energy Development Company. Milpitas residents complain that all three facilities contribute to odor. The odor attribution study is intended to characterize odors from each of the three facilities so that odors observed in the community can be traced to their source. The results of the study will be used by BAAQMD to develop a plan for reducing odors from any of those facilities that are found to contribute to odors observed in the community.

The odor attribution study includes seasonal sampling events. The first sampling event occurred in October 2020 with samples taken at RWF from the primary outflow channel, secondary aeration basin, a lagoon, and a drying bed. The sampling team also conducted ambient and downwind odor observations. A second monitoring event was conducted in March 2021 with samples again taken from the primary outflow channel and a secondary aeration basin.

Additional monitoring events were conducted in May and August of 2021. A report of the results is expected to be available in May 2022.

Recent and planned changes at the RWF are expected to reduce potential emissions of odors. The new Headworks Process (Headworks 3), currently under construction, will replace the current open headworks with an enclosed process equipped to collect and treat air with a biofilter to reduce potential odors. In addition, the RWF is in the start-up phase of new odor control measures for undigested sludge handling systems. The Digested Sludge Dewatering Facility will allow the eventual decommissioning of the lagoons and drying beds which have been alleged as odor sources by the BAAQMD. These enhanced odor control measures are intended to prevent objectional odors beyond the RWF fence line.

Biosolids Regulations

***Implementation of SB 1383*** – With the adoption of Senate Bill (SB) 1383 in 2016, the California Department of Resources Recycling and Recovery (CalRecycle) developed new regulations to reduce organic waste in landfills and short-lived climate pollutants, such as methane. The targets set by SB 1383 are a 50% reduction in the statewide disposal of organic waste from the 2014 level by 2020, and a 75% in the statewide disposal of organic waste from the 2014 level by 2025. CalRecycle's regulations were finalized in November 2020 and went into effect on January 1, 2022. The final regulations maintained biosolids in the definition of organic waste and, from a reporting perspective, deem the use of organic material ADC as landfill disposal. While the final regulations do not ban landfill disposal of biosolids, the regulations do encourage wastewater agencies to divert biosolids from landfills for wastewater agencies to be eligible for procurement credits toward the annual per-capita-based procurement target established should they co-digest sludge with other diverted organics.

To better align the RWF's operations with the intent of the SB 1383 regulations, staff is proceeding with the construction of the Digested Sludge Dewatering Facility (approved in March 2022), which is consistent with the Biosolids Transition Strategy (approved in June 2015) and Dewatered Biosolids Management Strategy (approved in June 2021). Upon completion of the Digested Sludge Dewatering Facility, anticipated to be in 2025, the emptying and decommissioning of the RWF's active lagoons and drying beds can begin. During this multi-year process, the RWF's sundried biosolids will continue to be sent to Newby Island Landfill while the RWF's mechanically dewatered biosolid are transported off-site for beneficial use. A procurement process is currently underway to select a few contractors to transport and beneficially use the RWF's dewatered biosolids. Early procurement of these services will ensure adequate capacity is secured. A 2019 biosolids disposition market assessment concluded that there is limited capacity for beneficial use of biosolids in and around the San Francisco Bay Area as more wastewater treatment plants diversify away from landfills, partly in recognition of the environmental benefits of using biosolids and in response to SB 1383 regulations. The transportation and beneficial use contracts will also provide flexibility while staff seeks to implement the other two aspects of the Dewatered Biosolids Management Strategy, which

include the development of an on-site fertilizer partner facility and the permitting of local natural and working lands to receive biosolids.

## EVALUATION AND FOLLOW UP

Staff will continue to track regulatory discussions and advocate for the City's interest directly with regulators and indirectly through several regional groups including BACWA, California Association of Sanitation Agencies (CASA), San Francisco Bay Regional Monitoring Program (RMP), SFEI, and the San Francisco Bay Nutrient Management Strategy Steering Committee. Staff will plan to return to the T&E Committee on an annual basis with an update, and will bring forward recommendations on specific items, as appropriate.

## CLIMATE SMART SAN JOSE

The content of this memorandum does not affect Climate Smart San José.

## PUBLIC OUTREACH/INTEREST

This memorandum will be posted on the City's website for the May 2, 2022, Transportation & Environment Committee agenda.

## COORDINATION

This report has been coordinated with the City Attorney's Office and Budget Office.

## COMMISSION RECOMMENDATION/INPUT

This item is scheduled to be heard at the June 9, 2022, Treatment Plant Advisory Committee meeting.

## CEQA

Not a Project, File No. PP10-0669 (a), Staff Reports.

/s/
KERRIE ROMANOW
Director, Environmental Services

For questions, please contact Jennifer Voccola Brown, Sustainability & Compliance Manager, at (408) 975-2594 or Jennifer.Brown@sanjoseca.gov.